

The background of the entire page is a dynamic, high-speed photograph of water splashing, creating numerous bubbles and droplets. The color palette is various shades of blue, from light sky blue to deep navy blue. A prominent white diagonal line runs from the top left towards the bottom right, bisecting the water splash. The overall effect is clean, fresh, and energetic.

**WATTS®**

2023 / 2024

Components and systems  
for plumbing and heating  
installations

# About Watts

Innovative products, which have become milestones in the plumbing and heating sector: since 1874, Watts Water Technologies has been contributing to technological research in the industry, with a sharp focus on continuous innovation

and top quality. Thanks to its in-depth know-how and eternal values, such as reliability, ethics and care for human health, safety and the environment, Watts is now a benchmark for the industry and for the plumbing and heating trade. On the strength of its historic experience and its capacity for large-scale manufacturing of both components and complex systems, the biggest companies and the best distributors of plumbing and heating products choose Watts as their partner.



**COLLABORATION  
WITH  
CUSTOMERS**  
from the earliest stages  
of design



**INNOVATIVE,  
INTEGRATED  
PRODUCTS AND  
SYSTEMS**  
that anticipate market  
requirements



**CONTINUOUS  
INVESTMENT**  
to deliver  
high-tech content

# Our history

## WATTS ITALIA



Joseph Watts establishes the company in Lawrence, Massachusetts.

1874

1999



The historic company **CAZZANIGA S.p.a.**, based in Biassono in the Italian province of Monza and Brianza, and Italy's leading manufacturer of heating and plumbing products, joins the Watts family.



The Watts product range is extended to include **FIMET** pressure gauges and thermometers.



2001

2002

### giuliani anello

Watts Italia enters the world of gas: **GIULIANI ANELLO S.r.l.** adds components for gas, diesel and fuel oil systems to the Watts portfolio.

Watts opens a new production facility in **Trento** as a joint initiative between two companies based in Northern Italy.



2007

2009

SIOP

The production facilities achieve **Class A** accreditation from Oliver Wight.

The new Trento site is extended to accommodate the production of **MICROFLEX®** pre-insulated flexible piping.



2014

2016

Innovation needs more space: the company opens its **INNOVATION CENTER** in Rovereto (province of Trento).



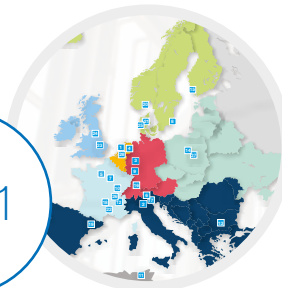
A WATTS Brand

**Socla**, France's leading manufacturer of components for water distribution systems, joins forces with Watts in the Italian market.



2017

2021



The Biassono site (province of Monza and Brianza) becomes an **CEE distribution hub** in Europe.

**INNOVATION CONTINUES!**

# One group

## COUNTLESS SOLUTIONS

Watts offers solutions **for a wide range of applications**, on the strength of its international experience and the many Group brands with which it share a **solid reputation** for **product quality** and **customer satisfaction**.



*Data Center*



*Water quality and treatment*



*Marine*



*HVAC & Home Automation*



*Flow control and public water hydraulic solutions*



*Top-quality OEM solutions*

---

## MANY SERVICES

Watts provides its customers with **online resources and offline technical support**. Our experts have developed specific tools and software to **make processes more efficient** and ensure **continuous updating**.

*Configurators and Simulators*

**wattswater.it**

*Software for designers*

**idronicaline.net**

*DWG / DXF / STP / BIM objects for programming*

**wattswater.it**

*Online training*

**training.watts.com**

---

bar

BLÜCHER®

SOCCLA

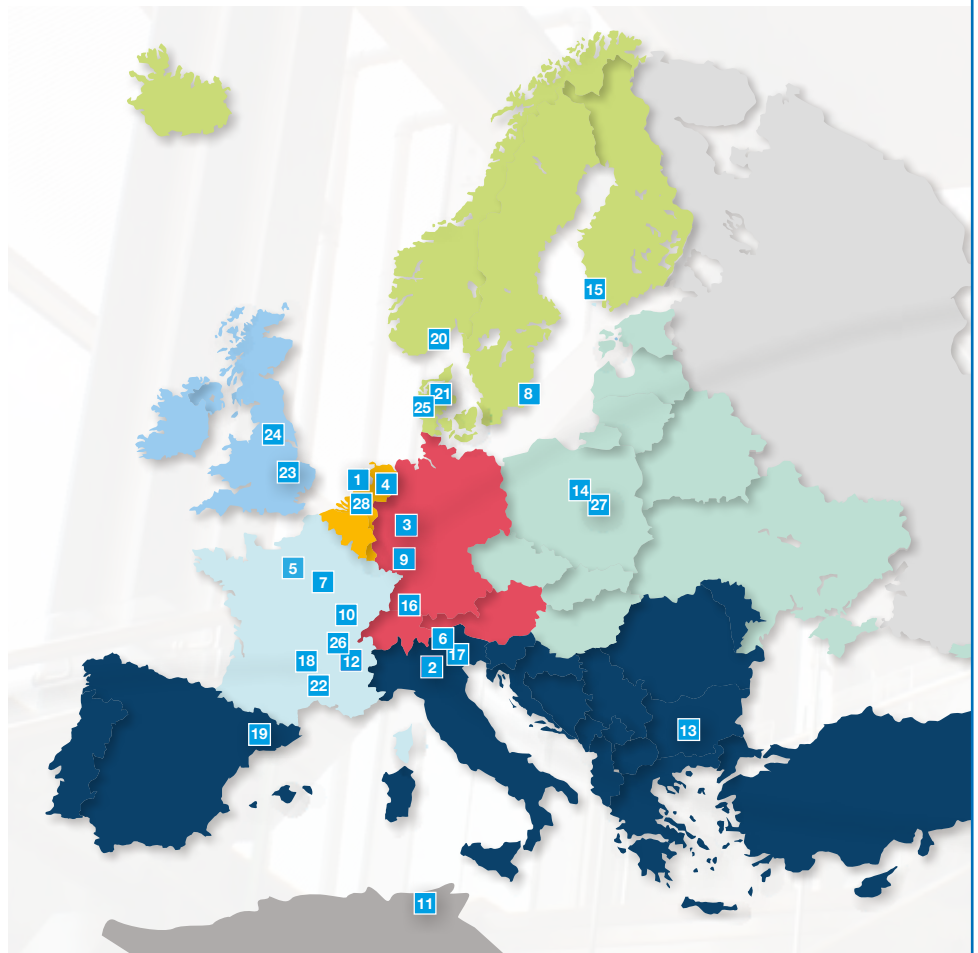
valpes

# Our sites worldwide



## Watts in Europe 7 distribution regions

1	Amsterdam	Netherlands
2	Biassono	Italy
3	Dattenberg	Germany
4	Eerbeek	Netherlands
5	Evry	France
6	Gardolo	Italy
7	Hautvillers	France
8	Kalmar	Sweden
9	Landau	Germany
10	Chambery	France
11	Monastir	Tunisia
12	Moirans	France
13	Plovdiv	Bulgaria
14	Piaseczno	Poland
15	Raisio	Finland
16	Reichenau	Germany
17	Rovereto	Italy
18	Rosieres	France
19	Rubí	Spain
20	Siljan	Norway
21	Skanderborg	Denmark
22	Sorgues	France
23	St. Neots	UK
24	Tadcaster	UK
25	Vildbjerg	Denmark
26	Virey le Grand	France
27	Warsaw	Poland
28	Wingene	Belgium





BOILER ROOM COMPONENTS

1

HOME AUTOMATION AND COMFORT CONTROL

2

SHUT-OFF AND CHECK VALVES

3

PRESSURE GAUGES AND THERMOMETERS

4

MICROFLEX® FLEXIBLE PIPING SYSTEMS

5

BALANCING DEVICES FOR WATER DISTRIBUTION SYSTEMS

6

THERMAL ENERGY METERING

7

DISTRIBUTION SYSTEMS

8

VALVES AND ACCESSORIES FOR RADIATORS

9

COMPONENTS FOR GAS,  
DIESEL AND FUEL OIL SYSTEMS

10

CONTROL AND PROTECTION OF WATER  
DISTRIBUTION SYSTEMS

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# Chapter 1

## Boiler room components



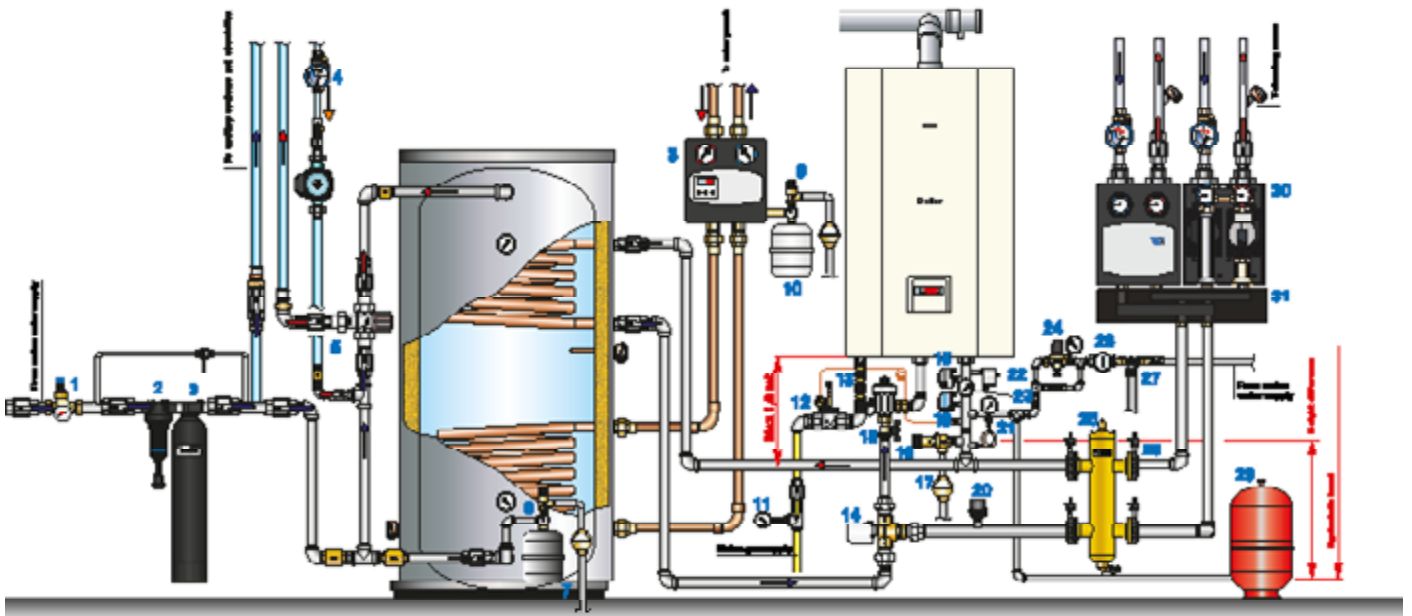
### TRI - Instrument manifold

Quick installation  
Horizontal or vertical fitting  
Components as specified in INAIL "R" regulations

## Chapter 1.1

# SAFETY, PROTECTION AND CONTROL DEVICES

### Boiler room components to INAIL technical specifications



All information, data, photographs and products contained in this representation and/or diagram are purely for illustrative and promotional purposes, they have no contractual value and are not covered by warranty, they do not constitute either a user manual or represent an official diagram.

**1. DESBORDES**

Pressure reducing valve  
P 408

**2. WHOF1**

Self-cleaning filter  
P 404

**3. ONEFLOW®**

Anti-scale system  
P 400

**4. IDROSET® CF Series**

Static balancing valve  
P 190

**5. 61C**

Thermostatic mixing valve for domestic water  
P 419

**6. SV**

Safety valve for boilers  
P 17

**7. DHW CE**

Expansion vessel for domestic water systems.  
P 447

**8. FBS**

Return-circuit pump unit for solar thermal systems  
P 462

**9. SVE SOL**

Safety valve for solar thermal systems  
P 459

**10. SOLAR**

Expansion vessel for systems with solar panels  
P 460

**11. MP1 63**

Diaphragm pressure gauge for gas  
P 140

**12. VIC**

Fuel shut-off valve  
P 300

**13. GE**

Flexible joint for gas systems  
P 339

**14. VU3+ETE**

Servo-controlled three-way valve with electro-thermal actuator  
Page 254 and 259

**15. DSPN**

Compact magnetic dirt separator  
P 28

**16. VST**

Safety valve INAIL approved  
P 14

**17. IS**

Exposed drain funnel  
P 18

**18. PRMIN**

Minimum pressure switch with manual resetting  
P 24

**19. PRM**

Shut-off pressure switch with manual resetting  
P 24

**20. FLU25PL**

Flow switch  
P 24

**21. M1-ABS 80R**

Pressure gauge INAIL compliant.  
Page 139

**22. TRS TU**

Immersion control and shut-off bi-thermostat with manual resetting  
P 25

**23. TB-80 VE**

Thermometer INAIL compliant.  
P 152

**24. ALM**

Automatic filling valve  
P 22

**25. SDDF**

Multifunction hydraulic separator  
P 28

**26. WMT**

Volumetric meter for DCW  
P 234

**27. CA9C**

Backflow preventer with built-in filter  
P 435

**28. XYLIA**

Butterfly valve  
P 99

**29. ERE**

Closed expansion vessel  
P 26

**30. HK20**

Compact domestic hot water and mixing unit  
P 36

**31. VB32**

Manifold distribution  
P 39

## Safety valves

### VST



Diaphragm safety valve, fixed setting. CW617N brass body and cap.  
 F/F connections with reinforced outlet. Overpressure: 10% Blowdown: 20% PN 10.  
 Operating temperature range: -10 to 120°C. Fluids: water with glycol up to 50%.

**INAIL approved and calibrated.**  
**Compliant with: PED 2014/68/EU.**

Part no.	DN	bar	Pcs. pack	Package
0212122	1/2" x 3/4"	2.25	1	20
0212125	1/2" x 3/4"	2.5	1	20
0212127	1/2" x 3/4"	2.7	1	20
0212130	1/2" x 3/4"	3	1	20
0212135	1/2" x 3/4"	3.5	1	20
0212140	1/2" x 3/4"	4	1	20
0212145	1/2" x 3/4"	4.5	1	20
0212150	1/2" x 3/4"	5	1	20
0212154	1/2" x 3/4"	5.4	1	20
0212160	1/2" x 3/4"	6	1	20
0213122	3/4" x 1"	2.25	1	20
0213125	3/4" x 1"	2.5	1	20
0213127	3/4" x 1"	2.7	1	20
0213130	3/4" x 1"	3	1	20
0213135	3/4" x 1"	3.5	1	20
0213140	3/4" x 1"	4	1	20
0213145	3/4" x 1"	4.5	1	20
0213150	3/4" x 1"	5	1	20
0213154	3/4" x 1"	5.4	1	20
0213160	3/4" x 1"	6	1	20
0214122	1" x 1.1/4"	2.25	1	20
0214125	1" x 1.1/4"	2.5	1	20
0214127	1" x 1.1/4"	2.7	1	20
0214130	1" x 1.1/4"	3	1	20
0214135	1" x 1.1/4"	3.5	1	20
0214140	1" x 1.1/4"	4	1	20
0214145	1" x 1.1/4"	4.5	1	20
0214150	1" x 1.1/4"	5	1	20
0214154	1" x 1.1/4"	5.4	1	20
0214160	1" x 1.1/4"	6	1	20

Dimensions on page 29



## VST valves: technical data and discharge flow rates

Model	Pressure of (bar)			Orifice Ø mm	Orifice sect. cm <sup>2</sup>	Discharge coefficient K	Capacity	
	Setting	Drain	Closure				Steam venting kg/h	Generator kW
1/2"x3/4"	2.25	2.475	1.80				205.67	119.29
	2.50	2.75	2.00				221.40	128.41
	2.70	2.97	2.16				233.78	135.59
	3.00	3.30	2.40				253.74	147.17
	3.50	3.85	2.80	15	1.7671	0.71	284.07	164.76
	4.00	4.40	3.20				318.07	164.76
	4.50	4.95	3.60				344.78	199.97
	5.00	5.50	4.00				376.39	218.30
	5.40	5.94	4.32				399.70	231.24
	6.00	6.60	4.80				442.81	256.83

Model	Pressure of (bar)			Orifice Ø mm	Orifice sect. cm <sup>2</sup>	Discharge coefficient K	Capacity	
	Setting	Drain	Closure				Steam venting kg/h	Generator kW
3/4"x1"	2.25	2.475	1.80				412.01	238.96
	2.50	2.75	2.00				443.52	257.24
	2.70	2.97	2.16				468.31	271.62
	3.00	3.30	2.40				508.30	294.81
	3.50	3.85	2.80	20	3.1416	0.80	569.04	330.04
	4.00	4.40	3.20				637.17	369.55
	4.50	4.95	3.60				690.67	400.58
	5.00	5.50	4.00				753.98	437.31
	5.40	5.94	4.32				804.25	466.50
	6.00	6.60	4.80				887.04	514.48

Model	Pressure of (bar)			Orifice Ø mm	Orifice sect. cm <sup>2</sup>	Discharge coefficient K	Capacity	
	Setting	Drain	Closure				Steam venting kg/h	Generator kW
1"x1.14"	2.25	2.475	1.80				571.37	331.37
	2.50	2.75	2.00				615.03	356.71
	2.70	2.97	2.16				649.41	376.65
	3.00	3.30	2.40				704.86	408.82
	3.50	3.85	2.80	25	4.9087	0.71	789.09	457.67
	4.00	4.40	3.20				883.56	512.46
	4.50	4.95	3.60				957.75	555.49
	5.00	5.50	4.00				1045.55	606.42
	5.40	5.94	4.32				1120.24	649.79
	6.00	6.60	4.80				1230.06	713.43

### TECHNICAL NOTE

#### INAIL approval certificates

The approval of individual VIC/A, VST, 464, NVFN and VTFN Series valves governs the relationship between the manufacturer and INAIL. The manufacturer is required to produce the item within the time limits covered by the approval certificate (5 years or more if renewed).

The expiry of these time limits does not preclude the use of items produced within the specified time limits, even if the approval certificate is not renewed. In view of their reliability and functionality, safety devices are not considered perishable, and there are no time limits for their use and installation.

In the event of loss of the original certificate, it is possible to order a conforming copy.

For repairs or servicing of INAIL approved products, please contact our sales department.

**MSV**



Standard diaphragm safety valve. CW617N brass body. 1/2" F/F connection. Technopolymer manual discharge knob. Ni-Cr steel spring. PN 10.  
 Operating temperature range: -10 to 110°C. Fluids: water with glycol up to 50%.  
**WRAS compliant. Compliant with: PED 2014/68/EU.**

Part no.	DN	bar	Pcs. pack	Package
0207015 N	1/2"	1,5	1	40
0207018 N	1/2"	1,8	1	40
0207020 N	1/2"	2	1	40
0207525	1/2"	2,5	1	40
0207530	1/2"	3	1	40
0207035 N	1/2"	3,5	1	40
0207540	1/2"	4	1	40
0207050 N	1/2"	5	1	40
0207060 N	1/2"	6	1	40
0207070 N	1/2"	7	1	40
0207080 N	1/2"	8	1	40
0207090 N	1/2"	9	1	40
0207099 N	1/2"	10	1	40

Dimensions on page 29

**MSL**



Diaphragm safety valve. CW617N brass body. 1/2" M/F connections. Technopolymer manual discharge knob. Ni-Cr steel spring. PN 10. Operating temperature range: -10 to 110°C.  
 Fluids: water with glycol up to 50%.  
**WRAS compliant. Compliant with: PED 2014/68/EU.**

Part no.	DN	bar	Pcs. pack	Package
0206015 N	1/2"	1,5	1	40
0206018 N	1/2"	1,8	1	40
0206020 N	1/2"	2	1	40
0206525	1/2"	2,5	1	40
0206530	1/2"	3	1	40
0206035 N	1/2"	3,5	1	40
0206540	1/2"	4	1	40
0206050 N	1/2"	5	1	40
0206060 N	1/2"	6	1	40
0206070 N	1/2"	7	1	40
0206080 N	1/2"	8	1	40
0206090 N	1/2"	9	1	40
0206099 N	1/2"	10	1	40

Dimensions on page 29

## SV



Diaphragm safety valve. CW617N brass body. F/F connections with reinforced outlet. Technopolymer manual discharge knob. Ni-Cr steel spring. PN 10.

Operating temperature range: -10 to 110°C. Fluids: water with glycol up to 50%.

Compliant with: PED 2014/68/EU.

Models DN 15, 20, 25, 32 set pressure 2.5, 3.0, 4.0, 6.0, 8.0 and 10.0 bar.

Compliant with German standards TRD721, VdT V Merkblatt Sicherheitsventil 100.

Approval: ACS (Attestation de Conformité Sanitaire). Up to 3/4" models.

Part no.	DN	bar	Pcs. pack	Package
0216015 N	1/2" x 3/4"	1,5	1	40
0216018 N	1/2" x 3/4"	1,8	1	40
0216020 N	1/2" x 3/4"	2	1	40
0215125	1/2" x 3/4"	2,5	1	40
0215130	1/2" x 3/4"	3	1	40
0216035 N	1/2" x 3/4"	3,5	1	40
0215104	1/2" x 3/4"	4	1	40
0216045 N	1/2" x 3/4"	4,5	1	40
0216050 N	1/2" x 3/4"	5	1	40
0216055 N	1/2" x 3/4"	5,5	1	40
0216060 N	1/2" x 3/4"	6	1	40
0216070 N	1/2" x 3/4"	7	1	40
0216080 N	1/2" x 3/4"	8	1	40
0216090 N	1/2" x 3/4"	9	1	40
0216099 N	1/2" x 3/4"	10	1	40
0217015 N	3/4" x 1"	1,5	1	40
0217018 N	3/4" x 1"	1,8	1	40
0217020 N	3/4" x 1"	2	1	15
0217625	3/4" x 1"	2,5	1	15
0217630	3/4" x 1"	3	1	15
0217035 N	3/4" x 1"	3,5	1	15
0217604	3/4" x 1"	4	1	15
0217045 N	3/4" x 1"	4,5	1	15
0217050 N	3/4" x 1"	5	1	15
0217055 N	3/4" x 1"	5,5	1	15
0217060 N	3/4" x 1"	6	1	15
0217070 N	3/4" x 1"	7	1	12
0217080 N	3/4" x 1"	8	1	12
0217090 N	3/4" x 1"	9	1	12
0217099 N	3/4" x 1"	10	1	12
0218615	1"x1.1/4"	1,5	1	15
0218625	1"x1.1/4"	2,5	1	15
0218630	1"x1.1/4"	3	1	15
0218604	1"x1.1/4"	4	1	15
0218305	1"x1.1/4"	5	1	15
0218606	1"x1.1/4"	6	1	15
0218607	1"x1.1/4"	7	1	15
0218608	1"x1.1/4"	8	1	15
0218610	1"x1.1/4"	10	1	15
0219615	1.1/4"x1.1/2"	1,5	1	12
0219625	1.1/4"x1.1/2"	2,5	1	12
0219630	1.1/4"x1.1/2"	3	1	12
0219604	1.1/4"x1.1/2"	4	1	12
0219405	1.1/4"x1.1/2"	5	1	12
0219606	1.1/4"x1.1/2"	6	1	12
0219607	1.1/4"x1.1/2"	7	1	12
0219608	1.1/4"x1.1/2"	8	1	12
0219610	1.1/4"x1.1/2"	10	1	12

Dimensions on page 29

**SFR**



Safety unit with straight body for boilers up to 10kW, complete with safety valve, shut-off valve (to isolate the boiler from the supply line), inspectable check valve (to prevent the backflow of “contaminated” water into the supply line), lever for manual discharge via the safety valve. Safety valve setting: 7 bar. 1” M discharge connection.

**NF approved. ACS compliant.**

Part no.	DN	Body	Pcs. pack
<b>54310</b>	1/2" MF	Chrome-plated	1
<b>52550</b>	3/4" MF	Chrome-plated	1

Dimensions on page 35

**SIF**



Discharge funnel for SFR safety units. White polypropylene body. NF approved.

Part no.	DN	Pcs. pack
<b>7092315</b>	1" F	1

Dimensions on page 34

**MSL/PT**



Combined temperature and pressure safety valve for protecting storage tanks. DZR brass body, steel spring, EPDM diaphragm. Models with threaded male/female connections or male/fitting connection for copper pipe. Vertical or horizontal installation (with bottom discharge only). PN 10.

Nominal temperature: 92°C. Fluids: domestic water.

**Compliant with EN 1490 and Directive: PED 2014/68/EU.**

Part no.	DN	Setting (bar)	Pcs. pack	Package
<b>0206930</b>	3/4"MF	3	1	1
<b>0206940</b>	3/4"MF	4	1	1
<b>0206960</b>	3/4"MF	6	1	1
<b>0206970</b>	3/4"MF	7	1	1
<b>0206999</b>	3/4"MF	10	1	1

Dimensions on page 29

**IS**



Exposed drain funnel for safety and thermal drain valves.

Part no.	DN	Pcs. pack	Package
<b>0235115</b>	1/2" FF	1	1
<b>0235120</b>	3/4" FF	1	1
<b>0235125</b>	1" FF	1	1
<b>0235132</b>	1.1/4" FF	1	1

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## Fuel shut-off and thermal drain valves

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Three-way valve for boiler and expansion vessel shut-off. Threaded versions from DN 1" to DN 2" with bronze body, Flanged versions from DN 65 to DN 200 with cast iron body. The port sections inside the valve correspond to those of the piping with the same nominal diameter in accordance with INAIL technical specifications.

Part no.	DN	bar	Pcs. pack	Package
<b>2961</b>	1"	10	1	8
<b>296114</b>	1.1/4"	10	1	6
<b>296112</b>	1.1/2"	10	1	4
<b>2962</b>	2"	10	1	1
<b>296212</b>	65	16	1	1
<b>2963</b>	80	16	1	1
<b>296100</b>	100	16	1	1
<b>296125</b>	125	16	1	1
<b>296150</b>	150	16	1	1
<b>296200</b>	200	16	1	1

Dimensions on page 30

### VTFN-TERMOFLUX



Positive action thermal drain valve with manual resetting and optical signal. PN10. Set temperature 95°C. Drain capacity without filling: DN 1.1/4"-176,750 kcal/h equal to 7070 l/h. DN 1.1/2" - 318,200 kcal/h equal to 12728 l/h. Protection rating IP40. **INAIL approved and calibrated. Compliant with Directives LVD 2014/35/EU, EMC 2014/30/EU, PED 2014/68/EU.**

Part no.	DN	Cable length	Pcs. pack	Package
<b>0230232</b>	1.1/4"	1m	1	15
<b>0230240</b>	1.1/2"	1m	1	10

Dimensions on page 29

### VIC/A



Fuel shut-off valves. Compatible with natural gas, town gas, LPG, diesel and fuel oil. Positive action with manual reset. Capillary length 6 m. Aluminium body, stainless steel springs. NBR seals. 1/2" M sensor sheath connection. Max. operating pressure: 1 bar. Connections for flanged models, PN16 EN 1024. **Temperature:** - setting 96±3°C -maximum sensor side 130°C-maximum valve side 70°C - valve side 0°C.

**INAIL approved and calibrated. Type approved to ATEX 2014/34/EU. Compliant with: PED 2014/68/EU.**

Type	Part no.	Connections	Pcs. pack	Package
<b>VIC/A12</b>	006.0150.000	1/2"	1	1
<b>VIC/A34</b>	006.0151.000	3/4"	1	1
<b>VIC/A100</b>	006.0152.000	1"	1	1
<b>VIC/A114</b>	006.0153.000	1.1/4"	1	1
<b>VIC/A112</b>	006.0154.000	1.1/2"	1	1
<b>VIC/A200</b>	006.0155.000	2"	1	1
<b>VIC/A212</b>	006.0156.100	DN 65	1	1
<b>VIC/A300</b>	006.0157.100	DN 80	1	1
<b>VIC/A400</b>	006.0158.000	DN 100	1	1

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### SPARE PARTS

Type	Part no.	Description	Pcs. pack	Package
<b>1140</b>	014.0008.000	Bulb pocket for VIC/A 10 cm.	1	1
<b>1153</b>	014.0009.000	Bulb pocket for VIC/A 5 cm.	1	1

**NVFN-FLAM STOP**



Fuel shut-off valve compatible with natural gas, town gas, LPG, diesel and fuel oil. DN 1/2" and 3/4" suitable for biodiesel. Positive action with manual reset. Liquid expansion thermostat. Capillary length 5 m. Compact sensor. 1/2"M sensor sheath connection. Aluminium body, stainless steel springs. Max. operating pressure: 6 bar (DN15–25) - 1 bar (Dn 32–100). Flange: DN 65 - 80 PN16 UNI 2223.

**Temperature:** - setting 97±3°C - maximum sensor side 120°C-maximum valve side 50°C - minimum valve side -5°C.

**INAIL approved and calibrated. Type approved to ATEX 2014/34/EU.**

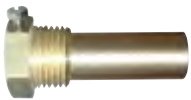
**Compliant with PED Directive 2014/68/EU.**



Part no.	DN	Pmax (bar)	Pcs. pack	Package
0231415	1/2" FF	6	1	1
0231420	3/4" FF	6	1	1
0231425	1" FF	1	1	1
0231432	1.1/4" FF	1	1	1
0231440	1.1/2" FF	1	1	1
0231450	2" FF	1	1	1
0231465	65	1	1	1
0231480	80	1	1	1

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**PARTS** 1/2" brass sheath



Part no.	DN	Pcs. pack	Package
0299011	1/2" F x 3/4" M	1	10

**464 - FULLMATIC - Discontinued series, available while stocks last**



Fuel shut-off valve compatible with natural gas, town gas, LPG, diesel and fuel oil. Positive action with manual reset. Liquid expansion thermostat. Capillary length 5 m. 1/2"M sensor sheath connection. Set temperature: 97±3°C. Max. operating pressure: 1 bar.

**Temperature:** - setting 97°C±3°C - maximum sensor side 120°C - maximum valve side 40°C -minimum valve side -2°C - maximum sensor side: 115±3°C.

**INAIL approved and calibrated. Type approved to ATEX 2014/34/EU.**

**Compliant with PED Directive 2014/68/EU.**



Part no.	DN	Material	Pcs. pack	Package
4641C34X	3/4"FF	bronze	1	1
4642C1X	1"FF	bronze	1	1
4643C114X	1.1/4"FF	bronze	1	1
4644C112X	1.1/2"FF	bronze	1	1
4645C2X	2"FF	bronze	1	1
4646C65X	65 flanged	cast iron	1	1
4647C80X	80 flanged	cast iron	1	1

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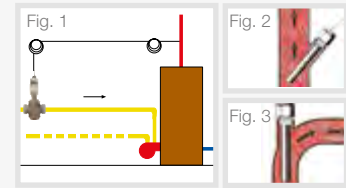
**PARTS** 1/2" M copper sheath



Part no.	Description	Pcs. pack	Package
4680C12	for 464 flanged	1	15
4681C12	for 464 threaded	1	15

**TECHNICAL NOTE - Installation notes**

- The valve must be fitted on the fuel piping, upstream of the burner (Fig. 1), observing the direction of flow shown by the arrow on the valve body.
- The flow temperature probe must be fitted on the piping within 1 m of the generator upstream of any shut-off valve. The fluid must flow over the probe inside its sheath, preferably against the direction of installation (Fig. 2 and 3).
- When connecting the valve to the piping, take the utmost care not to damage the capillary. For repair or servicing of the capillary with INAIL setting, contact the sales department.

**STS - SECURFLUX**

Thermal safety drain for non-atomised solid fuel boilers with double safety. Nickel-plated CW617N brass body. Functional testing device. Immersion probe with 145 mm sheath and 1/2" M connection. PN 10. Set temperature: 97°C; max. drain capacity temperature: 107°C. Max. drain capacity: 6500 l/h at 8 bar.

**Compliant with PED Directive 2014/68/EU.**

Part no.	DN	Capillary	Pcs. pack	Package
0232120	3/4" F	double safety 1300 mm	1	20
0232220	3/4" F	double safety 2000 mm	1	20

Dimensions on page 31

**PARTS 1/2" M brass sheath**

Part no.	DN	Pcs. pack	Package
0299014	1/2"	1	10

**STS.S**

Thermal safety drain for non-atomised solid fuel boilers with double safety and 360° adjustable capillary connection. CW617N brass body. Immersion probe with 145 mm sheath and 1/2" M connection. PN 10. Set temperature: 55°C, 85°C, 93°C, 97°C and 103°C, max. drain capacity temperature: 107°C. Max. drain capacity: 6500 l/h at 8 bar. DN 3/4" F.

**Compliant with PED Directive 2014/68/EU.**

Part no.	T°C	Capillary	Pcs. pack	Package
0232620	97	1300mm	1	20
0232621	85	1300mm	1	20
0232622	93	1300mm	1	20
0232623	55	1300mm	1	20
0232624	103	1300mm	1	20
0232625	97	2000mm	1	20
0232626	97	4000mm	1	20

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**PARTS 1/2" M brass sheath**

Part no.	DN	Pcs. pack	Package
0299019	1/2"	1	10

## RT - AIRSTOP



Draught regulator for boilers running on non-atomised fuels, with single safety (Item 0234200) or double safety (Item 0234100). Connection: DN 3/4". Wax heat-sensitive element. Operating temperature range: 40 to 100°C.

Part no.	Stroke	Operating temperature	Pcs. pack	Package
0234100	60mm	125cm	1	10
0234200	80mm	125cm	1	10

Dimensions on page 31

## RT10N - AIRSTOP



Draught regulator for boilers running on non-atomised fuels, with single safety. Connection: DN 3/4". Wax heat-sensitive element. Operating temperature range: 30 to 100°C.

Part no.	Stroke	Chain length	Pcs. pack	Package
0234300	60-80 mm	125cm	1	10

Dimensions on page 31

## Filler valves

### AL - ALIMAT



Automatic filling valve complete with check valve, manual shut-off, stainless steel filter, and vent screw. CW617N brass body. Impact-resistant plastic cap. 1/4"F pressure gauge connection. Max. upstream pressure 10 bar. Adjustable downstream pressure 0.3 to 4 bar.

Part no.	DN	Pcs. pack	Package
0240100	1/2" MF	1	30

Dimensions on page 32

### ALM



Automatic filling valve complete with check valve, manual shut-off, stainless steel filter, vent screw and pressure gauge 0-4 bar with bottom connection and 50 mm dial. CW617N brass body. Impact-resistant plastic cap. 1/4"F pressure gauge connection. Max. upstream pressure 10 bar. Adjustable downstream pressure 0.3 to 4 bar.

Part no.	DN	Pcs. pack	Package
0240200	1/2" MF	1	20

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### 3110C - FILLMATIC



Automatic filling valve complete with 0-6 bar pressure gauge, self-cleaning check valve, manual shut-off and sintered bronze filter. CW617N brass body. Max. upstream pressure: 10 bar. Adjustable downstream pressure: 0.3 to 4 bar. Set pressure: 1 bar. Setting ratio: 1 rev. = 0.4 mWG

Part no.	DN	Pcs. pack	Package
3110C12	1/2" MF	1	15

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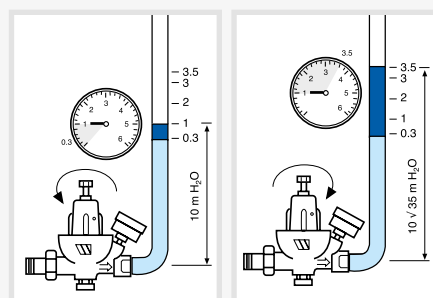
#### TECHNICAL NOTE - Filling valves

##### Setting

The filling valve is factory-set to a pressure of 1 bar. To adjust to pressures other than the factory setting, simply turn the screw clockwise to increase the pressure (max 4 bar) or anticlockwise to decrease it (min 0.3 bar).

##### Installation

Install the valve according to the direction of the arrow stamped on the valve body. For quicker filling, make sure the regulating valve is fully open, although it is advisable to introduce the water slowly enough to avoid the formation of water pockets, which are difficult to expel. When filling, the device ensures that all water supplied from the mains is filtered.





## Relief valves and check valves

### USVR



Relief valve for systems with manual or automatic shut-off elements on the radiators (thermostatic valves, two-way zone valves). Female inlet connections, male union outlet. CW617N brass body and cap.

Adjustment: Position "0" = Fully open

Part no.	DN	bar	Pcs. pack	Package
<b>0265220</b>	3/4" FM	0.03 - 0.50	1	30
<b>0265225</b>	1" FM	0.03 - 0.55	1	20
<b>0265232</b>	1.1/4" FM	0.06 - 0.46	1	15

Dimensions on page 32

### USV16/L



Relief valve in straight execution for systems with automatic shut-off elements (thermostatic or electrothermal valves, two-way zone valves). DN 3/4"F connections with union nut. CW617N brass body. PN 10. Overpressure 10-15%. Max. operating temperature: 110°C. Fluids: water with glycol up to 50%.

Part no.	DN	bar	Pcs. pack	Package
<b>0265118</b>	3/4" F	0.03 - 0.50	1	45

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#### TECHNICAL NOTE - Relief valves

##### Selection

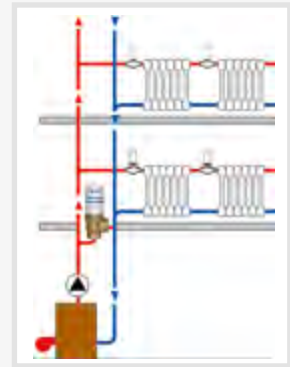
Valve selection is normally based on a by-pass flow rate of 25-30% of the total flow rate of the mains water system to be protected, and an overpressure of 10-15% of the head expected at that point (check curve of electric pump if necessary).

In the absence of precise data, select the model according to the TOTAL flow rate of the circuit to be protected, using the following values:

up to 1750 l/h	DN 1/2"
3500 l/h	DN 3/4"
7000 l/h	DN 1"
up to 12000 l/h	DN 1.1/4"

##### Installation

Install the relief valve downstream of the pump pressure port, connecting the flow piping to the return piping. Observe the direction of flow indicated on the valve body.



### RDF



Check valve with manual stop for systems with thermostat-controlled recirculating pump. CW617W brass body. Impact-resistant plastic knob. Adjust by turning the knob in the direction shown by the arrow.

N = normal position with operation as check valve, eliminating natural circulation when the pump is OFF;

A = open position, for operation without check valve, allowing natural circulation in the event of pump failure;

F = closed position, if you want to shut off the heating system. This must be done with the pump OFF.

The valve can be fitted either vertically or horizontally, preceded by a straight run (>70 cm). PN 10. Opening pressure 25-26 mbar. Operating temperature range: 105°C. Max. temperature: 130°C.

Part no.	DN	Connection	Pcs. pack	Package
<b>0262125</b>	1"	FF	1	20
<b>0262132</b>	1.1/4"	FF	1	20

Dimensions on page 32

## Flow and pressure switches

### FLU25PL



Flow switch for liquids for piping from DN 1" to DN 8". Plastic body. Equipped with min. and max. flow rate adjuster screw. Brass fitting. 3-contact microswitch: 10(5)A-230V. PN 10. Max. fluid operating temperature: 110°C.

**Compliant with LVD Directive 2014/35/EU.**

Part no.	DN	Protection	Pcs. pack	Package
<b>0401225</b>	1"	IP64	1	10

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### PRM



Pressure switch with manual resetting for heating systems. Contact rating: 16A (10) - 250V. Protection rating IP44. Factory setting: 3 bar. PN 5. Max. fluid temperature: 110°C.

**PED Directive 2014/68/EU.**

**Compliant with: LVD 2014/35/EU, RoHS 2011/65/EU.**

Part no.	DN	Control range	Pcs. pack	Package
<b>0402101 N</b>	1/4" F	2 – 4.5 bar	1	50

Dimensions on page 32

### PRMIN



Minimum shut-off pressure switch with manual reset pushbutton.

Degree of protection: IP44. Contact rating: 16A(10) – 250Vac. Factory setting: 0.9 bar. Minimum reset differential 0.5 bar. PN 5. Max. fluid temperature: 110°C.

**PED Directive 2014/68/EU.**

**Compliant with Directives LVD 2014/35/EU and RoHS 2011/65/EU.**

Part no.	DN	Control range	Pcs. pack	Package
<b>0402103 N</b>	1/4" F	0.5 – 1.7 bar	1	50

Dimensions on page 32

## Control and safety thermostats, and boiler room accessories

### TRE TU



Immersion control thermostat with 3 switching contacts. Shuts off the heat supply when the water temperature reaches the set-point, which is adjustable from 30 to 90°C (tolerance  $\pm 3^\circ\text{C}$ ). Sensitive bulb with 1/2" M sheath 100 mm long.

Plastic case with external control knob.

Contact rating: 16(5) A 250V; 400V 10(1)A.



ENEC 03 compliant.

INAIL approved. Compliant with LVD Directive 2014/35/EU.

Part no.	Protection	Pcs. pack	Package
0405101TU	IP 40	1	50

Dimensions on page 32

### TS TU



Positive-safety immersion shut-off thermostat with manual resetting and fixed setpoint. Shuts off the heat supply when the water temperature reaches the setpoint. Set temperature: 97°C (tolerance +3 to -5°C). Sensitive bulb with 1/2" M sheath 89.7 mm long. 6.3 mm Fast-On terminals with screw fitting.

Contact rating: 16 (5)A 250V.

INAIL approved. Compliant with LVD Directive 2014/35/EU.

Part no.	Protection	Pcs. pack	Package
0405201TU	IP 43	1	50

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PARTS 1/2" M copper sheath

Part no.	DN	length	Pcs. pack	Package
LP441D	1/2" M	100mm	1	136

### TRS TU



Immersion control and shut-off bi-thermostat with manual resetting.

Control temperature: 30 to 90°C (tolerance  $\pm 3^\circ\text{C}$ ). Shut-off temperature 95°C. Sensitive bulb with 1/2" M sheath 100 mm long. Plastic case with external setting knob and manual resetting. Contact rating: 16(5) A 250V; 400V 10(1)A.



ENEC 03 compliant.

INAIL approved. Compliant with LVD 2014/35/EU.

Part no.	Protection	Pcs. pack	Package
0405301TU	IP 40	1	25

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PARTS 1/2" M copper sheath

Part no.	DN	length	Pcs. pack	Package
LP442	1/2" M	100mm - part for TRS TU	1	136

## INAIL nipple

### TRI - MANIFOLD



INAIL (ex ISPEL) instrument manifold and accessories as prescribed by “R” regulations for boiler room safety and control. Steel manifold. PN 10. Max. temperature 110°C.

Complete with:

- INAIL approved TS TU Series immersion shut-off thermostat with manual resetting;
- PRM Series pressure switch with manual resetting;
- PRMIN Series minimum pressure switch with manual resetting;
- INAIL compliant DN80 TB-80/VE Series thermometer;
- INAIL compliant M1-ABS 63/R Series pressure gauge;
- INAIL compliant 403/RF Series copper alloy pressure gauge valve with flange;
- 407D/SRN Series nickel-plated copper coil;
- INAIL G50/ISPEL Series test pocket;
- NVF/N Series pocket for shut-off valve;
- predisposition for VST Series safety valve connection;
- connection fittings.

Part no.	DN	Pcs. pack	Package
<b>TRI114</b>	1 ¼"	1	1
<b>TRI112</b>	1 ½"	1	1
<b>TRI200</b>	2"	1	1
<b>TRI065</b>	65	1	1
<b>TRI080</b>	80	1	1

Dimensions on page 33

## Expansion vessels

### ERE CE



Expansion vessels with fixed diaphragm for heating and chilling systems. Male threaded connection at top of vessel (excluding 500-litre model). The 80–300-litre models are equipped with a circular base. The 500-litre model is equipped with support feet and bottom connection. Operating temperature range: -10 to 100°C.

**Compliant with PED Directive 2014/68/EU.**

Part no.	Capacity	Pmax	Pre-charge	Connection	Pcs. pack	Package
<b>06820035C</b>	35	5	1.5	3/4" M	1	1
<b>06820050C</b>	50	6	1.5	3/4" M	1	1
<b>06820080C</b>	80	6	1.5	3/4" M	1	1
<b>06820100C</b>	100	6	1.5	3/4" M	1	1
<b>06820150C</b>	150	6	1.5	1" M	1	1
<b>06820200C</b>	200	6	1.5	1" M	1	1
<b>06820250C</b>	250	6	1.5	1" M	1	1
<b>06820300C</b>	300	6	1.5	1" M	1	1
<b>06820500C</b>	500	6	2.5	1" M	1	1

Dimensions on page 33

### PV M1-ABS 63/QG



DN 63 pressure gauge for monitoring filling pressure in expansion vessels, complete with hose L= 390mm and V40 connection for direct hook-up to vessel.

Measuring range 0 to 12 bar – dual scale bar/psi.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Accuracy class	Notes	Pcs. pack	Package
<b>PV3112DC00</b>	0–12 bar/psi	3/4" M	1.6	PV M1-ABS 63/QG	1	50

Dimensions on page 33

## Dirt separator

### WCS - COMPACT MAGNETIC DIRT SEPARATOR



Compact dirt separator for sludge and impurities (magnetic and otherwise), complete with magnet. Available with 3/4" and 1" connections. Fast, convenient dirt removal. Easy to install horizontally, vertically or diagonally. Easy to clean. Brass body. For use with water and water/glycol (up to 50%). PN 10. Max. operating temperature: 110°C. Particle separation capacity: up to 5 microns. EPP rigid foam insulation as per AnIV and EnEV requirements: available to order.

Part no.	DN	Flow rate/PN	Pcs. pack	Package
<b>DSC0034W</b>	3/4"	1.26 m <sup>3</sup> /h - PN10	1	1
<b>DSC0100W</b>	1"	1.98 m <sup>3</sup> /h - PN10	1	1

Dimensions on page 34

### WSS - THREADED MAGNETIC DIRT SEPARATOR



Dirt separator for the removal of sludge and impurities (magnetic and otherwise) from heating/cooling systems, complete with removable external magnet and drain valve for cleaning. Fast, convenient dirt removal. Easy to install horizontally, vertically or diagonally. Easy to clean. Brass body. For use with water and water/glycol (up to 50%). Max. operating temperature: 110°C.

Particle separation capacity: up to 5 microns.

EPP rigid foam insulation as per AnIV and EnEV requirements: available to order.

Part no.	DN	Flow rate/PN	Pcs. pack	Package
<b>DST0034W</b>	3/4"	1.30 m <sup>3</sup> /h - PN 6	1	1
<b>DST0100W</b>	1"	2.00 m <sup>3</sup> /h - PN 6	1	1
<b>DST0112W</b>	1 1/2"	5.00 m <sup>3</sup> /h - PN 10	1	1
<b>DST0200W</b>	2"	7.50 m <sup>3</sup> /h - PN 10	1	1

Dimensions on page 34

### WBS - FLANGED MAGNETIC DIRT SEPARATOR



Dirt separator for the removal of sludge and impurities (magnetic and otherwise) from heating/cooling systems, complete with removable external magnet and drain valve for cleaning. Fast, convenient dirt removal. For horizontal installation. Easy to clean. Stainless steel body. For use with water and water/glycol (up to 50%). Max. operating temperature: 110°C.

Particle separation capacity: up to 5 microns.

EPP rigid foam insulation as per AnIV and EnEV requirements up to DN100: available to order.

Part no.	DN	Flow rate/PN	Pcs. pack	Package
<b>DSF0065W</b>	DN65	20.00 m <sup>3</sup> /h - PN 10	1	1
<b>DSF0080W</b>	DN80	27.00 m <sup>3</sup> /h - PN 10	1	1
<b>DSF0100W</b>	DN100	47.00 m <sup>3</sup> /h - PN 10	1	1
<b>DSF0125W</b>	DN125	72.00 m <sup>3</sup> /h - PN 10	1	1
<b>DSF0150W</b>	DN150	108.00 m <sup>3</sup> /h - PN 10	1	1
<b>DSF0200W</b>	DN200	180.00 m <sup>3</sup> /h - PN 10	1	1
<b>DSF0250W</b>	DN250	288.00 m <sup>3</sup> /h - PN 10	1	1
<b>DSF0300W</b>	DN300	405.00 m <sup>3</sup> /h - PN 10	1	1

Dimensions on page 34

### INSULATION SHELLS

Part no.	Description	Dirt separator model	Pcs. pack	Package
<b>TUR100</b>	Insulating shell for WSS 3/4"-1"	DST0034W-DST0100W-DSC0034W-DSC0100W	1	1
<b>TUR150</b>	Insulating shell for WSS 1"-1/2"	DST0112W	1	1
<b>TUR200</b>	Insulating shell for WSS 2"	DST0200W	1	1
<b>TB050</b>	Insulating shell for WBS DN65	DST0065W	1	1
<b>TB080</b>	Insulating shell for WBS DN80-DN100	DST0080W-DST0100W	1	1
<b>TB125A01</b>	Insulating shell for WBS DN125-DN150	DST0125W-DST0150W	1	1

## SDDF - MULTIFUNCTION HYDRAULIC SEPARATOR



Multifunction hydraulic separator featuring steel body and low pressure losses: hydraulic separator, magnetic dirt separator and deaerator. The multifunction separator makes the flow and head characteristics of the primary and secondary circuits independent of each other and purges the circuit of micro air bubbles and both metallic and non-metallic dirt and debris. Flanged connections from DN50 up to DN300, compliant with PN16 (DIN2633/EN1092). Maximum operating pressure PN10. Temperature 0 °C to 110 °C.

Part no.	DN	Flow rate/PN	Pcs. pack	Package
<b>SDDF050W</b>	DN50	12.50 m <sup>3</sup> /h	1	1
<b>SDDF065W</b>	DN65	20.00 m <sup>3</sup> /h	1	1
<b>SDDF080W</b>	DN80	27.00 m <sup>3</sup> /h	1	1
<b>SDDF100W</b>	DN100	47.00 m <sup>3</sup> /h	1	1
<b>SDDF125W</b>	DN125	72.00 m <sup>3</sup> /h	1	1
<b>SDDF150W</b>	DN150	108.00 m <sup>3</sup> /h	1	1
<b>SDDF200W</b>	DN200	180.00 m <sup>3</sup> /h	1	1
<b>SDDF250W</b>	DN250	288.00 m <sup>3</sup> /h	1	1
<b>SDDF300W</b>	DN300	405.00 m <sup>3</sup> /h	1	1

Dimensions on page 35

### INSULATION SHELLS

Part no.	Description	Multi-function separator model	Pcs. pack	Package
<b>TBX050A01</b>	Insulating shell for SDDF DN50	SDDF050W	1	1
<b>TBX065A01</b>	Insulating shell for SDDF DN65	SDDF065W	1	1
<b>TBX080A01</b>	Insulating shell for SDDF DN80	SDDF080W	1	1
<b>TBX100A01</b>	Insulating shell for SDDF DN100	SDDF100W	1	1
<b>TBX125A01</b>	Insulating shell for SDDF DN125	SDDF125W	1	1
<b>TBX150A01</b>	Insulating shell for SDDF DN150	SDDF150W	1	1

## DSPN – NEW THREADED MAGNETIC DIRT SEPARATOR



The DSPN Series magnetic dirt separator ensures that the boiler stays continually protected, retains all impurities present in the system and prevents their circulation, consequently avoiding wear and preventing damage to other components of the system. Installed on the return circuit, at the inlet to the boiler, it is intended exclusively for use in domestic heating systems and is easy to install under the boiler because of its extremely compact size.

The magnet is easy to remove for cleaning.

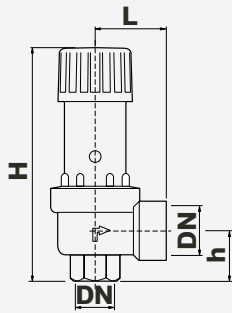
Body: PA66 reinforced plastic. Filter cartridge: AISI 304 L stainless steel. Ball valve: CW 617 N brass. Connections: main body G 3/4", drain G 1/2". Complete with ball valve and swivel fitting made of brass. Compatible fluids: water, water + glycol 70/30. Max. operating pressure: 3 bar at 90°C. Operating temperature: 4 to 90°C. Particle separation capacity: 500 µm.

Part no.	DN	PN	Pcs. pack	Package
<b>DSP0034WN</b>	3/4"	3 bar	1	1

Dimensions on page 34

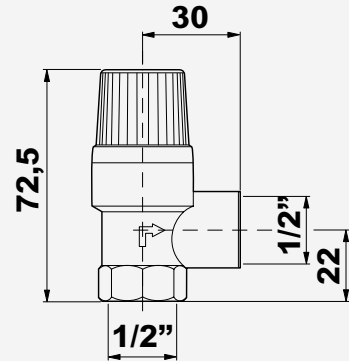
## Overall dimensions

### VST

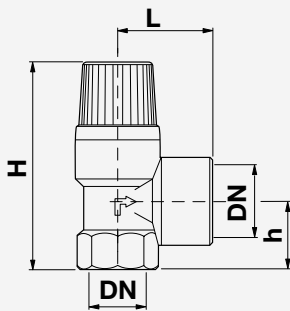


DN	L	H	h
1/2" x 3/4"	37	119	25
3/4" x 1"	48	165	29
1" x 1.1/4"	54	173	34.5

### MSL/MSV

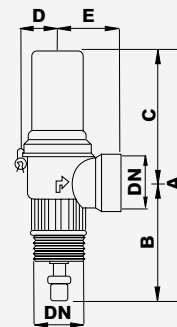


### SV



DN	L	H	h
1/2" x 3/4"	30/34	70/73	22/24.5
3/4" x 1"	37	84.5	34
1" x 1.1/4"	50	109	42
1.1/4" x 1.1/2"	55	116	42

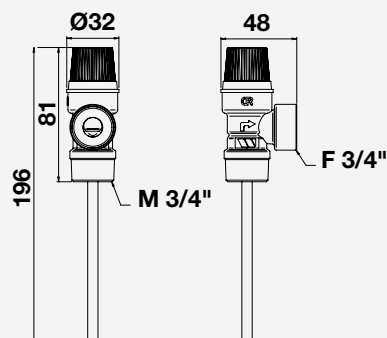
### VTFN



DN	A	B	C	D	E
1.1/4"	230	107	123	35	52
1.1/2"	246	120	126	38	60

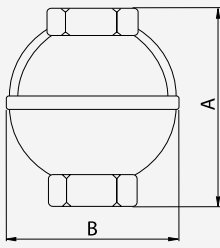
### MSL/PT

0206930-0206940-0206960-0206970-0206999



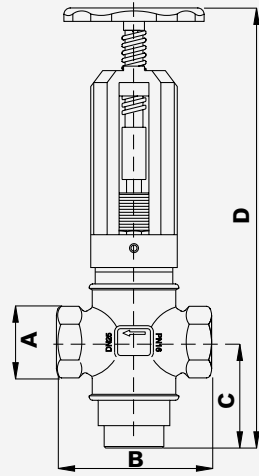
## Overall dimensions

### IS



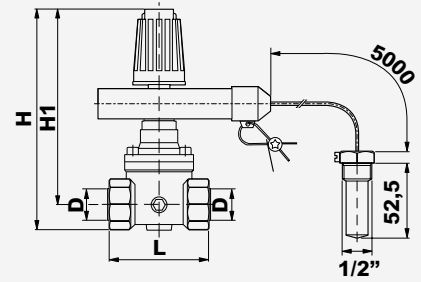
DN	A	B
1/2"	61	45
3/4"	65	57
1"	78	68
1.1/4"	113	97

### 296



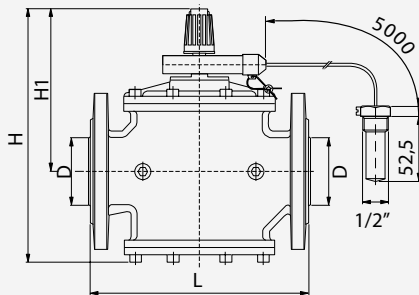
DN	B	C	D
1"F	105	72	320
1.1/4"F	120	75	330
1.1/2"F	145	80	335
2"F	165	90	360
65	290	170	500
80	310	185	490
100	350	200	520
125	400	240	600
150	480	280	680
200	600	360	750

### NVFN - THREADED



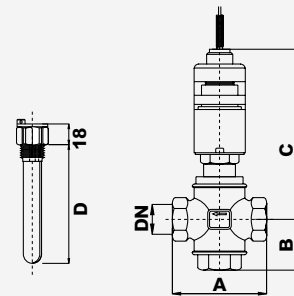
DN	L	H	H1
1/2"	70	155	138
3/4"	70	163	141
1"	90	196	169
1.1/4"	150	204	169
1.1/2"	150	204	169
2"	170	222	179

### NVFN - FLANGED



DN	L	H	h
65	260	310	200
80	310	351	234

### 464

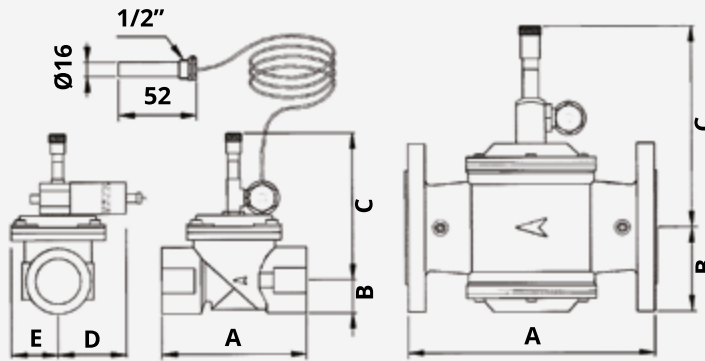


DN	A	B	C	D
1/2"M	50	27	117	87
3/4"F	85	42	161	87
1"F	105	49	161	87
1.1/4"F	120	52	163	87
1.1/2"F	145	62	182	87
2"F	165	73	192	87
65	290	92	188	105
80	310	100	185	105



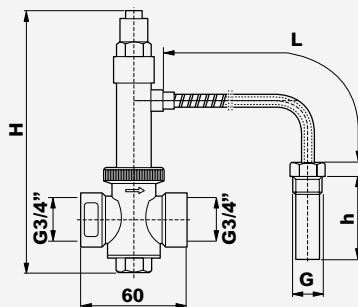
## Overall dimensions

### VIC/A



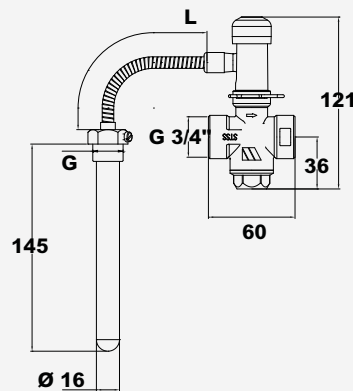
Mod. VIC/A	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	DN65	DN80	DN100
A	76	96	96	154	154	173	300	300	360
B	15	25	25	31	31	39	95	95	105
C	118	139	139	168	168	169	219	219	227
D	90	85	85	85	85	85	-	-	-
E	25	35	35	52	52	64	-	-	-

### STS



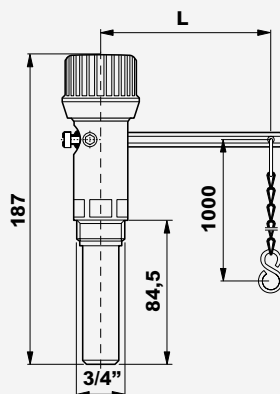
G	h	H	L
1/2"	145	129	1300
1/2"	145	129	2000
3/8"	108	127	1300

### STS.S



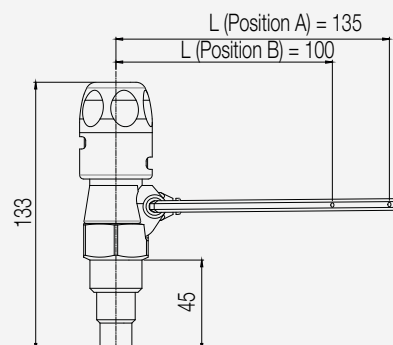
Part no.	T °C	G	L
0232620	97	1/2"	1300
0232621	85	1/2"	1300
0232622	93	1/2"	1300
0232623	55	1/2"	1300
0232624	103	1/2"	1300
0232625	97	1/2"	2000
0232626	97	1/2"	4000

### RT



Stroke	L
60	100
80	187.5

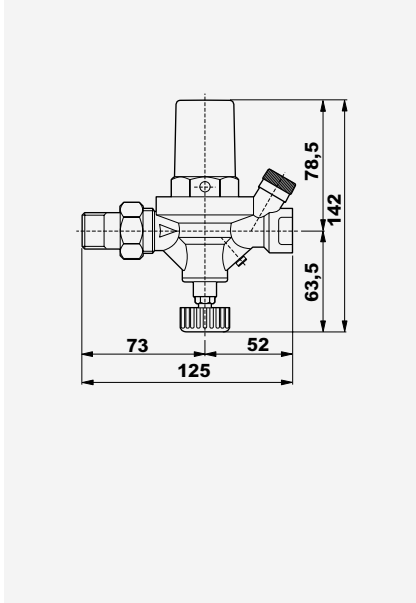
### RT10N



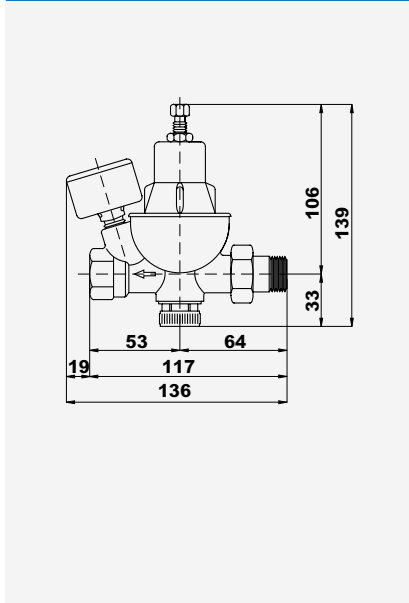
Stroke	Position
60	A
80	B

## Overall dimensions

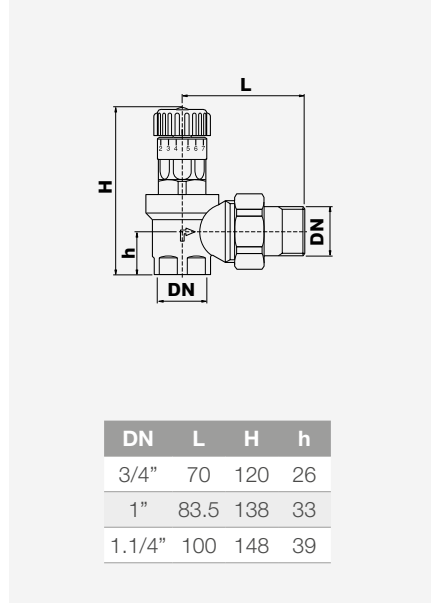
**AL-ALM**



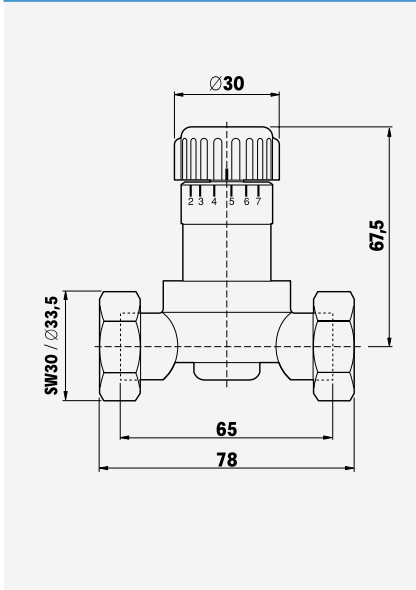
**3110C**



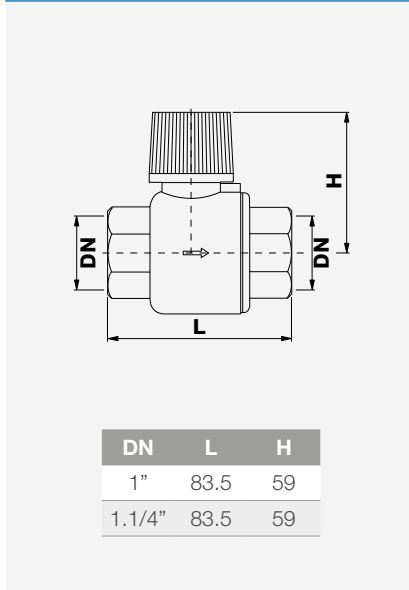
**USVR**



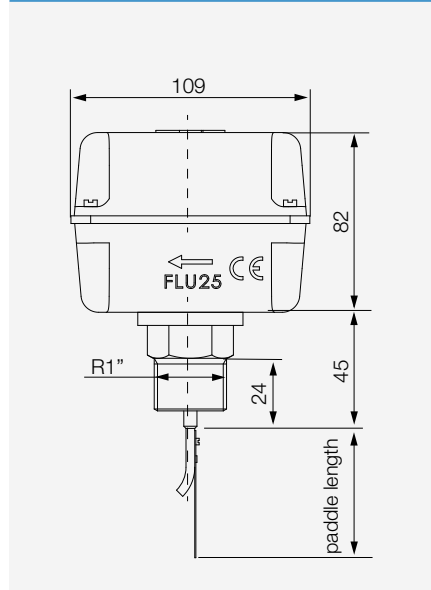
**USV16/L**



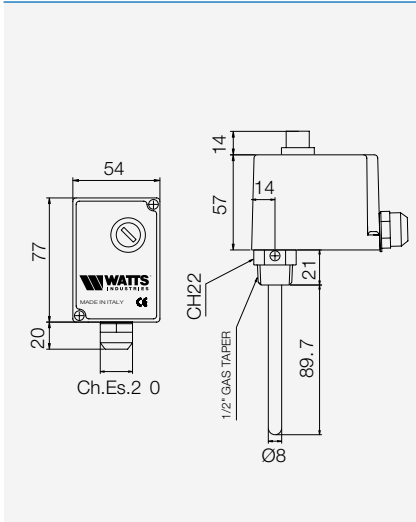
**RDF**



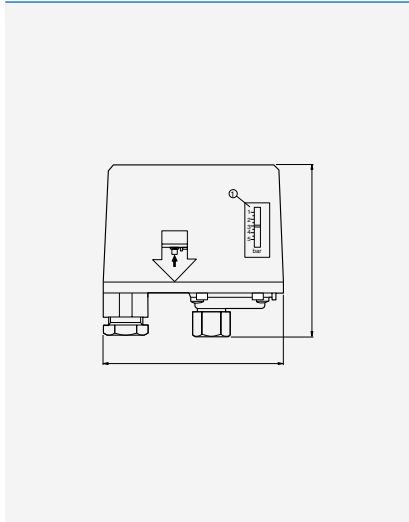
**FLU25PL**



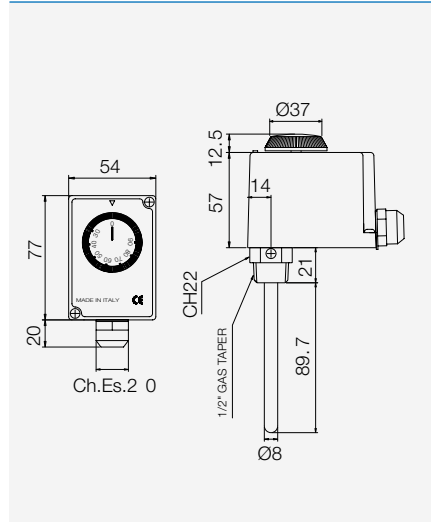
**TS TU**



**PRM/PRMIN**

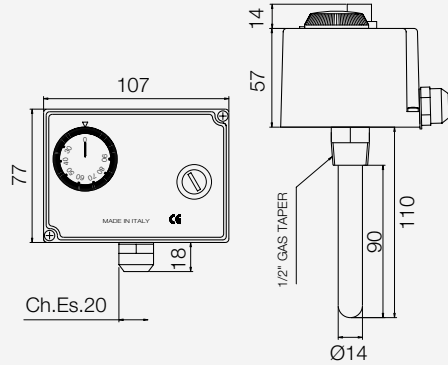


**TRE TU**

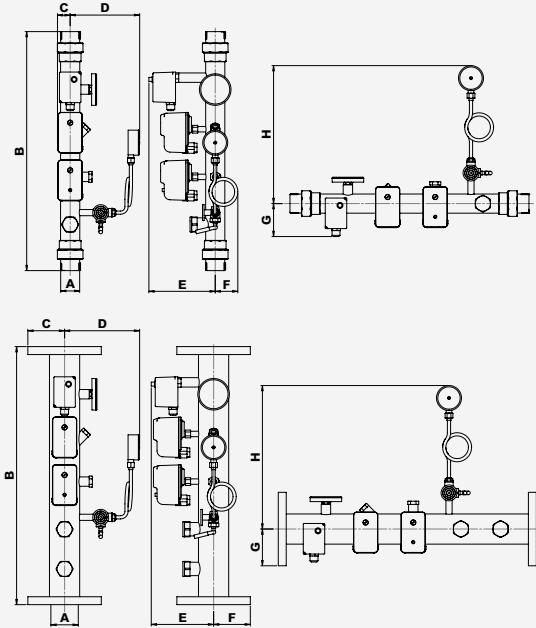


## Overall dimensions

### TRS TU

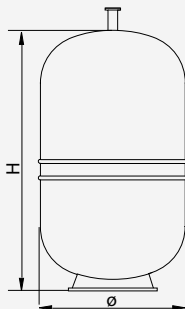


### TRI



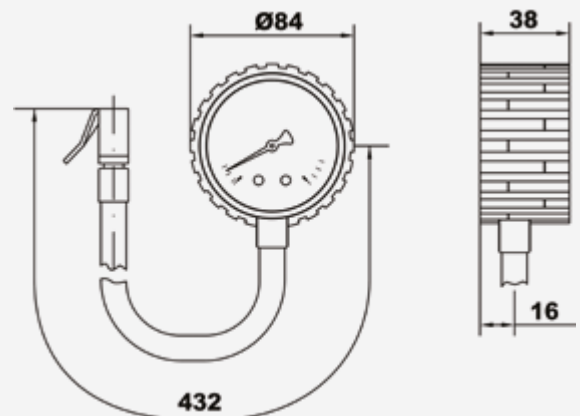
	A	B	C	D	E	F	G	H
TRI114	1 1/4"	556	32	175	167	57	83	347.5
TRI112	1 1/2"	602	32	175	167	57	83	347.5
TRI200	2"	644	41	182	163	57	83	354.5
TRI065	DN65	650	92.5	189	157	92.5	92.5	361.5
TRI080	DN80	650	100	195	157.5	100	100	367.5

### ERE CE



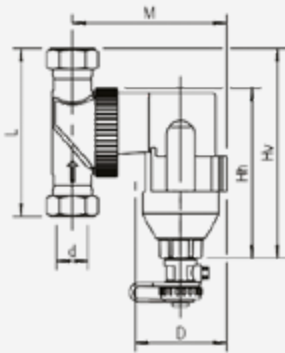
Capacity (L)	Ø	H
35	380	455
50	380	590
80	460	690
100	460	810
150	510	970
200	590	985
250	590	1230
300	650	1220
500	750	1575

### PV M1-ABS 63/QG



## Overall dimensions

### WCS - WSS



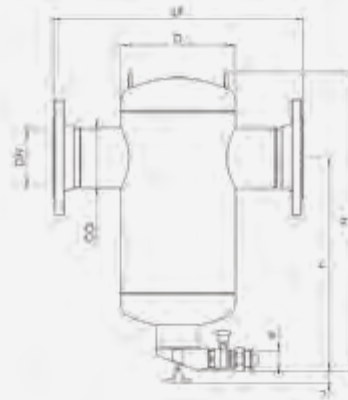
### WSS

D	3/4"	1"	1 1/2"	2"
Hv (mm)	164	164	224	224
Hh (mm)	148	148	210	210
L (mm)	90	90	128	128
M (mm)	116	120	141	148
Volume (L)	0.36	0.39	0.75	0.75
Empty weight (kg)	2.20	2.30	3.67	3.85

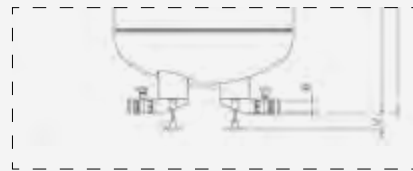
### WSC

D	3/4"	1"
Hv (mm)	140	140
Hh (mm)	121	121
L (mm)	100	100
M (mm)	112	124
D (mm)	73	83
Volume (L)	0.23	0.33
Empty weight (approx. kg)	1.35	1.63

### WBS

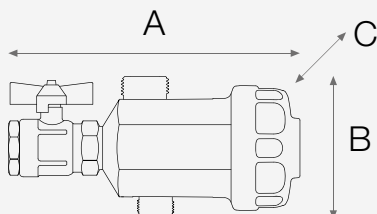


### WBS 200/250/300



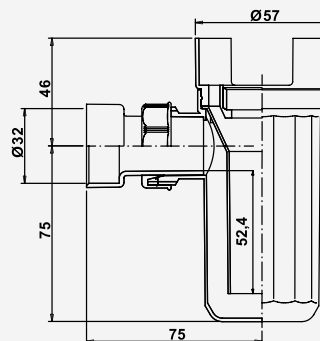
DN	65	80	100	125	150	200	250	300
OD (mm)	76.1	88.9	114.3	139.7	168.3	219.1	273	323.9
D (mm)	159	219	219	324	324	406	508	610
LF (mm)	350	470	475	635	635	775	890	1005
H (mm)	471	576	576	798	798	1063	1264	1492
h (mm)	333	424	412	605	591	773	896	1058
e (mm)	RP1	RP1	RP1	RP1	RP1	RP1	RP2	RP2
Volume (L)	5	17	17	50	50	105	210	350
Empty weight (kg)	14	24	28	58	61	107	162	261

### DSPN



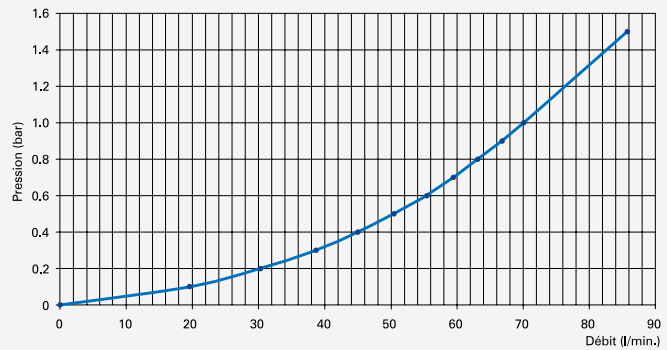
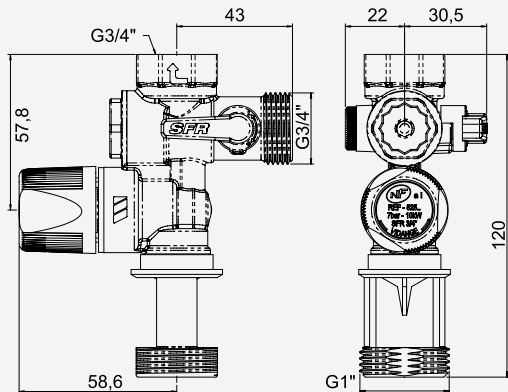
	DN	A	B	C
DSPN	3/4"	155	75	60

### SIF

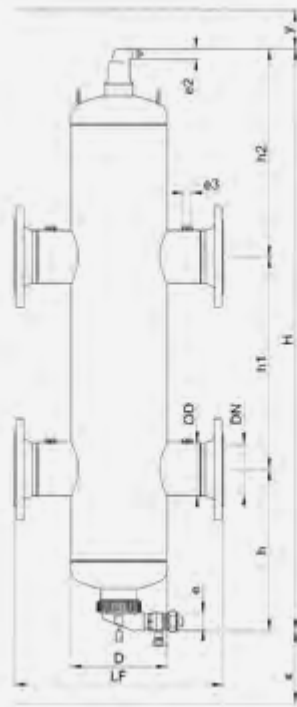


## Overall dimensions

### SFR



### SDDF



DN	50	65	80	100	125	150	200	250	300
OD (mm)	60.3	76.1	88.9	114.3	139.7	168.3	219.1	273	323.9
H (mm)	810	905	997	1261	1543	1778	2327	2870	3394
h (mm)	234	252	268	351	441	503	682	835	1002
h1 (mm)	240	305	360	460	560	670	870	1100	1295
h2 (mm)	337	348	369	450	542	604	776	935	1096
D (mm)	159	159	219	219	324	324	406	508	610
LF (mm)	350	350	470	475	635	635	775	890	1005
e	Rp 1	Rp 1.	Rp 1.	Rp 1.	R 1	R 1	Rp 1.	Rp 1.	Rp 1.
e2	R ½	R ½	R ½	R ½	R ½	R ½	R ½	R ½	R ½
x (mm)	> 75	> 75	> 100	> 100	> 100	> 100	> 100	> 100	> 100
y (mm)	> 50	> 50	> 50	> 50	> 50	> 50	> 50	> 50	> 50

## Chapter 1.2

# MODULAR DISTRIBUTION UNITS

## Mixing units

### HK20



Compact, ready-to-mount domestic hot water and mixing unit for DN20 heating and cooling systems, centre distance 90 mm. Complete with 2 multi-function valves with built-in thermometer (0to120°C) and gravity flow stop system. EPP insulation, fittings and single-point bracket for wall mounting, concealed cable routing. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready) length 130mm. PN 6. Minimum room temperature: -10°C, maximum: 40°C. Operating temperature: +2°C to +90°C (see the technical specifications of the circulation pump).

Part no.	DN	Description	Pcs/pack	Package
10077144	20	HK20 without pump	1	1

### HKF20

Dimensions on page 44



Compact domestic hot water and mixing unit for mixed heating systems, with fixed-point thermostatic temperature control. Temperature setting range: 20-55 °C or 30-70 °C. EPP insulation, fittings and single-point bracket for wall mounting, concealed cable routing. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready) with centre distance of 130mm. PN 6. Minimum room temperature: -10°C, maximum: 40°C. Operating temperature: +2°C to +90°C (see the technical specifications of the circulation pump).

Part no.	DN	Description	Pcs/pack	Package
10084593	20	HKF20 Setting 20 - 55°C without pump	1	1
10084596	20	HKF20 Setting 30 - 70°C without pump	1	1

### HKM20

Dimensions on page 44



Compact, ready-to-mount, modulating domestic hot water and mixing unit for DN20 heating and cooling systems with 3-way mixing valve and WattsClassic EVO2 Series 230V 3-point modulating actuator. Complete with 2 multi-function valves with built-in thermometer (0to120°C), gravity flow stop system, EPP insulation, fittings and single-point bracket for wall mounting. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready) with centre distance of 130mm with adaptor. PN6. Minimum room temperature: -10°C, maximum: 40°C. Operating temperature: +2°C to +90°C (see the technical specifications of the circulation pump).

Part no.	DN	Description	Pcs/pack	Package
10080076	20	HKM20 6.3 without pump	1	1

Dimensions on page 44

### HKFC20



Compact, ready-to-mount, fixed-point domestic hot water and mixing unit for DN 20 heating systems with 3-way mixing valve and controller, actuator and adjustable flow temperature sensor (5to95°C). Complete with 2 multi-function valves with built-in thermometer (0to120°C), gravity flow stop system, EPP insulation, fittings and bracket for wall mounting. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready) with centre distance of 130mm. PN6. Operating temperature: +2°C to +90°C (see the technical specifications of the circulation pump).

Part no.	DN	Description	Pcs/pack	Package
10080552	20	HKFC20 6.3 without pump	1	1

Dimensions on page 44

### HK25 - HK32



Compact, ready-to-mount domestic hot water and mixing unit for DN 25 and DN 32 heating and cooling systems. Complete with shut-off valves with built-in thermometer 0 to 120°C, gravity flow stop system, EPP insulation, fittings and bracket for wall mounting. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready) with centre distance of 180 mm (and 130 mm with adaptor). PN 6. Operating temperature: +2°C to +90°C (see the technical specifications of the circulation pump).

Part no.	DN	Description	Pcs/pack	Package
10026450	25	DHW and mixing unit	1	1
10026881	32	DHW and mixing unit	1	1
PA-130	25	Pump adaptor 130 mm	1	1

Dimensions on page 44

### HKF25



Compact, ready-to-mount, fixed-point domestic hot water and mixing unit for DN 25 heating systems with thermostatic mixing valve adjustable from 20 to 55°C or 30 to 70°C. Complete with shut-off valves with built-in thermometer (0 to 120°C), gravity flow stop system, EPP insulation, fittings and bracket for wall mounting. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready) with centre distance of 180mm. PN 6. Operating temperature: +2°C to +90°C (see the technical specifications of the circulation pump).

Part no.	DN	Description	Pcs/pack	Package
10084599	25	DHW and mixing unit - Setting 20-55°C	1	1
10084602	25	DHW and mixing unit - Setting 30-70°C	1	1
PA-130	25	Pump adaptor 130 mm	1	1

Dimensions on page 44

### HKM25 - HKM32



Compact, ready-to-mount, modulating domestic hot water and mixing unit for DN 25 and DN 32 heating and cooling systems with 3-way mixing valve and WATTS CLASSIC Series 230V 3-point modulating electronic actuator\*. Complete with shut-off valves with built-in thermometer 0 to 120°C, gravity flow stop system, EPP insulation, fittings and bracket for wall mounting. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready) with centre distance of 180 mm (and 130 mm with adaptor). PN 6. Operating temperature: +2°C to +90°C (see the technical specifications of the pump).

Part no.	DN	Description	Pcs/pack	Package
10026451	25	Mixing valve Kvs=6.3	1	1
10026883	32	Mixing valve Kvs=18	1	1
PA-130	25	Pump adaptor 130 mm	1	1

Dimensions on page 44

\*Available to order: 24V actuator with 0-10V signal.

### HK40 - HK50



Ready-to-mount domestic hot water and mixing unit for DN 40 and DN 50 heating and cooling systems. Complete with 2" F shut-off valves (DN50), built-in thermometer 0 to 120°C, gravity flow stop system and EPP insulation. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency circulation pumps (ErP ready).

Part no.	DN	Pump centre distance	Pcs/pack	Package
10027651	40	220mm	1	1
10027652	50	280mm	1	1

Dimensions on page 44

## HKM40 - HKM50



Ready-to-mount, modulating domestic hot water and mixing unit for DN 40 and DN 50 heating and cooling systems with 3-way mixing valve and 230V 3-point modulating electronic actuator. Complete with 2" F shut-off valves (DN50), built-in thermometer (0 to 120°C), gravity flow stop system and EPP insulation. **Supplied without circulation pump**, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready).

Part no.	DN	Pump centre distance	Pcs/pack	Package
<b>10027653</b>	40	220mm	1	1
<b>10027650</b>	50	280mm	1	1

Dimensions on page 44

## Hydraulic separators and distribution manifolds

### HW-Q60/80



Compact stainless steel hydraulic separator for HK, HKF and HKM Series domestic hot water and mixing units complete with EPP insulation and predisposition for immersion temperature probe (1/2" F – Ø 6.5 mm sleeve). 1.1/2" M x 1.1/2" F flat sealing connections with union nut. Compatible with VB32 Series manifolds (maximum 2 circuits). PN 6.

Part no.	Flow rate	Notes	Pcs/pack	Package
<b>10010424</b>	1.5 m³/h – 17 kW (ΔT = 10 K)	-	1	1

Dimensions on page 44

### HW



Steel hydraulic separator for VB32 and HKV50 Series distribution manifolds, complete with EPP insulation, air release valve, fill/drain cock, wall-mounting brackets and predisposition for immersion temperature probe (1/2" F – Ø 6.5 mm sleeve).

**Flat sealing connections:**

- HK80/120 1.1/2" M connections (4 m³/h)
- HK40/140 2" M connections complete with two 2" F x 1.1/4" F union nuts (10 m³/h).

Pre-insulated pipes are available for connecting the HK80/120 hydraulic separator to VB32 Series manifolds. PN 6.

Part no.	Description	Connections	Pcs/pack	Package
<b>10010376</b>	Separator 4 m³/h – 44 kW (ΔT = 10 K)	1. 1/2"	1	1
<b>10010419</b>	Separator 10 m³/h – 114 kW (ΔT = 10 K)	2"	1	1
<b>10010378</b>	Pair of pipes for connecting HK80/120 to VB32 manifolds	-	1	1
<b>10006335</b>	Set of two union nuts	1.1/2"Fx1"F	1	1

Dimensions on page 45

### VB20



Steel distribution manifold for DN 20 domestic hot water and mixing units (for connecting up to 3 modules) complete with EPP insulation, compatible with systems with flow from left. 1" flat sealing coupling nut for connection to a heating system, 1" threaded M connections for boiler side connection.

Part no.	DN	Model	Pcs/ pack	Pack- age
<b>10077395</b>	20"	For 2 DHW and mixing units	1	1
<b>10077396</b>	20"	For 3 DHW and mixing units	1	1
<b>10026388</b>	20"	Wall-mounting bracket for VB20/VB32	1	1

Dimensions on page 45



**VB25/32**



Steel distribution manifold for HK, HKF and HKM Series DN 25 and DN 32 domestic hot water and mixing units complete with EPP insulation, compatible with systems with flow from either left or right. Equipped with 3 x 1.1/2" M flat sealing flow connections, including one with a cap, and 1.1/2" F flat sealing connections with union nut on domestic hot water and mixing units side.

Part no.	Description	Notes	Pcs/pack	Pack- age
10025900	for 2 DHW and mixing units	-	1	1
10025901	for 3 DHW and mixing units	-	1	1
10026672	for 4 DHW and mixing units	-	1	1
10026931	for 5 DHW and mixing units	-	1	1
10026388	wall-mounting kit	-	1	1

Dimensions on page 45

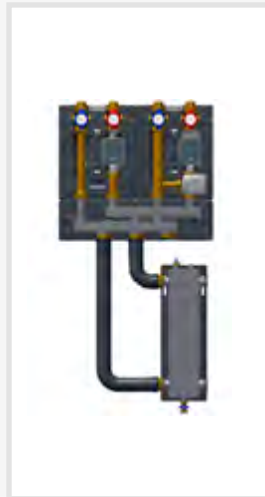
**TECHNICAL NOTE - Selection Guide**

**Modular connection of HK, HKF and HKM Series domestic hot water and mixing units**

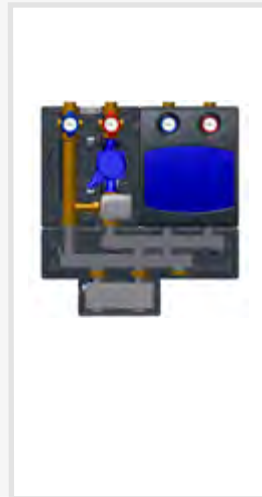
HK, HKF and HKM Series domestic hot water and mixing units are designed to allow modular installation. Quick, easy installation both with VB32 Series distribution manifolds and HW and HW-Q60/80 Series hydraulic separators makes it possible to meet a wide range of system requirements.



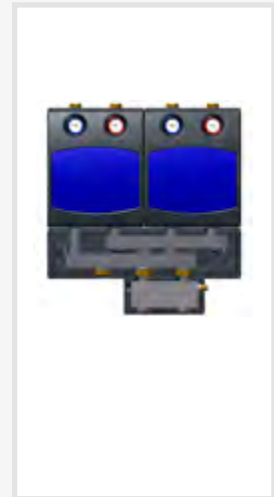
Connection with HW80/120 and primary flow on left



Connection with HW80/120 and primary flow on right



Connection with HW-Q60/80 and primary flow on left



Connection with HW-Q60/80 and primary flow on right

**HKV 50**



Steel distribution manifold for HK and HKM DN 40 and DN 50 Series domestic hot water and mixing units complete with EPP insulation, compatible with systems with flow from either left or right. Compatible with HK, HKF and HKM DN25 and DN32 Series domestic hot water and mixing units when used with REDU adaptor.

DN80 PN6 primary circuit flanged connections (2 blind flanges included). 2" F secondary circuit threaded flat sealing connections with union nut. Brackets not included.

Part no.	Description	Notes	Pcs/pack	Package
10011282	2 secondary circuits	-	1	1
10011283	3 secondary circuits	-	1	1

Dimensions on page 46

## VB50/80-ECK



Angle connector set for HKV50 Series distribution manifold, consisting of two pre-insulated flanged corner fittings.

Part no.	Connections	Pressure	Pcs/pack	Package
<b>10011284</b>	Flange DN80	PN6	1	1

## HKV-FUSS



Floor-mounting kit for HKV50 Series distribution manifolds, consisting of two height-adjustable pedestals and respective fasteners for connection to the manifolds.

Part no.	Height	Notes	Pcs/pack	Package
<b>10011285</b>	Adjustable from 650 to 850mm	-	1	1

Dimensions on page 46

## REDU



Adaptor for connecting HK, HKF and HKM DN25 and DN32 Series domestic hot water and mixing units to HKV50 distribution manifolds, complete with EPP insulation.

Part no.	Connections	Notes	Pcs/pack	Package
<b>10011286</b>	2" M x 1.1/2" F	union nut	1	1

## Climatic control units

### HKM25HC



Compact FlowBox Series Control climatic control unit for heating and air conditioning systems, equipped with RCL-HC digital controller with outdoor temperature compensation and 3-way mixing valve for flow temperature control. Weekly programming, 9 pre-set programmes and 4 custom programmes, outdoor temperature and water temperature display, maximum and minimum temperature limit, pump control, equipped for connection of a room thermostat. Predisposed for the installation of an antenna for use with RF 433 MHz thermostats and MILUX-HY Series humidistat. Complete with EPP insulation. Outdoor temperature probe, 2 water temperature probes (flow and return) and wall-mounting bracket. Ball valves with built-in thermometer on flow and return. 1" F connections. Power supply 230VAC 50 Hz. Class A variable flow circulation pump.

Part no.	Pump	Kvs mixer	Pcs/pack	Package
<b>10084614</b>	GRUNDFOS UPM3A/7	8.0	1	1
<b>10084157</b>	WILO PARA SC/7	8.0	1	1

Dimensions on page 46

## Mixing valves and actuators

### V3GB CLASSIC



3-way sector mixing valve complete with WattsClassic EVO2 3-point modulating bidirectional actuator. Brass body and rotor and EPDM gaskets. 1/2" to 2" F threaded connections. Rotation angle 90° in 140s. Power supply 230 V, 50 Hz; max. power 3 VA. Cable length: 1.5 metres. Can also be used as a diverter. PN 10. Operating temperature range: 0 to 110°C. Fluids: water with glycol up to 50%.

Part no.	DN	Kvs	Pcs/pack	Package
W3GB0015M60230	1/2"	2.5	1	1
W3GB0204M60230	3/4"	4	1	1
W3GB0206M60230	3/4"	6	1	1
W3GB2508M60230	1"	8	1	1
W3GB2512M60230	1"	12	1	1
W3GB3215M60230	1.1/4"	15	1	1
W3GB3218M60230	1.1/4"	18	1	1
W3GB4026M60230	1.1/2"	26	1	1
W3GB5040M60230	2"	40	1	1

Dimensions on page 46

### V4GB CLASSIC



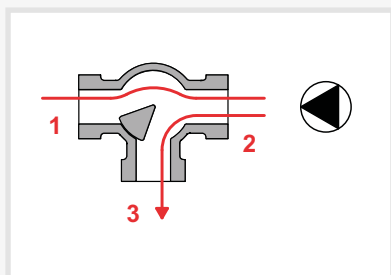
4-way sector mixing valve complete with WattsClassic EVO2 3-point modulating bidirectional actuator. Brass body and rotor and EPDM gaskets. 1/2" to 2" F threaded connections. Rotation angle 90° in 140s. Power supply 230 V, 50 Hz; max. power 3 VA. Cable length: 1.5 metres. PN 10. Operating temperature range: 0 to 110°C. Fluids: water with glycol up to 50%.

Part no.	DN	Kvs	Pcs/pack	Package
W4GB0015M60230	1/2"	2.5	1	1
W4GB0204M60230	3/4"	4	1	1
W4GB0206M60230	3/4"	6	1	1
W4GB2508M60230	1"	8	1	1
W4GB2512M60230	1"	12	1	1
W4GB3215M60230	1.1/4"	15	1	1
W4GB3218M60230	1.1/4"	18	1	1
W4GB4026M60230	1.1/2"	26	1	1
W4GB5040M60230	2"	40	1	1

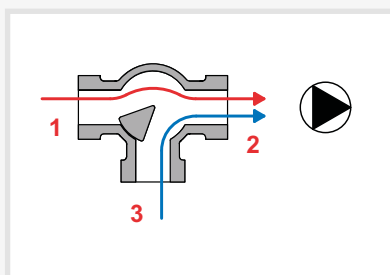
Dimensions on page 47

#### TECHNICAL NOTE on installation

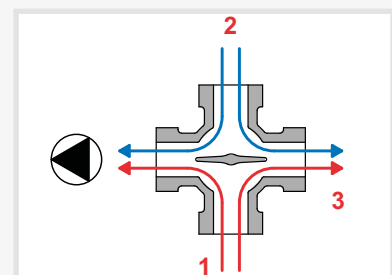
Depending on how they are connected to the system, V3GB CLASSIC Series 3-way valves operate both as diverter valves (fig.1) and mixing valves (fig. 2). V4GB CLASSIC Series 4-way valves operate as mixing valves (fig.3) and also act as a hydraulic switch between the primary and secondary circuit.



3-way diverter



3-way mixing



4-way mixing

## WATTS CLASSIC EVO2



3-point bidirectional modulating electronic actuator for rotary mixing or zone valves. Rotation angle 90° in 125 seconds, automatic and manual operation. Torque: 5.5 Nm. Power supply: 230 VAC 50 Hz. Power rating: 3 VA. Control signal: 3 points. IP rating: IP41. Cable length 2m (other cable lengths are available to order).

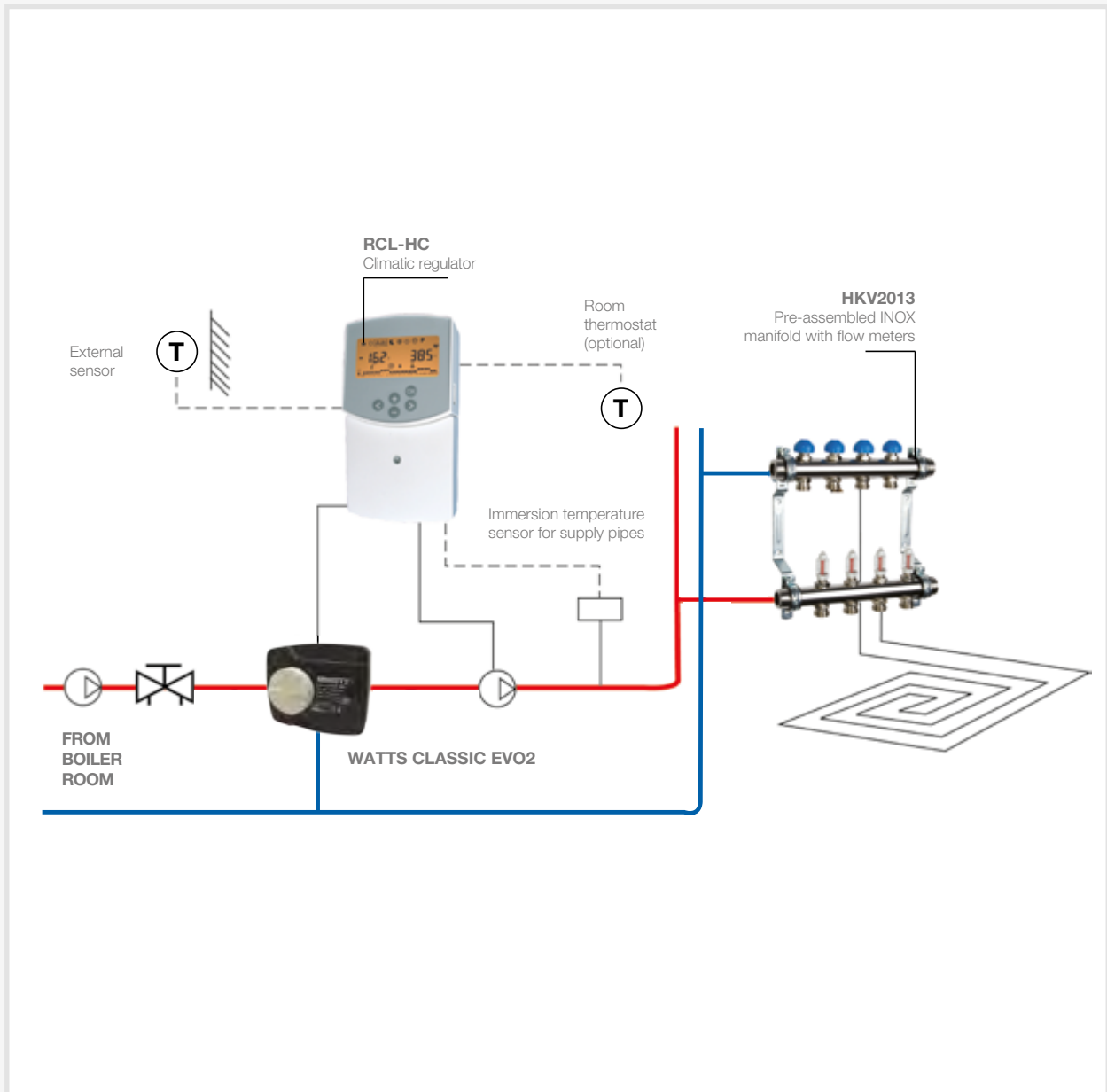
**TÜV Rheinland certified.**

Part no.	Pcs/ pack	Package
10028079	25	1

Dimensions on page 46

### TECHNICAL NOTE

The diagram shows an application with modulating climatic control for controlling the temperature of radiant panels in relation to the outdoor temperature, using an RCL-HC Series climatic regulator and V3GB CLASSIC Series 3-way valve.



## Domestic hot water mixing and circulation units

### FLOWBOX CIRCU



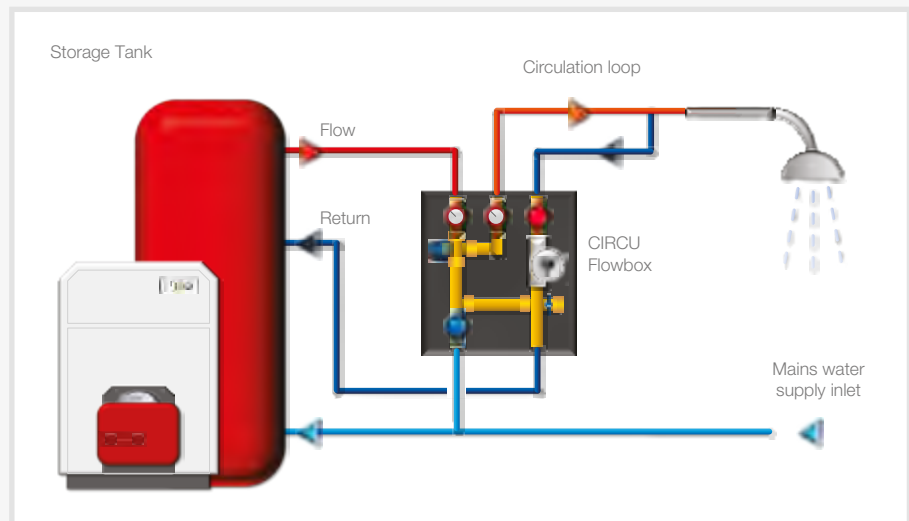
Ready-to-mount domestic hot water mixing and circulation unit complete with anti-scald thermostatic mixer valve, shut-off valves with built-in thermometer, check valves and EPP insulation.

Part no.	Pump	Pcs/pack	Package
10084639	LOWARA PRO 15-1/65B R	1	1

Dimensions on page 47

#### TECHNICAL NOTE

Flowbox CIRCU ready-to-mount domestic hot water mixing and circulation unit.  
Domestic hot water distribution system with central production, storage tank and circulation circuit.



## Boiler room accessories

### ERD - EUROVENT



Automatic/manual double air separator with expansion vessel. Tropicalised sheet steel body. OT58 brass cover. PN 8. Max. temperature: 115°C.

Part no.	DN	Pcs/ pack	Package
0253625	1"	1	20
0253640	1.1/2"	1	12

Dimensions on page 47

### SA



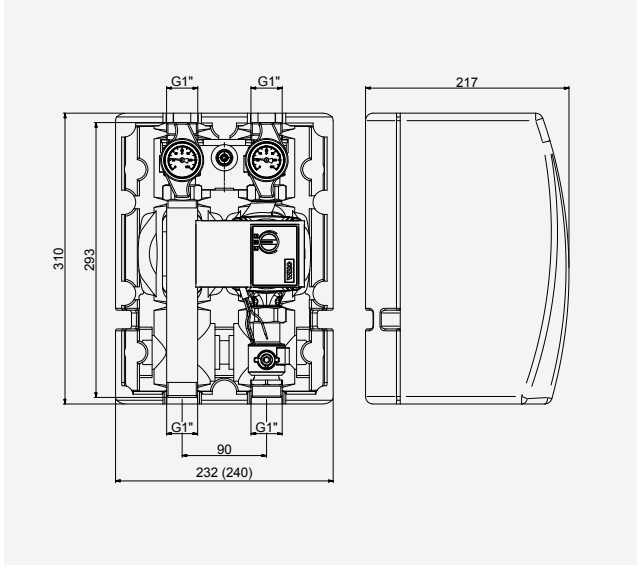
Air separator with 5 threaded female instrument connections (DN 3/8" – 1/2"). Painted, malleable, cast iron body.

Part no.	DN	Pcs/ pack	Package
0260132	1.1/4"	1	1
0260140	1.1/2"	1	1
0260165	2.1/2"	1	1
0260180	3"	1	1

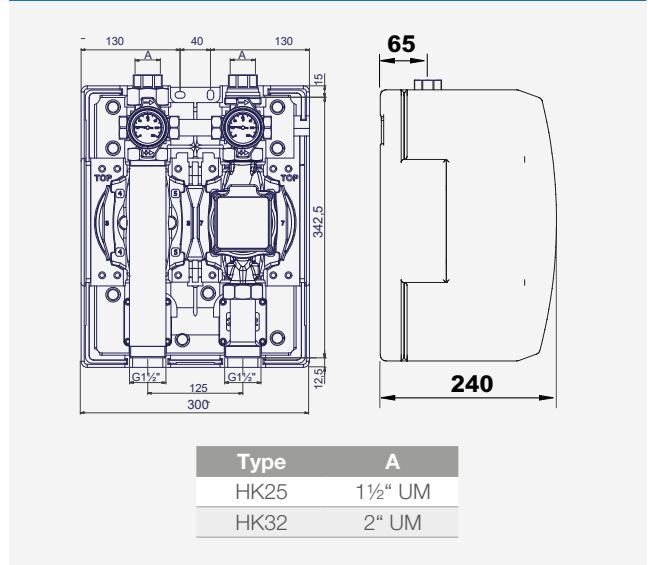
Dimensions on page 47

## Overall dimensions

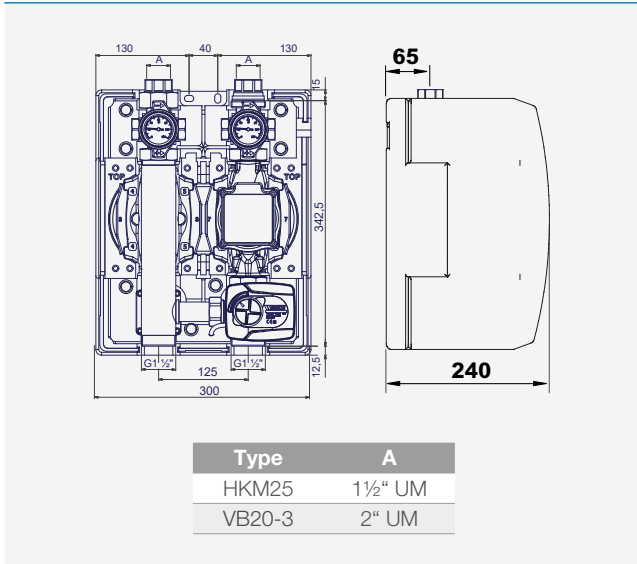
### HKFC20



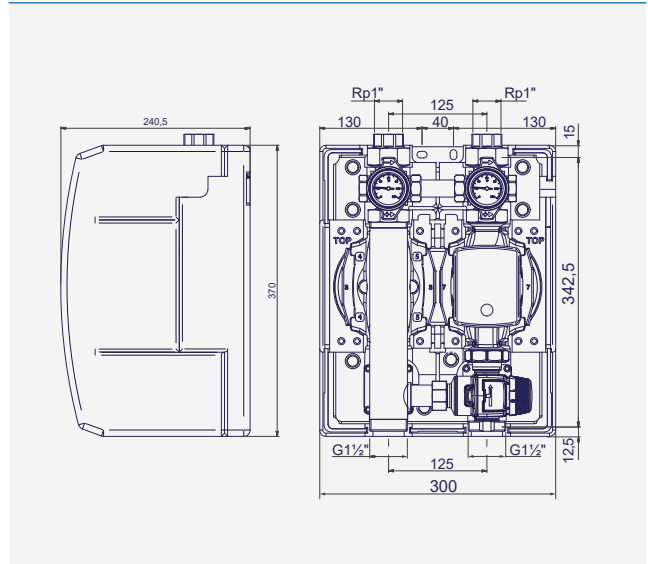
### FLOWBOX HK25/32



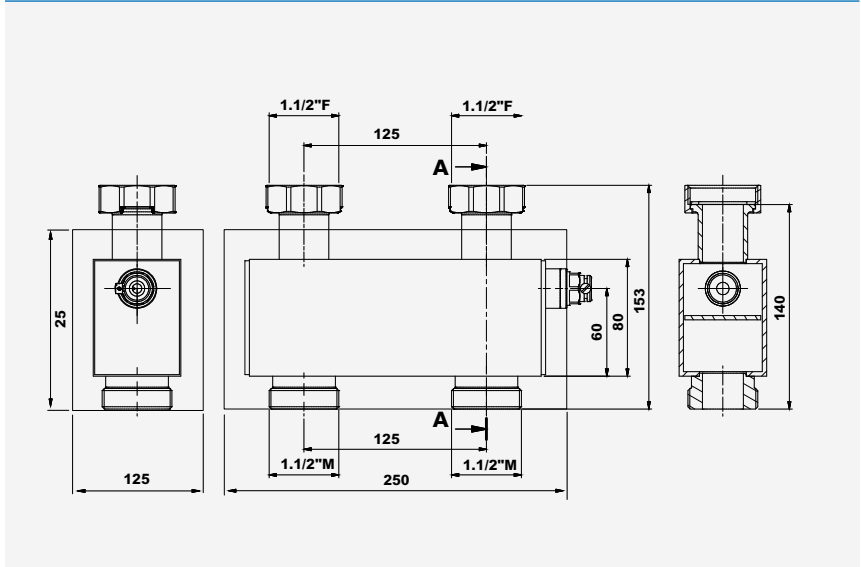
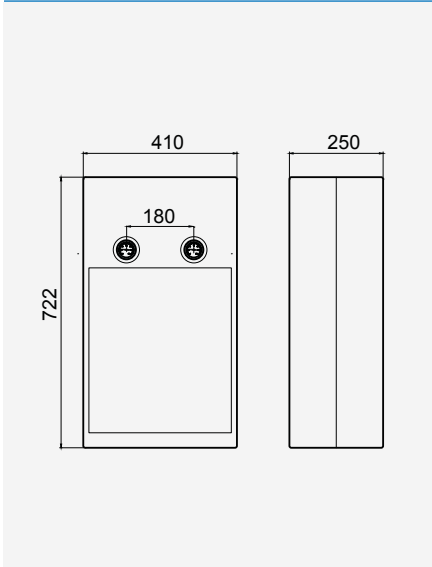
### FLOWBOX HKM25/32



### FLOWBOX HKF25

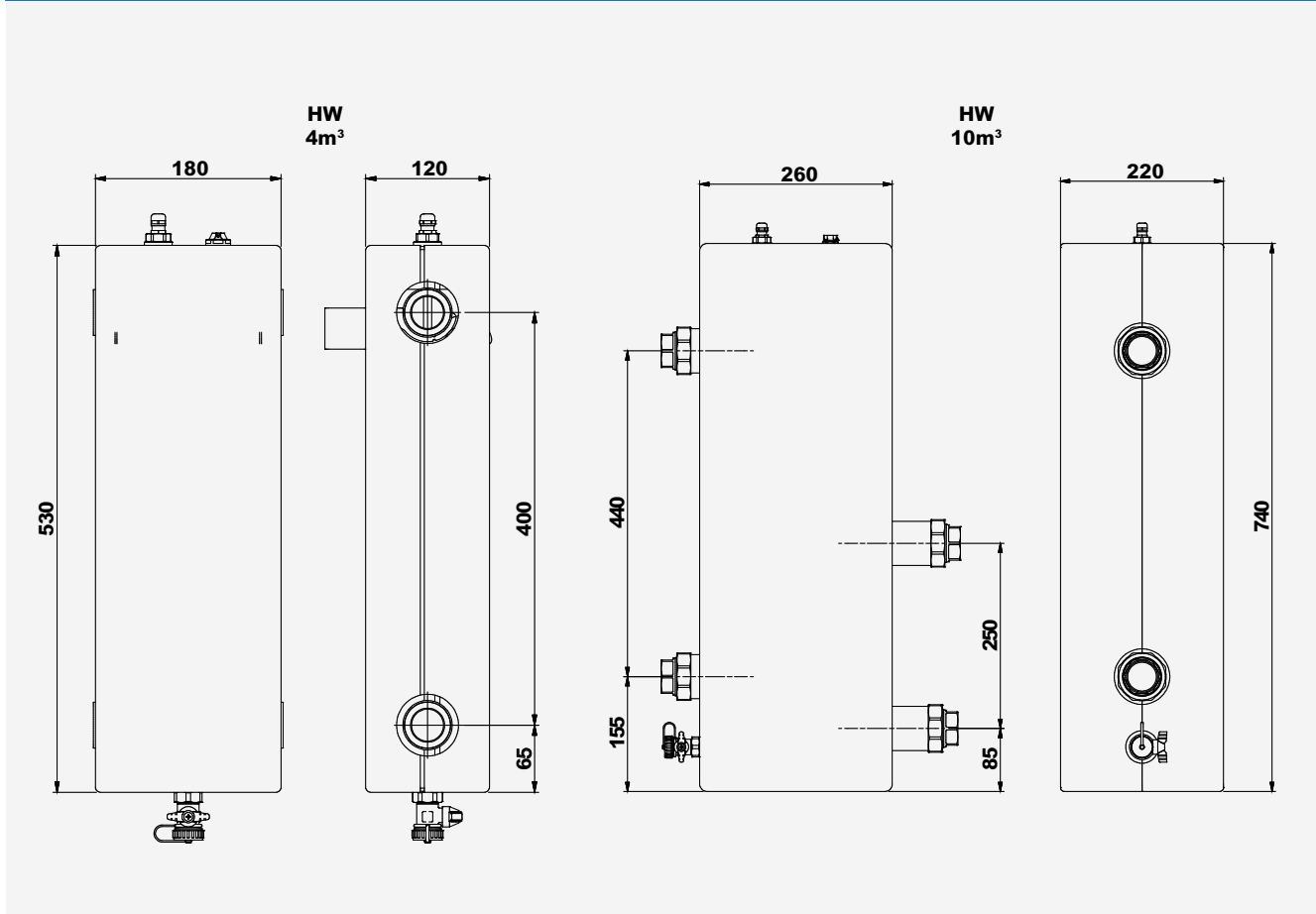


### HK40/HK50/HKM40/HKM50 HW-Q60/80

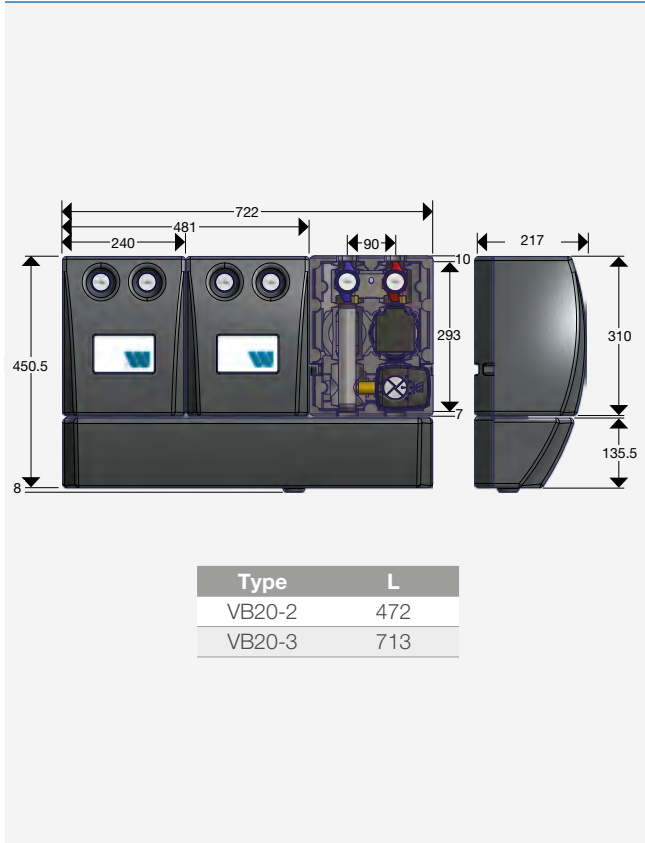


## Overall dimensions

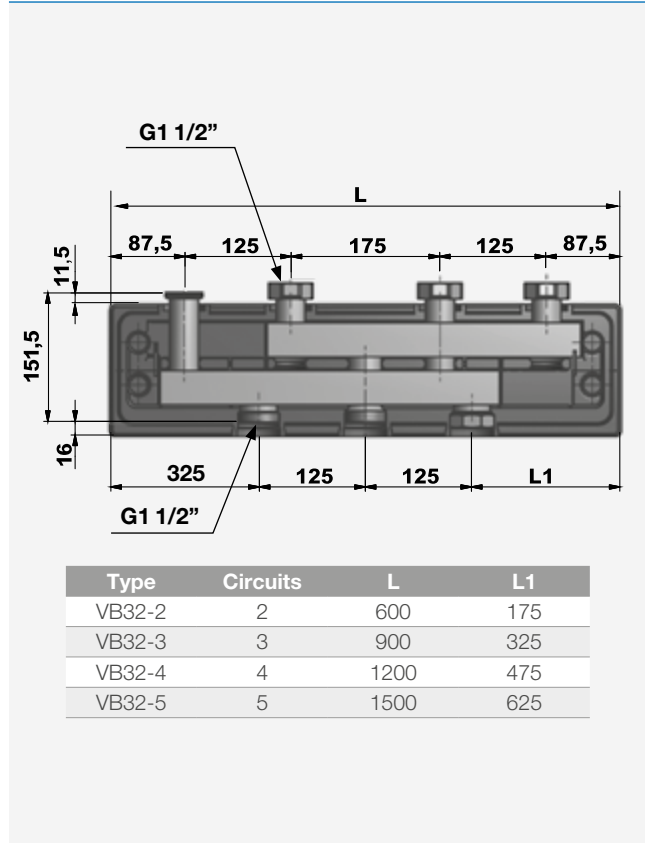
### HW



### VB20

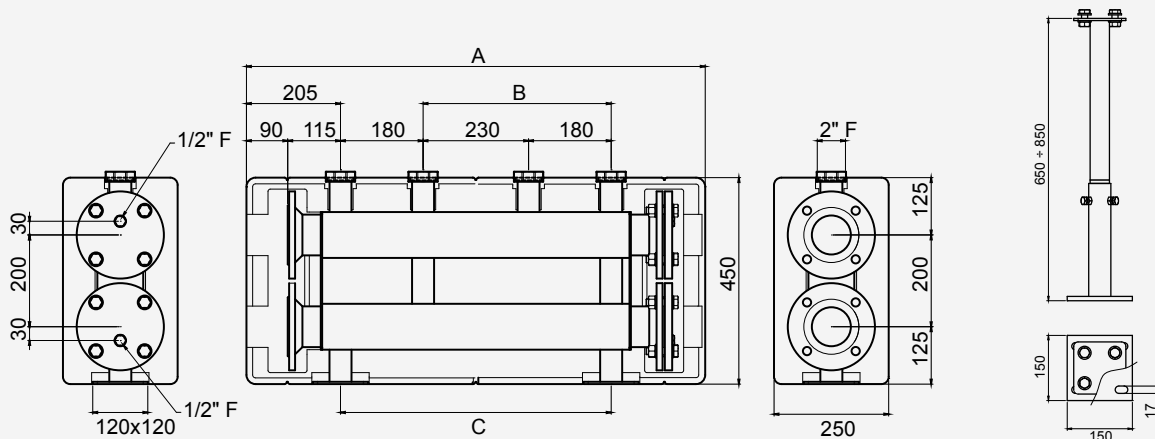


### VB25/32



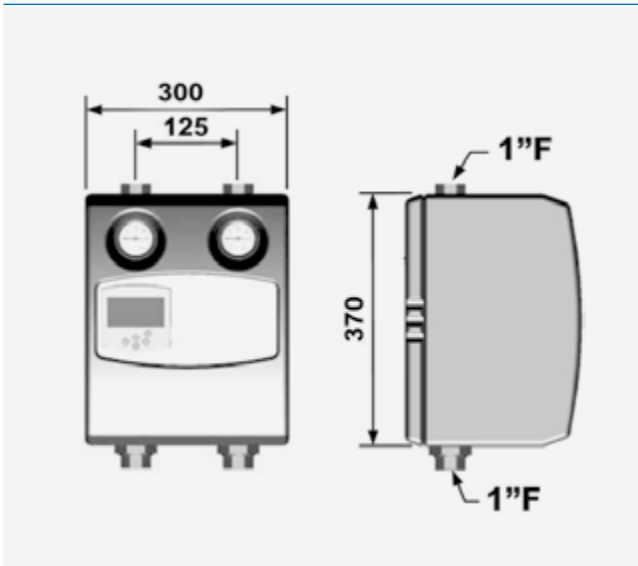
## Overall dimensions

### HKV50, HKV-FUSS

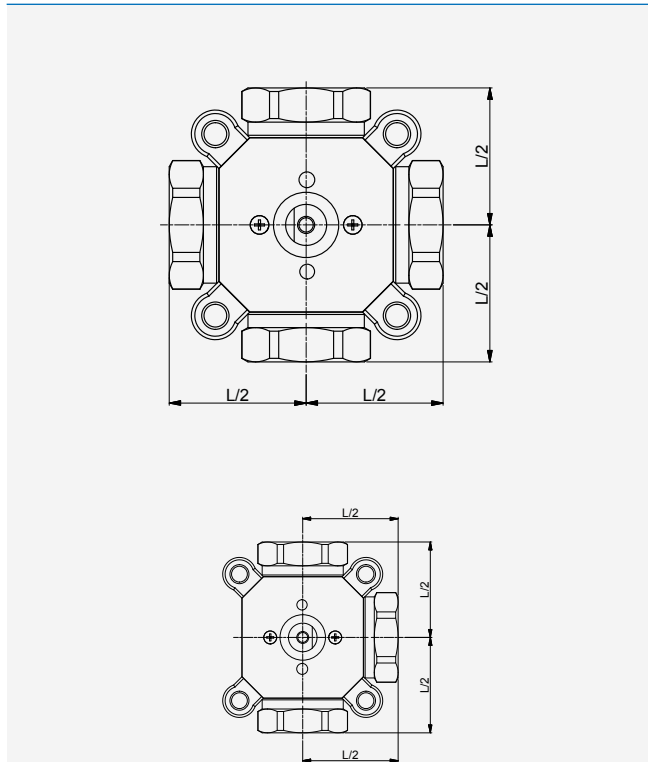


Type	Circuits	L
HKV50-2	2	1000
HKV50-3	3	1410

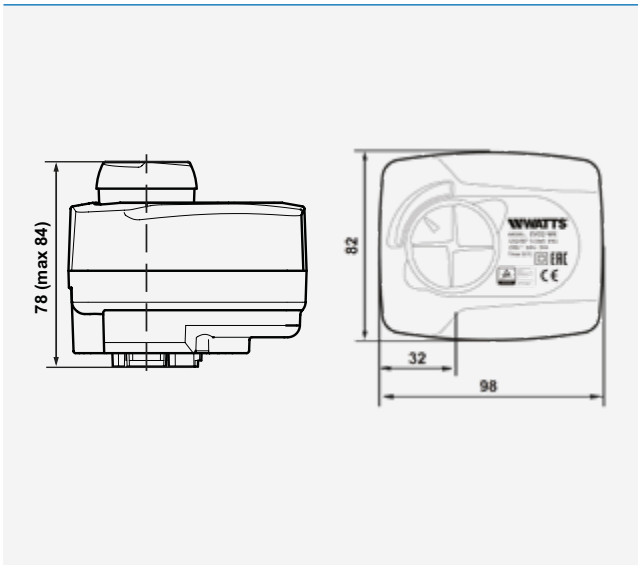
### HKM25HC



### V3GB CLASSIC



### WATTS CLASSIC EVO2

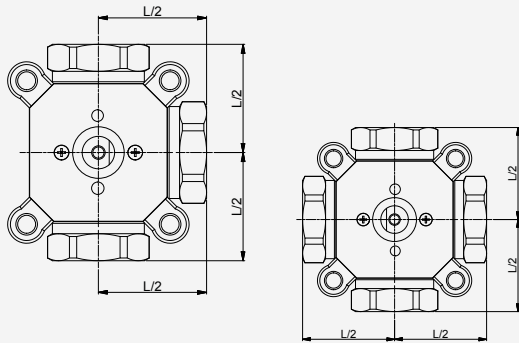


Part no.	DN	Kvs	L	H	H1
W3GB0015M60230	1/2"	2.5	80	119	35
W3GB0204M60230	3/4"	4	80	119	35
W3GB0206M60230	3/4"	6	80	119	35
W3GB2508M60230	1"	8	82	119	35
W3GB2512M60230	1"	12	82	119	35
W3GB3215M60230	1.1/4"	15	85	121	37
W3GB3218M60230	1.1/4"	18	85	121	37
W3GB4026M60230	1.1/2"	26	116	126	42
W3GB5040M60230	2"	40	125	127	43



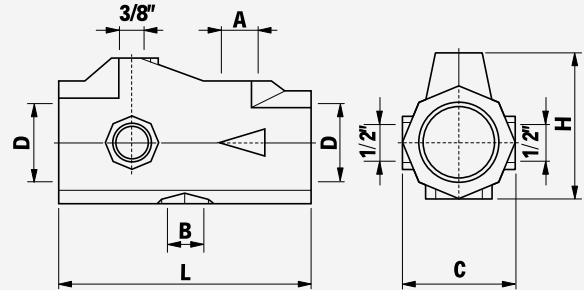
## Overall dimensions

### V4GB CLASSIC



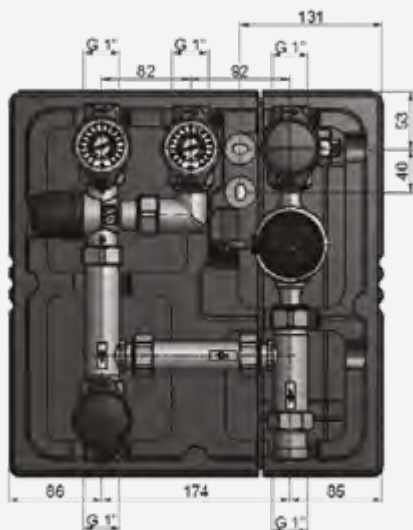
Part no.	DN	Kvs	L	H	H1
W4GB0015M60230	1/2"	2.5	80	119	35
W4GB0204M60230	3/4"	4	80	119	35
W4GB0206M60230	3/4"	6	80	119	35
W4GB2508M60230	1"	8	82	119	35
W4GB2512M60230	1"	12	82	119	35
W4GB3215M60230	1.1/4"	15	85	121	37
W4GB3218M60230	1.1/4"	18	85	121	37
W4GB4026M60230	1.1/2"	26	116	126	42
W4GB5040M60230	2"	40	125	127	43

### SA

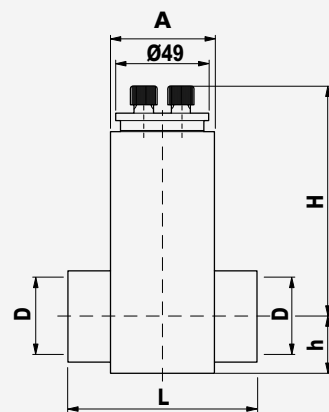


DN	A	B	C	L	H
1.1/4"	1/2"	3/4"	70	152	87
1.1/2"	1/2"	3/4"	70	152	87
2.1/2"	1"	1"	128	300	203
3"	1"	1"	128	300	203

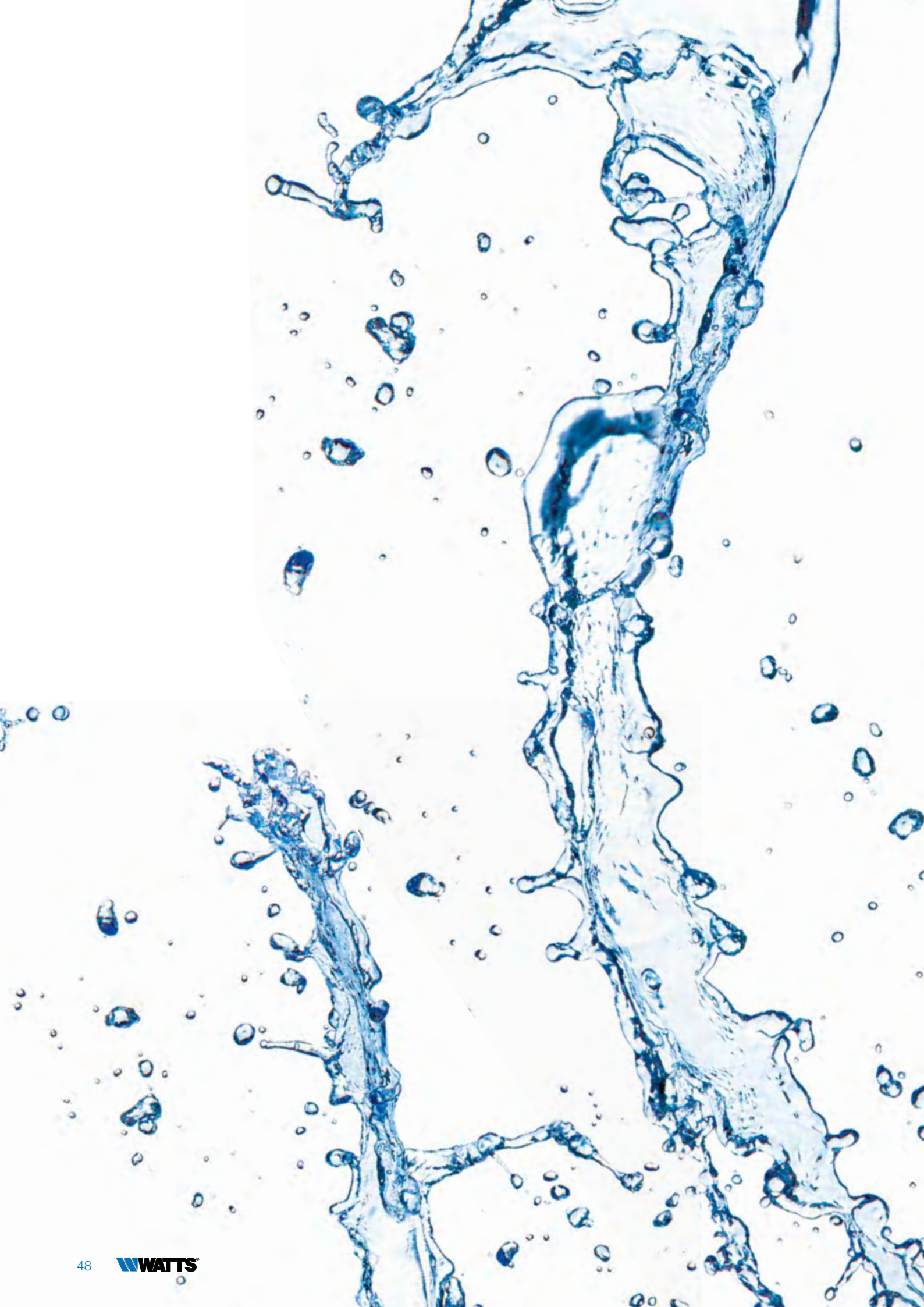
### FLOWBOX CIRCU



### ERD



DN	A	L	H	I
1"	60x50	94	153	26
1.1/2"	60x50	104	191	32



## Chapter 2

### Home automation and comfort control

**WATTS®**



#### CT02 RF

#### Central control unit Vision® Wireless

Easy to install and configure  
Intuitive operation with remote control via  
an app  
The system can be extended to radiant  
heating systems and electrical equipment

## Chapter 2

# VISION® WIRELESS: COMFORT CONTROL AND REGULATION

### VISION® WIRELESS SYSTEM

WATTS has developed a new home automation system called Vision® Wireless for temperature control, air conditioning, security and device management for residential applications. The system enables you to programme and view the settings of all your devices across multiple zones. It's a wireless solution for use in conjunction with WATTS second-generation RF thermostats, for room-by-room temperature control.

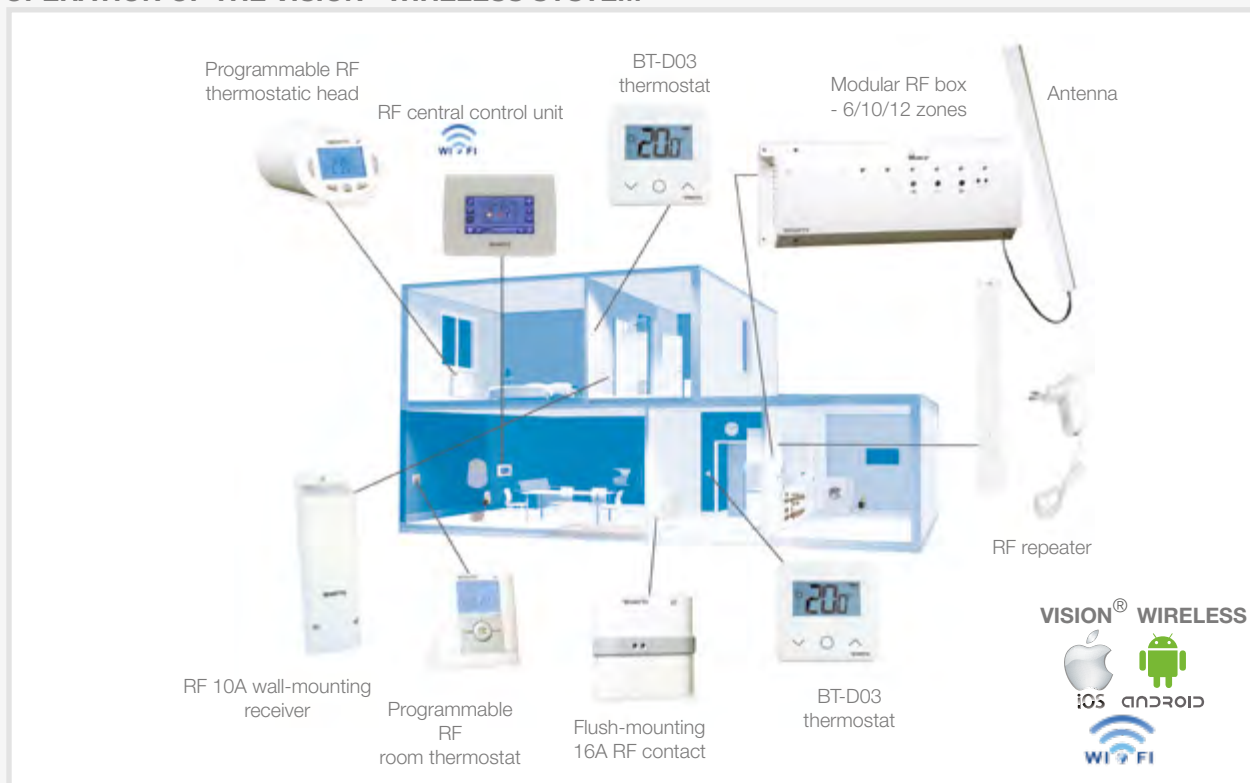


**Improved comfort and energy saving**

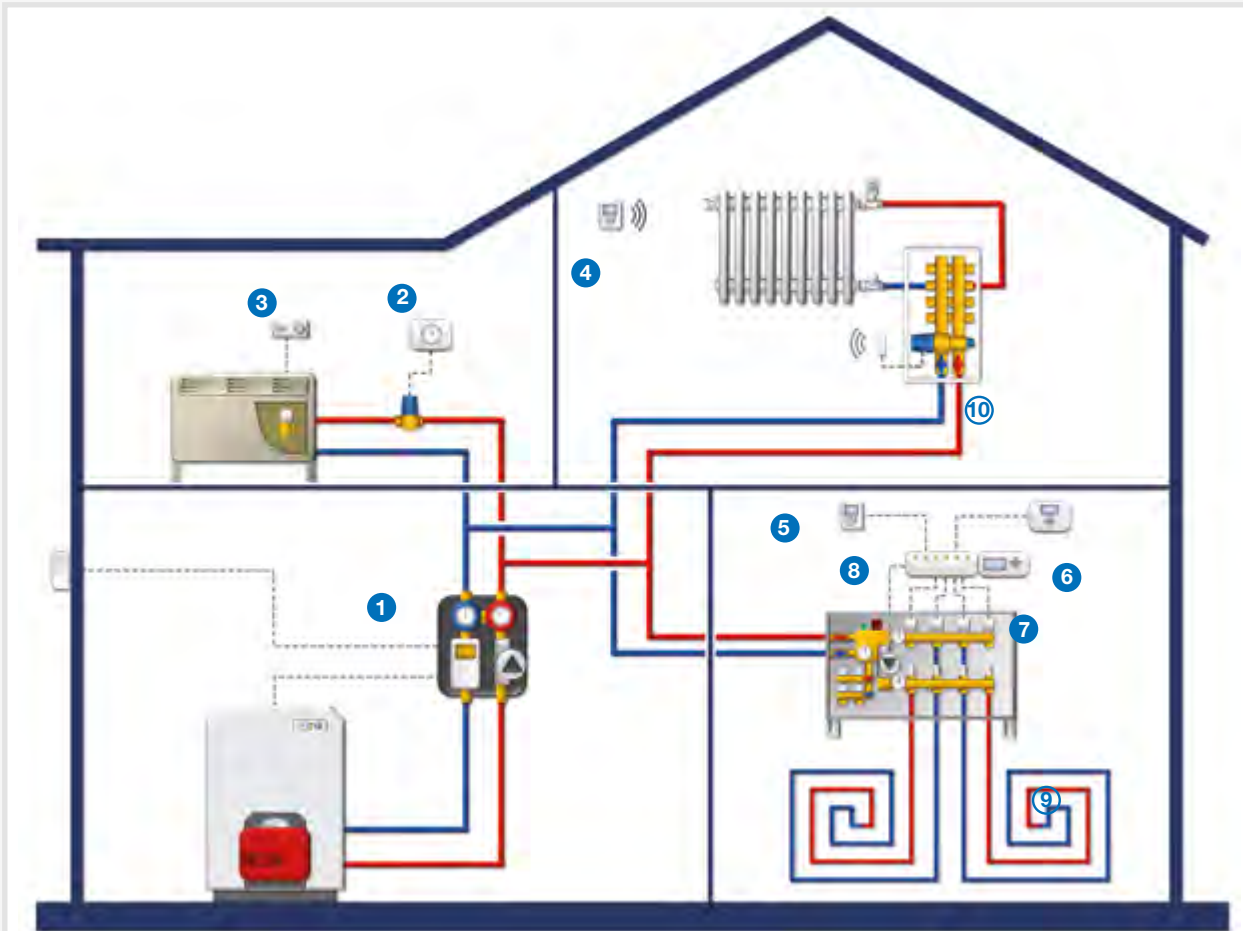
#### VISION® WIRELESS

- Provides full supervision of all devices using a Wi-Fi connection via pre-loaded web pages and type of browser (on PC, tablet or smartphone) or via a dedicated app (iOS, Android).
- Scalable system, easy to update with a wide range of products
- Provides individual radiator control in underfloor and conventional heating systems
- Controls various types of electrical devices









### OPERATION OF THE VISION® WIRELESS SYSTEM



**APPLICATION EXAMPLE**



**SIMPLIFIED DIAGRAM FOR THE SOLE PURPOSE OF ILLUSTRATING THE PRODUCTS COVERED IN THIS SECTION**

- |  |   |   |   |   |
|--|---|---|---|---|
| <p><b>1</b></p>  <p><b>HKM25HC</b><br/>pag.40</p> <p>Compact climatic control unit for heating/air conditioning</p> | <p><b>2</b></p>  <p><b>BATTERY ELECTRONIC</b><br/>pag.58</p> <p>Electronic room thermostat with analogue programming</p> | <p><b>3</b></p>  <p><b>FAN COIL 2T</b><br/>pag.60</p> <p>Electronic thermostat for fan-coils</p> | <p><b>4</b></p>  <p><b>MILUX 2 WEEKLY RF</b><br/>pag.56</p> <p>Digital electronic RF thermostat</p> | <p><b>5</b></p>  <p><b>BTD</b><br/>pag.57</p> <p>Wired digital electronic thermostat</p> |
| <p><b>6</b></p>  <p><b>MILUX 2 WEEKLY</b><br/>pag.56</p> <p>Digital electronic thermostat</p>                       | <p><b>7</b></p>  <p><b>WFHC-TIMER</b><br/>pag.59</p> <p>Two-channel programming clock</p>                                | <p><b>8</b></p>  <p><b>WFHC</b><br/>pag.59</p> <p>Modular connection box - 4/6 zones</p>         | <p><b>9</b></p> <p>Chapter 8.1<br/>pag.246<br/>Radiant panel systems</p>  | <p><b>10</b></p> <p>Chapter 8.2<br/>pag.252<br/>Modul systems</p>   |

## Vision® Wireless system

### BT-TH02 RF



Programmable electronic thermostatic head for radiators. Can be used in stand-alone mode (9 pre-set and 4 custom programmes) or in conjunction with the Vision® Wireless central control unit (CT02 RF) and BT-D03 RF Series thermostats. The central control unit is necessary for communication with the thermostats. Keypad lock PIN for installation in public places. Stroke speed: 2mm-1mm/s. Protection rating IP20 Class I. Power supply: 2 AA LR06 1.5V alkaline batteries (included). Actuator force 70N.

**Compliant with: EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Temp. control range	IP	Pcs/ pack	Package
<b>P06681</b>	5-30°C	IP20	1	17

Dimensions on page 63

### CT02 RF



Vision® Wireless central control unit manages hydronic and electric underfloor climate control systems, radiators, lights and other electrical devices.

Thanks to a built-in WiFi module, you can manage and monitor all the control parameters of your home via an app on your smartphone, tablet or PC.

Operating temperature (220 V): -30 to 40°C. Operating temperature (battery): 0 to 40°C. Installation Class II. Display accuracy: 0.1°C. Temperature setting range: - Comfort 5 to 30°C with sensitivity of 0.5°C - Reduced 5 to 30°C with sensitivity of 0.5°C - Anti-freeze 5 to 10°C.

Power supply (flush-mounting): 85-265VAC 50-60 Hz. USB power supply (not included).

Radio frequency 868 MHz, <10mW.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Description	Protection	Pcs/ pack	Package
<b>P07255</b>	white screen	IP30	1	17
<b>P07256</b>	black screen	IP30	1	17

Dimensions on page 63

### BT-D03 RF



BT-D03 RF Series wireless digital room thermostat with back-lit LCD radio frequency display (868 MHz, <10mW) designed to control different heating/cooling systems\*. Sensor: internal and/or external (opt.) NTC 10kOhm at 25°C. A LED indicates whether the heating/cooling ON signal is enabled. Operating temperature range: 0 to 50°C. Electrical protection Class II. Temperature control range: 5 to 37°C. Control characteristics: Proportional band (PWM 2°C/10 min) or hysteresis, adjustable from 0.2°C to 3.0°C. PIN code and locking pins for installation in public places. For wall-mounting or desktop installation with stand (included). Power supply 2 AAA LR03 1.5V Alkaline batteries (included). Life ~2 years.

**\*If used in conjunction with a CT02RF central control unit.**

**Compliant with: LVD 2014/35/EU, EMC 2014/30/EU, 2014/53/EU, RoHS 2011/65/EU, 2012/19/EU, 2015/1188/EU.**

Part no.	Description	Protection	Pcs/ pack	Package
<b>P07930</b>	black screen	IP30	1	24
<b>P07710</b>	white screen	IP30	1	24
<b>P08069</b>	white screen - with RH sensor	IP30	1	24

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**BT-DP02 RF/BT-DP02 RF RH**

Digital radio frequency (868MHz) programmable room thermostat with LCD display for controlling different types of heating and cooling\*\* system. Temperature control is based on an internal sensor. An external sensor (PPELE06019) can be connected without any additional external power supply. A red LED indicates that the heating system is ON.

Operating temperature 0 to 50°C. Installation Class II. Precision 0.1°C.

Control ranges: Comfort, Reduced, Timer 5 to 37°C in steps of 0.5°C.

Holiday mode. Anti-freeze: 7°C (programmable).

Control characteristics: proportional band (PWM 2°C/10min) or hysteresis of 0.5°C.

Power supply: 2 AAA LR03 1.5V alkaline batteries (included). Life ~2 years.

Sensor: internal and/or external (opt.) NTC 10kW at 25°C.

Radio frequency 868 MHz, <10mW. Compatible receivers Wall, Socket, Ver.02

**\*Version with humidity sensor.**

**\*\*If used in conjunction with a BT-CT02RF central control unit.**

**Compliant with: EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Temp. control range	Protection	Pcs/ pack	Package
<b>P06672</b>	5–37°C	IP30	1	50
<b>P06772*</b>	5–37°C	IP30	1	50

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**HCM02 RF**

Modular RF connection box (868 MHz) designed to control underfloor heating and cooling systems. Can be integrated with the Vision® Wireless system only by means of RF communication (868MHz) with M6Z02 RF Series boxes.

The box receives requests for heating/cooling through the various inputs listed:

- free contact input from the output of a heat pump;
- free contact input from a manual switch;
- from an NTC sensor for measuring flow water temperature;
- from a CT02-RF Series touch-screen panel (HCM02-RF configured in slave mode, connection with module M6Z02 RF required).

The HCM02-RF Series module has the following outputs for activating the:

- system pump;
- dehumidifier, associated with BT-D03 RF RH or BT-DP02 RF RH Series humidity sensor thermostats;
- boiler or air conditioning.

Equipped with 2 LED indicators (pump status, heating/cooling management), 3 pushbuttons for user configuration and an internal DIP switch for system configuration. IP30. 1 5A/230V pump relay, 3 free contact relays.

**Compliant with: LVD 2014/35/EC - EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P06066</b>	230V	IP30	1	10

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**M6Z02 RF**

Modular RF connection box (868 MHz) designed to control underfloor heating systems with C or NO ON/OFF electrothermal actuators. Easy to expand up to 12 zones with additional modules. Can be combined with BT-02 and BT-03 RF Series thermostats and/or the Vision® Wireless system. Operating temperature: 0 to 50°C.

Control characteristics: integral proportional control or hysteresis control depending on the type of thermostat connected to the individual channel.

Power supply: 230VAC ± 10% 50Hz; 24VAC. Pump or accessories outputs: Relay → 5A / 230VAC (open contact). Actuator outputs (NC) or (NO): Relay → 5A / 230VAC (L, N).

Radio frequency and signal coverage 868 MHz, <10mW (bidirectional transmission); coverage approximately 180 m (open field); coverage approximately 50 m (residential environment).

Combinations 10 Zones → 1 Master 6z+1 Slave 4 zones;

**12 Zones → 1 Master 6z+1 Slave 6 zones.**

**Compliant with: EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P06678</b>	230V	IP30	1	10

Dimensions on page 63

## S4Z02 RF/S6Z02 RF



Expansion module (RF 868 MHz) for modular boxes for controlling underfloor systems. Extends the number of controlled zones to 12 with ease.

Can be combined with BT-02 and BT-03 RF Series thermostats and/or the Vision® Wireless system. Operating temperature 0 to 50°C. Control characteristics: integral proportional control or hysteresis control depending on the type of thermostat connected to the individual channel.

Power supply: 230VAC±10% 50Hz; 24VAC.

Pump or accessories outputs: Relay → 5A/230VAC (open contact).

Actuator outputs (NC) or (NO): Relay → 5A / 230VAC (L, N).

Combinations: 10 zones → 1 Master 6z + 1 Slave 4 zones; 12 Zones → 1 Master 6z + 1 Slave 6 zones

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Description	Protection	Pcs/ pack	Package
<b>P06679</b>	S6Z02 RF (+6 zones)	IP30	1	34
<b>P06680</b>	S4Z02 RF (+4 zones)	IP30	1	24

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## WR02 RF



The WR02 RF Series receiver is a wall-mounting RF receiver designed for controlling climate control systems in conjunction with BT-D03 RF or BT-DP02 RF radio frequency thermostats. The receiver can also be managed by means of a touch-screen central control unit (CT02 RF) for complete system supervision. Supports hysteresis control and proportional band control set from the 02 and 03RF Series thermostat.

Operating temperature range: 0 to 40°C. Power supply 230VAC 50Hz. Electrical protection Class II. Output (1 powered contact) 10A-230VAC relay. Max. load up to 10A - 230VAC 50Hz (2 wires L,N). Radio frequency and signal coverage 868 MHz <10mW (bidirectional transmission). Coverage 100 m (open field). Coverage 30 m (residential environment).

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Coverage	Protection	Pcs/ pack	Package
<b>P06674</b>	100m (outdoors), 30m (indoors)	IP20	1	50

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## WR02 RF FC



The WR02 RF FREE CONTACT is a wall-mounting RF receiver designed for controlling heating/cooling systems in conjunction with BT-D03 RF or BT-DP02 RF radio frequency thermostats. The receiver can be controlled by means of the Vision® Wireless system (CT02 RF) for complete system supervision. Supports hysteresis control and proportional band control set from the 02 and 03 RF Series thermostat. Operating temperature range: 0 to 40°C. Power supply 230VAC 50Hz. Electrical protection Class II. Live/free output, equipped with cables for the configuration used by the relay. 10A-230VAC relay. Max. load up to 10A-230VAC 50Hz (2 wires LN). Radio frequency and signal coverage 868 MHz <10mW (bidirectional transmission). Coverage 100 m (open field). Coverage 30 m (residential environment).

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Coverage	Protection	Pcs/ pack	Package
<b>P07296</b>	100m (outdoors), 30m (indoors)	IP20	1	96

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**FR02 RF**

The FR02 RF Series receiver is a flush-wall-mounting receiver designed for controlling heating systems in conjunction with 02 and 03 Series RF thermostat models BT-D03RF or BT-DP02RF. The receiver enables you to connect a hard-wired floor sensor directly in the floor temperature monitoring and control unit. The receiver can also be managed by means of a touch-screen central control unit (BT-CT02 RF) for complete system supervision. Operating temperature: 0 to 40°C. Power supply 230VAC 50Hz. Protection Class II. Optional: IP21 insulation. Output (1 powered contact) 16A-230VAC relay. Max. load up to 16A - 230VAC 50Hz (2 wires L,N). Radio frequency and signal coverage: 868MHz < 10mW (bidirectional transmission). Coverage 100 m (open field). Coverage 30 m (residential environment). Optional floor sensor: NTC 10kΩ at 25°C. **Compliant with Directives: LVD 2014/35/EU - EMC 2014/30/EU - RoHS 2011/65/EU.**

Part no.	Coverage	Protection	Pcs/ pack	Package
<b>P06675</b>	100m (outdoors), 30m (indoors)	IP20	1	48

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**BT-OS02 RF**

Outdoor temperature sensor compatible with CT02RF Series central control unit. Equipped with protective case and internal battery, 1 Lithium AA battery (LR06) 2600mAh, 10-year life. Protection rating IP65. Operating temperature range: -20 to 55°C. Control range: 180m (open field). RF communication distance approximately 30m in a residential environment. **Approved to EN 300220-1-2/EN 301489-1-3, R&TTE.**

Part no.	Coverage	Protection	Pcs/ pack	Package
<b>P06788</b>	100m (outdoors), 30m (indoors)	IP20	1	84

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**POWER SUPPLY UNIT FOR CT02**

Power supply cables for CT02RF VISION Series touch-screen control unit. USB cable for power supply from PC and adaptor for 230V/50Hz wall-sockets.

Part no.	Description	Protection	Pcs/ pack	Package
<b>P07095</b>	Power supply unit	IP20	1	112

**RPT02 RF**

The antenna extends the radio reception range for the following products: CT02 RF Series central control unit and BT-M6Z02 RF Series master box. 230VAC power supply with wall-socket and USB cable.

Part no.	Description	Protection	Pcs/ pack	Package
<b>P06094</b>	Repeater	IP20	1	34

## Milux programmable room thermostats

### MILUX 2 WEEKLY



Digital electronic programmable room thermostat with weekly programming, for heating and cooling systems. Switch between summer and winter modes directly from keypad. 5 pre-set and 2 custom programmes available. Constant display of room temperature, time and operating status on LCD display. White frame with removable front panel for access to the batteries and connections. Easy wiring: two-wire connection (three-position connector) for heating or air conditioning systems, contact rating < 5A/400V. Automatic or manual operating modes. Complete with 2 LR3 (AAA) 1.5V batteries: life > 2 years. Batteries can be changed without losing programme settings. Temperature control range: 5 to 35°C. Two temperature levels: comfort and reduced modes. Anti-freeze (0.5 to 10°C). PWM control in 15min intervals on a band of 2°C. Power supply: 2 LR3 AAA 1.5V batteries (included). Protection rating IP 30, Class II.

Special functions:

- manual selector for standby and keypad lock mode;
- holiday mode to suspend operation temporarily when away from home;
- ITCS (optional): Intelligent Temperature Control System, automatic advance response to heating/cooling demand.

**Compliant with: EMC 2004/108/CE, RoHS 2011/65/EU, 811/2013/EU and 2010/30/EU, Energy class IV (2%).**

Part no.	Temp. control range	Programmes	Pcs/ pack	Package
P06584	5–37°C	9 +4 custom	1	48

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### MILUX 2 RF WEEKLY



Digital electronic programmable room thermostat with weekly wireless programming (868,3MHz, <10mW), for heating and cooling systems. Switch between summer and winter modes directly from keypad, for heating or air conditioning systems. 5 pre-set and 2 custom programmes available. Constant display of room temperature, time and operating status on LCD display. White frame with removable front panel for access to the batteries. Complete with 2 batteries. LR3 AAA 1.5V batteries: Life > 2 years. Batteries can be changed without losing programme settings. Temperature control range: 5 to 35°C. Two temperature levels: comfort and reduced modes. Anti-freeze (0.5 to 10°C). PWM control in 15min intervals on a band of 2°C.

Power supply: 2 LR3 AAA 1.5V batteries (included). Protection Class II.

Special functions:

- manual selector for standby and keypad lock mode;
- holiday mode to suspend operation temporarily when away from home;
- ITCS (optional): Intelligent Temperature Control System, automatic advance response to heating/cooling demand.

**Compliant with: R&TTE 1999/5/EC - EMC 2004/108/EC - RoHS 2011/65/EU. Energy Class 2010/30/EU IV (2%).**

Part no.	Coverage	Protection	Pcs/ pack	Package
P06585	30m (indoors)	IP30	1	13

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## Programmable room thermostats and thermostats for hard-wiring

### BTB



Digital electronic room thermostat for heating/cooling systems. Back-lit LCD display, two temperature levels (comfort and reduced modes), anti-freeze function. Can be connected to a temperature sensor (indoor, floor or outdoor PPLELE06019).

Temperature control range: 5 to 35°C. NTC sensitive element. PWM control or 0.5°K differential. Complete with 2 LR03 (AAA) 1.5V batteries (included). Life 2 years.

Voltage-free contact rating: 3A-230 VAC. Protection rating IP 30.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Temp. control range	Protection	Pcs/ pack	Package
<b>P04542</b>	5-37°C	IP30	1	112

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### BTDP



Digital electronic programmable room thermostat with weekly programming, for heating/cooling systems. 9 pre-set and 4 custom programmes available. Constant display of room temperature, time and operating status on back-lit LCD display. Can be connected to a temperature sensor (indoor, floor or outdoor PPLELE06019). Temperature control range: 5 to 35°C. NTC sensitive element.

Two temperature levels (comfort and reduced modes), anti-freeze function and holiday mode. Anti-freeze (0.5 to 10°C). PWM control or 0.5°K differential. Complete with 2 LR03 (AAA) 1.5V batteries (included). Life 2 years. Voltage-free contact rating: 3A-230 VAC. Protection rating IP30.

Special functions:

- reset, keypad lock (to prevent accidental changes to settings);
- holiday mode to suspend operation temporarily when away from home;
- automatic or manual adjustment to/from daylight saving time.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Temp. control range	Protection	Pcs/ pack	Package
<b>P04543</b>	5-35°C	IP30	1	112

Dimensions on page 64

### OUTDOOR NTC SENSOR



Part no.	Description	Dimensions	Pcs/ pack	Package
<b>PPLELE06019</b>	Outdoor 10kΩ NTC sensor	Cylindrical sensor 6X60mm. L cable = 3m	1	50

## BATTERY ELECTRONIC



Electronic programmable room thermostat with analogue programming, for heating systems. Protective front panel for clock and control knob. Minimum setting range: 15 min (daily) 120 min (weekly) 2 selectable temperature levels (comfort - reduced modes). Timer OFF mode selector: the thermostat maintains the selected temperature level (comfort - reduced modes) with minimum anti-freeze temperature (5°C). Temperature control range: 5 to 35°C. Differential: 0.5K. Operating temperature: 0 to 50°C. Protection class: II. Power supply: 2 LR6 (AA) 1.5V alkaline batteries (NOT INCLUDED). Contact rating: 8 (3) A 230V.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P03869 (daily)</b>	2 x 1.5V batteries	IP30	1	38
<b>P03865 (weekly)</b>	2 x 1.5V batteries	IP30	1	38

Dimensions on page 64

## BELUXTI



Room thermostat with saturated vapour expansion diaphragm temperature sensor, with 2 switching contacts. Stainless steel diaphragm. Temperature locking device on back of knob. Adjustment range: 5 to 30°C.

Differential at 20°C: 0.8K. Contact rating: 10 (2.5) A/230V. 1000/1000 silver contacts.

**Compliant with Directives LVD 2014/35/EU - EMC 2014/30/EU. EN 61000 and EN 60730 compliant.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>0403202</b>	230V	IP30	1	112

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## BELUXTIC



Room thermostat with saturated vapour expansion diaphragm temperature sensor, with 2 switching contacts and summer/winter switch. Stainless steel diaphragm. Temperature locking device on back of knob. Adjustment range: 5 to 30°C.

Differential at 20°C: 0.8K. Contact rating: 10 (2.5) A/230V. 1000/1000 silver contacts.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU. EN 61000 and EN 60730 compliant.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>0403302</b>	230V	IP30	1	112

Dimensions on page 64

## BELUXTOF



Room thermostat with saturated vapour expansion diaphragm temperature sensor, with 2 switching contacts and ON/OFF switch and indicator light. Stainless steel diaphragm. Temperature locking device on back of knob. Adjustment range: 5 to 30°C.

Differential at 20°C: 0.8K. Contact rating: 10 (2.5) A/230V. 1000/1000 silver contacts.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU. EN 61000 and EN 60730 compliant.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>0403162</b>	230V	IP30	1	112

Dimensions on page 64

## WFHT-LCD



Digital electronic thermostat. Night energy saving mode, temperature level selector (comfort/reduced modes) and signal from switch with clock. Can be connected directly to 22C, 22CX Series NO or NC and 22CX5 Series electro-thermal actuators or by means of WFHC modules. Display shows room temperature and operating mode. Protection rating IP30. Temperature control range: 5 to 30°C. Temperature differential: 0.5 K. Temperature sensor: NTC. Contact: Triac. Output power: max 15W.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Power supply	Actuator	Pcs/ pack	Package
<b>P2077</b>	230VAC	N.O. and N.C.	1	112

Dimensions on page 65

## WFHC



4- or 6-zone modular connection box. Can be connected with 4/6 thermostats. Each thermostat can control up to 4/6 actuators. Protection rating IP30. Master module with electric pump control relay. Slave module with plug-in connector for connecting to master unit.

Part no.	Description	Dimensions (mm)	Pcs/ pack	Package
<b>P2094</b>	4 ZONES (MASTER) NC	178 Lx88Hx58P	1	72
<b>P2096</b>	4 ZONES (SLAVE) NC	178 Lx88Hx58P	1	48
<b>P2090</b>	6 ZONES (MASTER) NC	210Lx88Hx58P	1	68
<b>P2092</b>	6 ZONES (SLAVE) NC	210Lx88Hx58P	1	68

## WFHC-TIMER



Weekly programming clock for two channels, suitable for radiant panel systems, can be connected to WFHC-4 and WFHC-6 modular boxes for managing 4, 6, 8, 10 or 12 different heating zones. Has 9 pre-set programmes and 1 custom programme for configuration by the user.

Part no.	Dimensions (mm)	Protection	Pcs/ pack	Package
<b>P2101</b>	158Lx88Hx 62P	IP30	1	48

## Thermostats for fan coils

### FAN OPEN



Mechanical thermostat for fan coils. ON/OFF switch (disables thermostat). Fan speed selector (3 speeds). Temperature locking device on back of knob.

Adjustment range: 5 to 30°C. Temperature differential: 0.6°C.

Contact power rating: 6(2) A/230V.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P02023</b>	230V	IP30	1	138

Dimensions on page 65

## FAN COIL 2T



Electronic thermostat for 2-pipe fan coils. ON/OFF switch (disables thermostat). Fan speed selector (3 speeds). Summer/Winter switch. Adjustment range: 5 to 35°C. Temperature differential: 0.2°C. Contact power: 6(2) A/250V. One output for controlling the heating (or cooling) valve and one output for controlling ventilation. Connections for outdoor Air and Water sensors (optional). Air recirculation function (only in Cooling mode and if a remote air sensor is connected). ON indicator light.

**Compliant with: 2001/95/EC – LVD 2014/35/EU – RoHS 2011/65/EU.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P07452</b>	230V	IP30	1	138

Dimensions on page 65

## FAN COIL 4T



Electronic thermostat for 2-pipe fan coils. ON/OFF switch (disables thermostat). Fan speed selector (3 speeds). Summer/Winter switch. Adjustment range: 5 to 35°C. Temperature differential: 0.2°C. Contact power: 6(2) A/250V. Dead zone adjustment: 1 to 10°C. Two independent outputs for controlling the heating and cooling valves and one output for controlling ventilation. Connections for outdoor Air and Water sensors (optional). Air recirculation function (only in Cooling mode and if a remote air sensor is connected).

**Compliant with: 2001/95/EC – LVD 2014/35/EU – RoHS 2011/65/EU.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P07453</b>	230V	IP30	1	138

Dimensions on page 65

## Climatic controllers

### RCL-HC



Digital climatic controller for heating only and heating/cooling systems with outdoor air temperature compensation. Recommended for flow temperature control with mixing valve with 230VAC 3-point actuator. Weekly programming, 9 pre-set programmes and 4 custom programmes, controlled on basis of outdoor temperature, outdoor temperature and water temperature display, maximum and minimum temperature limit, pump control, possible to connect a room thermostat. Predisposed for the installation of an antenna for use with RF 433 MHz thermostats and MILUX-HY Series humidistat (AN433 antenna not included). Ideal for controlling radiant panel heating/cooling systems. Flow water temperature 0 to 100°C. Power supply 230VAC 50 Hz. Pump control: 5A 230 VAC relay. Heating generator control: 5A 230 VAC relay. Air conditioning unit control: 5A 230 VAC relay. Mixing valve control: 3-point modulating (2 Triacs 75W Max 230 VAC).

Kit includes:

- climatic control unit;
  - outdoor temperature sensor with 2 m cable NTC 10 kΩ;
  - water temperature sensor (flow) comprising 5x45 cylindrical sensor with 3 m cable NTC 10 kΩ;
- Option for WSENS Series return water temperature probe.

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P04987</b>	230 VAC 50Hz	IP30	1	96

Dimensions on page 65

**OS-RF**

Wireless outdoor temperature sensor for RCL-HC Series climatic control units. Room temperature: -10 to 55°C. Protection rating IP 45. Power supply, 2.5V battery. AAA (LR03) alkaline: life 5 years. A single sensor can communicate with multiple controllers simultaneously.

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P04644</b>	AAA 2.5V alkaline batteries	IP45	1	84

Dimensions on page 65

**AN433**

Antenna for RCL-HC Series climatic control units for receiving 433 Mhz RF signals. Enables you to connect the following to RCL control units: MILUX HY thermostat/humidistat, OS-RF outdoor temperature sensor and all room thermostats and programmable room thermostats with radio frequency of 433 MHz Watts. Cable length 3 metres, dimensions 2cmx39cmx1.5cm, adhesive base.

Part no.	Reception	Cable	Pcs/ pack	Package
<b>P04510</b>	433Mhz	3m	1	70

**WSENS**

Water temperature probe (flow or return) NTC 10 kΩ.

Part no.	Notes	Pcs/ pack	Package
<b>PPLELE09995</b>	Cylindrical sensor 5x45 mm. L cable = 3m for TP Series pocket	1	50

**TP35**

Pocket for installation on pipe with 1/2" external thread. Suitable for WSENS temperature probes (P/N PPLELE09995).

**Compliant with MID 2014/32/EU.**

Part no.	Description	Length	Pcs/ pack	Package
<b>TP35B</b>	Brass	35mm	1	1

## Control and safety thermostats

### WTC



Compact contact thermostat with spring for mounting on pipes up to 2". Adjustment range: 30 to 90°C. Differential at 20°C < 10 K. Contact rating: 16 (4) A/230 V. Spring: L= 230 mm.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>P04075</b>	230V	IP40	1	87

Dimensions on page 65

### TRC100



Capillary control thermostat with 2 switching contacts. Copper capillary tube L= 900 mm (bulb 100 mm x Ø 6). Adjustment range: 30 to 90°C. Contact rating 16 (5) A-230 V.

Complete with knob.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Power supply	Temp. control range	Pcs/ pack	Package
<b>0408200</b>	230V	30–90°C	100	100

### TBC100



Capillary safety thermostat with manual resetting. Set temperature: 97°C±3°C. Copper capillary tube L= 900 mm (bulb 100 mm x Ø 6). Contact rating: 16 (5) A-230 V.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Power supply	Contact rating	Pcs/ pack	Package
<b>0408500</b>	230V	16 (5) A - 250V	125	125

### MTV



Bimetallic contact micro-thermostat for fan coils. Starts the fan at a pre-set temperature only. Faston version complete with 250 mm cables, terminal and spring for mounting on pipes. "Pre-wired" version with wired and IP 55 insulated thermostat, 300 mm connection cables and spring for mounting on pipes. Contact rating 10A (2.5) 250V. Contact opening temperature: 35°C. (Fan stops). Contact closing temperature: 42±3°C.

(Fan starts). The 0408303 Series is supplied with cables with 6.3mm F Faston connection on the terminal.

**Compliant with: LVD 2014/35/EU - EMC 2014/30/EU.**

Part no.	Power supply	Connection	Pcs/ pack	Package
<b>0408301</b>	230V	Faston	25	25
<b>0408303</b>	230V	Pre-wired	25	25

### CH30



Contact thermostat for max. 1/2" pipes. Suitable for automatic Summer/Winter switching for fan coil control. Operating range: 16 ±3.3°C - 26 ± 3.3°C.

T water <16°C: Red-Brown NC → Summer; T water >26°C: Red-Black NC → Winter.

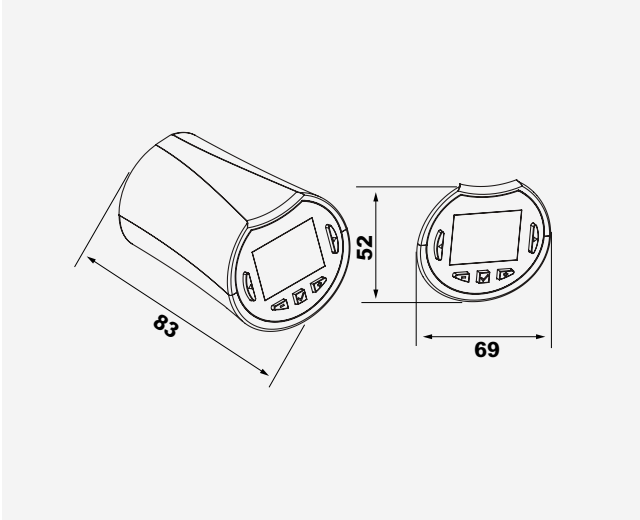
Contact rating 5A-230V switching. Complete with 3x1mm<sup>2</sup> cable L=0.3m.

Part no.	Contact rating	Cable	Pcs/ pack	Package
<b>CH30/1626L2</b>	5A - 230V	0.3m	1	1

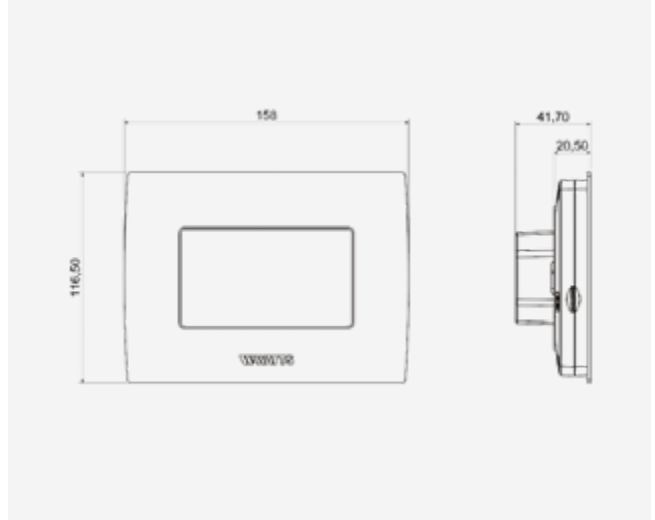


## Overall dimensions

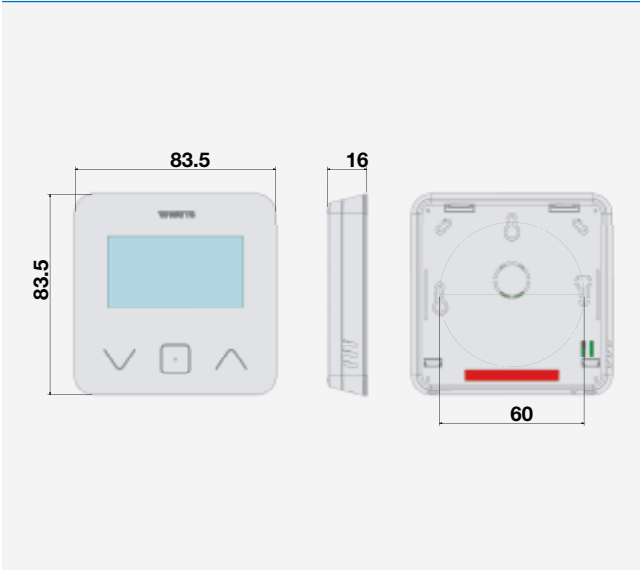
**BT-THR02 RF**



**CT02 RF**



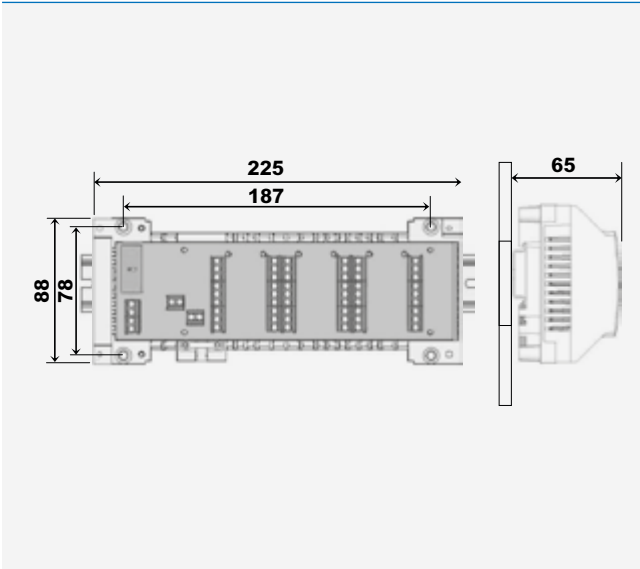
**BT-D03 RF**



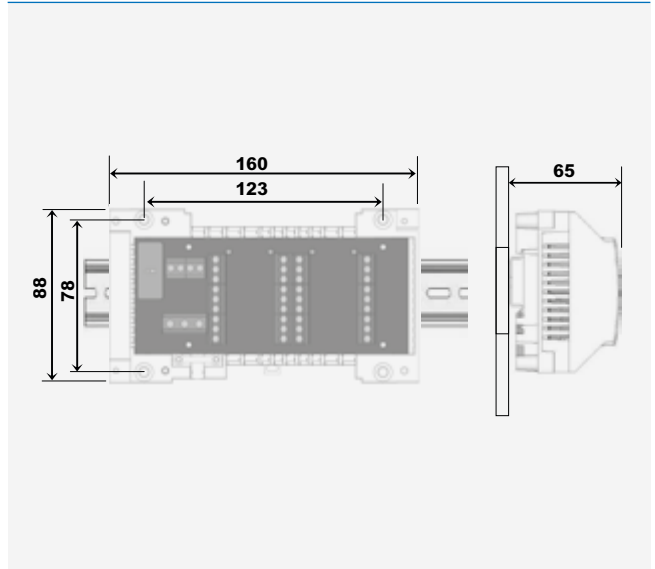
**BT-DP02 RF  
BT-DP02 RF RH**



**S6Z02 RF/M6Z02 RF/HCM02 RF**

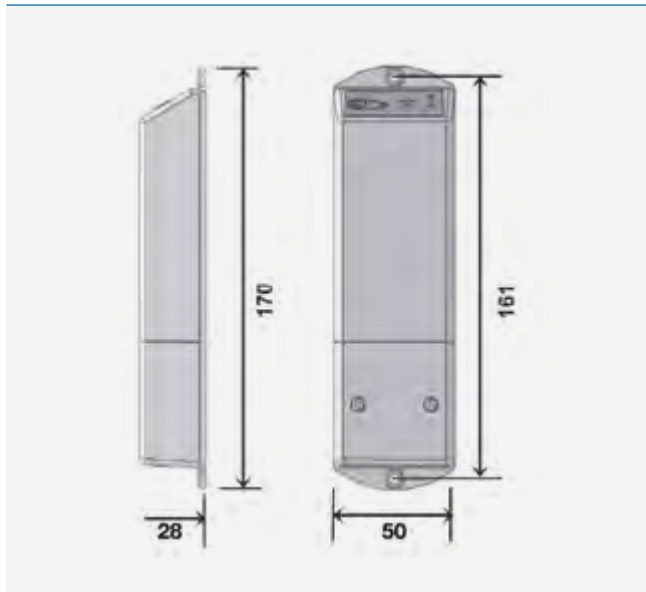


**S4Z02 RF**

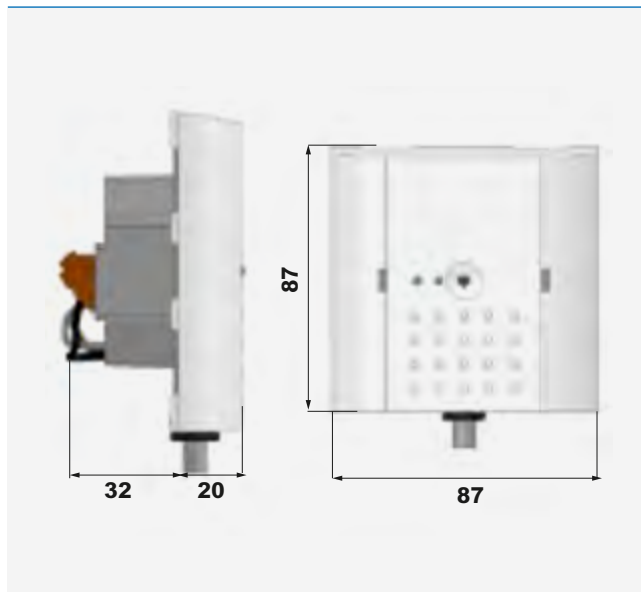


## Overall dimensions

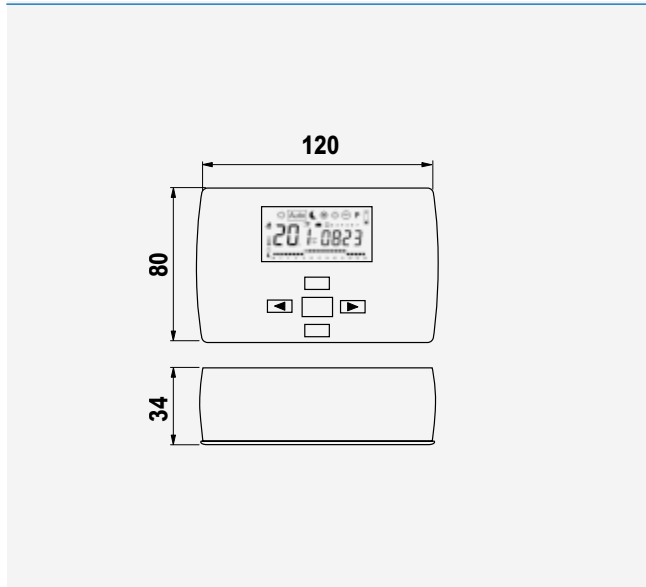
**WR02 RF**  
**WR02 RF FC**



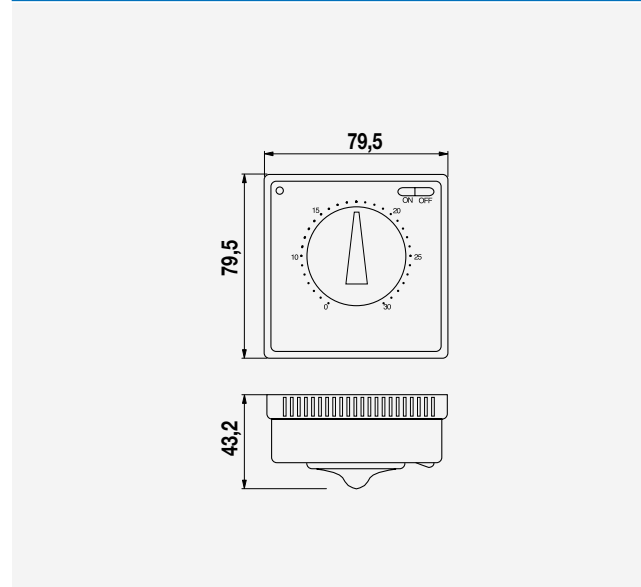
**FR02 RF**



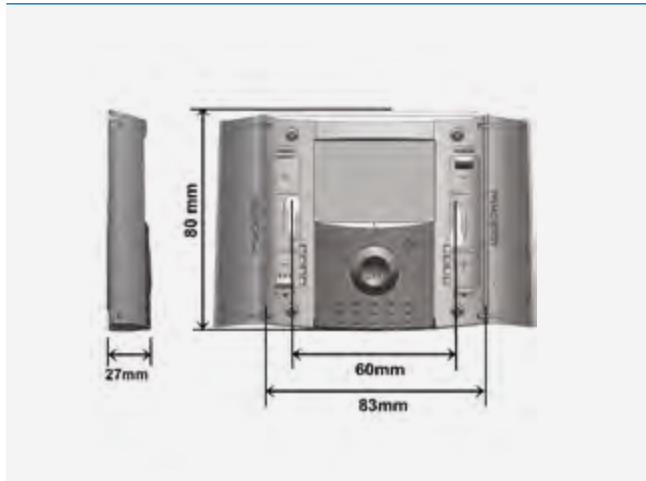
**MILUX WEEKLY**  
**MILUX WEEKLY RF**



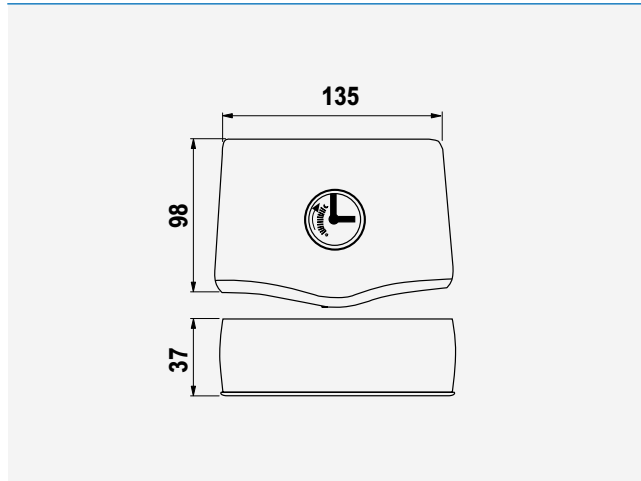
**BELUXTI/TIC/TOF**



**BTD/BTDP**

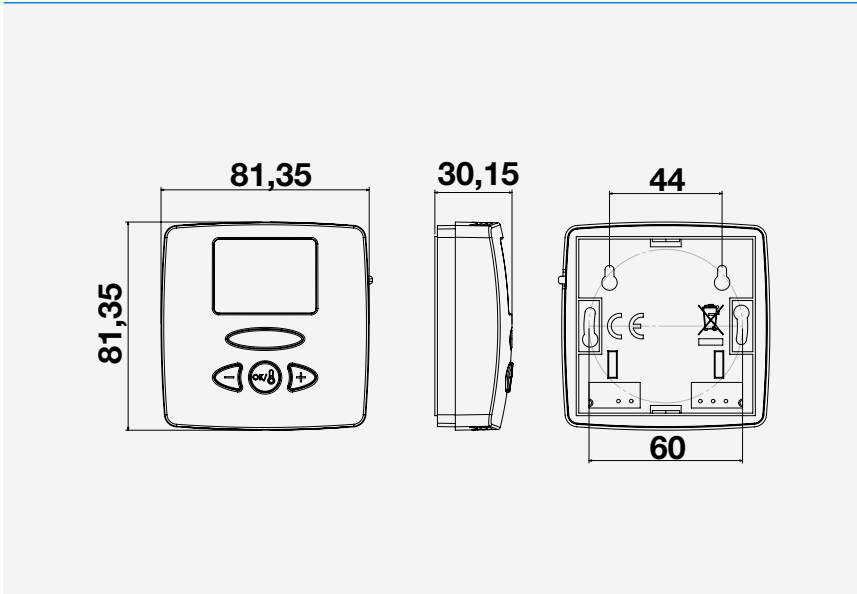


**BATTERY ELECTRONIC**

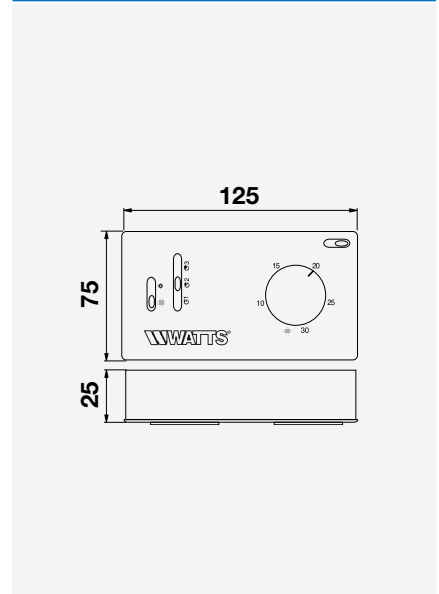


## Overall dimensions

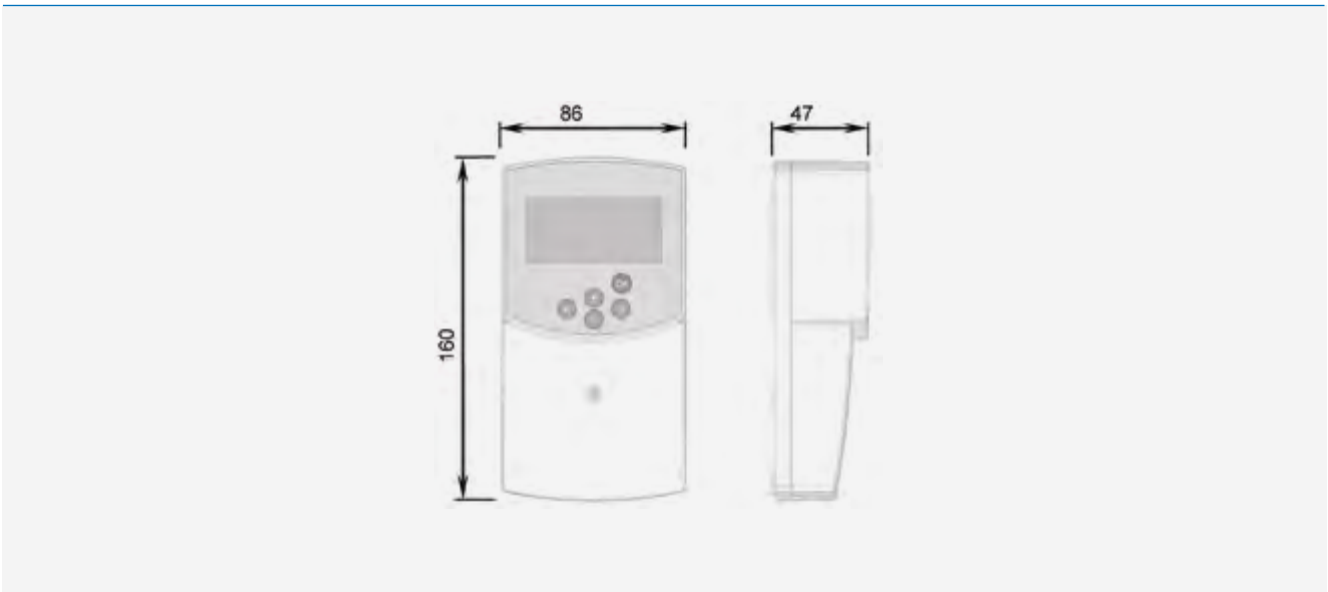
### WFHT-LCD



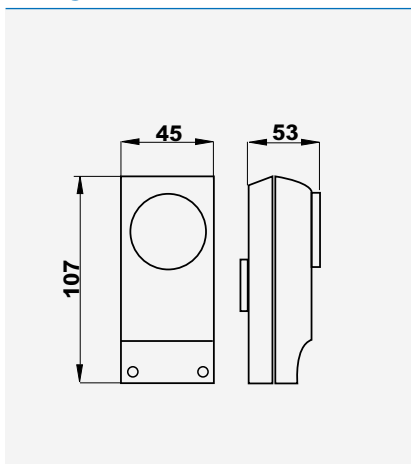
### FAN OPEN FAN COIL 2T FAN COIL 4T



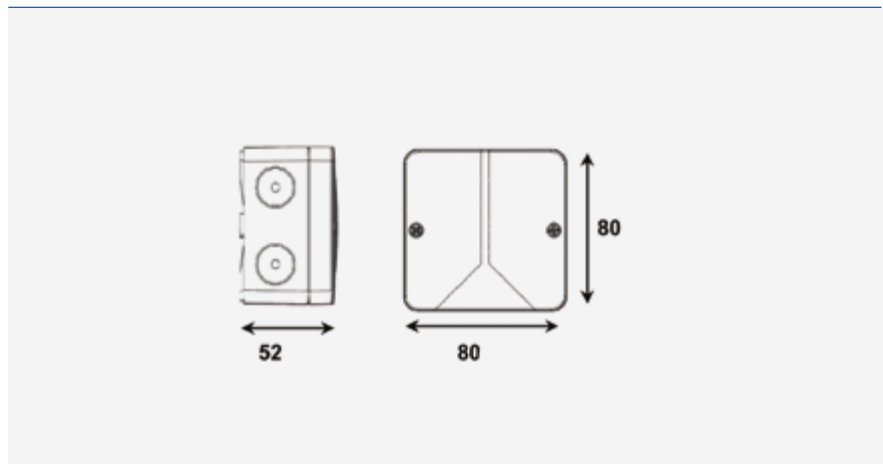
### RCL-HC



### WTC



### BT-OS02 RF OS RF





## Chapter 3

### Shut-off and check valves

**WATTS®**



### SYLAX Butterfly valve

**SCLA**  
A WATTS Brand

Epoxy-coated body and AISI 316 stainless steel disc  
Comprehensive range from DN25 to DN1200  
European certifications

## Chapter 3.1

# SHUT-OFF SYSTEMS

## Ball valves

### V3000



Body: brass. Full bore. Ball: chrome-plated brass. Seals: PTFE.

Max. temperature: 120°C. FF fitting.

Applications: general, heating, potable water and compatible fluid circuits.

**Approval: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PFA water	Package
<b>149B5039</b>	BRASS VALVE	10	3/8	20	30
<b>149B5040</b>	BRASS VALVE	15	1/2	20	20
<b>149B5041</b>	BRASS VALVE	20	3/4	20	15
<b>149B5042</b>	BRASS VALVE	25	1	20	10
<b>149B5043</b>	BRASS VALVE	32	1 1/4	16	10
<b>149B5044</b>	BRASS VALVE	40	1 1/2	16	5
<b>149B5045</b>	BRASS VALVE	50	2	16	2
<b>149B5054</b>	BRASS VALVE	65	2 1/2	10	1
<b>149B5055</b>	BRASS VALVE	80	3	10	1
<b>149B5056</b>	BRASS VALVE	100	4	10	1

Dimensions on page 104

### V3000 FM



Body: brass. Full bore. Ball: chrome-plated brass. Seal: PTFE.

Max. temperature: 80°C. MF fittings.

Applications: general, heating, potable water and compatible fluid circuits.

**Approval: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PFA water	Package
<b>149B5351</b>	BRASS VALVE	10	3/8	32	1
<b>149B5352</b>	BRASS VALVE	15	1/2	25	1
<b>149B5353</b>	BRASS VALVE	20	3/4	25	1
<b>149B5354</b>	BRASS VALVE	25	1	25	1
<b>149B5355</b>	BRASS VALVE	32	1 1/4	20	1
<b>149B5356</b>	BRASS VALVE	40	1 1/2	20	1
<b>149B5357</b>	BRASS VALVE	50	2	20	1

**V665**

Body: brass. Reduced bore. Ball: chrome-plated brass. Seal: PTFE  
 Max. temperature: 80°C. FF fitting.  
 Applications: general, heating, potable water and compatible fluid circuits.  
**Approval: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PFA water	Package
<b>149B5046</b>	BRASS VALVE	8	1/4	20	1
<b>149B5047</b>	BRASS VALVE	10	3/8	20	1
<b>149B5048</b>	BRASS VALVE	15	1/2	20	1
<b>149B5049</b>	BRASS VALVE	20	3/4	20	1
<b>149B5050</b>	BRASS VALVE	25	1	20	1
<b>149B5051</b>	BRASS VALVE	32	1 1/4	16	1
<b>149B5052</b>	BRASS VALVE	40	1 1/2	16	1
<b>149B5053</b>	BRASS VALVE	50	2	16	1
<b>149B5194</b>	BRASS VALVE	65	2 1/2	10	1

Dimensions on page 104

**V665PAP**

Body: brass. Reduced bore. Ball: chrome-plated brass. Seals: PTFE  
 Max. temperature: 80°C. FF fitting.  
 Applications: general, heating, potable water and compatible fluid circuits.  
**Approval: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PFA water	Package
<b>149B5112</b>	BRASS VALVE	8	1/4	20	1
<b>149B5113</b>	BRASS VALVE	10	3/8	20	1
<b>149B5114</b>	BRASS VALVE	15	1/2	20	1
<b>149B5115</b>	BRASS VALVE	20	3/4	20	1
<b>149B5116</b>	BRASS VALVE	25	1	20	1

Dimensions on page 104

## Three-piece ball valves

### X3777



Full bore. Body: 316 stainless steel (CF8M). Ball: 316 stainless steel. Seals: PTFE  
Handle with locking system. FF BSP threaded fitting.

Option: socket welding (X3777S) and butt welding (X3777B) fitting.

Applications: industry, high pressure, high temperature.

**Directive 2014/68/EU.**

Part no.	Description	DN mm	DN"	PFA water	Package
<b>149B12526</b>	3-PIECE STAINLESS STEEL VALVE	8	1/4	63	1
<b>149B12527</b>	3-PIECE STAINLESS STEEL VALVE	10	3/8	63	1
<b>149B12528</b>	3-PIECE STAINLESS STEEL VALVE	15	1/2	63	1
<b>149B12529</b>	3-PIECE STAINLESS STEEL VALVE	20	3/4	63	1
<b>149B12530</b>	3-PIECE STAINLESS STEEL VALVE	25	1	63	1
<b>149B12531</b>	3-PIECE STAINLESS STEEL VALVE	32	1 1/4	63	1
<b>149B12532</b>	3-PIECE STAINLESS STEEL VALVE	40	1 1/2	63	1
<b>149B12533</b>	3-PIECE STAINLESS STEEL VALVE	50	2	40	1
<b>149B12534</b>	3-PIECE STAINLESS STEEL VALVE	65	2 1/2	25	1
<b>149B12535</b>	3-PIECE STAINLESS STEEL VALVE	80	3	25	1
<b>149B12536</b>	3-PIECE STAINLESS STEEL VALVE	100	4	25	1

Dimensions on page 105

### X3444



Full bore. Body: carbon steel. Ball: 316 stainless steel. Seals: PTFE  
Handle with locking system. FF BSP threaded fitting.

Option: socket welding (X3444S) and butt welding (X3444B) fitting.

Applications: industry, high pressure, high temperature.

**Directive 2014/68/EU.**

Part no.	Description	DN mm	DN"	PFA water	Package
<b>149B12540</b>	3-PIECE STEEL VALVE	8	1/4	63	1
<b>149B12541</b>	3-PIECE STEEL VALVE	10	3/8	63	1
<b>149B12542</b>	3-PIECE STEEL VALVE	15	1/2	63	1
<b>149B12543</b>	3-PIECE STEEL VALVE	20	3/4	63	1
<b>149B12544</b>	3-PIECE STEEL VALVE	25	1	63	1
<b>149B12545</b>	3-PIECE STEEL VALVE	32	1 1/4	63	1
<b>149B12546</b>	3-PIECE STEEL VALVE	40	1 1/2	63	1
<b>149B12547</b>	3-PIECE STEEL VALVE	50	2	40	1
<b>149B12548</b>	3-PIECE STEEL VALVE	65	2 1/2	25	1
<b>149B12549</b>	3-PIECE STEEL VALVE	80	3	25	1
<b>149B12550</b>	3-PIECE STEEL VALVE	100	4	25	1

Dimensions on page 105



## Two-piece ball valves

### X2777



Full bore. Body: 316 stainless steel (CF8M). Ball: 316 stainless steel. Seals: PTFE  
Handle with locking system. FF BSP threaded fitting.

Applications: industry, high pressure, high temperature.

Directive 2014/68/EU.

Part no.	Description	DN mm	DN"	PFA water	Package
<b>149B12516</b>	2-PIECE STAINLESS STEEL VALVE	8	1/4	63	1
<b>149B12517</b>	2-PIECE STAINLESS STEEL VALVE	10	3/8	63	1
<b>149B12518</b>	2-PIECE STAINLESS STEEL VALVE	15	1/2	63	1
<b>149B12519</b>	2-PIECE STAINLESS STEEL VALVE	20	3/4	63	1
<b>149B12520</b>	2-PIECE STAINLESS STEEL VALVE	25	1	63	1
<b>149B12521</b>	2-PIECE STAINLESS STEEL VALVE	32	1 1/4	63	1
<b>149B12522</b>	2-PIECE STAINLESS STEEL VALVE	40	1 1/2	63	1
<b>149B12523</b>	2-PIECE STAINLESS STEEL VALVE	50	2	63	1
<b>149B12524</b>	2-PIECE STAINLESS STEEL VALVE	65	2 1/2	63	1
<b>149B12525</b>	2-PIECE STAINLESS STEEL VALVE	80	3	63	1

Dimensions on page 105

## One-piece ball valves

### X1666



Full bore. Body: 316 stainless steel (CF8M). Ball: 316 stainless steel. Seals: PTFE  
FF BSP threaded fitting. Applications: industry, high pressure, high temperature.

Directive 2014/68/EU

Part no.	Description	DN mm	DN"	PFA water	Package
<b>149B12508</b>	ONE-PIECE STAINLESS STEEL VALVE	8	1/4	63	1
<b>149B12509</b>	ONE-PIECE STAINLESS STEEL VALVE	10	3/8	63	1
<b>149B12510</b>	ONE-PIECE STAINLESS STEEL VALVE	15	1/2	63	1
<b>149B12511</b>	ONE-PIECE STAINLESS STEEL VALVE	20	3/4	63	1
<b>149B12512</b>	ONE-PIECE STAINLESS STEEL VALVE	25	1	63	1
<b>149B12513</b>	ONE-PIECE STAINLESS STEEL VALVE	32	1 1/4	63	1
<b>149B12514</b>	ONE-PIECE STAINLESS STEEL VALVE	40	1 1/2	63	1
<b>149B12515</b>	ONE-PIECE STAINLESS STEEL VALVE	50	2	63	1

Dimensions on page 105



## Sylax butterfly valve

### WITH COMPOSITE NOTCHED HAND-LEVER

Padlockable 5-position notched hand-lever. Insulating composite material. Corrosion-resistant.



EPOXY

**Butterfly: epoxy-coated GGG40 cast iron.**

**Sleeve:**

Temperature: -15°C / +120°C.

Body temperature: see page 72.

Applications: potable water.

**Approvals: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA, PED 2014/68/EU.**

3

### WAFER TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G032104</b>	GG25	EPDM	50	PN 6/10/16/ASA 150	16	1
<b>149G032114</b>	GG25	EPDM	65	PN 6/10/16/ASA 150	16	1
<b>149G032124</b>	GG25	EPDM	80	PN 6/10/16/ASA 150	16	1
<b>149G032134</b>	GG25	EPDM	100	PN 6/10/16/ASA 150	16	1
<b>149G032144</b>	GG25	EPDM	125	PN 6/10/16/ASA 150	16	1
<b>149G032154</b>	GG25	EPDM	150	PN 6/10/16/ASA 150	16	1
<b>149G039290</b>	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
<b>149G039291</b>	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
<b>149G039292</b>	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
<b>149G039293</b>	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
<b>149G039294</b>	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
<b>149G039295</b>	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1

Dimensions on page 106

### LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G032853</b>	GG25	EPDM	50	PN 10/16	16	1
<b>149G032863</b>	GG25	EPDM	65	PN 10/16	16	1
<b>149G032873</b>	GG25	EPDM	80	PN 10/16	16	1
<b>149G032883</b>	GG25	EPDM	100	PN 10/16	16	1
<b>149G032893</b>	GG25	EPDM	125	PN 10/16	16	1
<b>149G032903</b>	GG25	EPDM	150	PN 10/16	16	1
<b>149G039296</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G039297</b>	GGG40	EPDM	65	PN 10/16	16	1
<b>149G039298</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G039299</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G039300</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G058930</b>	GGG40	EPDM	150	PN 10/16	16	1

Dimensions on page 106



**STAINLESS  
STEEL**

**Butterfly: 316 stainless steel.**

Sleeve:

EPDM: temperature: -15 °C to +120 °C.

Body temperature: see page 72.

NITRILE: temperature: +5°C / +85°C.

Applications:

EPDM: potable water, heating, air conditioning.

NITRILE: general and industrial circuits, hydrocarbons, untreated water.

**EPDM approvals: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA, PED 2014/68/EU.**

**WAFER TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G032035	GG25	EPDM	25	PN 6/10/16/ASA 150	10	1
149G011255	GG25	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G011267	GG25	EPDM	50	PN 6/10/16/ASA 150	16	1
149G011288	GG25	EPDM	65	PN 6/10/16/ASA 150	16	1
149G011298	GG25	EPDM	80	PN 6/10/16/ASA 150	16	1
149G011317	GG25	EPDM	100	PN 6/10/16/ASA 150	16	1
149G011335	GG25	EPDM	125	PN 6/10/16/ASA 150	16	1
149G011344	GG25	EPDM	150	PN 6/10/16/ASA 150	16	1
149G035533	GG25	NITRILE	25	PN 6/10/16/ASA 150	10	1
149G018769	GG25	NITRILE	32/40	PN 6/10/16/ASA 150	16	1
149G011379	GG25	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G011388	GG25	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G011395	GG25	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G011400	GG25	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G011405	GG25	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G011410	GG25	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G039302	GGG40	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G039303	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
149G039304	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
149G039305	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
149G039306	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
149G039307	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
149G039308	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
149G039309	GGG40	NITRILE	32/40	PN 6/10/16/ASA 150	16	1
149G039310	GGG40	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G039311	GGG40	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G039312	GGG40	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G039313	GGG40	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G039314	GGG40	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G039315	GGG40	NITRILE	150	PN 6/10/16/ASA 150	16	1

Dimensions on page 106

For details regarding the pressure/temperature curve, see the technical data sheet.

## LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G011683</b>	GG25	EPDM	50	PN 10/16	16	1
<b>149G011687</b>	GG25	EPDM	65	PN 10/16	16	1
<b>149G011692</b>	GG25	EPDM	80	PN 10/16	16	1
<b>149G011697</b>	GG25	EPDM	100	PN 10/16	16	1
<b>149G011702</b>	GG25	EPDM	125	PN 10/16	16	1
<b>149G011706</b>	GG25	EPDM	150	PN 10/16	16	1
<hr/>						
<b>149G046562</b>	GG25	NITRILE	50	PN 10/16	16	1
<b>149G019077</b>	GG25	NITRILE	65	PN 10/16	16	1
<b>149G019080</b>	GG25	NITRILE	80	PN 10/16	16	1
<b>149G019083</b>	GG25	NITRILE	100	PN 10/16	16	1
<b>149G019086</b>	GG25	NITRILE	125	PN 10/16	16	1
<b>149G019089</b>	GG25	NITRILE	150	PN 10/16	16	1
<hr/>						
<b>149G039316</b>	GGG40	EPDM	32	PN 10/16	16	1
<b>149G039317</b>	GGG40	EPDM	40	PN 10/16	16	1
<b>149G039318</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G039319</b>	GGG40	EPDM	65	PN 10/16	16	1
<b>149G038236</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G039320</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G039321</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G039322</b>	GGG40	EPDM	150	PN 10/16	16	1
<hr/>						
<b>149G039323</b>	GGG40	NITRILE	32	PN 10/16	16	1
<b>149G039324</b>	GGG40	NITRILE	40	PN 10/16	16	1
<b>149G039325</b>	GGG40	NITRILE	50	PN 10/16	16	1
<b>149G039326</b>	GGG40	NITRILE	65	PN 10/16	16	1
<b>149G039327</b>	GGG40	NITRILE	80	PN 10/16	16	1
<b>149G039328</b>	GGG40	NITRILE	100	PN 10/16	16	1
<b>149G039329</b>	GGG40	NITRILE	125	PN 10/16	16	1
<b>149G039330</b>	GGG40	NITRILE	150	PN 10/16	16	1

Dimensions on page 106

## WITH CAST-IRON NOTCHED HAND-LEVER

Padlockable 10-position notched hand-lever.



EPOXY

**Butterfly: epoxy-coated GGG40 cast iron.**

Sleeve:

EPDM: temperature: -15 °C to +120 °C.

Body temperature: see page 72.

NITRILE: temperature: +5°C / +85°C.

Applications:

EPDM: potable water.

NITRILE: untreated water.

**EPDM approvals: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA, PED 2014/68/EU.**

## WAFER TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G032103</b>	GG25	EPDM	50	PN 6/10/16/ASA 150	16	1
<b>149G032113</b>	GG25	EPDM	65	PN 6/10/16/ASA 150	16	1
<b>149G032123</b>	GG25	EPDM	80	PN 6/10/16/ASA 150	16	1
<b>149G032133</b>	GG25	EPDM	100	PN 6/10/16/ASA 150	16	1
<b>149G032143</b>	GG25	EPDM	125	PN 6/10/16/ASA 150	16	1
<b>149G032153</b>	GG25	EPDM	150	PN 6/10/16/ASA 150	16	1
<b>149G093562</b>	GG25	EPDM	200	PN 6/10/16/ASA 150	16	1
<b>149G43170</b>	GG25	EPDM	250	PN 6/10/16/ASA 150	16	1
<b>149G43171</b>	GG25	EPDM	300	PN 6/10/16/ASA 150	16	1
<hr/>						
<b>149G045107</b>	GG25	NITRILE	50	PN 6/10/16/ASA 150	16	1
<b>149G045108</b>	GG25	NITRILE	65	PN 6/10/16/ASA 150	16	1
<b>149G045109</b>	GG25	NITRILE	80	PN 6/10/16/ASA 150	16	1
<b>149G045110</b>	GG25	NITRILE	100	PN 6/10/16/ASA 150	16	1
<b>149G045111</b>	GG25	NITRILE	125	PN 6/10/16/ASA 150	16	1
<b>149G045112</b>	GG25	NITRILE	150	PN 6/10/16/ASA 150	16	1
<b>149G045113</b>	GG25	NITRILE	200	PN 6/10/16/ASA 150	16	1
<b>149G045114</b>	GG25	NITRILE	250	PN 6/10/16/ASA 150	10	1
<hr/>						
<b>149G036113</b>	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
<b>149G039453</b>	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
<b>149G023622</b>	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
<b>149G038573</b>	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
<b>149G038574</b>	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
<b>149G038575</b>	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
<b>149G039454</b>	GGG40	EPDM	200	PN 6/10/16/ASA 150	16	1
<b>149G039455</b>	GGG40	EPDM	250	PN 6/10/16/ASA 150	16	1
<b>149G039456</b>	GGG40	EPDM	300	PN 6/10/16/ASA 150	16	1
<hr/>						
<b>149G045116</b>	GGG40	NITRILE	50	PN 6/10/16/ASA 150	16	1
<b>149G045117</b>	GGG40	NITRILE	65	PN 6/10/16/ASA 150	16	1
<b>149G045118</b>	GGG40	NITRILE	80	PN 6/10/16/ASA 150	16	1
<b>149G045119</b>	GGG40	NITRILE	100	PN 6/10/16/ASA 150	16	1
<b>149G045120</b>	GGG40	NITRILE	125	PN 6/10/16/ASA 150	16	1
<b>149G045121</b>	GGG40	NITRILE	150	PN 6/10/16/ASA 150	16	1
<b>149G045122</b>	GGG40	NITRILE	200	PN 6/10/16/ASA 150	16	1
<b>149G045123</b>	GGG40	NITRILE	250	PN 6/10/16/ASA 150	10	1

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## LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G032852</b>	GG25	EPDM	50	PN 10/16	16	1
<b>149G032862</b>	GG25	EPDM	65	PN 10/16 4 HOLES	16	1
<b>149G032872</b>	GG25	EPDM	80	PN 10/16	16	1
<b>149G032882</b>	GG25	EPDM	100	PN 10/16	16	1
<b>149G032892</b>	GG25	EPDM	125	PN 10/16	16	1
<b>149G032902</b>	GG25	EPDM	150	PN 10/16	16	1
<b>149G032912</b>	GG25	EPDM	200	PN10	10	1
<b>149G032921</b>	GG25	EPDM	250	PN10	10	1
<b>149G032929</b>	GG25	EPDM	300	PN10	10	1
<b>149G045125</b>	GG25	NITRILE	50	PN 10/16	16	1
<b>149G045126</b>	GG25	NITRILE	65	PN 10/16 4 HOLES	16	1
<b>149G045127</b>	GG25	NITRILE	80	PN 10/16	16	1
<b>149G045128</b>	GG25	NITRILE	100	PN 10/16	16	1
<b>149G045129</b>	GG25	NITRILE	125	PN 10/16	16	1
<b>149G045130</b>	GG25	NITRILE	150	PN 10/16	16	1
<b>149G045131</b>	GG25	NITRILE	200	PN10	10	1
<b>149G045132</b>	GG25	NITRILE	250	PN10	10	1
<b>149G039457</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G039458</b>	GGG40	EPDM	65	PN 10/16 4 HOLES	16	1
<b>149G039459</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G039460</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G039461</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G039462</b>	GGG40	EPDM	150	PN 10/16	16	1
<b>149G039463</b>	GGG40	EPDM	200	PN16	16	1
<b>149G039464</b>	GGG40	EPDM	250	PN16	16	1
<b>149G039465</b>	GGG40	EPDM	300	PN16	16	1
<b>149G039466</b>	GGG40	EPDM	200	PN10	10	1
<b>149G039467</b>	GGG40	EPDM	250	PN10	10	1
<b>149G039468</b>	GGG40	EPDM	300	PN10	10	1
<b>149G045134</b>	GGG40	NITRILE	50	PN 10/16	16	1
<b>149G045135</b>	GGG40	NITRILE	65	PN 10/16 4 HOLES	16	1
<b>149G045136</b>	GGG40	NITRILE	80	PN 10/16	16	1
<b>149G045137</b>	GGG40	NITRILE	100	PN 10/16	16	1
<b>149G045138</b>	GGG40	NITRILE	125	PN 10/16	16	1
<b>149G045139</b>	GGG40	NITRILE	150	PN 10/16	16	1
<b>149G045140</b>	GGG40	NITRILE	200	PN16	16	1
<b>149G045141</b>	GGG40	NITRILE	250	PN16	10	1
<b>149G045143</b>	GGG40	NITRILE	200	PN10	10	1
<b>149G045144</b>	GGG40	NITRILE	250	PN10	10	1

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**STAINLESS  
STEEL**

### Butterfly: 316 stainless steel.

Sleeve:

EPDM: temperature: -15 °C to +120 °C.

Body temperature: see page 72.

NITRILE: temperature: +5°C / +85°C.

Applications:

EPDM: potable water, heating, air conditioning.

NITRILE: general and industrial circuits, hydrocarbons, untreated water.

**EPDM approvals: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA, PED 2014/68/EU.**

## WAFER TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G059712	GG25	EPDM	25	PN 6/10/16/ASA 150	10	1
149G011254	GG25	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G011266	GG25	EPDM	50	PN 6/10/16/ASA 150	16	1
149G011287	GG25	EPDM	65	PN 6/10/16/ASA 150	16	1
149G011297	GG25	EPDM	80	PN 6/10/16/ASA 150	16	1
149G011316	GG25	EPDM	100	PN 6/10/16/ASA 150	16	1
149G011334	GG25	EPDM	125	PN 6/10/16/ASA 150	16	1
149G059260	GG25	EPDM	150	PN 6/10/16/ASA 150	16	1
149G016281	GG25	EPDM	200	PN 6/10/16/ASA 150	16	1
149G097060	GG25	EPDM	250	PN 6/10/16/ASA 150	16	1
149G023904	GG25	EPDM	300	PN 6/10/16/ASA 150	16	1
149G036917	GG25	NITRILE	25	PN 6/10/16/ASA 150	10	1
149G011375	GG25	NITRILE	32/40	PN 6/10/16/ASA 150	16	1
149G011378	GG25	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G011387	GG25	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G011394	GG25	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G011399	GG25	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G011404	GG25	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G011409	GG25	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G016283	GG25	NITRILE	200	PN 6/10/16/ASA 150	16	1
149G016284	GG25	NITRILE	250	PN 6/10/16/ASA 150	10	1
149G012313	GGG40	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G012322	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
149G012332	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
149G012339	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
149G059541	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
149G012360	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
149G012368	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
149G42089	GGG40	EPDM	200	PN 6/10/16/ASA 150	16	1
149G42090	GGG40	EPDM	250	PN 6/10/16/ASA 150	16	1
149G42091	GGG40	EPDM	300	PN 6/10/16/ASA 150	16	1
149G019665	GGG40	NITRILE	32/40	PN 6/10/16/ASA 150	16	1
149G026594	GGG40	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G012399	GGG40	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G012401	GGG40	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G012403	GGG40	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G012406	GGG40	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G012409	GGG40	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G42109	GGG40	NITRILE	200	PN 6/10/16/ASA 150	16	1
149G42110	GGG40	NITRILE	250	PN 6/10/16/ASA 150	10	1

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For details regarding the pressure/temperature curve, see the technical data sheet.



## LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G028008	GG25	EPDM	50	PN 10/16	16	1
149G011686	GG25	EPDM	65	PN 10/16 4 HOLES	16	1
149G011691	GG25	EPDM	80	PN 10/16	16	1
149G011696	GG25	EPDM	100	PN 10/16	16	1
149G028007	GG25	EPDM	125	PN 10/16	16	1
149G028006	GG25	EPDM	150	PN 10/16	16	1
149G092060	GG25	EPDM	200	PN10	10	1
149G41490	GG25	EPDM	250	PN10	10	1
149G41491	GG25	EPDM	300	PN10	10	1
149G011720	GG25	NITRILE	50	PN 10/16	16	1
149G011722	GG25	NITRILE	65	PN 10/16 4 HOLES	16	1
149G011724	GG25	NITRILE	80	PN 10/16	16	1
149G011726	GG25	NITRILE	100	PN 10/16	16	1
149G011728	GG25	NITRILE	125	PN 10/16	16	1
149G059358	GG25	NITRILE	150	PN 10/16	16	1
149G41509	GG25	NITRILE	200	PN10	10	1
149G025988	GG25	NITRILE	250	PN10	10	1
149G016753	GGG40	EPDM	32	PN 10/16	16	1
149G016754	GGG40	EPDM	40	PN 10/16	16	1
149G016219	GGG40	EPDM	50	PN 10/16	16	1
149G012574	GGG40	EPDM	65	PN 10/16 4 HOLES	16	1
149G012577	GGG40	EPDM	80	PN 10/16	16	1
149G012582	GGG40	EPDM	100	PN 10/16	16	1
149G012584	GGG40	EPDM	125	PN 10/16	16	1
149G012586	GGG40	EPDM	150	PN 10/16	16	1
149G42492	GGG40	EPDM	200	PN16	16	1
149G42493	GGG40	EPDM	250	PN16	16	1
149G42494	GGG40	EPDM	300	PN16	16	1
149G42489	GGG40	EPDM	200	PN10	10	1
149G42490	GGG40	EPDM	250	PN10	10	1
149G42491	GGG40	EPDM	300	PN10	10	1
149G016755	GGG40	NITRILE	32	PN 10/16	16	1
149G059626	GGG40	NITRILE	40	PN 10/16	16	1
149G016303	GGG40	NITRILE	50	PN 10/16	16	1
149G059628	GGG40	NITRILE	65	PN 10/16 4 HOLES	16	1
149G038678	GGG40	NITRILE	80	PN 10/16	16	1
149G012602	GGG40	NITRILE	100	PN 10/16	16	1
149G012605	GGG40	NITRILE	125	PN 10/16	16	1
149G012607	GGG40	NITRILE	150	PN 10/16	16	1
149G42512	GGG40	NITRILE	200	PN16	16	1
149G42513	GGG40	NITRILE	250	PN16	10	1
149G42509	GGG40	NITRILE	200	PN10	10	1
149G42510	GGG40	NITRILE	250	PN10	10	1

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**ALUMINIUM  
BRONZE**

**Butterfly: aluminium bronze.**

Sleeve:

EPDM: temperature: -15 °C to +120 °C.

Body temperature: see page 72.

NITRILE: temperature: +5°C / +85°C.

Applications:

EPDM: potable water, swimming pool water.

NITRILE: sea water.

Approvals:

EPDM: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA. PED 2014/68/EU.

RINA, Bureau Veritas, DNV.

**WAFER TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G011158	GG25	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G011172	GG25	EPDM	50	PN 6/10/16/ASA 150	16	1
149G011177	GG25	EPDM	65	PN 6/10/16/ASA 150	16	1
149G011181	GG25	EPDM	80	PN 6/10/16/ASA 150	16	1
149G011186	GG25	EPDM	100	PN 6/10/16/ASA 150	16	1
149G011192	GG25	EPDM	125	PN 6/10/16/ASA 150	16	1
149G011195	GG25	EPDM	150	PN 6/10/16/ASA 150	16	1
149G016277	GG25	EPDM	200	PN 6/10/16/ASA 150	16	1
149G41050	GG25	EPDM	250	PN 6/10/16/ASA 150	16	1
149G023902	GG25	EPDM	300	PN 6/10/16/ASA 150	16	1
149G011207	GG25	NITRILE	32/40	PN 6/10/16/ASA 150	16	1
149G011213	GG25	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G011218	GG25	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G011223	GG25	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G011226	GG25	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G011229	GG25	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G011233	GG25	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G016280	GG25	NITRILE	200	PN 6/10/16/ASA 150	16	1
149G016361	GG25	NITRILE	250	PN 6/10/16/ASA 150	10	1
149G012273	GGG40	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G016135	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
149G019541	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
149G016136	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
149G019549	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
149G019553	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
149G012282	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
149G42049	GGG40	EPDM	200	PN 6/10/16/ASA 150	16	1
149G42050	GGG40	EPDM	250	PN 6/10/16/ASA 150	16	1
149G42051	GGG40	EPDM	300	PN 6/10/16/ASA 150	16	1
149G016864	GGG40	NITRILE	32/40	PN 6/10/16/ASA 150	16	1
149G012293	GGG40	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G012295	GGG40	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G012297	GGG40	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G016029	GGG40	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G012300	GGG40	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G016296	GGG40	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G42069	GGG40	NITRILE	200	PN 6/10/16/ASA 150	16	1
149G42070	GGG40	NITRILE	250	PN 6/10/16/ASA 150	10	1

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## LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G018982	GG25	EPDM	50	PN 10/16	16	1
149G018985	GG25	EPDM	65	PN 10/16 4 HOLES	16	1
149G018988	GG25	EPDM	80	PN 10/16	16	1
149G018991	GG25	EPDM	100	PN 10/16	16	1
149G018994	GG25	EPDM	125	PN 10/16	16	1
149G018997	GG25	EPDM	150	PN 10/16	16	1
149G41449	GG25	EPDM	200	PN10	10	1
149G41450	GG25	EPDM	250	PN10	10	1
149G41451	GG25	EPDM	300	PN10	10	1
149G019010	GG25	NITRILE	50	PN 10/16	16	1
149G016157	GG25	NITRILE	65	PN 10/16 4 HOLES	16	1
149G016158	GG25	NITRILE	80	PN 10/16	16	1
149G016299	GG25	NITRILE	100	PN 10/16	16	1
149G019022	GG25	NITRILE	125	PN 10/16	16	1
149G019025	GG25	NITRILE	150	PN 10/16	16	1
149G41469	GG25	NITRILE	200	PN10	10	1
149G41470	GG25	NITRILE	250	PN10	10	1
149G012527	GGG40	EPDM	32	PN 10/16	16	1
149G035531	GGG40	EPDM	40	PN 10/16	16	1
149G019922	GGG40	EPDM	50	PN 10/16	16	1
149G012534	GGG40	EPDM	65	PN 10/16 4 HOLES	16	1
149G019930	GGG40	EPDM	80	PN 10/16	16	1
149G019934	GGG40	EPDM	100	PN 10/16	16	1
149G019938	GGG40	EPDM	125	PN 10/16	16	1
149G019942	GGG40	EPDM	150	PN 10/16	16	1
149G42452	GGG40	EPDM	200	PN16	16	1
149G42453	GGG40	EPDM	250	PN16	16	1
149G42454	GGG40	EPDM	300	PN16	16	1
149G42449	GGG40	EPDM	200	PN10	10	1
149G42450	GGG40	EPDM	250	PN10	10	1
149G42451	GGG40	EPDM	300	PN10	10	1
149G019968	GGG40	NITRILE	32	PN 10/16	16	1
149G019972	GGG40	NITRILE	40	PN 10/16	16	1
149G058955	GGG40	NITRILE	50	PN 10/16	16	1
149G044002	GGG40	NITRILE	65	PN 10/16 4 HOLES	16	1
149G019984	GGG40	NITRILE	80	PN 10/16	16	1
149G019988	GGG40	NITRILE	100	PN 10/16	16	1
149G019992	GGG40	NITRILE	125	PN 10/16	16	1
149G019996	GGG40	NITRILE	150	PN 10/16	16	1
149G42472	GGG40	NITRILE	200	PN16	16	1
149G42473	GGG40	NITRILE	250	PN16	10	1
149G42469	GGG40	NITRILE	200	PN10	10	1
149G42470	GGG40	NITRILE	250	PN10	10	1

Dimensions on page 106



EPOXY

**Butterfly: epoxy-coated GGG40.**

Sleeve: carboxylated nitrile.

Temperature: +5°C / +110°C.

Applications: fluids containing abrasive particles.

**A version with manual gearbox and handwheel is available to order.**

**WAFER TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G097719	GGG40	CARBOXYLATED NITRILE	50	PN6/10/16/ASA150	10	1
149G097720	GGG40	CARBOXYLATED NITRILE	65	PN6/10/16/ASA150	10	1
149G097721	GGG40	CARBOXYLATED NITRILE	80	PN6/10/16/ASA150	10	1
149G097722	GGG40	CARBOXYLATED NITRILE	100	PN6/10/16/ASA150	10	1
149G097723	GGG40	CARBOXYLATED NITRILE	125	PN6/10/16/ASA150	10	1
149G097724	GGG40	CARBOXYLATED NITRILE	150	PN6/10/16/ASA150	10	1

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**LUG TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G097728	GGG40	CARBOXYLATED NITRILE	50	PN 10/16	10	1
149G097729	GGG40	CARBOXYLATED NITRILE	65	PN 10/16 4 HOLES	10	1
149G097730	GGG40	CARBOXYLATED NITRILE	80	PN 10/16	10	1
149G097731	GGG40	CARBOXYLATED NITRILE	100	PN 10/16	10	1
149G097732	GGG40	CARBOXYLATED NITRILE	125	PN 10/16	10	1
149G097733	GGG40	CARBOXYLATED NITRILE	150	PN 10/16	10	1

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**STAINLESS  
STEEL**

**Butterfly: 316 stainless steel.**

Sleeve: carboxylated nitrile.

Temperature: +5°C / +110°C.

Applications: fluids containing abrasive particles.

**A version with manual gearbox and handwheel is available to order.**

## WAFER TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G042613</b>	GGG40	CARBOXYLATED NITRILE	32/40	PN6/10/16/ ASA150	10	1
<b>149G035671</b>	GGG40	CARBOXYLATED NITRILE	50	PN6/10/16/ ASA150	10	1
<b>149G035672</b>	GGG40	CARBOXYLATED NITRILE	65	PN6/10/16/ ASA150	10	1
<b>149G035673</b>	GGG40	CARBOXYLATED NITRILE	80	PN6/10/16/ ASA150	10	1
<b>149G093454</b>	GGG40	CARBOXYLATED NITRILE	100	PN6/10/16/ ASA150	10	1
<b>149G017247</b>	GGG40	CARBOXYLATED NITRILE	125	PN6/10/16/ ASA150	10	1
<b>149G035676</b>	GGG40	CARBOXYLATED NITRILE	150	PN6/10/16/ ASA150	10	1

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## LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G045031</b>	GGG40	CARBOXYLATED NITRILE	32	PN 10/16	10	1
<b>149G045032</b>	GGG40	CARBOXYLATED NITRILE	40	PN 10/16	10	1
<b>149G045033</b>	GGG40	CARBOXYLATED NITRILE	50	PN 10/16	10	1
<b>149G045034</b>	GGG40	CARBOXYLATED NITRILE	65	PN 10/16 4 HOLES	10	1
<b>149G045035</b>	GGG40	CARBOXYLATED NITRILE	80	PN 10/16	10	1
<b>149G045036</b>	GGG40	CARBOXYLATED NITRILE	100	PN 10/16	10	1
<b>149G045037</b>	GGG40	CARBOXYLATED NITRILE	125	PN 10/16	10	1
<b>149G045038</b>	GGG40	CARBOXYLATED NITRILE	150	PN 10/16	10	1

Dimensions on page 106



**STAINLESS  
STEEL**

**Butterfly: 316 stainless steel.**

Sleeve: Silicone.

Temperature: -25°C / +200°C

Applications: Dry air or gases, iced water, industrial processes.

**A version with manual gearbox with handwheel is available to order.**

**WAFER TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G020771</b>	GGG40	SILICONE	32/40	PN6/10/16/ASA150	10	1
<b>149G020775</b>	GGG40	SILICONE	50	PN6/10/16/ASA150	10	1
<b>149G020779</b>	GGG40	SILICONE	65	PN6/10/16/ASA150	10	1
<b>149G016543</b>	GGG40	SILICONE	80	PN6/10/16/ASA150	10	1
<b>149G020787</b>	GGG40	SILICONE	100	PN6/10/16/ASA150	10	1
<b>149G020791</b>	GGG40	SILICONE	125	PN6/10/16/ASA150	10	1
<b>149G017229</b>	GGG40	SILICONE	150	PN6/10/16/ASA150	10	1
<b>149G020799</b>	GGG40	SILICONE	200	PN6/10/16/ASA150	6	1
<b>149G020803</b>	GGG40	SILICONE	250	PN6/10/16/ASA150	6	1

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**LUG TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G022126</b>	GGG40	SILICONE	32	PN 10/16	10	1
<b>149G022130</b>	GGG40	SILICONE	40	PN 10/16	10	1
<b>149G022134</b>	GGG40	SILICONE	50	PN 10/16	10	1
<b>149G022138</b>	GGG40	SILICONE	65	PN 10/16 4 HOLES	10	1
<b>149G022142</b>	GGG40	SILICONE	80	PN 10/16	10	1
<b>149G022146</b>	GGG40	SILICONE	100	PN 10/16	10	1
<b>149G022150</b>	GGG40	SILICONE	125	PN 10/16	10	1
<b>149G014676</b>	GGG40	SILICONE	150	PN 10/16	10	1
<b>149G022173</b>	GGG40	SILICONE	200	PN16	6	1
<b>149G022177</b>	GGG40	SILICONE	250	PN16	6	1
<b>149G022158</b>	GGG40	SILICONE	200	PN10	6	1
<b>149G022162</b>	GGG40	SILICONE	250	PN10	6	1

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STAINLESS  
STEEL

**Butterfly: 316 stainless steel.**

Sleeve: FKM.

Max. temperature: +5°C / +180°C

Applications: Industrial fluids, acids, hydrocarbons.

**A version with manual gearbox with handwheel is available to order.**

## WAFER TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G012052</b>	GGG40	FKM.	32/40	PN6/10/16/ASA150	10	1
<b>149G012054</b>	GGG40	FKM.	50	PN6/10/16/ASA150	10	1
<b>149G019277</b>	GGG40	FKM.	65	PN6/10/16/ASA150	10	1
<b>149G016085</b>	GGG40	FKM.	80	PN6/10/16/ASA150	10	1
<b>149G012063</b>	GGG40	FKM.	100	PN6/10/16/ASA150	10	1
<b>149G012066</b>	GGG40	FKM.	125	PN6/10/16/ASA150	10	1
<b>149G072719</b>	GGG40	FKM.	150	PN6/10/16/ASA150	10	1
<b>149G036556</b>	GGG40	FKM.	200	PN6/10/16/ASA150	10	1

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## LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G022188</b>	GGG40	FKM.	32	PN 10/16	10	1
<b>149G022192</b>	GGG40	FKM.	40	PN 10/16	10	1
<b>149G014686</b>	GGG40	FKM.	50	PN 10/16	10	1
<b>149G022200</b>	GGG40	FKM.	65	PN 10/16 4 HOLES	10	1
<b>149G022204</b>	GGG40	FKM.	80	PN 10/16	10	1
<b>149G059993</b>	GGG40	FKM.	100	PN 10/16	10	1
<b>149G014692</b>	GGG40	FKM.	125	PN 10/16	10	1
<b>149G073770</b>	GGG40	FKM.	150	PN 10/16	10	1
<b>149G046220</b>	GGG40	FKM.	200	PN16	10	1
<b>149G046219</b>	GGG40	FKM.	200	PN10	10	1

Dimensions on page 106

## Sylax 316 stainless steel butterfly valve



**STAINLESS  
STEEL**

### Butterfly: 316 stainless steel.

Sleeve:

EPDM: temperature: -15°C / +120°C.

Body temperature: see page 72.

NITRILE: temperature: +5°C / +85°C.

Applications:

EPDM: potable water, general circuits and industrial processes, swimming pool water.

NITRILE: general and industrial circuits, hydrocarbons.

**A version with manual gearbox with handwheel is available to order.**

**EPDM approvals: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA, PED 2014/68/EU.**

## WAFER TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G016610</b>	316 STAINLESS STEEL	EPDM	32/40	PN 10/16	16	1
<b>149G012987</b>	316 STAINLESS STEEL	EPDM	50	PN 10/16	16	1
<b>149G012991</b>	316 STAINLESS STEEL	EPDM	65	PN 10/16	16	1
<b>149G012993</b>	316 STAINLESS STEEL	EPDM	80	PN 10/16	16	1
<b>149G012998</b>	316 STAINLESS STEEL	EPDM	100	PN 10/16	16	1
<b>149G015990</b>	316 STAINLESS STEEL	EPDM	125	PN 10/16	16	1
<b>149G013005</b>	316 STAINLESS STEEL	EPDM	150	PN 10/16	16	1
<b>149G013009</b>	316 STAINLESS STEEL	EPDM	200	PN 10/16	16	1
<b>149G016814</b>	316 STAINLESS STEEL	EPDM	250	PN 10/16	16	1
<b>149G016815</b>	316 STAINLESS STEEL	EPDM	300	PN 10/16	16	1
<b>149G018560</b>	316 STAINLESS STEEL	NITRILE	32/40	PN 10/16	16	1
<b>149G016818</b>	316 STAINLESS STEEL	NITRILE	50	PN 10/16	16	1
<b>149G016819</b>	316 STAINLESS STEEL	NITRILE	65	PN 10/16	16	1
<b>149G016820</b>	316 STAINLESS STEEL	NITRILE	80	PN 10/16	16	1
<b>149G016816</b>	316 STAINLESS STEEL	NITRILE	100	PN 10/16	16	1
<b>149G016821</b>	316 STAINLESS STEEL	NITRILE	125	PN 10/16	16	1
<b>149G016817</b>	316 STAINLESS STEEL	NITRILE	150	PN 10/16	16	1
<b>149G016822</b>	316 STAINLESS STEEL	NITRILE	200	PN 10/16	16	1
<b>149G016823</b>	316 STAINLESS STEEL	NITRILE	250	PN 10/16	10	1

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For details regarding the pressure/temperature curve, see the technical data sheet.



## LUG TYPE



Part no.	Body	Sleeve DN mm	Fittings	PFA water	Package
<b>149G020660</b>	316 STAINLESS STEEL	EPDM 50	PN 10/16	16	1
<b>149G020661</b>	316 STAINLESS STEEL	EPDM 65	PN 10/16 8 HOLES	16	1
<b>149G020662</b>	316 STAINLESS STEEL	EPDM 80	PN 10/16	16	1
<b>149G020663</b>	316 STAINLESS STEEL	EPDM 100	PN 10/16	16	1
<b>149G063722</b>	316 STAINLESS STEEL	EPDM 125	PN 10/16	16	1
<b>149G020665</b>	316 STAINLESS STEEL	EPDM 150	PN 10/16	16	1
<b>149G020666</b>	316 STAINLESS STEEL	EPDM 200	PN16	16	1
<b>149G020667</b>	316 STAINLESS STEEL	EPDM 250	PN16	16	1
<b>149G020668</b>	316 STAINLESS STEEL	EPDM 300	PN16	16	1
<b>149G041721</b>	316 STAINLESS STEEL	EPDM 200	PN10	10	1
<b>149G041722</b>	316 STAINLESS STEEL	EPDM 250	PN10	10	1
<b>149G041723</b>	316 STAINLESS STEEL	EPDM 300	PN10	10	1
<b>149G020669</b>	316 STAINLESS STEEL	NITRILE 50	PN 10/16	16	1
<b>149G020670</b>	316 STAINLESS STEEL	NITRILE 65	PN 10/16 8 HOLES	16	1
<b>149G020671</b>	316 STAINLESS STEEL	NITRILE 80	PN 10/16	16	1
<b>149G020672</b>	316 STAINLESS STEEL	NITRILE 100	PN 10/16	16	1
<b>149G020673</b>	316 STAINLESS STEEL	NITRILE 125	PN 10/16	16	1
<b>149G020674</b>	316 STAINLESS STEEL	NITRILE 150	PN 10/16	16	1
<b>149G020675</b>	316 STAINLESS STEEL	NITRILE 200	PN16	16	1
<b>149G020676</b>	316 STAINLESS STEEL	NITRILE 250	PN16	10	1
<b>149G041724</b>	316 STAINLESS STEEL	NITRILE 200	PN10	10	1
<b>149G041725</b>	316 STAINLESS STEEL	NITRILE 250	PN10	10	1

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EPOXY

**Butterfly: epoxy-coated GGG40 cast iron.**

Sleeve:

EPDM: temperature: -15 °C to +120 °C.

Body temperature: see page 72.

NITRILE: temperature: +5°C / +85°C.

Applications:

EPDM: heating and air conditioning.

NITRILE: general and industrial circuits, untreated water.

**A version with manual gearbox with handwheel is available to order.**

**WAFER TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G097764</b>	GGG40	EPDM	50	ASA150	20	1
<b>149G097765</b>	GGG40	EPDM	65	ASA150	20	1
<b>149G097766</b>	GGG40	EPDM	80	ASA150	20	1
<b>149G097767</b>	GGG40	EPDM	100	ASA150	20	1
<b>149G097768</b>	GGG40	EPDM	125	ASA150	20	1
<b>149G097769</b>	GGG40	EPDM	150	ASA150	20	1
<b>149G097770</b>	GGG40	EPDM	200	ASA150	20	1
<b>149G097771</b>	GGG40	NITRILE	50	ASA150	20	1
<b>149G097772</b>	GGG40	NITRILE	65	ASA150	20	1
<b>149G097773</b>	GGG40	NITRILE	80	ASA150	20	1
<b>149G097774</b>	GGG40	NITRILE	100	ASA150	20	1
<b>149G097775</b>	GGG40	NITRILE	125	ASA150	20	1
<b>149G097776</b>	GGG40	NITRILE	150	ASA150	20	1
<b>149G097777</b>	GGG40	NITRILE	200	ASA150	20	1

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**LUG TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G097778</b>	GGG40	EPDM	50	ASA150 METRIC	20	1
<b>149G097779</b>	GGG40	EPDM	65	ASA150 METRIC	20	1
<b>149G097780</b>	GGG40	EPDM	80	ASA150 METRIC	20	1
<b>149G097781</b>	GGG40	EPDM	100	ASA150 METRIC	20	1
<b>149G097782</b>	GGG40	EPDM	125	ASA150 METRIC	20	1
<b>149G097783</b>	GGG40	EPDM	150	ASA150 METRIC	20	1
<b>149G097784</b>	GGG40	EPDM	200	ASA150 METRIC	20	1
<b>149G097785</b>	GGG40	NITRILE	50	ASA150 METRIC	20	1
<b>149G097786</b>	GGG40	NITRILE	65	ASA150 METRIC	20	1
<b>149G097787</b>	GGG40	NITRILE	80	ASA150 METRIC	20	1
<b>149G097788</b>	GGG40	NITRILE	100	ASA150 METRIC	20	1
<b>149G097789</b>	GGG40	NITRILE	125	ASA150 METRIC	20	1
<b>149G097790</b>	GGG40	NITRILE	150	ASA150 METRIC	20	1
<b>149G097791</b>	GGG40	NITRILE	200	ASA150 METRIC	20	1

Dimensions on page 106



**STAINLESS  
STEEL**

### Butterfly: 316 stainless steel.

Sleeve:

EPDM: temperature: -15 °C to +120 °C.

Body temperature: see page 72.

NITRILE: max. temperature: +5°C / +85°C.

Applications:

EPDM: potable water, heating, air conditioning.

NITRILE: general and industrial circuits, hydrocarbons, untreated water.

**Approvals: EPDM: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA, PED 2014/68/EU.**

**A version with manual gearbox with handwheel is available to order.**

## WAFER TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G045545</b>	GGG40	EPDM	40	ASA150	20	1
<b>149G038570</b>	GGG40	EPDM	50	ASA150	20	1
<b>149G085477</b>	GGG40	EPDM	65	ASA150	20	1
<b>149G045550</b>	GGG40	EPDM	80	ASA150	20	1
<b>149G028535</b>	GGG40	EPDM	100	ASA150	20	1
<b>149G044406</b>	GGG40	EPDM	125	ASA150	20	1
<b>149G045552</b>	GGG40	EPDM	150	ASA150	20	1
<b>149G045553</b>	GGG40	EPDM	200	ASA150	20	1
<b>149G046119</b>	GGG40	NITRILE	40	ASA150	20	1
<b>149G046120</b>	GGG40	NITRILE	50	ASA150	20	1
<b>149G046121</b>	GGG40	NITRILE	65	ASA150	20	1
<b>149G046122</b>	GGG40	NITRILE	80	ASA150	20	1
<b>149G046123</b>	GGG40	NITRILE	100	ASA150	20	1
<b>149G046124</b>	GGG40	NITRILE	125	ASA150	20	1
<b>149G046125</b>	GGG40	NITRILE	150	ASA150	20	1
<b>149G046126</b>	GGG40	NITRILE	200	ASA150	20	1

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## LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G048642</b>	GGG40	EPDM	32	ASA150 METRIC	20	1
<b>149G045558</b>	GGG40	EPDM	40	ASA150 METRIC	20	1
<b>149G045559</b>	GGG40	EPDM	50	ASA150 METRIC	20	1
<b>149G045560</b>	GGG40	EPDM	65	ASA150 METRIC	20	1
<b>149G045561</b>	GGG40	EPDM	80	ASA150 METRIC	20	1
<b>149G045562</b>	GGG40	EPDM	100	ASA150 METRIC	20	1
<b>149G045563</b>	GGG40	EPDM	125	ASA150 METRIC	20	1
<b>149G045564</b>	GGG40	EPDM	150	ASA150 METRIC	20	1
<b>149G045565</b>	GGG40	EPDM	200	ASA150 METRIC	20	1
<b>149G046159</b>	GGG40	NITRILE	40	ASA150 METRIC	20	1
<b>149G046160</b>	GGG40	NITRILE	50	ASA150 METRIC	20	1
<b>149G046161</b>	GGG40	NITRILE	65	ASA150 METRIC	20	1
<b>149G046162</b>	GGG40	NITRILE	80	ASA150 METRIC	20	1
<b>149G046163</b>	GGG40	NITRILE	100	ASA150 METRIC	20	1
<b>149G046164</b>	GGG40	NITRILE	125	ASA150 METRIC	20	1
<b>149G046165</b>	GGG40	NITRILE	150	ASA150 METRIC	20	1
<b>149G046166</b>	GGG40	NITRILE	200	ASA150 METRIC	20	1

Dimensions on page 106



EPOXY

**Butterfly: epoxy-coated GGG40 cast iron.**

EPDM sleeve.

Max. temperature: -15°C / + 120°C.

Applications: heating and air conditioning.

**A version with manual gearbox with handwheel is available to order.**

**WAFER TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G097826	GGG40	EPDM	50	PN25	25	1
149G097827	GGG40	EPDM	65	PN25	25	1
149G097828	GGG40	EPDM	80	PN25	25	1
149G097829	GGG40	EPDM	100	PN25	25	1
149G097830	GGG40	EPDM	125	PN25	25	1
149G097831	GGG40	EPDM	150	PN25	25	1

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**LUG TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G097832	GGG40	EPDM	50	PN25	25	1
149G097833	GGG40	EPDM	65	PN25	25	1
149G097834	GGG40	EPDM	80	PN25	25	1
149G097835	GGG40	EPDM	100	PN25	25	1
149G097836	GGG40	EPDM	125	PN25	25	1
149G097837	GGG40	EPDM	150	PN25	25	1

Dimensions on page 106



STAINLESS  
STEEL

**Butterfly: 316 stainless steel.**

EPDM sleeve.

Max. temperature: -15°C / +120°C.

Applications: potable water, heating, air conditioning.

**Approvals: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA, PED 2014/68/EU.**

**A version with manual gearbox with handwheel is available to order.**

**WAFER TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G045554	GGG40	EPDM	40	PN25	25	1
149G045555	GGG40	EPDM	50	PN25	25	1
149G045556	GGG40	EPDM	65	PN25	25	1
149G016813	GGG40	EPDM	80	PN25	25	1
149G027934	GGG40	EPDM	100	PN25	25	1
149G045557	GGG40	EPDM	125	PN25	25	1
149G044395	GGG40	EPDM	150	PN25	25	1

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**LUG TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G045566	GGG40	EPDM	32	PN25	25	1
149G045567	GGG40	EPDM	40	PN25	25	1
149G045571	GGG40	EPDM	50	PN25	25	1
149G016079	GGG40	EPDM	65	PN25	25	1
149G093463	GGG40	EPDM	80	PN25	25	1
149G045572	GGG40	EPDM	100	PN25	25	1
149G045573	GGG40	EPDM	125	PN25	25	1
149G045574	GGG40	EPDM	150	PN25	25	1

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## Sylax butterfly valve with manual gearbox



EPOXY

### Butterfly: epoxy-coated GGG40 cast iron.

Sleeve:

EPDM: temperature: -15°C / +120°C.

Body temperature: see page 72.

NITRILE: temperature: +5 °C to +85 °C.

Applications:

EPDM: potable water.

NITRILE: untreated water.

DN 400 to DN 1000 available to order.

**EPDM approvals: ACS (Attestation de Conformité Sanitaire), KIWA UK, SVGW, BELGAQUA, PED 2014/68/EU.**

### WAFER TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G079907	GG25	EPDM	50	PN 6/10/16/ASA 150	16	1
149G079663	GG25	EPDM	65	PN 6/10/16/ASA 150	16	1
149G079204	GG25	EPDM	80	PN 6/10/16/ASA 150	16	1
149G079724	GG25	EPDM	100	PN 6/10/16/ASA 150	16	1
149G079304	GG25	EPDM	125	PN 6/10/16/ASA 150	16	1
149G079097	GG25	EPDM	150	PN 6/10/16/ASA 150	16	1
149G079305	GG25	EPDM	200	PN 6/10/16/ASA 150	16	1
149G080058	GG25	EPDM	250	PN 6/10/16/ASA 150	16	1
149G079205	GG25	EPDM	300	PN 6/10/16/ASA 150	16	1
149G079140	GG25	EPDM	350	PN 6/10/16/ASA 150	10	1
149G080104	GG25	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G080105	GG25	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G080106	GG25	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G080070	GG25	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G080071	GG25	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G080072	GG25	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G079489	GG25	NITRILE	200	PN 6/10/16/ASA 150	16	1
149G079050	GG25	NITRILE	250	PN 6/10/16/ASA 150	10	1
149G080073	GG25	NITRILE	300	PN 6/10/16/ASA 150	10	1
149G080074	GG25	NITRILE	350	PN 6/10/16/ASA 150	10	1
149G080113	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
149G080114	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
149G080115	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
149G079944	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
149G080049	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
149G080050	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
149G079466	GGG40	EPDM	200	PN 6/10/16/ASA 150	16	1
149G080051	GGG40	EPDM	250	PN 6/10/16/ASA 150	16	1
149G079145	GGG40	EPDM	300	PN 6/10/16/ASA 150	16	1
149G079146	GGG40	EPDM	350	PN 6/10/16/ASA 150	16	1
149G080117	GGG40	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G080118	GGG40	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G080119	GGG40	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G080082	GGG40	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G080083	GGG40	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G080084	GGG40	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G080085	GGG40	NITRILE	200	PN 6/10/16/ASA 150	16	1
149G080086	GGG40	NITRILE	250	PN 6/10/16/ASA 150	10	1
149G080087	GGG40	NITRILE	300	PN 6/10/16/ASA 150	10	1
149G080052	GGG40	NITRILE	350	PN 6/10/16/ASA 150	16	1

Dimensions on page 107

## LUG TYPE



DN400 to DN600 available to order.

Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G080107	GG25	EPDM	50	PN 10/16	16	1
149G080108	GG25	EPDM	65	PN 10/16 - 4 HOLES	16	1
149G079280	GG25	EPDM	80	PN 10/16	16	1
149G080059	GG25	EPDM	100	PN 10/16	16	1
149G080060	GG25	EPDM	125	PN 10/16	16	1
149G079279	GG25	EPDM	150	PN 10/16	16	1
149G079153	GG25	EPDM	200	PN10	10	1
149G080061	GG25	EPDM	250	PN10	10	1
149G079344	GG25	EPDM	300	PN10	10	1
149G080109	GG25	EPDM	350	PN10	10	1
149G080110	GG25	NITRILE	50	PN 10/16	16	1
149G080111	GG25	NITRILE	65	PN 10/16 4 HOLES	16	1
149G080112	GG25	NITRILE	80	PN 10/16	16	1
149G080075	GG25	NITRILE	100	PN 10/16	16	1
149G080076	GG25	NITRILE	125	PN 10/16	16	1
149G080077	GG25	NITRILE	150	PN 10/16	16	1
149G080078	GG25	NITRILE	200	PN10	10	1
149G080079	GG25	NITRILE	250	PN10	10	1
149G080080	GG25	NITRILE	300	PN10	10	1
149G080081	GG25	NITRILE	350	PN10	16	1
149G080122	GGG40	EPDM	50	PN 10/16	16	1
149G080123	GGG40	EPDM	65	PN 10/16 4 HOLES	16	1
149G080124	GGG40	EPDM	80	PN 10/16	16	1
149G080045	GGG40	EPDM	100	PN 10/16	16	1
149G080046	GGG40	EPDM	125	PN 10/16	16	1
149G080047	GGG40	EPDM	150	PN 10/16	16	1
149G080055	GGG40	EPDM	200	PN10	10	1
149G080056	GGG40	EPDM	250	PN10	10	1
149G080057	GGG40	EPDM	300	PN10	10	1
149G080103	GGG40	EPDM	350	PN10	10	1
149G079184	GGG40	EPDM	200	PN16	16	1
149G080048	GGG40	EPDM	250	PN16	16	1
149G080054	GGG40	EPDM	300	PN16	16	1
149G080128	GGG40	EPDM	350	PN16	16	1
149G080125	GGG40	NITRILE	50	PN 10/16	16	1
149G080126	GGG40	NITRILE	65	PN 10/16 4 HOLES	16	1
149G080127	GGG40	NITRILE	80	PN 10/16	16	1
149G080092	GGG40	NITRILE	100	PN 10/16	16	1
149G080093	GGG40	NITRILE	125	PN 10/16	16	1
149G080094	GGG40	NITRILE	150	PN 10/16	16	1
149G080089	GGG40	NITRILE	200	PN10	10	1
149G080090	GGG40	NITRILE	250	PN10	10	1
149G080091	GGG40	NITRILE	300	PN10	10	1
149G080088	GGG40	NITRILE	350	PN10	10	1
149G080095	GGG40	NITRILE	200	PN16	16	1
149G080096	GGG40	NITRILE	250	PN16	10	1
149G080097	GGG40	NITRILE	300	PN16	10	1
149G080053	GGG40	NITRILE	350	PN16	16	1

Dimensions on page 107



**STAINLESS  
STEEL**

**Butterfly: 316 stainless steel.**

Sleeve:

EPDM: temperature: -15°C / +120°C.

Body temperature: see page 72.

NITRILE: temperature: +5°C / +85°C.

DN400 to DN1000 available to order.

EPDM applications: potable water, heating, air conditioning.

NITRILE: general and industrial circuits, hydrocarbons, untreated water.

**EPDM approvals: ACS (Attestation de Conformité Sanitaire), KIWA UK, KIWA, SVGW, BELGAQUA, PED 2014/68/EU.**

**WAFER TYPE**



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G079901	GG25	EPDM	25	PN 6/10/16/ASA 150	10	1
149G079008	GG25	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G079037	GG25	EPDM	50	PN 6/10/16/ASA 150	16	1
149G079411	GG25	EPDM	65	PN 6/10/16/ASA 150	16	1
149G079082	GG25	EPDM	80	PN 6/10/16/ASA 150	16	1
149G079090	GG25	EPDM	100	PN 6/10/16/ASA 150	16	1
149G079014	GG25	EPDM	125	PN 6/10/16/ASA 150	16	1
149G079013	GG25	EPDM	150	PN 6/10/16/ASA 150	16	1
149G079134	GG25	EPDM	200	PN 6/10/16/ASA 150	16	1
149G080130	GG25	EPDM	250	PN 6/10/16/ASA 150	16	1
149G079120	GG25	EPDM	300	PN 6/10/16/ASA 150	16	1
149G079074	GG25	EPDM	350	PN 6/10/16/ASA 150	10	1
149G080168	GG25	NITRILE	25	PN 6/10/16/ASA 150	10	1
149G080165	GG25	NITRILE	32/40	PN 6/10/16/ASA 150	16	1
149G079723	GG25	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G080166	GG25	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G080167	GG25	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G079006	GG25	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G079005	GG25	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G080131	GG25	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G079447	GG25	NITRILE	200	PN 6/10/16/ASA 150	16	1
149G080132	GG25	NITRILE	250	PN 6/10/16/ASA 150	10	1
149G079121	GG25	NITRILE	300	PN 6/10/16/ASA 150	10	1
149G080188	GG25	NITRILE	350	PN 6/10/16/ASA 150	10	1
149G080175	GGG40	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G079065	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
149G079400	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
149G079334	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
149G080139	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
149G079096	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
149G079311	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
149G079080	GGG40	EPDM	200	PN 6/10/16/ASA 150	16	1
149G079562	GGG40	EPDM	250	PN 6/10/16/ASA 150	16	1
149G079122	GGG40	EPDM	300	PN 6/10/16/ASA 150	16	1
149G079906	GGG40	EPDM	350	PN 6/10/16/ASA 150	16	1
149G080176	GGG40	NITRILE	32/40	PN 6/10/16/ASA 150	16	1
149G080177	GGG40	NITRILE	50	PN 6/10/16/ASA 150	16	1
149G080178	GGG40	NITRILE	65	PN 6/10/16/ASA 150	16	1
149G080179	GGG40	NITRILE	80	PN 6/10/16/ASA 150	16	1
149G079039	GGG40	NITRILE	100	PN 6/10/16/ASA 150	16	1
149G080140	GGG40	NITRILE	125	PN 6/10/16/ASA 150	16	1
149G079470	GGG40	NITRILE	150	PN 6/10/16/ASA 150	16	1
149G079099	GGG40	NITRILE	200	PN 6/10/16/ASA 150	16	1
149G080141	GGG40	NITRILE	250	PN 6/10/16/ASA 150	10	1
149G080142	GGG40	NITRILE	300	PN 6/10/16/ASA 150	10	1
149G080190	GGG40	NITRILE	350	PN 6/10/16/ASA 150	16	1

Dimensions on page 107

For details regarding the pressure/temperature curve, see the technical data sheet.

### LUG TYPE WITH GG25 BODY



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G079028</b>	GG25	EPDM	50	PN 10/16	16	1
<b>149G080170</b>	GG25	EPDM	65	PN 10/16 4 HOLES	16	1
<b>149G079083</b>	GG25	EPDM	80	PN 10/16	16	1
<b>149G079092</b>	GG25	EPDM	100	PN 10/16	16	1
<b>149G079720</b>	GG25	EPDM	125	PN 10/16	16	1
<b>149G079093</b>	GG25	EPDM	150	PN 10/16	16	1
<b>149G079079</b>	GG25	EPDM	200	PN10	10	1
<b>149G080133</b>	GG25	EPDM	250	PN10	10	1
<b>149G079365</b>	GG25	EPDM	300	PN10	10	1
<b>149G079664</b>	GG25	EPDM	350	PN10	10	1
<b>149G080173</b>	GG25	NITRILE	50	PN 10/16	16	1
<b>149G080174</b>	GG25	NITRILE	65	PN 10/16 4 HOLES	16	1
<b>149G079167</b>	GG25	NITRILE	80	PN 10/16	16	1
<b>149G080134</b>	GG25	NITRILE	100	PN 10/16	16	1
<b>149G080135</b>	GG25	NITRILE	125	PN 10/16	16	1
<b>149G079780</b>	GG25	NITRILE	150	PN 10/16	16	1
<b>149G080136</b>	GG25	NITRILE	200	PN10	10	1
<b>149G080137</b>	GG25	NITRILE	250	PN10	10	1
<b>149G080138</b>	GG25	NITRILE	300	PN10	10	1
<b>149G080189</b>	GG25	NITRILE	350	PN10	10	1

Dimensions on page 107



## LUG TYPE WITH GGG40 BODY



DN400 to DN600 available to order.

Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G080182</b>	GGG40	EPDM	32	PN 10/16	16	1
<b>149G079643</b>	GGG40	EPDM	40	PN 10/16	16	1
<b>149G079357</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G079156</b>	GGG40	EPDM	65	PN 10/16 4 HOLES	16	1
<b>149G079578</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G079137</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G079367</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G079358</b>	GGG40	EPDM	150	PN 10/16	16	1
<b>149G079359</b>	GGG40	EPDM	200	PN10	10	1
<b>149G080143</b>	GGG40	EPDM	250	PN10	10	1
<b>149G079678</b>	GGG40	EPDM	300	PN10	10	1
<b>149G079677</b>	GGG40	EPDM	350	PN10	10	1
<b>149G079423</b>	GGG40	EPDM	200	PN16	16	1
<b>149G079473</b>	GGG40	EPDM	250	PN16	16	1
<b>149G079472</b>	GGG40	EPDM	300	PN16	16	1
<b>149G080192</b>	GGG40	EPDM	350	PN16	16	1
<b>149G080183</b>	GGG40	NITRILE	32	PN 10/16	16	1
<b>149G080184</b>	GGG40	NITRILE	40	PN 10/16	16	1
<b>149G080185</b>	GGG40	NITRILE	50	PN 10/16	16	1
<b>149G080186</b>	GGG40	NITRILE	65	PN 10/16 4 HOLES	16	1
<b>149G080187</b>	GGG40	NITRILE	80	PN 10/16	16	1
<b>149G080144</b>	GGG40	NITRILE	100	PN 10/16	16	1
<b>149G080145</b>	GGG40	NITRILE	125	PN 10/16	16	1
<b>149G091923</b>	GGG40	NITRILE	150	PN 10/16	16	1
<b>149G080147</b>	GGG40	NITRILE	200	PN10	10	1
<b>149G080148</b>	GGG40	NITRILE	250	PN10	10	1
<b>149G080149</b>	GGG40	NITRILE	300	PN10	10	1
<b>149G080191</b>	GGG40	NITRILE	350	PN10	10	1
<b>149G080150</b>	GGG40	NITRILE	200	PN16	16	1
<b>149G080151</b>	GGG40	NITRILE	250	PN16	10	1
<b>149G080152</b>	GGG40	NITRILE	300	PN16	10	1
<b>149G080193</b>	GGG40	NITRILE	350	PN16	16	1

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## Sylax CNPP/MF butterfly valve

ISO PN16 valves for fire sprinkler systems. Red manual gearbox, yellow flag-type position indicator, locking system with chain/padlock (CNPP only) with integrated limit switch contacts.

CNPP approval No. YO/AL/12/037 dated 02/12/2003.

Available to order: 316 stainless steel - PS 20 bar version.

FM approval No. 3029234 dated 19/12/2012.



POLYAMIDE

### SYLAX CNPP

**Butterfly: polyamide-coated GGG40 cast iron.**

Sleeve: EPDM: temperature -15°C / +120°C.

Body temperature: see page 72.

CNPP approved for fire-suppression systems.

## CNPP WAFER TYPE



Wafer No.	Body	Sleeve	DN mm	Fittings	PFA water	Package
WITH LIMIT SWITCH CONTACTS						
<b>149G064240</b>	GGG40	EPDM	32/40	PN 6/10/16/ASA 150	16	1
<b>149G029208</b>	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
<b>149G029211</b>	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
<b>149G029214</b>	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
<b>149G028861</b>	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
<b>149G029219</b>	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
<b>149G028862</b>	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
<b>149G029224</b>	GGG40	EPDM	200	PN 6/10/16/ASA 150	16	1
<b>149G029227</b>	GGG40	EPDM	250	PN 6/10/16/ASA 150	16	1
<b>149G029230</b>	GGG40	EPDM	300	PN 6/10/16/ASA 150	16	1

Dimensions on page 108

## CNPP LUG TYPE

Lug No.	Body	Sleeve	DN mm	Fittings	PFA water	Package
WITH LIMIT SWITCH CONTACTS						
<b>149G097296</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G064311</b>	GGG40	EPDM	65	PN 10/16	16	1
<b>149G097297</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G097298</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G097293</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G044714</b>	GGG40	EPDM	150	PN 10/16	16	1
<b>149G095646</b>	GGG40	EPDM	200	PN16	16	1
<b>149G060792</b>	GGG40	EPDM	250	PN16	16	1
<b>149G060636</b>	GGG40	EPDM	300	PN16	16	1



POLYAMIDE

**SYLAX MF****Butterfly: polyamide-coated GGG40 cast iron.**

Sleeve: EPDM: temperature: -15 °C to +120 °C.

FM approved for fire-suppression systems.

Wafer No.	Body	Sleeve	DN mm	Fittings	PFA water	Package
149G065374	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
149G065375	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
149G065376	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
149G065377	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
149G065378	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
149G065379	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
149G038535	GGG40	EPDM	200	PN 6/10/16/ASA 150	16	1
149G038536	GGG40	EPDM	250	PN 6/10/16/ASA 150	16	1
149G038537	GGG40	EPDM	300	PN 6/10/16/ASA 150	16	1

Lug No.	Body	Sleeve	DN mm	Fittings	PFA water	Package
WITH LIMIT SWITCH CONTACTS						
149G063847	GGG40	EPDM	50	PN 10/16	16	1
149G063850	GGG40	EPDM	65	PN 10/16	16	1
149G065856	GGG40	EPDM	80	PN 10/16	16	1
149G063860	GGG40	EPDM	100	PN 10/16	16	1
149G063861	GGG40	EPDM	125	PN 10/16	16	1
149G063862	GGG40	EPDM	150	PN 10/16	16	1
149G063810	GGG40	EPDM	200	PN16	16	1
149G063064	GGG40	EPDM	250	PN16	16	1
149G063877	GGG40	EPDM	300	PN16	16	1

Dimensions on page 108

STAINLESS  
STEEL

Wafer No.	Body	Sleeve	DN mm	Fittings	PFA water	Package
WITH LIMIT SWITCH CONTACTS						
149G065385	GGG40	EPDM	32/40	PN 6/10/16/ASA 150	16	1
149G065386	GGG40	EPDM	50	PN 6/10/16/ASA 150	16	1
149G065387	GGG40	EPDM	65	PN 6/10/16/ASA 150	16	1
149G065388	GGG40	EPDM	80	PN 6/10/16/ASA 150	16	1
149G065389	GGG40	EPDM	100	PN 6/10/16/ASA 150	16	1
149G065390	GGG40	EPDM	125	PN 6/10/16/ASA 150	16	1
149G065391	GGG40	EPDM	150	PN 6/10/16/ASA 150	16	1
149G043788	GGG40	EPDM	200	PN 6/10/16/ASA 150	16	1
149G043789	GGG40	EPDM	250	PN 6/10/16/ASA 150	16	1
149G043790	GGG40	EPDM	300	PN 6/10/16/ASA 150	16	1

Lug No.	Body	Sleeve	DN mm-	Fittings	PFA water	Package
WITH LIMIT SWITCH CONTACTS						
149G063833	GGG40	EPDM	40	PN10/16	16	1
149G090687	GGG40	EPDM	50	PN10/16	16	1
149G090686	GGG40	EPDM	65	PN10/16	16	1
149G100202	GGG40	EPDM	80	PN10/16	16	1
149G100203	GGG40	EPDM	100	PN10/16	16	1
149G100204	GGG40	EPDM	125	PN10/16	16	1
149G100205	GGG40	EPDM	150	PN10/16	16	1
149G058938	GGG40	EPDM	200	PN16	16	1
149G099788	GGG40	EPDM	250	PN16	16	1
149G102515	GGG40	EPDM	300	PN16	16	1

Dimensions on page 108

## Butterfly valve for gases



POLYAMIDE

### SYLAX GAS

Butterfly valve with 2-position lockable cast iron hand-lever and yellow cap.  
Nitrile sleeve. Temperature: +5°C / 85°C.

Body temperature: see page 72.

**Approvals: NF/ROB-GAZ/DVGW.**

**Butterfly: polyamide-coated GGG40 cast iron.**

### SYLAX GAS, LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G038777</b>	GGG40	NITRILE	50	PN 10/16	6	1
<b>149G032810</b>	GGG40	NITRILE	65	PN 10/16	6	1
<b>149G032812</b>	GGG40	NITRILE	80	PN 10/16	6	1
<b>149G089469</b>	GGG40	NITRILE	100	PN 10/16	6	1
<b>149G032816</b>	GGG40	NITRILE	125	PN 10/16	6	1
<b>149G032818</b>	GGG40	NITRILE	150	PN 10/16	6	1
<b>149G038781</b>	GGG40	NITRILE	200	PN16	6	1
<b>149G038782</b>	GGG40	NITRILE	250	PN16	6	1
<b>149G038779</b>	GGG40	NITRILE	200	PN10	6	1
<b>149G038780</b>	GGG40	NITRILE	250	PN10	6	1

Also available in wafer version with manual gearbox.

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STAINLESS  
STEEL

### SYLAX GAS, LUG TYPE



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G038811</b>	GGG40	NITRILE	32	PN 10/16	6	1
<b>149G038812</b>	GGG40	NITRILE	40	PN 10/16	6	1
<b>149G038813</b>	GGG40	NITRILE	50	PN 10/16	6	1
<b>149G038814</b>	GGG40	NITRILE	65	PN 10/16	6	1
<b>149G038815</b>	GGG40	NITRILE	80	PN 10/16	6	1
<b>149G038816</b>	GGG40	NITRILE	100	PN 10/16	6	1
<b>149G038817</b>	GGG40	NITRILE	125	PN 10/16	6	1
<b>149G038818</b>	GGG40	NITRILE	150	PN 10/16	6	1
<b>149G038821</b>	GGG40	NITRILE	200	PN10	6	1
<b>149G038822</b>	GGG40	NITRILE	250	PN10	6	1
<b>149G038819</b>	GGG40	NITRILE	200	PN16	6	1
<b>149G038820</b>	GGG40	NITRILE	250	PN16	6	1

Also available in wafer version with manual gearbox.

Dimensions on page 106

## Xylia2 butterfly valve



EPOXY

**Butterfly: epoxy-coated GGG40 cast iron.**

Sleeve: EPDM: max. temperature: -20 °C to +120 °C.

Applications: heating and air conditioning.

### WAFER TYPE WITH CAST-IRON NOTCHED HAND-LEVER



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G34923P</b>	GGG40	EPDM	50	PN10/16	16	1
<b>149G34924P</b>	GGG40	EPDM	65	PN10/16	16	1
<b>149G34925P</b>	GGG40	EPDM	80	PN10/16	16	1
<b>149G34926P</b>	GGG40	EPDM	100	PN10/16	16	1
<b>149G34927P</b>	GGG40	EPDM	125	PN10/16	16	1
<b>149G34928P</b>	GGG40	EPDM	150	PN10/16	16	1

Dimensions on page 108

### WAFER TYPE WITH MANUAL GEARBOX



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G34923R</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G34924R</b>	GGG40	EPDM	65	PN 10/16	16	1
<b>149G34925R</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G34926R</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G34927R</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G34928R</b>	GGG40	EPDM	150	PN 10/16	16	1
<b>149G34929R</b>	GGG40	EPDM	200	PN 10/16	16	1
<b>149G34930R</b>	GGG40	EPDM	250	PN 10/16	16	1
<b>149G34931R</b>	GGG40	EPDM	300	PN 10/16	16	1

Dimensions on page 109

### LUG TYPE WITH CAST-IRON NOTCHED HAND-LEVER



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G34933P</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G34934P</b>	GGG40	EPDM	65	PN 10/16	16	1
<b>149G34935P</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G34936P</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G34937P</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G34938P</b>	GGG40	EPDM	150	PN 10/16	16	1

Dimensions on page 108

### LUG TYPE WITH MANUAL GEARBOX



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G34933R</b>	GGG40	EPDM	50	PN10/16	16	1
<b>149G34934R</b>	GGG40	EPDM	65	PN10/16	16	1
<b>149G34935R</b>	GGG40	EPDM	80	PN10/16	16	1
<b>149G34936R</b>	GGG40	EPDM	100	PN10/16	16	1
<b>149G34937R</b>	GGG40	EPDM	125	PN10/16	16	1
<b>149G34938R</b>	GGG40	EPDM	150	PN10/16	16	1
<b>149G34939R</b>	GGG40	EPDM	200	PN16	16	1
<b>149G34940R</b>	GGG40	EPDM	250	PN16	16	1
<b>149G34941R</b>	GGG40	EPDM	300	PN16	16	1

Dimensions on page 109

**Butterfly: 316 stainless steel.**

Sleeve: EPDM: max. temperature: -10°C / +120°C.

Applications: heating and air conditioning.

**WAFER TYPE WITH CAST-IRON NOTCHED HAND-LEVER**

Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G34903P</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G34904P</b>	GGG40	EPDM	65	PN 10/16	16	1
<b>149G34905P</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G34906P</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G34907P</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G34908P</b>	GGG40	EPDM	150	PN 10/16	16	1

Dimensions on page 108

**WAFER TYPE WITH MANUAL GEARBOX**

Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G34903R</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G34904R</b>	GGG40	EPDM	65	PN 10/16	16	1
<b>149G34905R</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G34906R</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G34907R</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G34908R</b>	GGG40	EPDM	150	PN 10/16	16	1
<b>149G34909R</b>	GGG40	EPDM	200	PN 10/16	16	1
<b>149G34910R</b>	GGG40	EPDM	250	PN 10/16	16	1
<b>149G34911R</b>	GGG40	EPDM	300	PN 10/16	16	1

Dimensions on page 109

### LUG TYPE WITH CAST-IRON NOTCHED HAND-LEVER



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G34913P</b>	GGG40	EPDM	50	PN 10/16	16	1
<b>149G34914P</b>	GGG40	EPDM	65	PN 10/16	16	1
<b>149G34915P</b>	GGG40	EPDM	80	PN 10/16	16	1
<b>149G34916P</b>	GGG40	EPDM	100	PN 10/16	16	1
<b>149G34917P</b>	GGG40	EPDM	125	PN 10/16	16	1
<b>149G34918P</b>	GGG40	EPDM	150	PN 10/16	16	1

Dimensions on page 108

### LUG TYPE WITH MANUAL GEARBOX



Part no.	Body	Sleeve	DN mm	Fittings	PFA water	Package
<b>149G34913R</b>	GGG40	EPDM	50	PN10/16	16	1
<b>149G34914R</b>	GGG40	EPDM	65	PN10/16	16	1
<b>149G34915R</b>	GGG40	EPDM	80	PN10/16	16	1
<b>149G34916R</b>	GGG40	EPDM	100	PN10/16	16	1
<b>149G34917R</b>	GGG40	EPDM	125	PN10/16	16	1
<b>149G34918R</b>	GGG40	EPDM	150	PN10/16	16	1
<b>149G34919R</b>	GGG40	EPDM	200	PN16	16	1
<b>149G34920R</b>	GGG40	EPDM	250	PN16	16	1
<b>149G34921R</b>	GGG40	EPDM	300	PN16	16	1

Dimensions on page 109



## TILIS



Butterfly valve for alimentary fluids, soft drinks, pharmaceutical fluids and medium corrosive chemicals.

EPR/PTFE sleeve: max. temperature  $-20^{\circ}\text{C} / +150^{\circ}\text{C}$ .

Wafer, lug, with lever and manual gearbox.

**Available to order**

## LYCENE



Butterfly valve for corrosive fluids, alimentary fluids and high-purity processes.

SILICONE/PTFE sleeve: max. temperature  $-25^{\circ}\text{C} / +200^{\circ}\text{C}$ .

Wafer, lug, with lever and manual gearbox.

**Available to order**

## EMARIS



Butterfly valve for domestic heating, steam applications and industrial refrigeration.

PTFE/50% stainless steel seal: max. temperature  $-50^{\circ}\text{C} / +260^{\circ}\text{C}$ .

Wafer, lug, with lever and manual gearbox.

**Available to order**

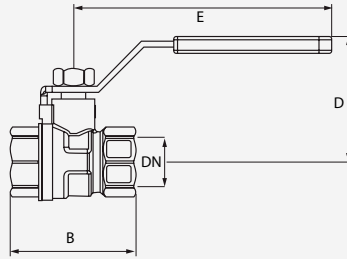
## Motor-operated butterfly valves

Available to order: valves complete with 100-240V 50/60 Hz, 100-350 VDC, 15-30VAC 50/60 Hz, 12-48 VDC electric motors or double-acting or single-acting pneumatic actuators and accessories.



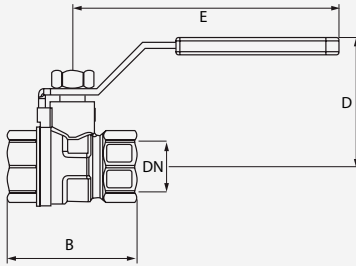
## Overall dimensions

### V3000



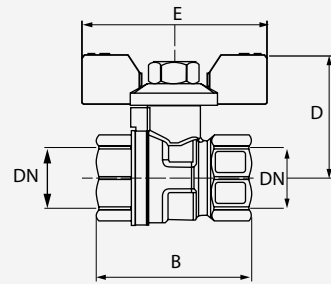
DN "	DN mm	A mm	B mm	C mm
3/8	10	44	40	70
1/2	15	48	49	93
3/4	20	57	53	93
1	25	67	61	113
1 1/4	32	76	66	113
1 1/2	40	90	74	153
2	50	107	81	153
2 1/2	65	134	90	173
3	80	152	116	238
4	100	169	124	238

### V665



DN "	DN mm	B mm	D mm	E mm
1/4	8/13	40	32	70
3/8	12/17	41	32	70
1/2	15/21	46	47	93
3/4	20/27	51	50	93
1	26/34	63	56	113
1 1/4	33/42	74	62	113
1 1/2	40/49	80	68	153
2	50/60	93	73	153
2 1/2	66/76	120	83	173

### V665PAP



DN "	DN mm	B mm	D mm	E mm
1/4	8	40	32	49
3/8	10	41	32	49
1/2	15	46	39	56
3/4	20	51	41	56
1	25	63	46	80

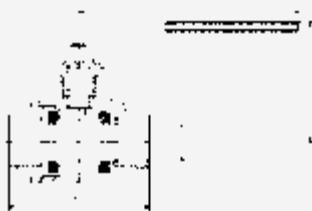
## Overall dimensions

### X3777, X3444



DN "	DN mm	A mm	B mm	C mm	D mm
1/4	8	11	50	51	105
3/8	10	12.5	60	51	105
1/2	15	15	75	53	118
3/4	20	20	80	60	118
1	25	25	90	75	150
1 1/4	32	32	110	80	150
1 1/2	40	40	120	88	182
2	50	50	140	95	182
2 1/2	65	65	185	121	254
3	80	80	205	135	254
4	100	100	240	158	285

### X2777



DN "	DN mm	A mm	B mm	C mm	D mm
1/4	8	11.5	49	54	105
3/8	10	12.5	49	54	105
1/2	15	15	57	56	105
3/4	20	20	64	65	118
1	25	25	77	70	150
1 1/4	32	32	90	75	150
1 1/2	40	40	105	93	182
2	50	50	125	99	182
2 1/2	65	65	153	123	254
3	80	76	172	140	254
4	100	94	221	175	285

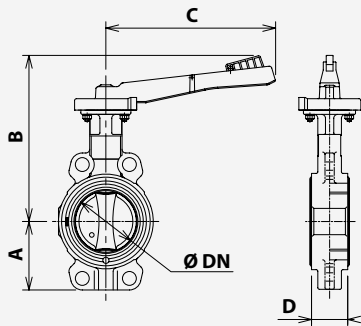
### X1666



DN "	DN mm	A mm	B mm	C mm	D mm
1/4	8	5	40	33	67
3/8	10	7	45	36	67
1/2	15	9	58	37	93
3/4	20	12.5	60	42	93
1	25	15	71	52	103
1 1/4	32	20	78	56	103
1 1/2	40	25	82	65	125
2	50	32	100	70	125

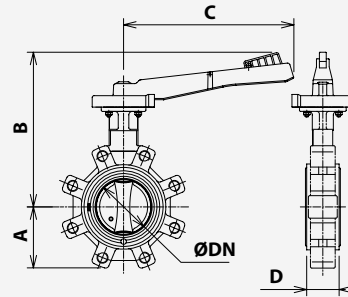
## Overall dimensions

### SYLAX COMPOSITE HAND-LEVER WAFER Butterfly: cast iron-316 stainless steel-aluminium bronze.



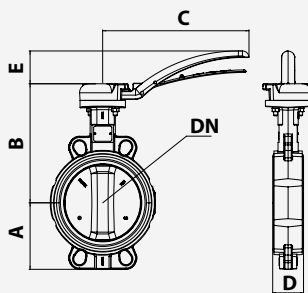
DN	A	B	C	D
25	52	207	200	32
32	57	212	200	32
40	57	212	200	32
50	62	218	200	43
65	70	227	200	46
80	89	233	200	46
100	106	260	200	52
125	120	273	275	56
150	132	286	275	56

### SYLAX COMPOSITE HAND-LEVER LUG Butterfly: cast iron-316 stainless steel-aluminium bronze.



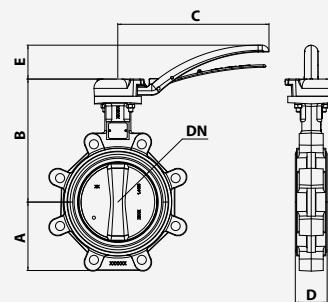
DN	A	B	C	D
32	57	212	200	32
40	57	212	200	32
50	62	218	200	43
65	70	227	200	46
80	89	233	200	46
100	106	260	200	52
125	120	273	275	56
150	132	286	275	56

### SYLAX AND SYLAX GAS CAST IRON HAND-LEVER WAFER Butterfly: cast iron-316 stainless steel-aluminium bronze.



DN	A	B	C	D	E
25	50	158	200	32	45
32/40	57	163	200	32	45
50	62	169	200	43	45
65	70	178	200	46	45
80	89	184	200	46	45
100	106	208	200	52	45
125	120	223	290	56	65
150	131	236	290	56	65
200	164	293	450	60	86
250	200	318	450	68	86
300	235	343	450	78	86

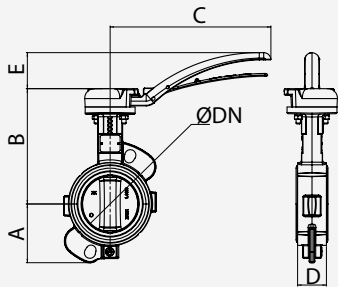
### SYLAX AND SYLAX GAS CAST IRON HAND-LEVER LUG Butterfly: cast iron-316 stainless steel-aluminium bronze.



DN	A	B	C	D	E
25	50	158	200	32	45
32/40	57	163	200	32	45
50	62	169	200	43	45
65	70	178	200	46	45
80	89	184	200	46	45
100	106	208	200	52	45
125	120	223	290	56	65
150	131	236	290	56	65
200	164	293	450	60	86
250	200	318	450	68	86
300	235	343	450	78	86

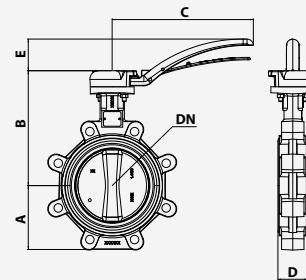
### Overall dimensions

#### SYLAX STAINLESS STEEL BODY CAST IRON HAND-LEVER WAFER



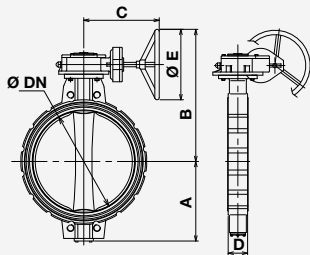
DN	A	B	C	D	E
25	50	158	200	32	45
32/40	57	163	200	32	45
50	62	169	200	43	45
65	70	178	200	46	45
80	89	184	200	46	45
100	106	208	200	52	45
125	120	223	290	56	65
150	131	236	290	56	65
200	164	293	450	60	86
250	200	318	450	68	86
300	235	343	450	78	86

#### SYLAX STAINLESS STEEL BODY CAST IRON HAND-LEVER LUG



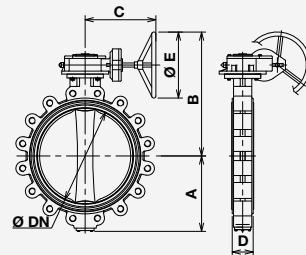
DN	A	B	C	D	E
25	50	158	200	32	45
32/40	57	163	200	32	45
50	62	169	200	43	45
65	70	178	200	46	45
80	89	184	200	46	45
100	106	208	200	52	45
125	120	223	290	56	65
150	131	236	290	56	65
200	164	293	450	60	86
250	200	318	450	68	86
300	235	343	450	78	86

#### SYLAX WITH MANUAL GEARBOX WAFER Butterfly: cast iron-316 stainless steel



DN	A	B	C	D	E
25	50	214.5	120	32	125
32/40	57	219.5	120	32	125
50	62	225.5	120	43	125
65	70	234.5	120	46	125
80	89	240.5	120	46	125
100	106	264.5	120	52	125
125	120	279.5	120	56	125
150	131	292.5	120	56	125
200	164	373.5	197	60	200
250	200	399	197	68	200
300	235	459	239	78	250
350	270	468	239	78	250

#### SYLAX WITH MANUAL GEARBOX LUG Butterfly: cast iron-316 stainless steel

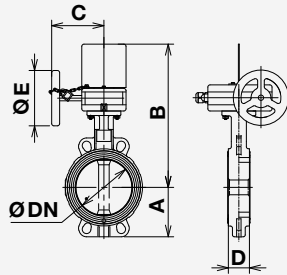


DN	A	B	C	D	E
32	57	219.5	120	32	125
40	57	219.5	120	32	125
50	62	225.5	120	43	125
65	70	234.5	120	46	125
80	89	240.5	120	46	125
100	103	264.5	120	52	125
125	119	279.5	120	56	125
150	133	292.5	120	56	125
200	168	373.5	197	60	200
250	198	399	197	68	200
300	227	459	239	78	250
350	248	468	239	78	250

## Overall dimensions

### SYLAX CNPP WAFER

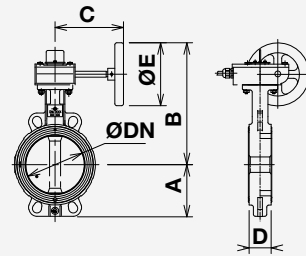
Butterfly: cast iron



DN	A	B	C	D	E
32/40	57	281	118	32	125
50	62	294	118	43	125
65	70	303	118	46	125
80	89	309	118	46	125
100	106	333	118	52	125
125	120	348	118	56	125
150	132	361	118	56	125
200	164	419	205	60	200
250	200	444	205	68	200
300	238	469	205	78	200
300	235	459	239	78	250
350	270	468	239	78	250

### SYLAX MF WAFER

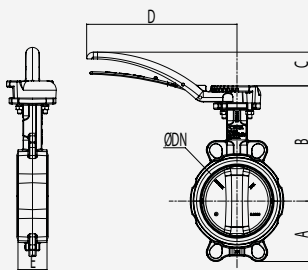
Butterfly: cast iron-316 stainless steel



DN	A	B	C	D	E
32/40	57	232	168	32	100
50	62	238	168	43	100
65	70	247	168	46	100
80	89	253	168	46	100
100	106	277	175	52	120
125	120	292	175	56	120
150	131	305	175	56	120
200	164	386	228	60	200
250	200	411.5	228	68	200
300	235	461.5	234	78	250
300	227	459	239	78	250
350	248	468	239	78	250

### XYLIA2 CAST IRON HAND-LEVER WAFER

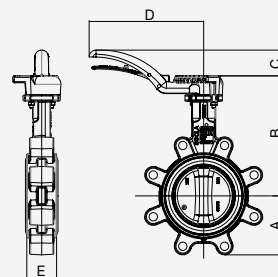
Butterfly: cast iron-316 stainless steel



DN	A	B	C	D	E
50	62	136	71.2	218	43
65	70	145	71.2	218	46
80	89	151	71.2	218	46
100	106	170	71.2	218	52
125	119	190	71.2	304	56
150	131	203	71.2	304	56

### XYLIA2 CAST IRON HAND-LEVER LUG

Butterfly: cast iron-316 stainless steel

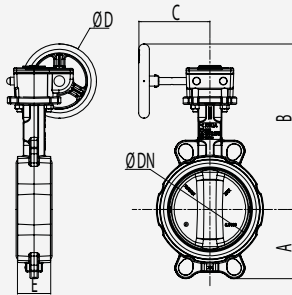


DN	A	B	C	D	E
50	62	136	71.2	218	43
65	70	145	71.2	218	46
80	89	151	71.2	218	46
100	106	170	71.2	218	52
125	119	190	71.2	304	56
150	131	203	71.2	304	56

## Overall dimensions

### XYLIA2 MANUAL GEARBOX WAFER

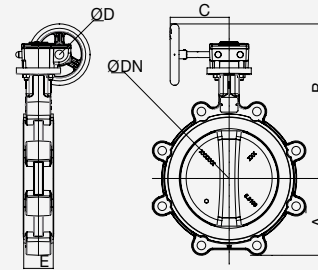
Butterfly: cast iron-316 stainless steel



DN	A	B	C	D
50	62	196.5	142	43
65	70	205.5	142	46
80	89	211.5	142	46
100	106	230.5	142	52
125	119	250.5	142	56
150	131	263.5	142	56
200	164	317.5	258	60
250	199	343	258	68
300	230	375	258	78

### XYLIA2 MANUAL GEARBOX LUG

Butterfly: cast iron-316 stainless steel





















































DN	A	B	C	D
50	62	196.5	142	43
65	70	205.5	142	46
80	89	211.5	142	46
100	106	230.5	142	52
125	119	250.5	142	56
150	131	263.5	142	56
200	164	317.5	258	60
250	199	343	258	68
300	230	375	258	78

# CHECK VALVES

## Range of check valves/applications

**THERE IS NO SUCH THING AS UNIVERSAL VALVE!**

The table below provides the key parameters for selecting the right valve for your installation and use requirements.

APPLICATIONS	 BUILDING	 PUMPING	 STORAGE							 BUILDING		
	 DISTRIBUTION	 DISTRIBUTION		 WATER SUPPLY					 STORAGE	 PUMPING		
	 PROTECTION	 WATER SUPPLY		 TREATMENT	 DISTRIBUTION	 CONDITIONING	 PUMPING	 DISTRIBUTION		 DISTRIBUTION	 BUILDING	
	 HEATING	 TREATMENT	 DISTRIBUTION	 AGRICULTURE	 AGRICULTURE	 WATER SUPPLY	 CONDITIONING	 OVERPRESSURE		 HEATING	 HEATING	
	 INDUSTRY	 OVERPRESSURE	 PROTECTION	 INDUSTRY	 INDUSTRIES	 DISTRIBUTION	 AGRICULTURE	 INDUSTRIES	 PUMPING	 INDUSTRIES	 INDUSTRIES	
SHUT-OFF SYSTEMS	01	02	03/03HP	05 Dual plate	05 Single plate	05 Flanged	B	M / MI	TJ	TJO / 04	W	
NATURE OF FLUID	CLEAR	●	●	●	●	●	●	●	●	●	●	
PARTICLE-LOADED						●	●					
GAS	●	●	●	●				●			●	
STEAM											●	
AGGRESSIVE		●		●		●	●			●		
FOOD	●	●	●			●		●			●	
OPERATING POSITION												
T°C	60/80	80/140	80/90 110/230	100/130	110/180	70	60/150	60/100	60	60/80	100/350	
PFA (PS according to PED)	10	16/25/40	16	16/25	16	16	10	6 (M) 16/25 (M)	6/10	10	16/40	
FITTINGS	THREADED	1/4" to 2 1/2"	2" 1/4" to 8"	1/2" to 2"	-	-	-	1" to 3"	3/4" to 4"	-	1/4" to 2"	1/2" to 2"
FLANGED	-	40-500 mm	40 - 250 mm	-	-	65-300 mm	50-350 mm	40-200 mm	200-600 mm	-	-	
OTHER	-	-	-	Between flanges 50-600 mm	Between flanges 40-600 mm	-	-	-	-	-	Between flanges 15-200 mm	



## Brass/plastic check valves

### 601



Body: brass. Disc: POM (polyacetal). Guide: POM (polyacetal).

Spring: stainless steel. Seal: NBR.

Max. temperature: 80°C.

Applications: construction, industry, potable water.

**Approvals: ACS (Attestation de Conformité Sanitaire), Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B2503</b>	-	3/8"	FF	10	10
<b>149B2504</b>	-	1/2"	FF	10	10
<b>149B2505</b>	-	3/4"	FF	10	10
<b>149B2506</b>	-	1"	FF	10	10
<b>149B2507</b>	-	1 1/4"	FF	10	8
<b>149B2508</b>	-	1 1/2"	FF	10	6
<b>149B2509</b>	-	2"	FF	10	6

Dimensions on page 129

### 601V



Body: brass. Disc: POM (polyacetal) or PPO (polyphenylene oxide).

Guide: POM (polyacetal)/PA. Spring: stainless steel.

Seal: fluoroelastomer.

Max. temperature: 80°C.

Applications: heating, circulator pumps, pumping (diesel), industry.

**Approvals: Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B2447</b>	-	3/8"	FF	10	10
<b>149B2448</b>	-	1/2"	FF	10	10
<b>149B2450</b>	-	1"	FF	10	10

Other models available to order:

**601 P:** PVC body - FF glue-on connection

**281 P:** MF fitting

**211:** compression fittings

Dimensions on page 129

## 290



Body: brass. Disc: DN1/4"- 1/2", PA (polyamide), DN3/4" - 2", POM (polyacetal).  
 Seal: EPDM O-Ring. Spring: stainless steel. Max. temperature: 80°C.  
 Applications: construction, distribution, domestic pumping, potable water.  
**Approvals: ACS (Attestation de Conformité Sanitaire), Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3118</b>	-	1/4	FF	10	10
<b>149B3119</b>	-	3/8	FF	10	10
<b>149B3120</b>	-	1/2	FF	10	10
<b>149B3121</b>	-	3/4	FF	10	10
<b>149B3122</b>	-	1	FF	10	10
<b>149B3123</b>	-	1 1/4	FF	10	10
<b>149B3124</b>	-	1 1/2	FF	10	6
<b>149B3125</b>	-	2	FF	10	6

Other models available to order: **290X**: made entirely of 304 stainless steel.  
 Dimensions on page 134

## 290D



Body: POM (polyacetal). Disc: DN3/8"-1/2", PA (polyamide), DN3/4"-1": POM (polyacetal). Seal: EPDM O-Ring. Spring: stainless steel. Max. temperature: 80°C.  
 Applications: construction, distribution, domestic pumping, potable water.  
**Approvals: ACS (Attestation de Conformité Sanitaire), Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3319</b>	-	3/8	FF	10	10
<b>149B3320</b>	-	1/2	FF	10	10
<b>149B3321</b>	-	3/4	FF	10	10
<b>149B3322</b>	-	1	FF	10	10

Other models available to order: **290P**: polypropylene body and fluoroelastomer O-Ring.  
 Dimensions on page 134

## 297



Body: brass. Disc: DN1/4"-1/2", PA (polyamide), DN3/4"-2": POM (polyacetal).  
 Seal: fluoroelastomer O-ring. Spring: stainless steel. Max. temperature: 80°C.  
 Applications: heating, pumping (diesel), circulator pumps.  
**Approvals: Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3168</b>	-	1/4	FF	10	10
<b>149B3159</b>	-	3/8	FF	10	10
<b>149B3160</b>	-	1/2	FF	10	10
<b>149B3161</b>	-	3/4	FF	10	10
<b>149B3162</b>	-	1	FF	10	10
<b>149B3163</b>	-	1 1/4	FF	10	10
<b>149B3164</b>	-	1 1/2	FF	10	6
<b>149B3165</b>	-	2	FF	10	6

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## 297D



Body: POM (polyacetal). Disc: DN1/4"-1/2", PA (polyamide), DN3/4"-2": POM (polyacetal).  
 Seal: fluoroelastomer O-ring. Spring: stainless steel. Max. temperature: 80°C.  
 Applications: heating, pumping (diesel), circulator pumps.  
**Approvals: Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3359</b>	-	3/8	FF	10	10
<b>149B3360</b>	-	1/2	FF	10	10
<b>149B3361</b>	-	3/4	FF	10	10
<b>149B3362</b>	-	1	FF	10	10

Dimensions on page 134

## Cast iron check valves

462



Body with integrated single-arm guide: epoxy-coated GG25 cast iron. Face-to-face dimensions to EN558-1

Series 14. Seal: EPDM. Disc: brass. Ring + Stem: bronze.

Spring: stainless steel. Max. temperature: 100°C. Operates in all positions.

Applications: supply, distribution circuits, pumping, industry, potable water.

**Approvals: ACS (Attestation de Conformité Sanitaire), PED 2014/68/EU, Bureau Veritas.**

Part no.	DN mm	DN"	PN	PFA water	Package
149B3751	50	2	10/16	16	1
149B3752	65	2 1/2	10/16	16	1
149B3753	80	3	10/16	16	1
149B3754	100	4	10/16	16	1
149B3755	125	5	10/16	16	1
149B3756	150	6	10/16	16	1
149B3757	200	8	10	10	1

Dimensions on page 129

402/202

Body: epoxy-coated GG25 cast iron, 2 undrilled bosses. Seal: EPDM.

Spring: stainless steel.

Applications: supply, distribution circuits, pumping, industry, potable water.

**Approvals: ACS (Attestation de Conformité Sanitaire), PED 2014/68/EU, Bureau Veritas.**

Other approvals available.



**Type 402 flanged:** Disc: DN 40: brass, DN 50 and 65: bronze, other DN's: cast iron with bronze / stainless steel stem. Guide: DN 50: brass, other DN's: cast iron with bronze ring.

Part no.	DN mm	DN"	PN	PFA water	Package
149B2281	40	1 1/2	10/16	16	1
149B2282	50	2	10/16	16	1
149B2283	65	2 1/2	10/16	16	1
149B2284	80	3	10/16	16	1
149B2285	100	4	10/16	16	1
149B2226	125	5	10/16	16	1
149B2227	150	6	10/16	16	1
149B2229	200	8	10	10	1
149B2230	250	10	10	10	1
149B2231	300	12	10	10	1
149B002849	200	8	16	10	1
149B002851	250	10	16	10	1
149B002853	300	12	16	10	1

Other models available to order:

**402 B:** 2 drilled threaded bosses with plugs - **402S:** with PN25-40 flanges- **402X:** with stainless steel body

**402Z:** with bronze body - **402WG:** 250 micron epoxy coating

Dimensions on page 130



**Type 202 threaded:** Disc: DN 2" 1/2 and 3": bronze, DN 4": cast iron with bronze stem.

Guide: DN 2" 1/2: bronze, other DN's: cast iron with bronze ring. Operates in all positions.

Part no.	DN mm	DN"	Connection	PFA water	Package
149B2286	65	2 1/2	FF	16	1
149B2287	80	3	FF	16	1
149B2288	100	4	FF	16	1

Other models available to order:

**202B:** 2 drilled threaded bosses with plugs - **202Z:** made entirely of bronze - **202RR:** Rilsan coating

**202V:** with fluoroelastomer seal - **212:** male/female.

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## 402V



Seal: FKM fluoroelastomer.

Other features: see model 402.

Applications: Supply, pumping, general industrial circuits, hydrocarbons.

Approvals: Bureau Veritas, PED 2014/68/EU.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B2281V</b>	40	1 1/2	10/16	16	1
<b>149B2346</b>	50	2	10/16	16	1
<b>149B2347</b>	65	2 1/2	10/16	16	1
<b>149B2348</b>	80	3	10/16	16	1
<b>149B2349</b>	100	4	10/16	16	1
<b>149B2226V</b>	125	5	10/16	16	1
<b>149B2227V</b>	150	6	10/16	16	1
<b>149B2229V</b>	200	8	10	10	1
<b>149B2230V</b>	250	10	10	10	1

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## 882



Body: Epoxy-coated GGG40 cast iron. Bronze disc (DN65), cast iron disc (DN 80 to DN 250). Cast iron guide with bronze ring. Seal: EPDM

Max. temperature: 100°C

Applications: pumping, supply, pressure relief units, industry, potable water.

Approvals: ACS (Attestation de Conformité Sanitaire), Bureau Veritas, PED 2014/68/EU.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B3040</b>	65	2 1/2	PN10-16-25-40-ASA150	40	1
<b>149B3041</b>	80	3	PN10-16-25-40-ASA150	40	1
<b>149B3042</b>	100	4	PN10-16-25-40-ASA150	40	1
<b>149B3043</b>	125	5	PN10-16-25-40-ASA150	40	1
<b>149B3044</b>	150	6	PN10-16-25-40-ASA150	40	1
<b>149B3045</b>	200	8	PN10-16-ASA150	16	1
<b>149B007936</b>	200	8	PN25	25	1
<b>149B007937</b>	200	8	PN40	40	1
<b>149B3046</b>	250	10	PN40	40	1
<b>149B007938</b>	250	10	PN25	25	1

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## Cast iron check valves with two plates between flanges

895



Body: epoxy-coated GG25 cast iron (DN50 to DN150), epoxy-coated GGG40 cast iron (DN200 to DN400). Plates: 304 stainless steel. Seal: EPDM.

Spring: stainless steel. Max. temperature: 100°C.

Applications: pumping, supply, general industrial circuits, potable water.

Approvals: ACS (Attestation de Conformité Sanitaire), PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B3000</b>	50	2	10/16	16	1
<b>149B3001</b>	65	2 1/2	10/16	16	1
<b>149B3002</b>	80	3	10/16	16	1
<b>149B3003</b>	100	4	10/16/ASA150	16	1
<b>149B3004</b>	125	5	10/16/ASA150	16	1
<b>149B3005</b>	150	6	10/16/ASA150	16	1
<b>149B3006</b>	200	8	10/16/ASA150	16	1
<b>149B3007</b>	250	10	10/16/ASA150	16	1
<b>149B3008</b>	300	12	10/16/ASA150	16	1
<b>149B3010</b>	400	16	10/16/ASA150	16	1

Other models available to order:

**825:** made entirely of 316 stainless steel (from 50mm to 350mm).

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895V



Seal: FKM fluoroelastomer.

Other features: see model 895.

Applications: Pumping, supply, general industrial circuits, hydrocarbons.

Approvals: Bureau Veritas, PED 2014/68/EU.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B3000V</b>	50	2	10/16	16	1
<b>149B3001V</b>	65	2 1/2	10/16	16	1
<b>149B3002V</b>	80	3	10/16	16	1
<b>149B3003V</b>	100	4	10/16/ASA150	16	1
<b>149B3004V</b>	125	5	10/16/ASA150	16	1
<b>149B3005V</b>	150	6	10/16/ASA150	16	1
<b>149B3006V</b>	200	8	10/16/ASA150	16	1
<b>149B3007V</b>	250	10	10/16/ASA150	16	1
<b>149B3008V</b>	300	12	10/16/ASA150	16	1

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3

## 805



Body: GG25 cast iron with epoxy coating, except for DN 200,250,300,400: GGG40 cast iron with epoxy coating. Plates: aluminium bronze. Seal: EPDM (DN50 to DN300 + DN400), NITRILE (DN 350 and DN 450 to DN600). Spring: stainless steel.

Max. temperature EPDM: 100°C, NITRILE: 80°C

Applications: pumping, supply, general industrial circuits.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B3270</b>	50	2	10/16	16	1
<b>149B3271</b>	65	2 1/2	10/16	16	1
<b>149B3272</b>	80	3	10/16	16	1
<b>149B3273</b>	100	4	10/16/ASA150	16	1
<b>149B3274</b>	125	5	10/16/ASA150	16	1
<b>149B3275</b>	150	6	10/16/ASA150	16	1
<b>149B3276</b>	200	8	10/16/ASA150	16	1
<b>149B3277</b>	250	10	10/16/ASA150	16	1
<b>149B3278</b>	300	12	10/16/ASA150	16	1
<b>149B2590</b>	350	14	10/16/ASA150	16	1
<b>149B3330</b>	400	16	10/16/ASA150	16	1
<b>149B2592</b>	450	18	10/16/ASA150	16	1
<b>149B2593</b>	500	20	10/16/ASA150	16	1
<b>149B2594</b>	600	24	10/16/ASA150	16	1

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## 815



Body: Epoxy-coated FGS cast iron Plates: DN50>DN300+DN400: 304 stainless steel - DN350+DN450>DN600 aluminium bronze.

Seal: DN50>DN300+DN400: EPDM - DN350+DN450>DN600 NBR. Spring: stainless steel.

Max. temperature: EPDM 100°C – NBR 80°C. Maximum pressure: 25 bar.

Applications: pumping, supply, general industrial circuits.

Approvals: Bureau Veritas, PED 2014/68/EU, ACS for DN50>DN300+DN400.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B3290</b>	50	2	25	25	1
<b>149B3291</b>	65	2 1/2	25	25	1
<b>149B3292</b>	80	3	25	25	1
<b>149B3293</b>	100	4	25	25	1
<b>149B3294</b>	125	5	25	25	1
<b>149B3295</b>	150	6	25	25	1
<b>149B3296</b>	200	8	25	25	1
<b>149B3297</b>	250	10	25	25	1
<b>149B3298</b>	300	12	25	25	1
<b>149B2650</b>	350	14	25	25	1
<b>149B3340</b>	400	16	25	25	1
<b>149B2652</b>	450	18	25	25	1
<b>149B2653</b>	500	20	25	25	1
<b>149B2654</b>	600	24	25	25	1

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## Cast iron check valves with one plate between flanges

### 635E



Body and plate: steel with cathophoretic coating. Seal: EPDM on seat.

Max. temperature: 110°C.

Applications: general circuits, pumping, distribution, supply.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149G3550</b>	40	-	10/16	16	1
<b>149G3551</b>	50	-	10/16	16	1
<b>149G3552</b>	65	-	10/16	16	1
<b>149F021283</b>	80	-	10/16/ASA150	16	1
<b>149F021284</b>	100	-	10/16/ASA150	16	1
<b>149F021285</b>	125	-	10/16/ASA150	16	1
<b>149F021286</b>	150	-	10/16/ASA150	16	1
<b>149F021287</b>	200	-	10/16/ASA150	10	1
<b>149F021288</b>	250	-	10/16/ASA150	10	1
<b>149F021289</b>	300	-	10/16/ASA150	10	1

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### 635V



Body and plate: steel with cathophoretic coating. Seal: FKM.

Max. temperature: 150°C.

Applications: general and industrial circuits, hydrocarbons.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149F021308</b>	40	-	10/16	16	1
<b>149F021309</b>	50	-	10/16	16	1
<b>149F021310</b>	65	-	10/16	16	1
<b>149F021311</b>	80	-	10/16/ASA150	16	1
<b>149F021312</b>	100	-	10/16/ASA150	16	1
<b>149F021313</b>	125	-	10/16/ASA150	16	1
<b>149F021314</b>	150	-	10/16/ASA150	16	1
<b>149F021315</b>	200	-	10/16/ASA150	10	1
<b>149F021316</b>	250	-	10/16/ASA150	10	1
<b>149F021317</b>	300	-	10/16/ASA150	10	1

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## 627E



Body and plate: 316 stainless steel. Seal: EPDM on seat.

Max. temperature: 110°C

Applications: general and industrial circuits, pumping.

**Approvals: ACS (Attestation de Conformité Sanitaire), Bureau Veritas, PED 2014/68/EU.**

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149G3560</b>	40	-	10/16	16	1
<b>149G3561</b>	50	-	10/16	16	1
<b>149G3562</b>	65	-	10/16	16	1
<b>149F021290</b>	80	-	10/16/ASA150	16	1
<b>149F021292</b>	100	-	10/16/ASA150	16	1
<b>149F021293</b>	125	-	10/16/ASA150	16	1
<b>149F021294</b>	150	-	10/16/ASA150	16	1
<b>149F021295</b>	200	-	10/16/ASA150	10	1
<b>149F021296</b>	250	-	10/16/ASA150	10	1
<b>149F021297</b>	300	-	10/16/ASA150	10	1

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## 627V



Body and plate: 316 stainless steel. Seal: FKM.

Max. temperature: 150°C

Applications: general and industrial circuits, hydrocarbons.

**Approvals: Bureau Veritas, PED 2014/68/EU.**

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149F021226</b>	40	-	10/16	16	1
<b>149F021227</b>	50	-	10/16	16	1
<b>149F021228</b>	65	-	10/16	16	1
<b>149F021318</b>	80	-	10/16/ASA150	16	1
<b>149F021319</b>	100	-	10/16/ASA150	16	1
<b>149F021320</b>	125	-	10/16/ASA150	16	1
<b>149F021321</b>	150	-	10/16/ASA150	16	1
<b>149F021322</b>	200	-	10/16/ASA150	10	1
<b>149F021323</b>	250	-	10/16/ASA150	10	1
<b>149F021324</b>	300	-	10/16/ASA150	10	1

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## Cast iron check valves with one plate between flanges, inspectable

405



Body: GGG40 cast iron with internal/external epoxy coating. Plate: GGG40 cast iron coated with NBR coating.

Options: plate lifting system. Max. temperature: 70°C.

Applications: clear water, waste water, supply, distribution, pumping.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	PN	PFA water	Package
149B3459	40	-	10/16	16	1
149B3460	50	-	10/16	16	1
149B3461	65	-	10/16	16	1
149B3462	80	-	10/16	16	1
149B3463	100	-	10/16	16	1
149B3464	125	-	10/16	16	1
149B3465	150	-	10/16	16	1
149B3466	200	-	10	10	1
149B3467	250	-	10	10	1
149B3468	300	-	10	10	1
149B028887	200		16	10	1
149B22072	250		16	10	1
149B24992	300	-	16	10	1

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## Wafer check valves

802



Body: DN 32 to 50: DZR brass; DN 65 to 100: GG25 cast iron with external epoxy coating; DN 125 to 200: GGG40 cast iron with external epoxy coating. Disc: 316L stainless steel. DN 125 to 200: cast iron disc assembly. Guide: austenitic steel. Spring: austenitic steel.

DN32 to DN50 max temperature: 200°C; DN65 to DN200 max temperature: 100°C.

Applications: heating, industrial circuits, potable water.

Approvals: ACS (Attestation de Conformité Sanitaire), PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	Between flanges	PFA water	Package
149B2413	32	1 1/4	PN6-10-16-ASA150	16	1
149B2414	40	1 1/2	PN6-10-16-ASA150	16	1
149B2415	50	2	PN6-10-16-ASA150	16	1
149B2416	65	2 1/2	PN6-10-16-ASA150	16	1
149B2417	80	3	PN6-10-16-ASA150	16	1
149B2418	100	4	PN6-10-16-ASA150	16	1
149B2439	125	5	PN10-16-ASA150	16	1
149B2440	150	6	PN10-16-ASA150	16	1
149B2441	200	8	PN10-16-ASA150	16	1

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812



Body: stainless steel (304); DN80-100 (316L). Mounting between flanges with centring collar.  
 Disc: 316L stainless steel for DN 15-100; 304 stainless steel for larger diameters. **G u i d e :**  
 stainless steel DN15 (316L)/DN20-100 (304L), DN125-150 (316L)/DN200 (304)  
 Spring: stainless steel. Max. temperature: 350°C.  
 Applications: industry, corrosive products, high pressure and high temperature, potable water.  
**Approvals: PED 2014/68/EU, Bureau Veritas.**

Part no.	DN mm	DN"	Between flanges	PFA water	Package
<b>149B2420</b>	15	1/2	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2421</b>	20	3/4	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2422</b>	25	1	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2423</b>	32	1 1/4	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2424</b>	40	1 1/2	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2425</b>	50	2	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2426</b>	65	2 1/2	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2427</b>	80	3	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2428</b>	100	4	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2429</b>	125	5	PN10-16-25-40-ASA150-ASA300	40	1
<b>149B2430</b>	150	6	PN10-16-25-40-ASA150-ASA300	40	1
<b>149B2431</b>	200	8	PN6-10-16-ASA150	16	1
<b>149B2432</b>	200	8	PN25-40-ASA300	40	1

ATEX version available to order.  
 Dimensions on page 133

812X



Same characteristics as 812 but made entirely of 316L stainless steel.

Part no.	DN mm	DN"	Between flanges	PFA water	Package
<b>149B2420X</b>	15	1/2	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2421X</b>	20	3/4	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2422X</b>	25	1	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2423X</b>	32	1 1/4	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2424X</b>	40	1 1/2	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2425X</b>	50	2	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2426X</b>	65	2 1/2	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2427X</b>	80	3	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2428X</b>	100	4	PN6-10-16-25-40-ASA150-ASA300	40	1
<b>149B2429X</b>	125	5	PN10-16-25-40-ASA150-ASA300	40	1
<b>149B2430X</b>	150	6	PN10-16-25-40-ASA150-ASA300	40	1
<b>149B2431X</b>	200	8	PN6-10-16-ASA150	16	1
<b>149B2432X</b>	200	8	PN25-40-ASA300	40	1

ATEX version available to order.  
 Dimensions on page 133

## Diaphragm check valves

### 407



Body: GG25 cast iron with epoxy coating. Seat: DN40-80: stainless steel; DN100-200: polyamide-coated steel. Diaphragm: NR (natural rubber). Seal: EPDM. Max. temperature: 60°C.

Application: compressed air circuits, vacuum pumps.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B2164</b>	40	1 1/2	10/16	16	1
<b>149B2165</b>	50	2	10/16	16	1
<b>149B2166</b>	65	2 1/2	10/16	16	1
<b>149B2167</b>	80	3	10/16	16	1
<b>149B2168</b>	100	4	10/16	16	1
<b>149B2169</b>	125	5	10/16	16	1
<b>149B2170</b>	150	6	10/16	16	1
<b>149B2237</b>	200	8	10	10	1
<b>149B1536</b>	200	8	16	10	1

Other models available to order:

**407V**: with fluoroelastomer - **407B**: with 2 threaded bosses and plugs - **417**: with PN25 flanges

Dimensions on page 132

### 207



Body: Epoxy-coated GG25 cast iron. Seat: stainless steel. Seal: EPDM. Diaphragm: NR (natural rubber). Max. temperature 60°C.

Application: compressed air circuits, vacuum pumps.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B2019</b>	-	3/8*	FF	16	1
<b>149B2100</b>	-	1/2	FF	16	1
<b>149B2101</b>	-	3/4	FF	16	1
<b>149B2102</b>	-	1	FF	16	1
<b>149B2103</b>	-	1 1/4	FF	16	1
<b>149B2104</b>	-	1 1/2	FF	16	1
<b>149B2105</b>	-	2	FF	16	1
<b>149B2106</b>	-	2 1/2	FF	16	1
<b>149B2107</b>	-	3	FF	16	1

Other models available to order: **207V**: with fluoroelastomer seal.

\* Aluminium body, seat and split pin.

Dimensions on page 132

## Ball check valves

### 418/408



Body: **418**: GGG40 cast iron with epoxy coating; **408**: GGG40 cast iron with epoxy coating. Length to EN558-1 Series 48. Seal: NBR. Ball: NBR-coated aluminium (DN50 to 100), NBR-coated cast iron (larger DN). Max. temperature: 80°C. Operates with ascending vertical or horizontal flow.

Applications: waste water, slurry, viscous liquids, sanitation.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B3140</b>	50	2	10/16	10	1
<b>149B3141</b>	65	2 1/2	10/16	10	1
<b>149B3142</b>	80	3	10/16	10	1
<b>149B3143</b>	100	4	10/16	10	1
<b>149B3144</b>	125	5	10/16	10	1
<b>149B3145</b>	150	6	10/16	10	1
<b>149B3146</b>	200	8	10	10	1
<b>149B2907</b>	250	10	10	10	1
<b>149B2908</b>	300	12	10	10	1
<b>149B15473</b>	200	8	16	10	1
<b>149B14908</b>	250	10	16	10	1
<b>149B99279</b>	300	12	16	10	1

Other models available to order: **418F/408F**: with floating ball (air vent valve) - **408X**: made entirely of 304 stainless steel - **418V**: with FKM-coated ball

Dimensions on page 131

Part no.	for DN mm	for DN"	Notes	PFA water	Package
	50	2	-	-	1
<b>149B055400</b>	65	2 1/2	-	-	1
	80	3	-	-	1
<b>149B055056</b>	100	4	-	-	1
	125	5	-	-	1
<b>149B055402</b>	150	6	-	-	1
	200	8	-	-	1
<b>149B055517</b>	250	10	-	-	1
<b>149B055240</b>	300	12	-	-	1

### 508



Body: GG25 cast iron with epoxy coating. Ball: formophenolic resin. Seal: NBR.

Max. temperature: 80°C. Operates with ascending vertical or horizontal flow.

Applications: waste water, viscous liquids, slurry.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3202</b>	-	1	FF	10	1
<b>149B3203</b>	-	1 1/4	FF	10	1
<b>149B3204</b>	-	1 1/2	FF	10	1
<b>149B3205</b>	-	2	FF	10	1
<b>149B3206</b>	-	2 1/2	FF	10	1

Other model available to order: **508V**: with FKM-coated ball

Dimensions on page 131

## KIT COMPRISING REPLACEMENT BALL + SEALS FOR 508 VALVE

Part no.	for DN mm	for DN"	Note	PFA water	Package
149B055073	-	1	-	-	1
149B055116	-	1 1/4	-	-	1
149B055113	-	1 1/2	-	-	1
149B055087	-	2	-	-	1
149B055119	-	2 1/2	-	-	1

## 508F



Body: GG25 cast iron with epoxy coating. Ball: floating, epoxy resin. Seal: NBR.  
Max. temperature: 80°C

Applications: air venting. Vacuum breaker function.

Approvals: Bureau Veritas.

Part no.	DN mm	DN"	Connection	PFA water	Package
149B3212	-	1	FF	10	1
149B3213	-	1 1/4	FF	10	1
149B3214	-	1 1/2	FF	10	1
149B3215	-	2	FF	10	1
149B3216	-	2 1/2	FF	10	1

Dimensions on page 131

## KIT COMPRISING REPLACEMENT BALL + SEALS FOR 508F VALVE

Part no.	for DN mm	for DN"	Note	PFA water	Package
149B055076	-	1	-	-	1
149B055128	-	1 1/4	-	-	1
149B055130	-	1 1/2	-	-	1
149B055132	-	2	-	-	1
149B055134	-	2 1/2	-	-	1

## 208P



Body: PVC. Ball: NBR-coated aluminium (nitrile). DN 1 1/4": NBR-coated cast iron.  
Max. temperature: 60°C. Operates with ascending vertical or horizontal flow.

Applications: waste water, viscous liquids.

Approvals: PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	Connection	PFA water	Package
149B5221	-	1	FF	6	1
149B5222	-	1 1/4	FF	6	1
149B3448	-	1 1/2	FF	6	1
149B5224	-	2	FF	6	1
149B5225	-	2 1/2	FF	6	1
149B3456	-	3	FF	6	1

Dimensions on page 132

## KIT COMPRISING REPLACEMENT BALL + COVER SEAL FOR 208P VALVE

Part no.	for DN mm	for DN"	Note	PFA water	Package
149B055526	-	1	-	-	1
149B055526	-	1 1/4	-	-	1
149B055525	-	1 1/2	-	-	1
149B055349	-	2	-	-	1
149B055449	-	2 1/2	-	-	1
149B055527	-	3	-	-	1

## Brass/plastic foot valves

### 190



Body: brass. Disc: POM (polyacetal) valve. Seal: EPDM.  
Spring: stainless steel. Strainer: PE (polyethylene). Max. temperature: 60°C.  
Applications: construction, pumping, potable water.

**Approvals: ACS (Attestation de Conformité Sanitaire), Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3924</b>	-	1 1/2	FF	10	6
<b>149B3925</b>	-	2	FF	10	6

Available to order: **190P**: polypropylene body and FKM seal.

Dimensions on page 132

### 190D



Body: POM (polyacetal). Disc: DN3/8"-1/2", PA (polyamide) valve, DN3/4"-2": POM (polyacetal) valve. Seal: EPDM. Spring: stainless steel. Strainer: PE (polyethylene).

Max. temperature: 60°C.

Applications: construction, pumping, potable water.

**Approvals: ACS (Attestation de Conformité Sanitaire), Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3719</b>	-	3/8	F	10	10
<b>149B3720</b>	-	1/2	F	10	10
<b>149B3721</b>	-	3/4	F	10	10
<b>149B3722</b>	-	1	F	10	6
<b>149B3723</b>	-	1 1/4	F	10	6
<b>149B3724</b>	-	1 1/2	F	10	6
<b>149B3725</b>	-	2	F	10	6

Available to order: **190X**: 304L stainless steel body and FKM seal.

Dimensions on page 132

### 193D



Body: POM (polyacetal). Disc: DN3/8"-1/2", PA (polyamide) valve, DN3/4"-2": POM (polyacetal) valve. Seal: FKM. Spring: stainless steel.

Strainer: PE (polyethylene). Max. temperature: 60°C.

Applications: construction, pumping, diesel.

**Approvals: Bureau Veritas.**

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3619</b>	-	3/8	F	10	10
<b>149B3620</b>	-	1/2	F	10	10
<b>149B3621</b>	-	3/4	F	10	10
<b>149B3622</b>	-	1	F	10	10
<b>149B3623</b>	-	1 1/4	F	10	10
<b>149B3624</b>	-	1 1/2	F	10	6
<b>149B3625</b>	-	2	F	10	6

Dimensions on page 132

## 193/114



Body: brass. Disc: DN3/8"-1/2", PA (polyamide) valve, DN3/4"-2": POM (polyacetal) valve. Seal: FKM. Spring: stainless steel. Strainer: PE (polyethylene).

Max. temperature: 65°C.

Applications: construction, pumping, diesel.

Approvals: Bureau Veritas.

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B3819</b>	-	3/8	F	10	10
<b>149B3820</b>	-	1/2	F	10	10
<b>149B2371V</b>	-	3/4	F	10	10
<b>149B2372V</b>	-	1	F	10	10
<b>149B2373V</b>	-	1 1/4	F	10	10
<b>149B3824</b>	-	1 1/2	F	10	6
<b>149B3825</b>	-	2	F	10	6

Dimensions on page 133

## Cast iron foot valves

## 302



Body: GG25 cast iron with epoxy coating. Disc: DN 50 and 65: bronze; other DN's: cast iron with bronze stem. Guide: DN 50 bronze, other DN's: cast iron with bronze ring. Seal: EPDM.

Strainer: galvanised steel.

Max. temperature: 100°C.

Applications: pumping clear water, potable water.

Approvals: ACS (Attestation de Conformité Sanitaire), PED 2014/68/EU, Bureau Veritas.

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B2754</b>	50	2	10/16	16	1
<b>149B2755</b>	65	2 1/2	10/16	16	1
<b>149B2756</b>	80	3	10/16	16	1
<b>149B2757</b>	100	4	10/16	16	1
<b>149B2701</b>	125	5	10/16	10	1
<b>149B2702</b>	150	6	10/16	10	1
<b>149B2703</b>	200	8	10	10	1
<b>149B2704</b>	250	10	10	10	1
<b>149B2705</b>	300	12	10	10	1
<b>149B2706</b>	350	14	10	10	1
<b>149B14764</b>	200	8	16	10	1
<b>149B15556</b>	250	10	16	10	1

Other models available to order: **312**: with PN16 flanges - **302V**: with FKM seal - **302X**: made entirely of 304 stainless steel - **302Z**: with bronze body - **302P**: with polypropylene strainer

Dimensions on page 130

## 302 - 304L STAINLESS STEEL STRAINER

Part no.	DN mm	DN"	PN	PFA water	Package
<b>149B15094</b>	50	2	PN10/16	16	1
<b>149B15001</b>	65	2 1/2	PN10/16	16	1
<b>149B14999</b>	80	3	PN10/16	16	1
<b>149B15428</b>	100	4	PN10/16	16	1
<b>149B15002</b>	125	5	PN10	10	1
<b>149B15424</b>	150	6	PN10	10	1
<b>149B15036</b>	200	8	PN10	10	1
<b>149B14906</b>	250	10	PN10	10	1
<b>149B15505</b>	300	12	PN10	10	1



Body: GG25 cast iron with epoxy coating. Disc: 2" and 3" bronze; other DN: cast iron with bronze stem. Guide: 2" 1/4 to 2" 1/2 bronze, other DN: cast iron with bronze ring. Spring: stainless steel. Seal: EPDM. Strainer: galvanised steel. Max. temperature: 100°C.

Applications: pumping clear water, potable water.

Approvals: ACS (Attestation de Conformité Sanitaire), Bureau Veritas.

Part no.	DN mm	DN"	Connection	PFA water	Package
<b>149B2766</b>	60	2 1/4	F	16	1
<b>149B2767</b>	65	2 1/2	F	16	1
<b>149B2768</b>	80	3	F	16	1
<b>149B2769</b>	100	4	F	16	1
<b>149B1162</b>	125	5	F	16	1
<b>149B1163</b>	150	6	F	16	1
<b>149B1164</b>	175	7	F	16	1
<b>149B1165</b>	200	8	F	16	1

Other models available to order.

**102P:** with polypropylene strainer

Dimensions on page 130

## Diaphragm foot valves



Nipple: GG25 cast iron with epoxy coating. Strainer: galvanised steel. Diaphragm: EPDM.

Options: 316L stainless steel strainer.

Installation on hoses.

Max. temperature: 60°C.

Applications: applications with limited operating pressures, irrigation, potable water.

Approvals: ACS (Attestation de Conformité Sanitaire).

Part no.	DN mm	DN pipe	Connection	PFA water	Package
<b>149B2535</b>	30	40	push-in	6	1
<b>149B2537</b>	40	50	push-in	6	1
<b>149B2539</b>	50	60	push-in	6	1
<b>149B2541</b>	60	70	push-in	6	1
<b>149B2543</b>	70	80	push-in	6	1
<b>149B2544</b>	80	90	push-in	6	1
<b>149B2546</b>	90	100	push-in	6	1
<b>149B2547</b>	98	110	push-in	6	1
<b>149B2548</b>	108	120	push-in	6	1
<b>149B2550</b>	138	150	push-in	6	1
<b>149B2551</b>	180	200	push-in	6	1
<b>149F013316</b>	230	250	push-in	6	1
<b>149B2553</b>	276	300	push-in	6	1
version with manual discharge					
<b>149B2551D</b>	180	200	push-in	6	1
<b>149B2552D</b>	230	250	push-in	6	1
<b>149B2553D</b>	276	300	push-in	6	1

Dimensions on page 133



## 327



Strainer for irrigation pumping.

Temperature: 80°C.

FLANGE: epoxy-coated cast iron.

STRAINER: galvanised steel.

**APPROVALS: ACS (Attestation de Conformité Sanitaire); BUREAU VERITAS.**

Available to order: stainless steel strainer.

Part no.	DN mm	DN"	PN	PFA water Package	
149B2555	50	2	10/16	6	1
149B2556	65	2 1/2	10/16	6	1
149B2558	80	3	10/16	6	1
149B2560	100	4	10/16	6	1
149B2561	125	5	10/16	6	1
149B2562	150	6	10/16	6	1
149B2564	200	8	10	6	1
149B2565	250	10	10	6	1
149B2566	300	12	10	6	1
version with manual discharge					
149B2564D	200	8	10	6	1
149B2565D	250	10	10	6	1

Dimensions on page 133

## 337



Threaded fitting: epoxy-coated GG25 cast iron. Strainer: galvanised steel. Diaphragm: EPDM.

Options: 316L stainless steel strainer.

Max. temperature: 60°C.

Applications: irrigation, limit operating pressure, potable water.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	DN mm	DN"	Connection	PFA water	Package
149B2572	-	2	F	6	1
149B2574	-	2 1/2	F	6	1
149B2575	-	3	F	6	1
149B2577	-	4	F	6	1

Dimensions on page 134

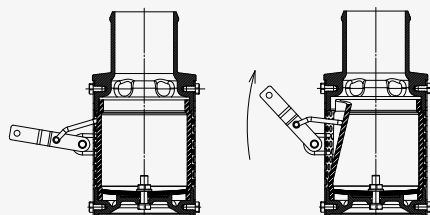
## KIT



Optional drain kit. For figures 317, 327 and 337. For diameters exceeding 150mm, the kit is fitted as standard.

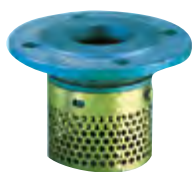
Part no.	DN mm	DN"	Feature	Notes	Package
149F008429	65-110	-	-	-	1
149F008449	120-150	-	-	-	1
149F008452	200-300	-	-	-	1

## TECHNICAL NOTE



OPERATING PRINCIPLE OF DRAIN SYSTEM  
(OPTIONAL)

## 46G



Strainer for irrigation pumping.  
Temperature: 80°C.  
Flange: cast iron with epoxy coating.  
Strainer: galvanised steel.

**APPROVALS: ACS (Attestation de Conformité Sanitaire); BUREAU VERITAS.**  
Available to order: stainless steel strainer.

Part no.	DN mm	DN"	PN	Package
149B2139	50	2	10/16	1
149B2140	65	2 1/2	10/16	1
149B2141	80	3	10/16	1
149B2142	100	4	10/16	1
149B2821	125	5	10/16	1
149B2822	150	6	10/16	1
149B2824	200	8	10	1
149B2825	250	10	10	1
149B2826	300	12	10	1
149B2827	350	14	10	1
149B2828	400	16	10	1

Dimensions on page 135

## Y-strainers

## Y333



Water strainer. DN40-50 GG25 cast iron with internal/external epoxy coating; DN65-400 GGG40 cast iron with internal/external epoxy coating. Mesh: stainless steel. Filtration rating: DN40-50: 500 microns - DN 65: 800 microns; DN 80-200: 1250 microns - DN 250-400: 1600 microns. Cover supplied with G 1/2" plugs (DN40-150) and G 3/4" plugs (DN200-400). Max. temperature: 100°C.

Applications: protection of pumps, valves, pressure reduction valves, potable water.

**Approvals: ACS (Attestation de Conformité Sanitaire), PED 2014/68/EU, WRAS.**

Part no.	DN mm	DN"	PN	PFA water	Package
149B3260	40	1 1/2	10/16	16	1
149B3261	50	2	10/16	16	1
149B3262	65	2 1/2	10/16	16	1
149B3263	80	3	10/16	16	1
149B3264	100	4	10/16	16	1
149B3265	125	5	10/16	16	1
149B3266	150	6	10/16	16	1
149B3267	200	8	10	10	1
149B3268	250	10	10	10	1
149B3269	300	12	10	10	1
149B23119	200	8	16	16	1
149B23121	250	10	16	16	1
149B23123	300	12	16	16	1

Dimensions on page 134

## Y666



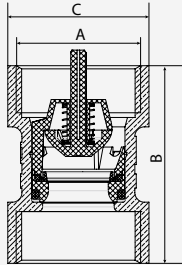
Strainer: AISI 316 stainless steel. Threaded with purge plug. Filtration: 600 microns. Max. temperature: 175°C. Applications: industrial processes, corrosive liquids, high pressure, high temperature.

Part no.	DN mm	DN"	Connection	PFA water	Package
149B5271	-	1/4	FF	40	1
149B5272	-	3/8	FF	40	1
149B5273	-	1/2	FF	40	1
149B5274	-	3/4	FF	40	1
149B5275	-	1	FF	40	1
149B5276	-	1 1/4	FF	40	1
149B5277	-	1 1/2	FF	40	1
149B5278	-	2	FF	40	1

Dimensions on page 134

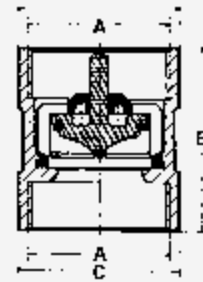
## Overall dimensions

601



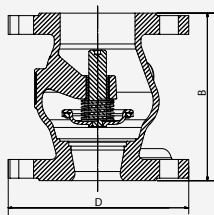
A "	A mm	B mm	C mm
3/8	12/17	38	22
1/2	15/21	41	26
3/4	20/27	42	30
1	26/34	47	37
1 1/4	33/42	55	47
1 1/2	40/49	78	55
2	50/60	89	67

601V



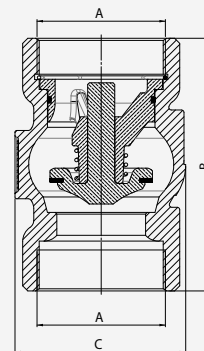
A "	A mm	B mm	C mm
3/8	12/17	38	22
1/2	15/21	41	26
1	26/34	47	37

462



DN "	DN mm	B mm	D mm
2	50	150	165
2 1/4	65	170	185
3	80	180	200
4	100	190	220
5	125	200	250
6	150	210	285
8	200	230	340

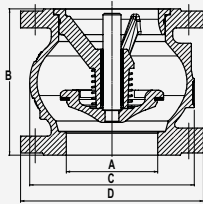
202



DN "	A mm	B mm	C mm
2 1/2	65	148	97
3	80	174	125
4	100	203	150

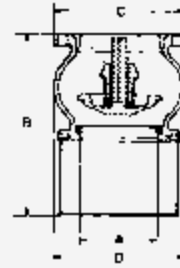
## Overall dimensions

### 402/402V



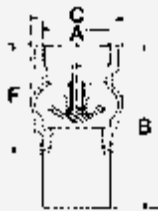
A "	A mm	B mm	C mm	D mm
1 1/2	40	85	80	150
2	50	100	97	165
2 1/2	65	120	125	185
3	80	140	150	200
4	100	170	187	220
5	125	200	220	250
6	150	230	250	285
8	200	289	340	340
10	250	354	420	405
12	300	396	490	460
14	350	473	586	533
16	400	560	680	597
20	500	750	880	670

### 302



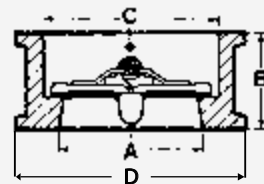
A mm	B mm	C mm	D mm
50	143	165	97
65	185	185	125
80	218	200	150
100	265	220	181
125	333	254	217
150	373	285	256
200	483	343	336
250	572	406	416
300	652	482	486
350	771	533	580
400	876	597	676
500	1094	670	880

### 102



A "	A mm	B mm	C mm	F mm
2 1/4	60	167	97	123
2 1/2	65	167	97	124
3	80	212	125	152
4	100	251	150	180
5	125	345	188	230
6	150	430	223	275
7	175	508	266	333
8	200	508	266	333

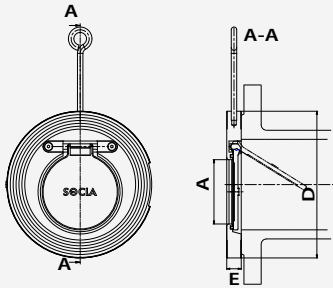
### 895/895V



A "	A mm	B mm	C mm	D mm
2	50	54	60	109
2 1/2	65	54	73	129
3	80	57	89	144
4	100	64	114	164
5	125	70	141	194
6	150	76	168	220
8	200	95	219	275
10	250	108	273	330
12	300	143	324	380
16	400	191	410	491

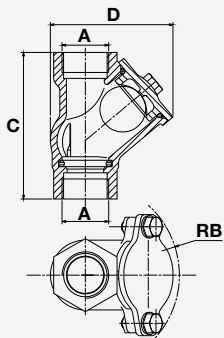
## Overall dimensions

### 635E/635V/627E/627V



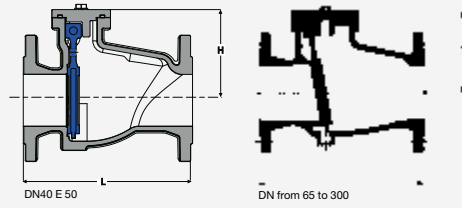
DN	A mm	D mm	E mm
40	22	94	16
50	32	106	16
65	42	129	16
80	53	144	16
100	71	162	16
125	94	194	16
150	114	220	19
200	164	275	28
250	199	331	32
300	240	380	38

### 508/508F



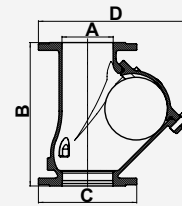
A "	A mm	RB mm	C mm	D mm
1	26/34	76	114	95
1 1/4	33/42	85	132	110.5
1 1/2	40/49	93	145	121
2	50/60	107	173.5	144
2 1/2	66/76	127	200	174.5

### 405



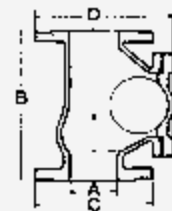
DN	L mm	H mm
40	180	89
50	200	95.5
65	240	122
80	260	140
100	300	152
125	350	162
150	400	180
200	500	205
250	600	255
300	700	293

### 418



A "	A mm	B mm	C mm	D mm
2	50	200	165	173
2 1/2	65	240	185	214
3	80	260	200	252
4	100	300	220	289
5	125	350	250	368
6	150	400	285	424
8	200	500	340	509

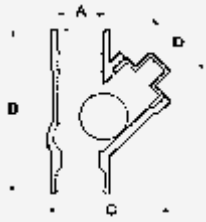
### 408



A "	A mm	B mm	C mm	D mm
10	250	600	400	593.50
12	300	700	455	725.50
14	350	875	505	820

## Overall dimensions

### 208P



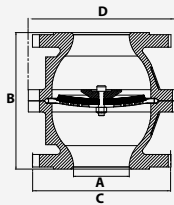
A "	A mm	B mm	C mm
1	26/34	207	114
1 1/4	33/42	143	114
1 1/2	40/49	154	135
2	50/60	179	160
2 1/2	66/76	198	189
3	80/90	276	225

### 190



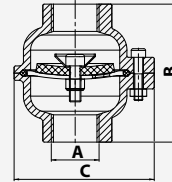
A "	A mm	B mm	C mm
1 1/2	40/49	148	53
2	50/60	179	66

### 407



A "	A mm	B mm	C mm	D mm
1 1/2	40	148	150	140
2	50	158	164	159
2 1/2	65	176	183	169
3	80	196	200	212
4	100	213	220	234
5	125	228	250	250
6	150	266	285	324
8	200	439	340	426

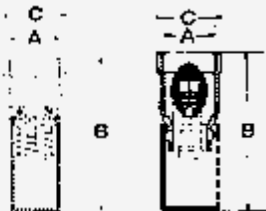
### 207



A "	A mm	B mm	C mm
3/8	12/17	67.5	60.0
1/2	15/21	86.0	88.0
3/4	20/27	86.0	88.0
1	26/34	96.0	97.5
1 1/4	33/42	100.0	107.5
1 1/2	40/49	132.0	123.5
2	50/60	172.0	139.5
2 1/2	66/76	196.0	170.0
3	80/90	234.0	214.0

### 190D

Ø 3/4 - 1 1/4  
1 1/2 - 2

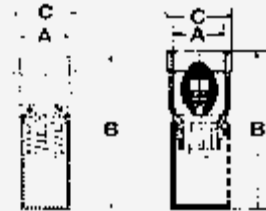


Ø 3/8 - 1/2 - 1

A "	A mm	B mm	C mm
3/8	12/17	56	23
1/2	15/21	56	27
3/4	20/27	75	31
1	26/34	95	40
1 1/4	33/42	119	49
1 1/2	40/49	148	56
2	50/60	180	66

### 193D

Ø 3/4 - 1 1/4  
1 1/2 - 2

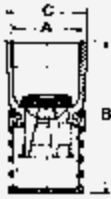


Ø 3/8 - 1/2 - 1

A "	A mm	B mm	C mm
3/8	12/17	59	23
1/2	15/21	59	24
3/4	20/27	64.5	30
1	26/34	78.5	37
1 1/4	33/42	97	47
1 1/2	40/49	148	53
2	50/60	179	66

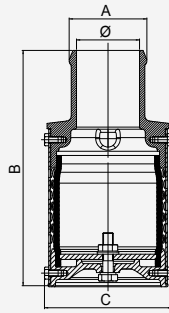
## Overall dimensions

## 193/114



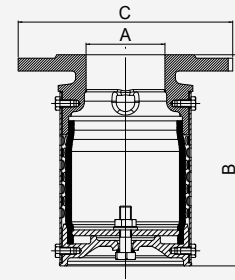
A	A	B	C
"	mm	mm	mm
3/8	12/17	57	23
1/2	15/21	57	27
3/4	20/27	75	31
1	26/34	95	40
1 1/4	33/42	119	49
1 1/2	40/49	148	56
2	50/60	180	66

## 317



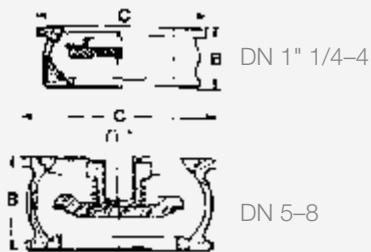
BORE	A	B	C
	mm	mm	mm
30	43	172	92
40	54	182	92
50	64	192	92
60	74	224	121
70	84	250	137
80	94	280	150
90	104	290	150
98	114	324	165
108	124	334	165
138	154	405	205
180	206	482	276
230	258	561	336
276	308	656	401

## 327



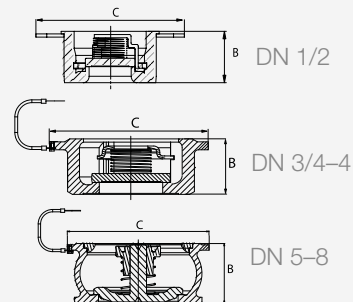
A	A	B	C
"	mm	mm	mm
2	50	151	165
2 1/2	65	182	185
3	80	205	200
4	100	228	220
5	125	258	250
6	150	303	285
8	200	385	340
10	250	441	395
12	300	506	445

## 802



DN	DN	B	C-PN6	C-PN10/16
"	mm	mm	mm	ASA150 mm
1 1/4	32	28	78	84
1 1/2	40	31.5	88	94
2	50	40	98	109
1 1/2	65	46	118	129
3	80	50	134	144
4	100	60	154	162
5	125	90	-	194
6	150	106	-	218
8	200	140	262	273

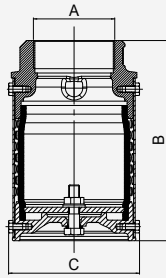
## 812/812X



DN	DN	B	C-PN6	C-PN10/16	C-PN25/40
"	mm	mm	mm	ASA150 mm	ASA 300 mm
1/2	15	16	44	53	53
3/4	20	19	54	63	63
1	25	22	64	73	73
1 1/4	32	28	78	84	84
1 1/2	40	31.5	88	94	94
2	50	40	98	109	109
2 1/2	65	46	118	129	129
3	80	50	134	144	144
4	100	60	154	162	170
5	125	90	-	192	192
6	150	106	-	218	224
8	200	140	262	273	-
8	200	140	-	-	284

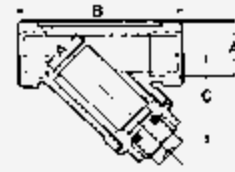
## Overall dimensions

### 337



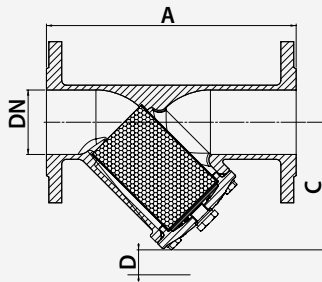
A	A	B	C
"	mm	mm	mm
2	50	153	92
2 1/2	65	185	121
3	80	205	137
4	100	230	150

### Y666



A	B	C
"	mm	mm
1/4	57	32
3/8	57	32
1/2	61	36
3/4	70	41
1	86	44
1 1/4	100	51
1 1/2	111	59
2	138	72

### Y333



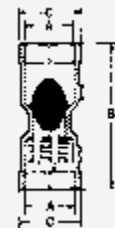
∅	A	C	D	Filtration
mm	mm	mm	mm	mm
40	200	130	35	0.50
50	230	145	50	0.50
65	290	192	65	0.80
80	310	159	75	1.25
100	350	187	90	1.25
125	400	249	125	1.25
150	480	326	145	1.25
200	600	403	220	1.25
250	730	472	200	1.60
300	850	508	250	1.60
350	980	587	315	1.60
400	1100	658	370	1.60

### 290/297



A	A	C	D
"	mm	mm	mm
1/4	8/13	52.5	20
3/8	12/17	54.0	20
1/2	15/21	66.0	24
3/4	20/27	73.0	30
1	26/34	94.0	38
1 1/4	33/42	105.0	47
1 1/2	40/49	120.0	53
2	50/60	156	66

### 290D/297D

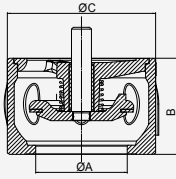


A	A	B	C
"	mm	mm	mm
3/8	12/17	54	23
1/2	15/21	66	28
3/4	20/27	80	34
1	26/34	100	44



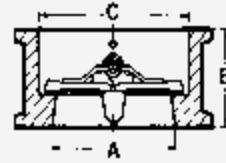
## Overall dimensions

882



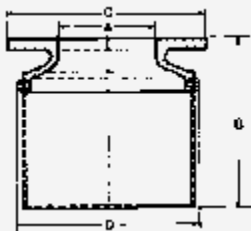
A	B	PN	PN	PN	ASA
"	mm	10/16	25	40	150
65	75	10/16	25	40	150
80	85	142	142	142	-
100	105	162	170	170	170
125	90	194	194	194	194
150	106	218	222	222	222
200	140	273	-	-	273
200	140	-	285	-	-
200	140	-	-	289	-
250	200	-	339	-	-
250	200	328	-	352	328
350	980	587	315	1.60	
400	1100	658	370	1.60	

805



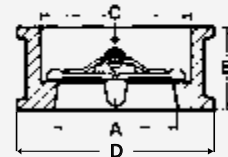
DN	DN	B	C	D
"	mm	mm	mm	mm
2	50	54	60	109
2 1/2	65	54	73	129
3	80	57	89	144
4	100	64	114	164
5	125	70	141	194
6	150	76	168	220
8	200	95	219	275
10	250	108	273	330
12	300	143	324	380
14	350	184	356	440
16	400	191	410	491
18	450	203	457	541
20	500	213	508	596
24	600	222	610	698

46G



A		B	C	D	Strainer
"	mm	mm	mm	mm	perforation
2	50	100	165	97	Ø 6 x 8.5
2 1/2	65	120	185	117	Ø 6 x 8.5
3	80	140	200	139	Ø 8 x 13
4	100	167	220	169	Ø 8 x 13
5	125	217	250	225	Ø 8 x 12
6	150	250	285	265	Ø 8 x 12
7	175	281	315	315	Ø 10 x 14
8	200	326	340	366	Ø 10 x 14
10	250	366	395	436	Ø 10 x 14
12	300	414	445	506	Ø 10 x 14
14	350	444	505	636	Ø 12 x 18
16	400	464	565	696	Ø 12 x 18

815



DN	DN	B	C	D
"	mm	mm	mm	mm
2	50	54	60	109
2 1/2	65	54	73	129
3	80	57	89	144
4	100	64	114	170
5	125	70	141	194
6	150	76	168	220
8	200	95	219	286
10	250	108	273	340
12	300	143	324	403
14	350	184	356	460
16	400	191	410	517
18	450	203	457	567
20	500	213	508	627
24	600	222	610	734



## Chapter 4

### Pressure gauges and thermometers

**WATTS®**



#### M1-80/R Bottom-connection pressure gauge

Higher precision than market standard  
Adjustable red pointer (INAIL)  
Made in Europe

## Chapter 4.1

# PRESSURE GAUGES

## Pressure gauges for boiler rooms

### M1-ABS 50/R



DN 50 bottom-connection pressure gauge with plastic body and red pointer for heating systems. Measuring range 0–4 to 0–40 bar. Accuracy class 2.5. Other scales and connections available to order.

**Complies with EN 837-1 and INAIL technical requirements.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZFEA2204BB10</b>	0–4 bar	G1/4B	10	100
<b>PZFEA2206BB13</b>	0–6 bar	G1/4B	10	100
<b>PZFEA2210BB12</b>	0–10 bar	G1/4B	10	100
<b>PZFEA2216BB09</b>	0–16 bar	G1/4B	10	100
<b>PZFEA2225BB04</b>	0–25 bar	G1/4B	10	100
<b>PZFEA2240BB00</b>	0–40 bar	G1/4B	10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### M1-ABS 63/R



DN 63 bottom-connection pressure gauge with plastic body and red pointer for heating systems. Measuring range 0–1 to 0–40 bar. Accuracy class 2.5. Other scales and connections available to order.

**Complies with EN 837-1 and INAIL technical requirements.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZFEA3101BB02</b>	0–1 bar	G1/4B	10	100
<b>PZFEA3102BB01</b>	0–1.6 bar	G1/4B	10	100
<b>PZFEA3203BB02</b>	0–2.5 bar	G1/4B	10	100
<b>PZFEA3204BB12</b>	0–4 bar	G1/4B	10	100
<b>PZFEA3206BB13</b>	0–6 bar	G1/4B	10	100
<b>PZFEA3210BB15</b>	0–10 bar	G1/4B	10	100
<b>PZFEA3216BB12</b>	0–16 bar	G1/4B	10	100
<b>PZFEA3225BB01</b>	0–25 bar	G1/4B	10	100
<b>PZFEA3240BB00</b>	0–40 bar	G1/4B	10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## M1-ABS 80/R



DN 80 bottom-connection pressure gauge with plastic body and red pointer for heating systems. Measuring range 0–1 to 0–40 bar or 0–60 mH<sub>2</sub>O. Accuracy class 1.6. Other scales and connections available to order.

Complies with EN 837-1 and INAIL technical requirements.

Part no.	Scale	Connection	Pcs. pack	Package
PA4101BC01	0–1 bar	G3/8B	1	50
PA4102BC01	0–1.6 bar	G3/8B	1	50
PA4203BC01	0–2.5 bar	G3/8B	1	50
PA4204BC05	0–4 bar	G3/8B	1	50
PA4206BC07	0–6 bar	G3/8B	1	50
PA4210BC05	0–10 bar	G3/8B	1	50
PA4216BC02	0–16 bar	G3/8B	1	50
PA4225BC01	0–25 bar	G3/8B	1	50
PA4240BC01	0–40 bar	G3/8B	1	50
PA4101WC02	0–10 mH <sub>2</sub> O	G3/8B	1	50
PA4102WC02	0–16 mH <sub>2</sub> O	G3/8B	1	50
PA4203WC02	0–25 mH <sub>2</sub> O	G3/8B	1	50
PA4204WC01	0–40 mH <sub>2</sub> O	G3/8B	1	50
PA4206WC01	0–60 mH <sub>2</sub> O	G3/8B	1	50
PA4204BD03	0–4 bar	G1/2B	1	50
PA4206BD04	0–6 bar	G1/2B	1	50
PA4210BD03	0–10 bar	G1/2B	1	50
PA4216BD04	0–16 bar	G1/2B	1	50
PA4225BD02	0–25 bar	G1/2B	1	50

Dimensions in technical catalogue.

## M1-ABS 100/R



DN 100 bottom-connection pressure gauge with plastic body and red pointer for heating systems. Measuring range 0–1 to 0–40 bar. Accuracy class 1.6. Other scales and connections available to order.

Complies with EN 837-1 and INAIL technical requirements.

Part no.	Scale	Connection	Pcs. pack	Package
PA5101BD02	0–1 bar	G1/2B	1	30
PA5102BD01	0–1.6 bar	G1/2B	1	30
PA5203BD01	0–2.5 bar	G1/2B	1	30
PA5204BD01	0–4 bar	G1/2B	1	30
PA5206BD03	0–6 bar	G1/2B	1	30
PA5210BD02	0–10 bar	G1/2B	1	30
PA5216BD03	0–16 bar	G1/2B	1	30
PA5225BD02	0–25 bar	G1/2B	1	30
PA5240BD01	0–40 bar	G1/2B	1	30

Dimensions in technical catalogue.

## M1-63/R



DN 63 bottom-connection pressure gauge with **chrome-plated steel body** and red pointer for heating systems. Measuring range 0–4 to 0–16 bar. Accuracy class 1.6. Other scales and connections available to order.

Complies with EN 837-1 and INAIL technical requirements.

Part no.	Scale	Connection	Pcs. pack	Package
PA3804BB00	0–4 bar	G1/4B	1	100
PA3806BB01	0–6 bar	G1/4B	1	100
PA3810BB00	0–10 bar	G1/4B	1	100
PA3816BB00	0–16 bar	G1/4B	1	100

Dimensions in technical catalogue.

## M1-80/R



DN 80 bottom-connection pressure gauge with **chrome-plated steel body** and red pointer for heating systems. Measuring range 0–4 to 0–16 bar. Accuracy class 1.6. Other scales and connections available to order.

**Complies with EN 837-1 and INAIL technical requirements.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PA4804BK01</b>	0–4 bar	G3/8B	1	50
<b>PA4806BK01</b>	0–6 bar	G3/8B	1	50
<b>PA4810BK01</b>	0–10 bar	G3/8B	1	50
<b>PA4816BK01</b>	0–16 bar	G3/8B	1	50

Dimensions in technical catalogue.

## M3A-ABS 50/R



DN 50 back-connection pressure gauge with plastic body and red pointer for heating systems. Measuring range 0–4 to 0–40 bar. Accuracy class 2.5. Other scales and connections available to order. **Complies with EN 837-1 and INAIL technical requirements.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZFEB2204BB16</b>	0–4 bar	G1/4B	10	100
<b>PZFEB2206BB10</b>	0–6 bar	G1/4B	10	100
<b>PZFEB2210BB09</b>	0–10 bar	G1/4B	10	100
<b>PZFEB2216BB04</b>	0–16 bar	G1/4B	10	100
<b>PZFEB2225BB00</b>	0–25 bar	G1/4B	10	100
<b>PZFEB2240BB00</b>	0–40 bar	G1/4B	10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## M3A-ABS 63/R



DN 63 back-connection pressure gauge with plastic body and red pointer for heating systems. Measuring range 0–4 to 0–40 bar. Accuracy class 2.5. Other scales and connections available to order.

**Complies with EN 837-1 and INAIL technical requirements.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZFEB3204BB06</b>	0–4 bar	G1/4B	10	100
<b>PZFEB3206BB06</b>	0–6 bar	G1/4B	10	100
<b>PZFEB3210BB05</b>	0–10 bar	G1/4B	10	100
<b>PZFEB3216BB07</b>	0–16 bar	G1/4B	10	100
<b>PZFEB3225BB00</b>	0–25 bar	G1/4B	10	100
<b>PZFEB3240BB00</b>	0–40 bar	G1/4B	10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## Diaphragm pressure gauges for gas

### MP1-63



DN 63 bottom-connection diaphragm pressure gauge with chrome-plated body for gas. Measuring range 0–60 to 0–600 mbar, dual scale mbar and mmH<sub>2</sub>O. Accuracy class 2.5. **EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PP354410</b>	0–600 mmH <sub>2</sub> O/0–60 mbar	G1/4B	1	50
<b>PP354810</b>	0–1000 mmH <sub>2</sub> O/0–100 mbar	G1/4B	1	50
<b>PP356010</b>	0–2500 mmH <sub>2</sub> O/0–250 mbar	G1/4B	1	50
<b>PP356610</b>	0–4000 mmH <sub>2</sub> O/0–400 mbar	G1/4B	1	50
<b>PP357010</b>	0–6000 mmH <sub>2</sub> O/0–600 mbar	G1/4B	1	50

Dimensions in technical catalogue.

**MP1-80**

DN 80 bottom-connection diaphragm pressure gauge with chrome-plated body for gas. Measuring range 0–60 to 0–600 mbar, dual scale mbar and mmH<sub>2</sub>O. Accuracy class 2.5. EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PP454411</b>	0–600 mmH <sub>2</sub> O/0–60 mbar	G3/8B	1	50
<b>PP454811</b>	0–1000 mmH <sub>2</sub> O/0–100 mbar	G3/8B	1	50
<b>PP456011</b>	0–2500 mmH <sub>2</sub> O/0–250 mbar	G3/8B	1	50
<b>PP456611</b>	0–4000 mmH <sub>2</sub> O/0–400 mbar	G3/8B	1	50
<b>PP457011</b>	0–6000 mmH <sub>2</sub> O/0–600 mbar	G3/8B	1	50

Dimensions in technical catalogue.

**MP1-100**

DN 100 bottom-connection diaphragm pressure gauge with chrome-plated body for gas. Measuring range 0–60 to 0–600 mbar, dual scale mbar and mmH<sub>2</sub>O. Accuracy class 2.5. EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PP554412</b>	0–600 mmH <sub>2</sub> O/0–60 mbar	G1/2B	1	12
<b>PP554812</b>	0–1000 mmH <sub>2</sub> O/0–100 mbar	G1/2B	1	12
<b>PP556012</b>	0–2500 mmH <sub>2</sub> O/0–250 mbar	G1/2B	1	12
<b>PP556612</b>	0–4000 mmH <sub>2</sub> O/0–400 mbar	G1/2B	1	12
<b>PP557012</b>	0–6000 mmH <sub>2</sub> O/0–600 mbar	G1/2B	1	12

Dimensions in technical catalogue.

**Pressure gauges for dry industrial applications****M1-ABS 40**

DN 40 bottom-connection pressure gauge with plastic body for industrial applications. Measuring range 0–1 to 0–40 bar and dual scale bar/psi. Accuracy class 2.5. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZFEA110117LF</b>	0–1 bar/psi	R1/8	10	200
<b>PZFEA110217LF</b>	0–1.6 bar/psi	R1/8	10	200
<b>PZFEA120317LF</b>	0–2.5 bar/psi	R1/8	10	200
<b>PZFEA120417LF</b>	0–4 bar/psi	R1/8	10	200
<b>PZFEA120617LF</b>	0–6 bar/psi	R1/8	10	200
<b>PZFEA121017LF</b>	0–10 bar/psi	R1/8	10	200
<b>PZFEA121217LF</b>	0–12 bar/psi	R1/8	10	200
<b>PZFEA121617LF</b>	0–16 bar/psi	R1/8	10	200
<b>PZFEA122017LF</b>	0–20 bar/psi	R1/8	10	200
<b>PZFEA122517LF</b>	0–25 bar/psi	R1/8	10	200
<b>PZFEA124017LF</b>	0–40 bar/psi	R1/8	10	200

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## M1-ABS 50



DN 50 bottom-connection pressure gauge with plastic body for industrial applications. Measuring range 0–1 to 0–40 bar and dual scale bar/psi. Accuracy class 2.5. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZFEA210118LF</b>	0–1 bar/psi	R1/4	10	100
<b>PZFEA220318LF</b>	0–2.5 bar/psi	R1/4	10	100
<b>PZFEA220418LF</b>	0–4 bar/psi	R1/4	10	100
<b>PZFEA220618LF</b>	0–6 bar/psi	R1/4	10	100
<b>PZFEA221018LF</b>	0–10 bar/psi	R1/4	10	100
<b>PZFEA221218LF</b>	0–12 bar/psi	R1/4	10	100
<b>PZFEA221618LF</b>	0–16 bar/psi	R1/4	10	100
<b>PZFEA222018LF</b>	0–20 bar/psi	R1/4	10	100
<b>PZFEA222518LF</b>	0–25 bar/psi	R1/4	10	100
<b>PZFEA224018LF</b>	0–40 bar/psi	R1/4	10	100
<b>PZFEA220617LF</b>	0–6 bar/psi	R1/8	10	100
<b>PZFEA221017LF</b>	0–10 bar/psi	R1/8	10	100
<b>PZFEA221217LF</b>	0–12 bar/psi	R1/8	10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## M1-ABS 63



DN 63 bottom-connection pressure gauge with plastic body for industrial applications. Measuring range 0–1 to 0–40 bar and dual scale bar/psi. Accuracy class 2.5. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZFEA310118LF</b>	0–1 bar/psi	R1/4	10	100
<b>PZFEA310218LF</b>	0–1.6 bar/psi	R1/4	10	100
<b>PZFEA320318LF</b>	0–2.5 bar/psi	R1/4	10	100
<b>PZFEA320418LF</b>	0–4 bar/psi	R1/4	10	100
<b>PZFEA320618LF</b>	0–6 bar/psi	R1/4	10	100
<b>PZFEA321018LF</b>	0–10 bar/psi	R1/4	10	100
<b>PZFEA321218LF</b>	0–12 bar/psi	R1/4	10	100
<b>PZFEA321618LF</b>	0–16 bar/psi	R1/4	10	100
<b>PZFEA322018LF</b>	0–20 bar/psi	R1/4	10	100
<b>PZFEA322518LF</b>	0–25 bar/psi	R1/4	10	100
<b>PZFEA324018LF</b>	0–40 bar/psi	R1/4	10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## M1-ABS 80



DN 80 bottom-connection pressure gauge with plastic body for industrial applications. Measuring range 0–10 to 0–25 bar and dual scale bar/psi. Accuracy class 1.6. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PA4210DC01</b>	0–10 bar/psi	G3/8B	1	50
<b>PA4216DC00</b>	0–16 bar/psi	G3/8B	1	50
<b>PA4225DC00</b>	0–25 bar/psi	G3/8B	1	50

Dimensions in technical catalogue.



## M1-ABS 100



DN 100 bottom-connection pressure gauge with plastic body for industrial applications. Measuring range 0–2.5 to 0–40 bar and dual scale bar/psi. Accuracy class 1.6. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
PA5203DD00	0–2.5 bar/psi	G1/2B	1	30
PA5204DD01	0–4 bar/psi	G1/2B	1	30
PA5206DD00	0–6 bar/psi	G1/2B	1	30
PA5210DD01	0–10 bar/psi	G1/2B	1	30
PA5216DD00	0–16 bar/psi	G1/2B	1	30
PA5225DD00	0–25 bar/psi	G1/2B	1	30
PA5240DD00	0–40 bar/psi	G1/2B	1	30

Dimensions in technical catalogue.

## M3A-ABS 40



DN 40 back-connection pressure gauge with plastic body for industrial applications. Measuring range 0–1 to 0–20 bar and dual scale bar/psi. Accuracy class 2.5. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
PZFEB110117LF	0–1 bar/psi	R1/8	10	200
PZFEB120317LF	0–2.5 bar/psi	R1/8	10	200
PZFEB120417LF	0–4 bar/psi	R1/8	10	200
PZFEB120617LF	0–6 bar/psi	R1/8	10	200
PZFEB121017LF	0–10 bar/psi	R1/8	10	200
PZFEB121217LF	0–12 bar/psi	R1/8	10	200
PZFEB121617LF	0–16 bar/psi	R1/8	10	200
PZFEB122017LF	0–20 bar/psi	R1/8	10	200

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## M3A-ABS 50



DN 50 back-connection pressure gauge with plastic body for industrial applications. Measuring range 0–1 to 0–20 bar and dual scale bar/psi. Accuracy class 2.5. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
PZFEB210117LF	0–1 bar/psi	R1/8	10	100
PZFEB210217LF	0–1.6 bar/psi	R1/8	10	100
PZFEB220317LF	0–2.5 bar/psi	R1/8	10	100
PZFEB220417LF	0–4 bar/psi	R1/8	10	100
PZFEB220617LF	0–6 bar/psi	R1/8	10	100
PZFEB221017LF	0–10 bar/psi	R1/8	10	100
PZFEB221217LF	0–12 bar/psi	R1/8	10	100
PZFEB221617LF	0–16 bar/psi	R1/8	10	100
PZFEB222017LF	0–20 bar/psi	R1/8	10	100
PZFEB220318LF	0–2.5 bar/psi	R1/4	10	100
PZFEB220418LF	0–4 bar/psi	R1/4	10	100
PZFEB220618LF	0–6 bar/psi	R1/4	10	100
PZFEB221018LF	0–10 bar/psi	R1/4	10	100
PZFEB221218LF	0–12 bar/psi	R1/4	10	100
PZFEB221618LF	0–16 bar/psi	R1/4	10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### M3A-ABS 63



DN 63 back-connection pressure gauge with plastic body for industrial applications. Measuring range 0–1 to 0–40 bar and dual scale bar/psi. Accuracy class 2.5. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
PZFEB310118LF	0–1 bar/psi	R1/4	10	100
PZFEB310218LF	0–1.6 bar/psi	R1/4	10	100
PZFEB320318LF	0–2.5 bar/psi	R1/4	10	100
PZFEB320418LF	0–4 bar/psi	R1/4	10	100
PZFEB320618LF	0–6 bar/psi	R1/4	10	100
PZFEB321018LF	0–10 bar/psi	R1/4	10	100
PZFEB321218LF	0–12 bar/psi	R1/4	10	100
PZFEB321618LF	0–16 bar/psi	R1/4	10	100
PZFEB322018LF	0–20 bar/psi	R1/4	10	100
PZFEB322518LF	0–25 bar/psi	R1/4	10	100
PZFEB324018LF	0–40 bar/psi	R1/4	10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### M3A-ABS 80



DN 80 back-connection pressure gauge with plastic body for industrial applications. Accuracy class 1.6. Other scales and connections available to order. Part numbers and prices on request.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
	0–2.5 bar	G3/8B	1	50
	0–4 bar	G3/8B	1	50
PB4206BC00	0–6 bar	G3/8B	1	50
	0–10 bar	G3/8B	1	50
PB4216BC00	0–16 bar	G3/8B	1	50
PB4225BC00	0–25 bar	G3/8B	1	50

Dimensions in technical catalogue.

### M1-80/T1



DN 80 bottom-connection pressure gauge with painted steel body and chrome-plated bezel for industrial applications, particularly **steam**. Measuring range 0–2.5 to 0–25 bar. Accuracy class 1.6. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
PA4803BK00	0–2.5 bar	G3/8B	1	50
PA4804BK00	0–4 bar	G3/8B	1	50
PA4806BK00	0–6 bar	G3/8B	1	50
PA4810BK00	0–10 bar	G3/8B	1	50
PA4816BK00	0–16 bar	G3/8B	1	50
PA4825BK00	0–25 bar	G3/8B	1	50

Dimensions in technical catalogue.

### M1-100/T1



DN 100 bottom-connection pressure gauge with painted steel body and chrome-plated bezel for industrial applications, particularly **steam**. Measuring range 0–2.5 to 0–25 bar. Accuracy class 1.6. Other scales and connections available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
PA5803BL00	0–2.5 bar	G1/2B	1	30
PA5804BL00	0–4 bar	G1/2B	1	30
PA5806BL00	0–6 bar	G1/2B	1	30
PA5810BL00	0–10 bar	G1/2B	1	30
PA5816BL00	0–16 bar	G1/2B	1	30
PA5825BL00	0–25 bar	G1/2B	1	30

Dimensions in technical catalogue.

## MC1-150



Bottom-connection DN 150 dry pressure gauges with AISI 316 stainless steel body, for calibration and testing of other pressure gauges or for laboratory measurements.

Also available in DN200 and/or in an eccentric back-connection version (MC3B Series), for accuracy classes 0.25 and 0.5 and scales of up to 1000 bar.

Part numbers, prices, accessories and LAT (ex SIT) calibration certificates available on request.

Part No. CI.0.5	Part No. CI.0.25	Scale	Connec- tion	Pcs. pack	Package
<b>PW00035100</b>	PW00035101	0-2.5 bar M	G1/2B	1	1
	PW00045100	0-4 bar M	G1/2B	1	1
<b>PW000651</b>	PW00065100	0-6 bar M	G1/2B	1	1
<b>PW001051</b>	PW00105100	0-10 bar M	G1/2B	1	1
<b>PW00165100</b>	PW00165101	0-16 bar M	G1/2B	1	1
<b>PW00255100</b>	PW00255101	0-25 bar M	G1/2B	1	1
<b>PW004051</b>	PW00405100	0-40 bar M	G1/2B	1	1

Dimensions in technical catalogue.

<b>Part no.</b> DCERTAR002	SIT test certificate	<i>Test certificate</i>
<b>Part no.</b> available to order	SIT ACCREDIAtest certificate	<i>Test certificate</i>
<b>Part no.</b> DCERTAR004	Recalibration + SIT test certificate	<i>Re-calibration + Test certificate</i>

## MX1-63



MX1 Series Bourdon tube pressure gauges made entirely of stainless steel, for special industrial applications and the chemical, food and shipbuilding industries. Dry, DN 63 mm made entirely of stainless steel, with bottom connection.

Measuring range from vacuum -1/0 to high pressure up to 1000 bar (DN 63). Fluid temperature limits: +150°C. Accuracy class 1.6.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZ6A3503BJ00</b>	0-2.5 bar	G1/4B	1	1
<b>PZ6A3504BJ00</b>	0-4 bar	G1/4B	1	1
<b>PZ6A3506BJ00</b>	0-6 bar	G1/4B	1	1
<b>PZ6A3510BJ00</b>	0-10 bar	G1/4B	1	1
<b>PZ6A3516BJ00</b>	0-16 bar	G1/4B	1	1
<b>PZ6A3525BJ00</b>	0-25 bar	G1/4B	1	1
<b>PZ6A3540BJ00</b>	0-40 bar	G1/4B	1	1

Dimensions in technical catalogue.

## MX1-100



MX1 Series Bourdon tube pressure gauges made entirely of stainless steel, for special industrial applications and the chemical, food and shipbuilding industries. Dry, DN 100 mm made entirely of stainless steel, with bottom connection.

Measuring range from vacuum -1/0 to high pressure up to 4000 bar (DN 100).

Fluid temperature limits: +150°C. Accuracy class 1.0.

Also available in DN160. Part numbers and prices available on request.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZ6A5503BL00</b>	0-2.5 bar	G1/2B	1	1
<b>PZ6A5504BL00</b>	0-4 bar	G1/2B	1	1
<b>PZ6A5506BL00</b>	0-6 bar	G1/2B	1	1
<b>PZ6A5510BL00</b>	0-10 bar	G1/2B	1	1
<b>PZ6A5516BL00</b>	0-16 bar	G1/2B	1	1
<b>PZ6A5525BL00</b>	0-25 bar	G1/2B	1	1
<b>PZ6A5540BL00</b>	0-40 bar	G1/2B	1	1

Dimensions in technical catalogue.

## MXG1-63



MXG1 Series Bourdon tube pressure gauges made entirely of stainless steel, for special industrial applications and the chemical, food and shipbuilding industries. Glycerin-filled, DN 63 mm made entirely of stainless steel, with bottom connection. Measuring range from vacuum -1/0 to high pressure up to 1000 bar.

Fluid temperature limits: +100°C. Accuracy class 1.6.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZ6E3503BJ00</b>	0–2.5 bar	G1/4B	1	1
<b>PZ6E3504BJ00</b>	0–4 bar	G1/4B	1	1
<b>PZ6E3506BJ00</b>	0–6 bar	G1/4B	1	1
<b>PZ6E3510BJ00</b>	0–10 bar	G1/4B	1	1
<b>PZ6E3516BJ00</b>	0–16 bar	G1/4B	1	1
<b>PZ6E3525BJ00</b>	0–25 bar	G1/4B	1	1
<b>PZ6E3540BJ00</b>	0–40 bar	G1/4B	1	1

Dimensions in technical catalogue.

## MXG1-100



MXG1 Series Bourdon tube pressure gauges made entirely of stainless steel, for special industrial applications and the chemical, food and shipbuilding industries. Glycerin-filled, DN 100 mm made entirely of stainless steel, with bottom connection. Measuring range from vacuum -1/0 to high pressure up to 4000 bar.

Fluid temperature limits: +100°C. Accuracy class 1.0 (DN 100).

Also available in DN160. Part numbers and prices available on request.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PZ6E5503BL00</b>	0–2.5 bar	G1/2B	1	1
<b>PZ6E5504BL00</b>	0–4 bar	G1/2B	1	1
<b>PZ6E5506BL00</b>	0–6 bar	G1/2B	1	1
<b>PZ6E5510BL00</b>	0–10 bar	G1/2B	1	1
<b>PZ6E5516BL00</b>	0–16 bar	G1/2B	1	1
<b>PZ6E5525BL00</b>	0–25 bar	G1/2B	1	1
<b>PZ6E5540BL00</b>	0–40 bar	G1/2B	1	1

Dimensions in technical catalogue.

## Glycerin-filled pressure gauges for industrial applications

## MG1-INOX 63



DN 63 bottom-connection glycerin-filled pressure gauge with stainless steel body, for industrial applications. Measuring range 0–1 to 0–600 bar and dual scale bar/psi.

Accuracy class 1.6. Other scales and connections available to order.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PE340114LF</b>	0–1 bar/psi	G1/4B	10	60
<b>PE340214LF</b>	0–1.6 bar/psi	G1/4B	10	60
<b>PE350314LF</b>	0–2.5 bar/psi	G1/4B	10	60
<b>PE350414LF</b>	0–4 bar/psi	G1/4B	10	60
<b>PE350614LF</b>	0–6 bar/psi	G1/4B	10	60
<b>PE351014LF</b>	0–10 bar/psi	G1/4B	10	60
<b>PE351214LF</b>	0–12 bar/psi	G1/4B	10	60
<b>PE351614LF</b>	0–16 bar/psi	G1/4B	10	60
<b>PE352014LF</b>	0–20 bar/psi	G1/4B	10	60
<b>PE352514LF</b>	0–25 bar/psi	G1/4B	10	60
<b>PE354014LF</b>	0–40 bar/psi	G1/4B	10	60

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

**MG1-INOX 100**

DN 100 bottom-connection glycerin-filled pressure gauge with stainless steel body, for industrial applications. Measuring range 0–1 to 0–600 bar and dual scale bar/psi.

Accuracy class 1.6.

Other scales and connections available to order.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PE540116LF</b>	0–1 bar/psi	G1/2B	1	12
<b>PE540216</b>	0–1.6 bar/psi	G1/2B	1	12
<b>PE550316LF</b>	0–2.5 bar/psi	G1/2B	1	12
<b>PE550416LF</b>	0–4 bar/psi	G1/2B	1	12
<b>PE550616LF</b>	0–6 bar/psi	G1/2B	1	12
<b>PE551016LF</b>	0–10 bar/psi	G1/2B	1	12
<b>PE551216LF</b>	0–12 bar/psi	G1/2B	1	12
<b>PE551616LF</b>	0–16 bar/psi	G1/2B	1	12
<b>PE552016LF</b>	0–20 bar/psi	G1/2B	1	12
<b>PE552516LF</b>	0–25 bar/psi	G1/2B	1	12
<b>PE554016LF</b>	0–40 bar/psi	G1/2B	1	12

Dimensions in technical catalogue.

**MG3A-INOX 63**

DN 63 back-connection glycerin-filled pressure gauge with stainless steel body, for industrial applications. Measuring range 0–1 to 0–600 bar and dual scale bar/psi.

Accuracy class 1.6. Other scales and connections available to order.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PF340114LF</b>	0–1 bar/psi	G1/4B	5	50
<b>PF340214LF</b>	0–1.6 bar/psi	G1/4B	5	50
<b>PF350314LF</b>	0–2.5 bar/psi	G1/4B	5	50
<b>PF350414LF</b>	0–4 bar/psi	G1/4B	5	50
<b>PF350614LF</b>	0–6 bar/psi	G1/4B	5	50
<b>PF351014LF</b>	0–10 bar/psi	G1/4B	5	50
<b>PF351214LF</b>	0–12 bar/psi	G1/4B	5	50
<b>PF351614LF</b>	0–16 bar/psi	G1/4B	5	50
<b>PF352014LF</b>	0–20 bar/psi	G1/4B	5	50
<b>PF352514LF</b>	0–25 bar/psi	G1/4B	5	50
<b>PF354014LF</b>	0–40 bar/psi	G1/4B	5	50

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

**MG3A-INOX 100**

DN 100 back-connection glycerin-filled pressure gauge with stainless steel body, for industrial applications. Measuring range 0–1 to 0–600 bar and dual scale bar/psi.

Accuracy class 1.6. Other scales and connections available to order.

**EN 837-1 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PF540116LF</b>	0–1 bar/psi	G1/2B	1	12
<b>PF550316LF</b>	0–2.5 bar/psi	G1/2B	1	12
<b>PF550416LF</b>	0–4 bar/psi	G1/2B	1	12
<b>PF550616LF</b>	0–6 bar/psi	G1/2B	1	12
<b>PF551016LF</b>	0–10 bar/psi	G1/2B	1	12
<b>PF551216LF</b>	0–12 bar/psi	G1/2B	1	12
<b>PF551616LF</b>	0–16 bar/psi	G1/2B	1	12
<b>PF552016LF</b>	0–20 bar/psi	G1/2B	1	12
<b>PF552516LF</b>	0–25 bar/psi	G1/2B	1	12
<b>PF554016LF</b>	0–40 bar/psi	G1/2B	1	12

Dimensions in technical catalogue.

## MG3B-INOX 63



DN63 back-connection glycerin-filled pressure gauge for panel-mounting with 3-hole flange for industrial applications. Stainless steel body and dual scale bar/psi. Accuracy class 1.6. DN 100, for measuring ranges from 0–1 to 0–600 bar also available to order.

EN 837-1 compliant.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PG340114LF</b>	0–1 bar/psi	G1/4B	5	40
<b>PG340214</b>	0–1.6 bar/psi	G1/4B	5	40
<b>PG350314LF</b>	0–2.5 bar/psi	G1/4B	5	40
<b>PG350414LF</b>	0–4 bar/psi	G1/4B	5	40
<b>PG350614LF</b>	0–6 bar/psi	G1/4B	5	40
<b>PG351014LF</b>	0–10 bar/psi	G1/4B	5	40
<b>PG351214LF</b>	0–12 bar/psi	G1/4B	5	40
<b>PG351614LF</b>	0–16 bar/psi	G1/4B	5	40
<b>PG352014LF</b>	0–20 bar/psi	G1/4B	5	40
<b>PG352514LF</b>	0–25 bar/psi	G1/4B	5	40
<b>PG354014LF</b>	0–40 bar/psi	G1/4B	5	40

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## ACCESSORIES FOR PRESSURE GAUGES

**403/RF**

Pressure gauge valve with  $\varnothing$  40 mm test flange. PN 16. **Complies with INAIL technical requirements.**

Part no.	Connection	Pcs. pack	Package
<b>403R14</b>	G1/4B	1	1
<b>403R38</b>	G3/8B	1	1
<b>403R12</b>	G1/2B	1	1

**RS**

Pressure gauge valve. PN 5.

Part no.	Connection	Pcs. pack	Package
<b>PZ112000</b>	G1/4B	1	1
<b>PZ122000</b>	G3/8B	1	1
<b>PZ132000</b>	G1/2B	1	1

**RP**

Nickel-plated pushbutton-operated pressure gauge valve for MP1 Series diaphragm pressure gauges. PN 4.

Part no.	Connection	Pcs. pack	Package
<b>PZ111000</b>	G1/4B	1	1
<b>PZ121000</b>	G3/8B	1	1
<b>PZ131000</b>	G1/2B	1	1

**407D/SRN**

Nickel-plated copper insulation loop for pressure gauges and pressure switches. PN 25. Male-female connections. G1/2B stainless steel PN100 model available to order.



Part no.	Connection	Pcs. pack	Package
<b>407D14</b>	G1/4B	1	1
<b>407D38</b>	G3/8B	1	1
<b>407D12</b>	G1/2B	1	1

**VR**

Soft seal check valve. PN 10. Male-female connections.



Part no.	Connection	Pcs. pack	Package
<b>0329008</b>	G1/4B x G1/4B	1	1
<b>0329010</b>	G3/8B x G3/8B	1	1
<b>PZ04000D00</b>	G1/2B x G1/4B	1	1
<b>0329015</b>	G1/2B x G1/2B	1	1

**AM**

Brass damper with male-female connections.



Part no.	Connection	Pcs. pack	Package
<b>PZ010000</b>	G1/4B	1	1
<b>PZ020000</b>	G3/8B	1	1
<b>PZ030000</b>	G1/2B	1	1

## Bimetallic system thermometers

### TBR-80/VE



DN 80 bottom-connection bimetallic thermometer with chrome-plated steel body for heating systems complete with brass pocket - fixing with O-ring. Accuracy class 2. Versions with scale 0–120°C and 0–140°C.

**Complies with EN 13190 and INAIL technical requirements.**

Part no.	Stem	Scale	Connection	Pcs. pack	Package
<b>PT8A507006</b>	50mm	0–120°C	G1/2B	1	50
<b>PT8A987002</b>	75mm	-30–50°C	G1/2B	1	50
<b>PT8A447001</b>	75mm	0–60°C	G1/2B	1	50
<b>PT8B987002</b>	100mm	-30–50°C	G1/2B	1	50
<b>PT8B447003</b>	100mm	0–60°C	G1/2B	1	50
<b>PT8B507005</b>	100mm	0–120°C	G1/2B	1	50

Dimensions in technical catalogue.

### TBC-33



DN 33 back-connection bimetallic thermometer with galvanised steel body for underfloor heating systems. Accuracy class 2.

**EN 13190 compliant.**

Part no.	Stem	Scale	Connection	Pcs. pack	Package
	8.5mm	0–50°C	ø 15	10	270
<b>PTAM440000</b>	13.5mm	0–60°C	ø 15	10	270
	8.5mm	0–70°C	ø 15	10	270
<b>PTAM450000</b>	13.5mm	0–80°C	ø 15	10	270
<b>PTAM450003</b>	8.5mm	0–80°C	ø 15	10	270
<b>PTAM450002</b>	8.5mm	0–80°C	ø 12	10	270

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### TBE-63VE



DN 63 back-connection bimetallic thermometer with galvanised steel body for underfloor heating systems. Accuracy class 2.

**EN 13190 compliant.**

Part no.	Stem	Scale	Connection	Pcs. pack	Package
<b>PT6A499002</b>	13.5mm	20–100°C		10	100
	13.5mm	0–80°C		10	100
	13.5mm	0–100°C		10	100

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### TB-ABS 63/ORT



DN 63 back-connection bimetallic thermometer with polycarbonate body and chrome-plated steel bezel, for heating systems complete with brass pocket – fixing with O-ring. Accuracy class 2. Version with scale 0–120°C.

**Complies with EN 13190 and INAIL technical requirements.**

Part no.	Stem	Scale	Connection	Pcs. pack	Package
<b>PT30987001</b>	50mm	-30 to +50 °C	G1/2B	10	100
<b>PT30447011</b>	50mm	0–60°C	G1/2B	10	100
<b>PT30457001</b>	50mm	0–80°C	G1/2B	10	100
<b>PT30507068</b>	50mm	0–120°C	G1/2B	10	100
<b>PT31987004</b>	100mm	-30 to +50 °C	G1/2B	12	60
<b>PT31447003</b>	100mm	0–60°C	G1/2B	12	60
<b>PT31457000</b>	100mm	0–80°C	G1/2B	12	60
<b>PT31507012</b>	100mm	0–120°C	G1/2B	12	60

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### TB-63/VE



DN 63 back-connection bimetallic thermometer with galvanised steel body for heating systems, complete with brass pocket, with fixing screw. Accuracy class 2.

Versions with scale 0–120°C and 0–140°C.

**Complies with EN 13190 and INAIL technical requirements.**

Part no.	Stem	Scale	Connection	Pcs. pack	Package
	50mm	-30 to +50 °C	G1/2B	10	100
<b>PT3A447002</b>	50mm	0–60°C	G1/2B	10	100
	50mm	0–80°C	G1/2B	10	100
<b>PT3A507009</b>	50mm	0–120°C	G1/2B	10	100
<b>PT3A507006</b>	50mm	0–120°C	G1/2B	10	100
	100mm	-30 to +50 °C	G1/2B	12	60
	100mm	0–60°C	G1/2B	12	60
	100mm	0–80°C	G1/2B	12	60
<b>PT3B507005</b>	100mm	0–120°C	G1/2B	12	60
<b>PT3B507004</b>	100mm	0–120°C	G1/2B	12	60
	150mm	as above	G1/2B	5	50
<b>PT3C507001</b>	150mm	0–120°C	G1/2B	5	50
	200mm	as above	G1/2B	4	40
	200mm	0–120°C	G1/2B	4	40
	300mm	as above	G1/2B	2	20
	300mm	0–120°C	G1/2B	2	20

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.



## TB-63



DN 63 back-connection bimetallic thermometer with galvanised steel body and chrome-plated bezel for heating systems, complete with brass pocket, with fixing screw. Accuracy class 2. Versions with scale 0–120°C and 0–140°C.

Complies with EN 13190 and INAIL technical requirements.

Part no.	Stem	Scale	Connection	Pcs. pack	Package
PT309870	50mm	-30 to +50 °C	G1/2B	10	100
PT304470	50mm	0–60°C	G1/2B	10	100
	50mm	0–80°C	G1/2B	10	100
PT305070	50mm	0–120°C	G1/2B	10	100
	50mm	0–140°C	G1/2B	10	100
PT30587001	50mm	0–200°C	G1/2B	10	100
PT30607000	50mm	0–250°C	G1/2B	10	100
PT306470	50mm	0–350°C	G1/2B	10	100
PT31987001	100mm	-30 to +50 °C	G1/2B	12	60
PT31447001	100mm	0–60°C	G1/2B	12	60
	100mm	0–80°C	G1/2B	12	60
PT315070	100mm	0–120°C	G1/2B	12	60
	100mm	0–140°C	G1/2B	12	60
PT31587001	100mm	0–200°C	G1/2B	12	60
PT31607001	100mm	0–250°C	G1/2B	12	60
PT316470	100mm	0–350°C	G1/2B	12	60
PT31687000	100mm	0–500°C	G1/2B	12	60
PT32687000	150mm	as above	G1/2B	5	50
	150mm	0–120°C	G1/2B	5	50
	200mm	as above	G1/2B	4	40
PT335070	200mm	0–120°C	G1/2B	4	40
	300mm	as above	G1/2B	2	20
PT34507000	300mm	0–120°C	G1/2B	2	20

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## TB-ABS 80/ORT



DN 80 back-connection bimetallic thermometer with polycarbonate body and chrome-plated steel bezel,

for heating systems, complete with brass pocket – fixing with O-ring. Accuracy class 2. Version with scale 0–120°C.

Complies with EN 13190 and INAIL technical requirements.

Part no.	Stem	Scale	Connection	Pcs. pack	Package
PT40987014	50mm	-30 to +50 °C	G1/2B	10	80
PT40447007	50mm	0–60°C	G1/2B	10	80
PT40457001	50mm	0–80°C	G1/2B	10	80
PT405070D4	50mm	0–120°C	G1/2B	10	80
PT41987010	100mm	-30 to +50 °C	G1/2B	12	48
PT41447004	100mm	0–60°C	G1/2B	12	48
PT41457002	100mm	0–80°C	G1/2B	12	48
PT41507047	100mm	0–120°C	G1/2B	12	48

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## TB-80/VE



DN 80 back-connection bimetallic thermometer with galvanised steel body for heating systems, complete with brass pocket, with fixing screw. Accuracy class 2.

Versions with scale 0–120°C and 0–140°C.

Complies with EN 13190 and INAIL technical requirements.

Part no.	Stem	Scale	Connection	Pcs. pack	Package
<b>PT4A987003</b>	50mm	-30 to +50 °C	G1/2B	10	80
<b>PT4A447004</b>	50mm	0–60°C	G1/2B	10	80
	50mm	0–80°C	G1/2B	10	80
<b>PT4A507011</b>	50mm	0–120°C	G1/2B	10	80
<b>PT4A507007</b>	50mm	0–120°C	G1/2B	10	80
<b>PT4B987002</b>	100mm	-30 to +50 °C	G1/2B	12	48
<b>PT4B447003</b>	100mm	0–60°C	G1/2B	12	48
	100mm	0–80°C	G1/2B	12	48
<b>PT4B507005</b>	100mm	0–120°C	G1/2B	12	48
<b>PT4B507003</b>	100mm	0–120°C	G1/2B	12	48
	150mm	as above	G1/2B	2	40
<b>PT4C507001</b>	150mm	0–120°C	G1/2B	2	40
	200mm	as above	G1/2B	2	40
<b>PT4D447000</b>	200mm	0–60°C	G1/2B	2	40
	200mm	0–120°C	G1/2B	2	40
	300mm	as above	G1/2B	2	20
	300mm	0–120°C	G1/2B	2	20

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## TB-80



DN 80 back-connection bimetallic thermometer with galvanised steel body and chrome-plated bezel for heating systems, complete with brass pocket, with fixing screw. Accuracy class 2.

Complies with EN 13190 and INAIL technical requirements.

Part no.	Stem	Scale	Connection	Pcs. pack	Package
<b>PT409870</b>	50mm	-30 to +50 °C	G1/2B	10	80
<b>PT404470</b>	50mm	0–60°C	G1/2B	10	80
	50mm	0–80°C	G1/2B	10	80
<b>PT405070</b>	50mm	0–120°C	G1/2B	10	80
	50mm	0–140°C	G1/2B	10	80
<b>PT406170</b>	50mm	0–200°C	G1/2B	10	80
	50mm	0–250°C	G1/2B	10	80
<b>PT40647000</b>	50mm	0–350°C	G1/2B	10	80
<b>PT419870</b>	100mm	-30 to +50 °C	G1/2B	12	48
<b>PT414470</b>	100mm	0–60°C	G1/2B	12	48
<b>PT41457001</b>	100mm	0–80°C	G1/2B	12	48
<b>PT415070</b>	100mm	0–120°C	G1/2B	12	48
	100mm	0–140°C	G1/2B	12	48
<b>PT415870</b>	100mm	0–200°C	G1/2B	12	48
<b>PT41607001</b>	100mm	0–250°C	G1/2B	12	48
<b>PT41647000</b>	100mm	0–350°C	G1/2B	12	48
<b>PT41687001</b>	100mm	0–500°C	G1/2B	12	48
	150mm	as above	G1/2B	2	40
<b>PT42507004</b>	150mm	0–120°C	G1/2B	2	40
	200mm	as above	G1/2B	2	40
	200mm	0–120°C	G1/2B	2	40
	300mm	as above	G1/2B	2	20
	300mm	0–120°C	G1/2B	2	20

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## TB-100/VE



DN100 back-connection bimetallic thermometer with galvanised steel body for heating systems, complete with brass pocket, with fixing screw. Accuracy class 2.

Complies with EN 13190 and INAIL technical requirements.

Part no.	Stem	Scale	Connection	Pcs. pack	Package
<b>PT5A987002</b>	50mm	-30–50°C	G1/2B	6	24
<b>PT5A447003</b>	50mm	0–60°C	G1/2B	6	24
<b>PT5A507006</b>	50mm	0–120°C	G1/2B	6	24
<b>PT5B987002</b>	100mm	-30–50°C	G1/2B	6	24
<b>PT5B447003</b>	100mm	0–60°C	G1/2B	6	24
<b>PT5B507006</b>	100mm	0–120°C	G1/2B	6	24

Dimensions in technical catalogue.

Other scales and stem lengths available to order.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

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## TB-100



DN 100 back-connection bimetallic thermometer with galvanised steel body and chrome-plated bezel for heating systems, complete with brass pocket, with fixing screw. Accuracy class 2.

Complies with EN 13190 and INAIL technical requirements.

Part no.	Stem	Scale	Connection	Pcs. pack	Package
<b>PT509870</b>	50mm	-30–50°C	G1/2B	6	24
<b>PT504470</b>	50mm	0–60°C	G1/2B	6	24
<b>PT505070</b>	50mm	0–120°C	G1/2B	6	24
<b>PT505870</b>	50mm	0–200°C	G1/2B	6	24
<b>PT519870</b>	100mm	-30–50°C	G1/2B	6	24
<b>PT514470</b>	100mm	0–60°C	G1/2B	6	24
<b>PT515070</b>	100mm	0–120°C	G1/2B	6	24
<b>PT515870</b>	100mm	0–200°C	G1/2B	6	24

Dimensions in technical catalogue.

Other scales and stem lengths available to order.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

## TBX-63



DN63 back-connection bimetallic thermometer with stainless steel body and stem for industrial systems. Measuring range from 0–60 to 160°C / -20+60°C. Stem lengths 63-100-150mm, without pocket. Accuracy class 1, DIN16203 compliant. **EN 60529 compliant.**

Part no.	Stem	Scale	Pcs. pack	Package
<b>PZ6T36460000</b>	63	-20 to +60 °C	1	1
<b>PZ6T364401</b>	63	0–60°C	1	1
<b>PZ6T365001</b>	63	0–120°C	1	1
<b>PZ6T36540001</b>	63	0–160°C	1	1
	100	-20 to +60 °C	1	1
	100	0–60°C	1	1
<b>PZ6T375001</b>	100	0–120°C	1	1
	100	0–160°C	1	1
<b>PZ6T38460000</b>	150	-20 to +60 °C	1	1
	150	0–60°C	1	1
	150	0–120°C	1	1
	150	0–160°C	1	1

Dimensions in technical catalogue.

**TBX-80**



DN80 back-connection bimetallic thermometer with stainless steel body and stem for industrial systems. Measuring range from 0–60 to 160°C / -20+60°C. Stem lengths 63-100-150-200mm, without pocket. Accuracy class 1, DIN16203 compliant. **EN 60529 compliant.**

Part no.	Stem	Scale	Pcs. pack	Package
<b>PZ6T45460000</b>	63	-20 to +60 °C	1	1
<b>PZ6T464401</b>	63	0–60°C	1	1
<b>PZ6T4550000</b>	63	0–120°C	1	1
<b>PZ6T46540000</b>	63	0–160°C	1	1
<b>PZ6T46460001</b>	100	-20 to +60 °C	1	1
	100	0–60°C	1	1
<b>PZ6T41507000</b>	100	0–120°C	1	1
	100	0–160°C	1	1
	150	-20 to +60 °C	1	1
	150	0–60°C	1	1
<b>PZ6T42507000</b>	150	0–120°C	1	1
	150	0–160°C	1	1
<b>PZ6T46460000</b>	200	-20 to +60 °C	1	1
	200	0–60°C	1	1
	200	0–120°C	1	1
	200	0-160	1	1

Dimensions in technical catalogue.

**TBX-100**



DN100 back-connection bimetallic thermometer with stainless steel body and stem for industrial systems. Measuring range from 0–60 to 160°C / -20+60°C. Stem lengths 63-100-150-200mm, without pocket. Accuracy class 1, DIN16203 compliant. **EN 60529 compliant.**

Part no.	Stem	Scale	Pcs. pack	Package
<b>PZ6T56460000</b>	63	-20 to +60 °C	1	1
<b>PZ6T56440000</b>	63	0–60°C	1	1
<b>PZ6T55500000</b>	63	0–120°C	1	1
<b>PZ6T56545000</b>	63	0–160°C	1	1
<b>PZ6T56960001</b>	100	-20 to +60 °C	1	1
<b>PZ6T51440001</b>	100	0–60°C	1	1
<b>PZ6T51507000</b>	100	0–120°C	1	1
<b>PZ6T51547000</b>	100	0–160°C	1	1
	150	-20 to +60 °C	1	1
	150	0–60°C	1	1
	150	0–120°C	1	1
<b>PZ6T57547000</b>	150	0–160°C	1	1
<b>PZ6T58969001</b>	200	-20 to +60 °C	1	1
	200	0–60°C	1	1
	200	0–120°C	1	1
	200	0–160°C	1	1

Dimensions in technical catalogue.

## G



Brass pockets for TB and TBR Series thermometers.

**G50/ISPESL model. Complies with INAIL technical requirements.**

Part no.	Description	Connection	Pcs. pack	Package
<b>PGUAOTT011</b>	G-30 for TB - 30mm stem	G3/8B	1	1
<b>PGUAOTT002</b>	G-50 for TB - 50mm stem	G1/2B	1	1
<b>0309115</b>	G-50/INAIL for TB - 50mm stem	G1/2B	1	1
<b>PGUAOTT005</b>	G-100 for TB - 100mm stem	G1/2B	1	1
<b>PGUAOTT006</b>	G-150 for TB - 150mm stem	G1/2B	1	1
<b>PGUAOTT007</b>	G-200 for TB - 200mm stem	G1/2B	1	1
<b>PGUAOTT008</b>	G-300 for TB - 300mm stem	G1/2B	1	1
<b>PGUAOTT019</b>	G-50 for TBR - 50mm stem	G1/2B	1	1
<b>PGUAOTT023</b>	G-75 for TBR - 75mm stem	G1/2B	1	1
<b>PGUAOTT020</b>	G-100 for TBR - 100mm stem	G1/2B	1	1

Dimensions in technical catalogue.

## G-INOX



AISI 304 stainless steel pockets for TB and TBX Series thermometers.

Part no.	Description	Connection	Pcs. pack	Package
<b>PGUAINX006</b>	G-INOX for TB - 50 stem	G1/2B	1	1
<b>PGUAINX004</b>	G-INOX for TB - 100 stem	G1/2B	1	1
<b>PGUAINX013</b>	G-INOX for TB - 150 stem	G1/2B	1	1
<b>PGUAINX011</b>	G-INOX for TB - 200 stem	G1/2B	1	1
<b>PGUAINX003</b>	G-INOX for TBX - 63 stem	G1/2B	1	1
<b>PGUAINX014</b>	G-INOX for TBX - 100 stem	G1/2B	1	1
<b>PGUAINX005</b>	G-INOX for TBX - 150 stem	G1/2B	1	1
<b>PGUAINX001</b>	G-INOX for TBX - 200 stem	G1/2B	1	1

Dimensions in technical catalogue.

## TCM-63



DN 63 bimetallic contact thermometer with painted steel body and fixing spring for Ø 30mm to Ø 65mm pipes. Accuracy class 2.

**EN 13190 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PT05507007</b>	0–120°C	spring	1	50

Dimensions in technical catalogue.

## TCF-63



DN 63 bimetallic contact thermometer with painted steel body and steel fixing clamp for Ø 30 mm to Ø 76 mm pipes. Accuracy class 2.

**EN 13190 compliant.**

Part no.	Scale	Connection	Pcs. pack	Package
<b>PT06507004</b>	0–120°C	clamp	1	70

Dimensions in technical catalogue.

## Flue thermometers and accessories

### TB-63/FUMI



DN 63 back-connection bimetallic thermometer with galvanised steel body and chrome-plated bezel for measuring flue gas temperature (pyrometer). Measuring range 0 to 500°C. Accuracy class 2.

Part no.	Stem	Scale	Pcs. pack	Package
<b>PT36687004</b>	100mm	0–500°C	6	60
<b>PT37687005</b>	150mm	0–500°C	5	50
<b>PT38687006</b>	200mm	0–500°C	4	40
<b>PT39687006</b>	300mm	0–500°C	2	20

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### MC



COOP spring for fixing TB thermometers.

Part no.	Pcs. pack	Package
<b>PMINACC037</b>	1	1

Dimensions in technical catalogue.

### MCL



CLIP spring for fixing TB thermometers.

Part no.	Pcs. pack	Package
<b>PMINACC049</b>	1	1

Dimensions in technical catalogue.

### SC



Channel base for fixing TB thermometers.

Part no.	Pcs. pack	Package
<b>PMINACC034</b>	1	1

Dimensions in technical catalogue.

## Glass thermometers

### TV



Straight xylene-filled glass thermometer. Measuring range: -10 to 120°C. Accuracy class 2.

Part no.	Length	Bulb	Scale	Pcs. pack	Package
<b>PZ185070</b>	200mm	35mm	-10–120°C	10	20
<b>PZ205070</b>	250mm	35mm	-10–120°C	10	20
<b>PZ225070</b>	300mm	50mm	-10–120°C	10	20

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### C



Straight brass case with pocket for TV Series glass thermometers.

Part no.	Length	Bulb	Connection	Pcs. pack	Package
<b>PZ050000</b>	200mm	45mm	1/2"	10	50
<b>PZ060000</b>	250mm	45mm	1/2"	10	50

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### TVA



Right-angle xylene-filled glass thermometer. Measuring range: -10 to 120°C. Accuracy class 2.

Part no.	Length	Bulb	Scale	Pcs. pack	Package
<b>PZ265070</b>	200mm	45mm	-10–120°C	10	10
<b>PZ275070</b>	250mm	45mm	-10–120°C	10	10

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### CA



Right-angle brass case with pocket for TVA Series glass thermometers.

Part no.	Length	Connection	Pcs. pack	Package
<b>PZ080000</b>	200mm	1/2"	10	50
<b>PZ090000</b>	250mm	1/2"	10	50

Dimensions in technical catalogue.

\*Unit price. The articles are purchasable by pack, in accordance with the specified quantities and respective multiples.

### TID



Straight immersion thermometer with aluminium body and brass sheath, PN 16. Measuring ranges: 0 to 120°C or -30 to 50°C. Accuracy class 1.

**DIN 16185 compliant.**

Part no.	Bulb/Connection	Scale	Pcs. pack	Package
<b>0307503</b>	63mm/1/2"	0–120°C	1	20
<b>0307510</b>	100mm/1/2"	0–120°C	1	20
<b>0307603</b>	63mm/1/2"	-30–50°C	1	20
<b>0307610</b>	100mm/1/2"	-30–50°C	1	20

Dimensions in technical catalogue.

### TIS



Right-angle immersion thermometer with aluminium body and brass sheath, PN 16. Measuring ranges: 0 to 120°C or -30 to 50°C. Accuracy class 1.

**DIN 16186 compliant.**

Part no.	Bulb/Connection	Scale	Pcs. pack	Package
<b>0307703</b>	63mm/1/2"	0–120°C	1	20
<b>0307710</b>	100mm/1/2"	0–120°C	1	20
<b>0307803</b>	63mm/1/2"	-30–50°C	1	20
<b>0307810</b>	100mm/1/2"	-30–50°C	1	20

Dimensions in technical catalogue.

## Chapter 4.3

# COMBINED THERMOMETERS AND PRESSURE GAUGES

### TIRM-ABS 80



DN 80 bottom-connection combined thermometer and pressure gauge with plastic body and red pointer for heating systems. Pressure accuracy class 2.5 - Temperature accuracy class 2.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PL4203VD01</b>	0–2.5 bar/0–120°C	G1/2B	1	50
<b>PL4204BD03</b>	0–4 bar/0–120°C	G1/2B	1	50
<b>PL4206BD03</b>	0–6 bar/0–120°C	G1/2B	1	50

Dimensions in technical catalogue.

### TIM-ABS 63



DN 63 back-connection combined thermometer and pressure gauge with plastic body and red pointer for heating systems. Pressure accuracy class 2.5 - Temperature accuracy class 2.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PN3204BD01</b>	0–4 bar/0–120°C	G1/2B	1	50
<b>PN3206VD03</b>	0–6 bar/0–120°C	G1/2B	1	50

Dimensions in technical catalogue.

### TIM-ABS 80



DN 80 back-connection combined thermometer and pressure gauge with plastic body and red pointer for heating systems. Pressure accuracy class 2.5 - Temperature accuracy class 2.

Part no.	Scale	Connection	Pcs. pack	Package
<b>PN4203BD02</b>	0–2.5 bar/0–120°C	G1/2B	1	50
<b>PN4204BD12</b>	0–4 bar/0–120°C	G1/2B	1	50
<b>PN4206BD05</b>	0–6 bar/0–120°C	G1/2B	1	50
<b>PN4210BD00</b>	0–10 bar/0–120°C	G1/2B	1	50

Dimensions in technical catalogue.



## Chapter 5

### Pre-insulated flexible piping

5

**WATTS®**

MICROFLEX®



Flexible and quick to install  
Double-wall outer casing  
10-year warranty





## Chapter 5

# PRE-INSULATED FLEXIBLE PIPING

## Microflex

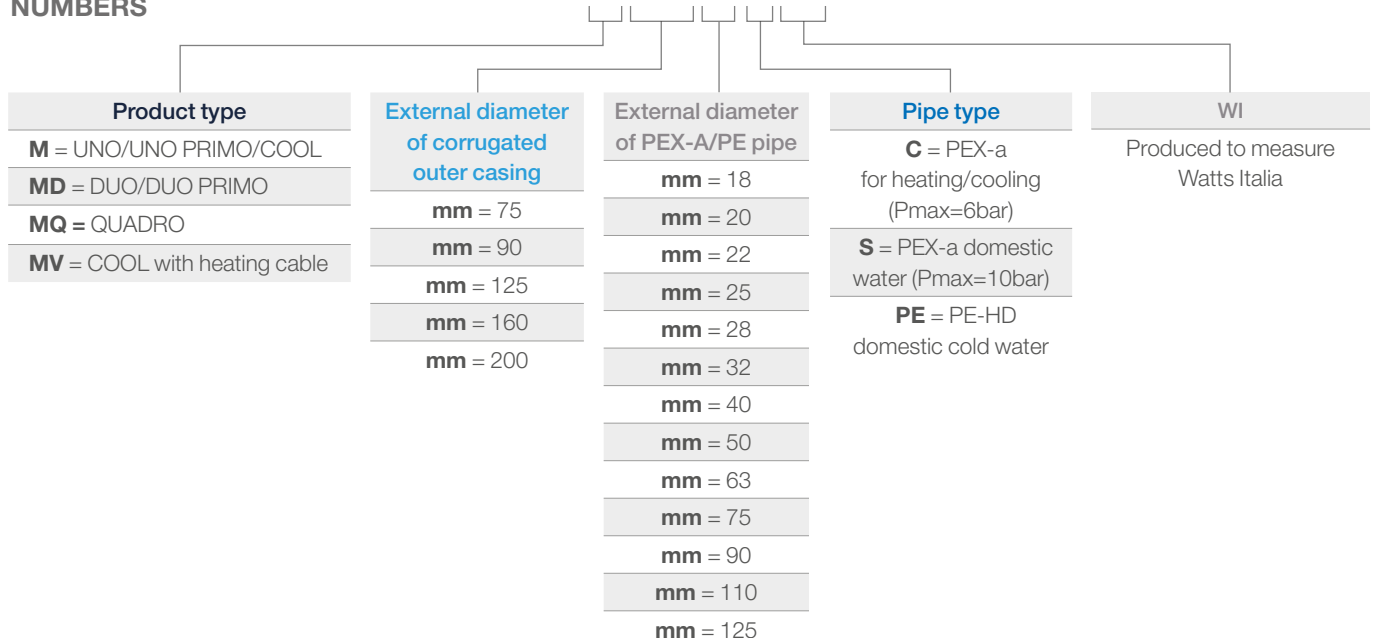
Microflex is a pre-insulated flexible piping system for fluid distribution in central heating and cooling systems and for domestic water distribution both for individual dwelling units and large district heating networks. Fixed points must be used on heating/cooling pipes (yellow) and domestic water pipes (white).

### TECHNICAL NOTE: selection guide

APPLICATION	FLUID	PIPE	Δt MAX. FLUID	MAX. PRESSURE	PRODUCT RANGE
	Heating (Cooling)	PEX-a	-10to95°C	6 bar	M...CWI MD...CWI MQ
	Domestic water DHW	PEX-a	-10to95°C	10 bar	M...SWI MD...SWI MQ
	Domestic cold water	HDPE	+25°C	16 bar	M(V)...PEWI MD...PEWI
	Cooling	HDPE	-10to25°C	16 bar	M(V)...PEWI MD...PEWI

### EXAMPLE OF HOW TO READ PART NUMBERS

**M16063CWI**



## MECHANICAL AND THERMAL PROPERTIES OF PEX-A PIPE TO DIN 16892/16893 EN ISO 15875

Property	Test method	Unit	Typical value
Density	DIN 53479	kg/m <sup>3</sup>	938
Elastic modulus (tensile) 20°	DIN 53457	N/mm <sup>2</sup>	600
Tensile strength 20°C 80°C	DIN 53455	N/mm <sup>2</sup>	≥ 20-26 > 9-13
Failure load 20°C 80°C 140°	DIN 53455	N/mm <sup>2</sup>	≥ 20-26 9-13 1.6-2.0
Yield point elongation 20°C 80°C 140°	DIN 53455	%	≥ 400 ≥ 400 ≥ 250
Impact resistance 20°C -20°C	DIN 53453	KJ/m <sup>2</sup>	No failure No failure
Thermal conductivity	DIN 52612	W/mK	0.35
Linear expansion 20°C 100°C	DIN 43328	1/K	1.4 X 10 <sup>-4</sup> 2.0 X 10 <sup>-4</sup>
Oxygen permeability at 40°C	DIN 4726		≥ 0.1 mg/l x day
Equivalent roughness		mm	0.007
DVGW (German Technical and Scientific Association for Gas and Water)	Work document W531		
Transverse resistance	DIN 53482	Ω cm	> 10 <sup>18</sup>
Specific thermal capacity	DIN 51005	kJ/kg/K	2.3

## INSULATING MATERIAL

The insulating material is a microcellular cross-linked polyethylene foam.

As well as providing excellent insulating properties, the closed-cell structure of the material minimises water absorption. The material is CFC-free.



Insulating material properties		Standard	Value
Density	-	ISO 845	30 kg/m <sup>3</sup>
Tensile strength	longitudinal	ISO 1798	0.30 MPa
	transverse		0.25 MPa
Elongation at break	longitudinal	ISO 1798	140%
	transverse		145%
Compression strength	10%	ISO 3386-1	16.6 KPa
	25%		35.7 KPa
	50%		94 KPa
Thermal stability		ISO 2796	95° C
Residual deformation 22 h, 25%, 23°	0.5 h	ISO 1856	16.6%
	24h		8.1%
Operating temperature		from	-80 to 110°C
Water absorption after 28 days		DIN ISO 2896	< 3% vol.
Hardness	Shore A	ISO R.868	12
Thermal conductivity at 40°C		ASTM C-177	0.0372 W/mK

## MICROFLEX UNO HEATING AND COOLING



Microflex pre-insulated flexible piping for heating and cooling systems with single internal pipe in PEX-a SDR11 with oxygen diffusion barrier (DIN 4726), suitable for fluids at temperatures of **-10 to 95°C** and pressures up to **6 bar, in accordance with EN ISO 15875**.

Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure. Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>M7525CWI</b>	25/2.3	20	75	0.68	20	6
<b>M9032CWI</b>	32/2.9	25	90	1.00	25	6
<b>M12525CWI</b>	25/2.3	20	125	1,32	30	6
<b>M12532CWI</b>	32/2.9	25	125	1,48	30	6
<b>M16032CWI</b>	32/2.9	25	160	1,96	35	6
<b>M16040CWI</b>	40/3.7	32	160	2.32	35	6
<b>M16050CWI</b>	50/4.6	40	160	2.48	45	6
<b>M16063CWI</b>	63/5.8	50	160	2.78	55	6
<b>M20075CWI</b>	75/6.8	65	200	4.16	80	6
<b>M20090CWI</b>	90/8.2	75	200	4.73	110	6
<b>M200110CWI</b>	110/10	90	200	5.64	120	6
<b>M200125CWI</b>	125/11.4	100	200	6.00	140	6

## ACCESSORIES



Piping	Dust caps	EPDM end caps*	MJ341 fitting		Fixed point	
	Part no.	Part no.	Part no.	Ø male thread external Ø of pipe mm	Part no.	
<b>M7525CWI</b>	<b>MS7525</b>	<b>MG751832</b>	<b>MJ3413425/23</b>	3/4"	25/2.3	<b>MFP34</b>
<b>M9032CWI</b>	<b>MS9032</b>	<b>MG901840</b>	<b>MJ3414432/29</b>	1"	32/2.9	<b>MFP44</b>
<b>M12525CWI</b>	<b>MS12525</b>	<b>MG1252532</b>	<b>MJ3413425/23</b>	3/4"	25/2.3	<b>MFP34</b>
<b>M12532CWI</b>	<b>MS12532</b>	<b>MG1252532</b>	<b>MJ3414432/29</b>	1"	32/2.9	<b>MFP44</b>
<b>M16032CWI</b>	<b>MS16032</b>	<b>MG1603250</b>	<b>MJ3414432/29</b>	1"	32/2.9	<b>MFP44</b>
<b>M16040CWI</b>	<b>MS16040</b>	<b>MG1603250</b>	<b>MJ3415440/37</b>	1.1/4"	40/3.7	<b>MFP54</b>
<b>M16050CWI</b>	<b>MS16050</b>	<b>MG1603250</b>	<b>MJ3416450/46</b>	1.1/2"	50/4.6	<b>MFP64</b>
<b>M16063CWI</b>	<b>MS16063</b>	<b>MG1606390</b>	<b>MJ341263/58</b>	2"	63/5.8	<b>MFP2</b>
<b>M20075CWI</b>	<b>MS20075</b>	<b>MG20075125</b>	<b>MJ34121275/68</b>	2.1/2"	75/6.8	<b>MFP212</b>
<b>M20090CWI</b>	<b>MS20090</b>	<b>MG20075125</b>	<b>MJ341390/82</b>	3"	90/8.2	<b>MFP3</b>
<b>M200110CWI</b>	<b>MS200110</b>	<b>MG20075125</b>	<b>MJ3414110/10</b>	4"	110/10	<b>MFP4</b>
<b>M200125CWI</b>	<b>MS200125</b>	<b>MG20075125</b>	<b>MJ3414125/114</b>	4"	125/11.4	<b>MFP4</b>

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX UNO PRIMO HEATING AND COOLING



Microflex pre-insulated flexible piping for heating and cooling systems with single internal pipe in PEX-a SDR11 with oxygen diffusion barrier (DIN 4726), suitable for fluids at temperatures of **-10 to 95°C** and pressures up to **6 bar, in accordance with EN ISO 15875**.

Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure.

Double-wall corrugated outer casing in PE-HD high-density polyethylene.

Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>M9040CWI</b>	40/3.7	32	90	1.11	30	6
<b>M12540CWI</b>	40/3.7	32	125	1.72	30	6
<b>M12550CWI</b>	50/4.6	40	125	1.92	40	6
<b>M12563CWI</b>	63/5.8	50	125	2.16	50	6
<b>M16075CWI</b>	75/6.8	65	160	3.2	75	6
<b>M16090CWI</b>	90/8.2	75	160	3.85	100	6

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## ACCESSORIES



Piping	Dust caps	EPDM end caps*	MJ341 fitting		Fixed point	
	Part no.	Part no.	Part no.	Ø male thread	external Ø of pipe mm	Part no.
<b>M9040CWI</b>	<b>MS9040</b>	<b>MG901840</b>	<b>MJ3415440/37</b>	1.1/4"	40/3.7	<b>MFP54</b>
<b>M12540CWI</b>	<b>MS12540</b>	<b>MG1254063</b>	<b>MJ3415440/37</b>	1.1/4"	40/3.7	<b>MFP54</b>
<b>M12550CWI</b>	<b>MS12550</b>	<b>MG1254063</b>	<b>MJ3416450/46</b>	1.1/2"	50/4.6	<b>MFP64</b>
<b>M12563CWI</b>	<b>MS12563</b>	<b>MG1254063</b>	<b>MJ341263/58</b>	2"	63/5.8	<b>MFP2</b>
<b>M16075CWI</b>	<b>MS16075</b>	<b>MG1606390</b>	<b>MJ34121275/68</b>	2.1/2"	75/6.8	<b>MFP212</b>
<b>M16090CWI</b>	<b>MS16090</b>	<b>MG1606390</b>	<b>MJ341390/82</b>	3"	90/8.2	<b>MFP3</b>

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX DUO HEATING AND COOLING



Microflex pre-insulated flexible piping for heating and cooling systems with two internal pipes in PEX-a SDR11 with oxygen diffusion barrier (DIN 4726), suitable for fluids at temperatures of **-10 to 95°C** and pressures up to **6 bar, in accordance with EN ISO 15875.**

Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure. Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>MD16025CWI</b>	25/2.3	20	160	2.21	50	6
<b>MD16032CWI</b>	32/2.9	25	160	2.41	50	6
<b>MD16040CWI</b>	40/3.7	32	160	2.63	60	6
<b>MD20050CWI</b>	50/4.6	40	200	4.03	80	6
<b>MD20063CWI</b>	63/5.8	50	200	4.64	120	6

## ACCESSORIES



Piping	Dust caps	EPDM end caps*	MJ341 fitting	Fixed point		
	Part no.	Part no.		Part no.	Part no.	
<b>MD16025CWI</b>	<b>MSD16025</b>	<b>MGD1602550</b>	<b>MJ3413425/23</b>	3/4"	25/2.3	<b>MFP34</b>
<b>MD16032CWI</b>	<b>MSD16032</b>	<b>MGD1602550</b>	<b>MJ3414432/29</b>	1"	32/2.9	<b>MFP44</b>
<b>MD16040CWI</b>	<b>MSD16040</b>	<b>MGD1602550</b>	<b>MJ3415440/37</b>	1.1/4"	40/3.7	<b>MFP54</b>
<b>MD20050CWI</b>	<b>MSD20050</b>	<b>MGD2004063</b>	<b>MJ3416450/46</b>	1.1/2"	50/4.6	<b>MFP64</b>
<b>MD20063CWI</b>	<b>MSD20063</b>	<b>MGD2004063</b>	<b>MJ341263/58</b>	2"	63/5.8	<b>MFP2</b>

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX DUO PRIMO HEATING AND COOLING



Microflex pre-insulated flexible piping for heating and cooling systems with two internal pipes in PEX-a SDR11 with oxygen diffusion barrier (DIN 4726), suitable for fluids at temperatures of **-10°C to 95°C** and pressures up to **6 bar, in accordance with EN ISO 15875**.

Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure. Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>MD12525CWI</b>	25/2.3	20	125	1.57	30	6
<b>MD12532CWI</b>	32/2.9	25	125	1.77	30	6
<b>MD16050CWI</b>	50/4.6	40	160	3.55	50	6

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## ACCESSORIES



Piping	Dust caps	EPDM end caps*		MJ341 fitting		Fixed point
	Part no.	Part no.	Part no.	Ø male thread	external Ø of pipe mm	Part no.
<b>MD12525CWI</b>	<b>MSD12525</b>	<b>MGD1251832</b>	<b>MJ3413425/23</b>	3/4"	25/2.3	<b>MFP34</b>
<b>MD12532CWI</b>	<b>MSD12532</b>	<b>MGD1251832</b>	<b>MJ3414432/29</b>	1"	32/2.9	<b>MFP44</b>
<b>MD16050CWI</b>	<b>MSD16050</b>	<b>MGD1602550</b>	<b>MJ3416450/46</b>	1.1/2"	50/4.6	<b>MFP64</b>

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX QUADRO PER HEATING, COOLING AND DHW



Microflex pre-insulated flexible piping for heating, cooling and domestic water systems, with four internal pipes in PEX-a **to EN ISO 15875**:

- two SDR11 pipes with oxygen diffusion barrier (DIN 4726), suitable for fluids at temperatures of -10 to 95°C and pressures up to 6 bar
- two SDR7.4 pipes, suitable for water up to 95°C and pressures up to 10 bar.

Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure. Double-wall corrugated outer casing in PE-HD high-density polyethylene.

Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>MQ16025C2520SWI</b>	2x25/2.3	20	160	2.40	60	6
	1x25/3.5	20				10
	1x20/2.8	20				10
<b>MQ16025C2818SWI</b>	2x25/2.3	20	160	2,58	60	6
	1x28/4.0	25				10
	1x18/2.5	15				10
<b>MQ16032C2520SWI</b>	2x32/2.9	25	160	2.60	60	6
	1x25/3.5	20				10
	1x20/2.8	20				10
<b>MQ16032C2818SWI</b>	2x32/2.9	25	160	2,64	60	6
	1x28/4.0	25				10
	1x18/2.5	15				10
<b>MQ16032C3218SWI</b>	2x32/2.9	25	160	2,67	60	6
	1x32/4.4	25				10
	1x18/2.5	15				10
<b>MQ16032C3225SWI</b>	2x32/2.9	25	160	2.70	60	6
	1x32/4.4	25				10
	1x25/3.5	20				10
<b>MQ20040C4028SWI</b>	2x40/3.7	32	200	4,12	130	6
	1x40/5.5	32				10
	1x28/4.0	25				10
<b>MQ20040C4032SWI</b>	2x40/3.7	32	200	4,14	130	6
	1x40/5.5	32				10
	1x32/4.4	25				10



## ACCESSORIES



Piping	Dust caps	EPDM end caps*	MJ341 fitting		Fixed point	
	Part no.	Part no.	Part no.	Ø male thread external Ø of pipe mm	Part no.	
MQ16025C2520SWI	MSQ160252520	MGQ1601832	MJ3413425/23	3/4"	25/2.3	MFP34
			MJ3413425/35	3/4"	25/3.5	MFP34
			MJ3413420/28	3/4"	20/2.8	MFP34
MQ16025C2818SWI	MSQ160252818	MGQ1601832	MJ3413425/23	3/4"	25/2.3	MFP34
			MJ3414428/40	1"	28/4.0	MFP44
			MJ3411218/25	1/2"	18/2.5	
MQ16032C2520SWI	MSQ160322520	MGQ1601832	MJ3414432/29	1"	32/2.9	MFP44
			MJ3413425/35	3/4"	25/3.5	MFP34
			MJ3413420/28	3/4"	20/2.8	MFP34
MQ16032C2818SWI	MSQ160322818	MGQ1601832	MJ3414432/29	1"	32/2.9	MFP44
			MJ3414428/40	1"	28/4.0	MFP44
			MJ3411218/25	1/2"	18/2.5	
MQ16032C3218SWI	MSQ160323218	MGQ1601832	MJ3414432/29	1"	32/2.9	MFP44
			MJ3414432/44	1"	32/4.4	MFP44
			MJ3411218/25	1/2"	18/2.5	
MQ16032C3225SWI	MSQ160323225	MGQ1601832	MJ3414432/29	1"	32/2.9	MFP44
			MJ3414432/44	1"	32/4.4	MFP44
			MJ3413425/35	3/4"	25/3.5	MFP34
MQ20040C4028SWI	MSQ200404028	n/a	MJ3415440/37	1.1/4"	40/3.7	MFP54
			MJ3415440/55	1.1/4"	40/5.5	MFP54
			MJ3414428/40	1"	28/4.0	MFP44
MQ20040C4032SWI	MSQ200404032	n/a	MJ3415440/37	1.1/4"	40/3.7	MFP54
			MJ3415440/55	1.1/4"	40/5.5	MFP54
			MJ3414432/44	1"	32/4.4	MFP44

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX HP FOR HEATING, COOLING AND CONNECTION TO HEAT PUMPS



Microflex pre-insulated flexible piping for heating and cooling systems and connection to heat pumps, consisting of:

- two SDR11 PEX-a pipes to **EN ISO 15875** with oxygen diffusion barrier (DIN 4726), suitable for fluids at temperatures from -10 to 95°C and pressures up to 6 bar
- two flame-proof corrugated casings suitable for ducting power cables and control probes.

Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure.

Double-wall corrugated outer casing in PE-HD high-density polyethylene.

Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø corrugated casing for ducting wires/ext./int. sensors mm	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN (PEX-a pipe)
<b>MQ12525C3225E</b>	2x25/2.3	2 x 20	25/18.8 32/25	125	1.63	30	6
<b>MQ12532C3225E</b>	2x32/2.9	2 x 25	25/18.8 32/25	125	1.79	30	6
<b>MQ16032C3225E</b>	2x32/2.9	2 x 25	25/18.8 32/25	160	2.27	50	6
<b>MQ16040C32E</b>	2x40/3.7	2 x 32	2 x 32/25	160	2.60	60	6

## ACCESSORIES



Piping	Dust caps	EPDM end caps*		MJ341 fitting		Fixed point
	Part no.	Part no.	Part no.	Ø male thread	external Ø of pipe mm	Part no.
<b>MQ12525C3225E</b>	<b>MSQ125253225</b>	<b>MGQ1251832</b>	<b>MJ3413425/23</b>	3/4"	25X2.3	<b>MFP34</b>
<b>MQ12532C3225E</b>	<b>MSQ125323225</b>	<b>MGQ1251832</b>	<b>MJ3414432/29</b>	1"	32X2.9	<b>MFP44</b>
<b>MQ16032C3225E</b>	<b>MSQ160323225</b>	<b>MGQ1601832</b>	<b>MJ3414432/29</b>	1"	32X2.9	<b>MFP44</b>
<b>MQ16040C32E</b>	<b>MSQ1604032</b>	<b>MGQ1602540</b>	<b>MJ3415440/37</b>	1.1/4"	40X3.7	<b>MFP54</b>

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX UNO FOR DOMESTIC WATER



Microflex pre-insulated flexible piping for domestic water systems with single internal pipe in PEX-a SDR7.4 suitable for water up to **95°C** and pressures up to **10 bar in accordance with EN ISO 15875**. Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure. Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
M7522SWI	22/3.0	20	75	0,65	20	10
M7525SWI	25/3.5	20	75	0.75	20	10
M7528SWI	28/4.0	25	75	1,00	25	10
M7532SWI	32/4.4	25	75	1,08	25	10
M9018SWI	18/2.5	15	90	0,92	25	10
M9032SWI	32/4.4	25	90	1.12	25	10
M9040SWI	40/5.5	32	90	1,32	30	10
M12525SWI	25/3.5	20	125	1,43	30	10
M12528SWI	28/4.0	25	125	1,51	30	10
M12532SWI	32/4.4	25	125	1,60	40	10
M12540SWI	40/5.5	32	125	1,89	40	10
M12550SWI	50/6.9	40	125	2.19	50	10
M12563SWI	63/8.7	50	125	2.59	55	10
M16032SWI	32/4.4	25	160	2,55	60	10
M16040SWI	40/5.5	32	160	2,84	60	10
M16050SWI	50/6.9	40	160	3,09	70	10
M16063SWI	63/8.7	50	160	3,18	80	10
M16075SWI	75/10.3	65	160	3,84	70	10
M20075SWI	75/10.3	65	200	4.16	80	10
M20090SWI	90/12.3	80	200	5.25	90	10
M200110SWI	110/15.1	100	200	6.44	95	10

## ACCESSORIES



Piping	Dust caps	EPDM end caps*	MJ341 fitting		Fixed point
	Part no.	Part no.	Part no.	Ø male thread external Ø of pipe mm	Part no.
M7522SWI	MS7522	MG751832	MJ3413422/30	3/4"	MFP34
M7525SWI	MS7525	MG751832	MJ3413425/35	3/4"	MFP34
M7528SWI	MS7528	MG751832	MJ3414428/40	1"	MFP44
M7532SWI	MS7532	MG751832	MJ3414432/44	1"	MFP44
M9018SWI	MS9018	MG901840	MJ3411218/25	1/2"	
M9032SWI	MS9032	MG901840	MJ3414432/44	1"	MFP44
M9040SWI	MS9040	MG901840	MJ3415440/55	1.1/4"	MFP54
M12525SWI	MS12525	MG1252532	MJ3413425/35	3/4"	MFP34
M12528SWI	MS12528	MG1252532	MJ3414428/40	1"	MFP44
M12532SWI	MS12532	MG1252532	MJ3414432/44	1"	MFP44
M12540SWI	MS12540	MG1254063	MJ3415440/55	1.1/4"	MFP54
M12550SWI	MS12550	MG1254063	MJ3416450/69	1.1/2"	MFP64
M12563SWI	MS12563	MG1254063	MJ341263/87	2"	MFP2
M16032SWI	MS16032	MG1603250	MJ3414432/44	1"	MFP44
M16040SWI	MS16040	MG1603250	MJ3415440/55	1.1/4"	MFP54
M16050SWI	MS16050	MG1603250	MJ3416450/69	1.1/2"	MFP64
M16063SWI	MS16063	MG1606390	MJ341263/87	2"	MFP2
M16075SWI	MS16075	MG1606390	MJ34121275/103	2.1/2"	MFP212
M20075SWI	MS20075	MG20075125	MJ34121275/103	2.1/2"	MFP212
M20090SWI	MS20090	MG20075125	MJ341390/123	3"	MFP3
M200110SWI	MS200110	MG20075125	MJ3414110/151	4"	MFP4

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX DUO FOR DOMESTIC WATER



Microflex pre-insulated flexible piping for domestic water systems with two internal pipes in PEX-a SDR7.4 suitable for water up to **95°C** and pressures up to **10 bar in accordance with EN ISO 15875**. Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure. Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>MD1252818SWI</b>	1x28/4.0	25	125	1,67	30	10
	1x18/2.5	15				
<b>MD1253222SWI</b>	1x32/4.4	25	125	1,86	30	10
	1x22/3.0	20				
<b>MD16025SWI</b>	2x25/3.5	20	160	2.35	50	10
<b>MD1603218SWI</b>	1x32/4.4	25	160	2,42	50	10
	1x18/2.5	15				
<b>MD1603225SWI</b>	1x32/4.4	25	160	5.50	50	10
	1x25/3.5	20				
<b>MD1603228SWI</b>	1x32/4.4	25	160	2,6	60	10
	1x28/4.0	25				
<b>MD1604025SWI</b>	1x40/5.5	32	160	2.71	60	10
	1x25/3.5	20				
<b>MD1604028SWI</b>	1x40/5.5	32	160	2,78	60	10
	1x28/4.0	25				
<b>MD1604032SWI</b>	1x40/5.5	40	160	2,88	60	10
	1x32/4.4	25				
<b>MD1605025SWI</b>	1x50/6.9	40	160	2.89	60	10
	1x25/3.5	20				
<b>MD1605032SWI</b>	1x50/6.9	40	160	3.04	60	10
	1x32/4.4	25				
<b>MD1605040SWI</b>	1x50/6.9	40	160	3,18	70	10
	1x40/5.5	32				
<b>MD20063SWI</b>	2x63/8.7	50	200	4,96	120	10

**ACCESSORIES**



Piping	Dust caps	EPDM end caps*	MJ341 fitting		Fixed point	
	Part no.	Part no.	Part no.	Ø male thread	external Ø of pipe mm	Part no.
MD1252818SWI	MSD1252818	MGD1251832	MJ3414428/40	1"	1x28/4.0	MFP44
			MJ3411218/25	1/2"	1x18/2.5	
MD1253222SWI	MSD1253222	MGD1251832	MJ3414432/44	1"	1x32/4.4	MFP44
			MJ3413422/30	3/4"	1x22/3.0	
MD16025SWI	MSD16025	MGD1602550	MJ3413425/35	3/4"	2x25/3.5	MFP34
MD1603218SWI	MSD1603218	MGD1601840	MJ3414432/44	1"	1x32/4.4	MFP44
			MJ3411218/25	1/2"	1x18/2.5	
MD1603225SWI	MSD1603225	MGD1602550	MJ3414432/44	1"	1x32/4.4	MFP44
			MJ3413425/35	3/4"	1x25/3.5	
MD1603228SWI	MSD1603228	MGD1602550	MJ3414432/44	1"	1x32/4.4	MFP44
			MJ3414428/40	1"	1x28/4.0	
MD1604025SWI	MSD1604025	MGD1602550	MJ3415440/55	1.1/4"	1x40/5.5	MFP54
			MJ3413425/35	3/4"	1x25/3.5	
MD1604028SWI	MSD1604028	MGD1602550	MJ3415440/55	1.1/4"	1x40/5.5	MFP54
			MJ3414428/40	1"	1x28/4.0	
MD1604032SWI	MSD1604032	MGD1602550	MJ3415440/55	1.1/4"	1x40/5.5	MFP64
			MJ3414432/44	1"	1x32/4.4	
MD1605025SWI	MSD1605025	MGD1602550	MJ3416450/69	1.1/2"	1x50/6.9	MFP64
			MJ3413425/35	3/4"	1x25/3.5	
MD1605032SWI	MSD1605032	MGD1602550	MJ3416450/69	1.1/2"	1x50/6.9	MFP64
			MJ3414432/44	1"	1x32/4.4	
MD1605040SWI	MSD1605040	MGD1602550	MJ3416450/69	1.1/2"	1x50/6.9	MFP64
			MJ3415440/55	1.1/4"	1x40/5.5	
MD20063SWI	MSD20063	MGD2004063	MJ341263/87	2"	2x63/8.7	MFP2

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX DUO PRIMO FOR DOMESTIC WATER



Microflex pre-insulated flexible piping for domestic water systems with two internal pipes in PEX-a SDR7.4 suitable for water up to **95°C** and pressures up to **10 bar**, in accordance with **EN ISO 15875**. Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure.

Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PEX-a pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>MD1252520SWI</b>	25/3.5	20	125	1.65	30	10
	20/2.8	20				
<b>MD1253225SWI</b>	32/4.4	25	125	2	30	10
	25/3.5	20				

## ACCESSORIES



Piping	Dust caps	EPDM end caps*	MJ341 fitting		Fixed point	
	Part no.	Part no.	Part no.	Ø male thread external Ø of pipe mm	Part no.	
<b>MD1252520SWI</b>	<b>MSD1252520</b>	<b>MGD1251832</b>	<b>MJ3413425/35</b>	3/4"	25/3.5	<b>MFP34</b>
			<b>MJ3413420/28</b>	3/4"	20/2.8	<b>MFP34</b>
<b>MD1253225SWI</b>	<b>MSD1253225</b>	<b>MGD1251832</b>	<b>MJ3414432/44</b>	1"	32/4.4	<b>MFP44</b>
			<b>MJ3413425/35</b>	3/4"	25/3.5	<b>MFP34</b>

(\*) Alternatively, MK Series heat-shrink end-piece

## MICROFLEX COOL UNO WITH HEATING CABLE



Microflex pre-insulated flexible piping **with self-regulating heating cable** (10 W/m)\* for domestic water systems with single internal pipe in PE-HD SDR11 suitable for potable water up to **25°C** and pressures up to **16 bar, in accordance with EN 12201**. Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure. Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PE-HD pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>MV7532PEWI</b>	32/2.9	25	75	0.84	20	16
<b>MV9040PEWI</b>	40/3.7	32	90	1.20	30	16
<b>MV12550PEWI</b>	50/4.6	40	125	2.00	40	16
<b>MV12563PEWI</b>	63/5.8	50	125	2.25	50	16
<b>MV16075PEWI</b>	75/6.8	65	160	3.30	75	16
<b>MV16090PEWI</b>	90/8.2	80	160	3.95	100	16
<b>MV200110PEWI</b>	110/1.0	100	200	5.84	120	16
<b>MV200125PEWI</b>	125/11.4	100	200	6.10	140	16

(\*) A version with 18W/m self-regulating heating cable is available to order

## ACCESSORIES



Piping	Dust caps	EPDM end caps*		MJ341 fitting	
	Part no.	Part no.	Part no.	Ø male thread	external Ø of pipe mm
<b>MV7532PEWI</b>	<b>MS7532</b>	<b>MG751832</b>	<b>MJ3414432/29</b>	1"	32/2.9
<b>MV9040PEWI</b>	<b>MS9040</b>	<b>MG901840</b>	<b>MJ3415440/37</b>	1.1/4"	40/3.7
<b>MV12550PEWI</b>	<b>MS12550</b>	<b>MG1254063</b>	<b>MJ3416450/46</b>	1.1/2"	50/4.6
<b>MV12563PEWI</b>	<b>MS12563</b>	<b>MG1254063</b>	<b>MJ341263/58</b>	2"	63/5.8
<b>MV16075PEWI</b>	<b>MS16075</b>	<b>MG1606390</b>	<b>MJ34121275/68</b>	2.1/2"	75/6.8
<b>MV16090PEWI</b>	<b>MS16090</b>	<b>MG1606390</b>	<b>MJ341390/82</b>	3"	90/8.2
<b>MV200110PEWI</b>	<b>MS200110</b>	<b>MG20075125</b>	<b>MJ3414110/10</b>	4"	110/1.0
<b>MV200125PEWI</b>	<b>MS200125</b>	<b>MG20075125</b>	<b>MJ3414125/114</b>	4"	125/11.4

(\*) Alternatively, MK Series heat-shrink end-piece



Piping	Part no.	MPP341 fitting	
		Ø male thread	external Ø of pipe mm
<b>MV7532PEWI</b>	<b>MPP3414432/29</b>	1"	32/2.9
<b>MV9040PEWI</b>	<b>MPP3415440/37</b>	1.1/4"	40/3.7
<b>MV12550PEWI</b>	<b>MPP3416450/46</b>	1.1/2"	50/4.6
<b>MV12563PEWI</b>	<b>MPP341263/58</b>	2"	63/5.8
<b>MV16075PEWI</b>	<b>MPP34121275/68</b>	2.1/2"	75/6.8
<b>MV16090PEWI</b>	<b>MPP341390/82</b>	3"	90/8.2
<b>MV200110PEWI</b>	<b>MPP3414110/10</b>	4"	110/10
<b>MV200125PEWI</b>	<b>MPP3414125/114</b>	4"	125/11.4

Option for constant low-temperature applications, sheltered from direct sunlight and bad weather.

## MICROFLEX COOL UNO



Microflex pre-insulated flexible piping for domestic water systems with single internal pipe in PE-HD SDR11 suitable for potable water up to **25°C** and pressures up to **16 bar, in accordance with EN12201**. Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure. Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PE-HD pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
M9032PEWI	32/2.9	25	90	0.78	25	16
M9040PEWI	40/3.7	32	90	1	50	16
M12550PEWI	50/4.6	40	125	1.4	50	16
M12563PEWI	63/5.8	50	125	1.8	50	16
M16075PEWI	75/6.8	65	160	2.5	55	16
M16090PEWI	90/8.2	80	160	3.3	55	16
M200110PEWI	110/1.0	100	200	5.74	120	16
M200125PEWI	125/11.4	100	200	6.10	140	16

## ACCESSORIES



Piping	Dust caps		EPDM end caps*		MJ341 fitting	
	Part no.	Part no.	Part no.	Part no.	Ø male thread	external Ø of pipe mm
M9032PEWI	MS9032		MG901840		MJ3414432/29	1" 32/2.9
M9040PEWI	MS9040		MG901840		MJ3415440/37	1.1/4" 40/3.7
M12550PEWI	MS12550		MG1254063		MJ3416450/46	1.1/2" 50/4.6
M12563PEWI	MS12563		MG1254063		MJ341263/58	2" 63/5.8
M16075PEWI	MS16075		MG1606390		MJ34121275/68	2.1/2" 75/6.8
M16090PEWI	MS16090		MG1606390		MJ341390/82	3" 90/8.2
M200110PEWI	MS200110		MG20075125		MJ3414110/10	4" 110/1.0
M200125PEWI	MS200125		MG20075125		MJ3414125/114	4" 125/11.4

(\*) Alternatively, MK Series heat-shrink end-piece



Piping	Part no.	MPP341 fitting	
		Ø male thread	external Ø of pipe mm
M9032PEWI	MPP3414432/29	1"	32/2.9
M9040PEWI	MPP3415440/37	1.1/4"	40/3.7
M12550PEWI	MPP3416450/46	1.1/2"	50/4.6
M12563PEWI	MPP341263/58	2"	63/5.8
M16075PEWI	MPP34121275/68	2.1/2"	75/6.8
M16090PEWI	MPP341390/82	3"	90/8.2
M200110PEWI	MPP3414110/10	4"	110/1.0
M200125PEWI	MPP3414125/114	4"	125/11.4

Option for constant low-temperature applications, sheltered from direct sunlight and bad weather.



## MICROFLEX COOL DUO



Microflex pre-insulated flexible piping for domestic water systems with two internal pipes in PE-HD SDR11 suitable for potable water up to **25°C** (other fluids -10 to 25°C) and pressures up to **16 bar in accordance with EN ISO 12201**. Multi-layer thermal insulation in CFC-free expanded PEX cross-linked polyethylene with closed-cell structure.

Double-wall corrugated outer casing in PE-HD high-density polyethylene. Supplied in lengths to customer specification. Max. length 100m.

Part no.	PE-HD pipe external Ø thk. mm	DN	Ø outer casing mm	Weight per metre kg	Bend radius cm	PN
<b>MD12532PEWI</b>	32/2.9	25	125	1.82	30	16
<b>MD16040PEWI</b>	40/3.7	32	160	2.63	60	16
<b>MD16050PEWI</b>	50/4.6	40	160	3.10	60	16
<b>MD20063PEWI</b>	63/5.8	50	200	4.64	120	16

5

## ACCESSORIES



Piping	Dust caps	EPDM end caps*		MJ341 fitting	
	Part no.	Part no.	Part no.	Ø male thread	external Ø of pipe mm
<b>MD12532PEWI</b>	<b>MSD12532</b>		<b>MGD1251832</b>	<b>MJ3414432/29</b>	1" 32/2.9
<b>MD16040PEWI</b>	<b>MSD16040</b>		<b>MGD1602550</b>	<b>MJ3415440/37</b>	1.1/4" 40/3.7
<b>MD16050PEWI</b>	<b>MSD16050</b>		<b>MGD1602550</b>	<b>MJ3416450/46</b>	1.1/2" 50/4.6
<b>MD20063PEWI</b>	<b>MSD20063</b>		<b>MGD2004063</b>	<b>MJ341263/58</b>	2" 63/5.8

(\*) Alternatively, MK Series heat-shrink end-piece



Piping	Part no.	MPP341 fitting	
		Ø male thread	external Ø of pipe mm
<b>MD12532PEWI</b>	<b>MPP3414432/29</b>	1"	32/2.9
<b>MD16040PEWI</b>	<b>MPP3415440/37</b>	1.1/4"	40/3.7
<b>MD16050PEWI</b>	<b>MPP3416450/46</b>	1.1/2"	50/4.6
<b>MD20063PEWI</b>	<b>MPP341263/58</b>	2"	63/5.8

Option for constant low-temperature applications, sheltered from direct sunlight and bad weather.

**CONNECTION KIT FOR SELF-REGULATING HEATING CABLE**



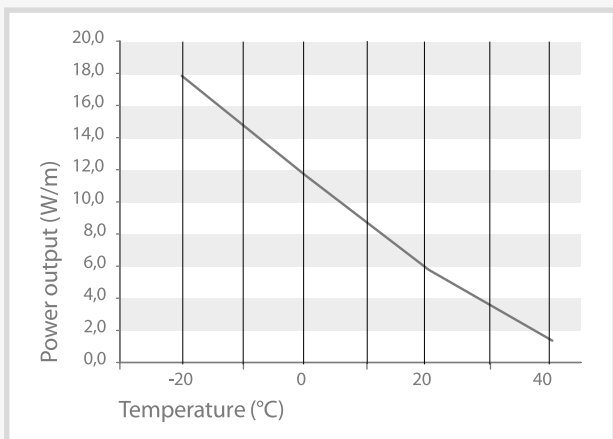
MVTH Room thermostat for powering self-regulating heating cable.  
 In IP54 case.  
 Measuring range -10 to 40 °C  
 Differential 1-2 K.  
 Power supply 230 VAC  
 Contact 16A/230 VAC



MVBOX Distribution box for connecting self-regulating heating cable



MVKITGR  
 3 shrink sleeves to insulate the power supply and earthing wires +1 shrink sleeve to insulate the power supply cable + 2 short shrink sleeves to insulate the ends of the heating cable +1 cable gland for distribution boxes



Part no.	Description	€ each
MVTH	Thermostat	319,30
MVBOX	Distribution box	16,90
MVKITGR10W	Set of shrink sleeves	62,60
MVKITM10W	1xMVBOX +2MVKIT-GR10W	142,10
MVKITT10W	1xMVBOX +3MVKIT-GR10W	204,80

(\*) A version for pipe with 18W/m heating cable is available to order

**INSTALLATION EXAMPLES**

**MVTH + MVBOX +MVKITGR**



**MVKITM**



**MVKITT**



**IMPORTANT:**

At a temperature of 0°C, the heating cable must not be longer than 100m. For longer lengths, multiple power supply points are required, at least 1 every 100 metres.

## Fittings for 6 bar heating and cooling pipes and 16 bar COOL pipes

### MJ341



DZR threaded end fitting for Microflex PN6 pipes and Microflex COOL PN 16 pipes.

Part no.	Ø pipe / thickness mm	Ø male thread
MJ3413425/23	25/2.3	3/4"
MJ3414432/29	32/2.9	1"
MJ3415440/37	40/3.7	1.1/4"
MJ3416450/46	50/4.6	1.1/2"
MJ341263/58	63/5.8	2"
MJ34121275/68	75/6.8	2.1/2"
MJ341390/82	90/8.2	3"
MJ3414110/10	110/10	4"
MJ3414125/114	125/11.4	4"

### S6



Weld-on threaded end fitting in DZR brass and steel for Microflex PN6 pipes and Microflex COOL PN 16 pipes.

Part no.	Ø pipe/thickness mm	external Ø weld-on	internal Ø weld-on
MJ3412725/23L	25/2.3	26.9	21.5
MJ3413332/29L	32/2.9	33.7	27.0
MJ3414240/37L	40/3.7	42.4	36.0
MJ3414550/46L	50/4.6	48.3	42.0
MJ3415763/58L	63/5.8	60.3	53.0
MJ3417675/68L	75/6.8	76.1	68.0
MJ3418990/82L	90/8.2	88.9	80.0
MJ341110110/10L	110/10.0	114.3	105.0
MJ341114125/114L	125/11.4	114.3	105.0

### MJ270



Straight fitting for PEX-a x PEX-a pipes in DZR brass for Microflex PN6 pipes and Microflex COOL PN 16 pipes.

Part no.	Ø pipe/thickness mm
MJ27025/23	25/2.3
MJ27032/29	32/2.9
MJ27040/37	40/3.7
MJ27050/46	50/4.6
MJ27063/58	63/5.8
MJ27075/68	75/6.9
MJ27090/82	90/8.2
MJ270110/10	110/10
MJ270125/114	125/11.4

## MJ90



Elbow fitting for PEX-a x PEX-a pipes in DZR brass for Microflex PN6 pipes and Microflex COOL PN 16 pipes.

Part no.	Ø pipe/thickness mm
<b>MJ9025/23</b>	25/2.3
<b>MJ9032/29</b>	32/2.9
<b>MJ9040/37</b>	40/3.7
<b>MJ9050/46</b>	50/4.6
<b>MJ9063/58</b>	63/5.8
<b>MJ9075/68</b>	75/6.8
<b>MJ9090/82</b>	90/8.2
<b>MJ90110/10</b>	110/10
<b>MJ90125/114</b>	125/11.4

Product composed of parts to be assembled.

## MJ130



T-fitting for PEX-a x PEX-a x PEX-a pipes in DZR brass for Microflex PN6 pipes and Microflex COOL PN 16 pipes.

Part no.	Ø pipes	Ø pipe/thickness mm
<b>MJ13025/23</b>	25-25-25	25/2.3
<b>MJ13032/29</b>	32-32-32	32/2.9
<b>MJ1304032/37</b>	40-32-40	40/3.7+32/2.9
<b>MJ13040/37</b>	40-40-40	40/3.7
<b>MJ1305040/46</b>	50-40-50	50/4.6+40/3.7
<b>MJ13050/46</b>	50-50-50	50/4.6
<b>MJ1306350/58</b>	63-50-63	63/5.8+50/4.6
<b>MJ13063/58</b>	63-63-63	63/5.8
<b>MJ13075/68</b>	75-75-75	75/6.8
<b>MJ13090/82</b>	90-90-90	90/8.2
<b>MJ130110/10</b>	110-110-110	110/10
<b>MJ130125/114</b>	125-125-125	125/11.4

Product composed of parts to be assembled.

## Domestic water pipe fittings - 10 bar

### MJ341



DZR brass threaded end fitting for Microflex PN10 pipes.

Part no.	Ø pipe/thickness mm	Ø male thread
MJ3411218/25	18/2.5	1/2"
MJ3413420/28	20/2.8	3/4"
MJ3413422/30	22/3.0	3/4"
MJ3413425/35	25/3.5	3/4"
MJ3414428/40	28/4.0	1"
MJ3414432/44	32/4.4	1"
MJ3415440/55	40/5.5	1.1/4"
MJ3416450/69	50/6.9	1.1/2"
MJ341263/87	63/8.7	2.1/2"
MJ34121275/103	75/10.3	2.1/2"
MJ341390/123	90/12.3	3"
MJ3414110/151	110/15.1	4"

### MJ270



Straight fitting for PEX-a x PEX-a pipes in DZR brass for Microflex PN10 pipes.

Part no.	Ø pipe/thickness mm
MJ27025/35	25/3.5
MJ27032/44	32/4.4
MJ27040/55	40/5.5
MJ27050/69	50/6.9
MJ27063/87	63/8.7
MJ27075/103	75/10.3
MJ27090/123	90/12.3
MJ270110/151	110/15.1

Product composed of parts to be assembled.

### MJ90



Elbow fitting for PEX-a x PEX-a pipes in DZR brass for Microflex PN10 pipes.

Part no.	Ø pipe/thickness mm
MJ9025/35	25/3.5
MJ9032/44	32/4.4
MJ9040/55	40/5.5
MJ9050/69	50/6.9
MJ9063/87	63/8.7
MJ9075/103	75/10.3
MJ9090/123	90/12.3
MJ90110/151	110/15.1

Product composed of parts to be assembled.

### MJ130



T-fitting for PEX-a x PEX-a pipes in DZR brass for Microflex PN10 pipes.

Part no.	Ø pipes	Ø pipe/thickness mm
MJ13025/35	25-25-25	25/2.3
MJ13032/29	32-32-32	32/2.9
MJ1304032/37	40-32-40	40/3.7+32/2.9
MJ13040/37	40-40-40	40/3.7
MJ1305040/46	50-40-50	50/4.6+40/3.7
MJ13050/46	50-50-50	50/4.6
MJ1306350/58	63-50-63	63/5.8+50/4.6
MJ13063/58	63-63-63	63/5.8
MJ13075/68	75-75-75	75/6.8
MJ13090/82	90-90-90	90/8.2
MJ130110/10	110-110-110	110/10
MJ130125/114	125-125-125	125/11.4

Product composed of parts to be assembled.

## Plastic fittings for cool pipes

### MPP341



PLASTIC threaded end fitting for Microflex COOL PN 16/10 pipes.

Part no.	Ø pipe/thickness mm	Ø male thread	PN
MPP3414432/29	32/2.9	1"	16
MPP3415440/37	40/3.7	1.1/4"	16
MPP3416450/46	50/4.6	1.1/2"	16
MPP341263/58	63/5.8	2"	16
MPP34121275/68	75/6.8	2.1/2"	10
MPP341390/82	90/8.2	3"	10
MPP3414110/10	110/10.0	4"	10
MPP3414125/114	125/11.4	4"	10

### MPP270



Straight fitting for PE x P-a pipes in plastic for Microflex COOL PN16/PN10 pipes.

Part no.	Ø pipe/thickness mm	PN
MPP27032/29	32/2.9	16
MPP27040/37	40/3.7	16
MPP27050/46	50/4.6	16
MPP27063/58	63/5.8	16
MPP27075/68	75/6.8	10
MPP27090/82	90/8.2	10
MPP270110/10	110/10.0	10

### MPP90



Elbow fitting for PE x P-a pipes in plastic for Microflex COOL PN 10/16 pipes.

Part no.	Ø pipe/thickness mm	PN
MPP9032/29	32/2.9	16
MPP9040/37	40/3.7	16
MPP9050/46	50/4.6	16
MPP9063/58	63/5.8	16
MPP9075/68	75/6.8	10
MPP9090/82	90/8.2	10
MPP90110/10	110/10.0	10

### MPP130



T-fitting for PE x PE x PE pipes in plastic for Microflex COOL PN 10/16 pipes.

Part no.	Ø pipe/thickness mm	PN
MPP13032/29	32/2.9	16
MPP13040/37	40/3.7	16
MPP13050/46	50/4.6	16
MPP13063/58	63/5.8	16
MPP13075/68	75/6.8	10
MPP13090/82	90/8.2	10
MPP130110/10	110/10.0	10

**ACCESSORIES****MFP**

Bronze threaded fitting for creating a fixed point for absorbing expansion forces on Microflex PN 6/10/16 pipes.



Part no.	DN
<b>MFP34</b>	3/4"
<b>MFP44</b>	1"
<b>MFP54</b>	1.1/4"
<b>MFP64</b>	1.1/2"
<b>MFP2</b>	2"
<b>MFP212</b>	2.1/2"
<b>MFP3</b>	3"
<b>MFP4</b>	4"

**VW270**

Bronze F-F threaded sleeve - PN 6/10/16.



Part no.	DN
<b>VW27034</b>	3/4"
<b>VW27044</b>	1"
<b>VW27054</b>	1.1/4"
<b>VW27064</b>	1.1/2"
<b>VW2702</b>	2"
<b>VW270212</b>	2.1/2"
<b>VW2703</b>	3"
<b>VW2704</b>	4"

**VW90**

Bronze F-F threaded elbow - PN 6/10/16.



Part no.	DN
<b>VW9034</b>	3/4"
<b>VW9044</b>	1"
<b>VW9054</b>	1.1/4"
<b>VW9064</b>	1.1/2"
<b>VW902</b>	2"
<b>VW90212</b>	2.1/2"
<b>VW903</b>	3"
<b>VW904</b>	4"

ACCESSORIES



**VW130**

Bronze F-F threaded T-fitting - PN 6/10/16.

Part no.	DN
VW13034	3/4"
VW13044	1"
VW13054	1.1/4"
VW13064	1.1/2"
VW1302	2"
VW130212	2.1/2"
VW1303	3"
VW1304	4"

\* other versions of reducing T-fittings available to order.



**VW241**

DZR brass M-F threaded adaptor - PN 6/10/16.

Part no.	male thread	female thread
VW2414434	1"	3/4"
VW2415434	1.1/4"	3/4"
VW2415444	1.1/4"	1"
VW2416434	1.1/2"	3/4"
VW2416444	1.1/2"	1"
VW2416454	1.1/2"	1.1/4"
VW241234	2"	3/4"
VW241244	2"	1"
VW241254	2"	1.1/4"
VW241264	2"	1.1/2"
VW24121254	2.1/2"	1.1/4"
VW24121264	2.1/2"	1.1/2"
VW2412122	2.1/2"	2"
VW241344	3"	1"
VW241354	3"	1.1/4"
VW241364	3"	1.1/2"
VW24132	3"	2"
VW2413212	3"	2.1/2"
VW24142	4"	2"
VW2414212	4"	2.1/2"
VW24143	4"	3"



## ACCESSORIES

**VW280**

DZR brass M-M threaded nipple - PN 6/10/16.

Part no.	DN
VW28034	3/4"
VW28044	1"
VW28054	1.1/4"
VW28064	1.1/2"
VW2802	2"
VW280212	2.1/2"
VW2803	3"
VW2804	4"

**VW290**

DZR brass M-M threaded stop - PN 6/10/16.

Part no.	DN
VW29034	3/4"
VW29044	1"
VW29054	1.1/4"
VW29064	1.1/2"
VW2902	2"
VW290212	2.1/2"
VW2903	3"
VW2904	4"

**MDF**

Galvanised steel threaded flange - PN 6/10.

Part no.	DN
MDF34	3/4"
MDF44	1"
MDF54	1.1/4"
MDF64	1.1/2"
MDF2	2"
MDF212	2.1/2"
MDF3	3"
MDF4	4"

**MK - UNO**Shrink caps to prevent water from entering pipes  
Microflex UNO.

Part no.	Ø outer casing mm	Ø pipe mm
MK2000	75	25
MK2100	75 / 90	32 or 40
MK2200	125	40 or 50
MK2400	125	63
MK2340	160	40 or 50
MK2500	160	63 to 90
MK2600	200	75 to 125

## ACCESSORIES



### MK - DUO

Shrink caps to prevent water from entering pipes Microflex DUO.

Part no.	Ø outer casing mm	Ø pipe mm
<b>MK3250-P604</b>	125	1 x 25 / 1 x 20
<b>MK3250-P604</b>	125	2 x 25
<b>MK3250-P604</b>	125	1 x 32 / 1 x 25
<b>MK3280</b>	125	2 x 32
<b>MK3350-01</b>	160	2 x 25 or 2 x 32
<b>MK3350-02</b>	160	2 x 40
<b>MK3350-01</b>	160	1 x 32 / 1 x 25
<b>MK3350-02</b>	160	1 x 40 / 1 x 25
<b>MK3360-01</b>	160	1 x 50 / 1 x 25
<b>MK3350-03</b>	160	2 x 50
<b>MK3350-03</b>	200	2 x 50
<b>MK3350-05</b>	200	2 x 63

### LS

MICRO SEAL wall feed-through sealing sleeves.



Part no.	Ø outer casing mm	width including bolts	Ø hole in the wall mm	tightening torque Nm
<b>9LS200</b>	75	75	100 - 102	min. 3.0 - max. 3.5
<b>7LS300</b>	75	100	110 - 115	min. 9.0 - max. 11.0
<b>8LS300</b>	90	100	128 - 132	min. 9.0 - max. 11.0
<b>9LS315</b>	90	100	134 - 136	min. 10.0 - max. 12.0
<b>7LS475</b>	125	135	194 - 210	min. 26.0 - max. 32.5
<b>6LS325</b>	125	125	175 - 180	min. 11.8 - max. 14.5
<b>7LS325</b>	160	125	209 - 212	min. 11.8 - max. 14.5
<b>7LS400</b>	160	135	240 - 245	min. 30.0 - max. 37.0
<b>13LS300</b>	160	100	200 - 202	min. 9.0 - max. 11.0
<b>9LS325</b>	200	125	250 - 255	min. 11.8 - max. 14.5
<b>8LS400</b>	200	135	275 - 282	min. 30.0 - max. 37.0
<b>10LS575</b>	200	145	301 - 320	min. 47.0 - max. 61.0

### TECHNICAL NOTE



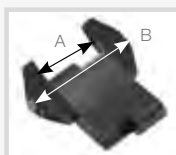
1. Drill a hole according to minimum and maximum dimensions



2. Fit the LS sleeve around the outer casing. Make sure that there is a straight line of at least 60 cm before and after the sleeve. Bends are not allowed.



3. Slide the pipe complete with sleeve into the through-hole in the wall.



4. Tightening the bolts of the evenly spaced links uniformly compresses the pressure plates, thus filling the annular space between the pipe and the through-hole in the wall.

## ACCESSORIES

### MICRO PRESS

MICRO PRESS wall feed-through seals are designed for systems of pre-insulated flexible pipes and PE-coated pipes. Available for all diameters of Microflex corrugated outer casing; in 2x40 and 1x40 mm versions. The extremely soft rubber allows a low tightening torque and ensures low risk of pipe deformation. MFPA-certified up to a pressure of 5 bar. Facilitates installation by making it possible to move and angle the pipe as necessary.

### MICRO PRESS - STANDARD VERSION 1X40MM

Stainless steel pressure plates. S304 bolts. EPDM rubber.



Part no.	Central hole (mm)	Outer casing (mm)
<b>M10527</b>	125	75
<b>M10532</b>	150	75
<b>M10534</b>	150	90
<b>M10540</b>	200	90
<b>M10543</b>	200	125
<b>M10553</b>	250	160
<b>M10557</b>	250	200
<b>M10567</b>	300	200

### MICRO PRESS - SPLIT VERSION

Stainless steel pressure plates. S304 bolts. EPDM rubber.



Part no.	Central hole (mm)	Outer casing (mm)
<b>M10627</b>	125	75
<b>M10632</b>	150	75
<b>M10634</b>	150	90
<b>M10641</b>	200	90
<b>M10643</b>	200	125
<b>M10653</b>	250	160
<b>M10657</b>	250	200
<b>M10667</b>	300	200

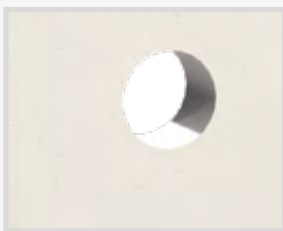
### MICRO PRESS - STANDARD VERSION 2X40MM

Stainless steel pressure plates. S304 bolts. EPDM rubber.

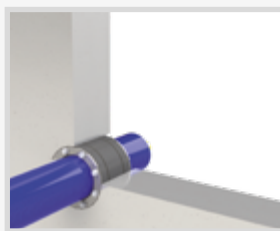


Part no.	Central hole (mm)	Outer casing (mm)
<b>M10701</b>	125	75
<b>M10705</b>	150	75
<b>M10706</b>	150	90
<b>M10709</b>	200	90
<b>M10711</b>	200	125
<b>M10718</b>	250	160
<b>M10722</b>	250	200
<b>M10727</b>	300	200

#### TECHNICAL NOTE



1. Drill a hole according to minimum and maximum dimensions.



2. Insert the pipe complete with MICRO PRESS sleeve into the hole in the wall.

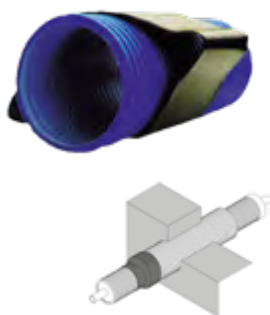


3. Use a torque wrench to tighten the bolts to the torque values specified in the installation manual.

## ACCESSORIES

### MMDV

MMDV wall feed-through sleeves.



Part no.	Ø pipe outer casing	external Ø sleeve	Ø hole in the wall mm
<b>MMDV75</b>	75	110	210
<b>MMDV90</b>	90	110	210
<b>MMDV125</b>	125	160	260
<b>MMDV160</b>	160	200	300
<b>MMDV200</b>	200	250	350

### MHM

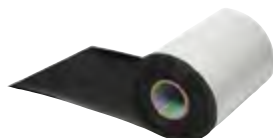
MHM shrink sleeve for repairing the outer casing of Microflex pipes.



Part no.	Ø pipe outer casing	Width of sleeve mm
<b>MHM75/90</b>	75-90	220mm
<b>MHM125</b>	125	220mm
<b>MHM160</b>	160	220mm
<b>MHM200</b>	200	220mm
<b>MHM235</b>	200	220mm

### MH

Tape for repairing the outer casing of Microflex pipes.



Part no.	Description	Length m	Width mm
<b>MHB200</b>	Heat-shrink tape	10	200
<b>MHK150</b>	Cold-applied tape	10	150

### MTR

Warning tape to indicate the location of underground Microflex pipes during excavation work.



Part no.	Description	Size
<b>MTRW</b>	water pipe (red)	250 x 0.08
<b>MTRB</b>	water pipe with heating cable (blue)	250 x 0.08

### MM

Insulated I-piece kit for straight, underground joints, complete with insulation material, sealant and stainless steel fasteners.



Part no.	Ø pipe outer casing	L1 mm	L2 mm
<b>MM129075</b>	125/90/75	960	290
<b>MM201612</b>	200/160/125	1170	345

**ACCESSORIES**

**MM**

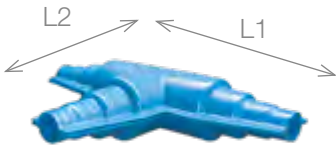
Insulation kit I-variant for straight, underground joints, complete with insulation material and shrink sleeves.



Part no.	Ø pipe outer casing	Length mm
<b>MM75/90</b>	75/90	700
<b>MM125</b>	125	850
<b>MM160</b>	160	1000
<b>MM200</b>	200	1000

**MT**

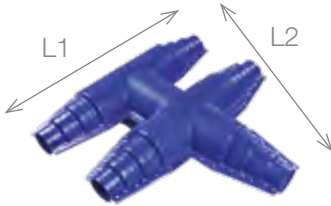
Insulated T-piece kit for underground T-joints, complete with insulation material, sealant and stainless steel fasteners.



Part no.	Ø pipe outer casing	L1 mm	L2 mm
<b>MT129075</b>	125/90/75	960	590
<b>MT201612</b>	200/160/125	1170	750

**MDT**

Insulated T-piece kit for underground double T-joints, complete with insulation material, sealant and stainless steel fasteners.



Part no.	Ø pipe outer casing	L1 mm	L2 mm
<b>MDT201612</b>	200/160/125	1200	1200

**MH**

Insulated elbow kit for underground elbow-joints, complete with insulation material, sealant and stainless steel fasteners.



Part no.	Ø pipe outer casing	LxWxH (mm)
<b>MH201612</b>	200/160/125	740x740x270

**MBR**

Insulated trouser piece kit for joining two single pipes to one double pipe, complete with insulation material, sealant and stainless steel fasteners.



Part no.	Ø pipe outer casing	LxWxH (mm)	Notes
<b>MBR201612</b>	200/160/125	1170X460X230	IN: 200/160/125 - OUT: 160/125

## ACCESSORIES



### MR

Adaptor for using pipes with outer casing diameter of less than 160 mm with insulated I-piece kit MM201612 and insulated T-piece kit MT201612. Length 1m.

Part no.	Ø pipe outer casing
<b>MR24116075</b>	Reduces from 160 to 75 mm



### MIS

Inspection chamber with six connection points for creating inspectable underground branches. Complete with sealant and stainless steel fasteners.

Part no.	Ø pipe outer casing	Ø pocket	Height mm
<b>MIS</b>	200/160/125	810	770



### MHM

Shrink sleeves for inspection chambers.

Part no.	Ø corrugated outer casing	Width of sleeve
<b>MHM125</b>	125	220
<b>MHM160</b>	160	220
<b>MHM235</b>	200	220

## Chapter 6

# Balancing devices for water distribution systems

6

**WATTS®**



### iDROSET® CF Series Static balancing valve

Single-step flow rate control  
Constant flow rate  
Energy saving and comfort

## Chapter 6

# BALANCING DEVICES FOR WATER DISTRIBUTION SYSTEMS

## Static balancing valves

### iDROSET® CF Series

Balancing and control valve with threaded connections, union nut and female threaded versions, for heating and cooling distribution systems.

Shut-off function. Flow rate setting and reading integrated into the valve without the use of special tools. Brass and composite body. Fluids: water with glycol up to 50%.

PN: 16 bar. Operating temperature range: -10 to 110°C.



### Union nut, female thread

Part no.	DN	Kvs	Flow rate [l/h]	Weight (kg)	Pcs. pack	Package
PAP-S015	1/2"	1.70	35/700	1.0	1	1
PAP-S020	3/4"	1.70	35/700	1.0	1	1
PAP-M025	1"	4.40	50/1600	1.1	1	1
PAP-L032	1 1/4"	14.00	250/6000	2.6	1	1
PAP-L040	1 1/2"	14.00	250/6000	2.6	1	1
PAPXL050	2"	25.00	400/10000	5.1	1	1

Dimensions on page 196



### Female thread

Part no.	DN	Kvs	Flow rate [l/h]	Weight (kg)	Pcs. pack	Package
PAP-S015-FFG	1/2"	1.70	35/700	1.40	1	1
PAP-S020-FFG	3/4"	1.70	35/700	1.35	1	1
PAP-M025-FFG	1"	4.40	50/1600	1.20	1	1
PAP-L032-FFG	1 1/4"	14.00	250/6000	2.80	1	1
PAP-L040-FFG	1 1/2"	14.00	250/6000	3.00	1	1
PAPXL050-FFG	2"	25.00	400/10000	5.80	1	1

Dimensions on page 197



## iDROSET® CF Series shells



Insulating shells for balancing valves in the iDROSET® CF Series.  
 Thermal conductivity  $\lambda$ : 0.036 W/mK.  
 Fire-resistance: Class B2 - DIN 4102.

Part no.	For model	Pcs. pack	Package
<b>PAP-001</b>	PAP-S015	1	1
<b>PAP-002</b>	PAP-S020	1	1
<b>PAP-003</b>	PAP-M025	1	1
<b>PAP-004</b>	PAP-S015-FFG PAP-S020-FFG PAP-M025-FFG	1	1
<b>PAP-006</b>	PAP-L032 PAP-L032-FFG PAP-L040 PAP-L040-FFG	1	1
<b>PAP-005</b>	PAPXL50 PAPXL50-FFG	1	1

Dimensions on page 198

### TECHNICAL NOTE - use and operation

All distribution networks, even the simplest, are made up of different branches, whose flow rates need to be defined at the design stage and must then correspond to the values calculated in the course of operation.

In an unbalanced system (Fig.1) the flow rate is too high in the circuits closest to the pump, and too low in the ones furthest away from it. The temperature differences between the various rooms not only reduce comfort but also increase energy consumption.

The use of thermostatic or control valves in this situation can cause noise.

The installation and correct setting of CF Series balancing valves (Fig. 2) on boiler room manifolds, at the bottom of risers and upstream of heat production and exchange units or zones ensures correct flow distribution, thus offering immediate benefits in terms of comfort and energy saving, as well as optimising efficiency. CF Series valves also act as shut-off valves. They are particularly recommended for use in heating, cooling and domestic water distribution systems.

The CF Series is based on innovative technology that makes it possible to read and control the flow rate directly from the valve without using any kind of external tool.

The operation is very simple:

- Fully open the handwheel on the valve during installation
  - After start-up, set the desired flow rate in L/h according to the design. Turn the handwheel clockwise to reduce the flow rate or anti-clockwise to increase it.
- This done, you can read the actual flow rate on the dial. You can block the position of the handwheel by means of the screw on it, in order to prevent tampering.

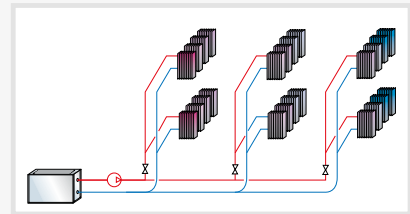


Fig.1 - Unbalanced system

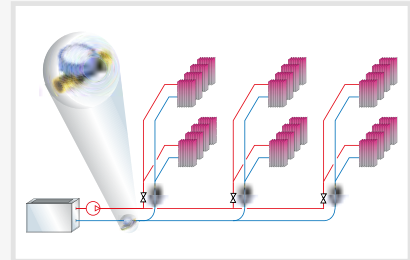


Fig.2 - Balanced system



Fig.3 - Opening the handwheel

**FO-BV**



Fixed-orifice balancing and control valve with threaded connections for heating, cooling and domestic water systems. Shut-off function, pre-setting function with 40 positions visible on the handwheel, and flow rate and differential pressure measuring function with a computerised instrument (BVT-SET). DZR (CW602N) brass valve body, PTFE gasket. Accuracy KVs ± 3% (tested to BS 7350). Fluid temperature: -10 to 120°C (temperatures below 0°C or above 100°C only for water with anti-freeze and anti-boil added to it). Female threaded connections: ISO 228/1 for 1/2" and 3/4"; ISO 7/1 Rp from 1" to 2". PN 25 up to 110°C (PN 20 at 120°C).

Part no.	DN	Kvs	Kvs tp	Flow rate [l/min]	Pcs. pack	Package
<b>FO-BV015</b>	15	1.92	2.80	3.7–8.9	1	1
<b>FO-BV020</b>	20	3.67	5.33	8.3–19.5	1	1
<b>FO-BV025</b>	25	6.24	9.72	15.5–36.2	1	1
<b>FO-BV032</b>	32	12.54	20.25	32.4–75.0	1	1
<b>FO-BV040</b>	40	19.59	30.23	48.6–112.8	1	1
<b>FO-BV050</b>	50	29.72	55.07	91.2–210.6	1	1

Dimensions on page 199

**TECHNICAL NOTE - Fixed-orifice valve: one Kv only for all settings**

The FO-BV Series fixed-orifice balancing valves (Fig.1) are based on the measuring principle that makes use of the Venturi effect.

They are equipped with an insert with orifice calibrated to a known Kv (1) connected to two external high-pressure (2) and low-pressure (3) tapping points.

By measuring the differential pressure ΔP (in bar) at the two tapping points, it is possible to calculate the flow rate Q (in m³/h) of fluid **using the formula:**

$$Q = Kv \cdot \sqrt{\Delta p}$$

The same formula also applies to variable-orifice valves (Fig.2), where the orifice (1), however, corresponds to the area of flow of the fluid at the valve disc, so is variable. The Kv is not fixed either, but depends on the position of the disc, i.e. on the setting of the valve.

Measuring flow rates for different settings with fixed-orifice valves is easier because:

- with a fixed orifice, you can simply measure the ΔP and apply the formula, because the Kv is independent of the setting position;
- with a variable-orifice valve, you need to measure the ΔP and know the value of Kv in the corresponding setting (which can normally determined from tables or nomograms).

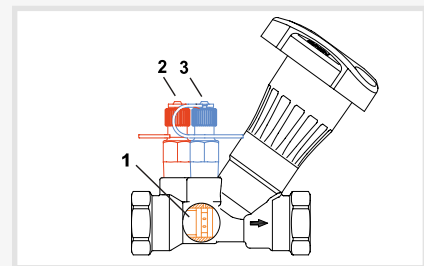


Fig.1 - Fixed-orifice valve

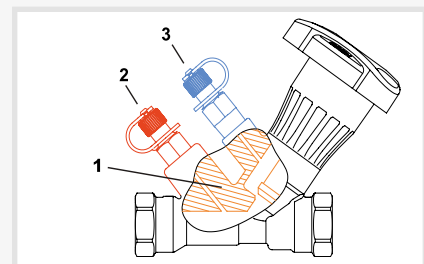


Fig.2 - Variable-orifice valve

**STAD**



Balancing and control valve with threaded connections for heating, cooling and domestic water systems. Shut-off function, pre-setting function with 40 positions, and drain function (optional accessory kit); diagnosis using computerised instrument (BVT-SET) on self-sealing pressure tapping points. AMETAL® (DZR alloy) valve body. Polyamide plastic digital handwheel. Seat seal: disc with EPDM O-ring. PN 20.

Operating temperature range: -20 to 120°C.

Part no.	DN	Kvs	Pcs. pack	Package
<b>STAD10</b>	10	1.47	1	1
<b>STAD15</b>	15	2.52	1	1
<b>STAD20</b>	20	5.7	1	1
<b>STAD25</b>	25	8.7	1	1
<b>STAD32</b>	32	14.2	1	1
<b>STAD40</b>	40	19.2	1	1
<b>STAD50</b>	50	33	1	1

Dimensions on page 199

**WATTFLOW OL**

Inclined-seat balancing valve with threaded connections for heating and cooling systems, complete with built-in flow meter for direct flow rate reading. PN 10 with fluid at 70°C (PN6 with fluid at 100°C). Operating temperature range: -10 to 100°C. Measuring accuracy  $\pm 10\%$  of flow rate read. Brass body, EPDM seals, impact-resistant and temperature-resistant plastic flow meter. Can be installed in any position and suitable for water with glycol. Supplied with adjuster wrench.

Part no.	DN	Flow rate	Kvs	Pcs. pack	Package
<b>10010101</b>	1/2"F	1-8 L/MIN	1.7	1	1
<b>10010108</b>	3/4"F	2-16 L/MIN	2.00	1	1

Dimensions on page 199

**WATTFLOW BP**

Inclined-seat balancing valve with threaded connections for heating and cooling systems, complete with built-in flow meter for direct flow rate reading and mechanical memory of setting position. PN 10. Operating temperature range: -20 to 100°C. Measuring accuracy  $\pm 10\%$  of flow rate read. Brass body, EPDM seals, impact-resistant and temperature-resistant plastic flow meter. Can be installed in any position and suitable for water with glycol. Adjust with hex wrench.

Part no.	DN	Flow rate	Kvs	Pcs. pack	Package
<b>10010156</b>	1"	5-50 L/MIN	5.5	1	1
<b>10010159</b>	1.1/4"	10-80 L/MIN	9.0	1	1
<b>10010160</b>	1.1/2"	15-120 L/MIN	13.0	1	1
<b>10010162</b>	2"	20-200 L/MIN	18.0	1	1

Dimensions on page 199

**STAF**

Balancing and control valve with flanged connections for heating and cooling systems. Shut-off and pre-setting functions; diagnosis using computerised instrument (TA-SCOPE, CMI) on self-sealing pressure tapping points. PN 16. Body centre distance ISO 5752 Series 1 and EN 558-1 Series 1, flange ISO 7005-2, EN 1092-2. Seat seal: disc with EPDM O-ring.

DN 65–150. Operating temperature: -10 to 120°C. EN-GJL-250 (GG25) grey cast iron valve body with epoxy paint surface treatment, other parts in AMETAL® (DZR alloy).

Polyamide plastic digital handwheel with 80 setting positions. DN 200–300. Operating temperature range: -20 to 120°C. EN-GJS-400-15 ductile iron valve body. Surface treatment in epoxy paint or two-component enamel (according to DN). Aluminium digital handwheel with 120-160 setting positions (according to DN). Bronze disc and AMETAL® (DZR alloy) stem.

DN 350-400 models available to order. Bronze models available.

STAF-R: DN 65-150 ideal for potable water distribution.

Part no.	DN	Kvs	Pcs. pack	Package
<b>STAF65</b>	65	85	1	1
<b>STAF80</b>	80	120	1	1
<b>STAF100</b>	100	190	1	1
<b>STAF125</b>	125	300	1	1
<b>STAF150</b>	150	420	1	1
<b>STAF200</b>	200	765	1	1
<b>STAF250</b>	250	1185	1	1
<b>STAF300</b>	300	1450	1	1

Dimensions on page 199

## STAF-SG



Balancing and control valve with flanged connections for heating and cooling systems. Shut-off and pre-setting functions; diagnosis using computerised instrument (TA-SCOPE, CMI) on self-sealing pressure tapping points. PN 25. Body centre distance ISO 5752 Series 1 and EN 558-1 Series 1 (the DN 20-50 versions can also use counterflanges for PN16), flange ISO 7005-2, EN 1092-2. Seat seal: disc with EPDM O-ring. Operating temperature range: -20 to 120°C. EN-GJS-400-15 ductile iron valve body with epoxy paint surface treatment, other parts in AMETAL® (DZR alloy). Polyamide plastic digital handwheel with 40-80 setting positions (according to DN).

Part no.	DN	Kvs	Pcs. pack	Package
<b>STAF-SG20</b>	20	5.7	1	1
<b>STAF-SG25</b>	25	8.7	1	1
<b>STAF-SG32</b>	32	14.2	1	1
<b>STAF-SG40</b>	40	19.2	1	1
<b>STAF-SG50</b>	50	33	1	1
<b>STAF-SG65</b>	65	85	1	1
<b>STAF-SG80</b>	80	120	1	1
<b>STAF-SG100</b>	100	190	1	1
<b>STAF-SG125</b>	125	300	1	1
<b>STAF-SG150</b>	150	420	1	1

Dimensions on page 199

## Automatic balancing valves

### DYN



Dynamic balancing valve, made of DZR brass, acts as a pressure independent control valve (PICV). Modulates the flow rate along the full stroke of the actuator, regardless of pre-setting. PN20. Equipped with a regulating cartridge for  $\Delta p$  of up to 400kPa. M/M thread for union (ISO228/1). M30x1.5 threaded connection, can be used in conjunction with WATTS linear **22C**, **22CX**, **22CX5**, and **26LC** Series ON/OFF actuators and **EMUJC Series** modulating actuators. The 3/4" valve versions can only receive 22CX5 Series or EMUJC Series actuators.

Operating conditions:

- Water: -10to130°C

T < 0°C only with water containing anti-freeze

T > 100°C only with water containing anti-boil

- Not suitable for group 1 and 2 gases or group 1 liquids (Dir.2014/68/EU).

Part no.	DN	Valve body	Flow rate	Kvs	Pcs. pack	Package
<b>213112DYN</b>	15	without test points	0.030-0.150	0.9	1	1
<b>213134DYN</b>	20	without test points	0.062-0.311	1.86	1	1
<b>21311DYN</b>	25	without test points	0.120-0.600	3.8	1	1
<b>213114DYN</b>	32	without test points	0.200-1,000	6.4	1	1
<b>213112DYN-P</b>	15	with test points	0.030-0.150	0.9	1	1
<b>213134DYN-P</b>	20	with test points	0.062-0.311	1.86	1	1
<b>21311DYN-P</b>	25	with test points	0,120-0,600	3.8	1	1
<b>213114DYN-P</b>	32	with test points	0,200-1,000	6.4	1	1

Dimensions on page 198

## Measuring instruments

### BVT-SET



Computerised instrument for measuring the static pressure, differential pressure and flow rate of the fluid in a circuit. Connection to smartphone (not included) via Bluetooth and a dedicated app for calculating flow rate. Supplied in a carrying case containing: battery-powered differential pressure sensor; pair of measuring probes complete with adaptors for the various models of valve. Pre-defined valves stored in the app and custom valves. Rated pressure range 1000 kPa. Operating temperature: -5 to 50°C. Fluid temperature: -5 to 90°C. Power supply: AAA alkaline or NiMH rechargeable batteries.

Part no.	Pcs. pack	Package
<b>BVT-SET2</b>	1	1

## BALANCING ACCESSORIES

### STK



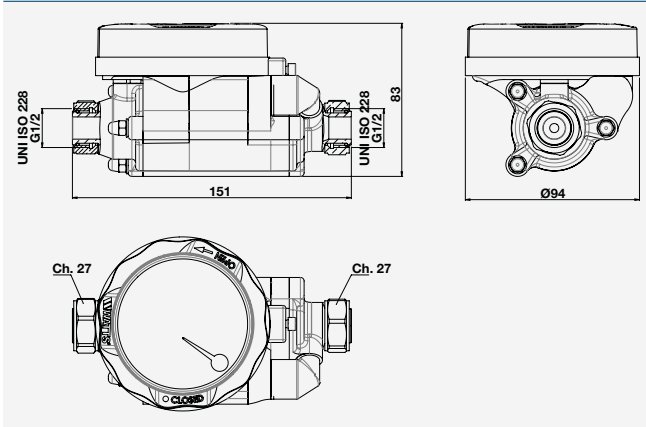
Shut-off lockshield valve for balancing terminal units in heating, cooling and domestic water distribution systems. Set with snap-on wrench by positioning the special insert in the graduated ring. PN16. Operating temperature: -10 to 120°C. Nickel-plated AMETAL® body, disc, stem and fittings. Nitrile rubber O-ring. 1/2" F/F connections

Part no.	DN	Kvs	Pcs. pack	Package
<b>STK15</b>	15	1.8	1	30
<b>STK20</b>	20	4.5	1	15
<b>52187-003</b>	Adjuster wrench		1	1

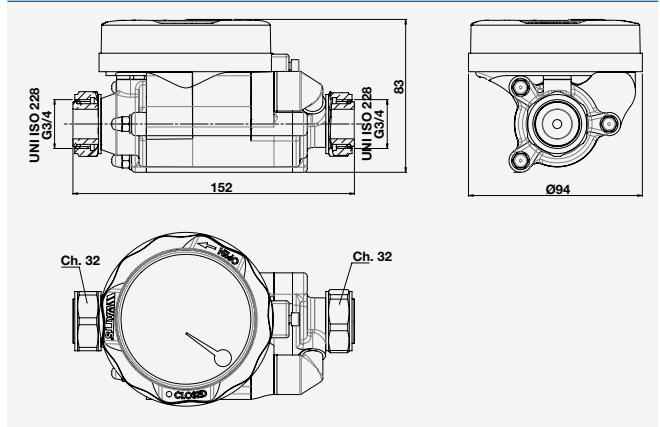
Dimensions on page 199

## Overall dimensions

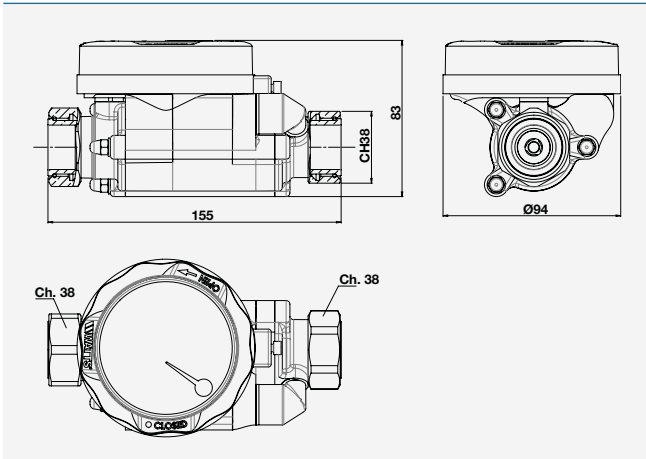
**UNION NUT, FEMALE THREAD iDROSET® CF Series - 1/2"**



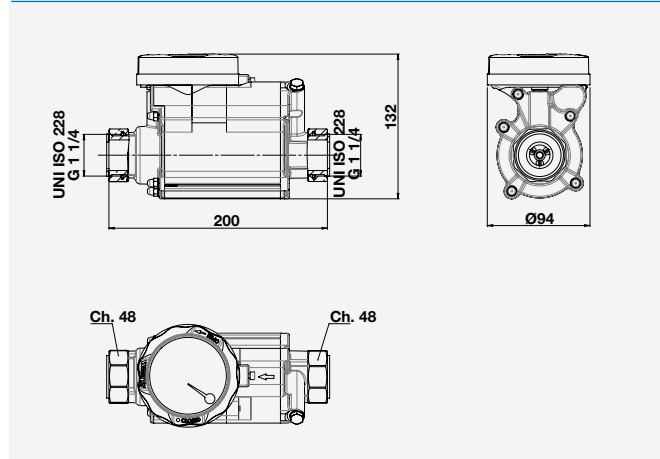
**UNION NUT, FEMALE THREAD iDROSET® CF Series - 3/4"**



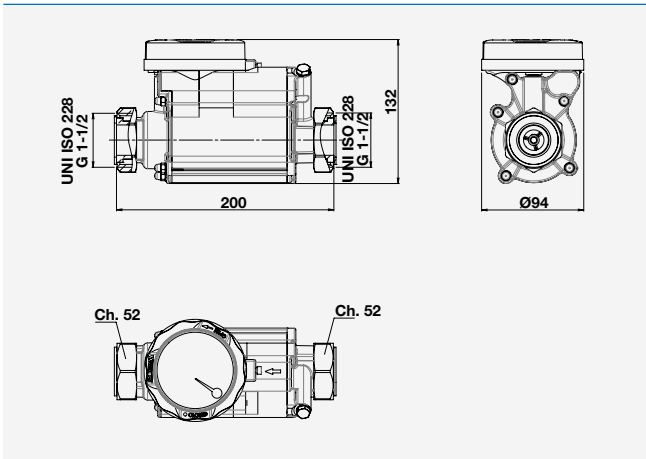
**UNION NUT, FEMALE THREAD iDROSET® CF Series - 1"**



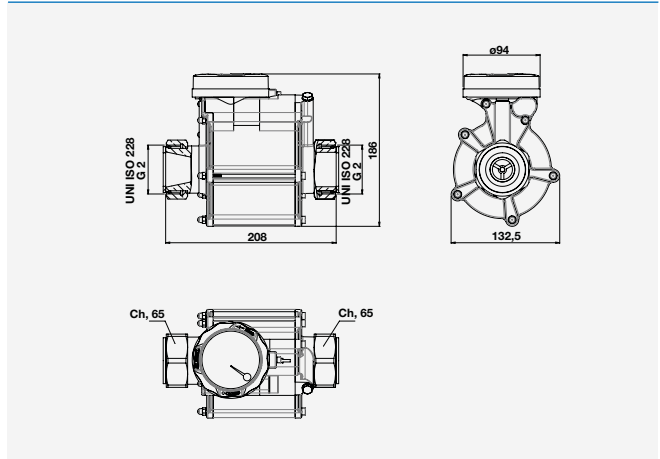
**UNION NUT, FEMALE THREAD iDROSET® CF Series - 1 1/4"**



**UNION NUT, FEMALE THREAD iDROSET® CF Series - 1 1/2"**

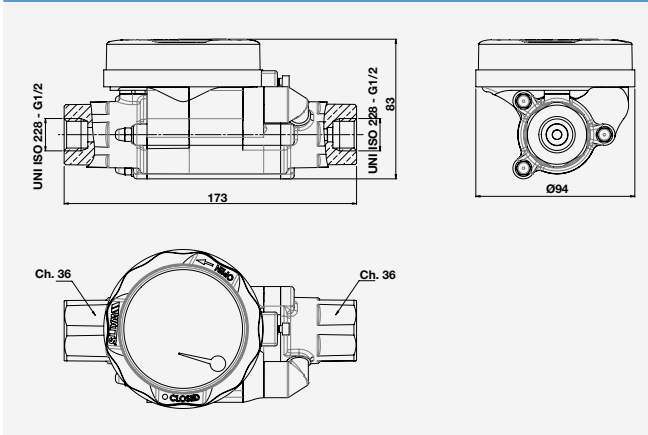


**UNION NUT, FEMALE THREAD iDROSET® CF Series - 2"**

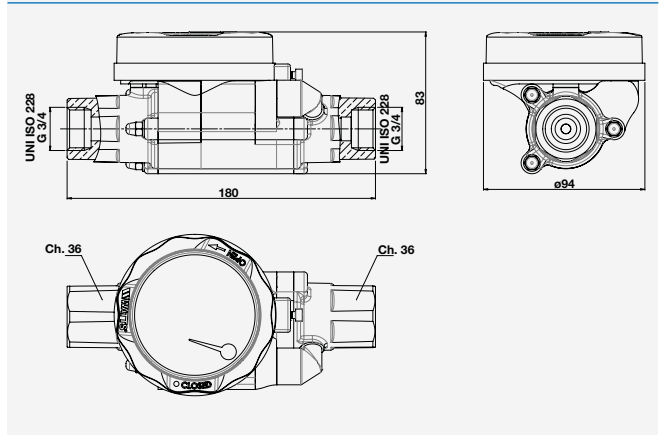


## Overall dimensions

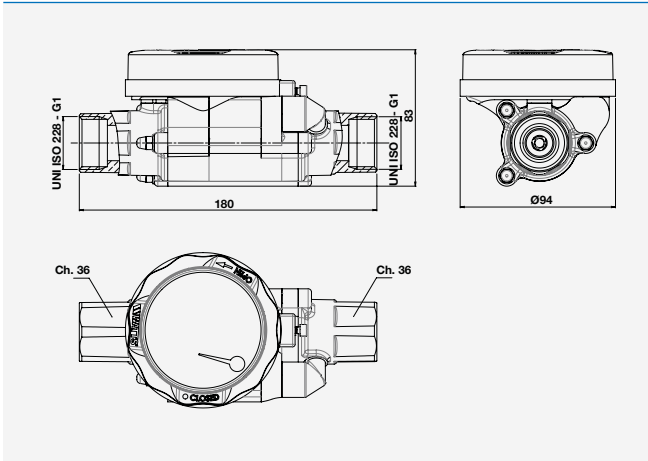
### FEMALE THREAD iDROSET® CF Series - 1/2"



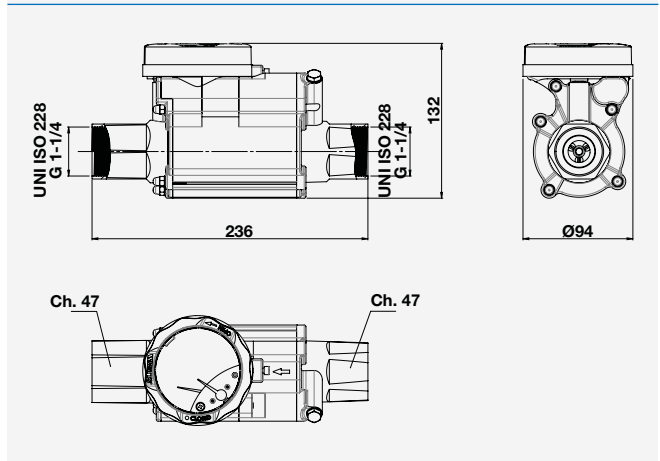
### FEMALE THREAD iDROSET® CF Series - 3/4"



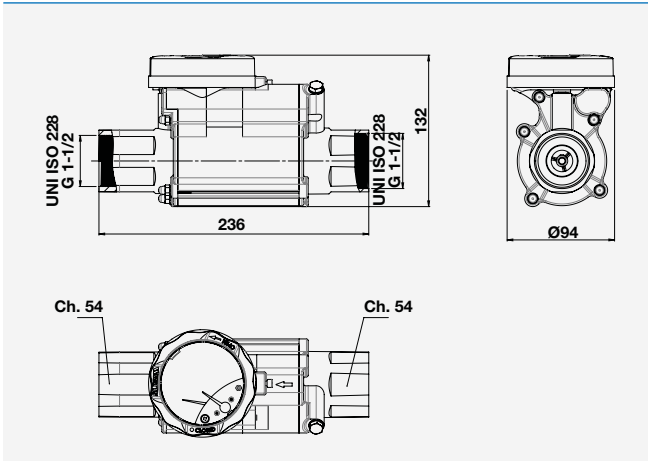
### FEMALE THREAD iDROSET® CF Series - 1"



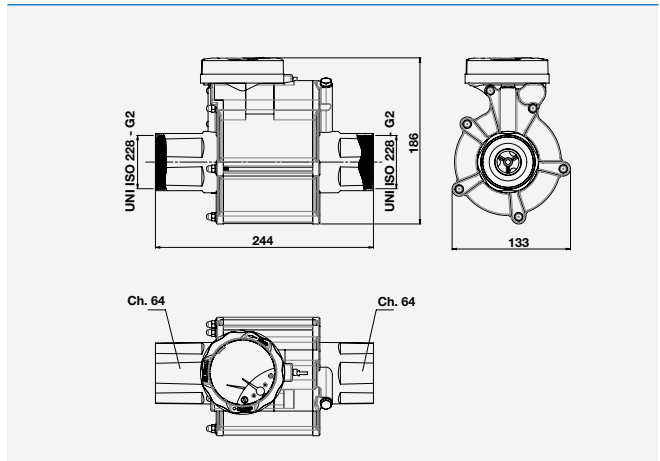
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### FEMALE THREAD iDROSET® CF Series - 1 1/2"

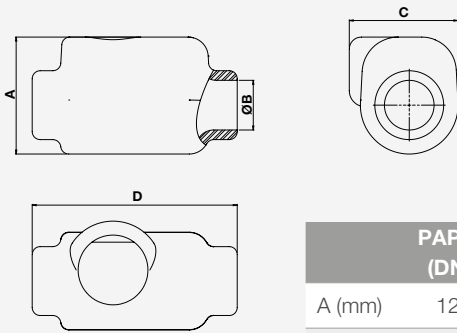


### FEMALE THREAD iDROSET® CF Series - 2"



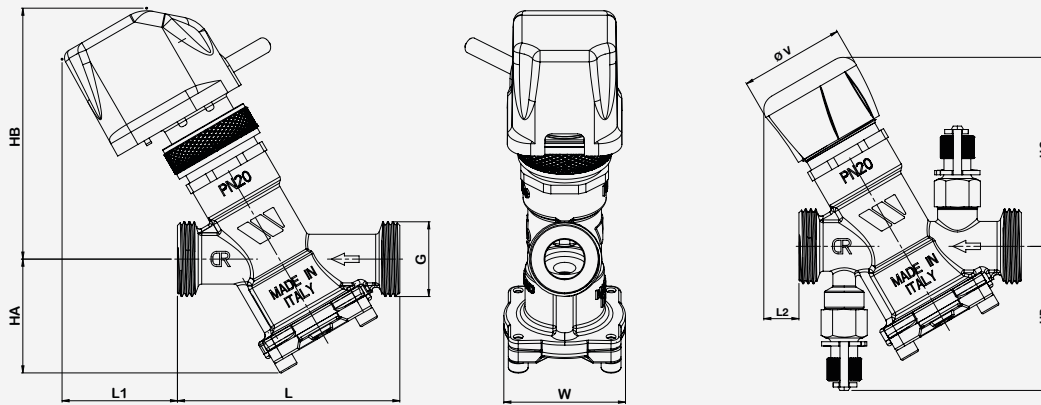
## Overall dimensions

### SHELLS iDROSET® CF Series



	PAP-001 (DN15)	PAP-002 (DN20)	PAP-003 (DN25/15UNS)	PAP-004 (NPT GAS)	PAP-005 (DN50)	PAP-006 (DN32/DN40)
A (mm)	125	125	100	125	160	135
B (mm)	Ø30	Ø35	42	Ø40	Ø72	Ø65
C (mm)	100	100	125	100	190	150
D (mm)	150	150	151	188	235	250

### DYN

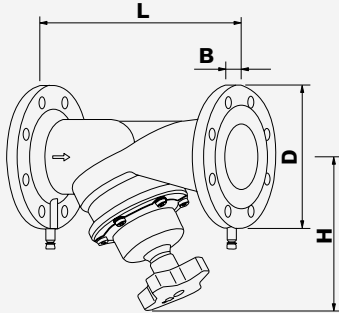


DN	G	L	L1	L2	HA	HB	HC	HP	ØV	W	Flow rate (l/s)
15	3/4"	78.6	41	12.5	38.9	87.8	66.8	60.9	36.8	43	0.030-0.15
20	1"	92	45	16.5	47.4	87.8	66.8	69.4	36.8	52	0.062-0.311
25	1 1/4"	115	27.8	0	56.2	99.7	79.2	73.3	36.8	62.32	0.12/0.6
32	1 1/2"	140	20	-7.3	77.8	98.3	77.8	91.6	36.8	81.5	0.2/1



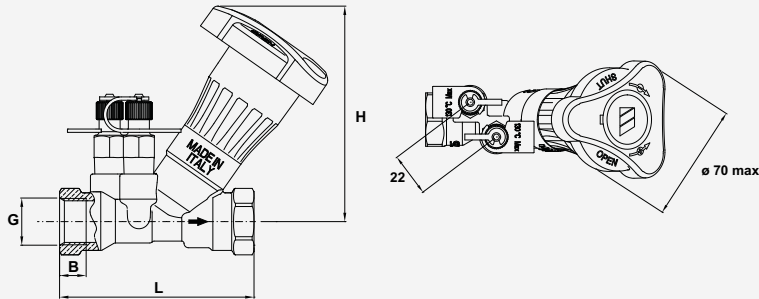
## Overall dimensions

### STAF/STAF-SG



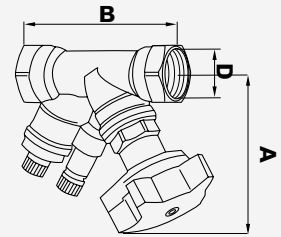
DN	L	H	D	B
20	150	100	105	16
25	160	109	115	16
32	180	111	140	18
40	200	122	150	19
50	230	122	165	19
65	290	205	185	19
80	310	220	200	19
100	350	240	235	19
125	400	275	270	19
150	480	285	300	19
200	600	430	360	21
250	730	420	425	23.5
300	850	480	485	24.6

### FO-BV



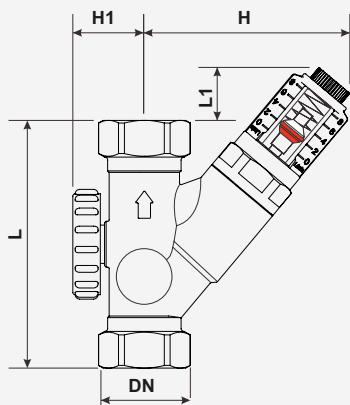
DN	G	H	L	B
15	1/2"	98	87.8	17.5
20	3/4"	98	95.9	19.0
25	1"	98	100.0	22.5
32	1.1/4"	118.3	117.5	24.8
40	1.1/2"	120.4	127.0	24.8
50	2"	130.6	145.3	29.2

### STAD



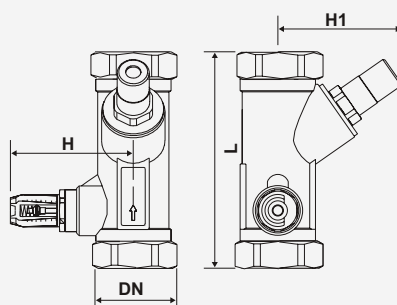
DN	A	B	D
10	100	83	3/8"
15	100	90	1/2"
20	100	97	3/4"
25	105	110	1"
32	110	124	1.1/4"
40	120	130	1.1/2"
50	120	155	2"

### WATTFLOW OL



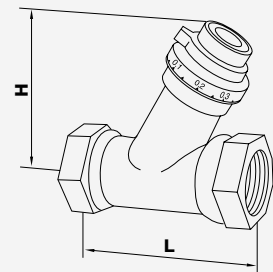
DN	L	L1	H	H1
15	81	17	67	26
20	86	15	71	27

### WATTFLOW BP



DN	L	H	H1
25	120	73	69
32	135	77	77
40	153	80	78
50	176	85	87

### STK



DN	L	H
15	63	55
20	80	69



# Chapter 7

## Thermal energy metering



### DOMOCOMPACT

A comprehensive range of metering products  
Data transmission with EN1434-4 standard protocol  
Available in various versions

## Chapter 7

# THERMAL ENERGY METERING

## Domocompact: temperature control and thermal energy metering modules

### Product range

The DOMOCOMPACT Series temperature control and heat metering modules are available in three different product ranges - MyHome, Family and Suite - to meet a wide variety of design, installation and maintenance requirements. The range can be divided according to actual system requirements, on the basis of the flow rate needed. For all products, the module can be fitted either as a finished product or in separate stages (installation of the frame first and the functional parts later). The FAMILY and SUITE modules are fitted with a Watts patented multi-function valve, which includes three-way zone valve, balancing valve, bypass setting and debris filter.

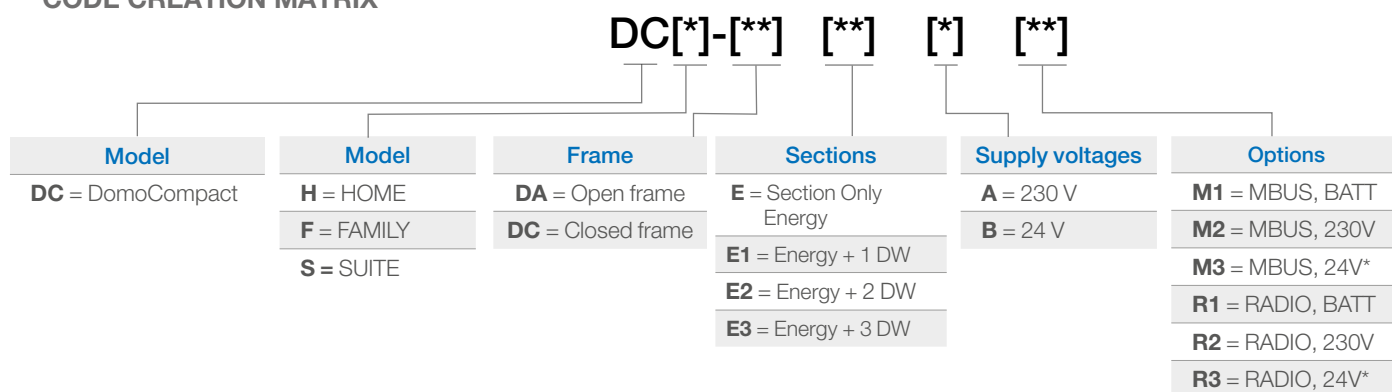
### Application

The universal installation system and transparent metering of consumption make DOMOCOMPACT models the number one choice for anyone who wants to design a system with a high level of energy efficiency (Italian Law No. 90/13), enable end-users to manage the activation times and room temperature of their home autonomously, and ensure correct allocation of costs on the basis of the actual energy consumed for heating/cooling, and domestic hot and/or cold water. DOMOCOMPACT models are also market leaders in sections for thermal energy metering designed to operate separately from sections for domestic water use. All components intended for metering comply with the Measuring Instruments Directive currently in force.

### System efficiency upgrades

Italian tax legislation has introduced incentives for all work aimed at upgrading the energy efficiency of buildings and systems. The Italian Ministerial Decree of 19-02-07 as amended establishes the implementing regulations that still govern the relevant tax deductions. The types of upgrade covered by article 1, paragraph 5 of the above decree include the conversion of existing central systems or groups of independent individual systems into modern heating systems with central production, by installing condensing boilers, applying thermal energy metering by individual consumer and simultaneously upgrading the distribution system (Art. 9 "Statement of work involved in the replacement of "winter" climate control systems, paragraph 3). Tax deductions are granted subject to acquisition of the formal documentation described in Art. 4 of the same decree.

### CODE CREATION MATRIX

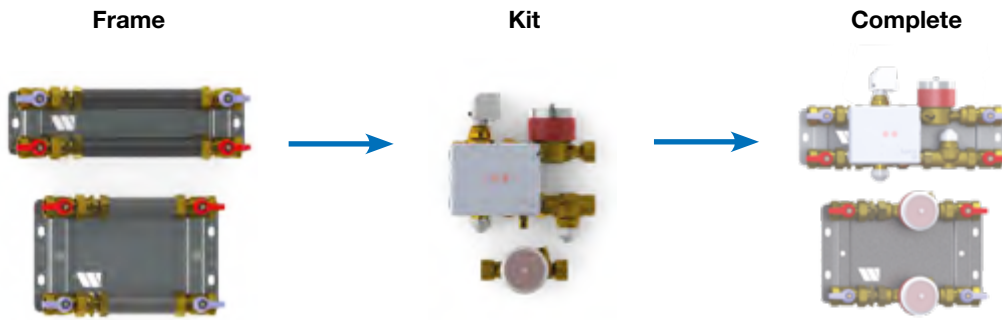


(\*) only for module with supply voltage of 24V

**Installation**

All DOMOCOMPACT models can be supplied for installation in a single phase or according to the progress of construction work: a single frame complete with shut-off ball valves and removable flushing pipes supplied in the early stages of installation makes it possible to carry out initial commissioning of the network and connect the module at a later stage. The modules are therefore designed in such a way that the primary network can be constructed and completed without necessarily having to fit the chosen DOMOCOMPACT unit. This reduces possible damage and deterioration of the DOMOCOMPACT module caused by construction work, because the module is fitted at the time of first commissioning for each individual consumer (to be planned at the works kick-off stage).

**INSTALLATION PHASES**



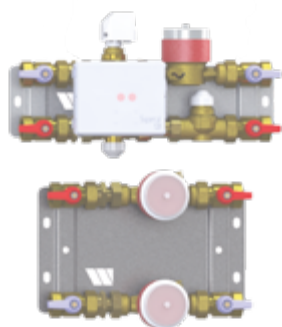
**PRODUCT RANGE: GENERAL FEATURES**



	<b>My Home My Home Basic</b>	<b>My Home2</b>	<b>Family Family Basic</b>	<b>Suite</b>
Flow rate Qn [l/h]	<800	<1500	800 – 2000	2000 – 2800
Energy section and domestic water section connections	1"	1"	1"	1-1/4"
DN	15	20	25	32
Metering	Heating Cooling	Heating Cooling	Heating Cooling	Heating Cooling
Power supply	230Vac/24Vac	230Vac/24Vac	230Vac/24Vac	230Vac/24Vac
Electronic Management	Local (LCD) or M-bus (EN1434) or RF (433 Mhz, 10 mW)	Local (LCD) or M-bus (EN1434) or RF (433 Mhz, 10 mW)	Local (LCD) or M-bus (EN1434) or RF (433 Mhz, 10 mW)	Local (LCD) or M-bus (EN1434) or RF (433 Mhz, 10 mW)
Dimensions (LxHxD)	390x240 (open frame) 520x520x110 (closed frame)	390x240 (open frame) 550x550x110 (closed frame)	515x250 (open frame) 550x550x110 (closed frame)	750x265 (open frame) 850x560x120 (closed frame)

Note: for full data, consult the technical data sheets for the individual modules.

## DOMOCOMPACT MY HOME with open frame



Temperature control and thermal energy metering module for consumers with flow rate requirements of up to 800 l/h and metering of domestic water (hot, cold and dual), pre-mounted on a sheet steel frame.

Observe the direction of flow required by the volumetric flow meter.

The module consists of:

Energy metering section (heating and cooling)

- Supercal 531 Series energy meter complete with Pt500 temperature sensors
- single-jet turbine flow meter (WMT Series), compliant with MID MI004
- 3-way zone valve
- balancing valve
- by-pass control valve

Energy meter with the possibility of remote reading via M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW) powered by battery or 230VAC or 24VDC (all options according to system requirements).

Digital outputs (energy and volume) for direct connection to data centralisation systems. Other transmission systems available to order (4-20mA, 0-10VDC analogue outputs, relay modules, RS232).

Domestic Water (DHW and DCW) and Dual Water (DW) metering section

- single-jet turbine flow meter (WMT Series), compliant with MID MI001 (DCW and DHW)
- additional flow meter for DW, compliant with MID MI001

Domestic hot or cold water circuit flow metering (Qn=4.0) by one or more single-jet turbine flow meters (WMT Series).

The module is suitable for horizontal and/or vertical installation, with right/left or left/right inlets.

Insulation and flushing pipes included for all models.

1" F heating section connections.

1" F domestic water section connections.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

(\*) For all options, consult the technical documentation for the Supercal 531 energy meter

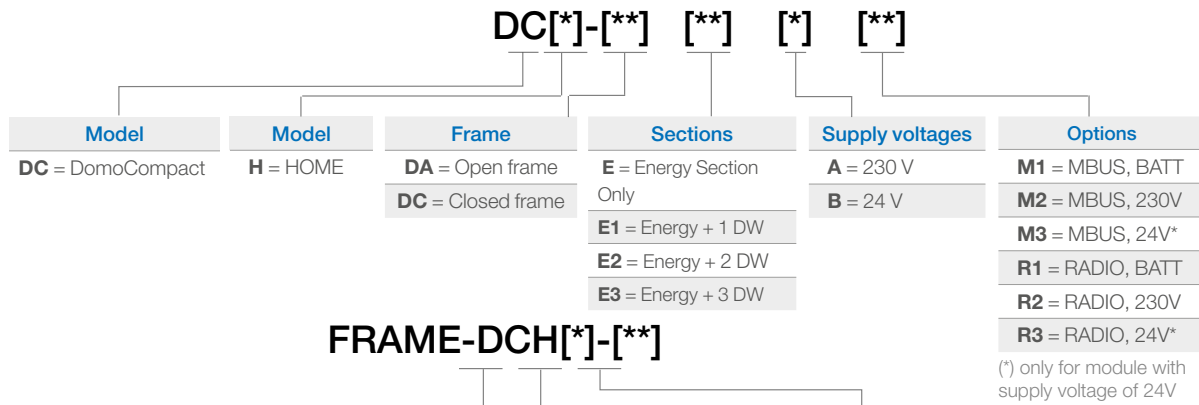
Dimensions on page 240

## ACCESSORIES

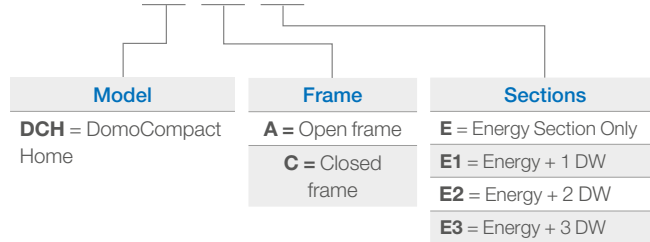
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW).

CODE CREATION MATRIX



**FRAME-DCH[\*]-[\*\*]**



Functions		Product for installation in two stages			Complete module		
Volumetric domestic water		FRAME		BODY			
Actuator power supply	Energy integrator	Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	Part no.
230 Vac	MBUS, BATT	x			DIMA-DCHAE	DCH-EAM1	DCH-DAEAM1
		x	x		DIMA-DCHAE1	DCH-E1AM1	DCH-DAE1AM1
		x	x	x	DIMA-DCHAE2	DCH-E2AM1	DCH-DAE2AM1
230 Vac	MBUS, 230 Vac	x			DIMA-DCHAE3	DCH-E3AM1	DCH-DAE3AM1
		x			DIMA-DCHAE	DCH-EAM2	DCH-DAEAM2
		x	x		DIMA-DCHAE1	DCH-E1AM2	DCH-DAE1AM2
230 Vac	RADIO, BATT	x	x		DIMA-DCHAE2	DCH-E2AM2	DCH-DAE2AM2
		x	x	x	DIMA-DCHAE3	DCH-E3AM2	DCH-DAE3AM2
		x			DIMA-DCHAE	DCH-EAR1	DCH-DAEAR1
230 Vac	RADIO, 230 Vac	x	x		DIMA-DCHAE1	DCH-E1AR1	DCH-DAE1AR1
		x	x		DIMA-DCHAE2	DCH-E2AR1	DCH-DAE2AR1
		x	x	x	DIMA-DCHAE3	DCH-E3AR1	DCH-DAE3AR1
230 Vac	RADIO, 230 Vac	x			DIMA-DCHAE	DCH-EAR2	DCH-DAEAR2
		x	x		DIMA-DCHAE1	DCH-E1AR2	DCH-DAE1AR2
		x	x	x	DIMA-DCHAE2	DCH-E2AR2	DCH-DAE2AR2
24 Vac	MBUS, BATT	x			DIMA-DCHAE3	DCH-E3AR2	DCH-DAE3AR2
		x			DIMA-DCHAE	DCH-EBM1	DCH-DAEBM1
		x	x		DIMA-DCHAE1	DCH-E1BM1	DCH-DAE1BM1
24 Vac	MBUS, 24 Vac	x	x		DIMA-DCHAE2	DCH-E2BM1	DCH-DAE2BM1
		x	x	x	DIMA-DCHAE3	DCH-E3BM1	DCH-DAE3BM1
		x			DIMA-DCHAE	DCH-EBM3	DCH-DAEBM3
24 Vac	RADIO, BATT	x	x		DIMA-DCHAE1	DCH-E1BM3	DCH-DAE1BM3
		x	x		DIMA-DCHAE2	DCH-E2BM3	DCH-DAE2BM3
		x	x	x	DIMA-DCHAE3	DCH-E3BM3	DCH-DAE3BM3
24 Vac	RADIO, 24 Vac	x			DIMA-DCHAE	DCH-EBR1	DCH-DAEBR1
		x	x		DIMA-DCHAE1	DCH-E1BR1	DCH-DAE1BR1
		x	x		DIMA-DCHAE2	DCH-E2BR1	DCH-DAE2BR1
24 Vac	RADIO, 24 Vac	x	x	x	DIMA-DCHAE3	DCH-E3BR1	DCH-DAE3BR1
		x			DIMA-DCHAE	DCH-EBR3	DCH-DAEBR2
		x			DIMA-DCHAE1	DCH-E1BR3	DCH-DAE1BR2
24 Vac	RADIO, 24 Vac	x	x		DIMA-DCHAE2	DCH-E2BR3	DCH-DAE2BR2
		x	x	x	DIMA-DCHAE3	DCH-E3BR3	DCH-DAE3BR2

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.

## DOMOCOMPACT MY HOME with closed frame



Like Domocompact Myhome with open frame but with components installed in a frame closed with a front panel (white RAL 9010) with lock.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Dimensions on page 240

## ACCESSORIES

Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

		Functions			Product for installation in two stages		Complete module
		Volumetric domestic water			FRAME	BODY	
Actuator power supply	Energy integrator	Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	Part no.
230 Vac	MBUS, BATT	x			DIMA-DCHCE	DCH-EAM1	DCH-DCEAM1
		x			DIMA-DCHCE1	DCH-E1AM1	DCH-DCE1AM1
		x	x		DIMA-DCHCE2	DCH-E2AM1	DCH-DCE2AM1
		x	x	x	DIMA-DCHCE3	DCH-E3AM1	DCH-DCE3AM1
230 Vac	MBUS, 230 Vac	x			DIMA-DCHCE	DCH-EAM2	DCH-DCEAM2
		x			DIMA-DCHCE1	DCH-E1AM2	DCH-DCE1AM2
		x	x		DIMA-DCHCE2	DCH-E2AM2	DCH-DCE2AM2
		x	x	x	DIMA-DCHCE3	DCH-E3AM2	DCH-DCE3AM2
230 Vac	RADIO, BATT	x			DIMA-DCHCE	DCH-EAR1	DCH-DCEAR1
		x			DIMA-DCHCE1	DCH-E1AR1	DCH-DCE1AR1
		x	x		DIMA-DCHCE2	DCH-E2AR1	DCH-DCE2AR1
		x	x	x	DIMA-DCHCE3	DCH-E3AR1	DCH-DCE3AR1
230 Vac	RADIO, 230 Vac	x			DIMA-DCHCE	DCH-EAR2	DCH-DCEAR2
		x			DIMA-DCHCE1	DCH-E1AR2	DCH-DCE1AR2
		x	x		DIMA-DCHCE2	DCH-E2AR2	DCH-DCE2AR2
		x	x	x	DIMA-DCHCE3	DCH-E3AR2	DCH-DCE3AR2
24 Vac	MBUS, BATT	x			DIMA-DCHCE	DCH-EBM1	DCH-DCEBM1
		x			DIMA-DCHCE1	DCH-E1BM1	DCH-DCE1BM1
		x	x		DIMA-DCHCE2	DCH-E2BM1	DCH-DCE2BM1
		x	x	x	DIMA-DCHCE3	DCH-E3BM1	DCH-DCE3BM1
24 Vac	MBUS, 24 Vac	x			DIMA-DCHCE	DCH-EBM3	DCH-DCEBM3
		x			DIMA-DCHCE1	DCH-E1BM3	DCH-DCE1BM3
		x	x		DIMA-DCHCE2	DCH-E2BM3	DCH-DCE2BM3
		x	x	x	DIMA-DCHCE3	DCH-E3BM3	DCH-DCE3BM3
24 Vac	RADIO, BATT	x			DIMA-DCHCE	DCH-EBR1	DCH-DCEBR1
		x			DIMA-DCHCE1	DCH-E1BR1	DCH-DCE1BR1
		x	x		DIMA-DCHCE2	DCH-E2BR1	DCH-DCE2BR1
		x	x	x	DIMA-DCHCE3	DCH-E3BR1	DCH-DCE3BR1
24 Vac	RADIO, 24 Vac	x			DIMA-DCHCE	DCH-EBR3	DCH-DCEBR3
		x			DIMA-DCHCE1	DCH-E1BR3	DCH-DCE1BR3
		x	x		DIMA-DCHCE2	DCH-E2BR3	DCH-DCE2BR3
		x	x	x	DIMA-DCHCE3	DCH-E3BR3	DCH-DCE3BR3

**N.B. The price shown does not include commissioning of the individual model. Quote provided on request.**



## DOMOCOMPACT MY HOME BASIC with open frame



Temperature control and thermal energy metering module for consumers with flow rate requirements of up to 800 l/h and metering of domestic water (hot, cold and dual), pre-mounted on a sheet steel frame.

Observe the direction of flow required by the volumetric flow meter.

The module consists of:

Energy metering section (heating and cooling)

- 3-way zone valve
- balancing valve
- by-pass control valve
- Supercal 739 Series energy meter with single-jet volumetric meter or Superstatic 789 Series with fluidic oscillation (optional)
- complete with Pt500 temperature sensor
- remote reading possible by means of M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW)
- battery-powered (battery life 12+1 years).

Domestic Water (DHW and DCW) and Dual Water (DW) metering section

- single-jet turbine flow meter (WMT Series), compliant with MID MI001 (DCW and DHW)
- additional flow meter for DW, compliant with MID MI001 with M-Bus or Radio Frequency transmission

Domestic hot or cold water circuit flow metering (Qn=4.0) by one or more single-jet turbine flow meters (WMT Series).

The module is suitable for horizontal and/or vertical installation, with right/left or left/right inlets.

Insulation and flushing pipes included for all models.

1" F heating section connections.

1" F domestic water section connections.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

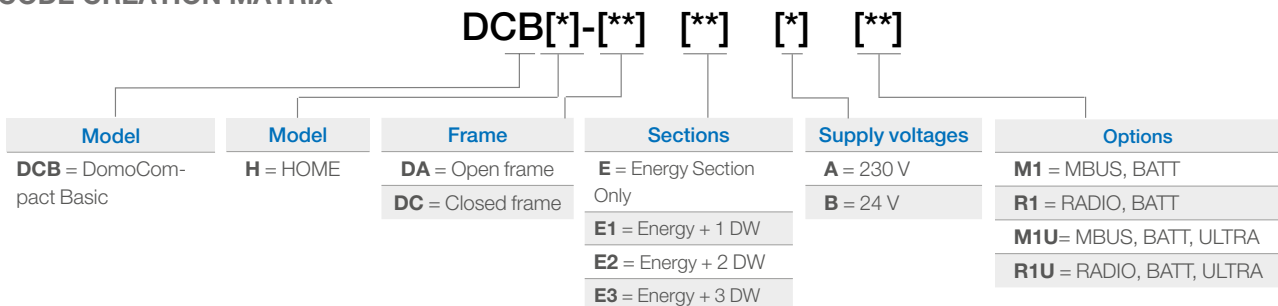
Dimensions on page 240

## ACCESSORIES

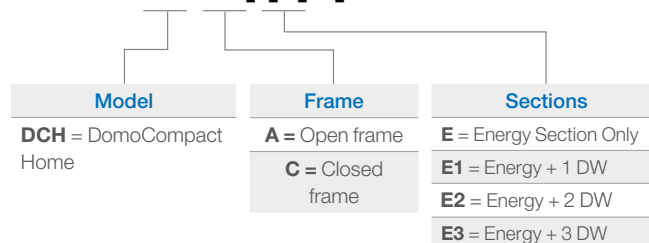
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

## CODE CREATION MATRIX



## FRAME-DCH[\*]-[\*\*]



Functions		Product for installation in two stages			Complete module		
Actuator power supply	Energy integrator	Volumetric domestic water			FRAME	BODY	
		Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	Part no.
230 Vac	MBUS, BATT	x			DIMA-DCHAE	DCBH-EAM1	DCBH-DAEAM1
		x			DIMA-DCHAE1	DCBH-E1AM1	DCBH-DAE1AM1
		x	x		DIMA-DCHAE2	DCBH-E2AM1	DCBH-DAE2AM1
230 Vac	MBUS, BATT, ULTRA	x			DIMA-DCHAE3	DCBH-E3AM1	DCBH-DAE3AM1
		x			DIMA-DCHAE	DCBH-EAM1U	DCBH-DAEAM1U
		x	x		DIMA-DCHAE1	DCBH-E1AM1U	DCBH-DAE1AM1U
230 Vac	RADIO, BATT	x			DIMA-DCHAE2	DCBH-E2AM1U	DCBH-DAE2AM1U
		x	x		DIMA-DCHAE3	DCBH-E3AM1U	DCBH-DAE3AM1U
		x	x	x	DIMA-DCHAE	DCBH-EAR1	DCBH-DAEAR1
230 Vac	RADIO, BATT, ULTRA	x			DIMA-DCHAE1	DCBH-E1AR1	DCBH-DAE1AR1
		x	x		DIMA-DCHAE2	DCBH-E2AR1	DCBH-DAE2AR1
		x	x	x	DIMA-DCHAE3	DCBH-E3AR1	DCBH-DAE3AR1
24 Vac	MBUS, BATT	x			DIMA-DCHAE	DCBH-EAR1U	DCBH-DAEAR1U
		x			DIMA-DCHAE1	DCBH-E1AR1U	DCBH-DAE1AR1U
		x	x		DIMA-DCHAE2	DCBH-E2AR1U	DCBH-DAE2AR1U
24 Vac	MBUS, BATT, ULTRA	x			DIMA-DCHAE3	DCBH-E3AR1U	DCBH-DAE3AR1U
		x			DIMA-DCHAE	DCBH-EBM1	DCBH-DAEBM1
		x	x		DIMA-DCHAE1	DCBH-E1BM1	DCBH-DAE1BM1
24 Vac	RADIO, BATT	x			DIMA-DCHAE2	DCBH-E2BM1	DCBH-DAE2BM1
		x	x		DIMA-DCHAE3	DCBH-E3BM1	DCBH-DAE3BM1
		x	x	x	DIMA-DCHAE	DCBH-EBM1U	DCBH-DAEBM1U
24 Vac	RADIO, BATT, ULTRA	x			DIMA-DCHAE1	DCBH-E1BM1U	DCBH-DAE1BM1U
		x	x		DIMA-DCHAE2	DCBH-E2BM1U	DCBH-DAE2BM1U
		x	x	x	DIMA-DCHAE3	DCBH-E3BM1U	DCBH-DAE3BM1U
24 Vac	RADIO, BATT	x			DIMA-DCHAE	DCBH-EBR1	DCBH-DAEBR1
		x			DIMA-DCHAE1	DCBH-E1BR1	DCBH-DAE1BR1
		x	x		DIMA-DCHAE2	DCBH-E2BR1	DCBH-DAE2BR1
24 Vac	RADIO, BATT, ULTRA	x			DIMA-DCHAE3	DCBH-E3BR1	DCBH-DAE3BR1
		x			DIMA-DCHAE	DCBH-EBR1U	DCBH-DAEBR1U
		x	x		DIMA-DCHAE1	DCBH-E1BR1U	DCBH-DAE1BR1U
24 Vac	RADIO, BATT, ULTRA	x			DIMA-DCHAE2	DCBH-E2BR1U	DCBH-DAE2BR1U
		x	x		DIMA-DCHAE3	DCBH-E3BR1U	DCBH-DAE3BR1U
		x	x	x	DIMA-DCHAE	DCBH-EBR1U	DCBH-DAEBR1U

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.

## DOMOCOMPACT MY HOME BASIC with closed frame



Like Domocompact Myhome Basic with open frame but with components installed in a frame closed with a front panel (white RAL 9010) with lock.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Dimensions on page 240

## ACCESSORIES

Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

		Functions			Product for installation in two stages			Complete module
		Volumetric domestic water			FRAME	BODY		
Actuator power supply	Energy integrator	Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	Part no.	
230 Vac	MBUS, BATT				DIMA-DCHCE	DCBH-EAM1	DCBH-DCEAM1	
		x			DIMA-DCHCE1	DCBH-E1AM1	DCBH-DCE1AM1	
		x	x		DIMA-DCHCE2	DCBH-E2AM1	DCBH-DCE2AM1	
		x	x	x	DIMA-DCHCE3	DCBH-E3AM1	DCBH-DCE3AM1	
230 Vac	MBUS, BATT, ULTRA				DIMA-DCHCE	DCBH-EAM1U	DCBH-DCEAM1U	
		x			DIMA-DCHCE1	DCBH-E1AM1U	DCBH-DCE1AM1U	
		x	x		DIMA-DCHCE2	DCBH-E2AM1U	DCBH-DCE2AM1U	
		x	x	x	DIMA-DCHCE3	DCBH-E3AM1U	DCBH-DCE3AM1U	
230 Vac	RADIO, BATT				DIMA-DCHCE	DCBH-EAR1	DCBH-DCEAR1	
		x			DIMA-DCHCE1	DCBH-E1AR1	DCBH-DCE1AR1	
		x	x		DIMA-DCHCE2	DCBH-E2AR1	DCBH-DCE2AR1	
		x	x	x	DIMA-DCHCE3	DCBH-E3AR1	DCBH-DCE3AR1	
230 Vac	RADIO, BATT, ULTRA				DIMA-DCHCE	DCBH-EAR1U	DCBH-DCEAR1U	
		x			DIMA-DCHCE1	DCBH-E1AR1U	DCBH-DCE1AR1U	
		x	x		DIMA-DCHCE2	DCBH-E2AR1U	DCBH-DCE2AR1U	
		x	x	x	DIMA-DCHCE3	DCBH-E3AR1U	DCBH-DCE3AR1U	
24 Vac	MBUS, BATT				DIMA-DCHCE	DCBH-EBM1	DCBH-DCEBM1	
		x			DIMA-DCHCE1	DCBH-E1BM1	DCBH-DCE1BM1	
		x	x		DIMA-DCHCE2	DCBH-E2BM1	DCBH-DCE2BM1	
		x	x	x	DIMA-DCHCE3	DCBH-E3BM1	DCBH-DCE3BM1	
24 Vac	MBUS, BATT, ULTRA				DIMA-DCHCE	DCBH-EBM1U	DCBH-DCEBM1U	
		x			DIMA-DCHCE1	DCBH-E1BM1U	DCBH-DCE1BM1U	
		x	x		DIMA-DCHCE2	DCBH-E2BM1U	DCBH-DCE2BM1U	
		x	x	x	DIMA-DCHCE3	DCBH-E3BM1U	DCBH-DCE3BM1U	
24 Vac	RADIO, BATT				DIMA-DCHCE	DCBH-EBR1	DCBH-DCEBR1	
		x			DIMA-DCHCE1	DCBH-E1BR1	DCBH-DCE1BR1	
		x	x		DIMA-DCHCE2	DCBH-E2BR1	DCBH-DCE2BR1	
		x	x	x	DIMA-DCHCE3	DCBH-E3BR1	DCBH-DCE3BR1	
24 Vac	RADIO, BATT, ULTRA				DIMA-DCHCE	DCBH-EBR1U	DCBH-DCEBR1U	
		x			DIMA-DCHCE1	DCBH-E1BR1U	DCBH-DCE1BR1U	
		x	x		DIMA-DCHCE2	DCBH-E2BR1U	DCBH-DCE2BR1U	
		x	x	x	DIMA-DCHCE3	DCBH-E3BR1U	DCBH-DCE3BR1U	

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.

## DOMOCOMPACT MY HOME2 with open frame



Temperature control and thermal energy metering module for consumers with flow rate requirements of up to 1500 l/h and metering of domestic water (hot, cold and dual), pre-mounted on a sheet steel frame. Observe the direction of flow required by the volumetric flow meter.

The module consists of:

Energy metering section (heating and cooling)

- Supercal 739 Series compact energy meter with single-jet volumetric meter or Superstatic 789 Series with fluidic oscillation static meter
- complete with Pt500 temperature sensor
- remote reading possible by means of M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW)
- battery-powered (battery life 12+1 years)

Domestic Water (DHW and DCW) and Dual Water (DW) metering section

- single-jet turbine flow meter (WMT Series), compliant with MID MI001 (DCW and DHW)
  - additional flow meter for DW, compliant with MID MI001 with M-Bus or Radio Frequency transmission
- Domestic hot or cold water circuit flow metering (Qn=4.0) by one or more single-jet turbine flow meters (WMT Series).

The module is suitable for horizontal or vertical installation.

Insulation and flushing pipes included for all models.

1" F heating section connections.

1" F domestic water section connections.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

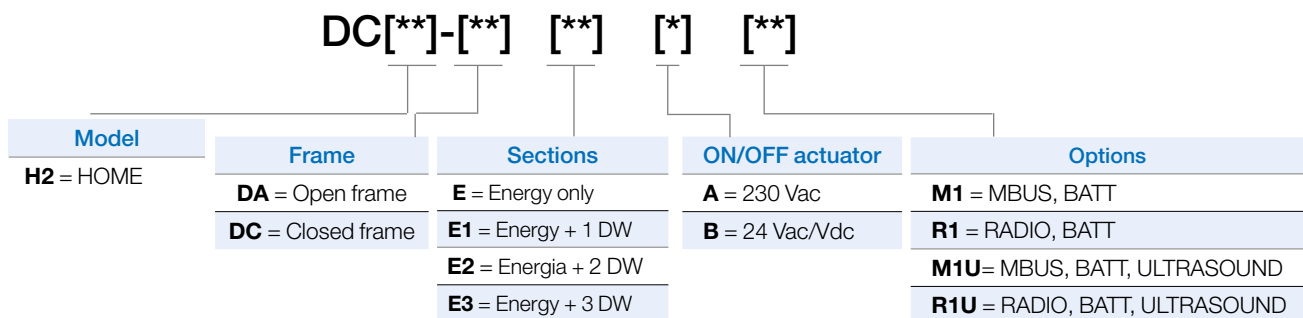
Dimensions on page 240

## ACCESSORIES

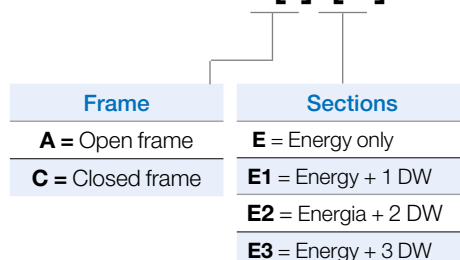
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

## CODE CREATION MATRIX



## FRAME-DCH2[\*]-[\*\*]



Functions		Product for installation in two stages			Complete module		
Actuator power supply	Energy integrator	Volumetric domestic water			FRAME	BODY	Part no.
		Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	
230 Vac	MBUS, BATT				DIMA-DCH2AE	DCH2-EAM1	DCH2-DAEAM1
		x			DIMA-DCH2AE1	DCH2-E1AM1	DCH2-DAE1AM1
		x	x		DIMA-DCH2AE2	DCH2-E2AM1	DCH2-DAE2AM1
		x	x	x	DIMA-DCH2AE3	DCH2-E3AM1	DCH2-DAE3AM1
230 Vac	MBUS, BATT, ULTRA				DIMA-DCH2AE	DCH2-EAM1U	DCH2-DAEAM1U
		x			DIMA-DCH2AE1	DCH2-E1AM1U	DCH2-DAE1AM1U
		x	x		DIMA-DCH2AE2	DCH2-E2AM1U	DCH2-DAE2AM1U
		x	x	x	DIMA-DCH2AE3	DCH2-E3AM1U	DCH2-DAE3AM1U
230 Vac	RADIO, BATT				DIMA-DCH2AE	DCH2-EAR1	DCH2-DAEAR1
		x			DIMA-DCH2AE1	DCH2-E1AR1	DCH2-DAE1AR1
		x	x		DIMA-DCH2AE2	DCH2-E2AR1	DCH2-DAE2AR1
		x	x	x	DIMA-DCH2AE3	DCH2-E3AR1	DCH2-DAE3AR1
230 Vac	RADIO, BATT, ULTRA				DIMA-DCH2AE	DCH2-EAR1U	DCH2-DAEAR1U
		x			DIMA-DCH2AE1	DCH2-E1AR1U	DCH2-DAE1AR1U
		x	x		DIMA-DCH2AE2	DCH2-E2AR1U	DCH2-DAE2AR1U
		x	x	x	DIMA-DCH2AE3	DCH2-E3AR1U	DCH2-DAE3AR1U
24 Vac	MBUS, BATT				DIMA-DCH2AE	DCH2-EBM1	DCH2-DAEBM1
		x			DIMA-DCH2AE1	DCH2-E1BM1	DCH2-DAE1BM1
		x	x		DIMA-DCH2AE2	DCH2-E2BM1	DCH2-DAE2BM1
		x	x	x	DIMA-DCH2AE3	DCH2-E3BM1	DCH2-DAE3BM1
24 Vac	MBUS, BATT, ULTRA				DIMA-DCH2AE	DCH2-EBM1U	DCH2-DAEBM1U
		x			DIMA-DCH2AE1	DCH2-E1BM1U	DCH2-DAE1BM1U
		x	x		DIMA-DCH2AE2	DCH2-E2BM1U	DCH2-DAE2BM1U
		x	x	x	DIMA-DCH2AE3	DCH2-E3BM1U	DCH2-DAE3BM1U
24 Vac	RADIO, BATT				DIMA-DCH2AE	DCH2-EBR1	DCH2-DAEBR1
		x			DIMA-DCH2AE1	DCH2-E1BR1	DCH2-DAE1BR1
		x	x		DIMA-DCH2AE2	DCH2-E2BR1	DCH2-DAE2BR1
		x	x	x	DIMA-DCH2AE3	DCH2-E3BR1	DCH2-DAE3BR1
24 Vac	RADIO, BATT, ULTRA				DIMA-DCH2AE	DCH2-EBR1U	DCH2-DAEBR1U
		x			DIMA-DCH2AE1	DCH2-E1BR1U	DCH2-DAE1BR1U
		x	x		DIMA-DCH2AE2	DCH2-E2BR1U	DCH2-DAE2BR1U
		x	x	x	DIMA-DCH2AE3	DCH2-E3BR1U	DCH2-DAE3BR1U

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.



## DOMOCOMPACT MY HOME2 with closed frame



Like Domocompact Myhome2 with open frame but with components installed in a frame closed with a front panel (white RAL 9010) with lock.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Dimensions on page 240

## ACCESSORIES

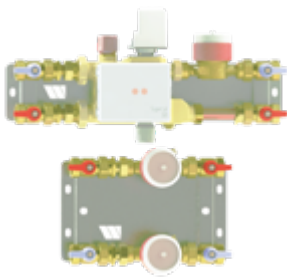
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

		Functions			Product for installation in two stages		Complete module
		Volumetric domestic water			FRAME	BODY	
Actuator power supply	Energy integrator	Cold water	Hot water	Dual/Rec. Water	Part no.	Part no.	Part no.
230 Vac	MBUS, BATT				DIMA-DCH2CE	DCH2-EAM1	DCH2-DCEAM1
		x			DIMA-DCH2CE1	DCH2-E1AM1	DCH2-DCE1AM1
		x	x		DIMA-DCH2CE2	DCH2-E2AM1	DCH2-DCE2AM1
		x	x	x	DIMA-DCH2CE3	DCH2-E3AM1	DCH2-DCE3AM1
230 Vac	MBUS, BATT, ULTRA				DIMA-DCH2CE	DCH2-EAM1U	DCH2-DCEAM1U
		x			DIMA-DCH2CE1	DCH2-E1AM1U	DCH2-DCE1AM1U
		x	x		DIMA-DCH2CE2	DCH2-E2AM1U	DCH2-DCE2AM1U
		x	x	x	DIMA-DCH2CE3	DCH2-E3AM1U	DCH2-DCE3AM1U
230 Vac	RADIO, BATT				DIMA-DCH2CE	DCH2-EAR1	DCH2-DCEAR1
		x			DIMA-DCH2CE1	DCH2-E1AR1	DCH2-DCE1AR1
		x	x		DIMA-DCH2CE2	DCH2-E2AR1	DCH2-DCE2AR1
		x	x	x	DIMA-DCH2CE3	DCH2-E3AR1	DCH2-DCE3AR1
230 Vac	RADIO, BATT, ULTRA				DIMA-DCH2CE	DCH2-EAR1U	DCH2-DCEAR1U
		x			DIMA-DCH2CE1	DCH2-E1AR1U	DCH2-DCE1AR1U
		x	x		DIMA-DCH2CE2	DCH2-E2AR1U	DCH2-DCE2AR1U
		x	x	x	DIMA-DCH2CE3	DCH2-E3AR1U	DCH2-DCE3AR1U
24 Vac	MBUS, BATT				DIMA-DCH2CE	DCH2-EBM1	DCH2-DCEBM1
		x			DIMA-DCH2CE1	DCH2-E1BM1	DCH2-DCE1BM1
		x	x		DIMA-DCH2CE2	DCH2-E2BM1	DCH2-DCE2BM1
		x	x	x	DIMA-DCH2CE3	DCH2-E3BM1	DCH2-DCE3BM1
24 Vac	MBUS, BATT, ULTRA				DIMA-DCH2CE	DCH2-EBM1U	DCH2-DCEBM1U
		x			DIMA-DCH2CE1	DCH2-E1BM1U	DCH2-DCE1BM1U
		x	x		DIMA-DCH2CE2	DCH2-E2BM1U	DCH2-DCE2BM1U
		x	x	x	DIMA-DCH2CE3	DCH2-E3BM1U	DCH2-DCE3BM1U
24 Vac	RADIO, BATT				DIMA-DCH2CE	DCH2-EBR1	DCH2-DCEBR1
		x			DIMA-DCH2CE1	DCH2-E1BR1	DCH2-DCE1BR1
		x	x		DIMA-DCH2CE2	DCH2-E2BR1	DCH2-DCE2BR1
		x	x	x	DIMA-DCH2CE3	DCH2-E3BR1	DCH2-DCE3BR1
24 Vac	RADIO, BATT, ULTRA				DIMA-DCH2CE	DCH2-EBR1U	DCH2-DCEBR1U
		x			DIMA-DCH2CE1	DCH2-E1BR1U	DCH2-DCE1BR1U
		x	x		DIMA-DCH2CE2	DCH2-E2BR1U	DCH2-DCE2BR1U
		x	x	x	DIMA-DCH2CE3	DCH2-E3BR1U	DCH2-DCE3BR1U

**N.B. The price shown does not include commissioning of the individual model. Quote provided on request.**

## DOMOCOMPACT FAMILY with open frame



Temperature control and thermal energy metering module for a single consumer with flow rate of 800-2000 l/h and metering of domestic water (hot, cold and dual), pre-mounted on a compact open frame. The module can receive the main inlets from the risers on any of the four sides. Observe the direction of flow required by the volumetric flow meter.

The temperature control and setting functions are incorporated into the WATTS PATENTED multi-function one-piece brass valve consisting of:

- 3-way zone valve complete with 24VAC or 230VAC electrothermal actuator and ETE Series normally open auxiliary microswitch connected to a bypass setting valve;
- removable steel mesh debris filter basket;
- balancing device;

The module consists of:

Energy metering section (heating and cooling)

- Supercal 531 Series energy meter complete with Pt500 temperature sensors
- single-jet turbine flow meter (WMT Series), compliant with MID MI004

Energy meter with the possibility of remote reading via M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW) powered by battery or 230VAC or 24VDC (all options according to system requirements).

Digital outputs (energy and volume) for direct connection to data centralisation systems. Other transmission systems available to order (4-20mA, 0-10VDC analogue outputs, relay modules, RS232)\*.

Domestic Water (DHW and DCW) and Dual Water (DW) metering section

- single-jet turbine flow meter (WMT Series), compliant with MID MI001 with built-in check valve (DCW and DHW)
- additional flow meter for DW, compliant with MID MI001

Domestic hot or cold water circuit flow metering ( $Q_n=4.0$ ) by one or more single-jet turbine flow meters (WMT Series).

The module is easy to maintain because it is fitted with shut-off ball-valves upstream and downstream of the individual circuit sections assembled with the volumetric meters with appropriate extendable fittings.

The module is suitable for horizontal or vertical installation.

Insulation and flushing pipes included for all models.

1" F heating section connections.

1" F domestic water section connections.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

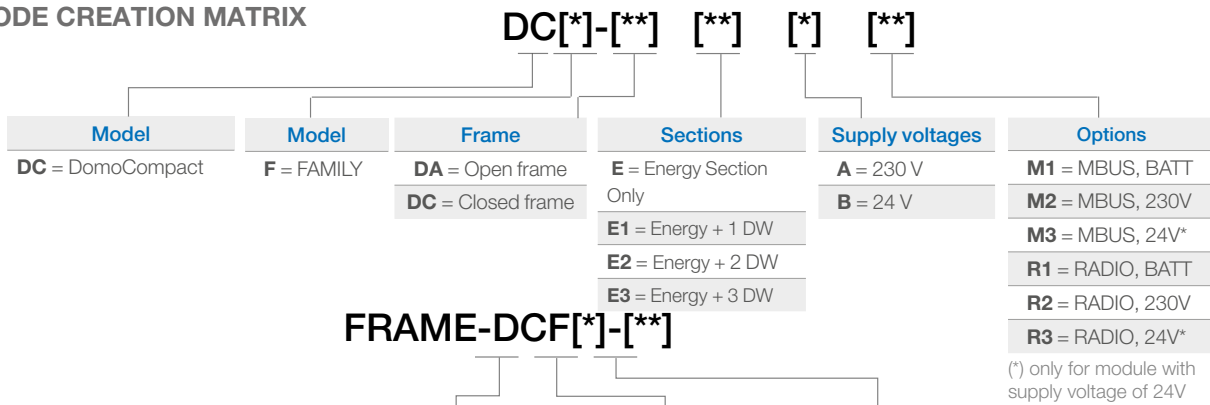
(\*) For all options, consult the technical documentation for the Supercal 531 energy meter  
Dimensions on page 241

## ACCESSORIES

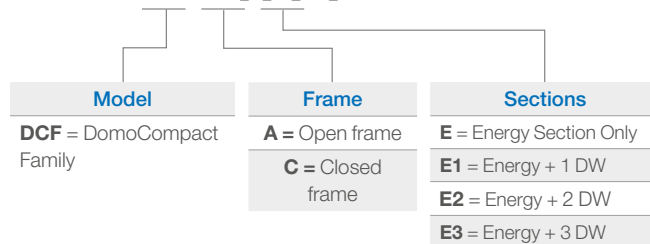
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

CODE CREATION MATRIX



FRAME-DCF[\*]-[\*\*]



(\*) only for module with supply voltage of 24V

		Functions			Product for installation in two stages		Complete module
		Volumetric domestic water			FRAME	BODY	
Actuator power supply	Energy integrator	Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	Part no.
230 Vac	MBUS, BATT	x			DIMA-DCFAE	DCF-EAM1	DCF-DAEAM1
		x			DIMA-DCFAE1	DCF-E1AM1	DCF-DAE1AM1
		x	x		DIMA-DCFAE2	DCF-E2AM1	DCF-DAE2AM1
		x	x	x	DIMA-DCFAE3	DCF-E3AM1	DCF-DAE3AM1
230 Vac	MBUS, 230 Vac	x			DIMA-DCFAE	DCF-EAM2	DCF-DAEAM2
		x			DIMA-DCFAE1	DCF-E1AM2	DCF-DAE1AM2
		x	x		DIMA-DCFAE2	DCF-E2AM2	DCF-DAE2AM2
		x	x	x	DIMA-DCFAE3	DCF-E3AM2	DCF-DAE3AM2
230 Vac	RADIO, BATT	x			DIMA-DCFAE	DCF-EAR1	DCF-DAEAR1
		x			DIMA-DCFAE1	DCF-E1AR1	DCF-DAE1AR1
		x	x		DIMA-DCFAE2	DCF-E2AR1	DCF-DAE2AR1
		x	x	x	DIMA-DCFAE3	DCF-E3AR1	DCF-DAE3AR1
230 Vac	RADIO, 230 Vac	x			DIMA-DCFAE	DCF-EAR2	DCF-DAEAR2
		x			DIMA-DCFAE1	DCF-E1AR2	DCF-DAE1AR2
		x	x		DIMA-DCFAE2	DCF-E2AR2	DCF-DAE2AR2
		x	x	x	DIMA-DCFAE3	DCF-E3AR2	DCF-DAE3AR2
24 Vac	MBUS, BATT	x			DIMA-DCFAE	DCF-EBM1	DCF-DAEBM1
		x			DIMA-DCFAE1	DCF-E1BM1	DCF-DAE1BM1
		x	x		DIMA-DCFAE2	DCF-E2BM1	DCF-DAE2BM1
		x	x	x	DIMA-DCFAE3	DCF-E3BM1	DCF-DAE3BM1
24 Vac	MBUS, 24 Vac	x			DIMA-DCFAE	DCF-EBM3	DCF-DAEBM3
		x			DIMA-DCFAE1	DCF-E1BM3	DCF-DAE1BM3
		x	x		DIMA-DCFAE2	DCF-E2BM3	DCF-DAE2BM3
		x	x	x	DIMA-DCFAE3	DCF-E3BM3	DCF-DAE3BM3
24 Vac	RADIO, BATT	x			DIMA-DCFAE	DCF-EBR1	DCF-DAEBR1
		x			DIMA-DCFAE1	DCF-E1BR1	DCF-DAE1BR1
		x	x		DIMA-DCFAE2	DCF-E2BR1	DCF-DAE2BR1
		x	x	x	DIMA-DCFAE3	DCF-E3BR1	DCF-DAE3BR1
24 Vac	RADIO, 24 Vac	x			DIMA-DCFAE	DCF-EBR3	DCF-DAEBR3
		x			DIMA-DCFAE1	DCF-E1BR3	DCF-DAE1BR3
		x	x		DIMA-DCFAE2	DCF-E2BR3	DCF-DAE2BR3
		x	x	x	DIMA-DCFAE3	DCF-E3BR3	DCF-DAE3BR3

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.



## DOMOCOMPACT FAMILY with closed frame



Like Domocompact Family with open frame but with components installed in a frame closed with a front panel (white RAL 9010) with lock.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Dimensions on page 241

## ACCESSORIES

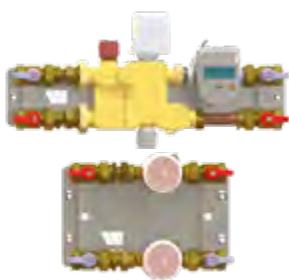
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

		Functions			Product for installation in two stages			Complete module
		Volumetric domestic water			FRAME		BODY	
Actuator power supply	Energy integrator	Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	Part no.	
230 Vac	MBUS, BATT	x			DIMA-DCFCE	DCF-EAM1	DCF-DCEAM1	
		x			DIMA-DCFCE1	DCF-E1AM1	DCF-DCE1AM1	
		x	x		DIMA-DCFCE2	DCF-E2AM1	DCF-DCE2AM1	
		x	x	x	DIMA-DCFCE3	DCF-E3AM1	DCF-DCE3AM1	
230 Vac	MBUS, 230 Vac	x			DIMA-DCFCE	DCF-EAM2	DCF-DCEAM2	
		x			DIMA-DCFCE1	DCF-E1AM2	DCF-DCE1AM2	
		x	x		DIMA-DCFCE2	DCF-E2AM2	DCF-DCE2AM2	
		x	x	x	DIMA-DCFCE3	DCF-E3AM2	DCF-DCE3AM2	
230 Vac	RADIO, BATT	x			DIMA-DCFCE	DCF-EAR1	DCF-DCEAR1	
		x			DIMA-DCFCE1	DCF-E1AR1	DCF-DCE1AR1	
		x	x		DIMA-DCFCE2	DCF-E2AR1	DCF-DCE2AR1	
		x	x	x	DIMA-DCFCE3	DCF-E3AR1	DCF-DCE3AR1	
230 Vac	RADIO, 230 Vac	x			DIMA-DCFCE	DCF-EAR2	DCF-DCEAR2	
		x			DIMA-DCFCE1	DCF-E1AR2	DCF-DCE1AR2	
		x	x		DIMA-DCFCE2	DCF-E2AR2	DCF-DCE2AR2	
		x	x	x	DIMA-DCFCE3	DCF-E3AR2	DCF-DCE3AR2	
24 Vac	MBUS, BATT	x			DIMA-DCFCE	DCF-EBM1	DCF-DCEBM1	
		x			DIMA-DCFCE1	DCF-E1BM1	DCF-DCE1BM1	
		x	x		DIMA-DCFCE2	DCF-E2BM1	DCF-DCE2BM1	
		x	x	x	DIMA-DCFCE3	DCF-E3BM1	DCF-DCE3BM1	
24 Vac	MBUS, 24 Vac	x			DIMA-DCFCE	DCF-EBM3	DCF-DCEBM3	
		x			DIMA-DCFCE1	DCF-E1BM3	DCF-DCE1BM3	
		x	x		DIMA-DCFCE2	DCF-E2BM3	DCF-DCE2BM3	
		x	x	x	DIMA-DCFCE3	DCF-E3BM3	DCF-DCE3BM3	
24 Vac	RADIO, BATT	x			DIMA-DCFCE	DCF-EBR1	DCF-DCEBR1	
		x			DIMA-DCFCE1	DCF-E1BR1	DCF-DCE1BR1	
		x	x		DIMA-DCFCE2	DCF-E2BR1	DCF-DCE2BR1	
		x	x	x	DIMA-DCFCE3	DCF-E3BR1	DCF-DCE3BR1	
24 Vac	RADIO, 24 Vac	x			DIMA-DCFCE	DCF-EBR3	DCF-DCEBR3	
		x			DIMA-DCFCE1	DCF-E1BR3	DCF-DCE1BR3	
		x	x		DIMA-DCFCE2	DCF-E2BR3	DCF-DCE2BR3	
		x	x	x	DIMA-DCFCE3	DCF-E3BR3	DCF-DCE3BR3	

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.

## DOMOCOMPACT FAMILY BASIC with open frame



Temperature control and thermal energy metering module for a single consumer with flow rate of 800-2000 l/h and metering of domestic water (hot, cold and dual), pre-mounted on a compact open frame. The module can receive the main inlets from the risers on any of the four sides. Observe the direction of flow required by the volumetric flow meter.

The module consists of a WATTS PATENTED multifunction brass valve comprising:

- 3-way zone valve complete with 24VAC or 230VAC electrothermal actuator and ETE Series normally open auxiliary microswitch connected to a bypass setting valve;
- removable steel mesh debris filter basket;
- balancing device;

Energy metering section (heating and cooling):

- Supercal 739 Series energy meter with single-jet volumetric meter or Superstatic 789 Series with fluidic oscillation (optional)
- complete with Pt500 temperature sensor
- remote reading possible by means of M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW)
- battery-powered (battery life 12+1 years).

Domestic Water (DHW and DCW) and Dual Water (DW) metering section

- single-jet turbine flow meter (WMT Series), compliant with MID MI001 with built-in check valve (DCW and DHW)
- additional flow meter for DW, compliant with MID MI001

Domestic hot or cold water circuit flow metering (Qn=4.0) by one or more single-jet turbine flow meters (WMT Series).

The module is easy to maintain because it is fitted with shut-off ball-valves upstream and downstream of the individual circuit sections assembled with the volumetric meters with appropriate extendable fittings.

The module is suitable for horizontal and/or vertical installation, with right/left or left/right inlets.

Insulation and flushing pipes included for all models.

1" F heating section connections.

1" F domestic water section connections.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

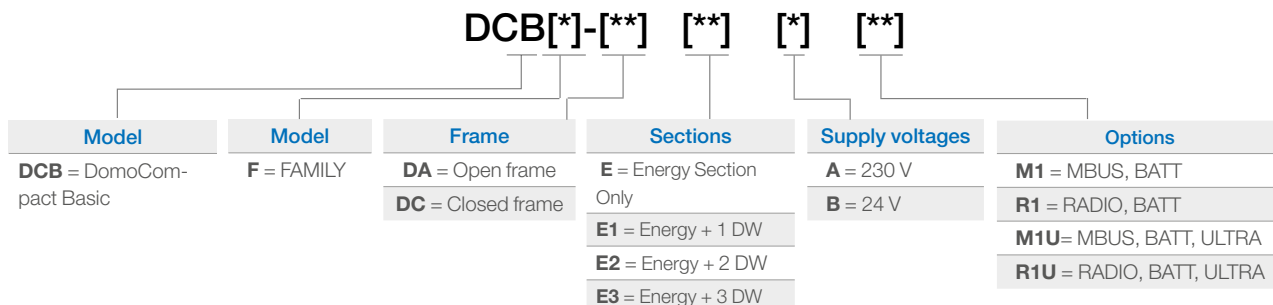
Dimensions on page 241

## ACCESSORIES

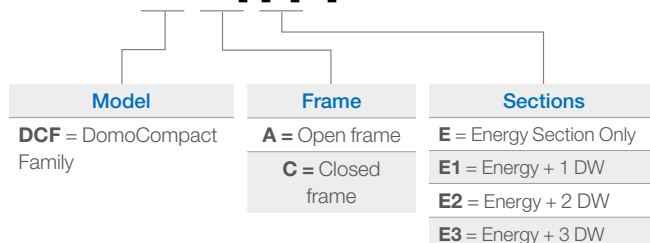
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

## CODE CREATION MATRIX



### FRAME-DCF[\*]-[\*\*]

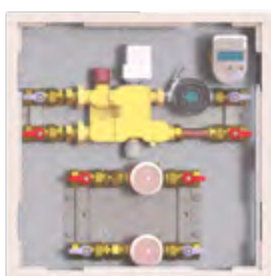


Functions		Product for installation in two stages			Complete module		
Actuator power supply	Energy integrator	Volumetric domestic water			FRAME	BODY	Part no.
		Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	
230 Vac	MBUS, BATT	x			DIMA-DCFAE	DCBF-EAM1	DCBF-DAEAM1
		x	x		DIMA-DCFAE1	DCBF-E1AM1	DCBF-DAE1AM1
		x	x	x	DIMA-DCFAE2	DCBF-E2AM1	DCBF-DAE2AM1
230 Vac	MBUS, BATT, ULTRA	x			DIMA-DCFAE3	DCBF-E3AM1	DCBF-DAE3AM1
		x			DIMA-DCFAE	DCBF-EAM1U	DCBF-DAEAM1U
		x	x		DIMA-DCFAE1	DCBF-E1AM1U	DCBF-DAE1AM1U
230 Vac	RADIO, BATT	x	x		DIMA-DCFAE2	DCBF-E2AM1U	DCBF-DAE2AM1U
		x	x	x	DIMA-DCFAE3	DCBF-E3AM1U	DCBF-DAE3AM1U
		x			DIMA-DCFAE	DCBF-EAR1	DCBF-DAEAR1
230 Vac	RADIO, BATT, ULTRA	x	x		DIMA-DCFAE1	DCBF-E1AR1	DCBF-DAE1AR1
		x	x		DIMA-DCFAE2	DCBF-E2AR1	DCBF-DAE2AR1
		x	x	x	DIMA-DCFAE3	DCBF-E3AR1	DCBF-DAE3AR1
24 Vac	MBUS, BATT	x			DIMA-DCFAE	DCBF-EAR1U	DCBF-DAEAR1U
		x	x		DIMA-DCFAE1	DCBF-E1AR1U	DCBF-DAE1AR1U
		x	x		DIMA-DCFAE2	DCBF-E2AR1U	DCBF-DAE2AR1U
24 Vac	MBUS, BATT, ULTRA	x	x	x	DIMA-DCFAE3	DCBF-E3AR1U	DCBF-DAE3AR1U
		x			DIMA-DCFAE	DCBF-EBM1	DCBF-DAEBM1
		x	x		DIMA-DCFAE1	DCBF-E1BM1	DCBF-DAE1BM1
24 Vac	RADIO, BATT	x	x		DIMA-DCFAE2	DCBF-E2BM1	DCBF-DAE2BM1
		x	x	x	DIMA-DCFAE3	DCBF-E3BM1	DCBF-DAE3BM1
		x			DIMA-DCFAE	DCBF-EBM1U	DCBF-DAEBM1U
24 Vac	RADIO, BATT, ULTRA	x	x		DIMA-DCFAE1	DCBF-E1BM1U	DCBF-DAE1BM1U
		x	x		DIMA-DCFAE2	DCBF-E2BM1U	DCBF-DAE2BM1U
		x	x	x	DIMA-DCFAE3	DCBF-E3BM1U	DCBF-DAE3BM1U
24 Vac	RADIO, BATT	x			DIMA-DCFAE	DCBF-EBR1	DCBF-DAEBR1
		x	x		DIMA-DCFAE1	DCBF-E1BR1	DCBF-DAE1BR1
		x	x		DIMA-DCFAE2	DCBF-E2BR1	DCBF-DAE2BR1
24 Vac	RADIO, BATT, ULTRA	x	x	x	DIMA-DCFAE3	DCBF-E3BR1	DCBF-DAE3BR1
		x			DIMA-DCFAE	DCBF-EBR1U	DCBF-DAEBR1U
		x	x		DIMA-DCFAE1	DCBF-E1BR1U	DCBF-DAE1BR1U
24 Vac	RADIO, BATT, ULTRA	x	x		DIMA-DCFAE2	DCBF-E2BR1U	DCBF-DAE2BR1U
		x	x	x	DIMA-DCFAE3	DCBF-E3BR1U	DCBF-DAE3BR1U

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.



## DOMOCOMPACT FAMILY BASIC with closed frame



Like Domocompact Family with open frame but with components installed in a frame closed with a front panel (white RAL 9010) with lock.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Dimensions on page 241

## ACCESSORIES

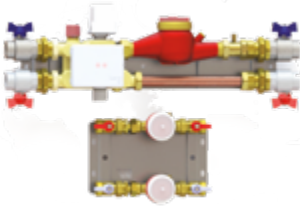
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

Functions		Product for installation in two stages			Complete module		
Volumetric domestic water		FRAME			BODY		
Actuator power supply	Energy integrator	Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	Part no.
230 Vac	MBUS, BATT	x			DIMA-DCFCE	DCBF-EAM1	DCBF-DCEAM1
		x			DIMA-DCFCE1	DCBF-E1AM1	DCBF-DCE1AM1
		x	x		DIMA-DCFCE2	DCBF-E2AM1	DCBF-DCE2AM1
		x	x	x	DIMA-DCFCE3	DCBF-E3AM1	DCBF-DCE3AM1
230 Vac	MBUS, BATT, ULTRA	x			DIMA-DCFCE	DCBF-EAM1U	DCBF-DCEAM1U
		x			DIMA-DCFCE1	DCBF-E1AM1U	DCBF-DCE1AM1U
		x	x		DIMA-DCFCE2	DCBF-E2AM1U	DCBF-DCE2AM1U
		x	x	x	DIMA-DCFCE3	DCBF-E3AM1U	DCBF-DCE3AM1U
230 Vac	RADIO, BATT	x			DIMA-DCFCE	DCBF-EAR1	DCBF-DCEAR1
		x			DIMA-DCFCE1	DCBF-E1AR1	DCBF-DCE1AR1
		x	x		DIMA-DCFCE2	DCBF-E2AR1	DCBF-DCE2AR1
		x	x	x	DIMA-DCFCE3	DCBF-E3AR1	DCBF-DCE3AR1
230 Vac	RADIO, BATT, ULTRA	x			DIMA-DCFCE	DCBF-EAR1U	DCBF-DCEAR1U
		x			DIMA-DCFCE1	DCBF-E1AR1U	DCBF-DCE1AR1U
		x	x		DIMA-DCFCE2	DCBF-E2AR1U	DCBF-DCE2AR1U
		x	x	x	DIMA-DCFCE3	DCBF-E3AR1U	DCBF-DCE3AR1U
24 Vac	MBUS, BATT	x			DIMA-DCFCE	DCBF-EBM1	DCBF-DCEBM1
		x			DIMA-DCFCE1	DCBF-E1BM1	DCBF-DCE1BM1
		x	x		DIMA-DCFCE2	DCBF-E2BM1	DCBF-DCE2BM1
		x	x	x	DIMA-DCFCE3	DCBF-E3BM1	DCBF-DCE3BM1
24 Vac	MBUS, BATT, ULTRA	x			DIMA-DCFCE	DCBF-EBM1U	DCBF-DCEBM1U
		x			DIMA-DCFCE1	DCBF-E1BM1U	DCBF-DCE1BM1U
		x	x		DIMA-DCFCE2	DCBF-E2BM1U	DCBF-DCE2BM1U
		x	x	x	DIMA-DCFCE3	DCBF-E3BM1U	DCBF-DCE3BM1U
24 Vac	RADIO, BATT	x			DIMA-DCFCE	DCBF-EBR1	DCBF-DCEBR1
		x			DIMA-DCFCE1	DCBF-E1BR1	DCBF-DCE1BR1
		x	x		DIMA-DCFCE2	DCBF-E2BR1	DCBF-DCE2BR1
		x	x	x	DIMA-DCFCE3	DCBF-E3BR1	DCBF-DCE3BR1
24 Vac	RADIO, BATT, ULTRA	x			DIMA-DCFCE	DCBF-EBR1U	DCBF-DCEBR1U
		x			DIMA-DCFCE1	DCBF-E1BR1U	DCBF-DCE1BR1U
		x	x		DIMA-DCFCE2	DCBF-E2BR1U	DCBF-DCE2BR1U
		x	x	x	DIMA-DCFCE3	DCBF-E3BR1U	DCBF-DCE3BR1U

**N.B. The price shown does not include commissioning of the individual model. Quote provided on request.**

## DOMOCOMPACT SUITE with open frame



Temperature control and thermal energy metering module for a single consumer with high flow rate of 2000 - 2800 l/h and metering of domestic water (hot, cold and dual), pre-mounted on a compact open frame.

The module can be adapted to receive the main inlets from the risers on any of the four sides. Observe the direction of flow required by the volumetric flow meter.

The module can receive the main inlets from the risers on any of the four sides. Observe the direction of flow required by the volumetric flow meter.

The module consists of a WATTS PATENTED multifunction brass valve comprising:

- 3-way zone valve complete with 24VAC or 230VAC electrothermal actuator and ETE Series normally open auxiliary microswitch connected to a bypass setting valve;
- removable steel mesh debris filter basket;
- balancing device;

Energy metering section (heating and cooling)

- Supercal 531 Series energy meter complete with Pt500 temperature sensors
- single-jet turbine flow meter (MTW Series), compliant with MID MI004

Energy meter with the possibility of remote reading via M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW) powered by battery or 230VAC or 24VDC (all options according to system requirements).

Digital outputs (energy and volume) for direct connection to data centralisation systems. Other transmission systems available to order (4-20mA, 0-10VDC analogue outputs, relay modules, RS232)\*.

Domestic Water (DHW and DCW) and Dual Water (DW) metering section

- single-jet turbine flow meter (WMT Series), compliant with MID MI001 with built-in check valve (DCW and DHW)
- additional flow meter for DW, compliant with MID MI001

Domestic hot or cold water circuit flow metering ( $Q_n=4.0$ ) by one or more single-jet turbine flow meters (WMT Series).

The module is easy to maintain because it is fitted with shut-off ball-valves upstream and downstream of the individual circuit sections assembled with the volumetric meters with appropriate extendable fittings.

The module is suitable for horizontal and/or vertical installation, with right/left or left/right inlets.

Insulation and flushing pipes included for all models.

1" F heating connections. 1" F domestic water connections.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

(\*) For all options, consult the technical documentation for the Supercal 531 energy meter

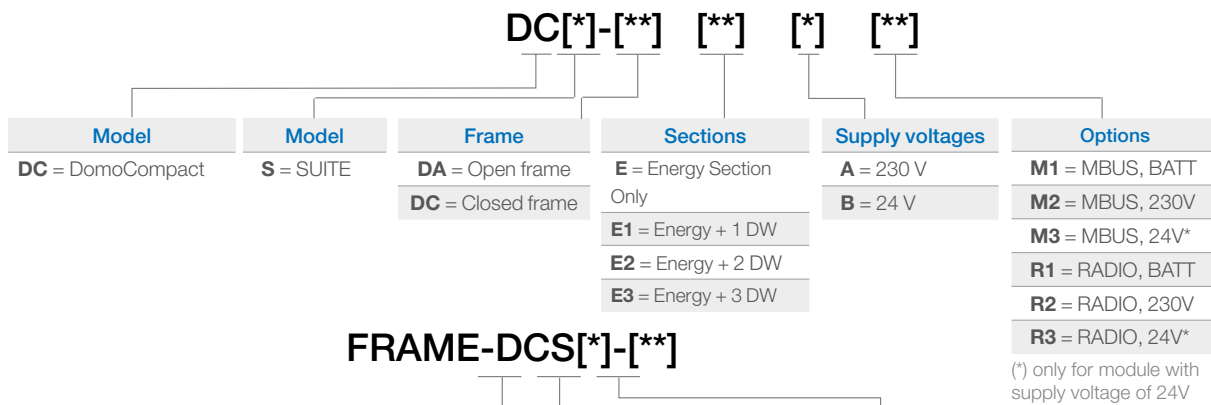
Dimensions on page 241

## ACCESSORIES

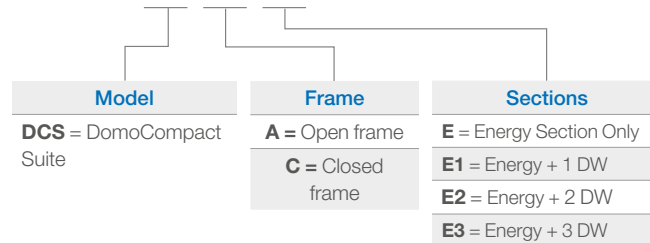
Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

CODE CREATION MATRIX



**FRAME-DCS[\*]-[\*\*]**



Functions		Product for installation in two stages			Complete module		
		FRAME			BODY		
Actuator power supply	Energy integrator	Volumetric domestic water			Part no.	Part no.	Part no.
		Cold water	Hot water	Dual/ Rec. Water			
230 Vac	MBUS, BATT	x			FRAME-DCSAE	DCS-EAM1	DCS-DAEAM1
		x	x		DIMA-DCSAE1	DCS-E1AM1	DCS-DAE1AM1
		x	x	x	DIMA-DCSAE2	DCS-E2AM1	DCS-DAE2AM1
230 Vac	MBUS, 230 Vac	x			DIMA-DCSAE3	DCS-E3AM1	DCS-DAE3AM1
		x			FRAME-DCSAE	DCS-EAM2	DCS-DAEAM2
		x	x		DIMA-DCSAE1	DCS-E1AM2	DCS-DAE1AM2
230 Vac	RADIO, BATT	x	x		DIMA-DCSAE2	DCS-E2AM2	DCS-DAE2AM2
		x	x	x	DIMA-DCSAE3	DCS-E3AM2	DCS-DAE3AM2
		x			FRAME-DCSAE	DCS-EAR1	DCS-DAEAR1
230 Vac	RADIO, 230 Vac	x			DIMA-DCSAE1	DCS-E1AR1	DCS-DAE1AR1
		x	x		DIMA-DCSAE2	DCS-E2AR1	DCS-DAE2AR1
		x	x	x	DIMA-DCSAE3	DCS-E3AR1	DCS-DAE3AR1
230 Vac	RADIO, 230 Vac	x			FRAME-DCSAE	DCS-EAR2	DCS-DAEAR2
		x	x		DIMA-DCSAE1	DCS-E1AR2	DCS-DAE1AR2
		x	x	x	DIMA-DCSAE2	DCS-E2AR2	DCS-DAE2AR2
24 Vac	MBUS, BATT	x			DIMA-DCSAE3	DCS-E3AR2	DCS-DAE3AR2
		x			FRAME-DCSAE	DCS-EBM1	DCS-DAEBM1
		x	x		DIMA-DCSAE1	DCS-E1BM1	DCS-DAE1BM1
24 Vac	MBUS, 24 Vac	x	x		DIMA-DCSAE2	DCS-E2BM1	DCS-DAE2BM1
		x	x	x	DIMA-DCSAE3	DCS-E3BM1	DCS-DAE3BM1
		x			FRAME-DCSAE	DCS-EBM3	DCS-DAEBM3
24 Vac	RADIO, BATT	x			DIMA-DCSAE1	DCS-E1BM3	DCS-DAE1BM3
		x	x		DIMA-DCSAE2	DCS-E2BM3	DCS-DAE2BM3
		x	x	x	DIMA-DCSAE3	DCS-E3BM3	DCS-DAE3BM3
24 Vac	RADIO, 24 Vac	x			FRAME-DCSAE	DCS-EBR1	DCS-DAEBR1
		x	x		DIMA-DCSAE1	DCS-E1BR1	DCS-DAE1BR1
		x	x	x	DIMA-DCSAE2	DCS-E2BR1	DCS-DAE2BR1
24 Vac	RADIO, 24 Vac	x	x		DIMA-DCSAE3	DCS-E3BR1	DCS-DAE3BR1
		x			FRAME-DCSAE	DCS-EBR3	DCS-DAEBR3
		x	x		DIMA-DCSAE1	DCS-E1BR3	DCS-DAE1BR3
24 Vac	RADIO, 24 Vac	x	x		DIMA-DCSAE2	DCS-E2BR3	DCS-DAE2BR3
		x	x	x	DIMA-DCSAE3	DCS-E3BR3	DCS-DAE3BR3

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.

## DOMOCOMPACT SUITE with closed frame



Like Domocompact Suite with open frame but with components installed in a frame closed with a front panel (white RAL 9010) with lock.

**Compliant with: MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

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## ACCESSORIES

Part no.	Description	Domestic Water Circuit	Pcs. Pack	Package
<b>MIX-DMS</b>	mixing DHW	DHW, DCW	1,00	1,00

NB: only for models equipped with two domestic water sections (DHW and DCW)

		Functions			Product for installation in two stages			Complete module
		Volumetric domestic water			FRAME	BODY		
Actuator power supply	Energy integrator	Cold water	Hot water	Dual/ Rec. Water	Part no.	Part no.	Part no.	
230 Vac	MBUS, BATT	x			DIMA-DCSCE	DCS-EAM1	DCS-DCEAM1	
		x			DIMA-DCSCE1	DCS-E1AM1	DCS-DCE1AM1	
		x	x		DIMA-DCSCE2	DCS-E2AM1	DCS-DCE2AM1	
		x	x	x	DIMA-DCSCE3	DCS-E3AM1	DCS-DCE3AM1	
230 Vac	MBUS, 230 Vac	x			DIMA-DCSCE	DCS-EAM2	DCS-DCEAM2	
		x			DIMA-DCSCE1	DCS-E1AM2	DCS-DCE1AM2	
		x	x		DIMA-DCSCE2	DCS-E2AM2	DCS-DCE2AM2	
		x	x	x	DIMA-DCSCE3	DCS-E3AM2	DCS-DCE3AM2	
230 Vac	RADIO, BATT	x			DIMA-DCSCE	DCS-EAR1	DCS-DCEAR1	
		x			DIMA-DCSCE1	DCS-E1AR1	DCS-DCE1AR1	
		x	x		DIMA-DCSCE2	DCS-E2AR1	DCS-DCE2AR1	
		x	x	x	DIMA-DCSCE3	DCS-E3AR1	DCS-DCE3AR1	
230 Vac	RADIO, 230 Vac	x			DIMA-DCSCE	DCS-EAR2	DCS-DCEAR2	
		x			DIMA-DCSCE1	DCS-E1AR2	DCS-DCE1AR2	
		x	x		DIMA-DCSCE2	DCS-E2AR2	DCS-DCE2AR2	
		x	x	x	DIMA-DCSCE3	DCS-E3AR2	DCS-DCE3AR2	
24 Vac	MBUS, BATT	x			DIMA-DCSCE	DCS-EBM1	DCS-DCEBM1	
		x			DIMA-DCSCE1	DCS-E1BM1	DCS-DCE1BM1	
		x	x		DIMA-DCSCE2	DCS-E2BM1	DCS-DCE2BM1	
		x	x	x	DIMA-DCSCE3	DCS-E3BM1	DCS-DCE3BM1	
24 Vac	MBUS, 24 Vac	x			DIMA-DCSCE	DCS-EBM3	DCS-DCEBM3	
		x			DIMA-DCSCE1	DCS-E1BM3	DCS-DCE1BM3	
		x	x		DIMA-DCSCE2	DCS-E2BM3	DCS-DCE2BM3	
		x	x	x	DIMA-DCSCE3	DCS-E3BM3	DCS-DCE3BM3	
24 Vac	RADIO, BATT	x			DIMA-DCSCE	DCS-EBR1	DCS-DCEBR1	
		x			DIMA-DCSCE1	DCS-E1BR1	DCS-DCE1BR1	
		x	x		DIMA-DCSCE2	DCS-E2BR1	DCS-DCE2BR1	
		x	x	x	DIMA-DCSCE3	DCS-E3BR1	DCS-DCE3BR1	
24 Vac	RADIO, 24 Vac	x			DIMA-DCSCE	DCS-EBR3	DCS-DCEBR3	
		x			DIMA-DCSCE1	DCS-E1BR3	DCS-DCE1BR3	
		x	x		DIMA-DCSCE2	DCS-E2BR3	DCS-DCE2BR3	
		x	x	x	DIMA-DCSCE3	DCS-E3BR3	DCS-DCE3BR3	

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.

## Remote thermal modules

### DOMOCAL

Multi-function thermal module that acts as a water and heat distribution interface between central heat generation and the independent supply of heating (room comfort) and domestic hot water. The module is installed in a metal frame that can be surface wall-mounted or flush wall-mounted. Temperature control and metering functions for each individual consumer by means of an MID-compliant direct (hot/cold) thermal energy metering system, which enables costs to be allocated fairly on the basis of the energy actually consumed.

Device based on WEB system electronic logic (zero consumption in thermal off-line mode).

Possibility of data and consumption reading concentrated, transmitted and processed by means of M-Bus hard-wired network (EN1434) or Radio Frequency (433 Mhz, 10mW).

Domestic cold water management and metering by means of MID-compliant instruments.

Multi-function one-piece valve that combines the functions of low-loss header, primary flow balancing and, on request, modulating flow temperature control, by mixing the primary flow and return fluid to and from the consumer. There are also models equipped with an electric pump and uprated heat exchanger, which are suitable for use with condensing boilers and in applications requiring high performance for DHW.

The modules are supplied in an open frame, with or without front panel closure (white RAL 9010).

All modules feature versatile design and are outstandingly compact.

**Compliant with MID 2004/22/EC, Italian legislative decree No. 22 of 2/02/07.**

#### Special features

As well as being highly versatile and extremely compact, the DOMOCAL thermal module comes in a vast range of models, mounting several high-tech devices.

These include:

- DOMOCAL WEB system (Waste Energy Blocking system – zero consumption in thermal off-line mode), which electronically controls switch-on and switch-off of heating and instantaneous DHW production.

When there is no demand for heating or hot water, it ensures separation from the risers, thus preventing 100% of unwanted consumption.

- Multi-function valve that combines the functions of low-loss header, primary flow balancing and, on request, modulating flow temperature control, by mixing the boiler flow and return water.

- When using DOMOCAL modules in conjunction with condensing boilers or where high DHW performance is required, an uprated plate-type heat exchanger is included or available to order (even as a replacement when the work is under way).

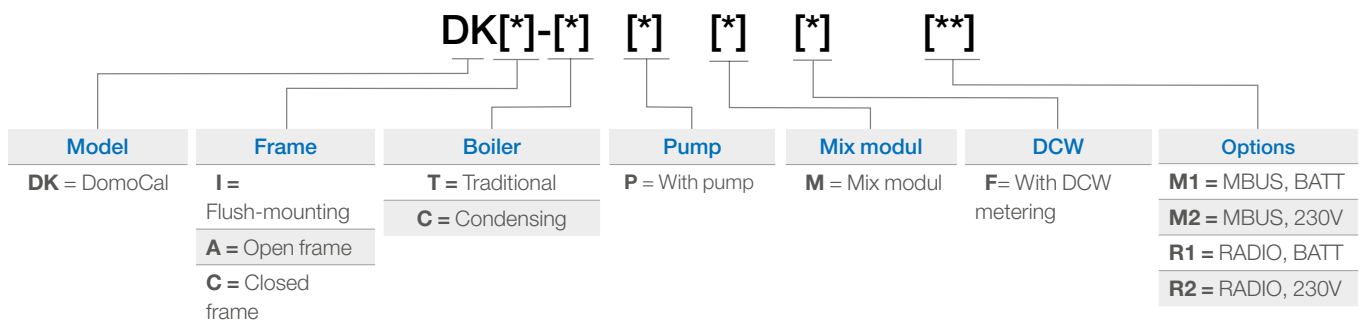


WEB system



Multi-function valve

### CODE CREATION MATRIX





**Installation**

Systems designed to include peripheral thermal modules are generally constructed and completed over a medium to long time-frame, and must therefore follow the various stages of construction of the building.

The modules are designed to allow the construction and completion of the primary network that originates in the boiler room and terminates near the dwelling, without necessarily having to fit the chosen DOMOCAL peripheral module.

This therefore prevents possible damage and deterioration of the DOMOCAL module caused by construction work, because the module is fitted at the time of first commissioning for each individual consumer.

For the initial installation phase, Watts provides a frame complete with shut-off ball valves on each section of circuit (heating, DHW and DCW) and removable flushing pipes for thorough flushing of the system. It is always advisable to flush the system, as a precaution, before installing the module.

Before final start-up, shut off the individual circuits by manually closing the ball valves, remove the flushing pipes (which can be re-used by the installer or system operator) and install the DOMOCAL product.

The module can be left without its front panel if fitted in a service closet (wall-mounting Domocal with open frame) or a protected, sheltered place as required by the customer (flush-mounting or wall-mounting Domocal with closed frame).

Thanks to these DOMOCAL assembly features, the system operator can take action during the course of system operation in the event of any kind of fault, and remove the thermal module without having to shut down the entire system, by closing the shut-off ball valves.

It is advisable, especially for medium to large systems, to allow at least one back-up thermal module so as to ensure continuity of service in the event of emergencies, pending repair by expert personnel.

The DOMOCAL thermal module is equipped with high-quality components and built to ensure long service-life, provided it is properly maintained.

**INSTALLATION PHASES**

**Frame**



**Installation frame and network pre-flushing pipes (removable)**



**Unit**



**Complete**



## DOMOCAL flush wall-mounting



Multi-function thermal module that acts as a water and heat distribution interface between central heat generation and the independent supply of heating (room comfort controlled by a room thermostat, not supplied with the module) and domestic hot water.

The module is installed in a metal frame that can be flush wall-mounted, with front panel (white RAL 9010)

Temperature control and metering by individual consumer by means of an MID-compliant direct heat metering system (heating/cooling).

Three-way solenoid valve with WEB system electronic logic (zero consumption in thermal off-line mode).

Energy meter with the possibility of remote reading via M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW) powered by battery or 220VAC (options according to system requirements).

Digital outputs (energy and volume) for direct connection to data centralisation systems. Other transmission systems available to order (4-20mA, 0-10VDC analogue outputs, relay modules, RS232)\*.

Multi-function one-piece valve that combines the functions of low-loss header, primary flow balancing and, on request, modulating flow temperature control, by mixing the primary flow and return fluid to and from the consumer.

Models are available with electric pump, uprated heat exchanger, suitable for use in conjunction with condensing boilers and where high DHW performance is required, and for traditional boilers for standard installations, including versions for remote heating.

1" F primary, secondary and domestic water circuit connections.

Compact dimensions.

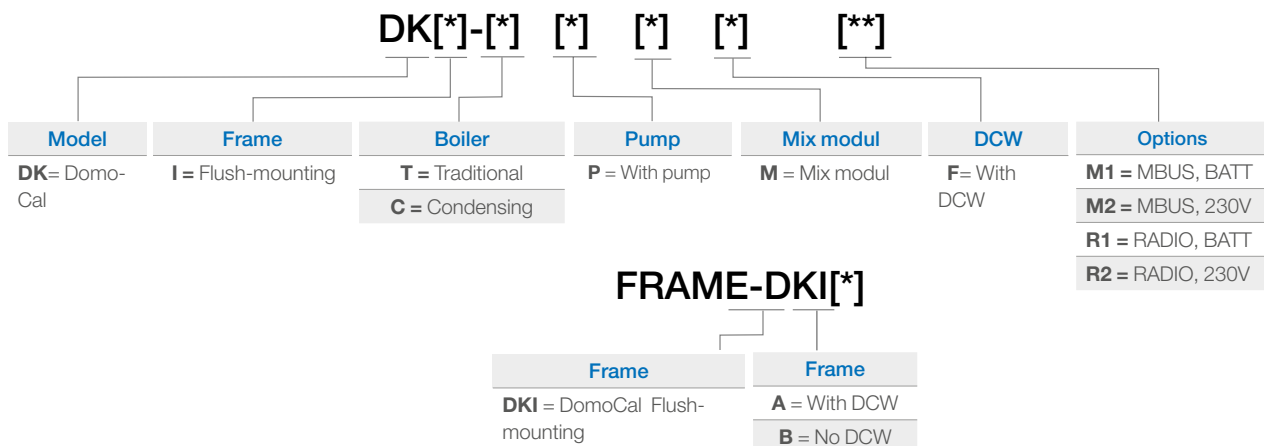
**Compliant with MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

(\*) For all options, consult the technical documentation for the Supercal 531 energy meter  
Dimensions on page 242

## ACCESSORIES

Part no.	Description	Pcs. Pack	Package
<b>PIPE-DCA06</b>	Flushing pipes for DKIB frame	1,00	1,00
<b>PIPE-DCA07</b>	Flushing pipes for DKIA frame	1,00	1,00
<b>471015002</b>	water hammer arrestor	1,00	1,00

## CODE CREATION MATRIX



Functions		Product for installation in two stages			Complete module		
		FRAME			BODY		
Boiler Type	Energy integrator	Pump	Mix modul	DCW meter	Part no.	Part no.	Part no.
Traditional	MBUS, BATT	X	X	X	DIMA-DKIA	DKF-TPMFM1	DKI-TPMFM1
		X	X		DIMA-DKIB	DKF-TPMM1	DKI-TPMM1
		X		X	DIMA-DKIA	DKF-TPFM1	DKI-TPFM1
		X			DIMA-DKIB	DKF-TPM1	DKI-TPM1
				X	DIMA-DKIA	DKF-TFM1	DKI-TFM1
					DIMA-DKIB	DKF-TM1	DKI-TM1
Traditional	MBUS, 230 Vac	X	X	X	DIMA-DKIA	DKF-TPMFM2	DKI-TPMFM2
		X	X		DIMA-DKIB	DKF-TPMM2	DKI-TPMM2
		X		X	DIMA-DKIA	DKF-TPFM2	DKI-TPFM2
		X			DIMA-DKIB	DKF-TPM2	DKI-TPM2
				X	DIMA-DKIA	DKF-TFM2	DKI-TFM2
					DIMA-DKIB	DKF-TM2	DKI-TM2
Traditional	RADIO, BATT	X	X	X	DIMA-DKIA	DKF-TPMFR1	DKI-TPMFR1
		X	X		DIMA-DKIB	DKF-TPMR1	DKI-TPMR1
		X		X	DIMA-DKIA	DKF-TPFR1	DKI-TPFR1
		X			DIMA-DKIB	DKF-TPR1	DKI-TPR1
				X	DIMA-DKIA	DKF-TFR1	DKI-TFR1
					DIMA-DKIB	DKF-TR1	DKI-TR1
Traditional	RADIO, 230 Vac	X	X	X	DIMA-DKIA	DKF-TPMFR2	DKI-TPMFR2
		X	X		DIMA-DKIB	DKF-TPMR2	DKI-TPMR2
		X		X	DIMA-DKIA	DKF-TPFR2	DKI-TPFR2
		X			DIMA-DKIB	DKF-TPR2	DKI-TPR2
				X	DIMA-DKIA	DKF-TFR2	DKI-TFR2
					DIMA-DKIB	DKF-TR2	DKI-TR2
Con-densing	MBUS, BATT	X	X	X	DIMA-DKIA	DKF-CPMFM1	DKI-CPMFM1
		X	X		DIMA-DKIB	DKF-CPMM1	DKI-CPMM1
		X		X	DIMA-DKIA	DKF-CPFM1	DKI-CPFM1
		X			DIMA-DKIB	DKF-CPM1	DKI-CPM1
Con-densing	MBUS, 230 Vac	X	X	X	DIMA-DKIA	DKF-CPMFM2	DKI-CPMFM2
		X	X		DIMA-DKIB	DKF-CPMM2	DKI-CPMM2
		X		X	DIMA-DKIA	DKF-CPFM2	DKI-CPFM2
		X			DIMA-DKIB	DKF-CPM2	DKI-CPM2
Con-densing	RADIO, BATT	X	X	X	DIMA-DKIA	DKF-CPMFR1	DKI-CPMFR1
		X	X		DIMA-DKIB	DKF-CPMR1	DKI-CPMR1
		X		X	DIMA-DKIA	DKF-CPFR1	DKI-CPFR1
		X			DIMA-DKIB	DKF-CPR1	DKI-CPR1
Con-densing	RADIO, 230 Vac	X	X	X	DIMA-DKIA	DKF-CPMFR2	DKI-CPMFR2
		X	X		DIMA-DKIB	DKF-CPMR2	DKI-CPMR2
		X		X	DIMA-DKIA	DKF-CPFR2	DKI-CPFR2
		X			DIMA-DKIB	DKF-CPR2	DKI-CPR2

N.B. The price shown does not include commissioning of the individual model. Quote provided on request.



## DOMOCAL SURFACE WALL-MOUNTING with open frame



Multi-function thermal module that acts as a water and heat distribution interface between central heat generation and the independent supply of heating (room comfort controlled by a room thermostat, not supplied with the module) and domestic hot water.

The module is installed in a metal frame that can be surface wall-mounted without a front panel. Temperature control and metering by individual consumer by means of an MID-compliant direct heat metering system (heating/cooling).

Three-way solenoid valve with WEB system electronic logic (zero consumption in thermal off-line mode).

Energy meter with the possibility of remote reading via M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW) powered by battery or 220VAC (options according to system requirements).

Digital outputs (energy and volume) for direct connection to data centralisation systems. Other transmission systems available to order (4-20mA, 0-10VDC analogue outputs, relay modules, RS232)\*.

Multi-function one-piece valve that combines the functions of low-loss header, primary flow balancing and, on request, modulating flow temperature control, by mixing the primary flow and return fluid to and from the consumer.

Models are available with electric pump, uprated heat exchanger, suitable for use in conjunction with condensing boilers and where high DHW performance is required, and for traditional boilers for standard installations, including versions for remote heating.

1" F primary, secondary and domestic water circuit connections.

Compact dimensions.

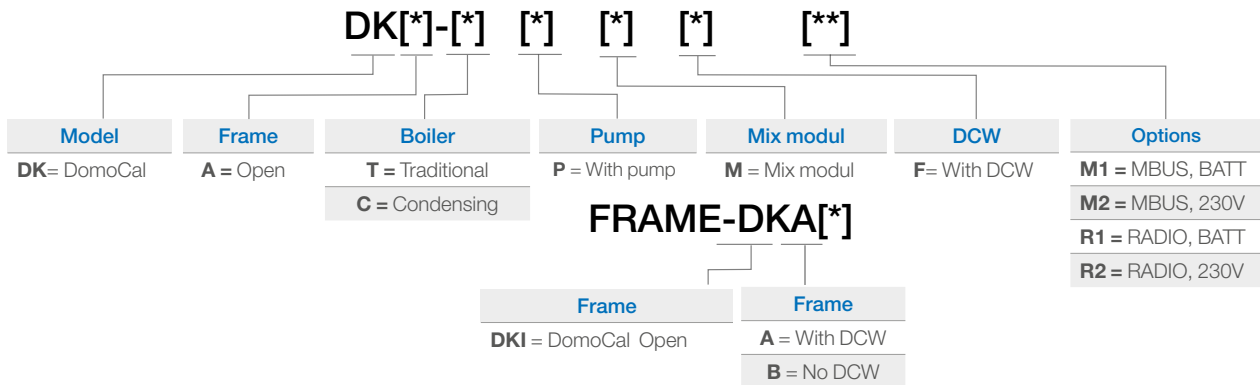
**Compliant with MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

(\*) For all options, consult the technical documentation for the Supercal 531 energy meter  
Dimensions on page 242

## ACCESSORIES

Part no.	Description	Pcs. Pack	Package
<b>PIPE-DCA06</b>	Flushing pipes for DKIB frame	1,00	1,00
<b>PIPE-DCA07</b>	Flushing pipes for DKIA frame	1,00	1,00
<b>471015002</b>	water hammer arrestor	1,00	1,00

## CODE CREATION MATRIX



		Functions			Product for installation in two stages		Complete module
		FRAME			BODY		
Boiler Type	Energy integrator	Pump	Mix modul	DCW meter	Part no.	Part no.	Part no.
Traditional	MBUS, BATT	X	X	X	DIMA-DKAA	DKF-TPMFM1	DKA-TPMFM1
		X	X		DIMA-DKAB	DKF-TPMM1	DKA-TPMM1
		X		X	DIMA-DKAA	DKF-TPFM1	DKA-TPFM1
		X			DIMA-DKAB	DKF-TPM1	DKA-TPM1
				X	DIMA-DKAA	DKF-TFM1	DKA-TFM1
					DIMA-DKAB	DKF-TM1	DKA-TM1
Traditional	MBUS, 230 Vac	X	X	X	DIMA-DKAA	DKF-TPMFM2	DKA-TPMFM2
		X	X		DIMA-DKAB	DKF-TPMM2	DKA-TPMM2
		X		X	DIMA-DKAA	DKF-TPFM2	DKA-TPFM2
		X			DIMA-DKAB	DKF-TPM2	DKA-TPM2
				X	DIMA-DKAA	DKF-TFM2	DKA-TFM2
					DIMA-DKAB	DKF-TM2	DKA-TM2
Traditional	RADIO, BATT	X	X	X	DIMA-DKAA	DKF-TPMFR1	DKA-TPMFR1
		X	X		DIMA-DKAB	DKF-TPMR1	DKA-TPMR1
		X		X	DIMA-DKAA	DKF-TPFR1	DKA-TPFR1
		X			DIMA-DKAB	DKF-TPR1	DKA-TPR1
				X	DIMA-DKAA	DKF-TFR1	DKA-TFR1
					DIMA-DKAB	DKF-TR1	DKA-TR1
Traditional	RADIO, 230 Vac	X	X	X	DIMA-DKAA	DKF-TPMFR2	DKA-TPMFR2
		X	X		DIMA-DKAB	DKF-TPMR2	DKA-TPMR2
		X		X	DIMA-DKAA	DKF-TPFR2	DKA-TPFR2
		X			DIMA-DKAB	DKF-TPR2	DKA-TPR2
				X	DIMA-DKAA	DKF-TFR2	DKA-TFR2
					DIMA-DKAB	DKF-TR2	DKA-TR2
Con-densing	MBUS, BATT	X	X	X	DIMA-DKAA	DKF-CPMFM1	DKA-CPMFM1
		X	X		DIMA-DKAB	DKF-CPMM1	DKA-CPMM1
		X		X	DIMA-DKAA	DKF-CPFM1	DKA-CPFM1
		X			DIMA-DKAB	DKF-CPM1	DKA-CPM1
Con-densing	MBUS, 230 Vac	X	X	X	DIMA-DKAA	DKF-CPMFM2	DKA-CPMFM2
		X	X		DIMA-DKAB	DKF-CPMM2	DKA-CPMM2
		X		X	DIMA-DKAA	DKF-CPFM2	DKA-CPFM2
		X			DIMA-DKAB	DKF-CPM2	DKA-CPM2
Con-densing	RADIO, BATT	X	X	X	DIMA-DKAA	DKF-CPMFR1	DKA-CPMFR1
		X	X		DIMA-DKAB	DKF-CPMR1	DKA-CPMR1
		X		X	DIMA-DKAA	DKF-CPFR1	DKA-CPFR1
		X			DIMA-DKAB	DKF-CPR1	DKA-CPR1
Con-densing	RADIO, 230 Vac	X	X	X	DIMA-DKAA	DKF-CPMFR2	DKA-CPMFR2
		X	X		DIMA-DKAB	DKF-CPMR2	DKA-CPMR2
		X		X	DIMA-DKAA	DKF-CPFR2	DKA-CPFR2
		X			DIMA-DKAB	DKF-CPR2	DKA-CPR2

**N.B. The price shown does not include commissioning of the individual model. Quote provided on request.**

## DOMOCAL SURFACE WALL-MOUNTING with closed frame



Multi-function thermal module that acts as a water and heat distribution interface between central heat generation and the independent supply of heating (room comfort controlled by a room thermostat, not supplied with the module) and domestic hot water.

The module is installed in a metal frame that can be surface wall-mounted with a front panel (white RAL 9010).

Temperature control and metering by individual consumer by means of an MID-compliant direct heat metering system (heating/cooling).

Three-way solenoid valve with WEB system electronic logic (zero consumption in thermal off-line mode).

Energy meter with the possibility of remote reading via M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW) powered by battery or 220VAC (options according to system requirements).

Digital outputs (energy and volume) for direct connection to data centralisation systems. Other transmission systems available to order (4-20mA, 0-10VDC analogue outputs, relay modules, RS232)\*.

Multi-function one-piece valve that combines the functions of low-loss header, primary flow balancing and, on request, modulating flow temperature control, by mixing the primary flow and return fluid to and from the consumer.

Models are available with electric pump, uprated heat exchanger, suitable for use in conjunction with condensing boilers and where high DHW performance is required, and for traditional boilers for standard installations, including versions for remote heating.

1" F primary, secondary and domestic water circuit connections.

**Compliant with MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

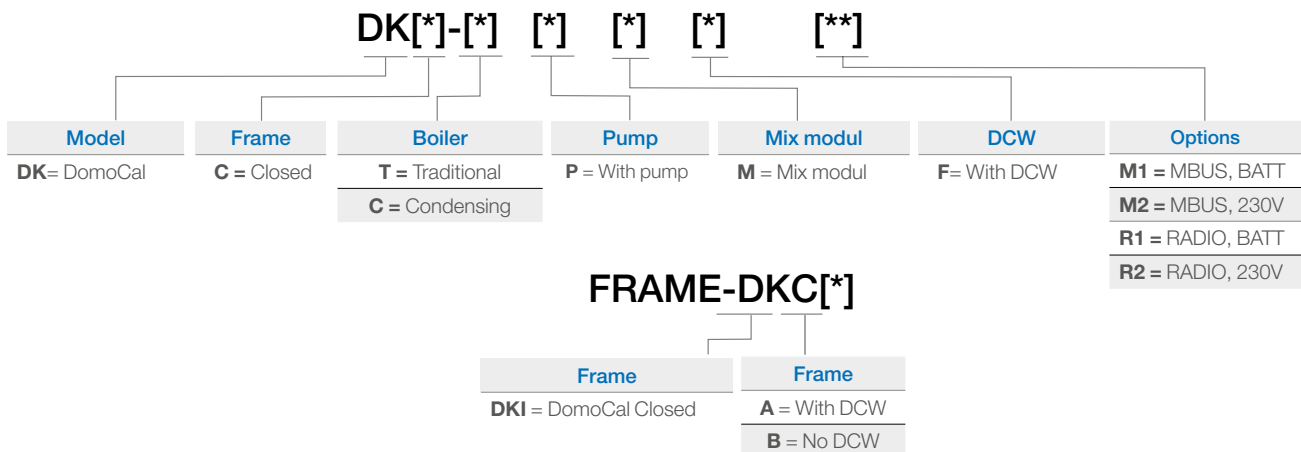
(\*) For all options, consult the technical documentation for the Supercal 531 energy meter

Dimensions on page 242

## ACCESSORIES

Part no.	Description	Pcs. Pack	Package
<b>PIPE-DCA06</b>	Flushing pipes for DKIB frame	1,00	1,00
<b>PIPE-DCA07</b>	Flushing pipes for DKIA frame	1,00	1,00
<b>471015002</b>	water hammer arrestor	1,00	1,00

## CODE CREATION MATRIX



		Functions			Product for installation in two stages		Complete module
		FRAME			BODY		
Boiler Type	Energy integrator	Pump	Mix modul	DCW meter	Part no.	Part no.	Part no.
Traditional	MBUS, BATT	X	X	X	DIMA-DKCA	DKFC-TPMFM1	DKC-TPMFM1
		X	X		DIMA-DKCB	DKFC-TPMM1	DKC-TPMM1
		X		X	DIMA-DKCA	DKFC-TPFM1	DKC-TPFM1
		X			DIMA-DKCB	DKFC-TPM1	DKC-TPM1
				X	DIMA-DKCA	DKFC-TFM1	DKC-TFM1
					DIMA-DKCB	DKFC-TM1	DKC-TM1
Traditional	MBUS, 230 Vac	X	X	X	DIMA-DKCA	DKFC-TPMFM2	DKC-TPMFM2
		X	X		DIMA-DKCB	DKFC-TPMM2	DKC-TPMM2
		X		X	DIMA-DKCA	DKFC-TPFM2	DKC-TPFM2
		X			DIMA-DKCB	DKFC-TPM2	DKC-TPM2
				X	DIMA-DKCA	DKFC-TFM2	DKC-TFM2
					DIMA-DKCB	DKFC-TM2	DKC-TM2
Traditional	RADIO, BATT	X	X	X	DIMA-DKCA	DKFC-TPMFR1	DKC-TPMFR1
		X	X		DIMA-DKCB	DKFC-TPMR1	DKC-TPMR1
		X		X	DIMA-DKCA	DKFC-TPFR1	DKC-TPFR1
		X			DIMA-DKCB	DKFC-TPR1	DKC-TPR1
				X	DIMA-DKCA	DKFC-TFR1	DKC-TFR1
					DIMA-DKCB	DKFC-TR1	DKC-TR1
Traditional	RADIO, 230 Vac	X	X	X	DIMA-DKCA	DKFC-TPMFR2	DKC-TPMFR2
		X	X		DIMA-DKCB	DKFC-TPMR2	DKC-TPMR2
		X		X	DIMA-DKCA	DKFC-TPFR2	DKC-TPFR2
		X			DIMA-DKCB	DKFC-TPR2	DKC-TPR2
				X	DIMA-DKCA	DKFC-TFR2	DKC-TFR2
					DIMA-DKCB	DKFC-TR2	DKC-TR2
Con-densing	MBUS, BATT	X	X	X	DIMA-DKCA	DKFC-CPMFM1	DKC-CPMFM1
		X	X		DIMA-DKCB	DKFC-CPMM1	DKC-CPMM1
		X		X	DIMA-DKCA	DKFC-CPFM1	DKC-CPFM1
		X			DIMA-DKCB	DKFC-CPM1	DKC-CPM1
Con-densing	MBUS, 230 Vac	X	X	X	DIMA-DKCA	DKFC-CPMFM2	DKC-CPMFM2
		X	X		DIMA-DKCB	DKFC-CPMM2	DKC-CPMM2
		X		X	DIMA-DKCA	DKFC-CPFM2	DKC-CPFM2
		X			DIMA-DKCB	DKFC-CPM2	DKC-CPM2
Con-densing	RADIO, BATT	X	X	X	DIMA-DKCA	DKFC-CPMFR1	DKC-CPMFR1
		X	X		DIMA-DKCB	DKFC-CPMR1	DKC-CPMR1
		X		X	DIMA-DKCA	DKFC-CPFR1	DKC-CPFR1
		X			DIMA-DKCB	DKFC-CPR1	DKC-CPR1
Con-densing	RADIO, 230 Vac	X	X	X	DIMA-DKCA	DKFC-CPMFR2	DKC-CPMFR2
		X	X		DIMA-DKCB	DKFC-CPMR2	DKC-CPMR2
		X		X	DIMA-DKCA	DKFC-CPFR2	DKC-CPFR2
		X			DIMA-DKCB	DKFC-CPR2	DKC-CPR2

**N.B. The price shown does not include commissioning of the individual model. Quote provided on request.**

## Thermal energy metering

### SUPERCAL 531



Multi-function calculation unit for thermal energy metering for heating/cooling systems:

- multi-function 8-digit LCD display for reading consumption data and instantaneous operating parameters;
- two pulse inputs for additional meters (domestic hot and cold water)
- transmission of remote reading data by means of M-Bus (EN1434) or Radio Frequency (bidirectional, 433 Mhz 10mW) compatible with SUPERCAL 636, 646 concentrator and 656 repeater.
- powered by battery or 230VAC (options according to system requirements).
- Two open collector pulse outputs (energy and volume) for direct connection to data centralisation systems.
- Other transmission systems available to order (4-20mA, 0-10VDC analogue outputs, relay modules, RS232).
- Protection rating IP54.
- Compatible with PS and 0531R-2S15 Series Pt500 sensors.
- Wall or DIN-rail mounting.
- Other configurations available to order.\*

**Compliant with MID 2014/32/EU.**

Part no.	Communication type	Power supply	I/pulse	Pcs. pack	Package
<b>0531R3-2.5</b>	M-Bus (EN1434)	Battery	2,5	1	1
<b>0531R3-10</b>	M-Bus (EN1434)	Battery	10	1	1
<b>0531R3-25</b>	M-Bus (EN1434)	Battery	25	1	1
<b>0531R3-100</b>	M-Bus (EN1434)	Battery	100	1	1
<b>0531R3-1000</b>	M-Bus (EN1434)	Battery	1000	1	1
<b>0531R4-2.5</b>	M-Bus (EN1434)	230Vac	2,5	1	1
<b>0531R4-10</b>	M-Bus (EN1434)	230Vac	10	1	1
<b>0531R4-25</b>	M-Bus (EN1434)	230Vac	25	1	1
<b>0531R4-100</b>	M-Bus (EN1434)	230Vac	100	1	1
<b>0531R4-1000</b>	M-Bus (EN1434)	230Vac	1000	1	1
<b>0531R5-2.5</b>	Radio (433 Mhz, 10mW)	Battery	2,5	1	1
<b>0531R5-10</b>	Radio (433 Mhz, 10mW)	Battery	10	1	1
<b>0531R5-25</b>	Radio (433 Mhz, 10mW)	Battery	25	1	1
<b>0531R5-100</b>	Radio (433 Mhz, 10mW)	Battery	100	1	1
<b>0531R5-1000</b>	Radio (433 Mhz, 10mW)	Battery	1000	1	1
<b>0531R6-2.5</b>	Radio (433 Mhz, 10mW)	230Vac	2,5	1	1
<b>0531R6-10</b>	Radio (433 Mhz, 10mW)	230Vac	10	1	1
<b>0531R6-25</b>	Radio (433 Mhz, 10mW)	230Vac	25	1	1
<b>0531R6-100</b>	Radio (433 Mhz, 10mW)	230Vac	100	1	1
<b>0531R6-1000</b>	Radio (433 Mhz, 10mW)	230Vac	1000	1	1

### PS/0531R-2S15

Dimensions on page 243



Pair of immersion temperature sensors. Can be used in conjunction with TP Series brass pocket (for PS) and G21 Series brass pocket (for 0531R) for heating and cooling system pipes. PT500 sensor, diameter 5.2mm (mod. PS) and 3.6mm (mod. 0531R-2S15). Operating temperature range: 0to150°C.

**Compliant with MID 2014/32/EU.**

Part no.	Cable length	Operating temp.	Pcs. pack	Package
<b>PS02</b>	2 m	0–150°C	1 pair	1 pair
<b>PS10</b>	10 m	0–150°C	1 pair	1 pair
<b>0531R-2S15</b>	1.5mt	0–150°C	1 pair	1 pair

### TP/G21



Pocket for installation on pipe with 1/2" external thread. Suitable for housing PS Series (mod. TP) and 0531R-2S15 (mod. G21) temperature sensors. **Compliant with MID 2014/32/EU.**

Part no.	Description	Length	Pcs. pack	Package
<b>TP35B</b>	Brass	35mm	1	1
<b>TP52B</b>	Brass	52mm	1	1
<b>TP85B</b>	Brass	85mm	1	1
<b>TP120B</b>	Brass	120mm	1	1
<b>TP85S</b>	Steel	85mm	1	1
<b>TP120S</b>	Steel	120mm	1	1
<b>G21.1CU</b>	Brass	18mm	12	240



## SUPERSTATIC 440



Fluidic oscillation static meter for thermal energy metering in heating and cooling systems, compliant with EN1434, class 2. Based on the principle of fluidic oscillation measurement, it is compatible with a wide range of flow rates and is suitable for any remote heating, air conditioning or building automation application. The oscillating-jet principle provides a high degree of stability and repeatability for precise, reliable metering of thermal energy and flow rate. The meter includes an oscillating-jet flow rate sensor, a dedicated Supercal 531 calculation unit, a pair of temperature sensors and a pair of sensor pockets.

Features:

- Interchangeable measuring head
  - Comprehensive range of pipes from G 3/4" to DN150
  - Corrosion-resistant materials
  - IP rating of flow rate sensor: IP68
  - Threaded and flanged connections
  - No need for a straight run of pipe (up to DN40)
  - No moving parts, so maximum wear-resistance
  - Unaffected by dirt
  - Stable measurement
  - Independent installation position for horizontal, ascending or descending pipes
  - Dynamic range:
    - 1:100 for qp 1 – 25 m<sup>3</sup>/h
    - 1:50 for qp 40 – 400 m<sup>3</sup>/h
    - 1:25 for qp 800 – 1500 m<sup>3</sup>/h
  - Direct sampling of voltage pulses without reflectors
  - Metering independent of heat-carrier
  - Stable, precise, reliable metering over time, even with poor quality water
- Also compatible for metering water/glycol mixtures for solar energy systems (compensation value can be set in the Supercal 531 electronic unit supplied with the volumetric meter).

**Approved to MID 2014/32/EU (EN1434) Class 2.**

Part no.	Description	DN	PN	Qn (m <sup>3</sup> /h)	Pcs. pack	Package
<b>0440L1-20R</b>	110mm, Radio, MID, brass	G 3/4"	-	1.0	1	1
<b>0440L2-20R</b>	110mm, Radio, MID, brass	G 3/4"	-	1.5	1	1
<b>0440L5-25R</b>	190mm, Radio, MID, brass	G 1"	16/25	2.5	1	1
<b>0440L7-32R</b>	260mm, Radio, MID, brass	G 1.1/4"	16/25	6.0	1	1
<b>0440L8-50R</b>	300mm, Radio, MID, brass	G 2"	16/25	10	1	1
<b>0440LA-25R</b>	260mm, Radio, MID, brass	25	16/25	6.0	1	1
<b>0440LB-40R</b>	300mm, Radio, MID, brass	40	16/25	10	1	1
<b>0440FC-50R</b>	270mm, Radio, MID, cast iron	50	16/25	15	1	1
<b>0440FD-65R</b>	300mm, Radio, MID, cast iron	65	16/25	25	1	1
<b>0440FF-80R</b>	300mm, Radio, MID, cast iron	80	16/25	40	1	1
<b>0440FH-100R</b>	360mm, Radio, MID, cast iron	100	16	60	1	1
<b>0440FJ-125R</b>	250mm, Radio, MID, cast iron	125	16	100	1	1
<b>0440FL-150R</b>	300mm, Radio, MID, cast iron	150	16	150	1	1
<b>0440L1-20M</b>	110mm, M-Bus, MID, brass	G 3/4"	-	1.0	1	1
<b>0440L2-20M</b>	110mm, M-Bus, MID, brass	G 3/4"	-	1.5	1	1
<b>0440L5-25M</b>	190mm, M-Bus, MID, brass	G 1"	16/25	2.5	1	1
<b>0440L7-32M</b>	260mm, M-Bus, MID, brass	G1-1/4"	16/25	6.0	1	1
<b>0440L8-50M</b>	300mm, M-Bus, MID, brass	G 2"	16/25	10	1	1
<b>0440LA-25M</b>	260mm, M-Bus, MID, brass	25	16/25	6.0	1	1
<b>0440LB-40M</b>	300mm, M-Bus, MID, brass	40	16/25	10	1	1
<b>0440FC-50M</b>	270mm, M-Bus, MID, cast iron	50	16/25	15	1	1
<b>0440FD-65M</b>	300mm, M-Bus, MID, cast iron	65	16/25	25	1	1
<b>0440FF-80M</b>	300mm, M-Bus, MID, cast iron	80	16/25	40	1	1
<b>0440FH-100M</b>	360mm, M-Bus, MID, cast iron	100	16	60	1	1
<b>0440FJ-125M</b>	250mm, M-Bus, MID, cast iron	125	16	100	1	1
<b>0440FL-150M</b>	300 mm, M-bus, MID, cast iron	150	16	150	1	1

Dimensions on page 242

**SUPERCAL 739**

Compact thermal energy meter for heating and cooling systems, consisting of: single-jet turbine volumetric flow meter, electronic energy meter, temperature probes.

Operating temperature range: 5to90°C. Battery life: 12 years + 1. Protection rating IP65.

Reading with bidirectional radio module. Available in models for reading with M-Bus.

For metering heating only, cooling only or heating and cooling, with two additional pulse inputs.

Dimensions: DN15, G 3/4", 110mm DN20, G 1", 130mm.

Compatible with RDRV model unions (see chapter 11).

**Complies with MID MI004, EN 1434 Class 3.**

Part no.	DN	Description	Qn m <sup>3</sup> /h	Pcs. pack	Package
<b>073915CFR</b>	15	Cooling/Heating + Radio Module	1.5	1	1
<b>073915CFIR</b>	15	Cooling/Heating + 2 pulse inputs + Radio Module	1.5	1	1
<b>073915CFM</b>	15	Cooling/Heating + M-Bus Module	1,5	1	1
<b>073915CFIM</b>	15	Cooling/Heating + 2 pulse inputs + M-Bus Module	1,5	1	1
<b>073920CFR</b>	20	Cooling/Heating + Radio Module	2.5	1	1
<b>073920CFIR</b>	20	Cooling/Heating + 2 pulse inputs + Radio Module	2.5	1	1
<b>073920CFM</b>	20	Cooling/Heating + M-Bus Module	2,5	1	1
<b>073920CFIM</b>	20	Cooling/Heating + 2 pulse inputs + M-Bus Module	2,5	1	1

Dimensions on page 244

## SUPERSTATIC 789



The Superstatic 789 is a rugged, compact, lightweight energy meter consisting of a volumetric meter made of high-tech composite material, an energy meter with various options and two temperature sensors. It is used for calculating heating and/or cooling energy consumption in all appropriate domestic and commercial applications. Volumetric metering is handled by an exclusive fluidic oscillation measurement system.

The meter contains no moving parts and is therefore immune to wear and unaffected by dirt or air bubbles in the metered fluid. The fluidic oscillation system ensures high stability and an extremely high degree of repeatability of the readings. It is also compatible with water mixed with glycol and other mixes, with a fluid temperature of 0 to 110°C.

Available in two different versions: Qp 1.5 m<sup>3</sup>/h, G3/4", 110mm; Qp 2.5 m<sup>3</sup>/h, G1", 130mm. Pt1000 temperature sensors ø5.2 mm. Powered by a battery with life of 12+1 years. Connection options (available to order): M-Bus (EN1434); bidirectional (433Mhz, 10mW); two pulse outputs; two additional pulse inputs for domestic water (hot and cold).

Compatible with RDRV model unions (see chapter 11).

**Complies with the Measuring Instruments Directive (2014/32/EU) and EN 1434 class 2.**

Part no.	Description	DN	Qn (m <sup>3</sup> /h)	Pcs. pack	Package
<b>078915CFR</b>	Cooling/Heating + Radio Module	15	1,5	1	1
<b>078915CFIR</b>	Cooling/Heating + 2 pulse inputs + Radio Module	15	1,5	1	1
<b>078915CFM</b>	Cooling/Heating + M-Bus Module	15	1,5	1	1
<b>078915CFIM</b>	Cooling/Heating + 2 pulse inputs + M-Bus Module	15	1,5	1	1
<b>078920CFR</b>	Cooling/Heating + Radio Module	20	2,5	1	1
<b>078920CFIR</b>	Cooling/Heating + 2 pulse inputs + Radio Module	20	2,5	1	1
<b>078920CFM</b>	Cooling/Heating + M-Bus Module	20	2,5	1	1
<b>078920CFIM</b>	Cooling/Heating + 2 pulse inputs + M-Bus Module	20	2,5	1	1

Dimensions on page 244

## Flow meters

### WMT



Single-jet turbine flow meter for hot water. PN 16. Max. fluid temperature: 90°C. Direct dry-dial reading with magnetic transmission. Brass body complete with nuts and sleeves. Threaded connections. Suitable for both horizontal and vertical installation. Complete with pulse transmitter. Slot for temperature sensor. The part numbers with extension SE denote products used for thermal energy metering (MI004 marking for MID purposes). The part numbers with extension AF and AFOEM denote products used for domestic cold water metering (MI001 marking). The part numbers with extension AC and ACOEM denote products used for domestic hot water metering (MI001 marking).

**Approved to MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Part no.	DN	Qn (m3/h)	l/pulse	Pcs. pack	Package
WMT15-15SE	15	1.5	2.5	1	1
WMT15-15AF	15	2.5	2.5	1	18
WMT15-15AC	15	2.5	2.5	1	18
WMT20-25SE	20	2.5	2.5	1	1
WMT20-20AFOEM	20	4.0	2.5	1	18
WMT20-20ACOEM	20	4.0	2.5	1	18

Dimensions on page 243

### MTW90



Multi-jet turbine flow meter for hot water. PN16. Max. fluid temperature: 90°C. Direct dry-dial reading with magnetic transmission. Brass body complete with nuts and sleeves. Threaded connections. For horizontal installation only. Complete with pulse transmitter.

The part numbers with extension E (product identification marking MI004 - art. 1 of the decree) denote products used for thermal energy metering. Part numbers with extension V (product identification marking MI001) denote products used for volumetric metering of hot and cold water.

**Approved to MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Part no.	DN	Qn (m3/h)	l/pulse	Pcs. pack	Package
MTW15E	15	1.5	2.5	1	1
MTW15V	15	1.5	2.5	1	1
MTW20E	20	2.5	2.5	1	1
MTW20V	20	2.5	2.5	1	1
MTW25E	25	3.5	2.5	1	1
MTW25V	25	3.5	2.5	1	1
MTW32E	32	6	25	1	1
MTW32V	32	6	25	1	1
MTW40E	40	10	25	1	1
MTW40V	40	10	25	1	1
MTW50E	50	15	25	1	1
MTW50V	50	15	25	1	1

Dimensions on page 243

### MTW130



Multi-jet turbine flow meter for hot water. Max. fluid temperature: 130°C. Dry-dial reading. Magnetic transmission. Horizontal installation only. PN16. Complete with pulse transmitter (K=10).

**Complies with MID 2004/22/EU MI004.**

Part no.	DN	Qn (m3/h)	l/pulse	Pcs. pack	Package
MTW15-130	15	1.5	10	1	1
MTW20-130	20	2.5	10	1	1
MTW25-130	25	3.5	10	1	1
MTW32-130	32	6	10	1	1
MTW40-130	40	10	10	1	1
MTW50-130	50	15	10	1	1

Dimensions on page 243

## MTW-V



Multi-jet turbine flow meter for hot water. PN16. Max. fluid temperature: 90°C. Direct dry-dial reading with magnetic transmission. Brass body complete with nuts and sleeves. Threaded connections. Suitable for vertical installation with fluid inlet from bottom. Complete with pulse transmitter. The part numbers with extension E (product identification marking MI004 - art .1 of the decree) denote products used for thermal energy metering.

Part numbers with extension V (product identification marking MI001) denote products used for volumetric metering of hot and cold water.

**Approved to MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Part no.	DN	Qn (m <sup>3</sup> /h)	l/pulse	Pcs. pack	Package
<b>MTW-V20E</b>	20	2.5	2.5	1	1
<b>MTW-V20V</b>	20	2.5	2.5	1	1
<b>MTW-V25E</b>	25	3.5	2.5	1	1
<b>MTW-V25V</b>	25	3.5	2.5	1	1
<b>MTW-V32E</b>	32	6	25	1	1
<b>MTW-V32V</b>	32	6	25	1	1
<b>MTW-V40E</b>	40	10	25	1	1
<b>MTW-V40V</b>	40	10	25	1	1

Dimensions on page 243

## MTW-VA



Multi-jet turbine flow meter for hot water. PN16. Max. fluid temperature: 90°C. Direct dry-dial reading with magnetic transmission. Brass body complete with nuts and sleeves. Threaded connections. Suitable for vertical installation with fluid inlet from top. Complete with pulse transmitter.

The part numbers with extension E (product identification marking MI004 - art .1 of the decree) denote products used for thermal energy metering. Part numbers with extension V (product identification marking MI001) denote products used for volumetric metering of hot and cold water. **Approved to MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.**

Part no.	DN	Qn (m <sup>3</sup> /h)	l/pulse	Pcs. pack	Package
<b>MTW-VA20E</b>	20	2.5	2.5	1	1
<b>MTW-VA20V</b>	20	2.5	2.5	1	1
<b>MTW-VA25E</b>	25	3.5	2.5	1	1
<b>MTW-VA25V</b>	25	3.5	2.5	1	1
<b>MTW-VA32E</b>	32	6	25	1	1
<b>MTW-VA32V</b>	32	6	25	1	1
<b>MTW-VA40E</b>	40	10	25	1	1
<b>MTW-VA40V</b>	40	10	25	1	1

Dimensions on page 243

## WPMM



Woltmann turbine flow meter for water. PN16.  
Max. fluid temperature: 130°C. Direct dry-dial reading with magnetic transmission. Cast iron body.  
Suitable for horizontal, vertical and inclined installation.  
Complete with pulse transmitter.

Approved to MID 2014/32/EU, Italian legislative decree No. 22 of 2/02/07.

Part no.	DN	Qn (m <sup>3</sup> /h)	l/pulse	Pcs. pack	Package
<b>WPMM50</b>	50	15	100	1	1
<b>WPMM65</b>	65	25	100	1	1
<b>WPMM80</b>	80	40	100	1	1
<b>WPMM100</b>	100	60	100	1	1
<b>WPMM125</b>	125	100	100	1	1
<b>WPMM150</b>	150	150	1000	1	1
<b>WPMM200</b>	200	250	1000	1	1
<b>WPMM250</b>	250	400	1000	1	1
<b>WPMM300</b>	300	600	1000	1	1

Dimensions on page 243

## 0127



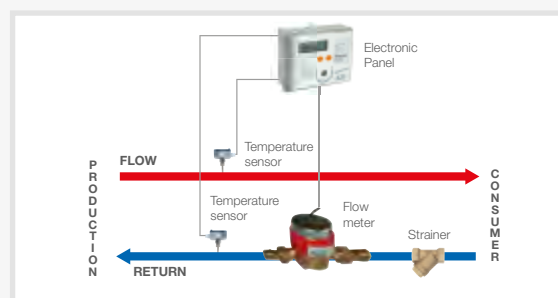
Single-jet volumetric meter for domestic water (DHW and DCW), for vertical or horizontal installation, PN16, maximum temperature 90°C, certified to MID 001 complete with Supercom 581 bidirectional radio module (433 Mhz) for remote reading with a Supercom 636 unit or a Supercom 646 concentrator. Features: G3/4, DN15, 1.5 m<sup>3</sup>/h (centre distance 80 and 110mm), G1", DN20, 2.5 m<sup>3</sup>/h (centre distance 130mm).

Part no.	Description	DN	PN	Qn (m <sup>3</sup> /h)	Pcs. pack	Package
<b>0127RC20</b>	T. max, 90°C, 110 mm, DHW + Radio Module 0581	G 3/4"	16	1,5	1	1
<b>0127RC2080</b>	T. max, 90°C, 80 mm, DHW + Radio Module 0581	G 3/4"	16	1,5	1	1
<b>0127RC25</b>	T. max, 90°C, 130 mm, DHW + Radio Module 0581	G 1"	16	2,5	1	1
<b>0127RF20</b>	T. max, 90°C, 110 mm, DCW + Radio Module 0581	G 3/4"	16	1,5	1	1
<b>0127RF2080</b>	T. max, 90°C, 80 mm, DCW + Radio Module 0581	G 3/4"	16	1,5	1	1
<b>0127RF25</b>	T. max, 90°C, 130 mm, DCW + Radio Module 0581	G 1"	16	2,5	1	1

### TECHNICAL NOTE - Water circuit diagram. 531 Series thermal energy meter

531 Series **thermal energy meters**, combined with volumetric flow meters, provide a direct metering system in modern, multi-consumer systems.

Using these devices in conjunction with temperature control units aligns the heating system with regulatory requirements (Italian legislative decree 192/05 as amended) and enables the user to manage and optimise indoor comfort conditions, and save energy.



## M-Bus data concentrators

### MR006



Concentrator for central reading of M-Bus EN1434 thermal energy meters. Equipped with two RS232 serial outputs, one for the local Operator Station and one for the telephone modem (not supplied). Multi-function display for local reading of operating data/parameters. Power supply 11 to 28 VDC or 13 to 18VAC (supplied as standard). Compatible with commercially available modems.

Part no.	Description	Pcs. pack	Package
<b>MR006DL</b>	Max 20 thermal energy meters	1	1

### MR004DL



Concentrator for central reading of M-Bus EN1434 thermal energy meters. Equipped with two RS232 serial outputs, one for the local Operator Station and one for the telephone modem (not supplied). Multi-function display for local reading of operating data/parameters. Power supply 230 VAC. Compatible with commercially available modems.

Part no.	Description	Pcs. pack	Package
<b>MR004DL</b>	Max 60 thermal energy meters	1	1

### DR000



Concentrator for central reading of M-Bus EN1434 thermal energy meters. Equipped with two RS232 serial outputs, one for the Operator Station and one for the telephone modem (not supplied). Multi-function display for local reading of consumption and operating data. Power supply 230VAC. Compatible with commercially available modems.

Part no.	Description	Pcs. pack	Package
<b>DR001</b>	max 250 thermal energy meters	1	1
<b>DR002</b>	max 120 thermal energy meters	1	1

## Instrumentation

### SUPERCOM 636



Bidirectional (433 MHz, 10 mW) walk-by radio modem interface (works in motion outside building) for the parameter setting and reading of all bidirectional RF metering devices covered in Chapter 7. Free-field coverage radius of up to 300 metres from the building. Bluetooth communication to a portable terminal (handheld PDA) or PC (running Microsoft Windows 7, 8 or 10). Powered by 3x1.2 V AAA 1000 mAh rechargeable batteries.

Supplied in rigid, impact-resistant carrying case complete with battery charger.

Part no.	Pcs. pack	Package
<b>0636R102</b>	1	1

### 566



Electronic heat cost allocator for use with 4 W to 16,000 W radiators. Operation with one probe or two probes with automatic de-activation in critical room temperature reading conditions. Bidirectional radio communication (433 MHz, 10 mW) and optical interface for setting parameters and reading consumption data. Stores 18 monthly values or 144 monthly values (via infrared), 36 monthly radiator temperature values (programmable). 6-digit display with user browse button. Lithium battery (life 10 years + 1). Pre-fitted with tamper-proof seal. Up to 3 anti-tamper passwords.

Automatic switch-on at installation stage. Minimum design temperature: 35/55°C (operation with one probe/two probes). Maximum design temperature: 90°C. Standard mounting kit included. Can be connected to a remote sensor instead of the internal probe.

Approved to EN834.

Part no.	Power supply	Temp. Sensor	Display	Length Cable	Pcs. pack	Package
<b>566</b>	battery	0–120°C	LCD 6 digits		10	50
<b>0565A004</b>	remote sensor			1.75m	1	1

Dimensions on page 244

### SUPERCOM 646



Radio concentrator for reading and storing data acquired by all bidirectional RF metering devices covered in Chapter 7. Indoor coverage radius of up to 30 metres, the equivalent of 5 storeys of an average tower block (according to type of structure). Coverage radius can be extended by installing up to a maximum of 6 SUPERCOM 656 repeaters connected in series, plus a further 3 for amplified branch. Data reading and storage from up to 1000 radio addresses. 433.82 MHz bidirectional radio communication (angle-adjustable antenna), GSM/GPRS or 3G/GPRS module USB port. Download stored data to a remote PC via a GSM/GPRS or 3G/GPRS connection or USB device. Software for reading and exporting billing data in Excel format supplied as standard.

Part no.	Description	Pcs. pack	Package
<b>0646RX221</b>	230 V - GSM/GPRS communication module - discontinued, available while stocks last	1	1
<b>0646RX291</b>	230 V - 3G/GPRS communication module	1	1

Dimensions on page 244

### SUPERCOM 656



Radio signal repeater for extending the coverage radius of 646 Series radio data concentrators. Coverage radius of up to 30 metres, the equivalent of 3 storeys of an average tower block. Coverage radius can be extended by installing 3 additional repeaters of the same series (maximum 6 amplifiers per series).

433.82 MHz bidirectional radio communication (angle-adjustable antenna) and USB port

Part no.	Power supply	Pcs. pack	Package
<b>0656RX101</b>	Battery	1	1
<b>0656RX221</b>	230V	1	1

Dimensions on page 244



**MOUNTINGS** - mounting accessories

Screws and anchors for fitting electronic heat cost allocators to different types of radiator.



Part no.	Description	Notes	Pcs. pack	Package
<b>0499P26300</b>	Fastener 60x10mm	standard	50	50
<b>0499P26200</b>	Fastener 36mm	multi-purpose	50	50
<b>07</b>	Small fastener 25x10mm	aluminium radiators	50	50
<b>14</b>	Dovetail fastener	tubular radiators	50	50
<b>0499P28100</b>	Expansion bolt	order 2 pcs.	50	50
<b>0499P27400</b>	Nut for expansion bolt		50	50
<b>0499P27300</b>	Screw M4x40	for std fastener and dovetail fastener	50	50
<b>06</b>	Screw M3x25	for small fastener	50	50

**PROFILE** - mounting accessories

Aluminium base for electronic heat cost allocators.



Part no.	Description	Pcs. pack	Package
<b>0555P005</b>	Aluminium profile	50	50

**SEAL** - mounting accessories

Tamper-proof mechanical seal for electronic heat cost allocators.



Part no.	Description	Pcs. pack	Package
<b>0555P004</b>	Anti-tamper seal	50	50

**PACTAN** - mounting accessories

Special adhesive with high thermal performance for fitting allocators and external probes to all types of radiator.



Part no.	Description	Pcs. pack	Package
<b>555P036</b>	Silicone 6060	1	1

**SUPERCOM 541**



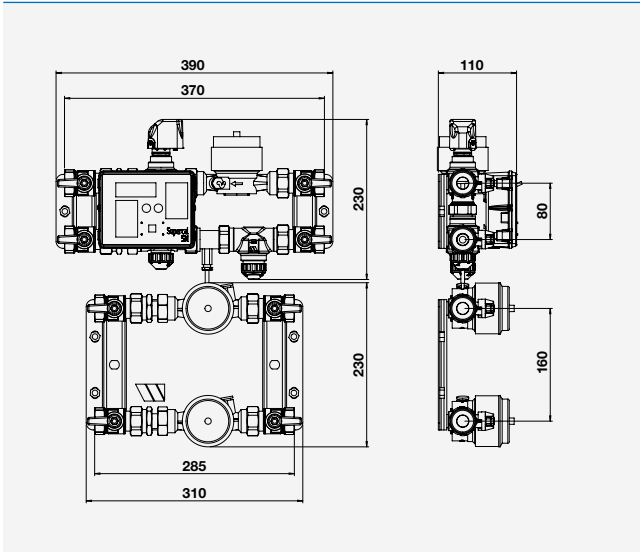
Radio module for pulse conversion and transmission, for remote reading for devices with pulse output. Two configurable inputs (ideal for domestic hot and cold water meters), bidirectional radio communication (433 MHz) compatible with SUPERCOM 636 Series, 646 Series concentrator and 656 Series repeater. Lithium battery (life 12 years). Wall or DIN-rail mounting.

Part no.	Power supply	Pcs. pack	Package
<b>0541R000</b>	Battery	1	1

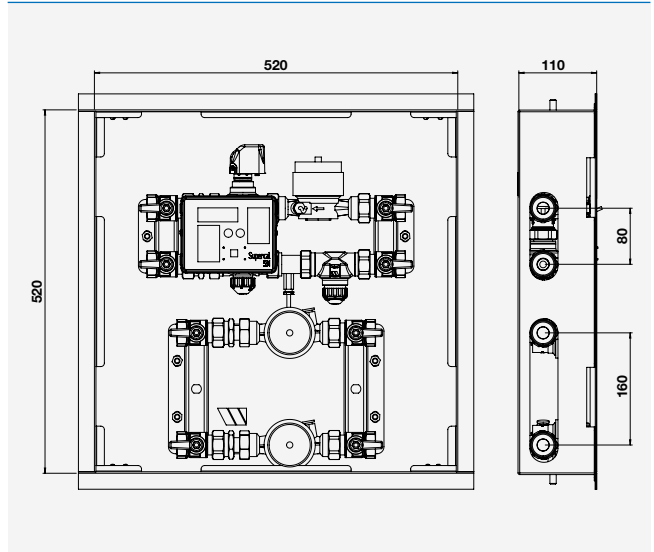
Dimensions on page 244

## Overall dimensions

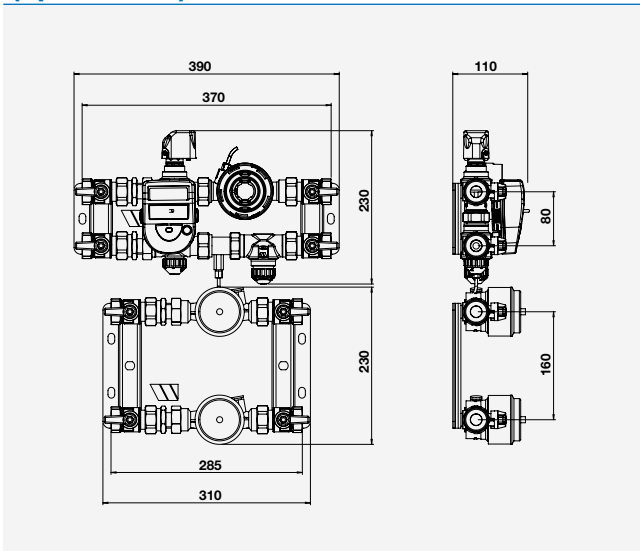
**DOMOCOMPACT MY HOME**  
(open frame)



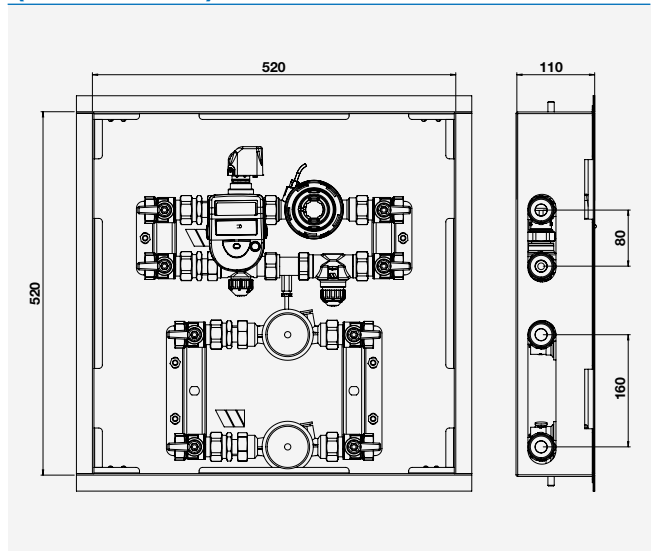
**DOMOCOMPACT MY HOME**  
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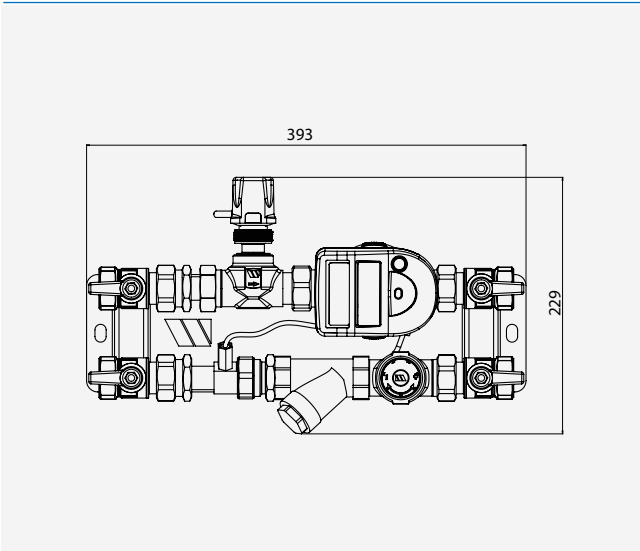
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(open frame)



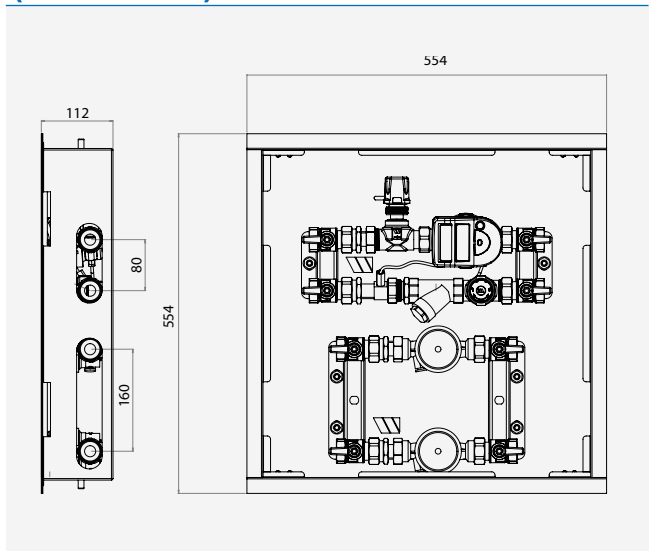
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(closed frame)



**DOMOCOMPACT MY HOME2**  
(open frame)

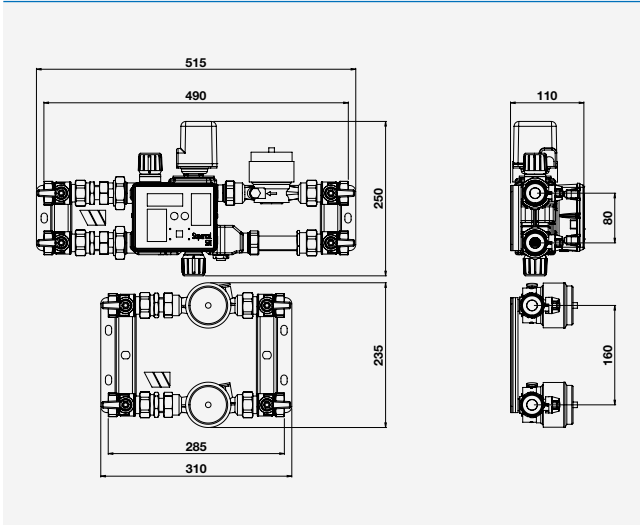


**DOMOCOMPACT MY HOME2**  
(closed frame)

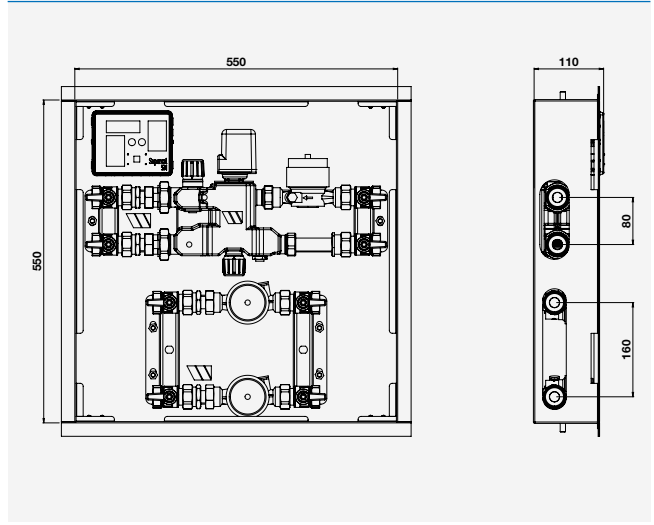


## Overall dimensions

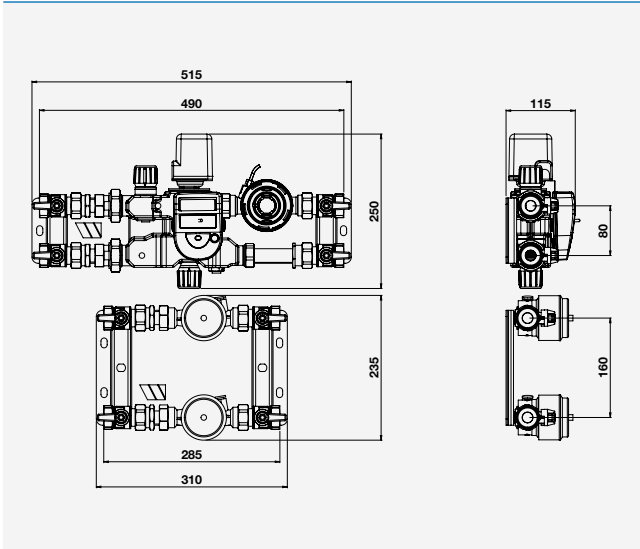
### DOMOCOMPACT FAMILY (open frame)



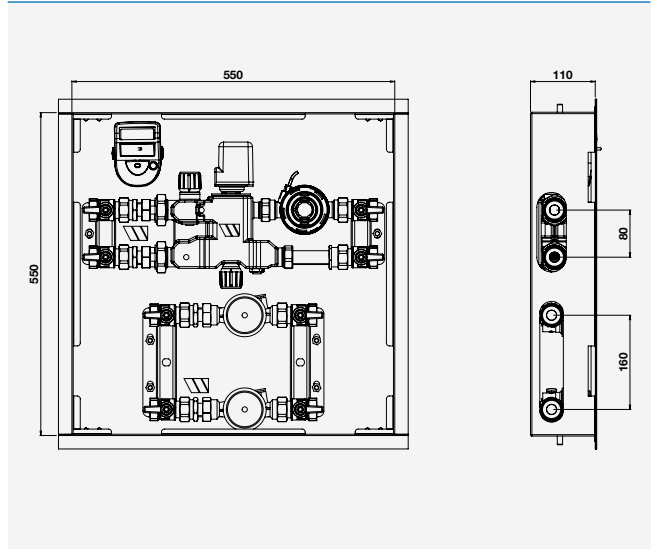
### DOMOCOMPACT FAMILY (closed frame)



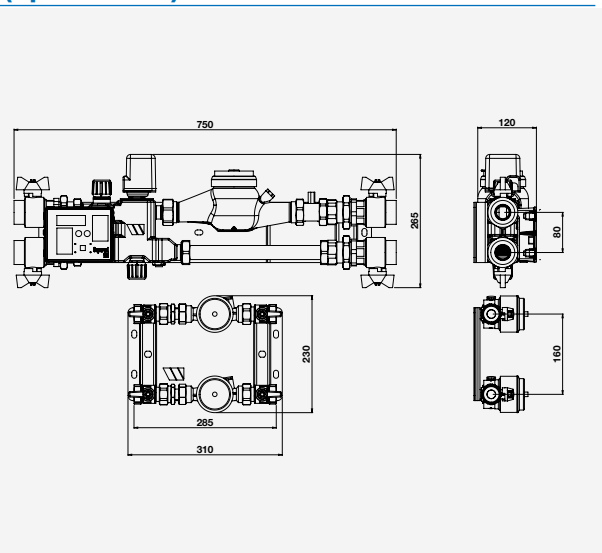
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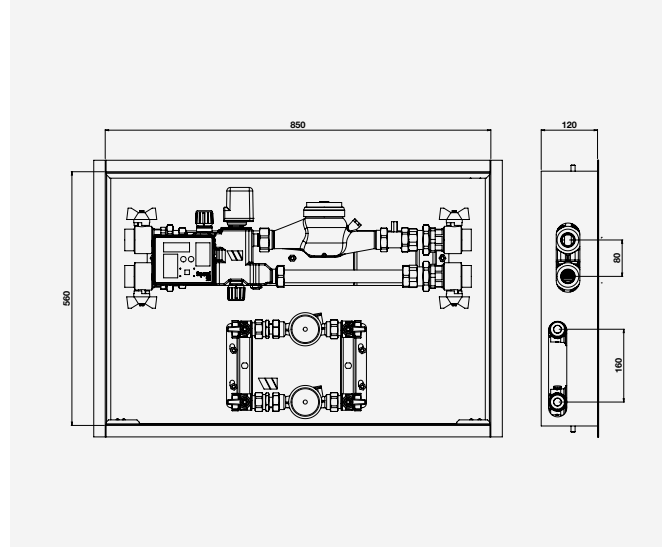
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### DOMOCOMPACT SUITE (open frame)

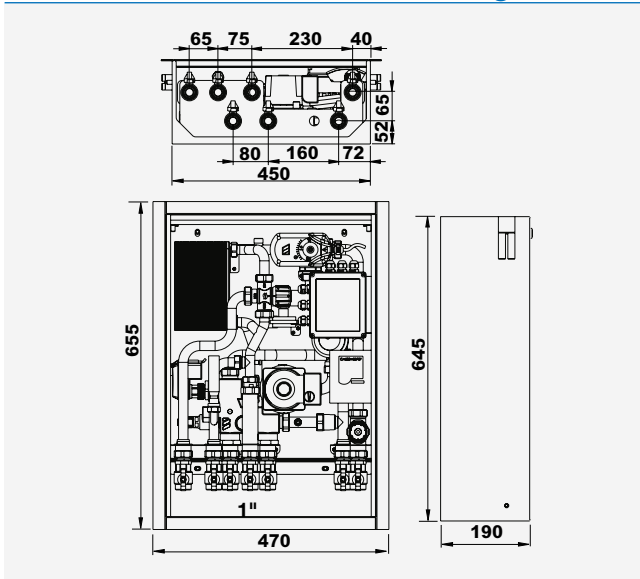


### DOMOCOMPACT SUITE (closed frame)

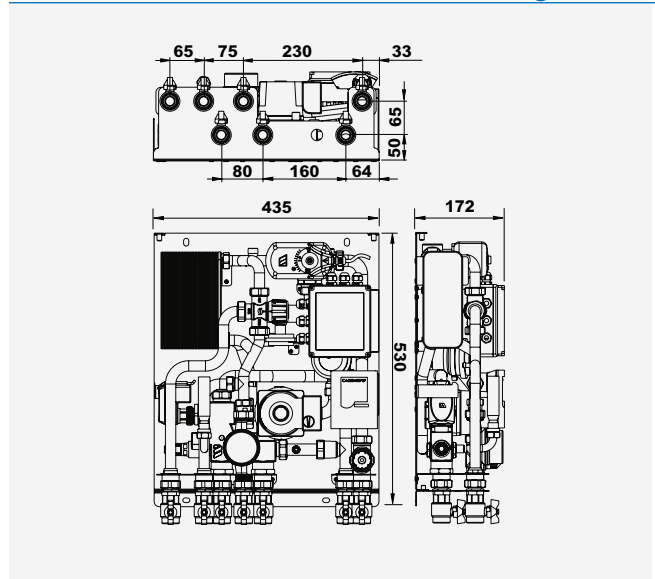


## Overall dimensions

### DOMOCAL -Flush wall-mounting model



### DOMOCAL -Surface wall-mounting model



### SUPERSTATIC 440

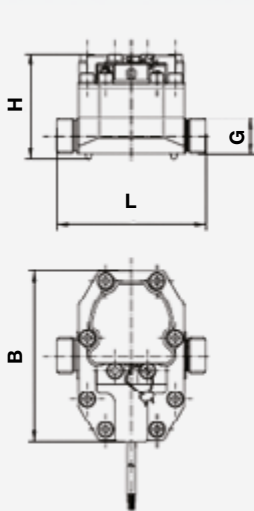


Fig.1

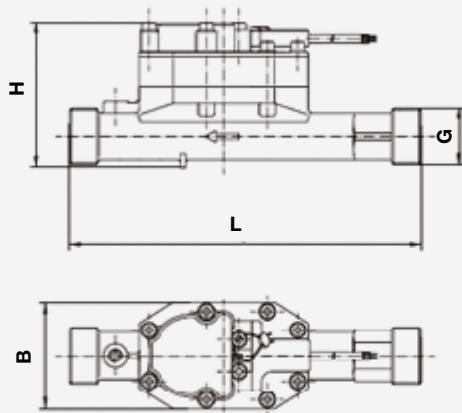


Fig.2

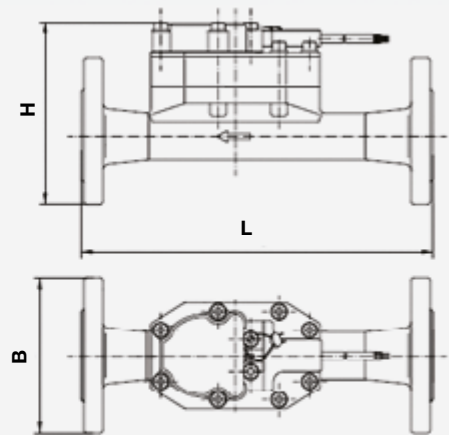
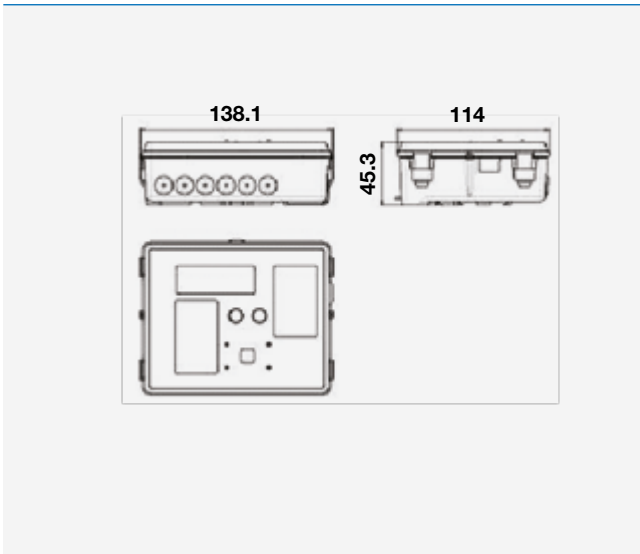


Fig.3

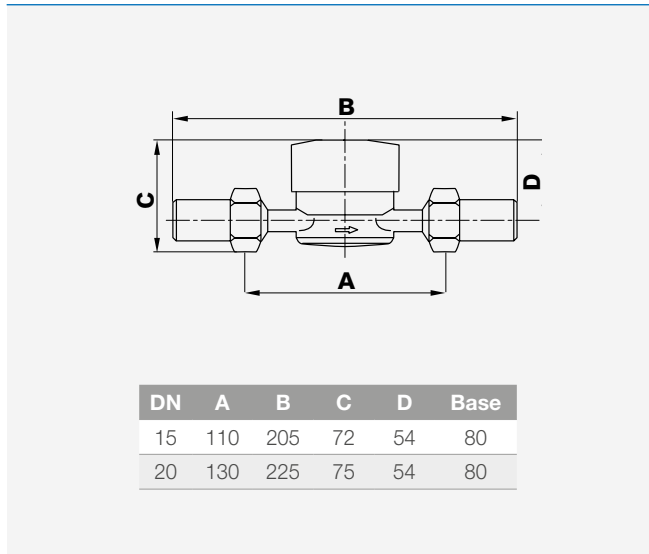
Qp	DN	G	PN	Fig.	B (mm)	H (mm)	L (mm)	h (mm)	# bolts (M)
1 m <sup>3</sup> /h	-	3/4"	16 / 25	1	125	79	110		-
1.5 m <sup>3</sup> /h	-	3/4"	16 / 25		125	79	110		-
2.5 m <sup>3</sup> /h	-	1"	16 / 25		125	79	190		-
6 m <sup>3</sup> /h	-	1 1/4"	16 / 25	2	78	105	260		-
6 m <sup>3</sup> /h	25	-	16 / 25	3	115	134	260	85	4 (M 12)
10 m <sup>3</sup> /h	-	2"	16 / 25	2	78	122	300		-
10 m <sup>3</sup> /h	40	-	16 / 25	3	150	157	300	110	4 (M 16)

## Overall dimensions

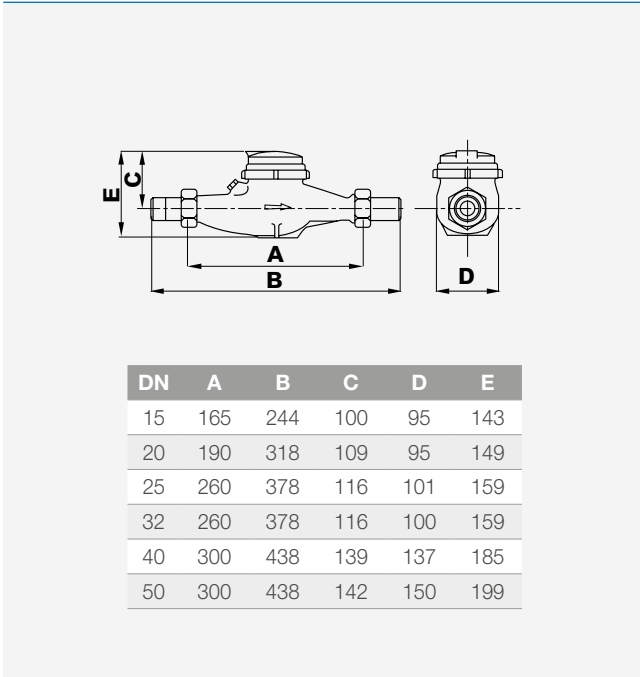
### SUPERCAL 531



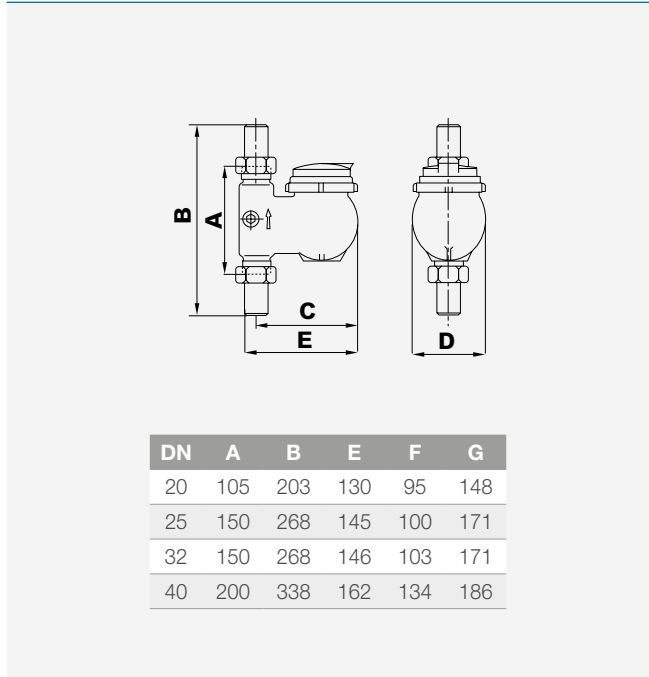
### WMT



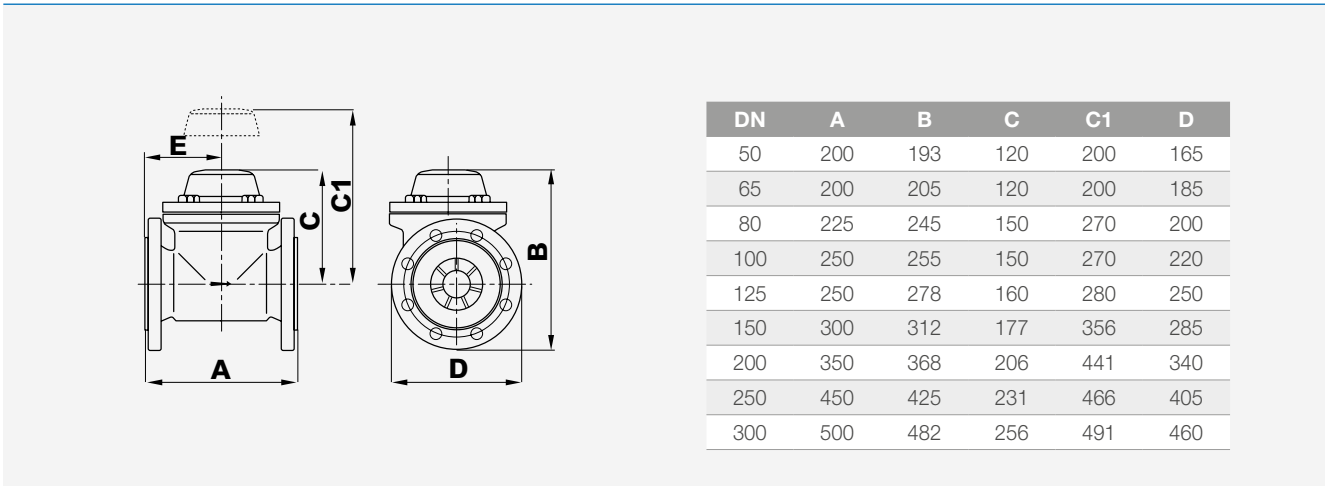
### MTW90-MTW130



### MTW-V/MTW-VA

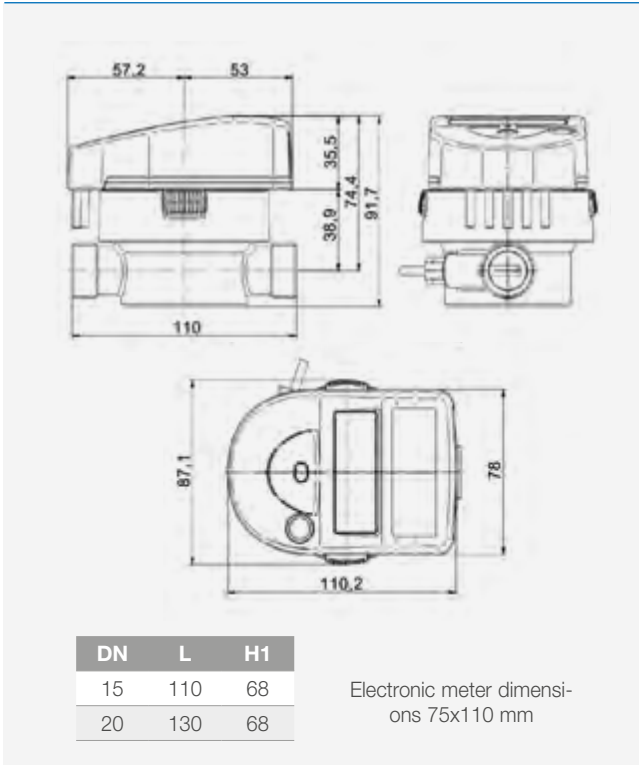


### WPMM

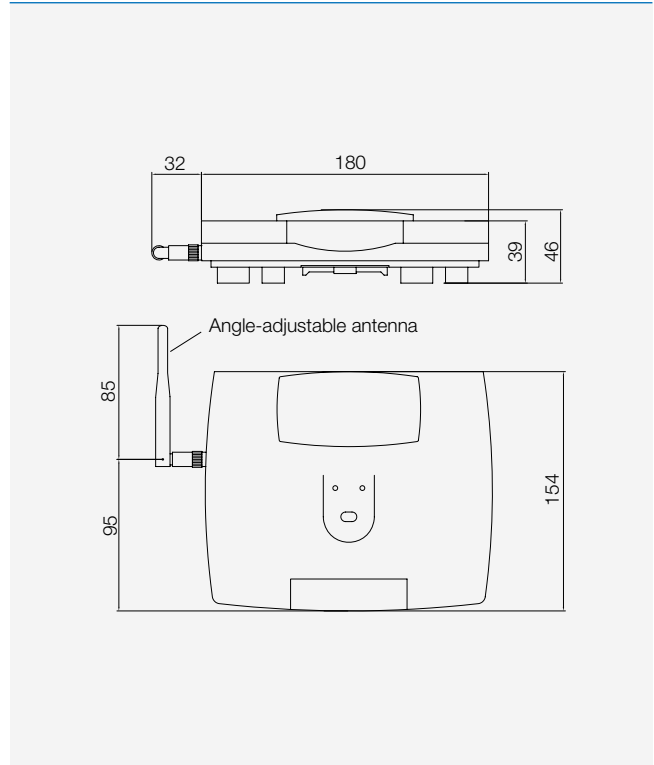


## Overall dimensions

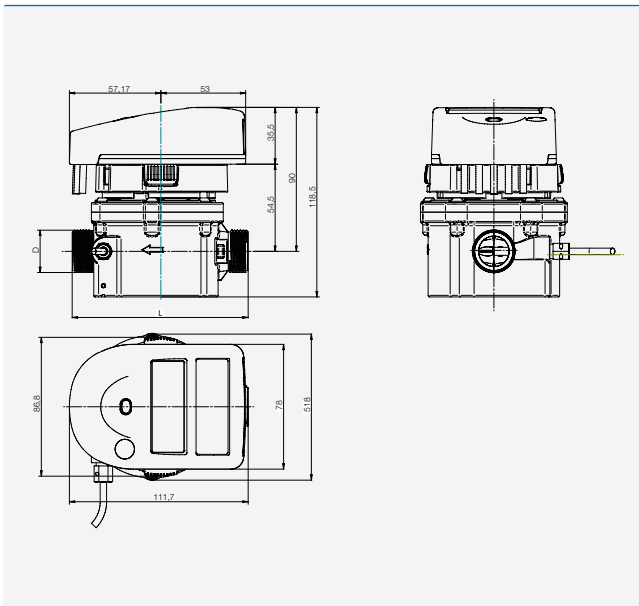
739



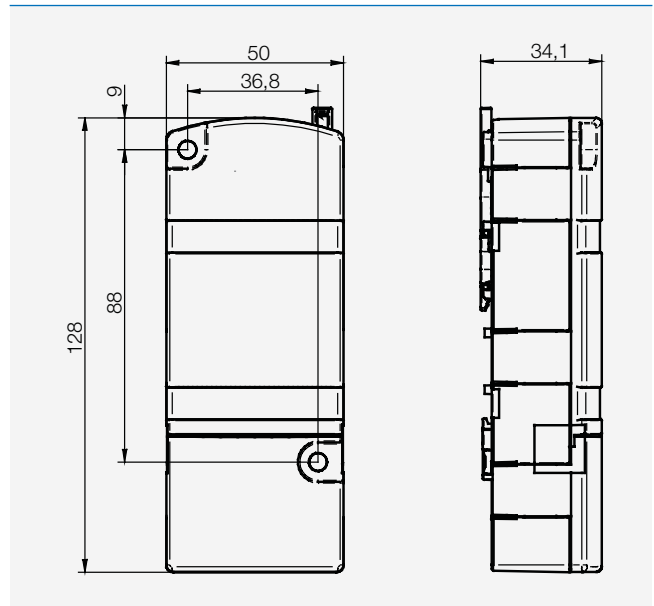
646 - 656



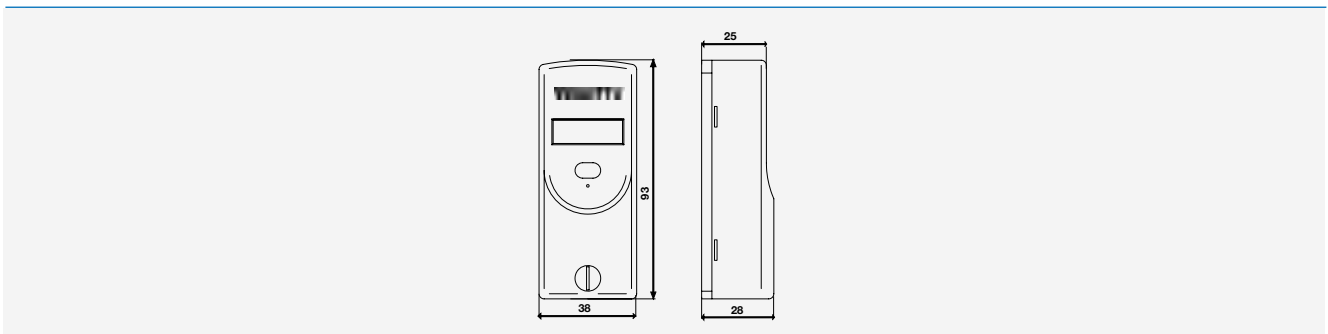
789



541



566



# Chapter 8

## Distribution systems



HKV - 2013A - VA  
Ready-to-mount manifold

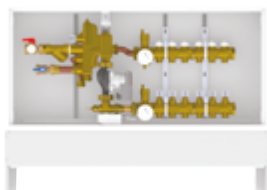
Micrometric control and flow meters  
Stainless steel: corrosion-resistant  
Easy to install

## Chapter 8.1

# RADIANT PANEL SYSTEMS

## Control modules

### DR96F - DOMORADIANT FIXED POINT 96%



Ready-to-mount module for fixed-point control, distribution and pumping of fluid for radiant panel systems.

The system supplies and controls individual circuits with low-temperature fluid and can be set with a range of 20 to 50°C.

The module consists of:

6-way multi-function valve equipped with:

- 3-way valve with bleeding from the primary circuit up to 96%;
- thermostatic actuator with remote sensor;
- built-in low-loss header system;
- balancing valve;
- flow meter (5-50 l/min);
- auxiliary connections (G1") for any additional radiators;
- primary circuit temperature display thermometer;
- shut-off/isolating valves;
- Y-strainer.

Pumping unit: consisting of a variable-speed electric pump in accordance with the Energy-related Products (ErP) Directive (2009/125/EC)

Distribution unit consisting of:

- DN 1" 1/4 F brass manifolds - 822MM Series (return) and FLMR Series (flow)
- EUROCONe DN 3/4" M side outlets
- fitting for manifolds complete with thermometer (0 to 80°C), automatic air vent and drain.

Integrated control system (optional and supplied separately) consisting of:

- 22C/22CX Series ON/OFF electrothermal actuators;
- 4/6-zone modular control boxes (WFHC Series), which can be connected with a weekly programming clock for 2 heating zones;
- electronic room thermostats (WFHT, BT, BT02 Series), also available in wireless version.

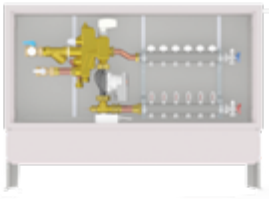
Metal housing and white-painted frame and door.

Optional by-pass kit for differential pressure control.

Part no.	Panel outlets	Pcs/ pack	Package
<b>DR96F-06</b>	Qty. 6 - 3/4" EUROCONe	1	1
<b>DR96F-07</b>	Qty. 7 - 3/4" EUROCONe	1	1
<b>DR96F-08</b>	Qty. 8 - 3/4" EUROCONe	1	1
<b>DR96F-09</b>	Qty. 9 - 3/4" EUROCONe	1	1
<b>DR96F-10</b>	Qty. 10 - 3/4" EUROCONe	1	1
<b>DR96F-11</b>	Qty. 11 - 3/4" EUROCONe	1	1
<b>DR96F-12</b>	Qty. 12 - 3/4" EUROCONe	1	1



## DR96M - MODULATING DOMORADIANT



Ready-to-mount module with modulating control and unit for distribution and pumping of hot fluid at low temperature or chilled fluid for radiant panel heating/cooling systems.

Complete with contact safety thermostat and thermal insulation.

230V 3-point actuator, stainless steel distribution manifolds, compatible with 22C, 22CX, and 26LC Series.

6-way multi-function valve with:

- 3-way valve with bleeding from the primary circuit up to 96%;
- electronic actuator (EMUJC-230) with supply voltage of 230V and 3-point control signal;
- built-in low-loss header;
- balancing valve;
- flow meter (5-50 l/min);
- auxiliary connections for additional and/or dehumidification terminal units, if applicable;
- primary circuit temperature control thermometer;
- shut-off valves;
- brass Y-strainer.

Pumping unit consisting of a variable-speed electric pump in accordance with the Energy-related Products (ErP) Directive (2009/125/EC)

Distribution unit consisting of:

- HKV2013 Series stainless steel DN 1" manifolds and Eurocone 3/4" M side outlets, complete with flow meters on the flow side and control valves on the return side;
- fitting for manifolds, complete with thermometer, float-type air vent valve and water drain.

Integrated control system (optional and supplied separately) with:

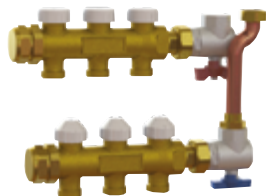
- ON/OFF electrothermal actuators (22C, 22CX, and 26LC Series);
- 4/6-zone modular control boxes (WFHC, BT02 Series), which can be connected with a weekly programming clock for 2 heating zones;
- electronic room thermostats (WFHT, BT, BT02 Series), also available in wireless version.

Metal housing and white-painted frame and door.

RCL-HC Series climatic control system (optional, supplied separately) for heating and cooling.

Part no.	Panel outlets	Pcs/ pack	Package
<b>DR96M-06</b>	Qty. 6 - 3/4" EUROCONE	1	1
<b>DR96M-07</b>	Qty. 7 - 3/4" EUROCONE	1	1
<b>DR96M-08</b>	Qty. 8 - 3/4" EUROCONE	1	1
<b>DR96M-09</b>	Qty. 9 - 3/4" EUROCONE	1	1
<b>DR96M-10</b>	Qty. 10 - 3/4" EUROCONE	1	1
<b>DR96M-11</b>	Qty. 11 - 3/4" EUROCONE	1	1
<b>DR96M-12</b>	Qty. 12 - 3/4" EUROCONE	1	1

## CAT96

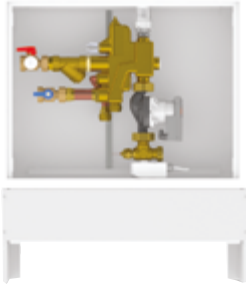


Manifold unit for direct supply of additional and/or dehumidification terminal units with hot fluid at HIGH temperature or chilled fluid:

- 822MME Series DN 3/4" brass manifold (return) with 2 or 3 EUROCONE DN 3/4" side outlets;
- 822MRE Series DN 3/4" brass manifold (flow) with 2 or 3 EUROCONE DN 3/4" side outlets;
- shut-off valves;
- connection pipe.

Part no.	Direct outlets	Pcs/ pack	Package
<b>CAT96-2</b>	Qty. 2 - 3/4" EUROCONE	1	1
<b>CAT96-3</b>	Qty. 3 - 3/4" EUROCONE	1	1

### DR96F-D - DOMORADIANT FIXED-POINT DISTRIBUTION ONLY



Ready-to-mount module with fixed control and unit for distribution and pumping of hot fluid at low temperature or chilled fluid for radiant panel heating systems.

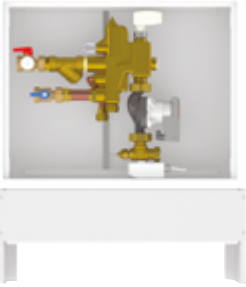
Complete with contact safety thermostat and thermal insulation.

- thermostatic actuator with remote sensor;
- 6-way multi-function valve with:
  - 3-way valve with bleeding from the primary circuit up to 96%;
  - thermostatic actuator with remote sensor;
  - built-in low-loss header;
  - balancing valve;
  - flow meter (5-50 l/min);
  - auxiliary connections for additional and/or dehumidification terminal units, if applicable;
  - primary circuit temperature control thermometer;
  - shut-off valves;
  - brass Y-strainer.

Pumping unit consisting of a variable-speed electric pump in accordance with the Energy-related Products (ErP) Directive (2009/125/EC)

Part no.	Description	Pcs/ pack	Package
<b>DR96F-D</b>	Distribution module	1	1

### DR96M-D - DOMORADIANT MODULATING DISTRIBUTION ONLY



Ready-to-mount module with modulating control and unit for distribution and pumping of hot fluid at low temperature or chilled fluid for radiant panel heating/cooling systems.

Complete with contact safety thermostat and thermal insulation.

230V 3-point actuator.

- 6-way multi-function valve with:
  - 3-way valve with bleeding from the primary circuit up to 96%;
  - electronic actuator (EMUJC-230) with supply voltage of 230V and 3-point control signal;
  - built-in low-loss header;
  - balancing valve;
  - flow meter (5-50 l/min);
  - auxiliary connections for additional and/or dehumidification terminal units, if applicable;
  - primary circuit temperature control thermometer;
  - shut-off valves;
  - brass Y-strainer.

Pumping unit consisting of a variable-speed electric pump in accordance with the Energy-related Products (ErP) Directive (2009/125/EC)

Part no.	Description	Pcs/ pack	Package
<b>DR96M-D</b>	Distribution module	1	1

### FH-148SD



Thermostatic actuator with remote immersion probe for fixed-point control.

Adjustment 20–50°C. Setting: 20to50°C.

Part no.	Bulb	Pcs/ pack	Package
<b>FH-148SD</b>	97mm	1	1

## ISOTHERM



Mixing, pumping and fixed-point control unit for radiant panel systems. The unit is suitable for direct connection to HKV2013 Series ready-to-mount manifolds. The system can be supplied at boiler temperature (70–80°C) and have the outlets at controlled low temperature.

The unit consists of:

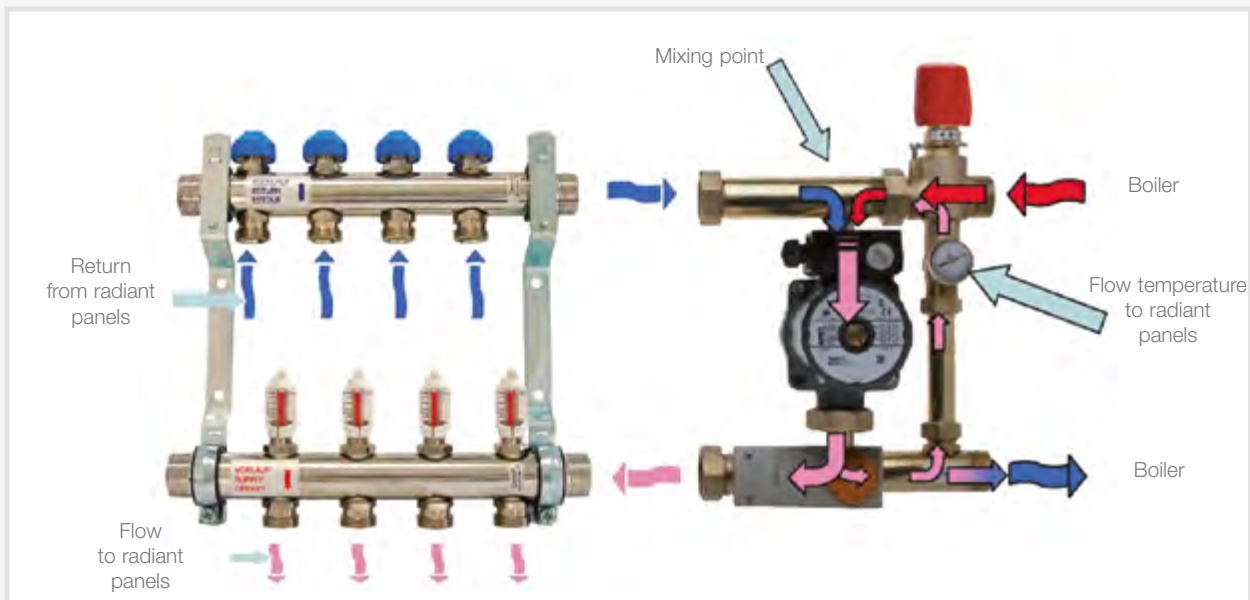
- 3-way thermostatic with setting range of 30–50°C;
- Wilo PARA SCU/6 electric circulation pump;
- adjustable safety thermostat for pump cut-out;
- panel flow precision thermometer;
- suitable for max. power of approximately 15 kW.

Max. operating temperature: 90°C. Max. operating pressure: 6 bar.

Part no.	Max. operating temp.	Pcs/ pack	Package
10084162	90°C	1	1

Dimensions on page 251

### TECHNICAL NOTE - ISOTHERM DIAGRAM



## ISOMIX-F



Compact, ready-to-mount control unit for flow temperature control in radiant panel heating systems with heating demand of up to 14 kW. Flow temperature setting range: 20–70 °C, with temperature limiting and locking function on the thermostatic head. Pre-wired circulation pump and temperature limiter. Can be installed on the right or left of the manifold. Suitable for all 1" M Watts manifolds for heating circuits. Nickel-plated fittings.

Part no.	Description	Pcs/ pack	Package
10084161	With WILO Para SCU/6 circulation pump	1	1
10086195	With Calio SI/7 circulation pump	1	1
10082500	Without circulation pump	1	1

Dimensions on page 251

## ISOMIX-HC



Compact, ready-to-mount control unit, with climate controller, for flow temperature control in radiant panel heating/cooling systems with thermal demand of up to 14 kW. Circulation pump (130 mm), mixing valve with 3-position actuator, temperature limiter, CC-HC digital climate controller and flow temperature and outdoor temperature sensors. The climate controller is pre-wired to the circulation pump, temperature limiter and actuator. Can be installed on the right or left of the manifold. Suitable for all 1" M Watts manifolds for heating circuits. Nickel-plated fittings.

Part no.	Description	Pcs/ pack	Package
<b>10084160</b>	With WILO Para SCU/6 circulation pump	1	1
<b>10086193</b>	With Calio SI/7 circulation pump	1	1

Dimensions on page 251

## Mixing valve for radiant systems

### 63C - AQUAMIX



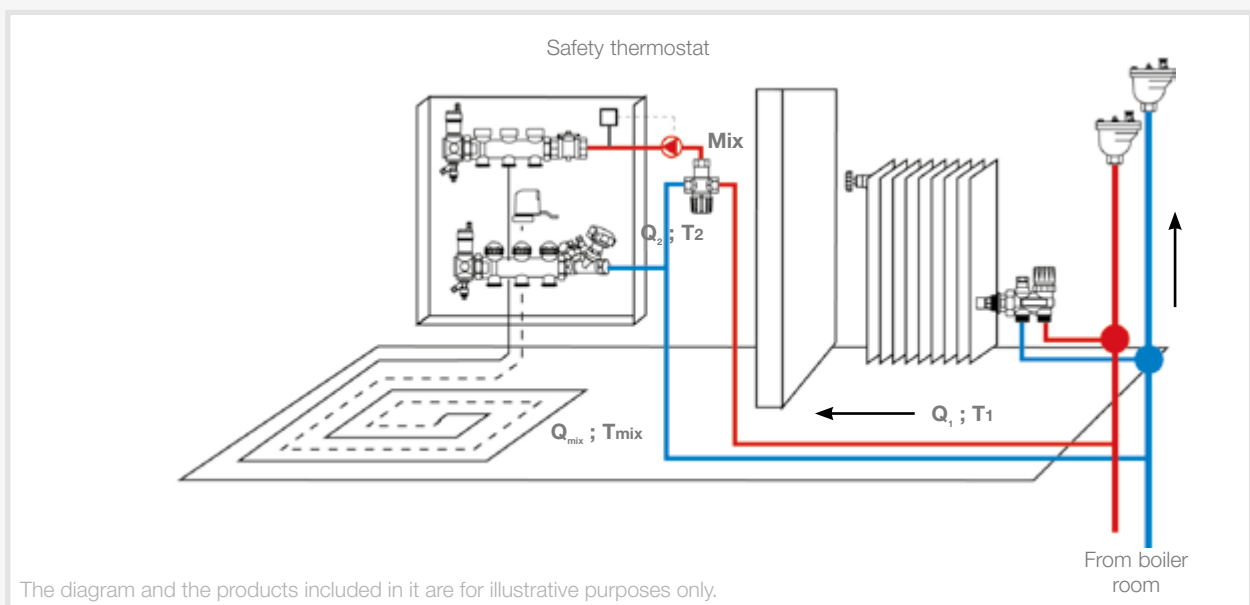
Thermostatic mixing valve for radiant panel systems with 10 setting positions and fixed bypass against overtemperature. Setting range: 25to50°C. Max. differential pressure: 2 bar.

Part no.	DN	Pcs/ pack	Package
<b>6310C34</b>	3/4" FF	1	36
<b>6311C1</b>	1" FF	1	36

Dimensions on page 251

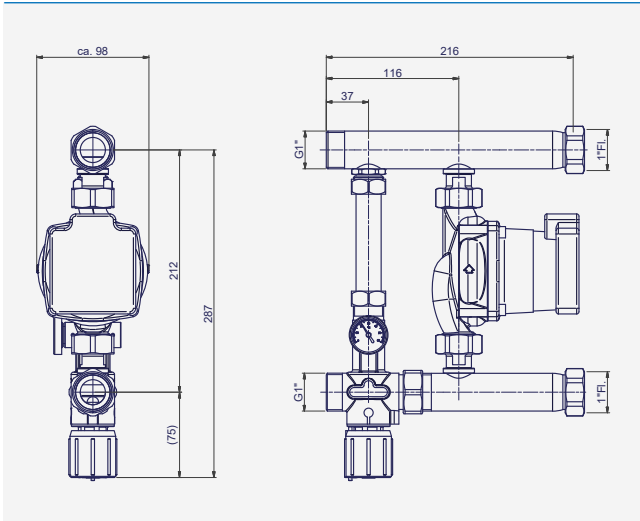
#### TECHNICAL NOTE - AQUAMIX DIAGRAM

Example configuration of AQUAMIX Series valve for radiant panel system with distribution manifold unit (822MM-822MR Series) complete with balancing valve (FO-BV Series) in housing.

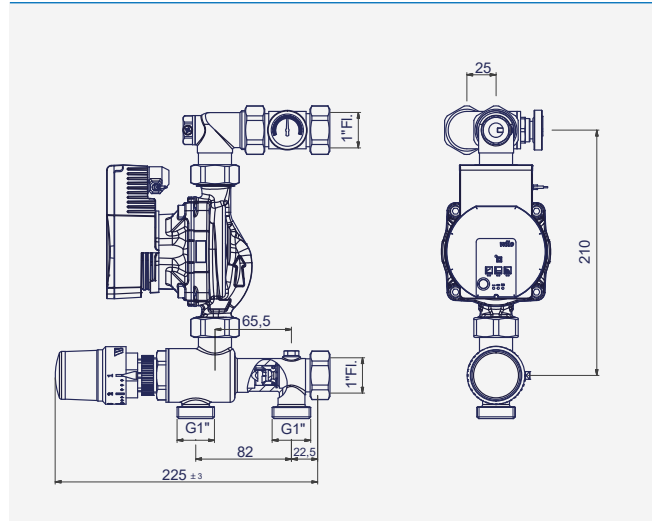


## Overall dimensions

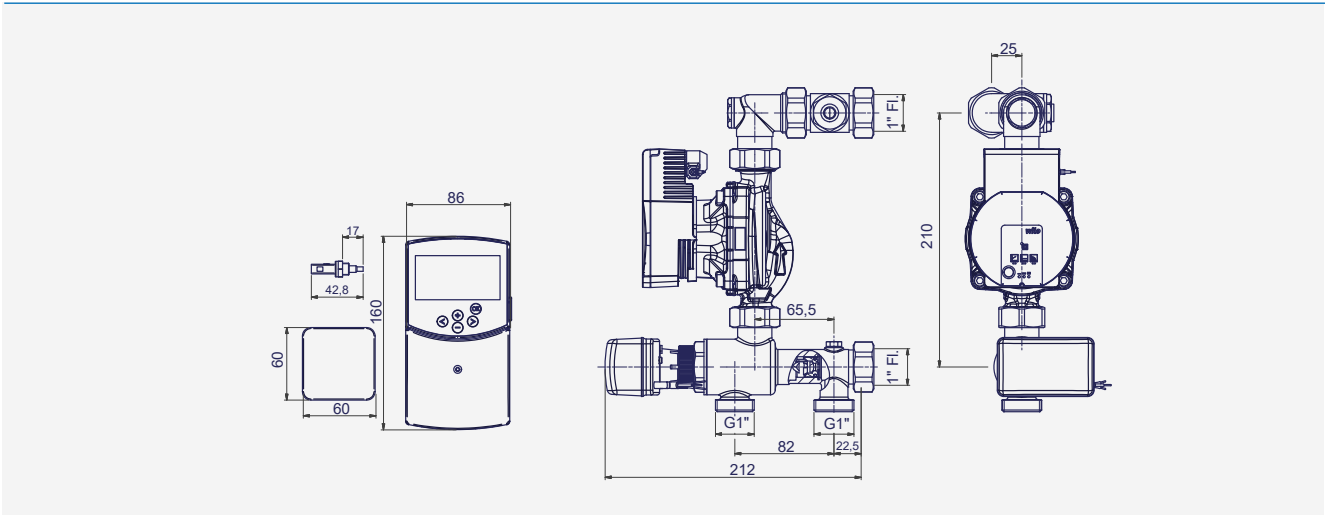
### ISOTHERM



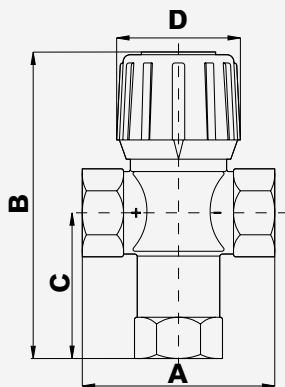
### ISOMIX-F



### ISOMIX-HC



### 63C



DN	A	B	C	D
3/4"	70	107	52	45
1"	80	110	55	45

## Chapter 8.2

# MODUL SYSTEMS

## Zone valves

### 571T



Two-way bronze zone valve, normally closed (NC). ON/OFF operation with an electrothermal actuator (580T Series) with bayonet fitting for connection to body. PN 10. Max. differential pressure (580T Series): 1.5 bar. Operating temperature range: 4to100°C. Disc stroke: 4mm.

Part no.	DN	Kvs	Disc stroke	Pcs/ pack	Package
<b>571T34</b>	3/4" FF	5.5	4mm	1	30
<b>571T1</b>	1" FF	6.8	4mm	1	30
<b>571T114</b>	1.1/4" FF	7.8	4mm	1	30

Dimensions on page 270

### 560T



Three-way bronze zone valve, normally closed (NC). ON/OFF operation with an electrothermal actuator (580T Series) with bayonet fitting for connection to body. PN 10. Max. differential pressure (580T Series): 1.5 bar. Operating temperature range: 4to100°C. Disc stroke: 4mm. Predisposed for fitting a 566T Series bypass setting valve.

To connect the zone valve and the setting valve to the Modul coplanar manifolds, use 565T Series eccentric unions.

Part no.	DN	Kvs	Kvs bypass	Pcs/ pack	Package
<b>560T34</b>	3/4" FF	5.5	3.6	1	30
<b>560T1</b>	1" FF	6.8	3.6	1	30

Dimensions on page 270

### 561T



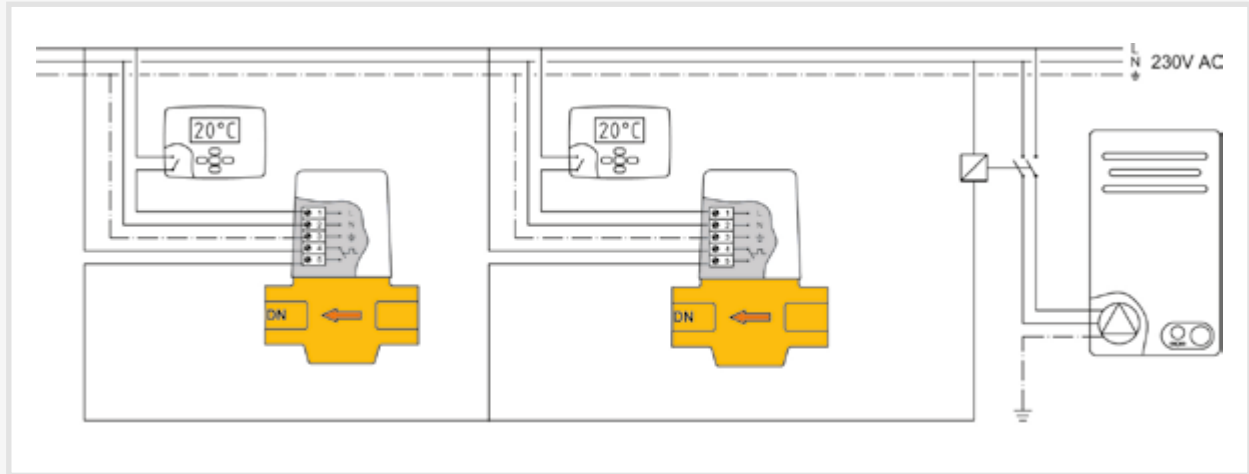
4-way normally closed (NC) zone valve with bronze connections and built-in bypass setting system. ON/OFF operation with an electrothermal actuator (580T Series) with bayonet fitting for connection to body. PN 10. Max. differential pressure (580T Series): 1.5 bar. Operating temperature range: 4to100°C. Disc stroke: 4mm. To connect the zone valve to the Modul coplanar manifolds, use 531C Series eccentric unions.

Part no.	DN	Kvs	Kvs bypass	Pcs/ pack	Package
<b>561T34</b>	3/4" FF	5.5	3.6	1	16
<b>561T1</b>	1" FF	6.8	3.6	1	16

Dimensions on page 270

**TECHNICAL NOTE - Electrical connections for 571T, 560T and 561T Series zone valves for multi-zone installation**

When a heat generator supplies multiple heating zones, it is possible to use the auxiliary contacts of the 580T Series to reduce energy wastage caused by the unnecessary operation of pumps or generators. When the thermostats (and hence the heating zones) require heat, the zone valves open, and the auxiliary contacts close, thus switching the heat generator pump on. When heat is no longer required, the auxiliary contacts open and switch the pump off. The rating of the auxiliary contacts is limited, as shown in the diagram. You are advised to use an auxiliary relay to connect the pump.



**580T**



Two-position electrothermal actuator for 561T, 560T and 571T Series zone valves. Normally open (NO) auxiliary microswitch for supplementary controls (e.g. pump, metering). Anti-tamper device, can be lead-sealed.

Bayonet-fitting for connection to valve body. External manual opening control.

Positioning time: 4-5 min. Power consumption: 20W (230V), 18W (24V).

**Compliant with Directives LVD 2014/30/EU and EMC 2014/35/EU.**

Part no.	Power supply	Protection	Posit. time	Pcs/pack	Package
<b>580T220VX</b>	230V	IP20	4-5min	1	10
<b>580T24VX</b>	24V	IP20	4-5min	1	10

Dimensions on page 270



**58T**



Disc unit for zone valves: 571T, 560T and 561T Series.

Part no.	Description	Notes	Pcs/pack	Package
<b>581TX</b>	for valve 571T	-	1	50
<b>582TX</b>	for valves 560T, 561T	-	1	50

NB: For valves manufactured since 2000

### 566T



Bypass setting valve. Suitable for fitting on 560T Series zone valves.

Part no.	DN	Pcs/ pack	Package
<b>566T34X</b>	3/4" FF	1	50
<b>566T1X</b>	1" FF	1	10

Dimensions on page 270

### 567T



Straight three-piece union for connection between zone valves and distribution manifolds.

Part no.	DN	Pcs/ pack	Package
<b>567T3434</b>	3/4" x 3/4"	5	50
<b>567T11</b>	1" x 1"	1	100

Dimensions on page 270

### 565T



Three-piece eccentric union with centre distance of 16 mm for connecting 560T Series three-way zone valves to 566T Series bypass setting valves and Modul coplanar manifolds.

Part no.	DN	Pcs/ pack	Package
<b>565T3434</b>	3/4" x 3/4"	2	40
<b>565T134</b>	1" x 3/4"	2	40
<b>565T11</b>	1" x 1"	2	30

### 531C



Three-piece eccentric union with centre distance of 6mm for connecting 561T Series 3-way 4-connection zone valves to Modul coplanar manifolds.

Part no.	DN	Pcs/ pack	Package
<b>5310C</b>	3/4" x 3/4"	2	40
<b>5311C</b>	1" x 3/4"	2	40
<b>5312C</b>	1" x 1"	2	40

### VU02



2-way brass zone valve, normally closed (NC). ON/OFF operation with ETE Series actuators. PN 16. Max. differential pressure: 1.5 bar.

Operating temperature: 4to110°C. Disc stroke: 4mm.

Part no.	DN	Kvs	Pcs/ pack	Package
<b>VU0220</b>	3/4" FF	4.0	1	40
<b>VU0225</b>	1" FF	6.5	1	36

Dimensions on page 270

### VU3



3-way brass zone valve, normally closed (NC). ON/OFF operation with ETE Series actuators. PN 16. Max. differential pressure: 1.5 bar.

Operating temperature: 4to110°C. Disc stroke: 4mm.

Part no.	DN	Kvs	Kvs bypass	Pcs/ pack	Package
<b>VU320</b>	3/4" FF	4.0	2.8	1	40
<b>VU325</b>	1" FF	6.5	3.3	1	36

Dimensions on page 270



## VU4



T-fitting for creating a bypass in VU3 Series valves.

Part no.	DN	Pcs/ pack	Package
<b>VU400</b>	3/4" FF	1	30
<b>VU401</b>	1" FF	1	10

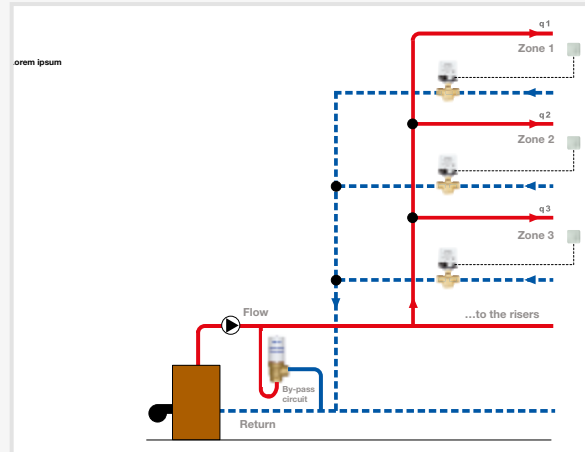
Dimensions on page 270

### TECHNICAL NOTE - Brass zone valve for fan coils

The VU Series zone control valves are automatic (NC) devices generally used for controlling flows of hot and cold water to heating and/or air conditioning systems in response to an ON/OFF control (also predisposed for ETM modulating actuators).

The electric actuator of the ETE thermal expansion servo-control with automatic limit switch is totally silent and reliable; simple bayonet fitting for connection to the valve body. A special device allows direct manual operation of the VU Series valve.

Avoid installing the valve with the servo-motor facing down (infiltration, condensation).



## Fan coil valves

### KV4



2-way, 3-way and 3-way 4-connection brass valves for fan coils. 3/4" male flat sealing connections. ON/OFF operation with 22C, 22CX, 22CX5 and 26LC Series actuators. Max. operating temperature: 110°C. Disc stroke 2.5mm.

Part no.	Description	Kvs	Kvs bypass	Pcs/ pack	Package
<b>213134P4</b>	2-way	4	-	1	20
<b>313134P4</b>	3-way	4	1.7	1	20
<b>41313440P4</b>	3-way 4-port	4	1.7	1	30

Dimensions - on pages 270-271

### 2131



2-way brass valve for fan coils. ON/OFF operation with 22C, 22CX, 22CX5 and 26LC Series actuators. Max. operating temperature. 110°C. Disc stroke: 2.5mm. PN 16. 840 Series fittings.

Part no.	DN	Kvs	Pcs/ pack	Package
<b>213112</b>	1/2" MM	1.7	1	30
<b>213134</b>	3/4" MM	2.8	1	30
<b>21311</b>	1" MM	4.5	1	36

Dimensions on page 271

### 3131



3-way brass valve for fan coils. ON/OFF operation with 22C, 22CX, 22CX5 and 26LC Series actuators. Max. operating temperature: 110°C. Disc stroke: 2.5mm. Can be used both as a mixing valve and diverter valve. PN 16. The Kvs and Kvs bypass values apply to use of the valve as a diverter. 840 Series fittings.

Part no.	DN	Kvs	Kvs bypass	Pcs/ pack	Package
<b>313112</b>	1/2" MM	1.7	1.3	1	30
<b>313134</b>	3/4" MM	2.8	1.8	1	30
<b>31311</b>	1" MM	4.5	3.1	1	36

Dimensions on page 271

## VU



T-fitting for creating a bypass in 3131 Series valves (DN 1").

Part no.	DN	Pcs/ pack	Package
<b>VU311</b>	1" MM	1	10

## 4131



3-way 4-connection brass valve for fan coils. ON/OFF operation with 22C, 22CX, 22CX5 and 26LC Series actuators. Max. operating temperature: 110°C. Disc stroke: 2.5mm. Can be used both as a mixing valve and diverter valve. PN 16.

Part no.	DN	Kvs	Kvs bypass	Pcs/ pack	Package
<b>413112</b>	1/2" MM	1.7	1.3	1	20
<b>413134</b>	3/4" MM	2.8	1.8	1	36

Dimensions on page 271

## 840



Soft seal connection unions with nut for 2131, 3131 and 4131 Series zone valves.

Part no.	DN	Pcs/ pack	Package
<b>8401212GAS</b>	1/2" X 1/2"	1	1
<b>8403434GAS</b>	3/4" X 3/4"	1	1
<b>84011GAS</b>	1" X 1"	1	1

## V2BMLN



Two-way globe control valve. Bronze body. Stainless steel stem.

Equal percentage flow characteristics. PN 16 threaded connections.

Suitable for water, temperature range 2–110°C.

Compatible with EMUK-24-500 and EMUK-230-500B Series servomotors with M30x1.5 threaded coupling.

Part no.	DN	Kvs	Pcs/ pack	Package
<b>V02BM15LN</b>	1/2" F	4.5	1	1
<b>V02BM20LN</b>	3/4" F	6	1	1
<b>V02BM25LN</b>	1" F	9.6	1	1
<b>V02BM32LN</b>	1.14" F	12.4	1	1
<b>V02BM40LN</b>	1.1/2" F	16.8	1	1
<b>V02BM50LN</b>	2" F	22	1	1

Dimensions on page 272

## V3BMLN



Three-way globe control valve. Bronze body. Stainless steel stem. Equal percentage flow characteristics.

PN 16 threaded connections. Suitable for water, temperature range 2–110°C.

Compatible with EMUK-24-500 EMUK-230-500B Series servomotors with M30x1.5 threaded coupling.

Part no.	DN	Kvs	Kvs bypass	Pcs/ pack	Package
<b>V3BM15LN</b>	1/2" F	4.5	3.6	1	1
<b>V3BM20LN</b>	3/4" F	6	4.9	1	1
<b>V3BM25LN</b>	1" F	9.6	8.6	1	1
<b>V3BM32LN</b>	1.14" F	12.4	10.5	1	1
<b>V3BM40LN</b>	1.1/2" F	16.8	15.4	1	1
<b>V3BM50LN</b>	2" F	22	19.6	1	1

Dimensions on page 272

## Actuators

### 148SD2



Thermostatic actuator with remote immersion probe for flow control based on the temperature of the radiant panels or tanks or water-air heat exchangers.

Part no.	Bulb thickness	Bulb	Setting	Pcs/ pack	Package
148SD2050	12mm	97mm	20–50°C	1	35
148SD2070	12mm	66mm	20–70°C	1	100

Dimensions on page 271

### 148SD12



Sheath for 148SD2 Series actuator sensor. With O-ring.

Part no.	Connection	Pcs/ pack	Package
148SD122050	1/2" M	1	100
148SD122070	1/2" M	1	100

### 22C



Compact electrothermal actuator with ON/OFF operation compatible with thermostat-adaptable radiator valves, valves for fan coils and manifolds. Self-extinguishing polymer cap. M30x1.5 nickel-plated threaded brass ring-nut. Normally closed (NC). Normally open (NO). Stroke: 3.5mm. Disc thrust: 100N (NC version) - 80N (NO version). Room temperature: 0to50°C. 4-wire version (NA4 – NC4) complete with auxiliary microswitch. Auxiliary contact rating: 700mA.

**Compliant with: LVD 2014/35/EU, EMC 2014/30/EU. TÜV approved.**

With  $\varnothing = 7.2\text{mm}$  cable

Part no.	Power supply	IP rating*	Pcs/ pack	Package
22C230NC2	230V	IP44	1	10
22C24NC2	24V	IP44	1	10
22C230NC4	230V	IP44	1	10
22C24NC4	24V	IP44	1	10
22C230NA2	230V	IP44	1	10
22C24NA2	24V	IP44	1	10
22C230NA4	230V	IP44	1	10
22C24NA4	24V	IP44	1	10

With  $\varnothing = 5.5\text{mm}$  cable

Part no.	Power supply	IP rating*	Pcs/ pack	Package
22C230NC2-5	230V	IP44	1	10
22C24NC2-5	24V	IP44	1	10
22C230NA2-5	230V	IP44	1	10
22C24NA2-5	24V	IP44	1	10

Dimensions on page 271

(\*) IP44 only if fitted in the prescribed vertical position

### 22CX



Compact electrothermal actuator with ON/OFF operation compatible with thermostat-adaptable radiator valves, valves for fan coils and manifolds. Self-extinguishing polymer cap. M30x1.5 nickel-plated threaded brass ring-nut. Normally closed (NC). Normally open (NO). Stroke: 3.5mm. Disc thrust: 100N (NC version) - 80N (NO version). Room temperature: 0 to 50°C. 4-wire version (NA4 – NC4) complete with auxiliary microswitch. Auxiliary contact rating: 700mA.

**Compliant with: LVD 2014/35/EU, EMC 2014/30/EU. TÜV approved.**

Part no.	Power supply	Protection	Pcs/ pack	Package
22CX230NC2	230V	IP54	1	50
22CX24NC2	24V	IP54	1	50
22CX230NC4	230V	IP54	1	50
22CX24NC4	24V	IP54	1	50
22CX230NA2	230V	IP54	1	50
22CX24NA2	24V	IP54	1	50
22CX230NA4	230V	IP54	1	50
22CX24NA4	24V	IP54	1	50

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## 22CX5



Compact electrothermal actuator with ON/OFF operation compatible with thermostat-adaptable radiator valves, valves for fan coils and manifolds. Self-extinguishing polymer cap. M30x1.5 nickel-plated threaded brass ring-nut. Normally closed (NC). Stroke: 5mm. Disc thrust: 110N (NC version). Room temperature: 0 to 50°C. 4-wire version (NC4) complete with auxiliary microswitch. Auxiliary contact rating: 700mA inductive-3A resistive.

**Compliant with: LVD 2014/35/EU, EMC 2014/30/EU. TÜV approved.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>22CX5230NC2</b>	230V	IP54	1	50
<b>22CX524NC2</b>	24V	IP54	1	50
<b>22CX5230NC4</b>	230V	IP54	1	50
<b>22CX524NC4</b>	24V	IP54	1	50
<b>22CX5230NC2-2</b>	230V - cable 2m	IP54	1	50
<b>22CX524NC2-2</b>	24V - cable 2m	IP54	1	50
<b>22CX5230NC4-2</b>	230V - cable 2m	IP54	1	50
<b>22CX524NC4-2</b>	24V - cable 2m	IP54	1	50

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## 26LC



Compact electrothermal actuator with ON/OFF operation compatible with thermostat-adaptable radiator valves, valves for fan coils and manifolds. Self-extinguishing plastic cap. M30x1.5 nickel-plated threaded brass ring-nut. Normally closed (NC) 24VAC and 230VAC low energy consumption. Stroke: 3.5mm. Cable is easy to remove thanks to safety-latch connector. LED operating status indicator (ON/OFF). Version with 4-pole cable (NC4) complete with auxiliary microswitch (NO contact). Protection rating IP64.

**Compliant with: LVD 2014/35/EU, EMC 2014/30/EU. TÜV approved.**

Part no.	Power supply	Microswitch	Pcs/ pack	Package
<b>26LC230NC2</b>	230 VAC	no	1	50
<b>26LC24NC2</b>	24 VAC	no	1	50
<b>26LC230NC4</b>	230 VAC	yes	1	50
<b>26LC24NC4</b>	24 VAC	yes	1	50

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## EMUWE



Compact electronic actuator with modulating action compatible with thermostat-adaptable radiator valves, valves for fan coils and manifolds. Self-extinguishing polymer cap. M30x1.5 nickel-plated threaded brass ring-nut. Stroke: **3.2 mm, 3.9 mm, 4.8 mm**. Disc thrust: 100N. Room temperature: 0 to 50°C. Protection rating IP54.

**Compliant with: LVD 2014/35/EU, EMC 2014/30/EU.**

Part no.	Control signal	Power supply	Consum.	Pcs/ pack	Package
<b>P07623</b>	Proportional 0-10V (2-10V)	12 Vdc - 24 Vdc/ ac	3 W	1	1

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## EMUJC



Compact electronic actuator for terminal units. Three-point or proportional control signal. Connection to 2131, 3131 and 4131 Series valves by means of M30x1.5 threaded brass ring-nut. LED actuator operating status indicator: ON/OFF, travel limit reached, positioning in progress. Power cable length: 2m.

Nominal thrust: 120N. Protection rating IP43. Room temperature: 0to50°C.

Part no.	Control signal	Power supply	Consum.	Pcs/ pack	Package
<b>EMUJC-230</b>	three points	230V	6.5VA	1	1
<b>EMUJC-24</b>	three points	24V	2.5VA	1	1
<b>EMUJC-010</b>	Proportional 0-10V (2-10V)	24V	2.5VA	1	1

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## EMUK



Electronic servomotor with 2-point, 3-point or 0-10V proportional control signal. Connection to VBMLN Series valves by means of an M30x1.5 threaded brass ring-nut. Power cable length: 1.5m. Nominal thrust: 500N. Degree of protection: IP54. Room temperature: 0 to 55°C  
**Complies with LVD 2014/35/EU and EMC 2014/30/EU.**

Part no.	Control signal	Power supply	Consumption	Pcs/ pack	Package
<b>EMUK-230-500B</b>	two and three points	230V	5.3VA	1	1
<b>EMUK-24-500</b>	two and three points / 0-10V	24V	4.0VA	1	1

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## ETE



Electrothermal actuator with ON/OFF operation for VU zone valves. Normally open (NO) auxiliary microswitch for supplementary controls (e.g. pump, metering). Bayonet-fitting for connection to valve body. Manual control device. Consumption: 18W. Stroke: 4mm. Disc thrust: 250N. Positioning time: 4min.

**Compliant with EN60730-1:95, EN60730-2-8:95 as amended.**  
**Compliant with EMC 2014/30/EU.**

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>ETE24BO</b>	24V	IP20	1	30
<b>ETE220BO</b>	230V	IP20	1	30

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## ETM



Modulating electrothermal actuator. Manual control device. Consumption: 18W. Steady state: 3W. ETM24-12 for use in conjunction with 24 VAC controllers; complete with 4x0.75 mm cable - L = 1m.

Part no.	Power supply	Protection	Pcs/ pack	Package
<b>ETM24-12</b>	24V	IP44	12	12

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## Modul single manifolds

### 805M



Single modular CW617N brass manifold with pre-assembled gasket and locking nut. Side outlets: 1/2" M-3/4" M. MF head connections: 3/4" - 1" - 1.1/4".

Part no.	DN	Outlets	Centre distance	Pcs/ pack	Package
<b>805M34TMN2</b>	3/4" MF	2-1/2" M	35mm	10	10
<b>805M34TMN3</b>	3/4" MF	3-1/2" M	35mm	10	10
<b>805M34TMN4</b>	3/4" MF	4-1/2" M	35mm	10	10
<b>805M1TMN2X</b>	1" MF	2-1/2" M	35mm	10	10
<b>805M1TMN3X</b>	1" MF	3-1/2" M	35mm	10	10
<b>805M1TMN4X</b>	1" MF	4-1/2" M	35mm	10	10
<b>805M54TMN3</b>	1.1/4" MF	3-1/2" M	50mm	10	10
<b>805M54TMN4</b>	1.1/4" MF	4-1/2" M	50mm	10	10
<b>805M1TN2X</b>	1" MF	2-1/2" M	50mm	10	10
<b>805M1TN3X</b>	1" MF	3-1/2" M	50mm	10	10
<b>805M1TN4X</b>	1" MF	4-1/2" M	50mm	10	10
<b>805M1TM2X</b>	1" MF	2-3/4" M	50mm	10	10
<b>805M1TM3X</b>	1" MF	3-3/4" M	50mm	10	10
<b>805M1TM4X</b>	1" MF	4-3/4" M	50mm	10	10
<b>805M54TM3</b>	1.1/4" MF	3-3/4" M	50mm	10	10
<b>805M54TM4</b>	1.1/4" MF	4-3/4" M	50mm	8	8

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## 807M



Single modular CW617N brass manifold.

Part no.	DN	Outlets	Centre distance	Pcs/ pack	Package
<b>807MT234</b>	3/4" FF	2-1/2" M	35mm	10	10
<b>807MT334</b>	3/4" FF	3-1/2" M	35mm	10	10
<b>807MT434</b>	3/4" FF	4-1/2" M	35mm	10	10

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## E807M



Single modular CW617N brass manifold.

Part no.	DN	Outlets	Centre distance	Pcs/ pack	Package
<b>E807M-MF-T2</b>	3/4" MF	2-1/2" M	35mm	10	10
<b>E807M-MF-T3</b>	3/4" MF	3-1/2" M	35mm	10	10
<b>E807M-MF-T4</b>	3/4" MF	4-1/2" M	35mm	10	10

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## 822MM



Single modular brass return manifold with pre-assembled gasket and locking nut. Built-in thermostat-adaptable control valves with 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators. Side outlets: 1/2" M-3/4" M. MF head connections: 3/4" -1"-1.1/4".

Differential pressure: 1.5 bar. Kvs outlets: 2.28. Centre distance 50mm.

Part no.	DN	Outlets	Pcs/ pack	Package
<b>822MM1TMN2</b>	1" MF	2-1/2" M	5	5
<b>822MM1TMN3</b>	1" MF	3-1/2" M	5	5
<b>822MM1TMN4</b>	1" MF	4-1/2" M	5	5
<b>822MM1TM2</b>	1" MF	2-3/4" M	5	5
<b>822MM1TM3</b>	1" MF	3-3/4" M	5	5
<b>822MM1TM4</b>	1" MF	4-3/4" M	5	5
<b>822MM54TMN4</b>	1.1/4" MF	4-1/2" M	5	5
<b>822MM54TM3</b>	1.1/4" MF	3-3/4" M	5	5
<b>822MM54TM4</b>	1.1/4" MF	4-3/4" M	5	5

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## 822MR



Single modular brass flow manifold with pre-assembled gasket, locking nut and built-in shut-off lockshields. Side outlets: 1/2" M - 3/4" M. MF head connections: 3/4" -1"-1.1/4". Kvs outlets: 2.61. Centre distance 50mm.

Part no.	DN	Outlets	Pcs/ pack	Package
<b>822MR1TMN2</b>	1" MF	2-1/2" M	5	5
<b>822MR1TMN3</b>	1" MF	3-1/2" M	5	5
<b>822MR1TMN4</b>	1" MF	4-1/2" M	5	5
<b>822MR1TM2</b>	1" MF	2-3/4" M	5	5
<b>822MR1TM3</b>	1" MF	3-3/4" M	5	5
<b>822MR1TM4</b>	1" MF	4-3/4" M	5	5
<b>822MR54TMN3</b>	1.1/4" MF	3-1/2" M	5	5
<b>822MR54TMN4</b>	1.1/4" MF	4-1/2" M	5	5
<b>822MR54TM3</b>	1.1/4" MF	3-3/4" M	5	5
<b>822MR54TM4</b>	1.1/4" MF	4-3/4" M	5	5

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## FLMR



Single modular brass flow manifold complete with FL flow meter for controlling and measuring the flow rate in the circuits, with pre-assembled gasket and locking nut. Side outlets: 3/4" M. MF head connections: 1"-1.1/4". Measuring range: 0-6 l/min. Differential pressure: 1.0 bar. Kvs outlets: 1.8. Centre distance 50mm.

Part no.	DN	Outlets	Pcs/ pack	Package
<b>FLMR1TM2</b>	1" MF	2-3/4"	1	24
<b>FLMR1TM3</b>	1" MF	3-3/4"	1	16
<b>FLMR1TM4</b>	1" MF	4-3/4"	1	12
<b>FLMR54TM3</b>	1.1/4" MF	3-3/4"	1	12
<b>FLMR54TM4</b>	1.1/4" MF	4-3/4"	1	9

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## FL



Device for controlling and measuring the flow rate in the individual circuits in FLMR manifolds. Measuring range: 0-6 l/min.

Part no.	Description	Pcs/ pack	Package
<b>FLMR</b>	Flow meter	24	24
<b>226</b>	Control cap	1	50

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## 210



Shut-off ball valve with three-piece union for manifold head connections. Max. operating pressure: 25 bar up to 95°C; 16 bar up to 120°C.

Part no.	DN	Pcs/ pack	Package
<b>2101212</b>	1/2" MF	5	5
<b>2103434</b>	3/4" MF	5	5
<b>21011</b>	1" MF	5	5
<b>210114114</b>	1.1/4" MF	5	5

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## Modul coplanar manifolds

### 825M



Coplanar CW617N brass manifold. Side outlets on both sides: 1/2" M. FF head connections: 3/4"-1". Distance between centres of outlets: 35mm.

Part no.	DN	Outlets	Pcs/ pack	Package
<b>825M34DD22</b>	3/4" FF	2 + 2	1	20
<b>825M34DD44</b>	3/4" FF	4 + 4	1	15
<b>825M34DD66</b>	3/4" FF	6 + 6	1	10
<b>825M34DD88</b>	3/4" FF	8 + 8	1	8
<b>825M1DD44</b>	1" FF	4 + 4	1	10
<b>825M1DD66</b>	1" FF	6 + 6	1	6
<b>825M1DD88</b>	1" FF	8 + 8	1	6
<b>825M1DD1010</b>	1" FF	10 + 10	1	1

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## HKV 2013A-VA



Ready-to-mount stainless steel manifold unit:

- top return manifold with micrometric control and shut-off of the outlet;
  - bottom flow manifold with flow meters (0-6 l/min) capable of controlling or shutting off the outlet;
  - galvanised steel brackets complete with anti-vibration mountings.
- 1" M head connection, Eurocone 3/4" side outlets, centre distance 50mm.  
 Operating temperature range: -10 to 80°C. PN 6. Available with insulation.  
 Compatible with 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	Outlets	Pcs/ pack	Package
3816302	2	1	1
3816303	3	1	1
3816304	4	1	1
3816305	5	1	1
3816306	6	1	1
3816307	7	1	1
3816308	8	1	1
3816309	9	1	1
3816310	10	1	1
3816311	11	1	1
3816312	12	1	1

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## HKV 2013A-AFC



**DYNAMIC SELF-BALANCING** ready-to-mount stainless steel manifold unit:

- bottom return manifold with outlet control and shut-off valve; **adjustment range 30 to 300L/h;** M30x1.5 adapter;
  - top flow manifold with low-pressure-drop flow meters and shut-off function;
  - galvanised steel brackets complete with anti-vibration mountings.
- 1" M head connection, Eurocone 3/4" side outlets, centre distance 50mm.  
 KFE90 Series terminal filling and air vent valves (pre-installed).  
 Operating temperature range: -5 to 70°C. PN 10. Available with insulation.  
 Compatible with 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	Outlets	Pcs/ pack	Package
10081563	2	1	1
10081564	3	1	1
10081565	4	1	1
10081566	5	1	1
10081567	6	1	1
10081568	7	1	1
10081569	8	1	1
10081570	9	1	1
10081571	10	1	1
10081572	11	1	1
10081573	12	1	1

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## HKV ISO



Pair of insulators for HKV2013 Series manifolds, consisting of modular 6-position EPP shells.  
 Quantity necessary according to number of manifold outlets:

- 2 to 6 outlets: 1 pair of insulators
- 7 to 10 outlets: 2 pairs of insulators
- 11 to 12 outlets: 3 pairs of insulators

Part no.	Pcs/ pack	Package
5251025	1	1



## ACCESSORIES

### KHT-1



Pair of shut-off ball valves with precision thermometer (scale 0–60°C) for HKV2013 Series manifolds. 1" Fx1" F connections, flat sealing nut.

Part no.	Description	Pcs/ pack	Package
<b>3114065</b>	Brass	1	1
<b>3114065 N</b>	Nickel-plated brass	1	1

### ES-QS



Pair of terminal valves for HKV2013 Series manifolds with manual air vent device and 3/4" system fill/drain cock complete with safety plug. 1" F connection, flat sealing nut.

Part no.	Description	Pcs/ pack	Package
<b>3036115</b>	Brass	1	1
<b>3036120 N</b>	Nickel-plated brass	1	1



### DFM38-A

Device for controlling and measuring the flow rate in the individual circuits in HKV2013 Series manifolds. Measuring range: 0-6 l/min. 3/8" connection.

Part no.	Description	Pcs/ pack	Package
<b>10010893</b>	flow meter	1	24



### 823MP

Terminal fitting with pre-assembled gasket and locking nut. Equipped with: 2 x 1/2" connections for fitting the immersion thermometer.

Part no.	DN	Outlets	Connections	Pcs/ pack	Package
<b>823MP13812</b>	1"	1/2" and 3/8"	2+2	10	10
<b>823MP543812</b>	1.1/4"	1/2" and 3/8"	2+2	10	10
<b>823MP112</b>	1"	1/2"	2	10	10

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### 823MT



Terminal for brass manifolds. Connections for air vent valve and for 3/8"F drain cock. Connection for additional outlet: 1/2"F.

Part no.	DN	Pcs/ pack	Package
<b>823MT1</b>	1" M	10	10
<b>823MT114</b>	1.1/4" M	10	10

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### 209



Micrometric brass control lockshield for Modul manifold side connections.

Part no.	DN	Pcs/ pack	Package
<b>2091212</b>	1/2" MF	25	25

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### 290



Drain cock for boilers with hose fitting, plug and chain.

Part no.	connection DN	plug DN	Pcs/ pack	Package
<b>29038</b>	3/8"	1/2"	10	200
<b>29012</b>	1/2"	3/4"	10	150
<b>29034</b>	3/4"	1"	10	100

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## Inspection boxes

### 824CF



Plastic universal inspection box complete with base, frame with pre-cut openings, screw-on cover, removable protection for masonry work and accessories for mounting 3/4" and 1" single and coplanar manifolds.

Suitable for housing:

- 825 Series coplanar manifolds with 571T, 560T and 561T Series zone valves and accessories.
  - 805M (3/4" and 1"), 807M, E807M and 822M (1") Series single brass manifolds and accessories.
- Supplied in a compact package, quick to fit.

Part no.	w x h x d (mm)	Pcs/ pack	Package
<b>824CF2632</b>	265 x 320 x 95	1	10
<b>824CF2640</b>	265 x 400 x 95	1	10
<b>824CF2650</b>	265 x 500 x 95	1	10
<b>824CF3160</b>	310 x 600 x 95	1	10

### 828M



Galvanised sheet steel inspection box complete with screw-on cover.

Suitable for housing distribution units consisting of 825M Series coplanar manifolds, either alone or assembled with 561T Series zone valves. Complete with screws and a bracket for mounting the manifold unit on a central rail.

Part no.	w x h x d (mm)	Pcs/ pack	Package
<b>828M2933N</b>	290 x 330 x 80	1	1
<b>828M2950N</b>	290 x 500 x 80	1	1
<b>828M2965N</b>	290 x 650 x 80	1	1

### 832M



White-painted galvanised sheet steel inspection box complete with screw-on cover. Suitable for housing distribution units consisting of 825M Series coplanar manifolds, either alone or assembled with 561T Series zone valves. Complete with screws and a bracket for mounting the manifold unit on a central rail.

Part no.	w x h x d (mm)	Pcs/ pack	Package
<b>832M3370N</b>	330 x 700 x 75	1	1

### 839M

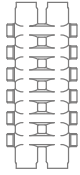


Galvanised sheet steel inspection box complete with lockable, white-painted, snap-on cover. Foot height can be adjusted in situ. Suitable for housing distribution units consisting of 822MM - 822MR - FLMR - 805M Series modular manifolds.

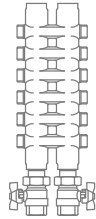
Complete with screws for fixing brackets (excluding 840MR Series) on universal rails.

Part no.	w x h x d (mm)	Pcs/ pack	Package
<b>839M4075NV</b>	400 x 750 x 110/150	1	1
<b>839M6075NV</b>	600 x 750 x 110/150	1	1
<b>839M8075NV</b>	850 x 750 x 110/150	1	1
<b>839M10075NV</b>	1000 x 750 x 110/150	1	1

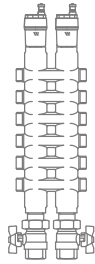
**TECHNICAL NOTE - Choice of box by number of outlets**



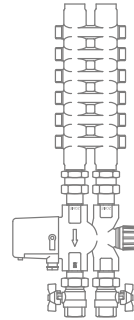
**Type A**  
825M coplanar manifold only



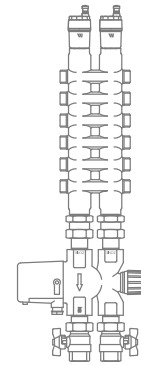
**Type B**  
Coplanar manifold with shut-off valves and top-entry supply



**Type C**  
Coplanar manifold with shut-off valves, bottom-entry supply and air vents in the manifold heads



**Type D**  
Same as Type B but with a 561T, 560 T or 571T Series zone valve fitted



**Type E**  
Same as Type C but with a 561T, 560T or 571T Series zone valve fitted

Model	Dimensions w x h x d (mm)	Max. capacity				
		Type A	Type B	Type C	Type D	Type E
824CF	26.5 x 32 x 9.5	6x6	2x2	-	-	-
	26.5 x 40 x 9.5	8x8	4x4	2x2	2x2	-
	26.5 x 50 x 9.5	10x10	8x8	6x6	4x4	2x2
	31 x 60 x 9.5	10x10	10x10	8x8	6x6	4x4
828M	29 x 33 x 8	6x6	2x2	-	-	-
	29 x 50 x 8	10x10	8x8	6x6	4x4	2x2
	29 x 65 x 8	10x10	10x10	8x8	8x8	6x6
832M	33 x 70 x 7.5	-	-	10x10	10x10	10x10

**TECHNICAL NOTE - Choice of box by number of outlets**

**Type A:**

805M, 822MM, 822MR, FLMR Series modular manifold with pair of 210 Series ball valves and 823MT Series terminal pair.

**Type B:**

As per type A but with 1 ball valve and 1 balancing valve.

Model	No. of outlets	
	Type A	Type B
839M4075NV	3	-
839M6075NV	6	5
839M8075NV	10	9
839M10075NV	12	12



## 840MR



Universal telescopic brackets for assembling distribution units made up of 805M, 806M, 807M, E807M, 822MM, 822MR and FLMR Series modular manifolds with DN 3/4" to 1.1/4" and accessories. The brackets are equipped with plastic spacers in different sizes and colours for assembly to the U-mountings to adapt any type of manifold with height from min. 23 to max. 45.

The construction solution:

- makes it possible to have different centre distances between the flow and return manifolds according to system requirements: min. 170 - max. 270;
- makes the distribution unit quick and easy to install in the inspection box;
- facilitates the connection of copper, pex and multi-layer pipes to the side outlets, thanks to the inclination of the bottom bracket to be fixed to the inspection box;
- enables the distribution unit to be installed in the inspection box without rails, or to be wall mounted, using 4 spacer feet at the ends of the brackets supplied.

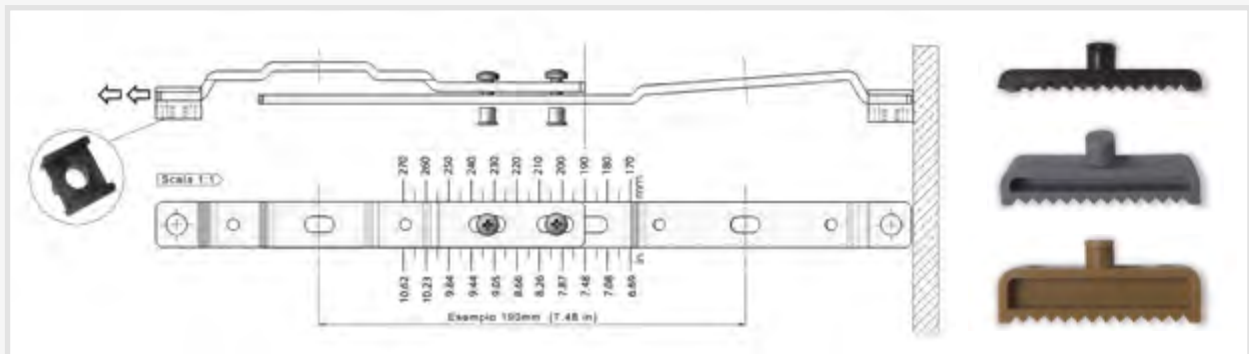
These spacer feet must not be used with inspection boxes with rails.

The package includes fixing screws:

- Qty. 4 M6x14
- Qty. 4 M6x164 M6x20

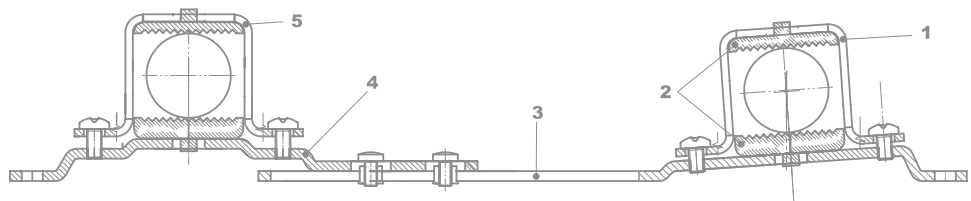
Part no.	Pcs/ pack	Package
<b>840MR80</b>	1	10

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**Key:**

1. U-mounting
2. Spacer plates
3. Bottom bracket
4. Top bracket
5. U-mounting



**Use of spacer plates:**

Black, Grey, Beige.

Spacer plate selection table with dimensions of Watts manifold

Model	DN	Centre distance	Dimensions	Plates
805M	3/4"	35	24	BEIGE/BEIGE
805M	1"	35	30	BEIGE/BEIGE
805M	1"	50	31	BLACK/BEIGE
805M	1.1/4"	50	41	BLACK/GREY
807M	3/4"	35	30	BEIGE/BEIGE
822MM	1"	50	39	BLACK/GREY
822MR	1"	50	39	BLACK/GREY
FLMR	1"	50	39	BLACK/GREY
822MM	1.1/4"	50	45	BLACK/GREY
822MR	1.1/4"	50	45	BLACK/GREY
FLMR	1.1/4"	50	45	BLACK/GREY

## Float-type air vent valves

### INT - NEW INTERVENT



Automatic air vent valve with unscrewable inspection cover. CW617N brass body and cover. Corrosion-resistant polythene float switch. PN 12. Max. operating pressure: 12 bar. Max. operating temperature: 115°C. Also suitable for water with additive (glycol up to 50%).

Part no.	DN	Pcs/ pack	Package
<b>0248010</b>	3/8"	1	60
<b>0248010-K10</b>	3/8"	10	60
<b>0248015</b>	1/2"	1	60
<b>0248015-K10</b>	1/2"	10	60
<b>0248020</b>	3/4"	1	60
<b>0248020-K10</b>	3/4"	10	60

Dimensions on page 274

### DUO - DUOVENT



Automatic and manual air vent valve with unscrewable inspection cover. CW617N brass body and cover. Corrosion-resistant polythene float switch. PN12.

Max. operating pressure: 12 bar. Max. operating temperature: 115°C. Automatic venting capacity at 3 bar: 20 NL/min. Manual venting capacity at 3 bar: 100 NL/min. Also suitable for water with additive (glycol up to 50%).

Part no.	DN	Pcs/ pack	Package
<b>0248210</b>	3/8"	1	60
<b>0248210-K10</b>	3/8"	10	60
<b>0248215</b>	1/2"	1	60
<b>0248215-K10</b>	1/2"	10	60
<b>0248220</b>	3/4"	1	60
<b>0248220-K10</b>	3/4"	10	60

Dimensions on page 274

### MV - MINIVENT - Discontinued series, available while stocks last



Automatic air vent valve with unscrewable inspection cover. CW617N brass body and cover. Corrosion-resistant polythene float switch. Max. operating pressure: 12 bar. Max. operating temperature: 115°C. Also suitable for water with additive (glycol up to 50%).

Part no.	DN	Pcs/ pack	Package
<b>0250010</b>	3/8"	10	60
<b>0250215</b>	1/2"	10	60

Dimensions on page 274

### MVD - DUOVENT - Discontinued series, available while stocks last



Automatic and manual air vent valve with unscrewable inspection cover. CW617N brass body and cover. Corrosion-resistant polythene float switch. PN 12. Max. operating pressure: 8 bar. Max. temperature: 115°C.

Automatic venting capacity at 3 bar: 17.9 NL/min. Manual venting capacity at 3 bar: 139.5 NL/min. Also suitable for water with additive (glycol up to 50%).

Part no.	DN	Pcs/ pack	Package
<b>0250610</b>	3/8"	10	60
<b>0250615</b>	1/2"	10	60

Dimensions on page 274

## INT/AV15 - NEW INTERVENT WITH SIDE CONNECTION



Automatic air vent valve with unscrewable inspection cover and side connection. Nickel-plated CW617N brass body and cover. Corrosion-resistant polythene float switch. PN12. Max. operating pressure: 12 bar. Max. operating temperature: 115°C. Also suitable for water with additive (glycol up to 50%).

Part no.	DN	Pcs/ pack	Package
<b>0248016</b>	1/2"	1	60
<b>0248016-K10</b>	1/2"	10	60

Dimensions on page 274

## MKV - MICROVENT



Vertical automatic air vent valve. CW617N brass body and cover, with O-ring. PN12. Max. operating pressure: 10 bar. Max. operating temperature: 110°C. Also suitable for water with additive (glycol up to 50%).

Model **0251310** is complete with RIA Series automatic shut-off valve.

Part no.	DN	Pcs/ pack	Package
<b>0251210</b>	3/8"	10	120

Dimensions on page 274

## MHV - HYBRIVENT VERTICAL



Vertical automatic air vent valve. CW617N brass body. Composite cover, with O-ring. PN12. Max. operating pressure: 10 bar. Max. operating temperature: 110°C. Also suitable for water with additive (glycol up to 50%).

Part no.	DN	Pcs/ pack	Package
<b>0246010</b>	3/8"	1	1
<b>0246010-K10</b>	3/8"	10	1

Dimensions on page 274

## MKL - MICROVENT



Lateral automatic air vent valve. CW617N brass body and cover. Pre-sealed with O-ring. PN12. Max. operating pressure: 10 bar. Max. temperature: 110°C. Also suitable for water with additive (glycol up to 50%).

Model **0252310** is complete with RIA automatic shut-off valve.

Part no.	DN	Pcs/ pack	Package
<b>0252210</b>	3/8"	10	120

Dimensions on page 274

## MHL - HYBRIVENT LATERAL



Lateral automatic air vent valve. CW617N brass body. Composite cover, with O-ring. PN12. Max. operating pressure: 10 bar.

Max. operating temperature: 110°C. Also suitable for water with additive (glycol up to 50%).

Part no.	DN	Pcs/ pack	Package
<b>0247010</b>	3/8"	1	1
<b>0247010-K10</b>	3/8"	10	1

Dimensions on page 274

## RIA



Automatic shut-off valve for MVD, MV, MKV, MKL, INT, DUO, MHV and MHL Series air vent valves. Complete with device for total, rapid drainage of water from the valve.

Part no.	DN	Pcs/ pack	Package
<b>0259010</b>	3/8"x3/8"	10	400
<b>0259015</b>	1/2"x1/2"	10	400
<b>0259016</b>	3/8"x1/2"	10	400

Dimensions on page 275

## 2161C - FLOATVENT



Vertical automatic air vent valve, with O-ring. Suitable for installation on the head connections of coplanar manifolds. CW617N brass body. Maximum pressure: 10 bar. Max. temperature: 110°C. Suitable for water with additive (glycol up to 50%).

Part no.	DN	Pcs/ pack	Package
<b>2161C38</b>	3/8"	1	60
<b>2161C12</b>	1/2"	1	60
<b>2161C34</b>	3/4"	1	60
<b>2161C1</b>	1"	1	60

Dimensions on page 275

## 2311C - CHECKVENT



Pre-sealed check valve for 2161C38 vertical automatic air vent valve.

Part no.	DN	Pcs/ pack	Package
<b>2311C38</b>	3/8"	50	300

## MXV - MAXIVENT



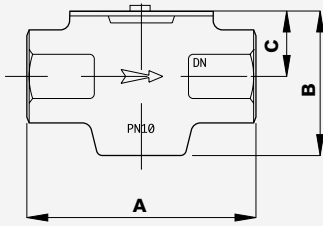
High-flow automatic air vent valve. Equipped with manual vent valve. Cast iron body and cover with epoxy paint finish. Max. operating pressure: 12 bar. Max. operating temperature: 100°C. 3/8"F air outlet connection.

Part no.	DN	Pcs/ pack	Package
<b>0253020</b>	3/4"	1	1
<b>0253025</b>	1"	1	1
<b>0253032</b>	1.1/4"	1	1

Dimensions on page 275

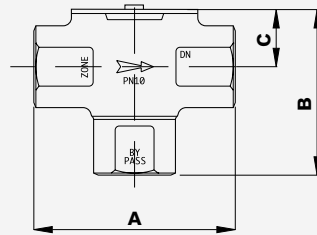
## Overall dimensions

### 571T



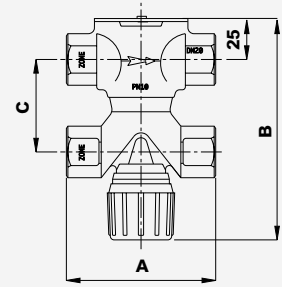
DN	A	B	C
3/4"	90	61	25
1"	100	61	25
1.1/4"	103	59	25

### 560T



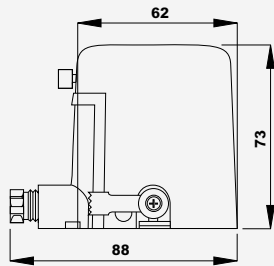
DN	A	B	C
3/4"	90	78	25
1"	100	78	25

### 561T

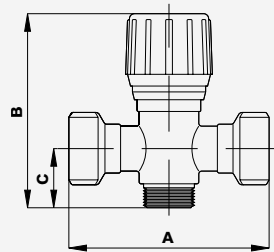


DN	A	B	C
3/4"	90	130	50
1"	100	140	60

### 580T

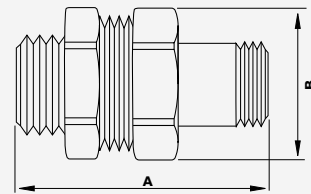


### 566T



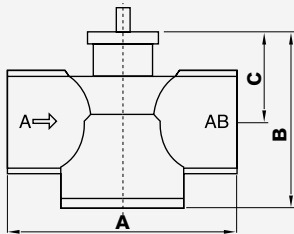
DN	A	B	C
3/4"	90	100	34
1"	100	104	34

### 567T



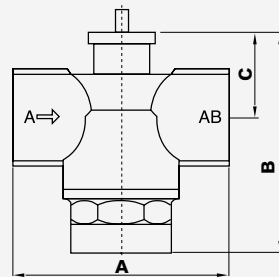
DN	A	B
3/4"	66	37
1"	77	46

### VU02



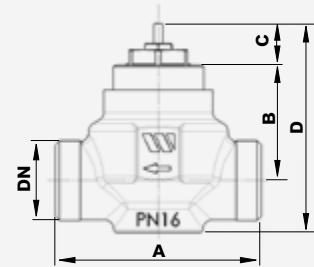
DN	A	B	C
3/4"	78	61	30
1"FF	83	61	30

### VU3



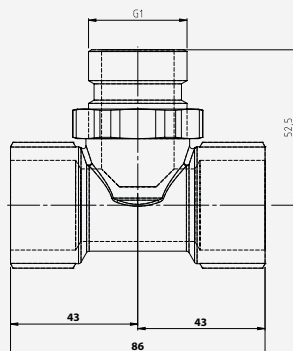
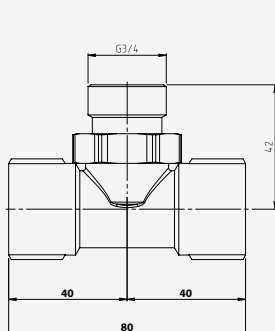
DN	A	B	C
3/4"FF	78	77	30
1"FF	83	77	30

### KV4-2-WAY

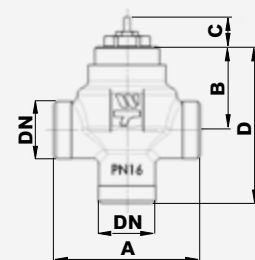


DN	A	B	C	D
3/4"	68	38	13.7	69

### VU4



### KV4-3-WAY

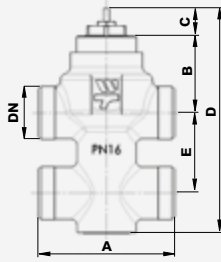


DN	A	B	C	D
3/4"	68	38	13.7	86



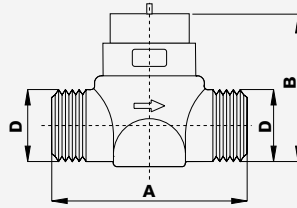
## Overall dimensions

### KV4-3 VIE



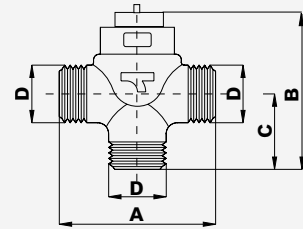
DN	A	B	C	D	E
3/4"	68	38	13.7	112	40

### 2131



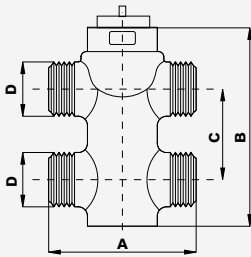
DN	A	B
1/2"	52	43
3/4"	56	43
1"	83	70

### 3131



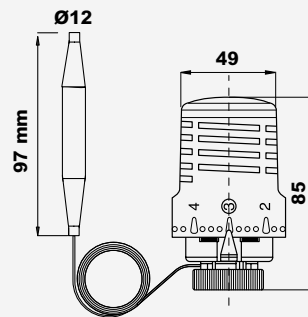
DN	A	B	C
1/2"	52	56	25
3/4"	56	58	34
1"	82	93	41

### 4131

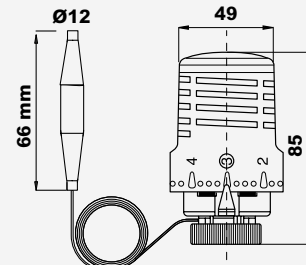


DN	A	B	C
1/2"	52	83	35
3/4"	56	96	50

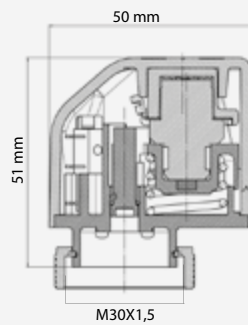
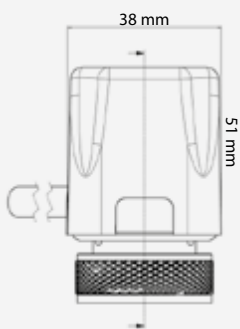
### 148SD2050



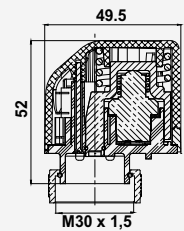
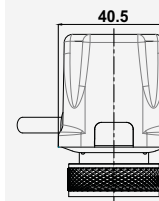
### 148SD2070



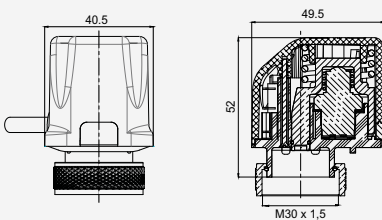
### 22C



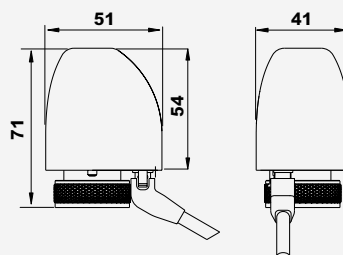
### 22CX



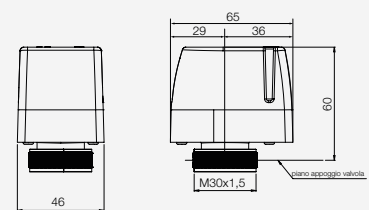
### 22CX5



### 26LC

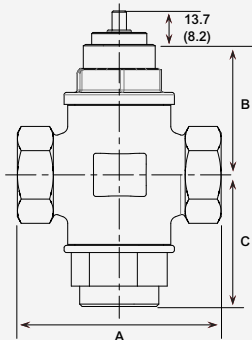


### EMUWE



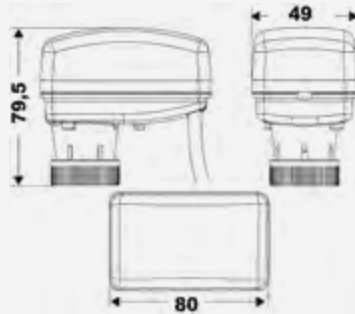
## Overall dimensions

### V3BMLN

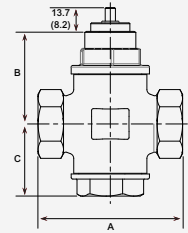


DN	A	B	C
15	85	54.5	55
20	85	54.5	55
25	105	56.5	55
32	120	59.5	63
40	145	68	78.5
50	165	93	89.0

### EMUJC

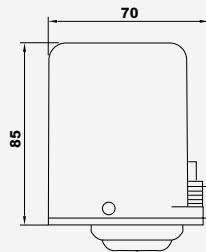


### V2BMLN

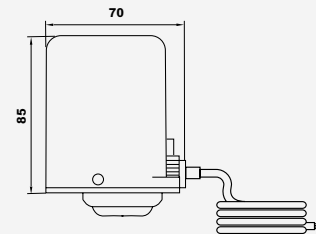


DN	A	B	C
15	85	54.5	42.5
20	85	54.5	42.5
25	105	56.5	49
32	120	59.5	52
40	145	68	63
50	165	93	73

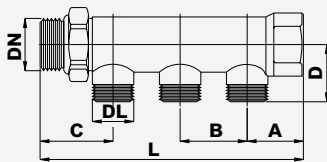
### ETE



### ETM

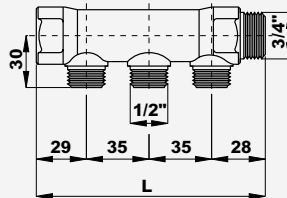


### 805M



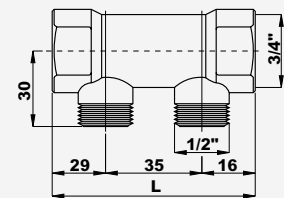
DN	DL	L	A	B	C	D
3/4"	2x1/2"	98	28.5	35	34.5	28
3/4"	3x1/2"	133	28.5	35	34.5	28
3/4"	4x1/2"	168	28.5	35	34.5	28
1"	2x1/2"	97	24	35	38	33
1"	3x1/2"	132	24	35	38	33
1"	4x1/2"	167	24	35	38	33
1"	2x1/2"	114.5	24.5	50	41	33
1"	3x1/2"	164.5	24.5	50	41	33
1"	4x1/2"	214.5	24.5	50	41	33
1"	2x3/4"	114.5	24.5	50	41	33
1"	3x3/4"	164.5	24.5	50	41	33
1"	4x3/4"	214.5	24.5	50	41	33
1.1/4"	3x1/2"	168.5	27.5	50	41	36
1.1/4"	4x1/2"	218.5	27.5	50	41	36
1.1/4"	3x3/4"	168.5	27.5	50	41	36
1.1/4"	4x3/4"	218.5	27.5	50	41	36

### E807M



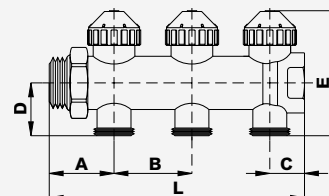
DN	Side outlets	L
3/4"	2	92
3/4"	3	127
3/4"	4	162

### 807M



DN	Side outlets	L
3/4"	2	80
3/4"	3	115
3/4"	4	150

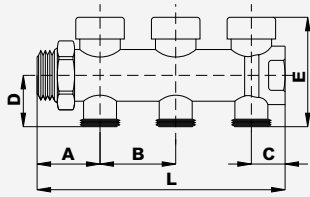
### 822MM



DN	L	L	L	A	B	C	D	E
2 Outlets 3 Outlets 4 Outlets								
1"	115	169	215	40	50	24.5	33	80
1.1/4"	-	169	219	41	50	24.5	33	86

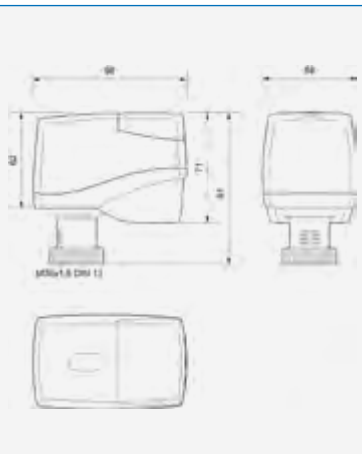
## Overall dimensions

### 822MR

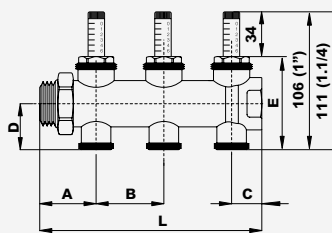


DN	L	L	L	A	B	C	D	E
	2 Outlets		3 Outlets		4 Outlets			
1"	115	169	215	40	50	24.5	33	72
1.1/4"	-	169	219	41	50	27.5	36	77

### EMUK

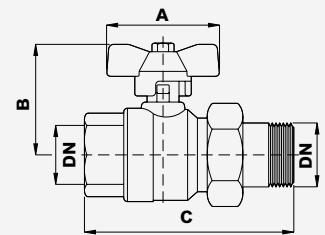


### FLMR/FL



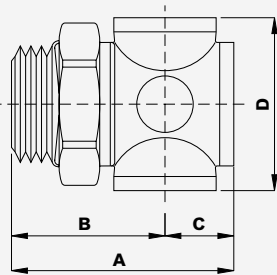
DN	L	L	L	A	B	C	D	E
	2 Outlets		3 Outlets		4 Outlets			
1"	114	164	214	40	50	24.5	33	72
1.1/4"	-	168	218	41	50	27.5	36	77

### 210



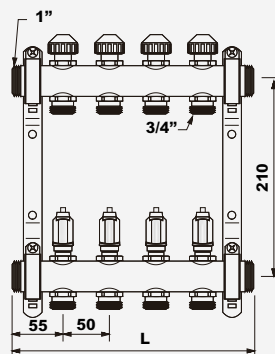
DN	A	B	C
1/2"	46	50	76
3/4"	46	53	94
1"	66	65	109
1.1/4"	66	70	128

### 823MT



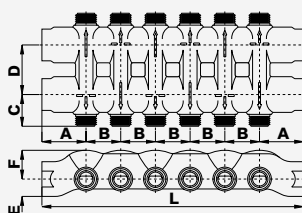
DN	A	B	C	D
1"	61.5	42	19.5	49
1.1/4"	63.5	42	19.5	49

### HKV 2013-VA/HKV2013A-AFC



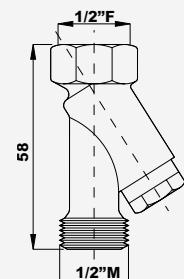
No. of outlets	L
2	160
3	210
4	260
5	310
6	360
7	410
8	460
9	510
10	560
11	610
12	660

### 825M



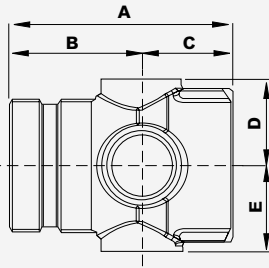
DN	Side outlets	L	A	B	C	D	E	F
3/4"	2 x 2	125	45	35	31	50	18	28.5
3/4"	4 x 4	195	45	35	31	50	18	28.5
3/4"	6 x 6	265	45	35	31	50	18	28.5
3/4"	8 x 8	335	45	35	31	50	18	28.5
1"	4 x 4	215	55	35	34	60	21	35.5
1"	6 x 6	285	55	35	34	60	21	35.5
1"	8 x 8	355	55	35	34	60	21	35.5
1"	10 x 10	425	55	35	34	60	21	35.5

### 209



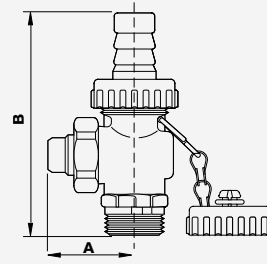
## Overall dimensions

### 823MP



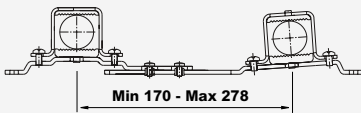
DN	A	B	C	D	E
1"G	69.5	40	25.5	27	27
1.1/4"G	69.5	41	28.5	27	27

### 290

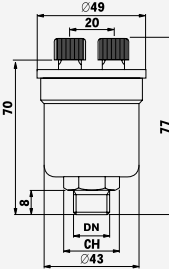


DN	A	B
1/8"	25	60
3/8"	30	75
1/2"	33	75

### 840MR

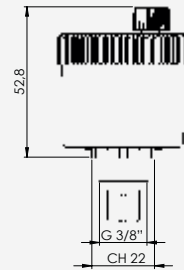


### MVD

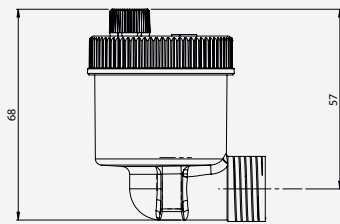


DN	B
3/8"	19
1/2"	22

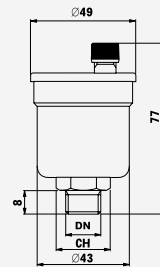
### INT-INT/R DUO-DUO/R



### INT/AV15

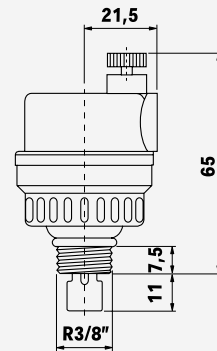


### MV

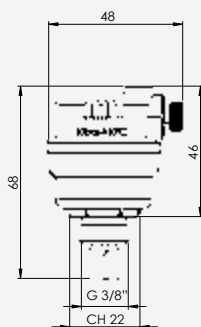


DN	B
3/8"	19
1/2"	22

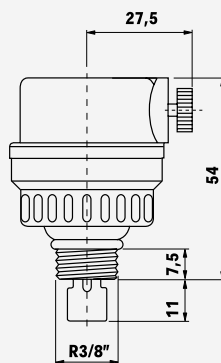
### MKV



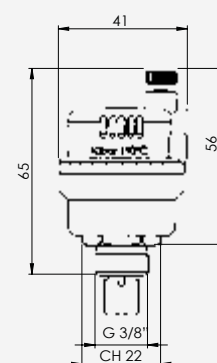
### MHV-MHV/R



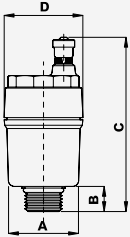
### MKL



### MHL

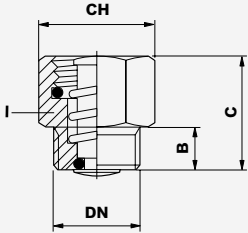


**2161C**



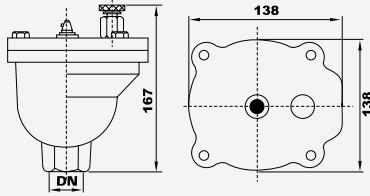
DN	A	B	C	D
3/8"	30	10	77	36
1/2"	30	10	77	36
3/4"	32	12	79	36
1"	37	12	79	36

**RIA**



DN	B	C	CH
3/8"	8	11	19
1/2"	8	11	24

**MXV**





# Chapter 9

## Valves and accessories for radiators

**WATTS®**

9



TRV - Thermostat-adaptable valve

Easy to pre-set  
Quick to install  
Suitable for reverse flow operation

## Chapter 9

# VALVES AND ACCESSORIES FOR RADIATORS

## TRV Series right-angle thermostat-adaptable valves and lockshields with copper/plastic connection

### 1378TRV



Nickel-plated thermostat-adaptable valve. Right-angle body. 1/2" M connection for copper or plastic pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem.

Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1378TRV38</b>	3/8"	1/2"	1.35	1	20
<b>1378TRV38-12</b>	3/8"	1/2"	1.35	1	20
<b>1378TRV38-24</b>	3/8"	M24 X 1.5**	1.35	1	20
<b>1378TRV12</b>	1/2"	1/2"	1.42	1	20
<b>1378TRV12-12</b>	1/2"	1/2"	1.42	1	20
<b>1378TRV12-24</b>	1/2"	M24 X 1.5**	1.42	1	20

\*Increased internal diameter. Compatible with 873M12...-12 and 817MSC12...-12 fittings.

\*\* Compatible with 873M12S...-24 and 817MSC12S...-24 fittings.

Dimensions on page 298

### 1388TRV



Nickel-plated thermostat-adaptable valve with six-position pre-setting device. Right-angle body. 1/2" M connection for copper or plastic pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem.

Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1388TRV38</b>	3/8"	1/2"	1.25	1	20
<b>1388TRV38-12</b>	3/8"	1/2"	1.25	1	20
<b>1388TRV38-24</b>	3/8"	M24 X 1.5**	1.25	1	20
<b>1388TRV12</b>	1/2"	1/2"	1.32	1	20
<b>1388TRV12-12</b>	1/2"	1/2"	1.32	1	20
<b>1388TRV12-24</b>	1/2"	M24 X 1.5**	1.32	1	20

\*Increased internal diameter. Compatible with 873M12...-12 and 817MSC12...-12 fittings.

\*\* Compatible with 873M12S...-24 and 817MSC12S...-24 fittings.

Dimensions on page 298

### 1395TRV



Nickel-plated micrometric lockshield. Right-angle body. 1/2" M connection for copper or plastic pipe. Straight tailpiece pre-sealed with O-ring. ABS cap.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1395TRV38</b>	3/8"	1/2"	1.50	1	100
<b>1395TRV38-12</b>	3/8"	1/2"	1.50	1	100
<b>1395TRV38-24</b>	3/8"	M24 X 1.5**	1.50	1	100
<b>1395TRV12</b>	1/2"	1/2"	1.50	1	100
<b>1395TRV12-12</b>	1/2"	1/2"	1.50	1	100
<b>1395TRV12-24</b>	1/2"	M24 X 1.5**	1.50	1	100

\*Increased internal diameter. Compatible with 873M12...-12 and 817MSC12...-12 fittings.

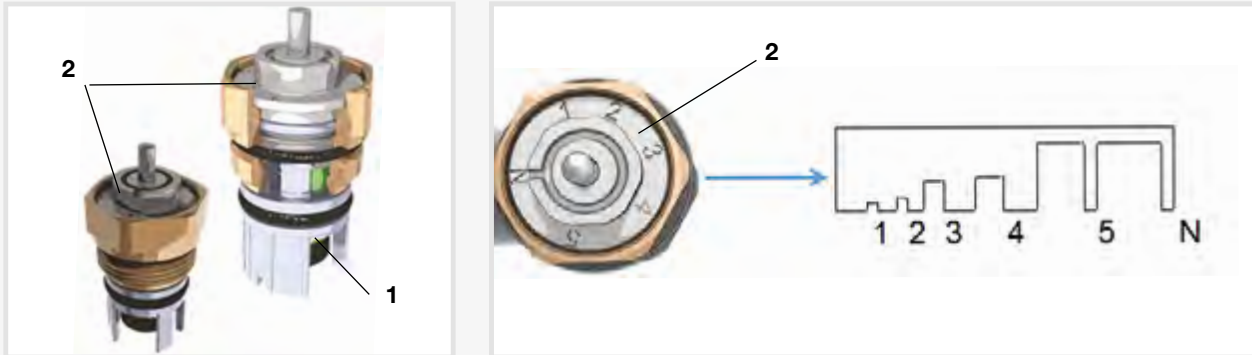
\*\* Compatible with 873M12S...-24 and 817MSC12S...-24 fittings.

Dimensions on page 298



## TECHNICAL NOTE - TRV valves

TRV Series thermostat-adaptable valves control possible imbalances in the circuits by setting a maximum flow rate. The pre-setting device works by limiting the flow rate with calibrated orifices (1). Remove the manual handwheel to turn the numbered pre-setting ring-nut (2). Active-memory pre-setting permanently retains the set balance.



## TRV Series straight thermostat-adaptable valves and lockshields with copper/plastic connection

### 1379TRV



Nickel-plated thermostat-adaptable valve. Straight body. 1/2" M connection for copper or plastic pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1379TRV38</b>	3/8"	1/2"	0.95	1	20
<b>1379TRV38-12</b>	3/8"	1/2"	0.95	1	20
<b>1379TRV38-24</b>	3/8"	M24 X 1.5**	0.95	1	20
<b>1379TRV12</b>	1/2"	1/2"	1.08	1	20
<b>1379TRV12-12</b>	1/2"	1/2"	1.08	1	20
<b>1379TRV12-24</b>	1/2"	M24 X 1.5**	1.08	1	20

\*Increased internal diameter. Compatible with 873M12...-12 and 817MSC12....-12 fittings.

\*\* Compatible with 873M12S...-24 and 817MSC12S...-24 fittings.

Dimensions on page 298

### 1389TRV



Nickel-plated thermostat-adaptable valve with six-position pre-setting device. Straight body. 1/2" M connection for copper or plastic pipe. Straight tailpiece with O-ring. ABS handwheel with stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1389TRV38</b>	3/8"	1/2"	0.90	1	100
<b>1389TRV38-12</b>	3/8"	1/2"	0.90	1	100
<b>1389TRV38-24</b>	3/8"	M24 X 1.5**	0.90	1	20
<b>1389TRV12</b>	1/2"	1/2"	1.00	1	20
<b>1389TRV12-12</b>	1/2"	1/2"	1.00	1	20
<b>1389TRV12-24</b>	1/2"	M24 X 1.5**	1.00	1	20

\*Increased internal diameter. Compatible with 873M12...-12 and 817MSC12....-12 fittings.

\*\* Compatible with 873M12S...-24 and 817MSC12S...-24 fittings.

Dimensions on page 298

### 1396TRV



Nickel-plated micrometric lockshield. Straight body. 1/2" M connection for copper or plastic pipe. Straight tailpiece with O-ring. ABS cap.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1396TRV38</b>	3/8"	1/2"	1.00	1	100
<b>1396TRV38-12</b>	3/8"	1/2"	1.00	1	100
<b>1396TRV38-24</b>	3/8"	M24 X 1.5**	1.00	1	100
<b>1396TRV12</b>	1/2"	1/2"	1.10	1	100
<b>1396TRV12-12</b>	1/2"	1/2"	1.10	1	100
<b>1396TRV12-24</b>	1/2"	M24 X 1.5**	1.10	1	100

\*Increased internal diameter. Compatible with 873M12...-12 and 817MSC12....-12 fittings.

\*\* Compatible with 873M12S...-24 and 817MSC12S...-24 fittings.

Dimensions on page 298

## TRV Series right-angle thermostat-adaptable valves and lockshields with iron connection - EN215

### 378TRV



Nickel-plated thermostat-adaptable valve. Right-angle body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>378TRV38</b>	3/8"	3/8"	1.30	1	20
<b>378TRV12</b>	1/2"	1/2"	1.40	1	20
<b>378TRV34</b>	3/4"	3/4"	1.45	1	20

Dimensions on page 298

### 388TRV



Nickel-plated thermostat-adaptable valve with six-position pre-setting device. Right-angle body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>388TRV38</b>	3/8"	3/8"	1.30	1	20
<b>388TRV12</b>	1/2"	1/2"	1.40	1	20
<b>388TRV34</b>	3/4"	3/4"	1.45	1	20

Dimensions on page 298

### 395TRV



Nickel-plated micrometric lockshield. Right-angle body. Connection for iron pipe. Straight tailpiece with O-ring. ABS cap.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>395TRV38</b>	3/8"	3/8"	1.35	1	100
<b>395TRV12</b>	1/2"	1/2"	1.45	1	100
<b>395TRV34</b>	3/4"	3/4"	1.55	1	100

Dimensions on page 298

## TRV Series straight thermostat-adaptable valves and lockshields with iron connection - EN215

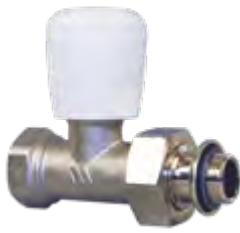
### 379TRV



Nickel-plated thermostat-adaptable valve. Straight body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>379TRV38</b>	3/8"	3/8"	1.00	1	20
<b>379TRV12</b>	1/2"	1/2"	1.10	1	20
<b>379TRV34</b>	3/4"	3/4"	1.15	1	20

Dimensions on page 298

**389TRV**

Nickel-plated thermostat-adaptable valve with six-position pre-setting device. Straight body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>389TRV38</b>	3/8"	3/8"	1.00	1	20
<b>389TRV12</b>	1/2"	1/2"	1.10	1	20
<b>389TRV34</b>	3/4"	3/4"	1.15	1	20

Dimensions on page 298

**396TRV**

Nickel-plated micrometric lockshield. Straight body. Connection for iron pipe. Straight tailpiece with O-ring. ABS cap.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>396TRV38</b>	3/8"	3/8"	1.05	1	100
<b>396TRV12</b>	1/2"	1/2"	1.15	1	100
<b>396TRV34</b>	3/4"	3/4"	1.25	1	100

Dimensions on page 298

## Right-angle thermostat-adaptable valves and lockshields with copper/plastic connection

**1178UM**

Nickel-plated thermostat-adaptable valve. Right-angle body. 1/2" connection for copper or plastic/multi-layer pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1178UMSN38X</b>	3/8"	1/2"	2.6	1	20
<b>1178UMSN12</b>	1/2"	1/2"	2.6	1	20

Dimensions on page 295

**1188UM**

Nickel-plated thermostat-adaptable valve with nine-position pre-setting device. Right-angle body. 1/2" connection for copper or plastic/multi-layer pipe. Straight tailpiece with O-ring. ABS handwheel with fixed stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1188UMSN38X</b>	3/8"	1/2"	2.6	1	20
<b>1188UMSN12</b>	1/2"	1/2"	2.6	1	20

Dimensions on page 295

**1195UM**

Nickel-plated micrometric lockshield. Right-angle body. 1/2" connection for copper or plastic/multi-layer pipe. Straight tailpiece with O-ring. ABS cap.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1195UMSN38X</b>	3/8"	1/2"	2.1	1	30
<b>1195UMSN12</b>	1/2"	1/2"	2.1	1	30

Dimensions on page 295

## Straight thermostat-adaptable valves and lockshields with copper/plastic connection

### 1179UM



Nickel-plated thermostat-adaptable valve. Straight body. 1/2”M connection for copper or plastic/multi-layer pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1179UMSN38X</b>	3/8”	1/2”	1.8	1	20
<b>1179UMSN12</b>	1/2”	1/2”	1.8	1	20

Dimensions on page 295

### 1189UM



Nickel-plated thermostat-adaptable valve with nine-position pre-setting device. Straight body. 1/2”M connection for copper or plastic/multi-layer pipe. Straight tailpiece with O-ring. ABS handwheel with fixed stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1189UMSN38X</b>	3/8”	1/2”	1.8	1	20
<b>1189UMSN12</b>	1/2”	1/2”	1.8	1	20

Dimensions on page 295

### 1196UM



Nickel-plated micrometric lockshield. Straight body. 1/2”M connection for copper or plastic/multi-layer pipe. Straight tailpiece with O-ring. ABS cap.

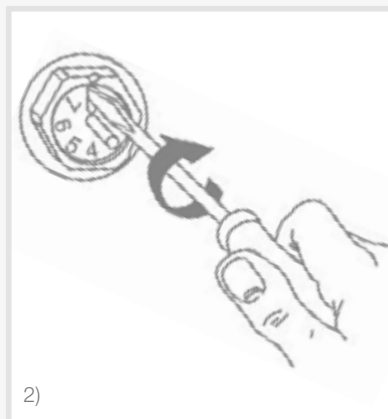
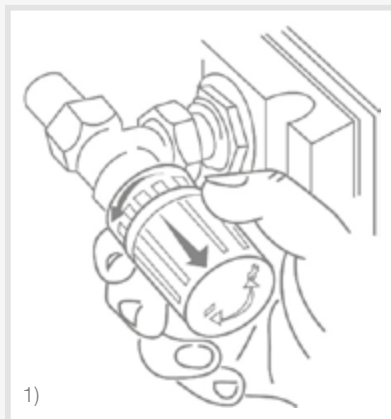
Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1196UMSN38X</b>	3/8”	1/2”	1.7	1	30
<b>1196UMSN12</b>	1/2”	1/2”	1.7	1	30

Dimensions on page 295

#### TECHNICAL NOTE - Valve setting instructions

188UM-1188UM-189UM-1189UM-130UM-130SN-134UM-1134UM-1130UM-131UM-1131UM-120B-120M thermostat-adaptable valves enable you to set a clearly defined maximum flow rate, thus controlling possible imbalances in the circuits: the pre-setting device works by limiting the stroke of the disc and each setting position is obtained by turning the ring-nut under the handwheel. The fluid flow rate and pressure drop can be determined from the nomograms. In thermostatic mode, however, they assume the characteristics of the device in question.

- 1) Remove the manual handwheel
- 2) Fully close the pre-setting ring-nut
- 3) Re-open to the pre-setting position specified for the project or selected in the specific diagram, so that the number corresponds to the reference notch. Refit the handwheel.



## Right-angle thermostat-adaptable valves and lockshields with iron connection - EN215

### 178UM



Nickel-plated thermostat-adaptable valve. Right-angle body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators. **Keymark certified.**

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>178UMSN38</b>	3/8"	3/8"	2.1	1	30
<b>178UMSN12</b>	1/2"	1/2"	2.6	1	20
<b>178UMSN34</b>	3/4"	3/4"	3.3	1	20

Dimensions on page 295

### 188UM



Nickel-plated thermostat-adaptable valve with nine-position pre-setting device. Right-angle body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

**Keymark certified.**

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>188UMSN38</b>	3/8"	3/8"	2.1	1	20
<b>188UMSN12</b>	1/2"	1/2"	2.6	1	20
<b>188UMSN34</b>	3/4"	3/4"	3.3	1	20

Dimensions on page 295

### 130UM



Nickel-plated body. Right-angle thermostatic valve with easy-to-remove protection cap for installation with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators. Connection for iron pipe. Straight tailpiece with O-ring. Nine-position pre-setting device. **Keymark certified.**

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>130UMSN38</b>	3/8"	3/8"	2.1	1	30
<b>130UMSN12</b>	1/2"	1/2"	2.6	1	20
<b>130UMSN34</b>	3/4"	3/4"	3.3	1	20

Dimensions on page 295

### 130SN



Nickel-plated body. Right-angle thermostatic valve with easy-to-remove protection cap for installation with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators. Nine-position pre-setting device. Connection for iron pipe. Knurled tapered tailpiece to facilitate sealing with hemp. Compatible with handwheel for RV178 Series thermostat-adaptable valves.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>130SN1</b>	1"	1"	3.3	1	20

Dimensions on page 295

## 195UM



Nickel-plated micrometric lockshield. Right-angle body. Connection for iron pipe. Straight tailpiece with O-ring. ABS cap.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>195UMSN38</b>	3/8"	3/8"	1.9	1	30
<b>195UMSN12</b>	1/2"	1/2"	2.1	1	30
<b>195UMSN34</b>	3/4"	3/4"	5.0	1	20

Dimensions on page 295

## 195S



Nickel-plated micrometric lockshield. Right-angle body. Connection for iron pipe. Knurled tapered tailpiece to facilitate sealing with hemp. ABS cap.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>195SN1</b>	1"	1"	8.9	1	5

Dimensions on page 295

## Straight thermostat-adaptable valves and lockshields with iron connection - EN215 179UM



Nickel-plated thermostat-adaptable valve. Straight body. Connection for iron pipe. Straight tailpiece with O-ring. ABS handwheel with moving stem. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

**Keymark certified.**

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>179UMSN38</b>	3/8"	3/8"	1.1	1	30
<b>179UMSN12</b>	1/2"	1/2"	1.8	1	20
<b>179UMSN34</b>	3/4"	3/4"	2.6	1	20

Dimensions on page 296

## 189UM



Nickel-plated thermostat-adaptable valve with nine-position pre-setting device. Straight body. Connection for iron pipe. Straight tailpiece with O-ring. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

**Keymark certified.**

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>189UMSN38</b>	3/8"	3/8"	1.1	1	20
<b>189UMSN12</b>	1/2"	1/2"	1.8	1	20
<b>189UMSN34</b>	3/4"	3/4"	2.6	1	20

Dimensions on page 296

**131UM**

Nickel-plated thermostatic valve with easy-to-remove protection cap for installation with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators. Straight body. Connection for iron pipe. Straight tailpiece with O-ring. Nine-position pre-setting device. **Keymark certified.**

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>131UMSN38</b>	3/8"	3/8"	1.1	1	30
<b>131UMSN12</b>	1/2"	1/2"	1.8	1	20
<b>131UMSN34</b>	3/4"	3/4"	2.6	1	20

Dimensions on page 296

**196UM**

Nickel-plated micrometric lockshield. Straight body. Connection for iron pipe. Straight tailpiece with O-ring. ABS cap.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>196UMSN38</b>	3/8"	3/8"	1.1	1	30
<b>196UMSN12</b>	1/2"	1/2"	1.7	1	30
<b>196UMSN34</b>	3/4"	3/4"	3.5	1	20

Dimensions on page 298

**Thermostat-adaptable valves, reverse body****134M**

Right-angle nickel-plated reverse body. Thermostatic valve with removable protection cap for installation with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators. Connection for iron pipe. Straight tailpiece with O-ring. Nine-position pre-setting device.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>134M12</b>	1/2"	1/2"	1.4	1	100

Dimensions on page 296

**1134M**

Right-angle nickel-plated reverse body. Thermostatic valve with removable protection cap for installation with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators. 1/2" M connection for copper or plastic/multi-layer pipe. Straight tailpiece with O-ring. Nine-position pre-setting device.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>1134M12</b>	1/2"	1/2"	1.4	1	20

Dimensions on page 296

## 4-way thermostat-adaptable valves for single-pipe and two-pipe systems

### 120B



4-way nickel-plated thermostat-adaptable valve for two-pipe systems. Equipped with a nine-position pre-setting device. Built-in lockshield. Connection for copper or plastic pipe. O-ring-sealed straight tailpiece complete with flow separation probe. ABS handwheel. Differential pressure (148 and 148A Series): 1.5 bar. K<sub>vs</sub> with 2K proportional band: DN 1/2" = 0.58; DN 3/4" = 0.62. Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>120B12AM12</b>	1/2"	1/2"	0.82	1	50
<b>120B12AM34</b>	3/4"	1/2"	0.93	1	50

Dimensions on page 297

### 102M



4-way nickel-plated thermostat-adaptable valve for single-pipe systems with fixed bypass. Equipped with a nine-position pre-setting device. Built-in lockshield. Connection for copper or plastic pipe. O-ring-sealed straight tailpiece complete with flow separation probe. ABS handwheel. Differential pressure (148 and 148A Series): 1.5 bar.

K<sub>vs</sub> with 2K proportional band:

- DN 1/2" = 1.76

- DN 3/4" = 1.84

Flow rate to heat emitter: 50%

Compatible with 148 and 148A Series thermostatic actuators, BT-TH02 RF Series electronic thermostatic actuators and 22C, 22CX, 22CX5 and 26LC Series electrothermal actuators.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>102M12AM12</b>	1/2"	1/2"	2.00	1	50
<b>102M12AM34</b>	3/4"	1/2"	2.15	1	50
<b>102M24AM12</b>	1/2"	1/2"S	2.00	1	50
<b>102M24AM34</b>	3/4"	1/2"S	2.15	1	50
<b>102M24AM12-24</b>	1/2"	M24 X 1.5*	2.00	1	50
<b>102M24AM34-24</b>	3/4"	M24 X 1.5*	2.15	1	50

\* Compatible with 873M12S...-24 and 817MSC12S...-24 fittings.

Dimensions on page 297

#### TECHNICAL NOTE - Single-connection valve selection guide

Single-connection valves incorporate the various functions of the valve and lockshield into a single piece. In thermostatic mode, connect the flow pipe to the connection below the actuator.

#### For two-pipe systems

120B Series valves (without by-pass) make it possible to create two-pipe heating systems, where for aesthetic or installation reasons it is preferable to keep a single connection point to the radiator (at the bottom), thus reducing the amount of masonry work and installation time.



120B

#### For single-pipe systems

102M Series valves make it possible to split the water flow calculated for the entire loop into one part for heat exchange and one part for the next radiator. This permanently open by-pass allows constant circulation of the heat carrier fluid even when the valve is closed.



102M

## Manual single-pipe valves

### 119SX



4-way nickel-plated valve for single-pipe systems. Connection for copper or plastic pipe. Straight tailpiece complete with flow separation probe.

Flow rate to heat emitter: 100% ABS handwheel.

Part no.	DN Body	DN Pipe	Kvs	Pcs. pack	Package
<b>119S1212X</b>	1/2"	1/2"	1.6	1	50
<b>119S3412X</b>	3/4"	1/2"	2.00	1	50
<b>119SS1212SX</b>	1/2"	1/2"S	1.6	1	50
<b>119SS3412SX</b>	3/4"	1/2"S	2.00	1	50
<b>119SS12M24X</b>	1/2"	M24 X 1.5*	1.6	1	50
<b>119SS34M24X</b>	3/4"	M24 X 1.5*	2.00	1	50

\* Compatible with 873M12S...-24 and 817MSC12S...-24 fittings.

Dimensions on page 296



## Thermostatic actuators

### 148A



Thermostatic actuator for thermostat-adaptable valves with liquid-filled sensing element. Temperature limiting and locking device. ABS handwheel. Anti-freeze position: 8°C. Interchangeable with 148 Series actuator. Included in the TRV-G ring-nut package for TRV Series valves.

**UNI EN 215 certified.**

**TELL certification, class A.**

Part no.	Max. pressure	Graduated scale	Adjustment	Pcs. pack	Package
<b>148A</b>	1.5 bar	0-5	0-28°C	1	100

Dimensions on page 296

#### TECHNICAL NOTE - UNI EN 215 and TELL certifications

The introduction of the **TELL (Thermostatic Efficiency Label)** European classification system for classifying the energy efficiency of valves facilitates immediate identification of superior products.

Watts 148 and 148A Series actuators are TELL certified to **efficiency class A**.

#### The TELL certification criteria are:

- water temperature;
- hysteresis;
- response time to temperature changes;
- differential pressure.

Details of the classification scheme are available on [www.tell-online.eu](http://www.tell-online.eu)

**UNI EN 215 certifications: Approval tests conducted using 130, 178, 179 and 188 Series valves**

**TELL certifications: Approval tests conducted using 130D Series valves**

### 148



Thermostatic actuator for thermostat-adaptable valves with liquid-filled sensing element. Temperature limiting and locking device. ABS handwheel. Anti-freeze position: 8°C. Included in the TRV-G ring-nut package for TRV Series valves.

**UNI EN 215 certified.**

**TELL certification, class A.**

Part no.	Max. pressure	Graduated scale	Adjustment	Pcs. pack	Package
<b>148</b>	1.5 bar	0-5	0-28°C	1	100

Dimensions on page 296

### 147



Chrome-plated thermostatic actuator with oil-filled sensitive element. Temperature limiting and locking device. ABS handwheel. Anti-freeze position: 8°C. Included in the TRV-G ring-nut package for TRV Series valves.

Part no.	Max. pressure	Graduated scale	Adjustment	Pcs. pack	Package
<b>147CR</b>	1.5 bar	0-5	0-28°C	1	100

Dimensions on page 296

### 148SD



Thermostatic actuator with remote sensor. Temperature limiting and locking device. ABS handwheel. Capillary length 2 metres. Anti-freeze position: 8°C. Included in the TRV-G ring-nut package for TRV Series valves.

Part no.	Max. pressure	Graduated scale	Adjustment	Pcs. pack	Package
<b>148SD</b>	1.5 bar	0-5	0-28°C	1	60

Dimensions on page 296

**148CD**



Thermostatic actuator with remote control. Temperature limiting and locking device. ABS handwheel. Capillary length 2 metres. Anti-freeze position: 8°C. Included in the TRV-G ring-nut package for TRV Series valves.

Part no.	Max. pressure	Graduated scale	Adjustment	Pcs. pack	Package
<b>148CD</b>	1.0 bar	0-5	0-28°C	1	60

Dimensions on page 296

**148GA**



Tamper-proof cover for 148 and 148A Series thermostatic actuators. Provision for limiting and locking temperature range on rivetable closing position. Complete with standard fixing screws and break-stem rivets.

Part no.	Pcs. pack	Package
<b>148GA</b>	1	100

Dimensions on page 296

**TECHNICAL NOTE - Concise instructions on the use of thermostatic valves**

Thermostat-adaptable valves can be connected to thermostatic actuators (148 and 148A Series) in a single, simple step, and thus converted into thermostatic valves with the system still running.

- 1) Remove the manual handwheel (Fig. 1)
  - 2) Turn the thermostatic actuator to the fully open position (position 5)
  - 3) Approach the actuator to the valve body with the reference pointer clearly visible, then screw the nickel-plated ring-nut fully home (Fig. 2)
- Avoid positioning the actuator vertically; use the two setting blocks and position them to coincide with the required min./max. values (Fig. 3).



0	❄️	1	2	3	4	5
<b>Closed</b>	<b>8°C Anti-freeze</b>	<b>12°C</b>	<b>16°C</b>	<b>20°C</b>	<b>24°C</b>	<b>28°C</b>

**Radial slots**  
High sensitivity in room temperature measurement

**Adjustment riders**  
Provision for adjusting or locking the pre-set temperature range

**Threaded ring-nut**  
Practical and quick in installation operations

**5 temperature levels**  
Quick and easy setting of the required temperature

To find out which Watts thermostat-adaptable valves are **UNI EN 215 approved and certified with 130, 178, 179 and 188 Series valves** go to [www.wattswater.eu](http://www.wattswater.eu) where you will find all the information you need.

**EFFICIENCY AND ENERGY SAVING**

Keymark certified thermostatic actuators remain certified only when used in conjunction with Keymark valves. Otherwise their performance is not guaranteed.

## Thermostat-adaptable valve kit

### TWINKIT1178



Right-angle radiator valve kit, DN 3/8" and 1/2" for copper or plastic pipe connection.

Package contains:

- 1 x 1178UM Series nickel-plated thermostat-adaptable valve;
- 1 x 1195UM Series nickel-plated micrometric lockshield;
- 2 nickel-plated tailpieces with O-ring.

Part no.	DN Body	DN Pipe	Valve Kvs	Pcs. pack	Package
<b>KIT1178+D38</b>	3/8"	1/2"	2.6	1	20
<b>KIT1178+D12</b>	1/2"	1/2"	2.6	1	20

### TWINKIT178



Right-angle radiator valve kit, DN 3/8" and 1/2" for iron pipe connection.

Package contains:

- 1 x 178UM Series nickel-plated thermostat-adaptable valve;
- 1 x 195UM Series nickel-plated micrometric lockshield;
- 2 nickel-plated tailpieces with O-ring.

Part no.	DN Body	DN Pipe	Valve Kvs	Pcs. pack	Package
<b>KIT178+D38</b>	3/8"	1/2"	2.1	1	20
<b>KIT178+D12</b>	1/2"	1/2"	2.6	1	20

### KR-SR-TRV



Kit of valves and thermostatic actuators for 10 radiators, consisting of:

- 10 nickel-plated thermostatic valves with right-angle body and connection for copper/plastic pipe 1378UM or 1388UM Series with pre-setting;
- 10 x 1395UM Series nickel-plated micrometric lockshields with right-angle body and connection for copper/plastic pipe;
- 10 x 148 Series thermostatic actuators.

Part no.	Valve type	Pre-setting	DN Body	DN Pipe	Pcs. pack
<b>KR38VAD-SR-TRV</b>	1378 Series	-	3/8"	1/2"	1
<b>KR12VAD-SR-TRV</b>	1378 Series	-	1/2"	1/2"	1
<b>KR38PAD-SR-TRV</b>	1388 Series	yes	3/8"	1/2"	1
<b>KR12PAD-SR-TRV</b>	1388 Series	yes	1/2"	1/2"	1

### KR-DR-TRV



Kit of valves and thermostatic actuators for 10 radiators, consisting of:

- 10 nickel-plated thermostatic valves with straight body and connection for copper/plastic pipe 1379UM or 1389UM Series with pre-setting;
- 10 x 1396UM Series nickel-plated micrometric lockshields with straight body and connection for copper/plastic pipe;
- 10 x 148 Series thermostatic actuators.

Part no.	Valve type	Pre-setting	DN Body	DN Pipe	Pcs. pack
<b>KR38VAD-DR-TRV</b>	1379 Series	-	3/8"	1/2"	1
<b>KR12VAD-DR-TRV</b>	1379 Series	-	1/2"	1/2"	1
<b>KR38PAD-DR-TRV</b>	1389 Series	yes	3/8"	1/2"	1
<b>KR12PAD-DR-TRV</b>	1389 Series	yes	1/2"	1/2"	1

## KR-SF-TRV



Kit of valves and thermostatic actuators for 10 radiators, consisting of:

- 10 x 378UM Series nickel-plated thermostatic valves with right-angle body and connection for iron pipe or 388UM Series with pre-setting;
- 10 x 395UM Series nickel-plated micrometric lockshields with right-angle body and connection for iron pipe;
- 10 x 148 Series thermostatic actuators.

Part no.	Valve type	Pre-setting	DN	Pcs. pack	Package
<b>KR38VAD-SF-TRV</b>	378 Series	-	3/8"	1	1
<b>KR12VAD-SF-TRV</b>	378 Series	-	1/2"	1	1
<b>KR34VAD-SF-TRV</b>	378 Series	-	3/4"	1	1
<b>KR38PAD-SF-TRV</b>	388 Series	yes	3/8"	1	1
<b>KR12PAD-SF-TRV</b>	388 Series	yes	1/2"	1	1
<b>KR34PAD-SF-TRV</b>	388 Series	yes	3/4"	1	1

## KR-DF-TRV



Kit of valves and thermostatic actuators for 10 radiators, consisting of:

- 10 x 379UM Series nickel-plated thermostatic valves with straight body and connection for iron pipe or 389UM Series with pre-setting;
- 10 x 396UM Series nickel-plated micrometric lockshields with straight body and connection for iron pipe;
- 10 x 148 Series thermostatic actuators.

Part no.	Valve type	Pre-setting	DN	Pcs. pack	Package
<b>KR38VAD-DF-TRV</b>	379 Series	-	3/8"	1	1
<b>KR12VAD-DF-TRV</b>	379 Series	-	1/2"	1	1
<b>KR34VAD-DF-TRV</b>	379 Series	-	3/4"	1	1
<b>KR38PAD-DF-TRV</b>	389 Series	yes	3/8"	1	1
<b>KR12PAD-DF-TRV</b>	389 Series	yes	1/2"	1	1
<b>KR34PAD-DF-TRV</b>	389 Series	yes	3/4"	1	1

## Manual valves and lockshields

### 1163R



Nickel-plated manual valve. Right-angle body. Soft-seal disc. 1/2" M connection for copper or plastic pipe. Knurled tapered tailpiece to facilitate sealing with hemp. ABS handwheel.

Part no.	DN	DN Pipe	Kvs	Pcs. pack	Package
<b>1163SN38XR</b>	3/8"	1/2"	1.8	1	40
<b>1163SN12R</b>	1/2"	1/2"	1.9	1	40

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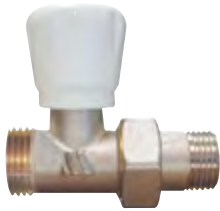
### 1193R



Nickel-plated micrometric lockshield. Right-angle body. Soft-seal disc. 1/2" M connection for copper or plastic pipe. Knurled tapered tailpiece to facilitate sealing with hemp. Nickel-plated brass cap.

Part no.	DN	DN Pipe	Pcs. pack	Package
<b>1193SN38XR</b>	3/8"	1/2"	1	120
<b>1193SN12R</b>	1/2"	1/2"	1	80

Dimensions on page 297

**1164R**

Nickel-plated manual valve. Straight body. Soft-seal disc. 1/2" M connection for copper or plastic pipe. Knurled tapered tailpiece to facilitate sealing with hemp. ABS handwheel.

Part no.	DN	DN Pipe	Kvs	Pcs. pack	Package
<b>1164SN38XR</b>	3/8"	1/2"	1.2	1	120
<b>1164SN12R</b>	1/2"	1/2"	1.4	1	40

Dimensions on page 297

**1194R**

Nickel-plated micrometric lockshield. Straight body. Soft-seal disc. 1/2" M connection for copper or plastic pipe. Knurled tapered tailpiece to facilitate sealing with hemp. Nickel-plated brass cap.

Part no.	DN	DN Pipe	Kvs	Pcs. pack	Package
<b>1194SN38XR</b>	3/8"	1/2"	1.2	1	80
<b>1194SN12R</b>	1/2"	1/2"	1.4	1	80

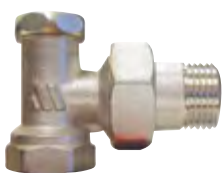
Dimensions on page 297

**163R**

Nickel-plated manual valve. Right-angle body. Soft-seal disc. Connection for iron pipe. Knurled tapered tailpiece to facilitate sealing with hemp. ABS handwheel.

Part no.	DN	DN Pipe	Kvs	Pcs. pack	Package
<b>163SN38R</b>	3/8"	3/8"	1.8	1	40
<b>163SN12R</b>	1/2"	1/2"	1.9	1	40

Dimensions on page 297

**193R**

Nickel-plated micrometric lockshield. Right-angle body. Soft-seal disc. Connection for iron pipe. Knurled tapered tailpiece to facilitate sealing with hemp. Nickel-plated brass cap.

Part no.	DN	DN Pipe	Kvs	Pcs. pack	Package
<b>193SN38R</b>	3/8"	3/8"	1.8	1	80
<b>193SN12R</b>	1/2"	1/2"	1.9	1	80

Dimensions on page 297

**164R**

Nickel-plated manual valve. Straight body. Soft-seal disc. Connection for iron pipe. Knurled tapered tailpiece to facilitate sealing with hemp. ABS cap.

Part no.	DN	DN Pipe	Kvs	Pcs. pack	Package
<b>164SN38R</b>	3/8"	3/8"	1.2	1	40
<b>164SN12R</b>	1/2"	1/2"	1.4	1	40

Dimensions on page 297

## 194R



Nickel-plated micrometric lockshield. Straight body. Soft-seal disc. Connection for iron pipe. Knurled tapered tailpiece to facilitate sealing with hemp. Nickel-plated brass cap.

Part no.	DN	DN Pipe	Kvs	Pcs. pack	Package
<b>194SN38R</b>	3/8"	3/8"	1.2	1	80
<b>194SN12R</b>	1/2"	1/2"	1.4	1	80

Dimensions on page 297

## ACCESSORIES



### 225-RP130

Puller for replacing RP130, RP320 and RP330 Series discs on thermostat-adaptable valves (1178UM, 1179UM, 1180UM, 1181UM, 1188UM, 1189UM, 178UM, 180UM, 188UM, 130UM, 179UM, 181UM, 189UM, 131UM, 134M, 1134M, 120B, 102M and TRV Series) and carrying out cleaning.

Part no.	Description	Pcs. pack	Package
<b>225-RP130</b>	Extractor	1	1

### 224

Pre-setting wrench for thermostat-adaptable valves (1188UM, 1189UM, 188UM, 130UM, 189UM, 131UM, 134M, 1134M, 120B, 102M) and 822M Series manifolds.



Part no.	Pcs. pack	Package
<b>224</b>	1	50

### 808D

White plastic one-hole washer.



Part no.	Size	Pcs. pack	Package
<b>808D10W</b>	10mm	25	2500
<b>808D12W</b>	12mm	25	2500
<b>808D14W</b>	14mm	25	2500
<b>808D15W</b>	15mm	25	2500
<b>808D16W</b>	16mm	25	2500
<b>808D18W</b>	18mm	25	2500
<b>808D22W</b>	22mm	25	2500
<b>808D28W</b>	28mm	25	2500

### 128

White plastic two-hole openable washer.



Part no.	Size	Pcs. pack	Package
<b>12812 W</b>	12mm	25	2500
<b>12814 W</b>	14mm	25	2500
<b>12816 W</b>	16mm	25	2500
<b>12818 W</b>	18mm	25	2500

**TRV-G**

Ring-nut for TRV Series valves, suitable for 148, 148A, 147CR, 148SD, 148CD, 22C, 22CX, 22CX5 and 26LC Series actuators.



Part no.	Description	Pcs. pack	Package
<b>TRV-G</b>	-	10	2500

**RV140**

Flow separation probe for 119SX, 102M and 120B Series 4-way valves.  
Material: ABS. L= 380 mm.



Part no.	DN	Pipe	Pcs. pack	Package
<b>RV14010</b>	1/2"	Ø10 thk. 1.2	10	10
<b>RV14014</b>	3/4"	Ø14 thk. 1.0	10	10

**PARTS FOR VALVES****234**

Straight tailpiece with nickel-plated nut for UM Series valves and lockshields with soft seal on radiator side and valve side.



Part no.	DN	Pcs. pack	Package
<b>234USN38X</b>	3/8" M x 1/2" F	10	200
<b>234USN38</b>	3/8" M x 5/8" F	10	200
<b>234SN12</b>	1/2" MF	10	150
<b>234SN34</b>	3/4" MF	10	100

**235**

Straight tailpiece with nickel-plated nut and probe mounting for 4-way single-pipe and two-pipe valves.



Part no.	DN	Pcs. pack	Package
<b>235SN3412</b>	1/2"	10	80
<b>235SN3434</b>	3/4"	10	60

**RP-30**

Disc unit for 822M Series (model 130) thermostatic valves, thermostat-adaptable valves and manifolds, TRV Series non-pre-set valves (model RP320) and TRV Series pre-set valves (RP330).



Part no.	DN	Pcs. pack	Package
<b>RP130</b>	M22 x 1.5	1	100
<b>RP320</b>	M18 x 1	1	100
<b>RP330</b>	M18 x 1	10	100

**RP-340**

Reverse flow disc assembly for 130 and 178 Series thermostatic and thermostat-adaptable valves.



Part no.	DN	Pcs. pack	Package
<b>RP340</b>	M22 x 1.5	1	100

**RV119**

Handwheel for 119SX Series single-pipe valves.



Part no.	DN	Pcs. pack	Package
<b>RV119B</b>	Single	1	100



**RV178**

White handwheel for 178UM-179UM-1178UM-1179UM, 120B, 102M Series thermostat-adaptable valves.

Part no.	DN	Pcs. pack	Package
<b>RV178</b>	Single	1	100



**RV188-RVTRV**

White handwheel for 188UM - 189UM - 1188UM - 1189UM Series (model RV188) thermostat-adaptable valves and TRV Series valves (model RVTRV).

Part no.	DN	Pcs. pack	Package
<b>RV188-189W</b>	Single	1	50
<b>RVTRV</b>	Single	1	50



**RV195-RV395**

White cap for 195 - 196 - 1195 - 1196 Series (models RV195) lockshields and TRV Series lockshields (model RV395).

Part no.	DN	Pcs. pack	Package
<b>RV195B</b>	3/8" - 1/2"	1	200
<b>RV19534B</b>	3/4"	1	100
<b>RV395</b>	3/8"-1/2"-3/4"	1	100

**Air vents**

**228C - HYGROVENT**



Automatic air vent valve with check device and discharge nozzle. Chrome-plated CW614N brass body. PN 6.

Part no.	DN	Pcs. pack	Package
<b>2280C18X</b>	1/8"	25	500
<b>2281C14X</b>	1/4"	25	500
<b>2282C38X</b>	3/8"	25	500

Dimensions on page 297

**238C**



Manual air vent valve with discharge nozzle. Chrome-plated CW614N brass body. PN 10.

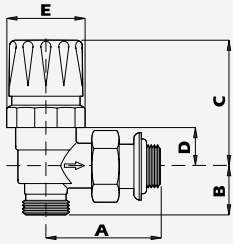
Part no.	DN	Pcs. pack	Package
<b>2381C18X</b>	1/8"	25	500
<b>2382C14X</b>	1/4"	25	500
<b>2383C38X</b>	3/8"	25	500

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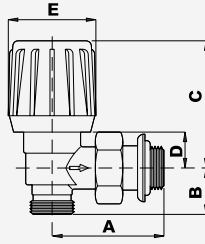
## Overall dimensions

### 1178UM



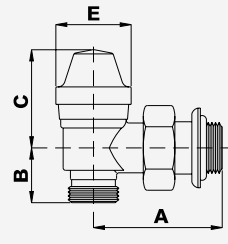
DN	A	B	C	D	E
1/2" x 3/8"	49	20.5	56	18	35
1/2" x 1/2"	53	20.5	56	18	35

### 1188UM



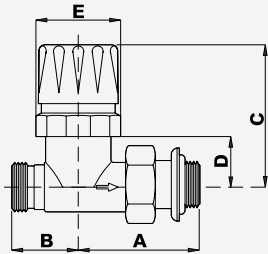
DN	A	B	C	D	E
1/2" x 3/8"	49	20.5	62	18	40
1/2" x 1/2"	53	20.5	62	18	40

### 1195UM



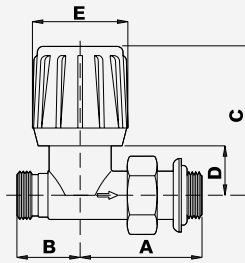
DN	A	B	C	E
1/2" x 3/8"	48	19	36	31
1/2" x 1/2"	52	19	40	31

### 1179UM



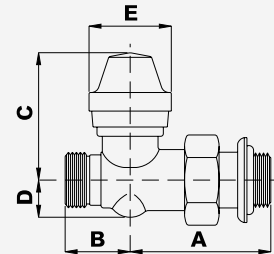
DN	A	B	C	D	E
1/2" x 3/8"	49	26	62	24.5	35
1/2" x 1/2"	53	26	62	24.5	35

### 1189UM



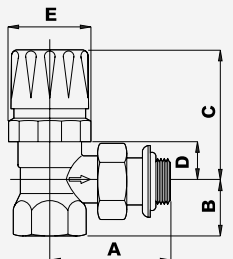
DN	A	B	C	D	E
1/2" x 3/8"	49	26	68	24.5	40
1/2" x 1/2"	53	26	68	24.5	40

### 1196UM



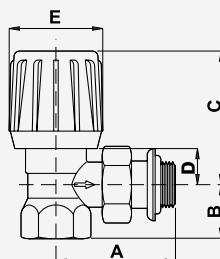
DN	A	B	C	D	E
1/2" x 3/8"	48	23	42	11	31
1/2" x 1/2"	52	23	45	11	31

### 178UM



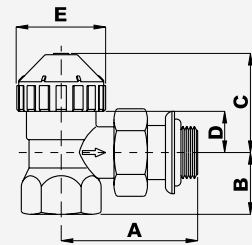
DN	A	B	C	D	E
3/8"	49	20	56	18	35
1/2"	53	23	56	18	35
3/4"	61	28	56	18	35

### 188UM



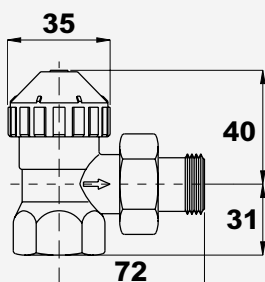
DN	A	B	C	D	E
3/8"	49	20	62	18	40
1/2"	53	23	62	18	40
3/4"	61	28	62	18	40

### 130UM

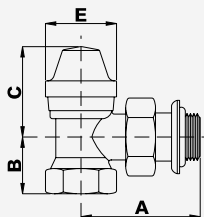


DN	A	B	C	D	E
3/8"	49	20	40	18	35
1/2"	53	23	40	18	35
3/4"	61	28	40	18	35

### 130SN

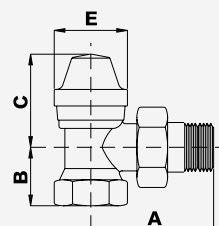


### 195UM



DN	A	B	C	E
3/8"	48	21	36	31
1/2"	52	25	40	31
3/4"	60	29	50	41

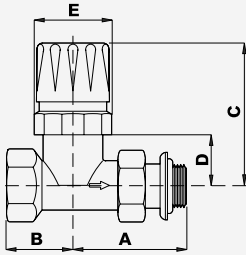
### 195S



DN	A	B	C	E
1"	70	29	57	46

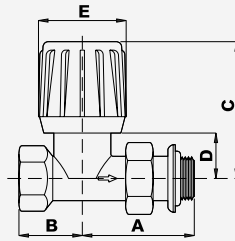
## Overall dimensions

### 179UM



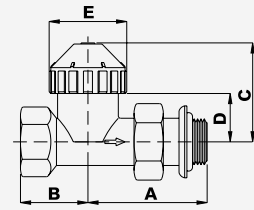
DN	A	B	C	D	E
3/8"	49	26	62	24.5	35
1/2"	53	29	62	24.5	35
3/4"	61	34	62	24.5	35

### 189UM



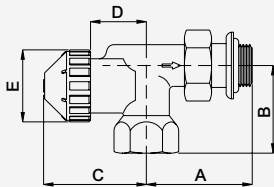
DN	A	B	C	D	E
3/8"	49	26	68	24.5	40
1/2"	53	29	68	24.5	40
3/4"	61	34	68	24.5	40

### 131UM



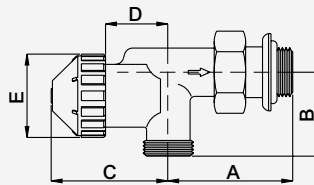
DN	A	B	C	D	E
3/8"	49	26	46.5	24.5	35
1/2"	53	29	46.5	24.5	35
3/4"	61	34	46.5	24.5	35

### 134M



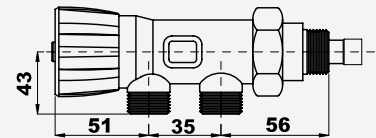
DN	A	B	C	D	E
1/2"	53	37	50	31	35

### 1134M

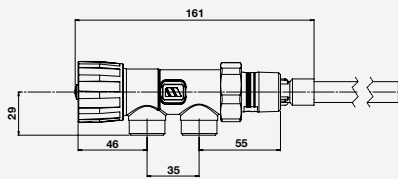


DN	A	B	C	D	E
1/2"	53	34	50	31	35

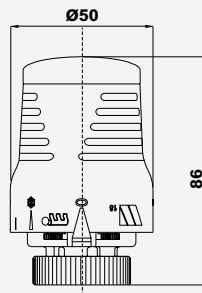
### 119SX



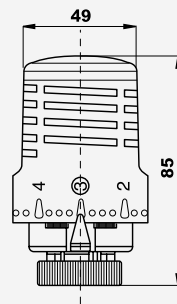
### 119SX with M24X1.5 CONNECTION



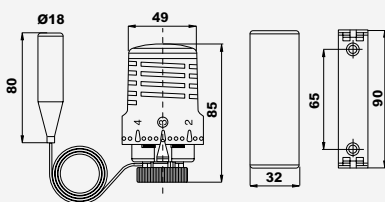
### 148A



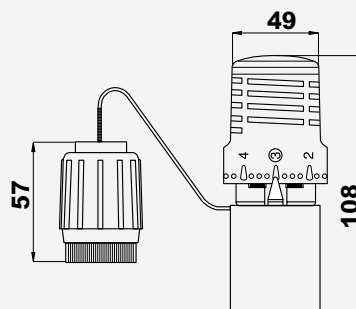
### 147/148



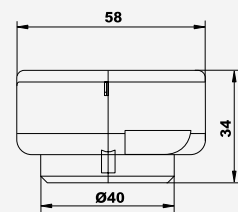
### 148SD



### 148CD

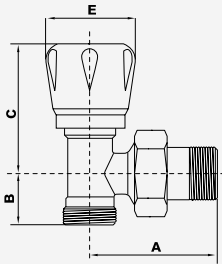


### 148GA



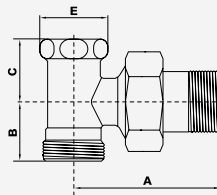
## Overall dimensions

### 1163R



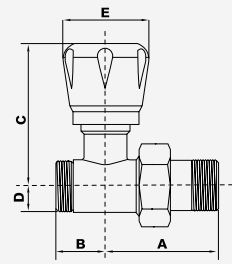
DN	A	B	C	E
3/8"	47.5	20	48.5	34.1
3/4"	51	20	48.5	34.1

### 1193R



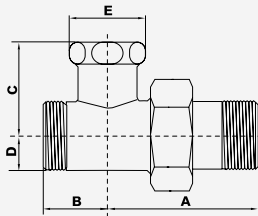
DN	A	B	C	E
3/8"	48	20	21	23
1/2"	50.5	20	21	23

### 1164R



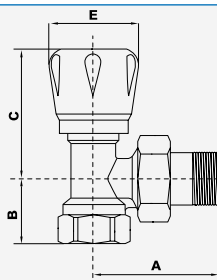
DN	A	B	C	D	E
3/8"	46	20	50/58	10.4	34
1/2"	48.5	20	50/58	10.4	34

### 1194R



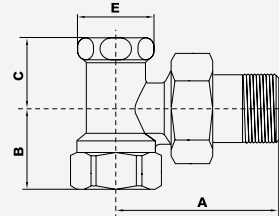
DN	A	B	C	D	E
3/8"	46	20	30	10.4	23
1/2"	48.5	20	30	10.4	23

### 163R



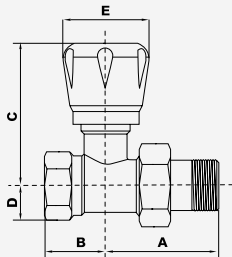
DN	A	B	C	E
3/8"	47.5	22	48.5	34.1
1/2"	51	25	48.5	34.1

### 193R



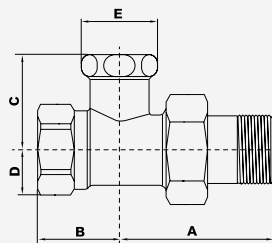
DN	A	B	C	E
3/8"	48	22	21	23
1/2"	50.5	25	21	23

### 164R



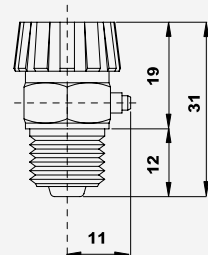
DN	A	B	C	D	E
3/8"	44	22	56	11	34.1
1/2"	46	25	56	14	34.1

### 194R

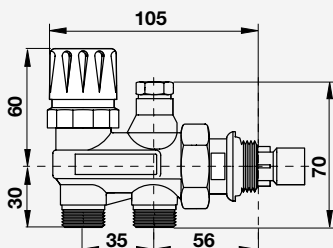


DN	A	B	C	D	E
3/8"	44	22	29	11	23
1/2"	46	25	29	11	23

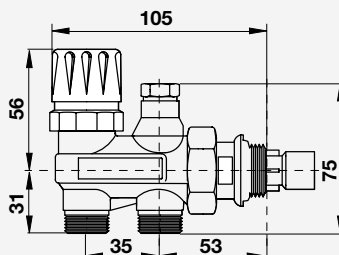
### 228C



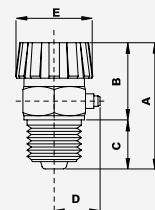
### 120B/102M



### 102M with M24X1.5 CONNECTION



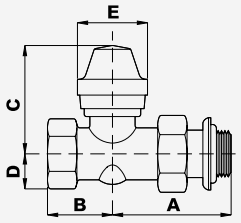
### 238C



DN	A	B	C	D	E
1/8"	29	17	12	11	17
1/4"	29	17	12	11	17
3/8"	29	19	10	11	17

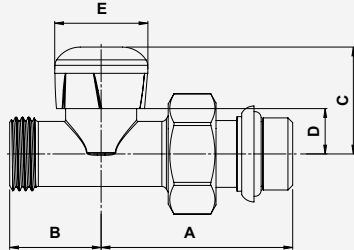
## Overall dimensions

### 196UM



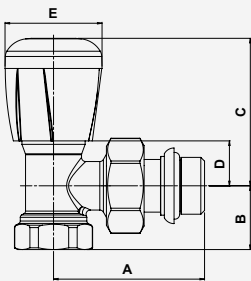
DN	A	B	C	D	E
3/8"	48	25	42	12	31
1/2"	52	28	45	14	31
3/4"	60	33	60	18	41

### 1396TRV



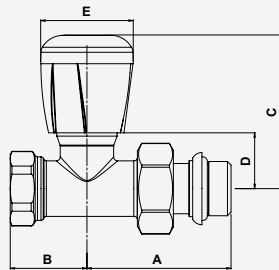
DN	A	B	C	D	E
1/2"x 3/8"	51	20.5	30	13	26.5
1/2"x 3/8"	51	20.5	30	13	26.5
M24(x1.5) x 3/8"	51	20.5	30	13	26.5
1/2"x 1/2"	55	20.5	30	13	26.5
1/2"x 1/2"	55	20.5	30	13	26.5
M24(x1.5) x 1/2"	55	20.5	30	13	26.5

### 388-378TRV



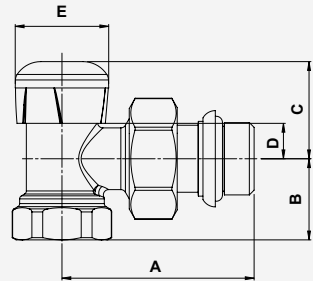
DN	A	B	C	D	E
3/8"	51	20	53	16	35
1/2"	55	23	53	16	35
3/4"	63	28	53	16	35

### 389-379TRV



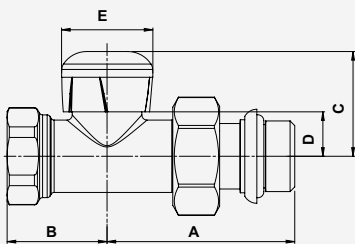
DN	A	B	C	D	E
3/8"	51	26	57	20	35
1/2"	55	29	57	20	35
3/4"	63	34	57	20	35

### 395TRV



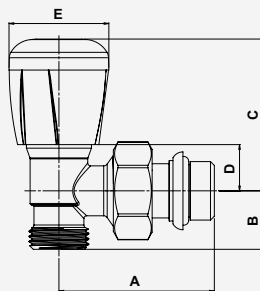
DN	A	B	C	D	E
3/8"	51	20	27	10	26.5
1/2"	55	23	27	10	26.5
3/4"	63	28	27	10	26.5

### 396TRV



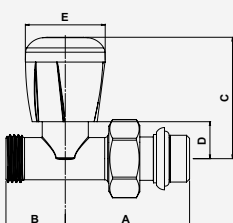
DN	A	B	C	D	E
3/8"	51	20	30	13	26.5
1/2"	55	29	30	13	26.5
3/4"	63	34	30	13	26.5

### 1388-1378TRV



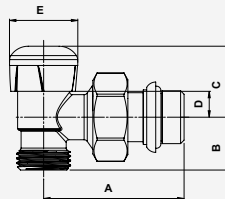
DN	A	B	C	D	E
1/2"x 3/8"	51	20.5	53	16	35
1/2"x 1/2"	55	20.5	53	16	35
M24(x1.5) x 3/8"	49	20.5	53	16	35
1/2"x 1/2"	55	20.5	53	16	35
1/2"x 1/2"	55	20.5	53	16	35
M24(x1.5) x 1/2"	55	20.5	53	16	35

### 1389-1379TRV



DN	A	B	C	D	E
1/2"x 3/8"	51	26	57	20	35
1/2"x 3/8"	49	26	58	21	35
M24(x1.5) x 3/8"	49	26	58	21	35
1/2"x 1/2"	55	26	57	20	35
1/2"x 1/2"	55	26	58	21	35
M24(x1.5) x 1/2"	55	26	58	21	35

### 1395TRV



DN	A	B	C	D	E
1/2"x 3/8"	51	20.5	27	10	26.5
1/2"x 3/8"	51	20.5	27	10	26.5
M24(x1.5) x 3/8"	51	20.5	27	10	26.5
1/2"x 1/2"	55	20.5	27	10	26.5
1/2"x 1/2"	55	20.5	27	10	26.5
M24(x1.5) x 1/2"	55	20.5	27	10	26.5

## Chapter 10

Components for  
gas, diesel  
and fuel oil  
systems

**WATTS®**

10



EV - Solenoid valve  
with manual resetting

Explosion-proof version  
Models with position indicator  
Various supply voltages

**giuliani anello**

## Chapter 10.1

# FUEL SHUT-OFF DEVICES

## Fuel shut-off and jerk handle on/off valves

### JH



Jerk-handle on/off valve remotely controlled by cable and LACPT Series fire-safety lever. Aluminium body. Stainless steel operating lever. PN 6 bar. Room temperature: -10to60°C. Max. fuel temperature: 80°C. Fuels: natural gas, town gas, LPG, diesel and fuel oil. ISO 7005/2 flanged connections. **Compliant with PED 2014/68/EU - CE 0497(DN 125-150).**

Type	Part no.	Connections	Pcs. pack	Package
<b>JH15</b>	006.0170.000	1/2"	1	1
<b>JH20</b>	006.0171.000	3/4"	1	1
<b>JH25</b>	006.0172.000	1"	1	1
<b>JH32</b>	006.0173.000	1.1/4"	1	1
<b>JH40</b>	006.0174.000	1.1/2"	1	1
<b>JH50</b>	006.0175.000	2"	1	1
<b>JH65</b>	006.0176.100	DN 65	1	1
<b>JH80</b>	006.0177.100	DN 80	1	1
<b>JH100</b>	006.0178.000	DN 100	1	1
<b>JH125</b>	006.0179.000	DN 125	1	1
<b>JH150</b>	006.0180.000	DN 150	1	1

Dimensions on page 301

### VIC/A



Fuel shut-off valves. Compatible with natural gas, town gas, LPG, diesel and fuel oil. Positive action with manual reset. Capillary length 6 m. Aluminium body, stainless steel springs. NBR seals. 1/2"M sensor sheath connection. Max. operating pressure: 1 bar. Connections for flanged models, PN16 EN 1024. **Temperature:** - setting 96±3°C -maximum sensor side 130°C-maximum valve side 70°C - valve side 0°C.

**INAIL approved and calibrated. Type approved to ATEX 2014/34/EU. Compliant with: PED 2014/68/EU.**

Type	Part no.	Connections	Pcs. pack	Package
<b>VIC/A12</b>	006.0150.000	1/2"	1	1
<b>VIC/A34</b>	006.0151.000	3/4"	1	1
<b>VIC/A100</b>	006.0152.000	1"	1	1
<b>VIC/A114</b>	006.0153.000	1.1/4"	1	1
<b>VIC/A112</b>	006.0154.000	1.1/2"	1	1
<b>VIC/A200</b>	006.0155.000	2"	1	1
<b>VIC/A212</b>	006.0156.100	DN 65	1	1
<b>VIC/A300</b>	006.0157.100	DN 80	1	1
<b>VIC/A400</b>	006.0158.000	DN 100	1	1

Dimensions on page 301

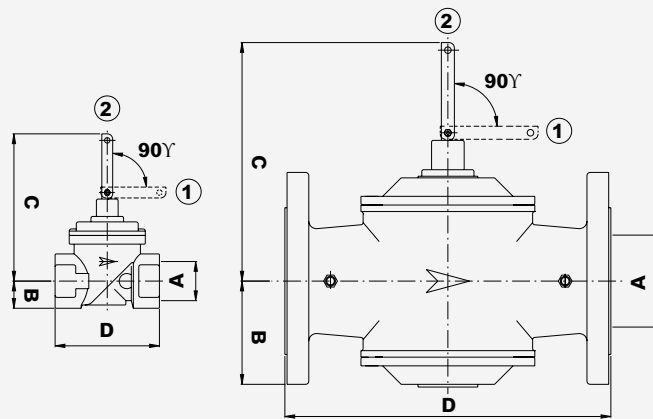
See chapter 1 for full range

**SPARE PARTS**

Type	Part no.	Description	Pcs. pack	Package
1140	014.0008.000	Bulb pocket for VIC/A 10 cm.	1	1
1153	014.0009.000	Bulb pocket for VIC/A 5 cm.	1	1

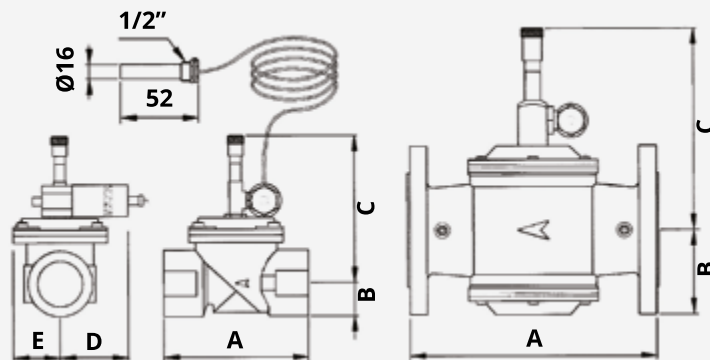
**Overall dimensions**

**JH**



Mod. JH	15	20	25	32	40	50	65	80	100	125	150
A	1/2"	3/4"	1"	1"1/4	1"1/2	2"	65	80	100	125	150
B	15	25	25	31	31	40	100	100	115	170	170
C	157	172	172	220	220	223	290	290	297	412	412
D	76	96	96	154	154	173	300	300	360	480	480

**VIC/A**

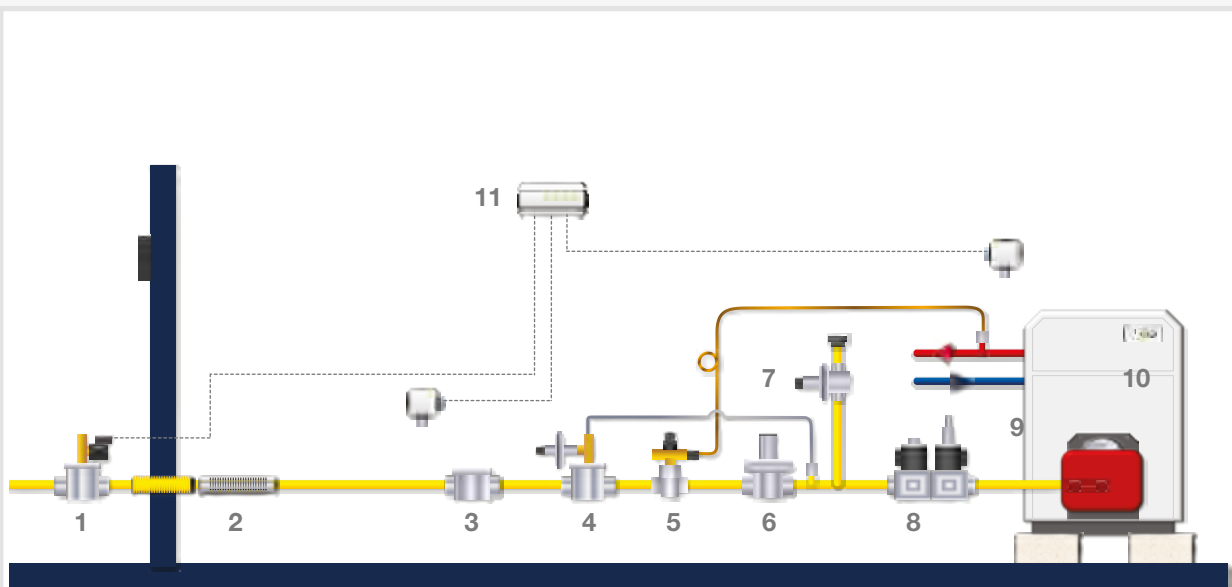


Mod. VIC/A	1/2"	3/4"	1"	1"1/4	1"1/2	2"	DN65	DN80	DN100
A	76	96	96	154	154	173	300	300	360
B	15	25	25	31	31	39	95	95	105
C	118	139	139	168	168	169	219	219	227
D	90	85	85	85	85	85	-	-	-
E	25	35	35	52	52	64	-	-	-

## Chapter 10.2

# DEVICES FOR GAS

### ACCESSORIES FOR GAS LINES



All information, data, photographs and products contained in this representation and/or diagram are purely for illustrative and promotional purposes, they have no contractual value and are not covered by warranty, they do not constitute either a user manual or represent an official diagram.

- |  |                        |
|--|------------------------|
| 1. Solenoid valve with manual resetting. | 7. Relief valve.       |
| 2. Vibration-damping joint.              | 8. ON/OFF valve.       |
| 3. Strainer filter.                      | 9. Burner.             |
| 4. Slam shut-off and relief valve.       | 10. Boiler.            |
| 5. Fuel shut-off valve.                  | 11. Gas leak detector. |
| 6. Pressure regulator.                   |                        |



## Air and gas filters

### 70600



Aluminium wall-mounting gas filter with galvanised steel cover; Viledon P15/500S filter element approved to DIN EN 779, synthetic filter cage; NBR cover O-ring. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Filtration rating 50 µm. PN 0.5. Operating temperature range: -10 to 80°C.

Type	Part no.	Connections	Pcs. pack	Package
<b>70609</b>	007.0030.100	1/2"	36	36
<b>70608</b>	007.0031.100	3/4"	36	36

Dimensions on page 341

### 70600/1B



Aluminium gas filter; Viledon P15/500S filter element approved to DIN EN779, synthetic filter cage; NBR cover O-ring. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Filtration rating 50 µm. PN 1. Operating temperature range: -20 to 80°C.

Type	Part no.	Connections	Pcs. pack	Package
<b>70611/1B</b>	007.0040.100	1/2"	1	1
<b>70612/1B</b>	007.0041.100	3/4"	1	1
<b>70602/1B</b>	007.0042.100	1"	1	1
<b>70604/1B</b>	007.0043.100	1.1/4"	1	1
<b>70603/1B</b>	007.0044.100	1.1/2"	1	1
<b>70631/1B</b>	007.0045.100	2"	1	1

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### 70600/6B



Aluminium gas filter; filter element composed of two Viledon P15/500S panels approved to DIN EN779; synthetic filter cage with penetration-resistant steel reinforcement; NBR cover O-ring. With two tapping points. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. PN 6 with 2 tapping points. Filtration rating 50 µm. Operating temperature range: -20 to 80°C.

Type	Part no.	Connections	Pcs. pack	Package
<b>70611/6B</b>	007.0060.000	1/2"	1	1
<b>70612/6B</b>	007.0061.000	3/4"	1	1
<b>70602/6B</b>	007.0062.000	1"	1	1
<b>70604/6B</b>	007.0063.000	1.1/4"	1	1
<b>70603/6B</b>	007.0064.000	1.1/2"	1	1
<b>70631/6B</b>	007.0065.000	2"	1	1

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**70600F/6B**

Aluminium gas filter; long-life filter element with high dust-absorption composed of two Viledon P15/500S panels approved to DIN EN779; synthetic filter cage with penetration-resistant steel reinforcement; NBR cover O-ring. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. PN 6 with 2 tapping points. Filtration rating: 50 µm. Operating temperature range: -20 to 80°C.

Type	Part no.	Connections	Pcs. pack	Package
<b>70603F/6B</b>	007.0050.100	DN 40	1	1
<b>70631F/6B</b>	007.0051.100	DN 50	1	1
<b>70610F/6B</b>	007.0052.200	DN 65	1	1
<b>70620F/6B</b>	007.0053.200	DN 80	1	1
<b>70640F/6B</b>	007.0054.100	DN 100	1	1
<b>70650F/6B</b>	007.0055.100	DN125	1	1
<b>70660F/6B</b>	007.0056.100	DN150	1	1

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**70680**

High-efficiency aluminium gas filter; polyester felt filter element; aluminium mesh cage. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. PN 6. Filtration rating: 5 µm. Operating temperature range: -20 to 80°C.

Type	Part no.	Connections	Pcs. pack	Package
<b>70684</b>	007.0012.000	1"	1	1
<b>70685</b>	007.0013.000	1.1/4"	1	1
<b>70686</b>	007.0014.000	1.1/2"	1	1
<b>70687</b>	007.0015.000	2"	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Pcs. pack	Package
<b>70516</b>	014.0053.000	Wall-mounting bracket	1	1
<b>3215</b>	014.0090.001	Kit comprising filter cartridge and cover O-ring for 70609 and 70608	1	1
<b>3216</b>	014.0091.001	Kit comprising filter cartridge and cover O-ring for 70611/1B and 70612/1B	1	1
<b>3217</b>	014.0092.001	Kit comprising filter cartridge and cover O-ring for 70602/1B, 70603/1B and 70604/1B	1	1
<b>3218</b>	014.0093.001	Kit comprising filter cartridge and cover O-ring for 70631/1B	1	1
<b>3219</b>	014.0094.001	Kit comprising filter cartridge and cover O-ring for 70603F/6B	1	1
<b>3220</b>	014.0095.001	Kit comprising filter cartridge and cover O-ring for 70631F/6B	1	1
<b>3226</b>	014.0104.000	Kit comprising filter cartridge and cover O-ring for 70610F/6B and 70620F/6B	1	1
<b>3223</b>	014.0098.001	Kit comprising filter cartridge and cover O-ring for 70640F/6B	1	1
<b>3225</b>	014.0099.001	Kit comprising filter cartridge and cover O-ring for 70650F/6B	1	1
<b>3224</b>	014.0100.001	Kit comprising filter cartridge and cover O-ring for 70660F/6B	1	1
<b>3216/6B</b>	014.0091.002	Kit comprising filter cartridge and cover O-ring for 70611/6B and 70612/6B	1	1
<b>3217/6B</b>	014.0092.002	Kit comprising filter cartridge and cover O-ring for 70602/6B, 70603/6B and 70604/6B	1	1
<b>3218/6B</b>	014.0093.002	Kit comprising filter cartridge and cover O-ring for 70631/6B	1	1
<b>60680</b>	014.0042.000	Kit comprising filter cartridge and cover O-ring for 70684, 70685 and 70686	1	1
<b>60687</b>	014.0043.000	Kit comprising filter cartridge and cover O-ring for 70687	1	1
<b>1639</b>	014.0006.001	1/8" test point (pack of 100 pcs.)	100	100
<b>1639</b>	014.0006.002	1/8" test point (pack of 1,000 pcs.)	1000	1000
<b>1640</b>	014.0007.001	1/4" test point (pack of 100 pcs.)	100	100
<b>1640</b>	014.0007.002	1/4" test point (pack of 1,000 pcs.)	1000	1000

## Vibration-damping and dielectric joints

### GA-GAF

Vibration-damping expansion joint for gas systems. Stainless steel body, carbon steel flanges. Threaded connections (DN 1/2"-2") and flanged connections (DN 65-100). PN 3. Operating temperature range: -20 to 60°C.

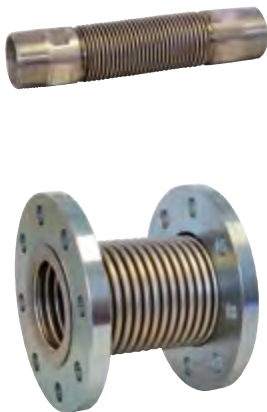


Type	Part no.	Connections	Pcs. pack	Package
<b>GA1556</b>	008.0070.000	1/2"	1	1
<b>GA1544</b>	008.0071.000	3/4"	1	1
<b>GA1545</b>	008.0072.000	1"	1	1
<b>GA1546</b>	008.0073.000	1.1/4"	1	1
<b>GA1547</b>	008.0074.000	1.1/2"	1	1
<b>GA1548</b>	008.0075.000	2"	1	1
<b>GAF212</b>	008.0080.000	DN 65	1	1
<b>GAF300</b>	008.0081.000	DN 80	1	1
<b>GAF400</b>	008.0082.000	DN 100	1	1
<b>GAF500</b>	008.0083.000	DN125	1	1
<b>GAF600</b>	008.0084.000	DN150	1	1

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### GDA

Vibration-damping expansion joint for gas systems. Stainless steel body, carbon steel flanges. Threaded connections (DN 1/2"-2") and flanged connections (DN 65-100). PN 0.5. Operating temperature -20 to 250°C.



Type	Part no.	Connections	Pcs. pack	Package
<b>GDA</b>	0915015	1/2"	1	1
<b>GDA</b>	0915020	3/4"	1	1
<b>GDA</b>	0915025	1"	1	1
<b>GDA</b>	0915032	1.1/4"	1	1
<b>GDA</b>	0915040	1.1/2"	1	1
<b>GDA</b>	0915050	2"	1	1
<b>GDA</b>	0915065	DN 65	1	1
<b>GDA</b>	0915080	DN 80	1	1
<b>GDA</b>	0915100	DN 100	1	1

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### GDMF

Insulating dielectric joints for joining pipes of different metals, thus eliminating corrosion risks due to stray currents or electrolytic phenomena. For gas and water. Male-female connections. PN 10. Operating temperature range: -15 to 70°C. Insulation voltage in air: 3 kV. Insulation resistance in air: 5 Mohm.

**UNI 10824 and UNI 7129 compliant.**



Type	Part no.	Connections	Pcs. pack	Package
<b>GDMF</b>	GDMF015	1/2"	1	80
<b>GDMF</b>	GDMF020	3/4"	1	50
<b>GDMF</b>	GDMF025	1"	1	40
<b>GDMF</b>	GDMF032	1.1/4"	1	25
<b>GDMF</b>	GDMF040	1.1/2"	1	20
<b>GDMF</b>	GDMF050	2"	1	20
<b>GDMF</b>	GDMF065	2.1/2"	1	10
<b>GDMF</b>	GDMF080	3"	1	8
<b>GDMF</b>	GDMF100	4"	1	1

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## GDIFF



Insulating dielectric joints for joining pipes of different metals, thus eliminating corrosion risks due to stray currents or electrolytic phenomena. For gas and water.

Female-female connections. PN 10. Operating temperature range: -15 to 70°C. Insulation voltage in air: 3 kV. Insulation resistance in air: 5 Mohm.

**UNI 10824 and UNI 7129 compliant.**

Type	Part no.	Connections	Pcs. pack	Package
<b>GDIFF</b>	GDIFF020	3/4"	1	40
<b>GDIFF</b>	GDIFF025	1"	1	25
<b>GDIFF</b>	GDIFF032	1.1/4"	1	20
<b>GDIFF</b>	GDIFF040	1.1/2"	1	20
<b>GDIFF</b>	GDIFF050	2"	1	20

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## Pressure regulators

### RP1B



Aluminium pressure regulator with built-in filter, to EN 88-2. Max. operating pressure 1 bar, with max. outlet pressure shut-off valve. Max. outlet pressure 80 mbar. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air.

Operating temperature range: -10 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>RP1B20</b>	009.1251.001	3/4"	Green spring 10-30 mbar - Shut-off 30-80 mbar	1	1
<b>RP1B20</b>	009.1251.002	3/4"	Neutral spring 20-80 mbar - Shut-off 50-160 mbar	1	1
<b>RP1B25</b>	009.1252.001	1"	Green spring 10-30 mbar - Shut-off 30-80 mbar	1	1
<b>RP1B25</b>	009.1252.002	1"	Neutral spring 20-80 mbar - Shut-off 50-160 mbar	1	1

### SPRINGS

Type	Part no.	Regulators	Setting and Colour	Pcs. pack	Package
<b>504.0012.020</b>	014.0260.001	RP1B20 - RP1B25	Green spring kit 10 - 30 mbar. Shut-off 30 - 80	1	1
<b>504.0013.020</b>	014.0261.001	RP1B20 - RP1B25	Neutral spring kit 20 - 80 mbar. Shut-off 50 - 160	1	1

**FGD**


Aluminium pressure regulator with built-in filter, to EN 88-1. Max. inlet pressure 200 mbar. Max. outlet pressure 160 mbar. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air.

Operating temperature range: -15 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>FGD15</b>	009.0020.101	1/2"	With neutral spring 10 - 30 mbar	1	1
<b>FGD15</b>	009.0020.102	1/2"	With green spring 5 - 15 mbar	1	1
<b>FGD15</b>	009.0220.103	1/2"	With purple spring 25 - 80 mbar	1	1
<b>FGD15</b>	009.0020.104	1/2"	With brown spring 70 - 160 mbar	1	1
<b>FGD20</b>	009.0021.101	3/4"	With neutral spring 10 - 30 mbar	1	1
<b>FGD20</b>	009.0021.102	3/4"	With green spring 5 - 15 mbar	1	1
<b>FGD20</b>	009.0021.103	3/4"	With purple spring 25 - 80 mbar	1	1
<b>FGD20</b>	009.0021.104	3/4"	With brown spring 70 - 160 mbar	1	1
<b>FGD25</b>	009.0022.101	1"	With neutral spring 10 - 30 mbar	1	1
<b>FGD25</b>	009.0022.102	1"	With green spring 5 - 15 mbar	1	1
<b>FGD25</b>	009.0022.103	1"	With purple spring 25 - 80 mbar	1	1
<b>FGD25</b>	009.0022.104	1"	With brown spring 70 - 160 mbar	1	1
<b>FGD32</b>	009.0023.101	1.1/4"	With neutral spring 10 - 25 mbar	1	1
<b>FGD32</b>	009.0023.102	1.1/4"	With green spring 5 - 15 mbar	1	1
<b>FGD32</b>	009.0023.103	1.1/4"	With purple spring 20 - 70 mbar	1	1
<b>FGD32</b>	009.0023.104	1.1/4"	With brown spring 65 - 130 mbar	1	1
<b>FGD32</b>	009.0023.106	1.1/4"	With white spring 120 - 160 mbar	1	1
<b>FGD40</b>	009.0024.101	1.1/2"	With neutral spring 10 - 25 mbar	1	1
<b>FGD40</b>	009.0024.102	1.1/2"	With green spring 5 - 15 mbar	1	1
<b>FGD40</b>	009.0024.103	1.1/2"	With purple spring 20 - 70 mbar	1	1
<b>FGD40</b>	009.0024.104	1.1/2"	With brown spring 65 - 130 mbar	1	1
<b>FGD40</b>	009.0024.106	1.1/2"	With white spring 120 - 160 mbar	1	1
<b>FGD50</b>	009.0025.101	2"	With neutral spring 10 - 35 mbar	1	1
<b>FGD50</b>	009.0025.102	2"	With green spring 5 - 15 mbar	1	1
<b>FGD50</b>	009.0025.103	2"	With purple spring 30 - 80 mbar	1	1
<b>FGD50</b>	009.0025.104	2"	With brown spring 70 - 160 mbar	1	1

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**FGDR/COM**


Compact aluminium pressure regulator with built-in filter, to EN 88-1. Max. inlet pressure 450to500 mbar. Max. outlet pressure 160 mbar.

Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15to60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>FGDR15/COM</b>	009.0300.003	1/2"	With red spring 20 - 55 mbar	1	1
<b>FGDR15/COM</b>	009.0300.005	1/2"	With blue spring 50 - 200 mbar	1	1
<b>FGDR20/COM</b>	009.0301.003	3/4"	With red spring 20 - 55 mbar	1	1
<b>FGDR20/COM</b>	009.0301.005	3/4"	With blue spring 50 - 200 mbar	1	1

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**FGDR**



Aluminium pressure regulator with built-in filter, to EN 88-1.  
 Max. inlet pressure 500 mbar. Max. outlet pressure 350 mbar.  
 Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15 to 60°C.

Type	Part no.	Con- nec- tions	Description	Pcs. pack	Pack- age
<b>FGDR15</b>	009.0220.101	1/2"	With neutral spring 10 - 30 mbar	1	1
<b>FGDR15</b>	009.0220.102	1/2"	With green spring 5 - 15 mbar	1	1
<b>FGDR15</b>	009.0220.103	1/2"	With purple spring 25 - 80 mbar	1	1
<b>FGDR15</b>	009.0220.104	1/2"	With brown spring 70 - 160 mbar	1	1
<b>FGDR15</b>	009.0220.105	1/2"	With blue spring 150 - 280 mbar	1	1
<b>FGDR15</b>	009.0220.106	1/2"	With white spring 270 - 350 mbar	1	1
<b>FGDR20</b>	009.0221.101	3/4"	With neutral spring 10 - 30 mbar	1	1
<b>FGDR20</b>	009.0221.102	3/4"	With green spring 5 - 15 mbar	1	1
<b>FGDR20</b>	009.0221.103	3/4"	With purple spring 25 - 80 mbar	1	1
<b>FGDR20</b>	009.0221.104	3/4"	With brown spring 70 - 160 mbar	1	1
<b>FGDR20</b>	009.0221.105	3/4"	With blue spring 150 - 280 mbar	1	1
<b>FGDR20</b>	009.0221.106	3/4"	With white spring 270 - 350 mbar	1	1
<b>FGDR25</b>	009.0222.101	1"	With neutral spring 10 - 30 mbar	1	1
<b>FGDR25</b>	009.0222.102	1"	With green spring 5 - 15 mbar	1	1
<b>FGDR25</b>	009.0222.103	1"	With purple spring 25 - 80 mbar	1	1
<b>FGDR25</b>	009.0222.104	1"	With brown spring 70 - 160 mbar	1	1
<b>FGDR25</b>	009.0222.105	1"	With blue spring 150 - 280 mbar	1	1
<b>FGDR25</b>	009.0222.106	1"	With white spring 270 - 350 mbar	1	1
<b>FGDR32</b>	009.0223.101	1.1/4"	With neutral spring 10 - 25 mbar	1	1
<b>FGDR32</b>	009.0223.102	1.1/4"	With green spring 5 - 15 mbar	1	1
<b>FGDR32</b>	009.0223.103	1.1/4"	With purple spring 20 - 70 mbar	1	1
<b>FGDR32</b>	009.0223.104	1.1/4"	With brown spring 65 - 130 mbar	1	1
<b>FGDR32</b>	009.0223.106	1.1/4"	With white spring 120 - 250 mbar	1	1
<b>FGDR32</b>	009.0223.107	1.1/4"	With black spring 240 - 350 mbar	1	1
<b>FGDR40</b>	009.0224.101	1.1/2"	With neutral spring 10 - 25 mbar	1	1
<b>FGDR40</b>	009.0224.102	1.1/2"	With green spring 5 - 15 mbar	1	1
<b>FGDR40</b>	009.0224.103	1.1/2"	With purple spring 20 - 70 mbar	1	1
<b>FGDR40</b>	009.0224.104	1.1/2"	With brown spring 65 - 130 mbar	1	1
<b>FGDR40</b>	009.0224.106	1.1/2"	With white spring 120 - 250 mbar	1	1
<b>FGDR40</b>	009.0224.107	1.1/2"	With black spring 240 - 350 mbar	1	1
<b>FGDR50/40</b>	009.0234.101	2"	With neutral spring 10 - 25 mbar	1	1
<b>FGDR50/40</b>	009.0234.102	2"	With green spring 5 - 15 mbar	1	1
<b>FGDR50/40</b>	009.0234.103	2"	With purple spring 20 - 70 mbar	1	1
<b>FGDR50/40</b>	009.0234.104	2"	With brown spring 65 - 130 mbar	1	1
<b>FGDR50/40</b>	009.0234.106	2"	With white spring 120 - 250 mbar	1	1
<b>FGDR50/40</b>	009.0234.107	2"	With black spring 240 - 350 mbar	1	1
<b>FGDR50</b>	009.0225.101	2"	With neutral spring 10 - 35 mbar	1	1
<b>FGDR50</b>	009.0225.102	2"	With green spring 5 - 15 mbar	1	1
<b>FGDR50</b>	009.0225.103	2"	With purple spring 30 - 80 mbar	1	1
<b>FGDR50</b>	009.0225.104	2"	With brown spring 70 - 220 mbar	1	1
<b>FGDR50</b>	009.0225.105	2"	With blue spring 210 - 350 mbar	1	1

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**FG1B/FG2B**



Aluminium pressure regulator with built-in filter, to EN 88-2. Max. inlet pressure 1 bar, also 2 bar version up to 1". Max. outlet pressure 450 mbar.

Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15 to 60°C.

Type	Part no.	Con- nec- tions	Description	Pcs. pack	Pack- age
<b>FG2B15</b>	009.0250.201	1/2"	With neutral spring 10-30 mbar. Pmax 2 bar	1	1
<b>FG2B15</b>	009.0250.203	1/2"	With purple spring 25-80 mbar. Pmax 2 bar	1	1
<b>FG2B15</b>	009.0250.204	1/2"	With brown spring 70-160 mbar. Pmax 2 bar	1	1
<b>FG2B15</b>	009.0250.205	1/2"	With blue spring 150-280 mbar. Pmax 2 bar	1	1
<b>FG2B20</b>	009.0251.201	3/4"	With neutral spring 10-30 mbar. Pmax 2 bar	1	1
<b>FG2B20</b>	009.0251.203	3/4"	With purple spring 25-80 mbar. Pmax 2 bar	1	1
<b>FG2B20</b>	009.0251.204	3/4"	With brown spring 70-160 mbar. Pmax 2 bar	1	1
<b>FG2B20</b>	009.0251.205	3/4"	With blue spring 150-280 mbar. Pmax 2 bar	1	1
<b>FG2B25</b>	009.0252.201	1"	With neutral spring 10-30 mbar. Pmax 2 bar	1	1
<b>FG2B25</b>	009.0252.203	1"	With purple spring 25-80 mbar. Pmax 2 bar	1	1
<b>FG2B25</b>	009.0252.204	1"	With brown spring 70-160 mbar. Pmax 2 bar	1	1
<b>FG2B25</b>	009.0252.205	1"	With blue spring 150-280 mbar. Pmax 2 bar	1	1
<b>FG1B15</b>	009.0250.101	1/2"	With neutral spring 10-30 mbar. Pmax 1 bar	1	1
<b>FG1B15</b>	009.0250.103	1/2"	With purple spring 25-80 mbar. Pmax 1 bar	1	1
<b>FG1B15</b>	009.0250.104	1/2"	With brown spring 70-160 mbar. Pmax 1 bar	1	1
<b>FG1B15</b>	009.0250.105	1/2"	With blue spring 150-280 mbar. Pmax 1 bar	1	1
<b>FG1B15</b>	009.0250.106	1/2"	With white spring 270-450 mbar. Pmax 1 bar	1	1
<b>FG1B20</b>	009.0251.101	3/4"	With neutral spring 10-30 mbar. Pmax 1 bar	1	1
<b>FG1B20</b>	009.0251.103	3/4"	With purple spring 25-80 mbar. Pmax 1 bar	1	1
<b>FG1B20</b>	009.0251.104	3/4"	With brown spring 70-160 mbar. Pmax 1 bar	1	1
<b>FG1B20</b>	009.0251.105	3/4"	With blue spring 150-280 mbar. Pmax 1 bar	1	1
<b>FG1B20</b>	009.0251.106	3/4"	With white spring 270-450 mbar. Pmax 1 bar	1	1
<b>FG1B25</b>	009.0252.101	1"	With neutral spring 10-30 mbar. Pmax 1 bar	1	1
<b>FG1B25</b>	009.0252.103	1"	With purple spring 25-80 mbar. Pmax 1 bar	1	1
<b>FG1B25</b>	009.0252.104	1"	With brown spring 70-160 mbar. Pmax 1 bar	1	1
<b>FG1B25</b>	009.0252.105	1"	With blue spring 150-280 mbar. Pmax 1 bar	1	1
<b>FG1B25</b>	009.0252.106	1"	With white spring 270-450 mbar. Pmax 1 bar	1	1
<b>FG1B32</b>	009.0253.101	1.1/4"	With neutral spring 10-25 mbar. Pmax 1 bar	1	1
<b>FG1B32</b>	009.0253.103	1.1/4"	With purple spring 20-70 mbar. Pmax 1 bar	1	1
<b>FG1B32</b>	009.0253.104	1.1/4"	With brown spring 65-130 mbar. Pmax 1 bar	1	1
<b>FG1B32</b>	009.0253.106	1.1/4"	With white spring 120-250 mbar. Pmax 1 bar	1	1
<b>FG1B32</b>	009.0253.107	1.1/4"	With black spring 240-360 mbar. Pmax 1 bar	1	1
<b>FG1B32</b>	009.0253.108	1.1/4"	With orange spring 350-450 mbar. Pmax 1 bar	1	1
<b>FG1B40</b>	009.0254.101	1.1/2"	With neutral spring 10-25 mbar. Pmax 1 bar	1	1
<b>FG1B40</b>	009.0254.103	1.1/2"	With purple spring 20-70 mbar. Pmax 1 bar	1	1
<b>FG1B40</b>	009.0254.104	1.1/2"	With brown spring 65-130 mbar. Pmax 1 bar	1	1
<b>FG1B40</b>	009.0254.106	1.1/2"	With white spring 120-250 mbar. Pmax 1 bar	1	1
<b>FG1B40</b>	009.0254.107	1.1/2"	With black spring 240-360 mbar. Pmax 1 bar	1	1
<b>FG1B40</b>	009.0254.108	1.1/2"	With orange spring 350-450 mbar. Pmax 1 bar	1	1
<b>FG1B50/40</b>	009.0264.101	2"	With neutral spring 10-25 mbar. Pmax 1 bar	1	1
<b>FG1B50/40</b>	009.0264.103	2"	With purple spring 20-70 mbar. Pmax 1 bar	1	1
<b>FG1B50/40</b>	009.0264.104	2"	With brown spring 65-130 mbar. Pmax 1 bar	1	1
<b>FG1B50/40</b>	009.0264.106	2"	With white spring 120-250 mbar. Pmax 1 bar	1	1
<b>FG1B50/40</b>	009.0264.107	2"	With black spring 240-360 mbar. Pmax 1 bar	1	1
<b>FG1B50/40</b>	009.0264.108	2"	With orange spring 350-450 mbar. Pmax 1 bar	1	1
<b>FG1B50</b>	009.0255.101	2"	With neutral spring 10-35 mbar. Pmax 1 bar	1	1
<b>FG1B50</b>	009.0255.103	2"	With purple spring 30-80 mbar. Pmax 1 bar	1	1
<b>FG1B50</b>	009.0255.104	2"	With brown spring 70-220 mbar. Pmax 1 bar	1	1
<b>FG1B50</b>	009.0255.105	2"	With blue spring 210-450 mbar. Pmax 1 bar	1	1

Dimensions on page 344

## FSDR



Flanged aluminium pressure regulator with built-in filter, to EN 88-1. Max. inlet pressure 500 mbar. Max. outlet pressure 350 mbar. Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -10 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>FSDR65</b>	009.0226.201	DN 65	With neutral spring 1 0-30 mbar	1	1
<b>FSDR65</b>	009.0226.203	DN 65	With red spring 25-80 mbar	1	1
<b>FSDR65</b>	009.0226.204	DN 65	With purple spring 60-120 mbar	1	1
<b>FSDR65</b>	009.0226.206	DN 65	With blue spring 100-220 mbar	1	1
<b>FSDR65</b>	009.0226.207	DN 65	With white spring 200-350 mbar	1	1
<b>FSDR80</b>	009.0227.201	DN 80	With neutral spring 10-30 mbar	1	1
<b>FSDR80</b>	009.0227.203	DN 80	With red spring 25-80 mbar	1	1
<b>FSDR80</b>	009.0227.204	DN 80	With purple spring 0-120 mbar	1	1
<b>FSDR80</b>	009.0227.206	DN 80	With blue spring 100-220 mbar	1	1
<b>FSDR80</b>	009.0227.207	DN 80	With white spring 200-350 mbar	1	1

Dimensions on page 345

## FS1B



Flanged aluminium pressure regulator with built-in filter, to EN 88-2. Max. inlet pressure 1 bar. Max. outlet pressure 450 mbar.

Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -10 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>FS1B65</b>	009.0256.201	DN 65	With neutral spring 10-30 mbar	1	1
<b>FS1B65</b>	009.0256.203	DN 65	With red spring 25-80 mbar	1	1
<b>FS1B65</b>	009.0256.204	DN 65	With purple spring 60-120 mbar	1	1
<b>FS1B65</b>	009.0256.206	DN 65	With blue spring 100-220 mbar	1	1
<b>FS1B65</b>	009.0256.207	DN 65	With white spring 200-450 mbar	1	1
<b>FS1B80</b>	009.0257.201	DN 80	With neutral spring 10-30 mbar	1	1
<b>FS1B80</b>	009.0257.203	DN 80	With red spring 25-80 mbar	1	1
<b>FS1B80</b>	009.0257.204	DN 80	With purple spring 60-120 mbar	1	1
<b>FS1B80</b>	009.0257.206	DN 80	With blue spring 100-220 mbar	1	1
<b>FS1B80</b>	009.0257.207	DN 80	With white spring 200-450 mbar	1	1

Dimensions on page 344



**STR**



Flanged aluminium pressure regulator to EN 88-1. Max. inlet pressure 500 mbar. Max. outlet pressure 350 mbar, 200 mbar for STR DN 125-150. Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>STR65</b>	009.0240.201	DN 65	With neutral spring 10-30 mbar	1	1
<b>STR65</b>	009.0240.203	DN 65	With red spring 25-80 mbar	1	1
<b>STR65</b>	009.0240.204	DN 65	With purple spring 60-120 mbar	1	1
<b>STR65</b>	009.0240.206	DN 65	With blue spring 100-220 mbar	1	1
<b>STR65</b>	009.0240.207	DN 65	With white spring 200-350 mbar	1	1
<b>STR80</b>	009.0241.201	DN 80	With neutral spring 10-30 mbar	1	1
<b>STR80</b>	009.0241.203	DN 80	With red spring 25-80 mbar	1	1
<b>STR80</b>	009.0241.204	DN 80	With purple spring 60-120 mbar	1	1
<b>STR80</b>	009.0241.206	DN 80	With blue spring 100-220 mbar	1	1
<b>STR80</b>	009.0241.207	DN 80	With white spring 200-350 mbar	1	1
<b>STR100</b>	009.0242.201	DN 100	With neutral spring 10-40 mbar	1	1
<b>STR100</b>	009.0242.203	DN 100	With red spring 30-70 mbar	1	1
<b>STR100</b>	009.0242.204	DN 100	With purple spring 60-110 mbar	1	1
<b>STR100</b>	009.0242.205	DN 100	With brown spring 100-210 mbar	1	1
<b>STR100</b>	009.0242.207	DN 100	With white spring 200-350 mbar	1	1
<b>STR125</b>	009.0243.001	DN 125	With neutral spring 10-30 mbar	1	1
<b>STR125</b>	009.0243.003	DN 125	With red spring 25-75 mbar	1	1
<b>STR125</b>	009.0243.005	DN 125	With brown spring 70-120 mbar	1	1
<b>STR125</b>	009.0243.007	DN 125	With white spring 110-170 mbar	1	1
<b>STR125</b>	009.0243.006	DN 125	With black spring 140-200 mbar	1	1
<b>STR150</b>	009.0244.001	DN 150	With neutral spring 10-30 mbar	1	1
<b>STR150</b>	009.0244.003	DN 150	With red spring 25-75 mbar	1	1
<b>STR150</b>	009.0244.005	DN 150	With brown spring 70-120 mbar	1	1
<b>STR150</b>	009.0244.007	DN 150	With white spring 110-170 mbar	1	1
<b>STR150</b>	009.0244.006	DN 150	With black spring 140-200 mbar	1	1

Dimensions on page 345

## ST1B



Flanged aluminium pressure regulator to EN 88-2. Max. inlet pressure 1 bar. Max. outlet pressure 450 mbar, 200 mbar for STR DN 125-150. Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15 to 60°C.

Type	Part no.	Con- nec- tions	Description	Pcs. pack	Pack- age
ST1B65	009.0270.201	DN 65	With neutral spring 10-30 mbar	1	1
ST1B65	009.0270.203	DN 65	With red spring 25-80 mbar	1	1
ST1B65	009.0270.204	DN 65	With purple spring 60-120 mbar	1	1
ST1B65	009.0270.206	DN 65	With blue spring 100-220 mbar	1	1
ST1B65	009.0270.207	DN 65	With white spring 200-450 mbar	1	1
ST1B80	009.0271.201	DN 80	With neutral spring 10-30 mbar	1	1
ST1B80	009.0271.203	DN 80	With red spring 25-80 mbar	1	1
ST1B80	009.0271.204	DN 80	With purple spring 60-120 mbar	1	1
ST1B80	009.0271.206	DN 80	With blue spring 100-220 mbar	1	1
ST1B80	009.0271.207	DN 80	With white spring 200-450 mbar	1	1
ST1B100	009.0272.201	DN 100	With neutral spring 10-40 mbar	1	1
ST1B100	009.0272.203	DN 100	With red spring 30-70 mbar	1	1
ST1B100	009.0272.204	DN 100	With purple spring 60-110 mbar	1	1
ST1B100	009.0272.205	DN 100	With brown spring 100-210 mbar	1	1
ST1B100	009.0272.207	DN 100	With white spring 200-450 mbar	1	1
ST1B125	009.0273.001	DN 125	With neutral spring 10-30 mbar	1	1
ST1B125	009.0273.003	DN 125	With red spring 25-75 mbar	1	1
ST1B125	009.0273.005	DN 125	With brown spring 70-120 mbar	1	1
ST1B125	009.0273.007	DN 125	With white spring 110-170 mbar	1	1
ST1B125	009.0273.006	DN 125	With black spring 140-200 mbar	1	1
ST1B150	009.0274.001	DN 150	With neutral spring 10-30 mbar	1	1
ST1B150	009.0274.003	DN 150	With red spring 25-75 mbar	1	1
ST1B150	009.0274.005	DN 150	With brown spring 70-120 mbar	1	1
ST1B150	009.0274.007	DN 150	With white spring 110-170 mbar	1	1
ST1B150	009.0274.006	DN 150	With black spring 140-200 mbar	1	1

Dimensions on pages 344-345






## PARTS KIT








Type	Part no.	Regulators	Description	Pcs. pack	Package
3235	014.0500.001	FGD, FGDR, FG1B 15 - 20 - 25	Kit comprising filter cartridge and cover O-ring	1	1
3236	014.0501.001	FGD, FGDR, FG1B 32 - 40 - 50/40	Kit comprising filter cartridge and cover O-ring	1	1
3233	014.0153.001	FGD, FGDR, FG1B 50	Kit comprising filter cartridge and cover O-ring	1	1
3234	014.0155.001	FSDR, FS1B 65 - 80	Kit comprising filter cartridge and cover O-ring	1	1
3286	014.0502.001	FGD, FGDR, FG1B 15 - 20 - 25	Servicing components kit	1	1
3287	014.0503.001	FGD, FGDR, FG1B 32 - 40 - 50/40	Servicing components kit	1	1
3262	014.0190.002	FGD, FGDR, FG1B 50	Servicing components kit	1	1
3295	014.0295.000	FSDR, FS1B 65 - 80	Servicing components kit	1	1
3296	014.0296.000	STR, ST1B 65 - 80	Servicing components kit	1	1
3297	014.0297.000	STR, ST1B 100	Servicing components kit	1	1
3504	014.0572.000	STR, ST1B 125 - 150	Servicing components kit	1	1



## SPRINGS








Type	Part no.	Regulators	Setting and Colour	Pcs. pack	Package
<b>E720</b>	014.0202.001	FGDR/COM 15 - 20	20-55 mbar - Red	1	1
<b>E737</b>	014.0204.001	FGDR/COM 15 - 20	50-200 mbar - Blue	1	1
<b>504.0037.020</b>	014.0504.001	FGD, FGDR 15 - 20 - 25	5-15 mbar - Green	1	1
<b>504.0031.020</b>	014.0505.001	FGD, FGDR, FG1B, FG2B 15 - 20 - 25	10-30 mbar - Neutral	1	1
<b>504.0032.020</b>	014.0506.001	FGD, FGDR, FG1B, FG2B 15 - 20 - 25	25-80 mbar - Violet	1	1
<b>504.0033.020</b>	014.0507.001	FGD, FGDR, FG1B, FG2B 15 - 20 - 25	70-160 mbar - Brown	1	1
<b>504.0034.020</b>	014.0508.001	FGDR, FG1B, FG2B 15 - 20 - 25	150-280 mbar - Blue	1	1
<b>504.0035.020</b>	014.0509.001	FGDR 15 - 20 - 25	270-350 mbar - White	1	1
<b>504.0035.020</b>	014.0509.001	FG1B 15 - 20 - 25	270-450 mbar - White	1	1
<b>E816D</b>	014.0220.001	FGD, FGDR 32 - 40 - 50/40	5-15 mbar - Green	1	1
<b>504.0016.020</b>	014.0221.001	FGD, FGDR, FG1B 32 - 40 - 50/40	10-25 mbar - Neutral	1	1
<b>504.0017.020</b>	014.0222.001	FGD, FGDR, FG1B 32 - 40 - 50/40	20-70 mbar - Violet	1	1
<b>E836D</b>	014.0223.001	FGD, FGDR, FG1B 32 - 40 - 50/40	65-130 mbar - Brown	1	1
<b>504.0018.020</b>	014.0225.001	FGD 32 - 40	120-160 mbar - White	1	1
<b>504.0018.020</b>	014.0225.001	FGDR, FG1B 32 - 40 - 50/40	120-250 mbar - White	1	1
<b>504.0036.020</b>	014.0520.001	FGDR 32 - 40 - 50/40	240-350 mbar - Black	1	1
<b>504.0036.020</b>	014.0520.001	FG1B 32 - 40 - 50/40	240-360 mbar - Black	1	1
<b>504.0041.020</b>	014.0523.001	FG1B 32 - 40 - 50/40	350-450 mbar - Orange	1	1
<b>504.0040.020</b>	014.0230.001	FGD, FGDR 50	5-15 mbar - Green	1	1
<b>E620</b>	014.0231.001	FGD, FGDR, FG1B 50	10-35 mbar - Neutral	1	1
<b>E619D</b>	014.0232.001	FGD, FGDR, FG1B 50	30-80 mbar - Violet	1	1
<b>E631D</b>	014.0233.001	FGD50	70-160 mbar - Brown	1	1
<b>E631D</b>	014.0233.001	FGDR, FG1B 50	70-220 mbar - Brown	1	1
<b>E630</b>	014.0234.001	FGDR50	210-350 mbar - Blue	1	1
<b>E630</b>	014.0234.001	FG1B50	210-450 mbar - Blue	1	1
<b>E405</b>	014.0241.001	FSDR, FS1B, STR, ST1B 65 - 80	10-30 mbar - Neutral	1	1
<b>E406</b>	014.0242.001	FSDR, FS1B, STR, ST1B 65 - 80	25-80 mbar - Red	1	1
<b>E417D</b>	014.0243.001	FSDR, FS1B, STR, ST1B 65 - 80	60-120 mbar - Violet	1	1
<b>E473</b>	014.0245.001	FSDR, FS1B, STR, ST1B 65 - 80	100-220 mbar - Blue	1	1
<b>504.0021.020</b>	014.0247.001	FSDR, STR 65 - 80	200-350 mbar - White	1	1
<b>504.0021.020</b>	014.0247.001	FS1B, ST1B 65 - 80	200-450 mbar - White	1	1
<b>E466D</b>	014.0251.001	STR, ST1B 100	10-40 mbar - Neutral	1	1
<b>E535</b>	014.0252.001	STR, ST1B 100	30-70 mbar - Red	1	1
<b>E468</b>	014.0253.001	STR, ST1B 100	60-110 mbar - Violet	1	1
<b>E475</b>	014.0254.001	STR, ST1B 100	100-210 mbar - Brown	1	1
<b>504.0065.000</b>	014.0256.001	STR 100	200-350 mbar - White	1	1
<b>504.0065.000</b>	014.0256.001	ST1B 100	200-450 mbar - White	1	1
<b>504.0050.000</b>	014.0560.000	STR, ST1B 125/150	10-30 mbar - Neutral	1	1
<b>504.0053.000</b>	014.0561.000	STR, ST1B 125/150	25-75 mbar - Red	1	1
<b>504.0051.000</b>	014.0562.000	STR, ST1B 125/150	70-120 mbar - Brown	1	1
<b>504.0062.000</b>	014.0563.000	STR, ST1B 125/150	110-170 mbar - White	1	1
<b>504.0064.000</b>	014.0564.000	STR, ST1B 125/150	140-200 mbar - Black	1	1







SELECTION GUIDE: SPRINGS

Model/Colour	FGD 15 - 20 - 25	FGD 32 - 40	FGD 50
GREEN 	5-15 mbar (014.0504.001)	5-15 mbar (014.0220.001)	5-15 mbar (014.0230.001)
NEUTRAL 	10-30 mbar (014.0505.001)	10-25 mbar (014.0221.001)	10-35 mbar (014.0231.001)
PURPLE 	25-80 mbar (014.0506.001)	20-70 mbar (014.0222.001)	30-80 mbar (014.0232.001)
BROWN 	70-160 mbar (014.0507.001)	65-130 mbar (014.0223.001)	70-160 mbar (014.0233.001)
WHITE 	/	120-160 mbar (014.0225.001)	/

Model/Colour	FGDR 15 - 20 - 25	FGDR 32 - 40 - 50/40	FGDR 50
GREEN 	5-15 mbar (014.0504.001)	5-15 mbar (014.0220.001)	5-15 mbar (014.0230.001)
NEUTRAL 	10-30 mbar (014.0505.001)	10-25 mbar (014.0221.001)	10-35 mbar (014.0231.001)
PURPLE 	25-80 mbar (014.0506.001)	20-70 mbar (014.0222.001)	30-80 mbar (014.0232.001)
BROWN 	70-160 mbar (014.0507.001)	65-130 mbar (014.0223.001)	70-220 mbar (014.0233.001)
BLUE 	150-280 mbar (014.0508.001)	/	210-350 mbar (014.0234.001)
WHITE 	270-350 mbar (014.0509.001)	120-250 mbar (014.0225.001)	/
BLACK 	/	240-350 mbar (014.0520.001)	/

Model/Colour	FGDR/COM 15-20
RED 	20-55 mbar (014.0202.001)
BLUE 	50-200 mbar (014.0204.001)

Model/Colour	FG1B 15 - 20 - 25	FG1B 32 - 40 - 50/40	FG1B 50
NEUTRAL 	10-30 mbar (014.0505.001)	10-25 mbar (014.0221.001)	10-35 mbar (014.0231.001)
PURPLE 	25-80 mbar (014.0506.001)	20-70 mbar (014.0222.001)	30-80 mbar (014.0232.001)
BROWN 	70-160 mbar (014.0507.001)	65-130 mbar (014.0223.001)	70-220 mbar (014.0233.001)
BLUE 	150-280 mbar (014.0508.001)	/	210-450 mbar (014.0234.001)
WHITE 	270-450 mbar (014.0509.001)	120-250 mbar (014.0225.001)	/
BLACK 	/	240-360 mbar (014.0520.001)	/
ORANGE 	/	350-450 mbar (014.0523.001)	/

Model/Colour	FSDR - STR 65 - 80	STR 100	FS1B - ST1B 65 - 80	ST1B 100
NEUTRAL 	10-30 mbar (014.0241.001)	10-40 mbar (014.0251.001)	10-30 mbar (014.0241.001)	10-40 mbar (014.0251.001)
RED 	25-80 mbar (014.0242.001)	30-70 mbar (014.0252.001)	25-80 mbar (014.0242.001)	30-70 mbar (014.0252.001)
PURPLE 	60-120 mbar (014.0243.001)	60-110 mbar (014.0253.001)	60-120 mbar (014.0243.001)	60-110 mbar (014.0253.001)
BROWN 	/	100-210 mbar (014.0254.001)	/	100-210 mbar (014.0254.001)
BLUE 	100-220 mbar (014.0245.001)	/	100-220 mbar (014.0245.001)	/
WHITE 	200-350 mbar (014.0247.001)	200-350 mbar (014.0256.001)	200-450 mbar (014.0247.001)	200-450 mbar (014.0256.001)

Model/Colour	STR 125 - 150	ST1B 125 - 150
NEUTRAL 	10-30 mbar (014.0560.000)	10-30 mbar (014.0560.000)
RED 	25-75 mbar (014.0561.000)	25-75 mbar (014.0561.000)
BROWN 	70-120 mbar (014.0562.000)	65-130 mbar (014.0562.000)
WHITE 	110-170 mbar (014.0563.000)	110-170 mbar (014.0563.000)
BLACK 	140-200 mbar (014.0564.000)	140-200 mbar (014.0564.000)

## Pressure regulators, 4 bar

### ST4B



Aluminium pressure regulator to EN 88-2. Max. inlet pressure 4 bar. Max. outlet pressure 450 mbar. Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15 to 60°C.

Type	Part no.	Con- nec- tions	Description	Pcs. pack	Package
ST4B20	009.0351.001	3/4"	With neutral spring 10-25 mbar	1	1
ST4B20	009.0351.002	3/4"	With purple spring 20-70 mbar	1	1
ST4B20	009.0351.003	3/4"	With brown spring 65-120 mbar	1	1
ST4B20	009.0351.004	3/4"	With white spring 110-230 mbar	1	1
ST4B20	009.0351.005	3/4"	With black spring 220-340 mbar	1	1
ST4B20	009.0351.006	3/4"	With orange spring 330-450 mbar	1	1
ST4B25	009.0352.001	1"	With neutral spring 10-25 mbar	1	1
ST4B25	009.0352.002	1"	With purple spring 20-70 mbar	1	1
ST4B25	009.0352.003	1"	With brown spring 65-120 mbar	1	1
ST4B25	009.0352.004	1"	With white spring 110-230 mbar	1	1
ST4B25	009.0352.005	1"	With black spring 220-340 mbar	1	1
ST4B25	009.0352.006	1"	With orange spring 330-450 mbar	1	1
ST4B32	009.0353.001	1.1/4"	With neutral spring 10-25 mbar	1	1
ST4B32	009.0353.002	1.1/4"	With purple spring 20-70 mbar	1	1
ST4B32	009.0353.003	1.1/4"	With brown spring 65-120 mbar	1	1
ST4B32	009.0353.004	1.1/4"	With white spring 110-230 mbar	1	1
ST4B32	009.0353.005	1.1/4"	With black spring 220-340 mbar	1	1
ST4B32	009.0353.006	1.1/4"	With orange spring 330-450 mbar	1	1
ST4B40	009.0354.001	1.1/2"	With neutral spring 10-25 mbar	1	1
ST4B40	009.0354.002	1.1/2"	With purple spring 20-70 mbar	1	1
ST4B40	009.0354.003	1.1/2"	With brown spring 65-120 mbar	1	1
ST4B40	009.0354.004	1.1/2"	With white spring 110-230 mbar	1	1
ST4B40	009.0354.005	1.1/2"	With black spring 220-340 mbar	1	1
ST4B40	009.0354.006	1.1/2"	With orange spring 330-450 mbar	1	1
ST4B50	009.0355.001	2"	With neutral spring 10-30 mbar	1	1
ST4B50	009.0355.002	2"	With purple spring 25-70 mbar	1	1
ST4B50	009.0355.003	2"	With brown spring 65-150 mbar	1	1
ST4B50	009.0355.004	2"	With white spring 140-270 mbar	1	1
ST4B50	009.0355.005	2"	With black spring 260-380 mbar	1	1
ST4B50	009.0355.006	2"	With orange spring 370-450 mbar	1	1

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**ST4B..BM**



Aluminium pressure regulator with maximum pressure shut-off valve, to EN 88-2. Max. inlet pressure 4 bar. Max. outlet pressure 450 mbar.

Closure control. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Pack-age
ST4B20BM	009.0361.001	3/4"	With neutral spring 10-25 mbar	1	1
ST4B20BM	009.0361.002	3/4"	With purple spring 20-70 mbar	1	1
ST4B20BM	009.0361.003	3/4"	With brown spring 65-120 mbar	1	1
ST4B20BM	009.0361.004	3/4"	With white spring 110-230 mbar	1	1
ST4B20BM	009.0361.005	3/4"	With black spring 220-340 mbar	1	1
ST4B20BM	009.0361.006	3/4"	With orange spring 330-450 mbar	1	1
ST4B25BM	009.0362.001	1"	With neutral spring 10-25 mbar	1	1
ST4B25BM	009.0362.002	1"	With purple spring 20-70 mbar	1	1
ST4B25BM	009.0362.003	1"	With brown spring 65-120 mbar	1	1
ST4B25BM	009.0362.004	1"	With white spring 110-230 mbar	1	1
ST4B25BM	009.0362.005	1"	With black spring 220-340 mbar	1	1
ST4B25BM	009.0362.006	1"	With orange spring 330-450 mbar	1	1
ST4B32BM	009.0363.001	1.1/4"	With neutral spring 10-25 mbar	1	1
ST4B32BM	009.0363.002	1.1/4"	With purple spring 20-70 mbar	1	1
ST4B32BM	009.0363.003	1.1/4"	With brown spring 65-120 mbar	1	1
ST4B32BM	009.0363.004	1.1/4"	With white spring 110-230 mbar	1	1
ST4B32BM	009.0363.005	1.1/4"	With black spring 220-340 mbar	1	1
ST4B32BM	009.0363.006	1.1/4"	With orange spring 330-450 mbar	1	1
ST4B40BM	009.0364.001	1.1/2"	With neutral spring 10-25 mbar	1	1
ST4B40BM	009.0364.002	1.1/2"	With purple spring 20-70 mbar	1	1
ST4B40BM	009.0364.003	1.1/2"	With brown spring 65-120 mbar	1	1
ST4B40BM	009.0364.004	1.1/2"	With white spring 110-230 mbar	1	1
ST4B40BM	009.0364.005	1.1/2"	With black spring 220-340 mbar	1	1
ST4B40BM	009.0364.006	1.1/2"	With orange spring 330-450 mbar	1	1
ST4B50BM	009.0365.001	2"	With neutral spring 10-30 mbar	1	1
ST4B50BM	009.0365.002	2"	With purple spring 25-70 mbar	1	1
ST4B50BM	009.0365.003	2"	With brown spring 65-150 mbar	1	1
ST4B50BM	009.0365.004	2"	With white spring 140-270 mbar	1	1
ST4B50BM	009.0365.005	2"	With black spring 260-380 mbar	1	1
ST4B50BM	009.0365.006	2"	With orange spring 370-450 mbar	1	1

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**BM**



Aluminium maximum pressure shut-off valve to EN 88-2. Max. inlet pressure 4 bar. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15to60°C.

Type	Part no.	Connections	Description	Pcs. pack	Pack-age
BM20	019.0041.001	3/4"	With neutral spring 50-200 mbar	1	1
BM25	019.0042.001	1"	With neutral spring 50-200 mbar	1	1
BM32	019.0043.001	1.1/4"	With neutral spring 50-200 mbar	1	1
BM40	019.0044.001	1.1/2"	With neutral spring 50-200 mbar	1	1
BM50	019.0045.001	2"	With neutral spring 50-200 mbar	1	1

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





**SPRINGS**

Type	Part no.	Regulators	Setting and Colour	Pcs. pack	Package
<b>504.0016.020</b>	014.0221.001	ST4B, ST4B..BM 20 - 25 - 32 - 40	10-25 mbar - Neutral	1	1
<b>504.0017.020</b>	014.0222.001	ST4B, ST4B..BM 20 - 25 - 32 - 40	20-70 mbar - Violet	1	1
<b>E836D</b>	014.0223.001	ST4B, ST4B..BM 20 - 25 - 32 - 40	65-120 mbar - Brown	1	1
<b>504.0018.020</b>	014.0225.001	ST4B, ST4B..BM 20 - 25 - 32 - 40	110-230 mbar - White	1	1
<b>504.0036.020</b>	014.0520.001	ST4B, ST4B..BM 20 - 25 - 32 - 40	220-340 mbar - Black	1	1
<b>504.0041.020</b>	014.0523.001	ST4B, ST4B..BM 20 - 25 - 32 - 40	330-450 mbar - Orange	1	1
<b>E320</b>	014.0231.001	ST4B, ST4B..BM 50	10-30 mbar - Neutral	1	1
<b>E619D</b>	014.0232.001	ST4B, ST4B..BM 50	25-70 mbar - Violet	1	1
<b>E631D</b>	014.0233.001	ST4B, ST4B..BM 50	65-150 mbar - Brown	1	1
<b>504.0038.020</b>	014.0521.001	ST4B, ST4B..BM 50	140-270 mbar - White	1	1
<b>504.0039.020</b>	014.0522.001	ST4B, ST4B..BM 50	260-380 mbar - Black	1	1
<b>504.0043.020</b>	014.0524.001	ST4B, ST4B..BM 50	370-450 mbar - Orange	1	1
<b>504.0015.020</b>	014.0267.000	BM 20 - 25 - 32 - 40 - 50	50-200 mbar - Neutral	1	1
<b>504.0059.000</b>	014.0265.000	BM 20 - 25 - 32 - 40 - 50	190-400 mbar - Red	1	1
<b>504.0060.000</b>	014.0266.000	BM 20 - 25 - 32 - 40 - 50	390-700 mbar - Blue	1	1

**PARTS KIT**

Type	Part no.	Regulators	Description	Pcs. pack	Package
<b>3500</b>	014.0515.001	ST4B, ST4B..BM 20 - 25	Servicing components kit	1	1
<b>3501</b>	014.0516.001	ST4B, ST4B..BM 32 - 40	Servicing components kit	1	1
<b>3502</b>	014.0517.001	ST4B, ST4B..BM 50	Servicing components kit	1	1
-	014.0545.000	ST4B..BM 20	Conversion kit	1	1
-	014.0546.000	ST4B..BM 25	Conversion kit	1	1
-	014.0547.000	ST4B..BM 32	Conversion kit	1	1
-	014.0548.000	ST4B..BM 40	Conversion kit	1	1
-	014.0549.000	ST4B..BM 50	Conversion kit	1	1

**SELECTION GUIDE: SPRINGS**

Model/Colour	ST4B 15 - 20 - 25	ST4B 32 - 40	ST4B 50
NEUTRAL 	10-25 mbar (014.0221.001)	10-25 mbar (014.0221.001)	10-30 mbar (014.0231.001)
PURPLE 	20-70 mbar (014.0222.001)	20-70 mbar (014.0222.001)	25-70 mbar (014.0232.001)
BROWN 	65-120 mbar (014.0223.001)	65-120 mbar (014.0223.001)	65-150 mbar (014.0233.001)
WHITE 	110-230 mbar (014.0225.001)	110-230 mbar (014.0225.001)	140-270 mbar (014.0521.001)
BLACK 	220-340 mbar (014.0520.001)	220-340 mbar (014.0520.001)	260-380 mbar (014.0522.001)
ORANGE 	330-450 mbar (014.0523.001)	330-450 mbar (014.0523.001)	370-450 mbar (014.0524.001)

## Slam shut-off and relief valves

### MB



Aluminium maximum pressure shut-off valve to EN 88-2.

Max. inlet pressure 1 bar. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -10 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>MB20</b>	019.0002.001	3/4"	With neutral spring 80-550 mbar	1	1
<b>MB20</b>	019.0002.002	3/4"	With blue spring 30-120 mbar	1	1
<b>MB25</b>	019.0003.001	1"	With neutral spring 80-550 mbar	1	1
<b>MB25</b>	019.0003.002	1"	With blue spring 30-120 mbar	1	1
<b>MB32</b>	019.0004.001	1.1/4"	With neutral spring 80-550 mbar	1	1
<b>MB32</b>	019.0004.002	1.1/4"	With blue spring 30-120 mbar	1	1
<b>MB40</b>	019.0005.001	1.1/2"	With neutral spring 80-550 mbar	1	1
<b>MB40</b>	019.0005.002	1.1/2"	With blue spring 30-120 mbar	1	1
<b>MB50</b>	019.0006.001	2"	With neutral spring 80-550 mbar	1	1
<b>MB50</b>	019.0006.002	2"	With blue spring 30-120 mbar	1	1
<b>MB65</b>	019.0007.101	DN65	With neutral spring 80-550 mbar	1	1
<b>MB65</b>	019.0007.102	DN65	With blue spring 30-120 mbar	1	1
<b>MB80</b>	019.0008.101	DN80	With neutral spring 80-550 mbar	1	1
<b>MB80</b>	019.0008.102	DN80	With blue spring 30-120 mbar	1	1
<b>MB100</b>	019.0009.001	DN100	With neutral spring 80-550 mbar	1	1
<b>MB100</b>	019.0009.002	DN100	With blue spring 30-120 mbar	1	1
<b>MB125</b>	019.0010.001	DN125	With neutral spring 80-550 mbar	1	1
<b>MB125</b>	019.0010.002	DN125	With blue spring 30-120 mbar	1	1
<b>MB150</b>	019.0011.001	DN150	With neutral spring 80-550 mbar	1	1
<b>MB150</b>	019.0011.002	DN150	With blue spring 30-120 mbar	1	1

Dimensions on page 347



## MB/6B



Aluminium maximum pressure shut-off valve to EN 88-2. Max. inlet pressure 6 bar. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -10 to 60°C.

Type	Part no.	Con- nec- tions	Description	Pcs. pack	Pack- age
<b>MB15/6B</b>	019.0021.001	1/2"	With neutral spring 80-550 mbar	1	1
<b>MB15/6B</b>	019.0021.002	1/2"	With blue spring 30-120 mbar	1	1
<b>MB20/6B</b>	019.0022.001	3/4"	With neutral spring 80-550 mbar	1	1
<b>MB20/6B</b>	019.0022.002	3/4"	With blue spring 30-120 mbar	1	1
<b>MB25/6B</b>	019.0023.001	1"	With neutral spring 80-550 mbar	1	1
<b>MB25/6B</b>	019.0023.002	1"	With blue spring 30-120 mbar	1	1
<b>MB32/6B</b>	019.0024.001	1.1/4"	With neutral spring 80-550 mbar	1	1
<b>MB32/6B</b>	019.0024.002	1.1/4"	With blue spring 30-120 mbar	1	1
<b>MB40/6B</b>	019.0025.001	1.1/2"	With neutral spring 80-550 mbar	1	1
<b>MB40/6B</b>	019.0025.002	1.1/2"	With blue spring 30-120 mbar	1	1
<b>MB50/6B</b>	019.0026.001	2"	With neutral spring 80-550 mbar	1	1
<b>MB50/6B</b>	019.0026.002	2"	With blue spring 30-120 mbar	1	1
<b>MB65/6B</b>	019.0027.101	DN65	With neutral spring 80-550 mbar	1	1
<b>MB65/6B</b>	019.0027.102	DN65	With blue spring 30-120 mbar	1	1
<b>MB80/6B</b>	019.0028.101	DN80	With neutral spring 80-550 mbar	1	1
<b>MB80/6B</b>	019.0028.102	DN80	With blue spring 30-120 mbar	1	1
<b>MB100/6B</b>	019.0029.001	DN100	With neutral spring 80-550 mbar	1	1
<b>MB100/6B</b>	019.0029.002	DN100	With blue spring 30-120 mbar	1	1
<b>MB125/6B</b>	019.0030.001	DN125	With neutral spring 80-550 mbar	1	1
<b>MB125/6B</b>	019.0030.002	DN125	With blue spring 30-120 mbar	1	1
<b>MB150/6B</b>	019.0031.001	DN150	With neutral spring 80-550 mbar	1	1
<b>MB150/6B</b>	019.0031.002	DN150	With blue spring 30-120 mbar	1	1

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### SPRINGS

Type	Part no.	Shut-off valve	Setting and Colour	Pcs. pack	Package
<b>E737</b>	014.0204.001	MB, MB/6B	30-120 mbar - Blue	1	1
<b>504.0001.000</b>	014.0262.001	MB, MB/6B	80-550 mbar - Neutral	1	1

## MS



Aluminium relief valve. Max. inlet pressure 2 bar. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -10 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Pack- age
<b>MS20</b>	002.0004.001	3/4"	With blue spring 80-600 mbar	1	1
<b>MS20</b>	002.0004.002	3/4"	With red spring 30-120 mbar	1	1
<b>MS25</b>	002.0005.001	1"	With blue spring 80-600 mbar	1	1
<b>MS25</b>	002.0005.002	1"	With red spring 30-120 mbar	1	1

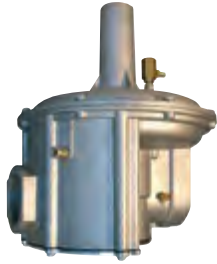
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### SPRINGS

Type	Part no.	Relief valve	Setting and Colour	Pcs. pack	Package
<b>E1211D</b>	014.0212.001	MS	30-130 mbar - Red	1	1
<b>504.0003.000</b>	014.0216.001	MS	80-600 mbar - Blue	1	1

## Air/gas ratio control valves

### GAVR



Air/gas ratio control valve with max. inlet pressure of 200mbar. Max. air inlet pressure 120 mbar. Ratio 1:1. Adjustable minimum flow rate. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -10 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Pack- age
<b>GAVR15</b>	020.0001.101	1/2"	Outlet pressure 2-120 mbar	1	1
<b>GAVR20</b>	020.0002.101	3/4"	Outlet pressure 2-120 mbar	1	1
<b>GAVR25</b>	020.0003.101	1"	Outlet pressure 2-120 mbar	1	1
<b>GAVR32</b>	020.0004.101	1.1/4"	Outlet pressure 2-120 mbar	1	1
<b>GAVR40</b>	020.0005.101	1.1/2"	Outlet pressure 2-120 mbar	1	1
<b>GAVR50/40</b>	020.0016.101	2"	Outlet pressure 2-120 mbar	1	1
<b>GAVR50</b>	020.0006.101	2"	Outlet pressure 2-120 mbar	1	1

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### VRGA



Air/gas ratio control valve with max. inlet pressure of 200mbar. Max. air inlet pressure 120 mbar. Ratio 1:1. Adjustable minimum flow rate. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -10 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Pack- age
<b>VRGA65</b>	020.0007.101	DN65	Outlet pressure 2-120 mbar	1	1
<b>VRGA80</b>	020.0008.101	DN80	Outlet pressure 2-120 mbar	1	1
<b>VRGA100</b>	020.0009.001	DN100	Outlet pressure 2-120 mbar	1	1

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#### PARTS KIT

Type	Part no.	Regulators	Description	Pcs. pack	Package
<b>3306</b>	014.0148.000	GAVR 15 - 20 - 25	Servicing components kit	1	1
<b>3307</b>	014.0149.000	GAVR 32 - 40 - 50/40	Servicing components kit	1	1
<b>3303</b>	014.0145.000	GAVR 50	Servicing components kit	1	1
<b>3304</b>	014.0146.000	VRGA 65 - 80	Servicing components kit	1	1
<b>3305</b>	014.0147.000	VRGA 100	Servicing components kit	1	1

## Automatic ON-OFF solenoid valves

### GSAVO



Automatic ON-OFF normally closed class A gas solenoid valve with threaded connections. Quick opening and closing. Brass body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Pack- age
<b>GSAVO15</b>	021.0030.001	1/2"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GASVO15/08B</b>	021.0031.001	1/2"	Power supply 230 VAC. Max. pressure 0.8 bar	1	1

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## GSAV



Automatic ON-OFF normally closed class A gas solenoid valve with threaded connections. Quick opening and closing. Aluminium body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>GSAV15/02B</b>	021.0020.001	1/2"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV20/02B</b>	021.0021.001	3/4"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV25/02B</b>	021.0022.001	1"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1

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## GSAV-R



Automatic ON-OFF normally closed class A gas solenoid valve with threaded connections. Quick opening and closing with adjustable flow rate. Aluminium body. Coil with IP65 connector (1/2"-3/4"-1"). Coil with IP54 electrical enclosure (1 1/4"-1 1/2"-2"). Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>GSAV15R</b>	021.0010.001	1/2"	Power supply 230 VAC. Max. pressure 0.5 bar	1	1
<b>GSAV20R</b>	021.0011.001	3/4"	Power supply 230 VAC. Max. pressure 0.5 bar	1	1
<b>GSAV25R</b>	021.0012.001	1"	Power supply 230 VAC. Max. pressure 0.5 bar	1	1
<b>GSAV32R</b>	021.0013.101	1.1/4"	Power supply 230 VAC. Max. pressure 0.5 bar	1	1
<b>GSAV40R</b>	021.0014.101	1.1/2"	Power supply 230 VAC. Max. pressure 0.5 bar	1	1
<b>GSAV50R</b>	021.0015.101	2"	Power supply 230 VAC. Max. pressure 0.5 bar	1	1

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## GSAV-2R



Automatic ON-OFF normally closed class A gas solenoid valve. Quick opening and closing with adjustable flow rate. Aluminium body. Coil with IP54 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>GSAV202R</b>	021.0121.001	3/4"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV252R</b>	021.0122.001	1"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV322R</b>	021.0123.001	1.1/4"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV402R</b>	021.0124.001	1.1/2"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV502R</b>	021.0125.001	2"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV652R</b>	021.0126.001	DN65	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV802R</b>	021.0127.001	DN80	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>GSAV1002R</b>	021.0128.001	DN100	Power supply 230 VAC. Max. pressure 0.2 bar	1	1

Dimensions on page 349

## AMSV-R



Automatic ON-OFF normally closed class A gas solenoid valve with threaded connections. Quick opening and closing with adjustable flow rate. Aluminium body. Coil with IP65 connector (1/2"-3/4"-1"). Coil with IP54 electrical enclosure (1.1/4"-1.1/2"-2"). Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>AMSV205R</b>	021.0139.001	3/4"	Power supply 230 VAC. Max. pressure 0.5 bar	1	1
<b>AMSV255R</b>	021.0140.001	1"	Power supply 230 VAC. Max. pressure 0.5 bar	1	1

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## AMSV-2R



Automatic ON-OFF normally closed class A gas solenoid valve. Quick opening and closing with adjustable flow rate. Aluminium body. Coil with IP54 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>AMSV202R</b>	021.0041.001	3/4"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>AMSV252R</b>	021.0042.001	1"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>AMSV322R</b>	021.0043.001	1.1/4"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>AMSV402R</b>	021.0044.001	1.1/2"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1
<b>AMSV502R</b>	021.0045.001	2"	Power supply 230 VAC. Max. pressure 0.2 bar	1	1

Dimensions on page 349

**GHAV**



Automatic ON-OFF normally closed class A gas solenoid valve. Actuated by IP56 electro-hydraulic actuator. Aluminium body. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -15 to 60°C.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>GHAV65N</b>	021.0100.101	DN65	Power supply 230 VAC. Max. pressure 1 bar	1	1
<b>GHAV80N</b>	021.0101.101	DN80	Power supply 230 VAC. Max. pressure 1 bar	1	1
<b>GHAV100N</b>	021.0102.101	DN100	Power supply 230 VAC. Max. pressure 1 bar	1	1
<b>GHAV125N</b>	021.0103.101	DN125	Power supply 230 VAC. Max. pressure 1 bar	1	1
<b>GHAV150N</b>	021.0104.101	DN150	Power supply 230 VAC. Max. pressure 1 bar	1	1

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**PARTS KIT**

Type	Part no.	Valve	Description	Pcs. pack	Package
<b>511.2102.001</b>	014.0307.001	GSAVO15	RAC coil 230 VAC	1	1
<b>511.0041.100</b>	014.0305.001	GSAVO15/08B - GSAV15/02B	RAC coil 230 VAC	1	1
<b>511.0219.100</b>	014.0306.001	GSAV20/02B - GSAV25/02B	RAC coil 230 VAC	1	1
<b>2104</b>	014.0277.001	GSAVO - GSAV15-20-25/02B	Connector 230 VAC	1	1
<b>821.0030.002</b>	014.0471.001	AMSV, GSAV 202 - 252 R-L	RAC coil 230 VAC	1	1
<b>821.0031.002</b>	014.0472.001	AMSV, GSAV 322 - 402 R-L	RAC coil 230 VAC	1	1
<b>821.0032.002</b>	014.0473.001	AMSV, GSAV 502 R-L	RAC coil 230 VAC	1	1
<b>821.0032.002</b>	014.0473.001	AMSV325-405-505R, GSAV32-40-50R	RAC coil 230 VAC	1	1
<b>821.0121.002</b>	014.0487.001	GSAV 652 - 802 R	RAC coil 230 VAC	1	1
<b>821.0122.002</b>	014.0488.001	GSAV1002 R	RAC coil 230 VAC	1	1
<b>511.0042.992</b>	014.0474.001	AMSV, GSAV 202 - 252 R-L	Rectifier 230 VAC	1	1
<b>511.0043.992</b>	014.0475.001	AMSV, GSAV 322 - 402 - 502 R-L	Rectifier 230 VAC	1	1
<b>511.0043.992</b>	014.0475.001	AMSV325-405-505R, GSAV32-40-50R	Rectifier 230 VAC	1	1
<b>511.0057.992</b>	014.0489.990	GSAV 652 - 802 R	Rectifier 230 VAC	1	1
<b>511.0058.992</b>	014.0490.990	GSAV1002 R	Rectifier 230 VAC	1	1
<b>511.2102.001</b>	014.0303.001	GSAV15R	RAC coil 230 VAC	1	1
<b>511.0020.001</b>	014.0049.001	GSAV 20 - 25 R, AMSV 205 - 255 R	RAC coil 230 VAC	1	1
<b>511.0020.001</b>	014.0046.001	GSAV 20 - 25 R	RAC coil 230 VAC + core + spring	1	1
<b>511.0023.990</b>	014.0280.001	GSAV15-20-25R, AMSV205-255R	RAC connector kit 230 VAC + LED	1	1
<b>511.0220.001</b>	014.0060.101	GHAVN 65 - 80	Actuator 230 VAC	1	1
<b>511.0221.001</b>	014.0061.101	GHAVN 100	Actuator 230 VAC	1	1
<b>511.0222.001</b>	014.0062.101	GHAVN 125 - 150	Actuator 230 VAC	1	1

SELECTION GUIDE: COILS AND CONNECTORS

Series	Connections	Coils	Connectors	Rectifier
<b>GSAVO15</b>	1/2"	014.0307.001	014.0277.001	-
<b>GSAVO15/08B</b>	1/2"	014.0305.001	014.0277.001	-
<b>GSAV15/02B</b>	1/2"	014.0305.001	014.0277.001	-
<b>GSAV20/02B</b>	3/4 "	014.0306.001	014.0277.001	-
<b>GSAV25/02B</b>	1"	014.0306.001	014.0277.001	-
<b>GSAV-R</b>	1/2" *	014.0303.001	014.0280.001	-
	3/4" - 1" *	014.0049.001	014.0280.001	-
	1.1/4" - 1.1/2" *	014.0473.001	-	014.0475.001
	2" *	014.0473.001	-	014.0475.001
<b>GSAV-2R</b>	3/4" - 1"	014.0471.001	-	014.0474.001
	1.1/4" - 1.1/2"	014.0472.001	-	014.0475.001
	2"	014.0473.001	-	014.0475.001
	DN65-DN80	014.0487.001	-	014.0489.990
	DN100	014.0488.001	-	014.0490.990
<b>AMSV-2R</b>	3/4" - 1"	014.0471.001	-	014.0474.001
	1.1/4" - 1.1/2"	014.0472.001	-	014.0475.001
	2"	014.0473.001	-	014.0475.001
<b>GHAV</b>	DN65 - DN 80	014.0060.101	-	-
	DN100	014.0061.101	-	-
	DN125 - DN150	014.0062.101	-	-

\* For products purchased from 01/01/2017

## Solenoid valves with manual resetting

### MSVO



Normally open gas solenoid valve with manual resetting and threaded connections. Brass body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 0.5 bar.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>MSVO12</b>	010.0020.001	1/2"	Power supply 230 VAC.	1	1
<b>MSVO12</b>	010.0020.002	1/2"	Power supply 24 VAC.	1	1
<b>MSVO12</b>	010.0020.003	1/2"	Power supply 12 VDC.	1	1
<b>MSVO34</b>	010.0021.001	3/4"	Power supply 230 VAC.	1	1
<b>MSVO34</b>	010.0021.002	3/4"	Power supply 24 VAC.	1	1
<b>MSVO34</b>	010.0021.003	3/4"	Power supply 12 VDC.	1	1
<b>MSVO100</b>	010.0022.001	1"	Power supply 230 VAC.	1	1
<b>MSVO100</b>	010.0022.002	1"	Power supply 24 VAC.	1	1
<b>MSVO100</b>	010.0022.003	1"	Power supply 12 VDC.	1	1

Dimensions on page 351

### MSVO/6B



Normally open gas solenoid valve with manual resetting and threaded connections. Brass body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 6 bar.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>MSVO12/6B</b>	010.0030.001	1/2"	Power supply 230 VAC.	1	1
<b>MSVO12/6B</b>	010.0030.002	1/2"	Power supply 24 VAC.	1	1
<b>MSVO12/6B</b>	010.0030.003	1/2"	Power supply 12 VDC.	1	1
<b>MSVO34/6B</b>	010.0031.001	3/4"	Power supply 230 VAC.	1	1
<b>MSVO34/6B</b>	010.0031.002	3/4"	Power supply 24 VAC.	1	1
<b>MSVO34/6B</b>	010.0031.003	3/4"	Power supply 12 VDC.	1	1
<b>MSVO100/6B</b>	010.0032.001	1"	Power supply 230 VAC.	1	1
<b>MSVO100/6B</b>	010.0032.002	1"	Power supply 24 VAC.	1	1
<b>MSVO100/6B</b>	010.0032.003	1"	Power supply 12 VDC.	1	1

Dimensions on page 351

**EVO**



Normally closed gas solenoid valve with manual resetting and threaded connections. Brass body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 0.5 bar.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>EVO15</b>	010.0040.001	1/2"	Power supply 230 VAC.	1	1
<b>EVO15</b>	010.0040.002	1/2"	Power supply 24 VAC.	1	1
<b>EVO15</b>	010.0040.003	1/2"	Power supply 12 VDC.	1	1
<b>EVO20</b>	010.0041.001	3/4"	Power supply 230 VAC.	1	1
<b>EVO20</b>	010.0041.002	3/4"	Power supply 24 VAC.	1	1
<b>EVO20</b>	010.0041.003	3/4"	Power supply 12 VDC.	1	1
<b>EVO25</b>	010.0042.001	1"	Power supply 230 VAC.	1	1
<b>EVO25</b>	010.0042.002	1"	Power supply 24 VAC.	1	1
<b>EVO25</b>	010.0042.003	1"	Power supply 12 VDC.	1	1

Dimensions on page 351

**EVO/6B**



Normally closed gas solenoid valve with manual resetting and threaded connections. Brass body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 6 bar.

Type	Part no.	Connections	Description	Pcs. pack	Package
<b>EVO15/6B</b>	010.0050.001	1/2"	Power supply 230 VAC.	1	1
<b>EVO15/6B</b>	010.0050.002	1/2"	Power supply 24 VAC.	1	1
<b>EVO15/6B</b>	010.0050.003	1/2"	Power supply 12 VDC.	1	1
<b>EVO20/6B</b>	010.0051.001	3/4"	Power supply 230 VAC.	1	1
<b>EVO20/6B</b>	010.0051.002	3/4"	Power supply 24 VAC.	1	1
<b>EVO20/6B</b>	010.0051.003	3/4"	Power supply 12 VDC.	1	1
<b>EVO25/6B</b>	010.0052.001	1"	Power supply 230 VAC.	1	1
<b>EVO25/6B</b>	010.0052.002	1"	Power supply 24 VAC.	1	1
<b>EVO25/6B</b>	010.0052.003	1"	Power supply 12 VDC.	1	1

Dimensions on page 351



**MSV**

Normally open gas solenoid valve with manual resetting. Aluminium body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 0.5 bar.



Type	Part no.	Connections	Description	Pcs. pack	Package
<b>MSV12</b>	010.0080.001	1/2"	Power supply 230 VAC.	1	1
<b>MSV12</b>	010.0080.002	1/2"	Power supply 24 VAC.	1	1
<b>MSV12</b>	010.0080.003	1/2"	Power supply 12 VDC.	1	1
<b>MSV34</b>	010.0081.001	3/4"	Power supply 230 VAC.	1	1
<b>MSV34</b>	010.0081.002	3/4"	Power supply 24 VAC.	1	1
<b>MSV34</b>	010.0081.003	3/4"	Power supply 12 VDC.	1	1
<b>MSV100</b>	010.0082.001	1"	Power supply 230 VAC.	1	1
<b>MSV100</b>	010.0082.002	1"	Power supply 24 VAC.	1	1
<b>MSV100</b>	010.0082.003	1"	Power supply 12 VDC.	1	1
<b>MSV114</b>	010.0083.001	1.1/4"	Power supply 230 VAC.	1	1
<b>MSV114</b>	010.0083.002	1.1/4"	Power supply 24 VAC.	1	1
<b>MSV114</b>	010.0083.003	1.1/4"	Power supply 12 VDC.	1	1
<b>MSV112</b>	010.0084.001	1.1/2"	Power supply 230 VAC.	1	1
<b>MSV112</b>	010.0084.002	1.1/2"	Power supply 24 VAC.	1	1
<b>MSV112</b>	010.0084.003	1.1/2"	Power supply 12 VDC.	1	1
<b>MSV112F</b>	010.0084.011	DN40	Power supply 230 VAC.	1	1
<b>MSV112F</b>	010.0084.012	DN40	Power supply 24 VAC.	1	1
<b>MSV112F</b>	010.0084.013	DN40	Power supply 12 VDC.	1	1
<b>MSV200</b>	010.0085.001	2"	Power supply 230 VAC.	1	1
<b>MSV200</b>	010.0085.002	2"	Power supply 24 VAC.	1	1
<b>MSV200</b>	010.0085.003	2"	Power supply 12 VDC.	1	1
<b>MSV200F</b>	010.0085.011	DN50	Power supply 230 VAC.	1	1
<b>MSV200F</b>	010.0085.012	DN50	Power supply 24 VAC.	1	1
<b>MSV200F</b>	010.0085.013	DN50	Power supply 12 VDC.	1	1
<b>MSV212</b>	010.0086.101	DN65	Power supply 230 VAC.	1	1
<b>MSV212</b>	010.0086.102	DN65	Power supply 24 VAC.	1	1
<b>MSV212</b>	010.0086.103	DN65	Power supply 24 VDC.	1	1
<b>MSV212</b>	010.0086.104	DN65	Power supply 12 VDC.	1	1
<b>MSV300</b>	010.0087.101	DN80	Power supply 230 VAC.	1	1
<b>MSV300</b>	010.0087.102	DN80	Power supply 24 VAC.	1	1
<b>MSV300</b>	010.0087.103	DN80	Power supply 24 VDC.	1	1
<b>MSV300</b>	010.0087.104	DN80	Power supply 12 VDC.	1	1
<b>MSV400</b>	010.0088.001	DN100	Power supply 230 VAC.	1	1
<b>MSV400</b>	010.0088.002	DN100	Power supply 24 VAC.	1	1
<b>MSV400</b>	010.0088.003	DN100	Power supply 24 VDC.	1	1
<b>MSV400</b>	010.0088.004	DN100	Power supply 12 VDC.	1	1
<b>MSV500</b>	010.0089.001	DN125	Power supply 230 VAC.	1	1
<b>MSV500</b>	010.0089.002	DN125	Power supply 24 VAC/VDC	1	1
<b>MSV500</b>	010.0089.003	DN125	Power supply 12 VDC.	1	1
<b>MSV600</b>	010.0090.001	DN150	Power supply 230 VAC.	1	1
<b>MSV600</b>	010.0090.002	DN150	Power supply 24 VAC/VDC	1	1
<b>MSV600</b>	010.0090.003	DN150	Power supply 12 VDC.	1	1
<b>MSV800</b>	010.0091.001	DN200	Power supply 230 VAC.	1	1
<b>MSV800</b>	010.0091.002	DN200	Power supply 24 VAC/VDC	1	1
<b>MSV800</b>	010.0091.003	DN200	Power supply 12 VDC.	1	1
<b>MSV1200</b>	010.0092.001	DN300	Power supply 230 VAC.	1	1
<b>MSV1200</b>	010.0092.002	DN300	Power supply 24 VAC/VDC	1	1
<b>MSV1200</b>	010.0092.003	DN300	Power supply 12 VDC.	1	1

Dimensions on page 350

## MSV/6B

Normally open gas solenoid valve with manual resetting. Aluminium body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20to60°C. Max. operating pressure: 6 bar.



Type	Part no.	Connections	Description	Pcs. pack	Pack- age
<b>MSV12/6B</b>	010.0120.001	1/2"	Power supply 230 VAC.	1	1
<b>MSV12/6B</b>	010.0120.002	1/2"	Power supply 24 VAC.	1	1
<b>MSV12/6B</b>	010.0120.003	1/2"	Power supply 12 VDC.	1	1
<b>MSV34/6B</b>	010.0121.001	3/4"	Power supply 230 VAC.	1	1
<b>MSV34/6B</b>	010.0121.002	3/4"	Power supply 24 VAC.	1	1
<b>MSV34/6B</b>	010.0121.003	3/4"	Power supply 12 VDC.	1	1
<b>MSV100/6B</b>	010.0122.001	1"	Power supply 230 VAC.	1	1
<b>MSV100/6B</b>	010.0122.002	1"	Power supply 24 VAC.	1	1
<b>MSV100/6B</b>	010.0122.003	1"	Power supply 12 VDC.	1	1
<b>MSV114/6B</b>	010.0123.001	1.1/4"	Power supply 230 VAC.	1	1
<b>MSV114/6B</b>	010.0123.002	1.1/4"	Power supply 24 VAC.	1	1
<b>MSV114/6B</b>	010.0123.003	1.1/4"	Power supply 12 VDC.	1	1
<b>MSV112/6B</b>	010.0124.001	1.1/2"	Power supply 230 VAC.	1	1
<b>MSV112/6B</b>	010.0124.002	1.1/2"	Power supply 24 VAC.	1	1
<b>MSV112/6B</b>	010.0124.003	1.1/2"	Power supply 12 VDC.	1	1
<b>MSV112/6BF</b>	010.0124.011	DN40	Power supply 230 VAC.	1	1
<b>MSV112/6BF</b>	010.0124.012	DN40	Power supply 24 VAC.	1	1
<b>MSV112/6BF</b>	010.0124.013	DN40	Power supply 12 VDC.	1	1
<b>MSV200/6B</b>	010.0125.001	2"	Power supply 230 VAC.	1	1
<b>MSV200/6B</b>	010.0125.002	2"	Power supply 24 VAC.	1	1
<b>MSV200/6B</b>	010.0125.003	2"	Power supply 12 VDC.	1	1
<b>MSV200/6BF</b>	010.0125.011	DN50	Power supply 230 VAC.	1	1
<b>MSV200/6BF</b>	010.0125.012	DN50	Power supply 24 VAC.	1	1
<b>MSV200/6BF</b>	010.0125.013	DN50	Power supply 12 VDC.	1	1
<b>MSV212/6B</b>	010.0126.101	DN65	Power supply 230 VAC.	1	1
<b>MSV212/6B</b>	010.0126.102	DN65	Power supply 24 VAC.	1	1
<b>MSV212/6B</b>	010.0126.103	DN65	Power supply 24 VDC.	1	1
<b>MSV212/6B</b>	010.0126.104	DN65	Power supply 12 VDC.	1	1
<b>MSV300/6B</b>	010.0127.101	DN80	Power supply 230 VAC.	1	1
<b>MSV300/6B</b>	010.0127.102	DN80	Power supply 24 VAC.	1	1
<b>MSV300/6B</b>	010.0127.103	DN80	Power supply 24 VDC.	1	1
<b>MSV300/6B</b>	010.0127.104	DN80	Power supply 12 VDC.	1	1
<b>MSV400/6B</b>	010.0128.001	DN100	Power supply 230 VAC.	1	1
<b>MSV400/6B</b>	010.0128.002	DN100	Power supply 24 VAC.	1	1
<b>MSV400/6B</b>	010.0128.003	DN100	Power supply 24 VDC.	1	1
<b>MSV400/6B</b>	010.0128.004	DN100	Power supply 12 VDC.	1	1
<b>MSV500/6B</b>	010.0129.001	DN125	Power supply 230 VAC.	1	1
<b>MSV500/6B</b>	010.0129.002	DN125	Power supply 24 VAC/ VDC	1	1
<b>MSV500/6B</b>	010.0129.003	DN125	Power supply 12 VDC.	1	1
<b>MSV600/6B</b>	010.0130.001	DN150	Power supply 230 VAC.	1	1
<b>MSV600/6B</b>	010.0130.002	DN150	Power supply 24 VAC/ VDC	1	1
<b>MSV600/6B</b>	010.0130.003	DN150	Power supply 12 VDC.	1	1
<b>MSV800/6B</b>	010.0131.001	DN200	Power supply 230 VAC.	1	1
<b>MSV800/6B</b>	010.0131.002	DN200	Power supply 24 VAC/ VDC	1	1
<b>MSV800/6B</b>	010.0131.003	DN200	Power supply 12 VDC.	1	1
<b>MSV1200/6B</b>	010.0132.001	DN300	Power supply 230 VAC.	1	1
<b>MSV1200/6B</b>	010.0132.002	DN300	Power supply 24 VAC/ VDC	1	1
<b>MSV1200/6B</b>	010.0132.003	DN300	Power supply 12 VDC.	1	1

Dimensions on page 350

**EV**

Normally closed gas solenoid valve with manual resetting. Aluminium body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 0.5 bar.



Type	Part no.	Connections	Description	Pcs. pack	Package
EV15	010.0180.001	1/2"	Power supply 230 VAC.	1	1
EV15	010.0180.002	1/2"	Power supply 24 VAC.	1	1
EV15	010.0180.003	1/2"	Power supply 12 VDC.	1	1
EV20	010.0181.001	3/4"	Power supply 230 VAC.	1	1
EV20	010.0181.002	3/4"	Power supply 24 VAC.	1	1
EV20	010.0181.003	3/4"	Power supply 12 VDC.	1	1
EV25	010.0182.001	1"	Power supply 230 VAC.	1	1
EV25	010.0182.002	1"	Power supply 24 VAC.	1	1
EV25	010.0182.003	1"	Power supply 12 VDC.	1	1
EV32	010.0183.001	1.1/4"	Power supply 230 VAC.	1	1
EV32	010.0183.002	1.1/4"	Power supply 24 VAC.	1	1
EV32	010.0183.003	1.1/4"	Power supply 12 VDC.	1	1
EV40	010.0184.001	1.1/2"	Power supply 230 VAC.	1	1
EV40	010.0184.002	1.1/2"	Power supply 24 VAC.	1	1
EV40	010.0184.003	1.1/2"	Power supply 12 VDC.	1	1
EV40F	010.0184.011	DN40	Power supply 230 VAC.	1	1
EV40F	010.0184.012	DN40	Power supply 24 VAC.	1	1
EV40F	010.0184.013	DN40	Power supply 12 VDC.	1	1
EV50	010.0185.001	2"	Power supply 230 VAC.	1	1
EV50	010.0185.002	2"	Power supply 24 VAC.	1	1
EV50	010.0185.003	2"	Power supply 12 VDC.	1	1
EV50F	010.0185.011	DN50	Power supply 230 VAC.	1	1
EV50F	010.0185.012	DN50	Power supply 24 VAC.	1	1
EV50F	010.0185.013	DN50	Power supply 12 VDC.	1	1
EV65	010.0186.101	DN65	Power supply 230 VAC.	1	1
EV65	010.0186.102	DN65	Power supply 24 VAC.	1	1
EV65	010.0186.103	DN65	Power supply 24 VDC.	1	1
EV65	010.0186.104	DN65	Power supply 12 VDC.	1	1
EV80	010.0187.101	DN80	Power supply 230 VAC.	1	1
EV80	010.0187.102	DN80	Power supply 24 VAC.	1	1
EV80	010.0187.103	DN80	Power supply 24 VDC.	1	1
EV80	010.0187.104	DN80	Power supply 12 VDC.	1	1
EV100	010.0188.001	DN100	Power supply 230 VAC.	1	1
EV100	010.0188.002	DN100	Power supply 24 VAC.	1	1
EV100	010.0188.003	DN100	Power supply 24 VDC.	1	1
EV100	010.0188.004	DN100	Power supply 12 VDC.	1	1
EV125	010.0189.001	DN125	Power supply 230 VAC.	1	1
EV125	010.0189.002	DN125	Power supply 24 VAC/VDC	1	1
EV125	010.0189.003	DN125	Power supply 12 VDC.	1	1
EV150	010.0190.001	DN150	Power supply 230 VAC.	1	1
EV150	010.0190.002	DN150	Power supply 24 VAC/VDC	1	1
EV150	010.0190.003	DN150	Power supply 12 VDC.	1	1
EV200	010.0191.001	DN200	Power supply 230 VAC.	1	1
EV200	010.0191.002	DN200	Power supply 24 VAC/VDC	1	1
EV200	010.0191.003	DN200	Power supply 12 VDC.	1	1
EV300	010.0192.001	DN300	Power supply 230 VAC.	1	1
EV300	010.0192.002	DN300	Power supply 24 VAC/VDC	1	1
EV300	010.0192.003	DN300	Power supply 12 VDC.	1	1

Dimensions on page 350

## EV/6B



Normally closed gas solenoid valve with manual resetting. Aluminium body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 6 bar.

Type	Part no.	Connections	Description	Pcs. pack	Pack- age
EV15/6B	010.0220.001	1/2"	Power supply 230 VAC.	1	1
EV15/6B	010.0220.002	1/2"	Power supply 24 VAC.	1	1
EV15/6B	010.0220.003	1/2"	Power supply 12 VDC.	1	1
EV20/6B	010.0221.001	3/4"	Power supply 230 VAC.	1	1
EV20/6B	010.0221.002	3/4"	Power supply 24 VAC.	1	1
EV20/6B	010.0221.003	3/4"	Power supply 12 VDC.	1	1
EV25/6B	010.0222.001	1"	Power supply 230 VAC.	1	1
EV25/6B	010.0222.002	1"	Power supply 24 VAC.	1	1
EV25/6B	010.0222.003	1"	Power supply 12 VDC.	1	1
EV32/6B	010.0223.001	1.1/4"	Power supply 230 VAC.	1	1
EV32/6B	010.0223.002	1.1/4"	Power supply 24 VAC.	1	1
EV32/6B	010.0223.003	1.1/4"	Power supply 12 VDC.	1	1
EV40/6B	010.0224.001	1.1/2"	Power supply 230 VAC.	1	1
EV40/6B	010.0224.002	1.1/2"	Power supply 24 VAC.	1	1
EV40/6B	010.0224.003	1.1/2"	Power supply 12 VDC.	1	1
EV40/6BF	010.0224.011	DN40	Power supply 230 VAC.	1	1
EV40/6BF	010.0224.012	DN40	Power supply 24 VAC.	1	1
EV40/6BF	010.0224.013	DN40	Power supply 12 VDC.	1	1
EV50/6B	010.0225.001	2"	Power supply 230 VAC.	1	1
EV50/6B	010.0225.002	2"	Power supply 24 VAC.	1	1
EV50/6B	010.0225.003	2"	Power supply 12 VDC.	1	1
EV50/6BF	010.0225.011	DN50	Power supply 230 VAC.	1	1
EV50/6BF	010.0225.012	DN50	Power supply 24 VAC.	1	1
EV50/6BF	010.0225.013	DN50	Power supply 12 VDC.	1	1
EV65/6B	010.0226.101	DN65	Power supply 230 VAC.	1	1
EV65/6B	010.0226.102	DN65	Power supply 24 VAC.	1	1
EV65/6B	010.0226.103	DN65	Power supply 24 VDC.	1	1
EV65/6B	010.0226.104	DN65	Power supply 12 VDC.	1	1
EV80/6B	010.0227.101	DN80	Power supply 230 VAC.	1	1
EV80/6B	010.0227.102	DN80	Power supply 24 VAC.	1	1
EV80/6B	010.0227.103	DN80	Power supply 24 VDC.	1	1
EV80/6B	010.0227.104	DN80	Power supply 12 VDC.	1	1
EV100/6B	010.0228.001	DN100	Power supply 230 VAC.	1	1
EV100/6B	010.0228.002	DN100	Power supply 24 VAC.	1	1
EV100/6B	010.0228.003	DN100	Power supply 24 VDC.	1	1
EV100/6B	010.0228.004	DN100	Power supply 12 VDC.	1	1
EV125/6B	010.0229.001	DN125	Power supply 230 VAC.	1	1
EV125/6B	010.0229.002	DN125	Power supply 24 VAC/VDC	1	1
EV125/6B	010.0229.003	DN125	Power supply 12 VDC.	1	1
EV150/6B	010.0230.001	DN150	Power supply 230 VAC.	1	1
EV150/6B	010.0230.002	DN150	Power supply 24 VAC/VDC	1	1
EV150/6B	010.0230.003	DN150	Power supply 12 VDC.	1	1
EV200/6B	010.0231.001	DN200	Power supply 230 VAC.	1	1
EV200/6B	010.0231.001	DN200	Power supply 24 VAC/VDC	1	1
EV200/6B	010.0231.001	DN200	Power supply 12 VDC.	1	1
EV300/6B	010.0232.001	DN300	Power supply 230 VAC.	1	1
EV300/6B	010.0232.001	DN300	Power supply 24 VAC/VDC	1	1
EV300/6B	010.0232.001	DN300	Power supply 12 VDC.	1	1

Dimensions on page 350

### MSVM/6B



Normally open gas solenoid valve with manual resetting. Aluminium body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 6 bar. Version with limit micro-switch for checking open/closed status.

Type	Part no.	Connections	Description	Pcs. pack	Pack- age
<b>MSVM34/6B</b>	010.0136.001	3/4"	Power supply 230 VAC.	1	1
<b>MSVM100/6B</b>	010.0137.001	1"	Power supply 230 VAC.	1	1
<b>MSVM114/6B</b>	010.0138.001	1.1/4"	Power supply 230 VAC.	1	1
<b>MSVM112/6B</b>	010.0139.001	1.1/2"	Power supply 230 VAC.	1	1
<b>MSVM200/6B</b>	010.0140.001	2"	Power supply 230 VAC.	1	1
<b>MSVM212/6B</b>	010.0141.001	DN65	Power supply 230 VAC.	1	1
<b>MSVM300/6B</b>	010.0142.101	DN80	Power supply 230 VAC.	1	1
<b>MSVM400/6B</b>	010.0143.001	DN100	Power supply 230 VAC.	1	1
<b>MSVM500/6B</b>	010.0144.001	DN125	Power supply 230 VAC.	1	1
<b>MSVM600/6B</b>	010.0145.001	DN150	Power supply 230 VAC.	1	1

Dimensions on page 351

### EVM/6B



Normally closed gas solenoid valve with manual resetting. Aluminium body. Coil with IP65 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20to60°C. Max. operating pressure: 6 bar. Version with limit micro-switch for checking open/closed status.

Type	Part no.	Connections	Description	Pcs. pack	Pack- age
<b>EVM20/6B</b>	010.0236.001	3/4"	Power supply 230 VAC.	1	1
<b>EVM25/6B</b>	010.0237.001	1"	Power supply 230 VAC.	1	1
<b>EVM32/6B</b>	010.0238.001	1.1/4"	Power supply 230 VAC.	1	1
<b>EVM40/6B</b>	010.0239.001	1.1/2"	Power supply 230 VAC.	1	1
<b>EVM50/6B</b>	010.0240.001	2"	Power supply 230 VAC.	1	1
<b>EVM65/6B</b>	010.0241.101	DN65	Power supply 230 VAC.	1	1
<b>EVM80/6B</b>	010.0242.101	DN80	Power supply 230 VAC.	1	1
<b>EVM100/6B</b>	010.0243.001	DN100	Power supply 230 VAC.	1	1
<b>EVM125/6B</b>	010.0244.001	DN125	Power supply 230 VAC.	1	1
<b>EVM150/6B</b>	010.0245.001	DN150	Power supply 230 VAC.	1	1

Dimensions on page 351

**MSV/6BEEXD**

Normally open gas solenoid valve with manual resetting. Aluminium body. Coil with IP67 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 6 bar. Explosion-proof version with EExd coil.



Type	Part no.	Connections	Description	Pcs. pack	Package
<a href="#">MSV12/6BEEXD</a>	010.0320.001	1/2"	Power supply 230 VAC.	1	1
<a href="#">MSV12/6BEEXD</a>	010.0320.002	1/2"	Power supply 24 VAC.	1	1
<a href="#">MSV12/6BEEXD</a>	010.0320.003	1/2"	Power supply 24 VDC.	1	1
<a href="#">MSV12/6BEEXD</a>	010.0320.004	1/2"	Power supply 12 VDC.	1	1
<a href="#">MSV34/6BEEXD</a>	010.0321.001	3/4"	Power supply 230 VAC.	1	1
<a href="#">MSV34/6BEEXD</a>	010.0321.002	3/4"	Power supply 24 VAC.	1	1
<a href="#">MSV34/6BEEXD</a>	010.0321.003	3/4"	Power supply 24 VDC.	1	1
<a href="#">MSV34/6BEEXD</a>	010.0321.004	3/4"	Power supply 12 VDC.	1	1
<a href="#">MSV100/6BEEXD</a>	010.0322.001	1"	Power supply 230 VAC.	1	1
<a href="#">MSV100/6BEEXD</a>	010.0322.002	1"	Power supply 24 VAC.	1	1
<a href="#">MSV100/6BEEXD</a>	010.0322.003	1"	Power supply 24 VDC.	1	1
<a href="#">MSV100/6BEEXD</a>	010.0322.004	1"	Power supply 12 VDC.	1	1
<a href="#">MSV114/6BEEXD</a>	010.0323.001	1.1/4"	Power supply 230 VAC.	1	1
<a href="#">MSV114/6BEEXD</a>	010.0323.002	1.1/4"	Power supply 24 VAC.	1	1
<a href="#">MSV114/6BEEXD</a>	010.0323.003	1.1/4"	Power supply 24 VDC.	1	1
<a href="#">MSV114/6BEEXD</a>	010.0323.004	1.1/4"	Power supply 12 VDC.	1	1
<a href="#">MSV112/6BEEXD</a>	010.0324.001	1.1/2"	Power supply 230 VAC.	1	1
<a href="#">MSV112/6BEEXD</a>	010.0324.002	1.1/2"	Power supply 24 VAC.	1	1
<a href="#">MSV112/6BEEXD</a>	010.0324.003	1.1/2"	Power supply 24 VDC.	1	1
<a href="#">MSV112/6BEEXD</a>	010.0324.004	1.1/2"	Power supply 12 VDC.	1	1
<a href="#">MSV200/6BEEXD</a>	010.0325.001	2"	Power supply 230 VAC.	1	1
<a href="#">MSV200/6BEEXD</a>	010.0325.002	2"	Power supply 24 VAC.	1	1
<a href="#">MSV200/6BEEXD</a>	010.0325.003	2"	Power supply 24 VDC.	1	1
<a href="#">MSV200/6BEEXD</a>	010.0325.004	2"	Power supply 12 VDC.	1	1
<a href="#">MSV212/6BEEXD</a>	010.0326.101	DN65	Power supply 230 VAC.	1	1
<a href="#">MSV212/6BEEXD</a>	010.0326.102	DN65	Power supply 24 VAC.	1	1
<a href="#">MSV212/6BEEXD</a>	010.0326.103	DN65	Power supply 24 VDC.	1	1
<a href="#">MSV212/6BEEXD</a>	010.0326.104	DN65	Power supply 12 VDC.	1	1
<a href="#">MSV300/6BEEXD</a>	010.0327.101	DN80	Power supply 230 VAC.	1	1
<a href="#">MSV300/6BEEXD</a>	010.0327.102	DN80	Power supply 24 VAC.	1	1
<a href="#">MSV300/6BEEXD</a>	010.0327.103	DN80	Power supply 24 VDC.	1	1
<a href="#">MSV300/6BEEXD</a>	010.0327.104	DN80	Power supply 12 VDC.	1	1
<a href="#">MSV400/6BEEXD</a>	010.0328.001	DN100	Power supply 230 VAC.	1	1
<a href="#">MSV400/6BEEXD</a>	010.0328.002	DN100	Power supply 24 VAC.	1	1
<a href="#">MSV400/6BEEXD</a>	010.0328.003	DN100	Power supply 24 VDC.	1	1
<a href="#">MSV400/6BEEXD</a>	010.0328.004	DN100	Power supply 12 VDC.	1	1
<a href="#">MSV500/6BEEXD</a>	010.0329.001	DN125	Power supply 230 VAC.	1	1
<a href="#">MSV500/6BEEXD</a>	010.0329.002	DN125	Power supply 24 VAC.	1	1
<a href="#">MSV500/6BEEXD</a>	010.0329.003	DN125	Power supply 24 VDC.	1	1
<a href="#">MSV500/6BEEXD</a>	010.0329.004	DN125	Power supply 12 VDC.	1	1
<a href="#">MSV600/6BEEXD</a>	010.0330.001	DN150	Power supply 230 VAC.	1	1
<a href="#">MSV600/6BEEXD</a>	010.0330.002	DN150	Power supply 24 VAC.	1	1
<a href="#">MSV600/6BEEXD</a>	010.0330.003	DN150	Power supply 24 VDC.	1	1
<a href="#">MSV600/6BEEXD</a>	010.0330.004	DN150	Power supply 12 VDC.	1	1

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## EV/6BEEXD

Normally closed gas solenoid valve with manual resetting. Aluminium body. Coil with IP67 connector. Suitable for manufactured gas, natural gas, liquefied petroleum gas (LPG), non-aggressive gas and air. Operating temperature range: -20 to 60°C. Max. operating pressure: 6 bar. Explosion-proof version with EExd coil.



Type	Part no.	Connections	Description	Pcs. pack	Package
EV15/6BEEXD	010.0420.001	1/2"	Power supply 230 VAC.	1	1
EV15/6BEEXD	010.0420.002	1/2"	Power supply 24 VAC.	1	1
EV15/6BEEXD	010.0420.003	1/2"	Power supply 24 VDC.	1	1
EV15/6BEEXD	010.0420.004	1/2"	Power supply 12 VDC.	1	1
EV20/6BEEXD	010.0421.001	3/4"	Power supply 230 VAC.	1	1
EV20/6BEEXD	010.0421.002	3/4"	Power supply 24 VAC.	1	1
EV20/6BEEXD	010.0421.003	3/4"	Power supply 24 VDC.	1	1
EV20/6BEEXD	010.0421.004	3/4"	Power supply 12 VDC.	1	1
EV25/6BEEXD	010.0422.001	1"	Power supply 230 VAC.	1	1
EV25/6BEEXD	010.0422.002	1"	Power supply 24 VAC.	1	1
EV25/6BEEXD	010.0422.003	1"	Power supply 24 VDC.	1	1
EV25/6BEEXD	010.0422.004	1"	Power supply 12 VDC.	1	1
EV32/6BEEXD	010.0423.001	1.1/4"	Power supply 230 VAC.	1	1
EV32/6BEEXD	010.0423.002	1.1/4"	Power supply 24 VAC.	1	1
EV32/6BEEXD	010.0423.003	1.1/4"	Power supply 24 VDC.	1	1
EV32/6BEEXD	010.0423.004	1.1/4"	Power supply 12 VDC.	1	1
EV40/6BEEXD	010.0424.001	1.1/2"	Power supply 230 VAC.	1	1
EV40/6BEEXD	010.0424.002	1.1/2"	Power supply 24 VAC.	1	1
EV40/6BEEXD	010.0424.003	1.1/2"	Power supply 24 VDC.	1	1
EV40/6BEEXD	010.0424.004	1.1/2"	Power supply 12 VDC.	1	1
EV50/6BEEXD	010.0425.001	2"	Power supply 230 VAC.	1	1
EV50/6BEEXD	010.0425.002	2"	Power supply 24 VAC.	1	1
EV50/6BEEXD	010.0425.003	2"	Power supply 24 VDC.	1	1
EV50/6BEEXD	010.0425.004	2"	Power supply 12 VDC.	1	1
EV65/6BEEXD	010.0426.101	DN65	Power supply 230 VAC.	1	1
EV65/6BEEXD	010.0426.102	DN65	Power supply 24 VAC.	1	1
EV65/6BEEXD	010.0426.103	DN65	Power supply 24 VDC.	1	1
EV65/6BEEXD	010.0426.104	DN65	Power supply 12 VDC.	1	1
EV80/6BEEXD	010.0427.101	DN80	Power supply 230 VAC.	1	1
EV80/6BEEXD	010.0427.102	DN80	Power supply 24 VAC.	1	1
EV80/6BEEXD	010.0427.103	DN80	Power supply 24 VDC.	1	1
EV80/6BEEXD	010.0427.104	DN80	Power supply 12 VDC.	1	1
EV100/6BEEXD	010.0428.001	DN100	Power supply 230 VAC.	1	1
EV100/6BEEXD	010.0428.002	DN100	Power supply 24 VAC.	1	1
EV100/6BEEXD	010.0428.003	DN100	Power supply 24 VDC.	1	1
EV100/6BEEXD	010.0428.004	DN100	Power supply 12 VDC.	1	1
EV125/6BEEXD	010.0429.001	DN125	Power supply 230 VAC.	1	1
EV125/6BEEXD	010.0429.002	DN125	Power supply 24 VAC.	1	1
EV125/6BEEXD	010.0429.003	DN125	Power supply 24 VDC.	1	1
EV125/6BEEXD	010.0429.004	DN125	Power supply 12 VDC.	1	1
EV150/6BEEXD	010.0430.001	DN150	Power supply 230 VAC.	1	1
EV150/6BEEXD	010.0430.002	DN150	Power supply 24 VAC.	1	1
EV150/6BEEXD	010.0430.003	DN150	Power supply 24 VDC.	1	1
EV150/6BEEXD	010.0430.004	DN150	Power supply 12 VDC.	1	1

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PARTS KIT

Type	Part no.	Valve	Description	Pcs. pack	Package
<b>511.2041.001</b>	014.0300.001	EVO, EV 1/2" to 2"	RAC coil 230 VAC	1	1
<b>511.2103.001</b>	014.0301.001	MSV 1/2" to 2"	Coil 230 VAC	1	1
<b>511.3426.001</b>	014.0302.001	MSVO 1/2" to 2"	Coil 230 VAC	1	1
<b>511.2102.001</b>	014.0303.001	MSV, EV 65 - 80 - 100	RAC coil 230 VAC	1	1
<b>511.0219.001</b>	014.0306.001	MSV 125 - 150	RAC coil 230 VAC	1	1
<b>511.0216.001</b>	014.0304.001	EV 125 - 150 - 200	RAC coil 230 VAC	1	1
<b>511.0216.001</b>	014.0304.001	EV 300	RAC coil 230 VAC	1	1
<b>511.0216.001</b>	014.0304.001	MSV 200 - 300	RAC coil 230 VAC	1	1
<b>511.2042.001</b>	014.0310.001	MSVO, EVO, EV 1/2" to 2"	RAC coil 24 VAC	1	1
<b>511.2109.001</b>	014.0311.001	MSV, EV 65 - 80 - 100	Coil 24 VAC - VDC	1	1
<b>1729</b>	014.0312.001	MSV 1/2" to 2"	Coil 24 VAC	1	1
<b>511.0218.001</b>	014.0313.001	MSV, EV 125 - 150 - 200 - 300	Coil 24 VAC - VDC	1	1
<b>511.2116.001</b>	014.0320.001	MSVO, EVO, MSV, EV 1/2" to 2"	Coil 12 VDC	1	1
<b>511.2177.001</b>	014.0321.001	MSV - EV 65 - 80 - 100	Coil 12 VDC	1	1
<b>511.0217.001</b>	014.0322.001	MSV - EV 125 - 150 - 200 - 300	Coil 12 VDC	1	1
<b>2105</b>	014.0275.001	MSVO, MSV 1/2" to 2"	Connector 230 VAC	1	1
<b>2105</b>	014.0275.001	MSVO, MSV 1/2" to 2"	Connector 24 VAC	1	1
<b>2105</b>	014.0275.001	MSVO, EVO, MSV, EV 1/2" to DN300	Connector 12 VDC	1	1
<b>2105</b>	014.0275.001	MSV, EV 65 - 80 - 100	Connector 24 VDC	1	1
<b>2104</b>	014.0277.001	DN65 to DN300 MSV	Connector 230 VAC RAC	1	1
<b>2104</b>	014.0277.001	EVO, EV 1/2" to 2" and DN125 to DN300	Connector 230 VAC RAC	1	1
<b>2045</b>	014.0278.001	EV 65 - 80 - 100	Connector 230 VAC RAC	1	1
<b>2108</b>	014.0276.001	EVO, EV 1/2" to 2"	Connector 24 VAC RAC	1	1
<b>2108</b>	014.0276.001	EV, MSV 65 - 80 - 100	Connector 24 VAC RAC	1	1
<b>511.0070.000</b>	014.0279.001	MSV, EV 125 - 150 - 200 - 300	Connector 24 VAC - VDC	1	1
	available to order	MSV - EV 1/2" to DN150	Coil 230 VAC EEXD	1	1
	available to order	MSV - EV 1/2" to DN150	Coil 24 VAC EEXD	1	1
	available to order	MSV - EV 1/2" to DN150	Coil 24 VDC EEXD	1	1
	available to order	MSV - EV 1/2" to DN150	Coil 12 VDC EEXD	1	1
<b>6218</b>	014.0034.000	MSVM - EVM 3/4" - DN150	Microswitch	1	1



**SELECTION GUIDE: COILS AND CONNECTORS**

Type	Connections	Coils		Coils	
		230 Vac	24 Vac	24 VDC	12 VDC
MSVO - MSVO/6B	1/2" - 1"	014.0302.001	014.0310.001	-	014.0320.001
EVO - EVO/6B	1/2" - 1"	014.0300.001	014.0310.001	-	014.0320.001
MSV MSV/6B MSVM/6B	1/2" - 2"	014.0301.001	014.0312.001	-	014.0320.001
	DN65 - DN100	014.0303.001	014.0311.001	014.0311.001	014.0321.001
	DN125 - DN150	014.0306.001	014.0313.001	014.0313.001	014.0322.001
	DN200 - DN300	014.0304.001	014.0313.001	014.0313.001	014.0322.001
EV EV/6B EVM/6B	1/2" - 2"	014.0300.001	014.0310.001	-	014.0320.001
	DN65 - DN100	014.0303.001	014.0311.001	014.0311.001	014.0321.001
	DN125 - DN150	014.0304.001	014.0313.001	014.0313.001	014.0322.001
	DN200	014.0304.001	014.0313.001	014.0313.001	014.0322.001
	DN300	014.0304.990	014.0313.001	014.0313.001	014.0322.001
MSV/6BEEXD	1/2" - DN150	014.0285.001	014.0286.001	014.0287.001	014.0288.001
EV/6BEEXD	1/2" - DN150	014.0285.001	014.0286.001	014.0287.001	014.0288.001

Type	Connections	Connectors		Connectors	
		230 Vac	24 Vac	24 VDC	12 VDC
MSVO	1/2" - 1"	014.0275.001	014.0275.001	-	014.0275.001
MSVO/6B	1/2" - 1"	014.0275.001	014.0275.001	-	014.0275.001
EVO	1/2" - 1"	014.0277.001	014.0276.001	-	014.0275.001
EVO/6B	1/2" - 1"	014.0277.001	014.0276.001	-	014.0275.001
MSV MSV/6B MSVM/6B	1/2" - 2"	014.0275.001	014.0275.001	-	014.0275.001
	DN65 - DN100	014.0277.001	014.0276.001	014.0275.001	014.0275.001
	DN125 - DN150	014.0277.001	014.0279.001	014.0279.001	014.0275.001
	DN200 - DN300	014.0277.001	014.0279.001	014.0279.001	014.0275.001
EV EV/6B EVM/6B	1/2" - 2"	014.0277.001	014.0276.001	-	014.0275.001
	DN65 - DN100	014.0278.001	014.0276.001	014.0275.001	014.0275.001
	DN125 - DN150	014.0277.001	014.0279.001	014.0279.001	014.0275.001
	DN200 - DN300	014.0277.001	014.0279.001	014.0279.001	014.0275.001
MSV/6BEEXD	1/2" - DN150			Included with the coil	
EV/6BEEXD	1/2" - DN150			Included with the coil	

## Gas leak detectors

### GSX - GAS SENTINEL



Surface wall-mounting microprocessor-controlled electronic domestic gas leak detector with acoustic and illuminating alarm, for connection to one or more normally closed solenoid valves (EV, EVO Series) or normally open solenoid valves (MSV, MSVO Series).  
White, wall-mounting version.

Type	Part no.	Description	Pcs. pack	Package
<b>GSX</b>	0941030	For detecting methane and natural gas.	1	1
<b>GSX</b>	0941530	For detecting LPG, propane, butane.	1	1

Dimensions on page 352

### GSW - GAS SENTINEL



Characteristics as per GSX but for flush wall-mounting. Compatible with the most common DIN plates and electrical enclosures on the market. Overall dimensions 115x66x62mm. White, wall-mounting version.

Type	Part no.	Description	Pcs. pack	Package
<b>GSW</b>	0941040	For detecting methane and natural gas.	1	1
<b>GSW</b>	0941540	For detecting LPG, propane, butane.	1	1

Dimensions on page 352

### CIVIC 1



Gas detector central unit for the connection of 1 UR13 or UR.20 probe; with LED-based optical interface (power ON, fault, gas alarm) and internal buzzer-based acoustic interface. Control output for gas alarm and OC output for fault indication.  
In self-extinguishing plastic housing for DIN-rail mounting.

Type	Part no.	Description	Pcs. pack	Package
<b>CIVIC1</b>	0940501	Power supply 12 VAC	1	1

Dimensions on page 352

### CIVIC 4



Gas detector central unit for the connection of 4 UR13 or UR20 probes; with LED-based optical interface (power ON, fault, gas alarm) and internal buzzer-based acoustic interface. Control output for gas alarm and OC output for fault indication.  
In self-extinguishing plastic housing for DIN-rail mounting.

Type	Part no.	Description	Pcs. pack	Package
<b>CIVIC4</b>	0940504	Power supply 12 VAC	1	1

Dimensions on page 352

## UR13



Gas detector sensor for CIVIC1 and CIVIC4 central units available in three versions for detecting natural gas, LPG and carbon monoxide (CO). Protection rating IP44.

Type	Part no.	Description	Pcs. pack	Package
UR13	0940561	For detecting natural gas	1	1
UR13	0940562	For detecting GPL	1	1
UR13	0940563	For detecting CO	1	1

Dimensions on page 352

## UR20S - Discontinued series, available while stocks last



Gas detector in metal housing (Group II protection mode, category 3G, Ex nA IIC T6) with operating status indicator light, for indicating gas alarms by means of a 4–20 mA analogue output or a trip threshold (pre-alarm, level 1 and 2 alarm, fault) that can be freely set with DIP-switches. Protection rating IP55.

Type	Part no.	Description	Pcs. pack	Package
UR20S	0940571	For detecting methane - discontinued, available while stocks last	1	1
UR20S	0940572	For detecting LPG - discontinued, available while stocks last	1	1
UR20S	0940573	For detecting CO - discontinued, available while stocks last	1	1

Dimensions on page 352

## UR21S



Gas detector in metal housing (Group II protection mode, category 3G, Ex nA IIC T6) with operating status indicator light, for indicating gas alarms by means of a 4–20 mA analogue output or a trip threshold (pre-alarm, level 1 and 2 alarm, fault) that can be freely set with DIP-switches. Protection rating IP55.

Type	Part no.	Description	Pcs. pack	Package
UR21S	0940571 N	For detecting natural gas	1	1
UR21S	0940572 N	For detecting GPL	1	1
UR21S	0940573 N	For detecting CO	1	1

Dimensions on page 352

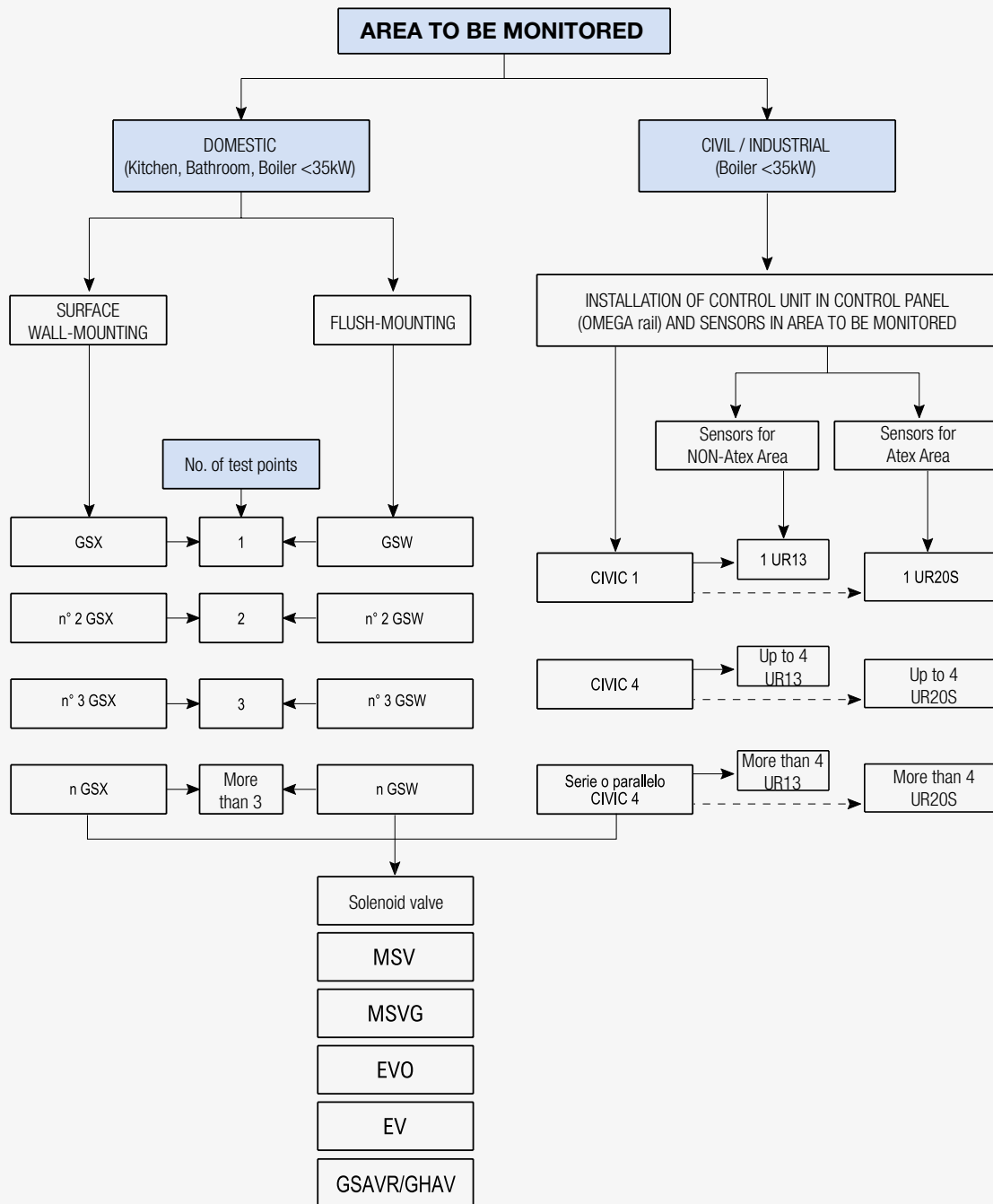
## GAS SENTINEL KIT



Wall-mounting domestic gas leak detector kit combined with normally open gas solenoid valve (MSVO) or normally closed gas solenoid valve (EVO), with manual resetting.

Type	Part no.	Description	Pcs. pack	Package
GSX/15NC	K0941060	KIT GSX NATURAL GAS + EVO15	1	1
GSX/20NC	K0941061	KIT GSX NATURAL GAS + EVO20	1	1
GSX/15NA	K0941050	KIT GSX NATURAL GAS + MSVO12	1	1
GSX/20NA	K0941051	KIT GSX NATURAL GAS + MSVO34	1	1
GSX/15NC	K0941560	KIT GSX LPG + EVO15	1	1
GSX/20NC	K0941561	KIT GSX LPG + EVO20	1	1
GSX/15NA	K0941550	KIT GSX LPG + MSV012	1	1
GSX/20NA	K0941551	KIT GSX LPG + MSV034	1	1

EXPLANATORY BLOCK DIAGRAM



	GSX	GSW	CIVIC 1	CIVIC 4	UR13	UR20S
<b>Protection rating</b>	IP42	IP42	IP20	IP20	IP44	IP55, Atex
<b>Installation</b>	Wall mount	Flush mount	On 35mm omega rail	On 35mm omega rail	Wall mount	Wall mount

## Extendable flexible joints

### CMGFF



AISI 316L stainless steel hose with PVC protective casing. Suitable for connecting domestic gas appliances running on natural gas, propane, butane and LPG. 1/2"FF UNI-ISO 228/1 union nut connections with hexagon on hose next to F union nut to facilitate installation. PN 6. Pack includes gaskets.

**Compliant with CPD 89/106 and UNI EN 14800:2007.**

Type	Part no.	Connections	Description	Pcs. pack	Package
CMGFF	9494002		Pipe length 750 mm	1	25
CMGFF	9494003		Pipe length 1000 mm	1	25
CMGFF	9494005		Pipe length 1500 mm	1	25
CMGFF	9494006		Pipe length 2000 mm	1	25

### CMGMF



AISI 316L stainless steel hose with PVC protective casing. Suitable for connecting domestic gas appliances running on natural gas, propane, butane and LPG. 1/2" MF UNI-ISO 228/1 connections (fixed male and female with union nut). PN 6.

Pack includes gaskets.

**Compliant with CPD 89/106 and UNI EN 14800:2007.**

Type	Part no.	Connections	Description	Pcs. pack	Package
CMGMF	9495002		Pipe length 750 mm	1	25
CMGMF	9495003		Pipe length 1000 mm	1	25
CMGMF	9495005		Pipe length 1500 mm	1	25
CMGMF	9495006		Pipe length 2000 mm	1	25

### GE



Stainless steel extendable flexible joint with continuous outer casing, suitable for connecting gas appliances. Deformation with bend radius of not less than twice the nominal diameter. Suitable for natural gas, propane, butane and LPG. Axial elongation approximately twice the initial measurement. Polyethylene casing, NBR gasket. PN 0.5 bar. Female fitting: union nut with ISO 228-1 straight thread, male fitting: EN 10226-1 type R gas taper thread. **UNI-CIG 11353 compliant.**

Type	Part no.	Connections	Description	Pcs. pack	Package
GE	0916015	1/2"M x 1/2"F	Min. length 90 mm, max. 140 mm	1	1
GE	0916020	3/4"M x 3/4"F	Min. length 90 mm, max. 140 mm	1	1
GE	0916025	1"M x 1"F	Min. length 90 mm, max. 140 mm	1	1
GE	0916115	1/2"M x 1/2"F	Min. length 130 mm, max. 220 mm	1	1
GE	0916120	3/4"M x 3/4"F	Min. length 130 mm, max. 220 mm	1	1
GE	0916125	1"M x 1"F	Min. length 130 mm, max. 220 mm	1	1
GE	0916215	1/2"M x 1/2"F	Min. length 220 mm, max. 420 mm	1	1
GE	0916220	3/4"M x 3/4"F	Min. length 220 mm, max. 420 mm	1	1
GE	0916225	1"M x 1"F	Min. length 220 mm, max. 420 mm	1	1

## Protection device

### GUA



Yellow, spiral-reinforced, self-extinguishing flexible sheath with smooth internal surface for protecting gas pipes, as laid down in UNI-CIG 7129-08 and UNI-CIG 7131. PVC sheath. Crush-resistance: To 320 N. Temperature-resistance: -10 to 70°C. Self-extinguishing to UL 94 class VO. Minimum bend radius less than 3 times the diameter (empty sheath). Absolute electrical insulation against stray currents. Absorbs the thermal expansion of gas supply pipes thereby preventing the formation of cracks in walls and floors.

Type	Part no.	External diameter	Internal diameter	Pcs. pack	Package
GUA	0917020	24.7mm	20mm	1	1
GUA	0917022	27mm	22mm	1	1
GUA	0917025	30.3mm	25mm	1	1
GUA	0917028	33.3mm	28mm	1	1
GUA	0917030	35.5mm	30mm	1	1
GUA	0917032	37.8mm	32mm	1	1
GUA	0917035	40.7mm	35mm	1	1
GUA	0917040	46.2mm	40mm	1	1
GUA	0917050	57mm	50mm	1	1
GUA	0917060	68mm	60mm	1	1

#### TECHNICAL NOTE - Protection of gas supply pipes

Cavity feed-through.  
Hollow brick, concrete, and prefabricated panel feed-through.  
Floor and ceiling slabs.  
Crossover or parallel runs of water supply pipes.  
Wherever it is necessary to insulate metal pipes against stray currents.

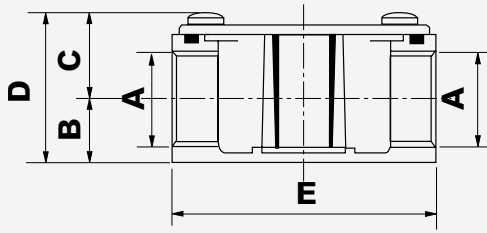
Italian standards UNI 7129-08 and UNI 7131-99 governing domestic gas supply systems supplied by the distribution network (UNI 7129) or with LPG (UNI 7131) require gas supply pipes to be inserted in a protective sheath. UNI 7129-08, 3.3.1.4.... omissis .... The internal diameter of the aforementioned sheaths must be at least 10 mm larger than the external diameter of the pipe.

#### SELF-EXTINGUISHING SHEATH WITH SPIRAL-REINFORCED EXTERNAL SURFACE AND SMOOTH INTERNAL SURFACE FOR PROTECTING GAS SUPPLY PIPES

Sheath	Diameter of sheath	Nominal diameter of iron supply pipes	Weight
Part no.	mm	mm	g/m
0917020	20	10	100
0917022	22	12	107
0917025	25	15	114
0917028	28	18	140
0917030	30	20	177
0917032	32	22	220
0917035	35	25	274
0917040	40	30	350
0917050	50	40	420
0917060	60	50	517

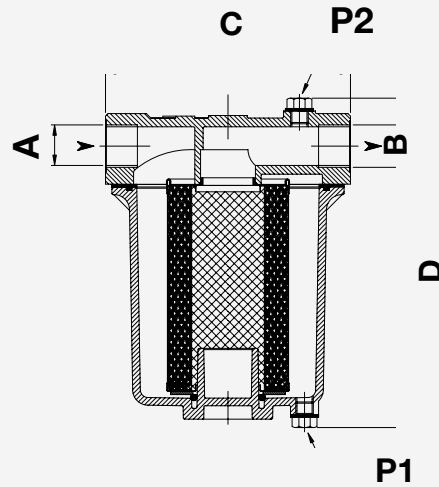
## Overall dimensions

### 70600



Type	A	B	C	D	E
70609	Rp 1/2"	17	22	39	70
70608	Rp 3/4"	17	22	39	70

### 70680



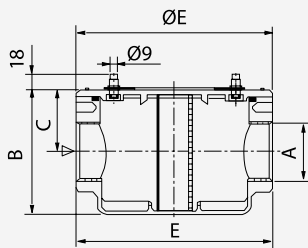
#### TECHNICAL NOTE

P1: inlet tapping point  
P2: outlet tapping point

A pressure gauge or differential pressure switch can be connected between P1 and P2 (Rp 1/2") to control the pressure drop in the cartridge.

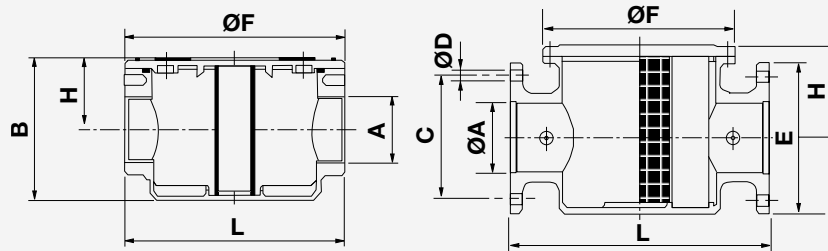
Type	A	B	C	D
70684	Rp 1"	Rp 1"	190	255
70685	Rp 1. 1/4"	Rp 1. 1/4"	190	255
70686	Rp 1. 1/2"	Rp 1. 1/2"	190	255
70687	Rp 2"	Rp 2"	190	255

### 70600/6B



Type	A	B	C	D	E
70611/6B	Rp 1/2"	92	37	120	20
70612/6B	Rp 3/4"	92	37	120	120
70602/6B	Rp 1"	103	50	160	160
70604/6B	Rp 1. 1/4"	103	50	160	160
70603/6B	Rp 1. 1/2"	103	50	160	160
70631/6B	Rp 2"	140	73	186	186

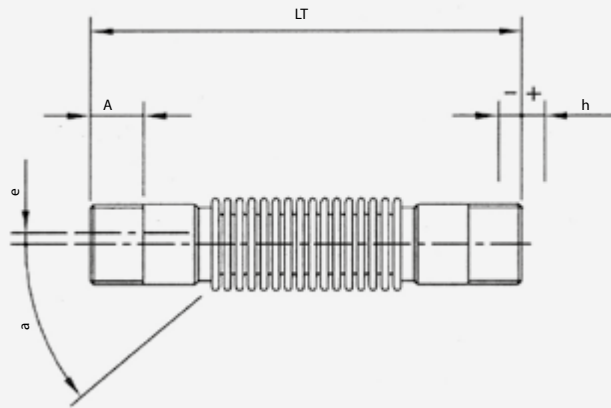
### 70600/1B - 70600F/6B



Type	A	B	C	D	E	F	H	L
70611/1B	Rp 1/2"	92	-	-	-	120	37	120
70612/1B	Rp 3/4"	92	-	-	-	120	37	120
70602/1B	Rp 1"	103	-	-	-	160	50	160
70604/1B	Rp 1. 1/4"	103	-	-	-	160	50	160
70603/1B	Rp 1. 1/2"	103	-	-	-	160	50	160
70631/1B	Rp 2"	140	-	-	-	186	73	186
70603F/6B	DN 40	-	110	18	150	130	130	200
70631F/6B	DN 50	-	125	18	165	148	148	230
70610F/6B	DN 65	-	145	18	185	212	212	290
70620F/6B	DN 80	-	160	18	200	240	240	320
70640F/6B	DN 100	-	180	18	220	280	280	380
70650F/6B	DN125	-	210	18	250	280	280	380
70660F/6B	DN150	-	240	22	288	310	310	450

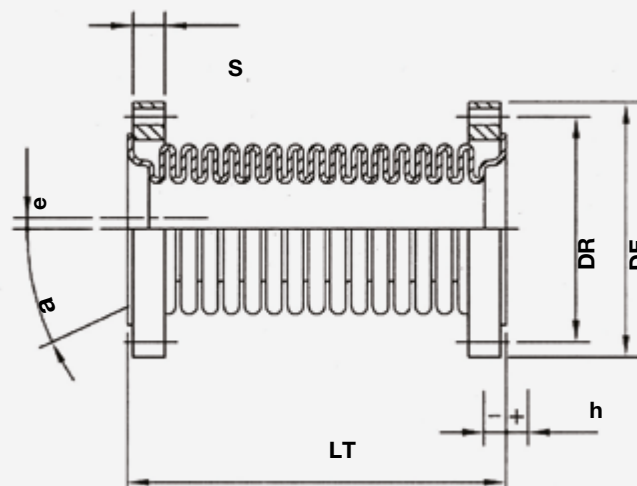
## Overall dimensions

### GA



Type GA	Connections UNI ISO 7-1	Max P. bar	Temp. °C	Axial compensation				Angular	Lateral	Dimensions
				h+	h-	h tot.	a ±	e ±	A	LT ±5
GA1556	R. 1/2"	3	-20 +60	10	10	20	35	5	18	170
GA1556	R. 1/2"	3	-20 +60	10	10	20	35	5	18	170
GA1545	R. 1"	3	-20 +60	10	10	20	25	6	22	200
GA1546	R. 1"1/4	3	-20 +60	12	12	24	35	10	24	220
GA1547	R. 1"1/2	3	-20 +60	15	15	30	35	10	24	240
GA1548	R. 2"	3	-20 +60	15	15	30	30	10	28	240

### GAF

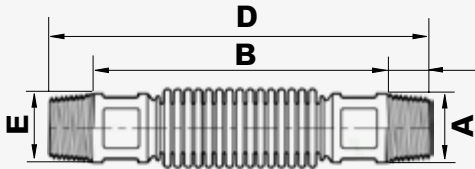


Type GA	Connections ISO 7005-2	Max P. bar	Temp. °C	Axial compensation			Angular	Lateral	Dimensions			
				h+	h-	h tot.	a ±	e ±	DE	DR	LT±5	S
GAF212	DN 65 PN16	3	-20 +60	20	20	40	20	10	185	145	150	18
GAF300	DN 80 PN16	3	-20 +60	20	20	40	20	10	200	160	160	20
GAF400	DN 100 PN16	3	-20 +60	20	20	40	20	10	220	180	170	23
GAF500	DN 125 PN16	3	-20 +60	25	25	50	4	6	250	210	240	24
GAF600	DN 150 PN16	3	-20 +60	25	25	50	4	6	285	240	240	24



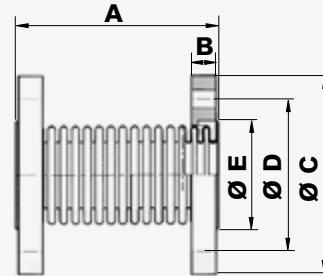
## Overall dimensions

### GDA THREADED



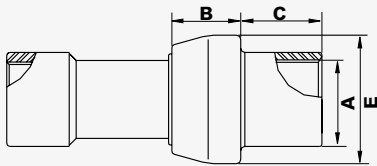
DN	A	B	C	D	E	Z*
16	1/2"	140	15	170	23	12
20	3/4"	145	17	180	27	16
25	1"	150	20	190	34	16
32	1.1/4"	155	22	200	43	20
40	1.1/2"	165	22	210	52	30
50	2"	190	25	240	64	30

### GDA FLANGED



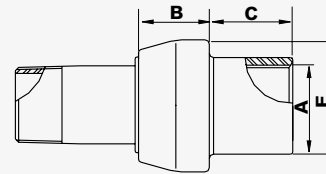
DN	A	B	C	D	E	F	No. of holes	Z*
65	155	20	185	145	92	18	4	40
80	165	20	200	160	113	18	8	45
100	175	22	220	180	135	18	8	55

### Gdff



DN	A	E	C	B
3/4"	26.7	53	27	30
1"	33.4	60	29	32
1.1/4"	42.2	71	32	35
1.1/2"	48.3	77	32	37
2"	60.3	90	36	38

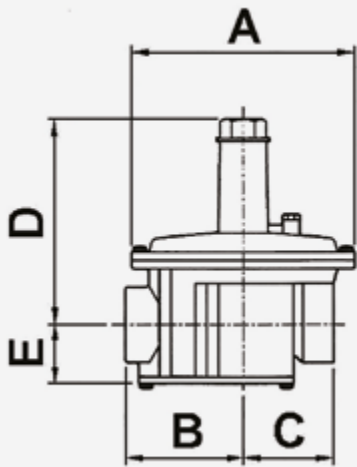
### GDMF



DN	A	E	C	B
1/2"	21.3	46	25	28
3/4"	26.7	53	27	30
1"	33.4	60	29	32
1.1/4"	42.2	71	32	35
1.1/2"	48.3	77	32	37
2"	60.3	90	36	38
2.1/2"	76.1	113	40	53
3"	88.9	127	44	53
4"	114.3	156	55	65

## Overall dimensions

### FGD - FGDR - FG1B/FG2B



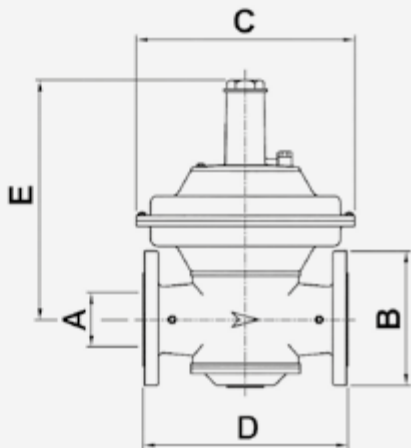
#### TECHNICAL NOTE

N.B. Measurement E must be increased by approximately 400 mm to facilitate filter cleaning and inspection.

FG.50/40: model with 2" threaded connections but with the overall dimensions of the 1 1/2" model (FG.40).

Model	Connections	A	B	C	D	E
FG..15	Rp 1/2" UNI-ISO 7/1					
FG..20	Rp 3/4" UNI-ISO 7/1	146	73	58	137	42
FG..25	Rp 1" UNI-ISO 7/1					
FG..32	Rp 1 1/4" UNI-ISO 7/1					
FG..40	Rp 1 1/2" UNI-ISO 7/1	194	98	80	175	52
FG..50/40	Rp 2" UNI-ISO 7/1					
FG..50	Rp 2" UNI-ISO 7/1	260	135	90	250	65

### FS1B - ST1B

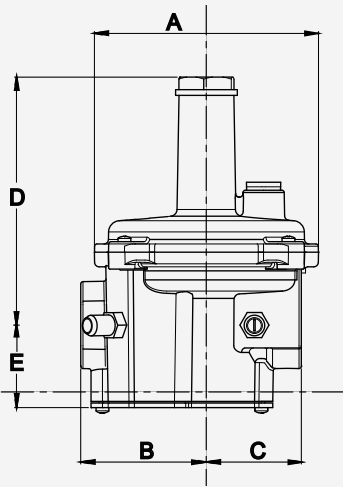


#### TECHNICAL NOTE

N.B. For the FS1B Series (with built-in filter unit) the measurement "E" must be increased by approximately 400 mm to facilitate cleaning and inspection of the filter.

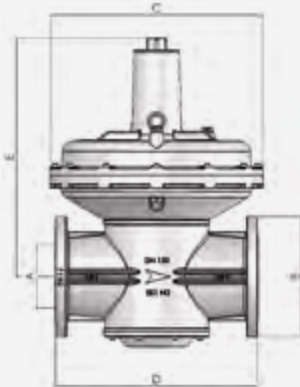
## Overall dimensions

### FGDR/COM



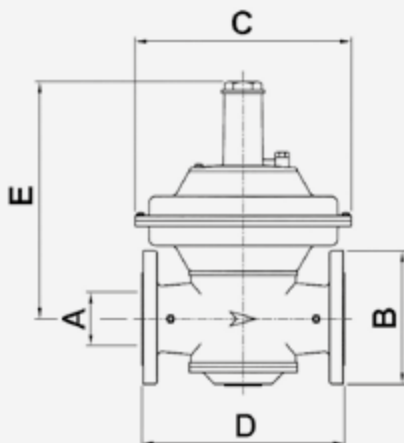
Model	Connections	A	B	C	D	E
FGDR/COM15	Rp 1/2" UNI ISO 7/1	98	55	41.5	108.5	35.5
FGDR/COM20	Rp 3/4" UNI ISO 7/1	98	55	41.5	108.5	35.5

### STR - ST1B



Model	Connections	A	B	C	D	E
ST1B125-STR125	DN 125 PN16 EN 1092-4	125	250	505	480	565
ST1B150-STR150	DN 150 PN16 EN 1092-4	150	288	505	480	565

### FSDR - STR



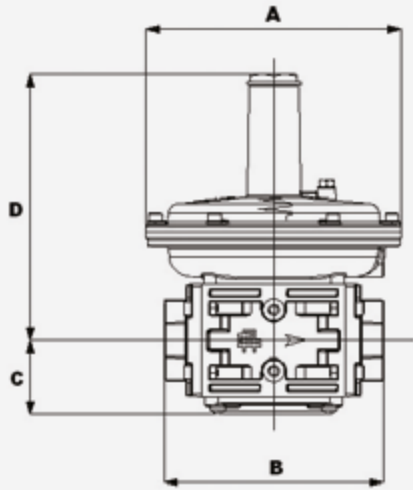
#### TECHNICAL NOTE

N.B. For the FSDR Series (with built-in filter unit) measurement "E" must be increased by approximately 400 mm to facilitate filter cleaning and inspection.

Model	Connections	A	B	C	D	E
FSDR65	DN 65 Pn16 EN 1092-4	85	185	320	300	340
FSDR80	DN 80 Pn16 EN 1092-4	85	200	320	300	340
STR65	DN 65 Pn16 EN 1092-4	85	185	320	300	340
STR80	DN 80 Pn16 EN 1092-4	85	200	320	300	340
STR100	DN100 PN16 EN 1092-4	100	220	370	360	410

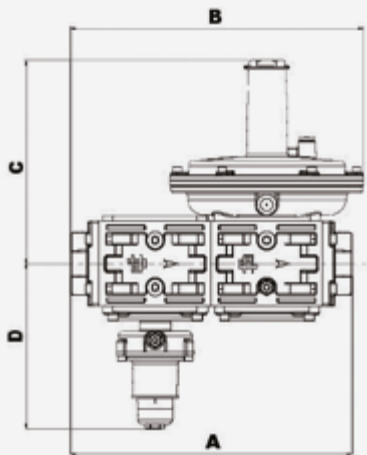
## Overall dimensions

### ST4B



Model	Connections	A	B	C	D
ST4B20	Rp 3/4" UNI-ISO 7/1	195	126	38	190
ST4B25	Rp 1" UNI-ISO 7/1	195	167	57	205
ST4B32	Rp 1.1/4" UNI-ISO 7/1	260	195	62	262
ST4B40	Rp 1.1/2" UNI-ISO 7/1	260	195	62	262
ST4B50	Rp 2" UNI-ISO 7/1	260	195	62	262

### ST4B...BM

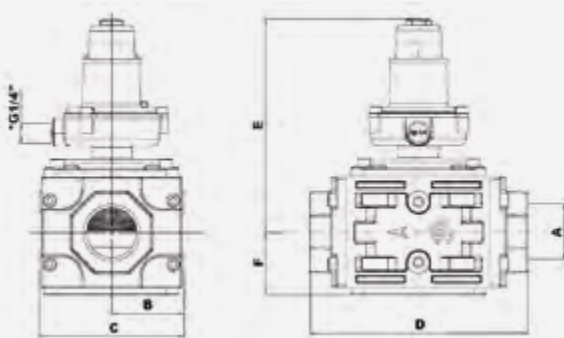


Model	Connections	A	B	C	D
ST4B20BM	Rp 3/4" UNI-ISO 7/1	200	234	190	123
ST4B25BM	Rp 1" UNI-ISO 7/1	282	294	204	146
ST4B32BM	Rp 1.1/4" UNI-ISO 7/1	326	360	262	150
ST4B40BM	Rp 1.1/2" UNI-ISO 7/1	326	360	262	150
ST4B50BM	Rp 2" UNI-ISO 7/1	326	360	262	150

**TECHNICAL NOTE**

N.B. G1/4" connection to be connected downstream of the regulator.

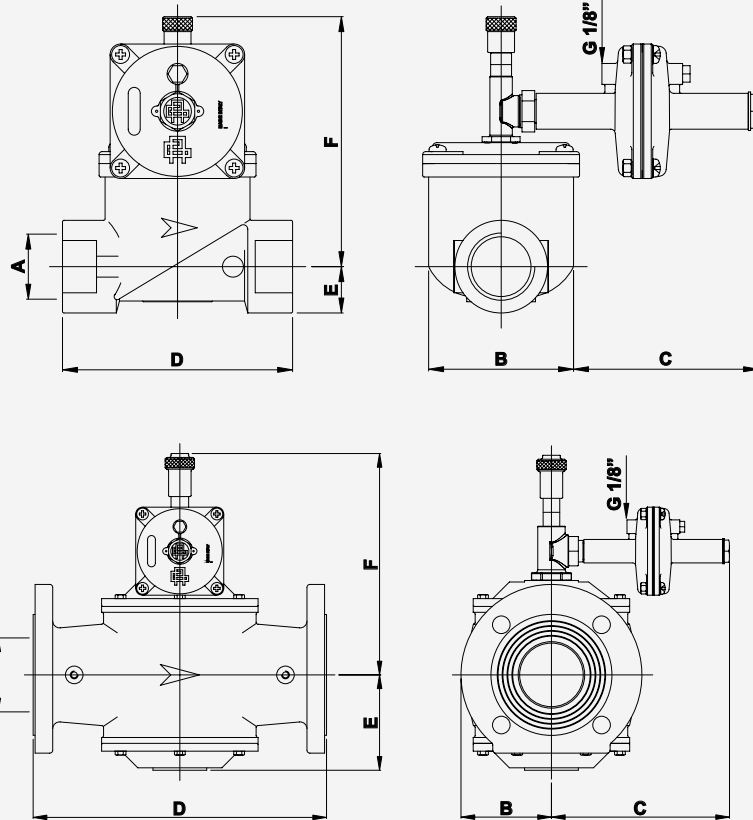
### BM



Model	BM20	BM25	BM32	BM40	BM50
A	Rp 3/4"	Rp 1"	Rp 1.1/4"	Rp 1.1/2"	Rp 2"
B	37	37	57	57	68
C	74	74	114	114	136
D	126	126	170	170	195
E	142	142	165	165	169
F	12	12	49	49	58

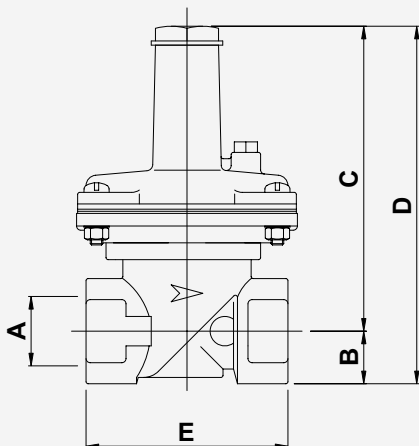
## Overall dimensions

### MB



Mod.	MB15	MB20	MB25	MB32	MB40	MB50	MB65	MB80	MB100	MB125	MB150
	MB15/6B	MB20/6B	MB25/6B	MB32/6B	MB40/6B	MB50/6B	MB65/6B	MB80/6B	MB100/6B	MB125/6B	MB150/6B
A	Rp 1/2"	Rp 3/4"	Rp 1"	Rp 1 1/4"	Rp 1 1/2"	Rp 2"	DN 65	DN 80	DN 100	DN 125	DN 150
B	25	35	35	52	52	64	93	100	110	125	142
C	175	175	175	175	175	175	197	197	197	180	180
D	76	96	96	154	154	173	300	300	360	480	480
E	15	25	25	31	31	39	100	100	105	170	170
F	120	140	140	170	170	170	230	230	230	370	370

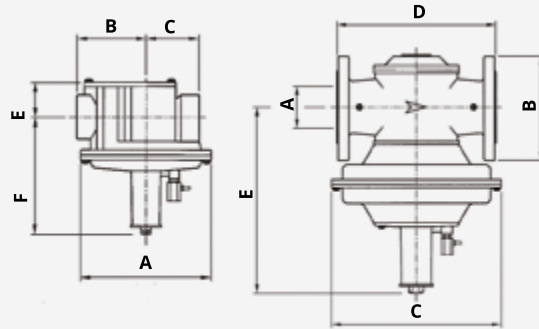
### MS



Type	A	B	C	D	E
MS20	Rp 3/4"	25	145	170	96
MS25	Rp 1"	25	145	170	96

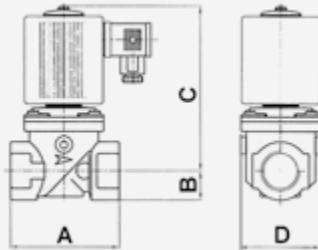
## Overall dimensions

### VRGA-GAVR



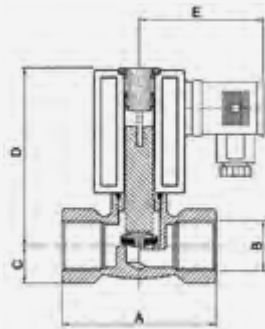
Type	Connections	A	B	C	D	E	F
GAVR 15	Rp 1/2" UNI ISO 7/1						
GAVR 20	Rp 3/4" UNI ISO 7/1	146	73	58	-	38	138
GAVR 25	Rp 1" UNI ISO 7/1						
GAVR 32	Rp 1"1/4 UNI ISO 7/1	194	98	80	-	52	179
GAVR 40	Rp 1"1/2 UNI ISO 7/1						
GAVR 50/40	Rp 2" UNI ISO 7/1	260	135	85	-	65	250
GAVR 50	Rp 2" UNI ISO 7/1						
VRGA 65	DN 65 PN 16	DN65	185	320	300	340	-
VRGA 80	DN 80 PN 16	DN80	200	320	300	340	-
VRGA 100	DN 100 PN 16	DN100	220	370	360	410	-

### GSAV-R



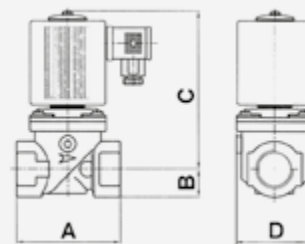
Model	GSAV15R	GSAV20R	GSAV25R	GSAV32R	GSAV40R	GSAV50R
Connections	Rp 1/2"	Rp 3/4"	Rp 1"	Rp 1.1/4"	Rp 1.1/2"	Rp 2"
A	76	96	96	154	154	173
B	15	25	25	31	31	39
C	101	137	137	193	193	194
D	52	70	70	105	105	127

### GSAVO



Model	A	B	C	D	E
GSAVO15					
GSAVO15/08B	64	Rp 1/2"	15	90	60

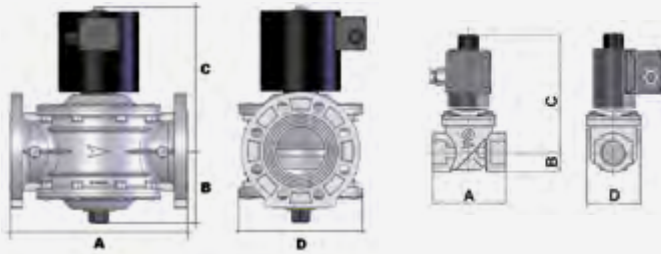
### GSAV



Model	Connections	A	B	C	D
GSAV15/02B	Rp 1/2"	76	15	107	52
GSAV20/02B	Rp 3/4"	96	25	137	70
GSAV25/02B	Rp 1"	96	25	137	70

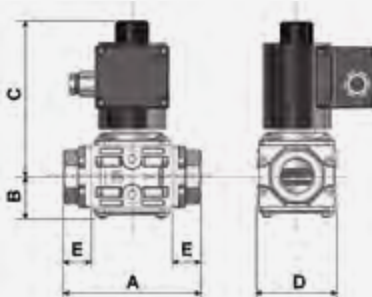
## Overall dimensions

### GSAV-2R



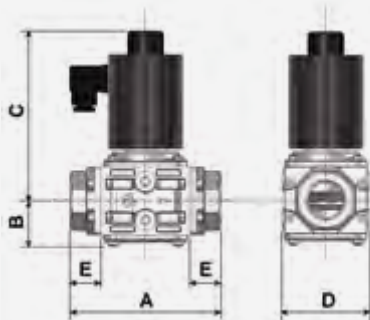
Model	Connections	A	B	C	D
GSAV202R	Rp 3/4"	96	25	155	70
GSAV252R	Rp 1"	96	25	155	70
GSAV322R	Rp 1 1/4"	154	31	193	105
GSAV402R	Rp 1 1/2"	154	31	193	105
GSAV502R	Rp 2"	173	39	194	127
GSAV652R	DN65 - PN16	300	120	245	210
GSAV802R	DN80 - PN16	300	120	245	210
GSAV1002R	DN100 - PN16	360	135	280	220

### AMSV-2R



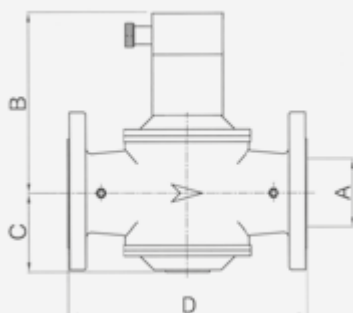
Model	Connections	A	B	C	D	E
AMSV20..R	Rp 3/4"	126	38	142	74	26
AMSV25..R	Rp 1"	126	38	142	74	26
AMSV32..R	Rp 1 1/4"	167	57	167	113	29
AMSV40..R	Rp 1 1/2"	167	57	167	113	29
AMSV50..R	Rp 2"	195	62	171	135	32

### AMSV-R



Model	Connections	A	B	C	D	E
AMSV205R	Rp 3/4"	126	38	142	74	26
AMSV255R	Rp 1"	126	38	142	74	26

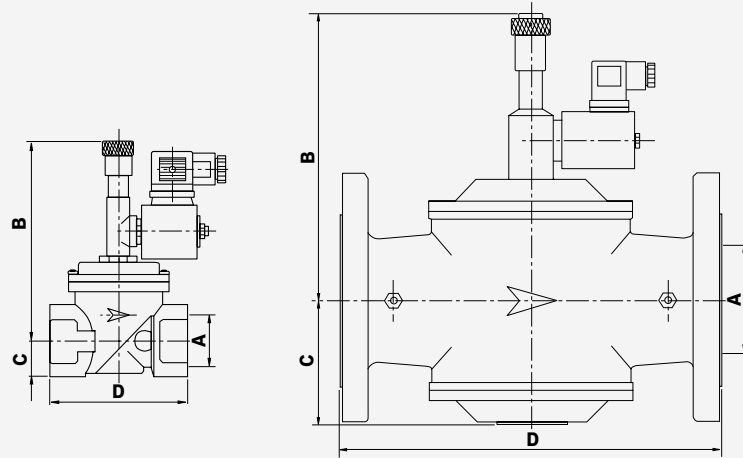
### GHAV



Mod.	GHAV65	GHAV80	GHAV100	GHAV125	GHAV150
A	DN 65	DN 80	DN 100	DN 125	DN 150
B	255	255	310	385	385
C	100	100	115	170	170
D	300	300	360	480	480

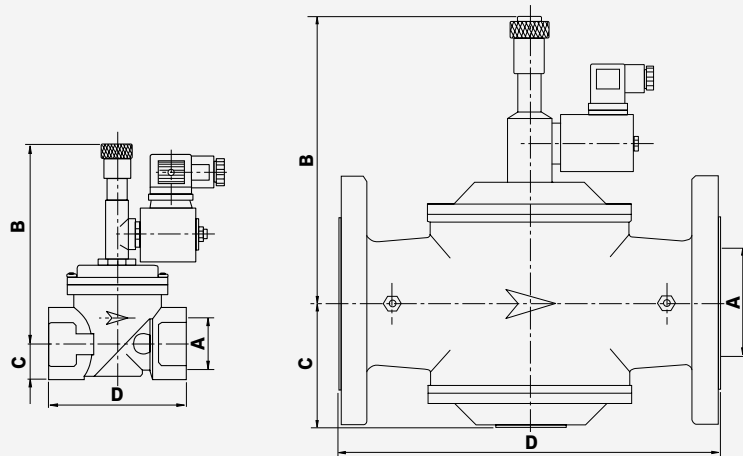
## Overall dimensions

### MSV - MSV/6B



Mod.	MSV12 MSV12/6B	MSV34 MSV100 MSV34/6B MSV100/6B	MSV114 MSV112 MSV114/6B MSV112/6B	MSV200 MSV200/6B	MSV212 MSV300 MSV212/6B MSV300/6B	MSV400 MSV400/6B	MSV500 MSV600 MSV500/6B MSV600/6B	MSV800 MSV800/6B	MSV1200 MSV1200/6B
A	Rp 1/2"	Rp 3/4"-1"	Rp 1.1/4"-Rp 1.1/2"	Rp 2"	DN 65-80	DN 100	DN 125-150	DN 200	DN 300
B	120	140	170	170	230	230	390	445	585
C	15	25	31	39	100	115	170	230	320
D	76	96	154	173	300	360	480	600	720

### EV - EV/6B

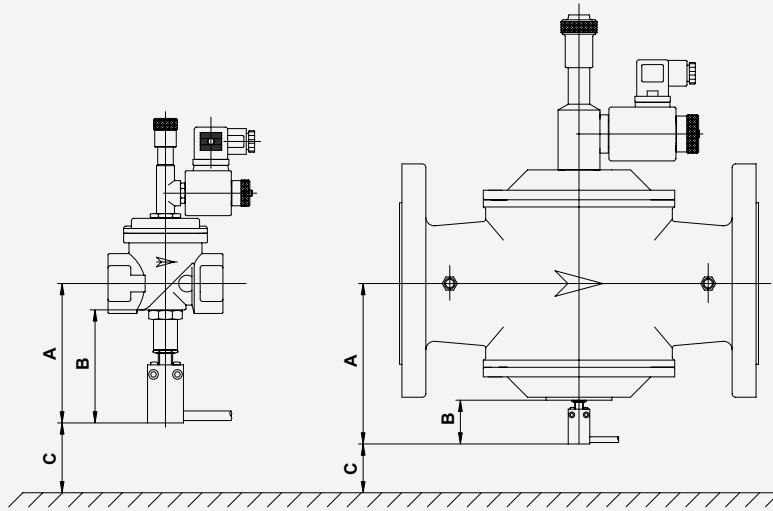


Mod.	EV15 EV15/6B	EV20 - EV25 EV20/6B EV25/6B	EV32 - EV40 EV32/6B EV40/6B	EV50 EV50/6B	EV65 - EV80 EV65/6B EV80/6B	EV100 EV100/6B	EV125 - EV150 EV125/6B EV150/6B	EV200 EV200/6B	EV300 EV300/6B
A	Rp 1/2"	Rp 3/4"-1"	Rp 1.1/4"-Rp 1.1/2"	Rp 2"	DN 65-80	DN 100	DN 125-150	DN 200	DN 300
B	120	140	170	170	230	230	390	445	585
C	15	25	31	39	100	115	170	230	320
D	76	96	154	173	300	360	480	600	720



## Overall dimensions

### MSVM/6B - EVM/6B

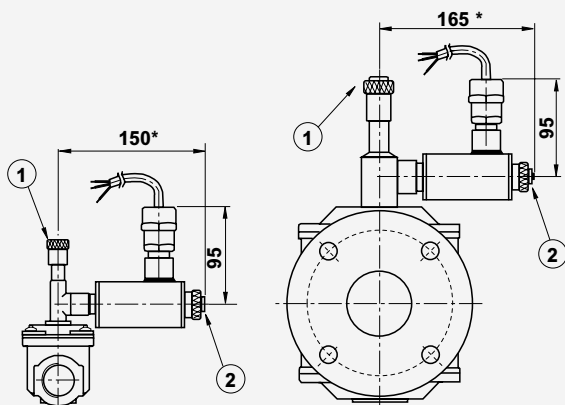


Mod.	3/4"	1"	1"1/4	1"1/2	2"	DN65	DN80	DN100	DN125	DN150
A	116	116	118	118	126.5	176.5	176.5	171	225	225
B	95	95	95	95	95	79	79	66	59	59
C	150	150	150	150	150	150	150	150	150	150

#### TECHNICAL NOTE

B: measurement to adhere to for correct adjustment of the position micro-switch.  
 C: minimum recommended distance from ground for maintenance operations.

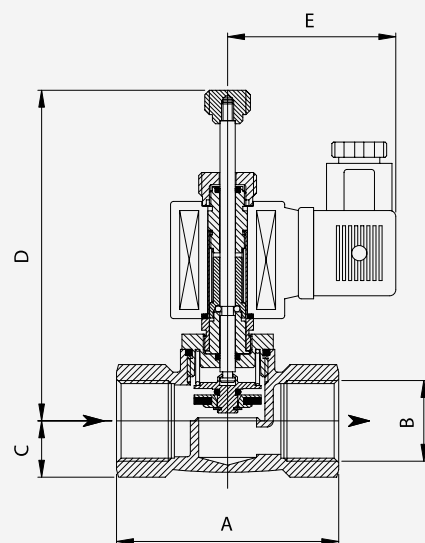
### MSV/6BEEXD - EV/6BBEXD



#### TECHNICAL NOTE

Reset pushbutton (2) on MSV models only.  
 \* Allow at least twice as much in the event of coil replacement.

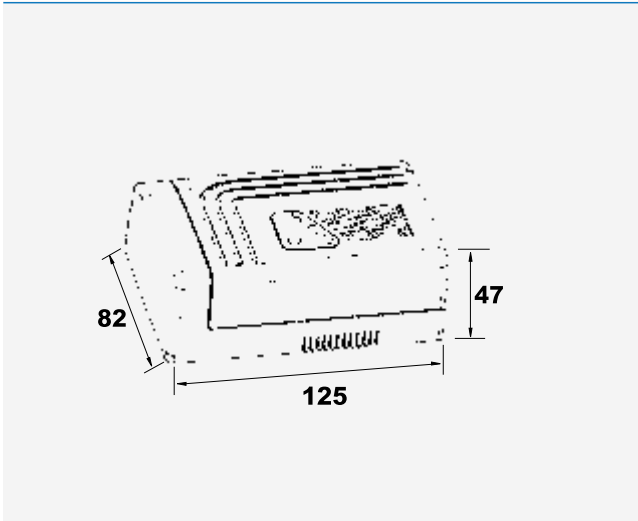
### MSVO - MSVO/68 - EVO - EVO/68



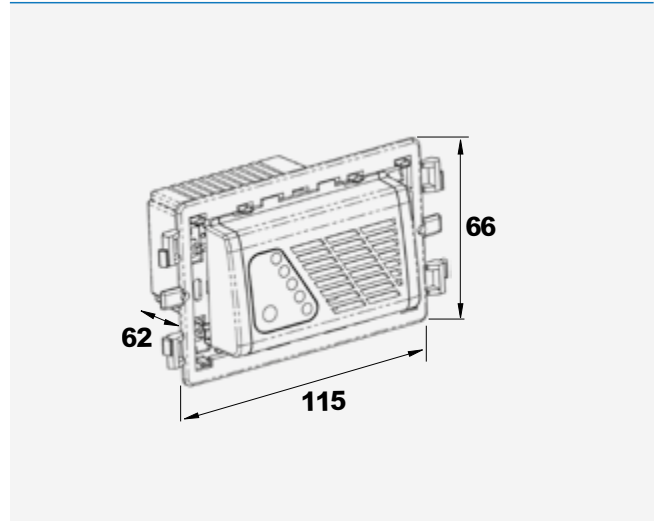
Type	A	B	C	D	D
12	64	Rp 1/2"	15	110	55
34	73	Rp 3/4"	18	110	55
100	86	Rp 1"	22	110	55

## Overall dimensions

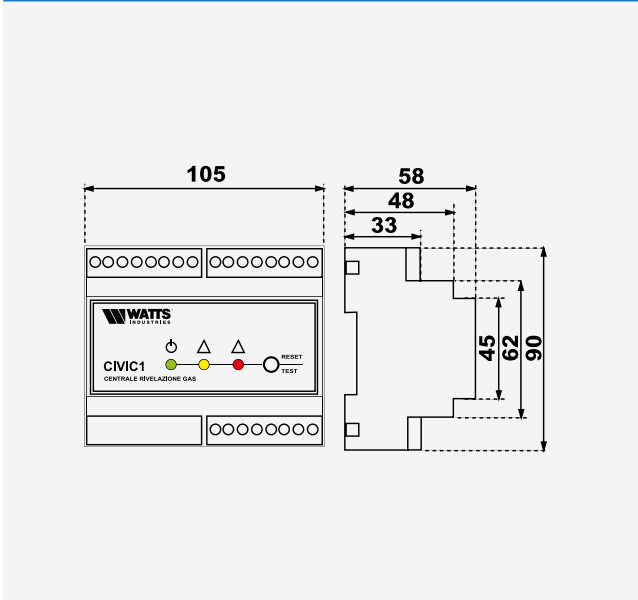
### GSX



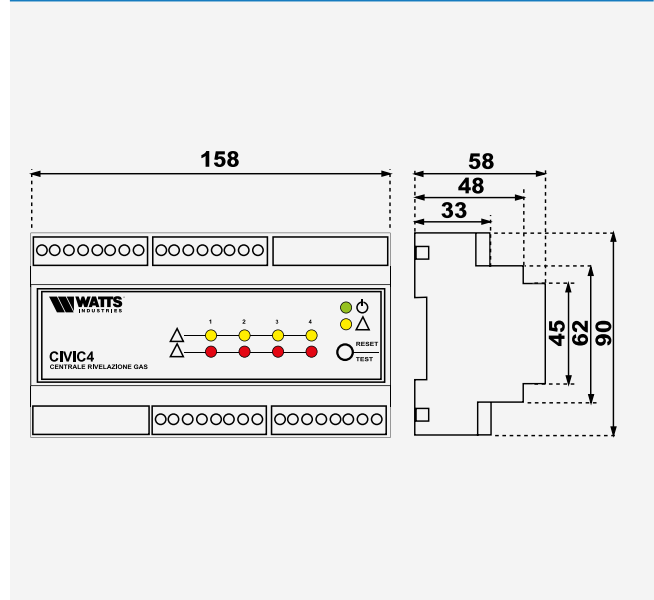
### GSW



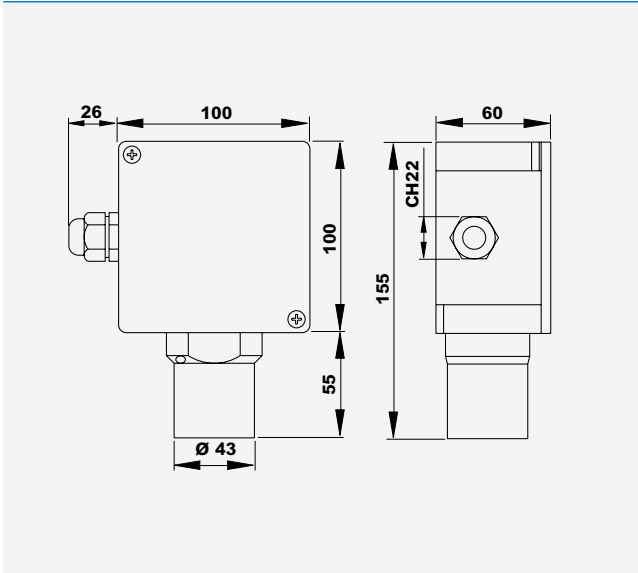
### CIVIC1



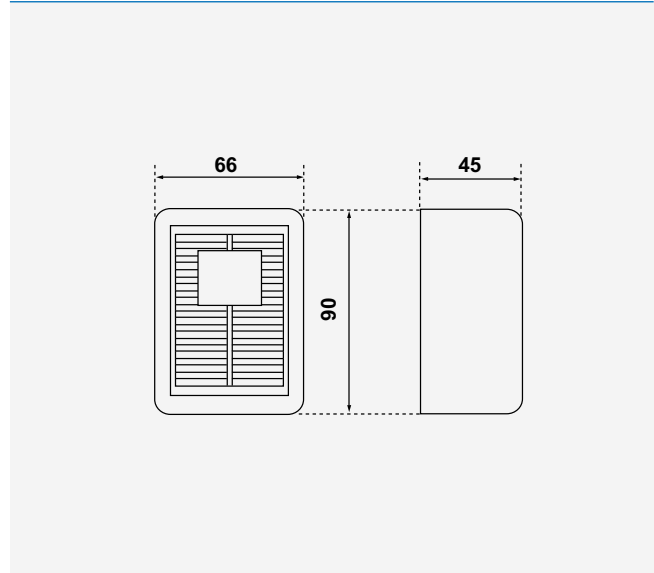
### CIVIC4



### UR20S/UR21S



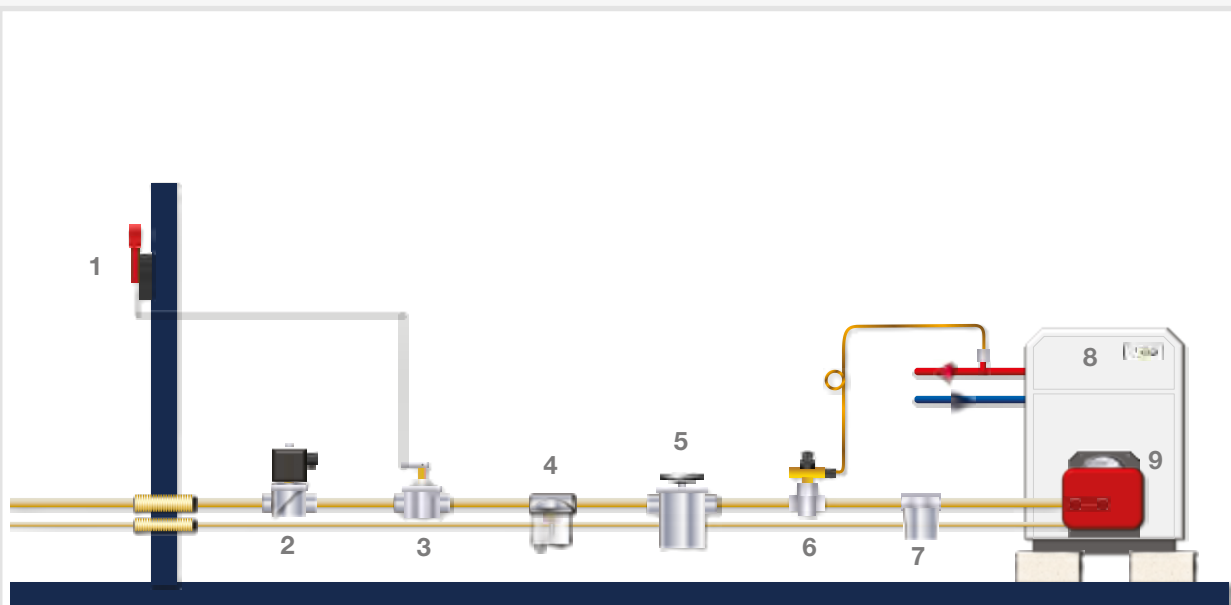
### UR13



## Chapter 10.3

# DEVICES FOR DIESEL AND FUEL OIL

### ACCESSORIES FOR A LIQUID FUEL LINE



All information, data, photographs and products contained in this representation and/or diagram are purely for illustrative and promotional purposes, they have no contractual value and are not covered by warranty, they do not constitute either a user manual or represent an official diagram.

1. Jerk-handle on/off valve lever.
2. Shut-off solenoid valve.
3. Jerk handle on/off valve.
4. Water separator filter.
5. Self-cleaning filter.
6. Fuel shut-off valve.
7. Strainer filter.
8. Boiler.
9. Burner.

## Strainer filters SERIES 70450

### 70452A



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl.  
Max. temperature: 90°C. PN 2. NBR gaskets. 1/4" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70452/0015AP</b>	001.0030.001	Paper filter	15 μ	50	50
<b>70452/006AG</b>	001.0030.003	Stainless steel pleated cartridge	60 μ	50	50
<b>70452/006AL</b>	001.0030.004	Stainless steel cylindrical cartridge	60 μ	50	50
<b>70452/01AG</b>	001.0030.005	Stainless steel pleated cartridge	100 μ	50	50
<b>70452/01AL</b>	001.0030.006	Stainless steel cylindrical cartridge	100 μ	50	50

Other packs available to order - Dimensions on page 391

### 70452P



Strainer filter for diesel, fuel oil and air with aluminium cover and transparent plastic bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 1/4" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70452/0015PP</b>	001.0031.001	Paper filter	15 μ	50	50
<b>70452/006PG</b>	001.0031.003	Stainless steel pleated cartridge	60 μ	50	50
<b>70452/006PL</b>	001.0031.004	Stainless steel cylindrical cartridge	60 μ	50	50
<b>70452/01PG</b>	001.0031.005	Stainless steel pleated cartridge	100 μ	50	50
<b>70452/01PL</b>	001.0031.006	Stainless steel cylindrical cartridge	100 μ	50	50

Other packs available to order - Dimensions on page 391

### 70451A



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl.  
Max. temperature: 90°C. PN 2. NBR gaskets. 3/8" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70451/0015AP</b>	001.0032.001	Paper filter	15 μ	50	50
<b>70451/006AG</b>	001.0032.003	Stainless steel pleated cartridge	60 μ	50	50
<b>70451/006AL</b>	001.0032.004	Stainless steel cylindrical cartridge	60 μ	50	50
<b>70451/01AG</b>	001.0032.005	Stainless steel pleated cartridge	100 μ	50	50
<b>70451/01AL</b>	001.0032.006	Stainless steel cylindrical cartridge	100 μ	50	50

Other packs available to order - Dimensions on page 391

## 70451P



Strainer filter for diesel, fuel oil and air with aluminium cover and transparent plastic bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 3/8" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70451/0015PP</b>	001.0033.001	Paper filter	15 µ	50	50
<b>70451/006PG</b>	001.0033.003	Stainless steel pleated cartridge	60 µ	50	50
<b>70451/006PL</b>	001.0033.004	Stainless steel cylindrical cartridge	60 µ	50	50
<b>70451/01PG</b>	001.0033.005	Stainless steel pleated cartridge	100 µ	50	50
<b>70451/01PL</b>	001.0033.006	Stainless steel cylindrical cartridge	100 µ	50	50

Other packs available to order - Dimensions on page 391

### ACCESSORIES

Type	Part no.	Description	Notes	Pcs. pack	Package
-	-	Supplement for vent plug	-	1	1
<b>70410</b>	014.0050.000	Fixing bracket and screw	filter Mod. 70450	1	1

## SERIES 70300

### 70303A



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1/4" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70303/0015AP</b>	001.0050.001	Paper filter	15 µ	20	20
<b>70303/006A</b>	001.0050.003	Stainless steel pleated cartridge	60 µ	20	20
<b>70303/01A</b>	001.0050.004	Stainless steel pleated cartridge	100 µ	20	20

Other packs available to order - Dimensions on page 391

### 70303P



Strainer filter for diesel, fuel oil and air with aluminium cover and transparent plastic bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 1/4" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70303/0015PP</b>	001.0051.001	Paper filter	15 µ	20	20
<b>70303/006P</b>	001.0051.003	Stainless steel pleated cartridge	60 µ	20	20
<b>70303/01P</b>	001.0051.004	Stainless steel pleated cartridge	100 µ	20	20

Other packs available to order - Dimensions on page 391

### 70301A



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl.  
Max. temperature: 90°C. PN 2. NBR gaskets. 3/8" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70301/0015AP</b>	001.0052.001	Paper filter	15 µ	20	20
<b>70301/006A</b>	001.0052.003	Stainless steel pleated cartridge	60 µ	20	20
<b>70301/01A</b>	001.0052.004	Stainless steel pleated cartridge	100 µ	20	20

Other packs available to order - Dimensions on page 391

### 70301P



Strainer filter for diesel, fuel oil and air with aluminium cover and transparent plastic bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 3/8" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70301/0015PP</b>	001.0053.001	Paper filter	15 µ	20	20
<b>70301/006P</b>	001.0053.003	Stainless steel pleated cartridge	60 µ	20	20
<b>70301/01P</b>	001.0053.004	Stainless steel pleated cartridge	100 µ	20	20

Other packs available to order - Dimensions on page 391

### 70302A



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl.  
Max. temperature: 90°C. PN 2. NBR gaskets. 1/2" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70302/0015AP</b>	001.0054.001	Paper filter	15 µ	20	20
<b>70302/006A</b>	001.0054.003	Stainless steel pleated cartridge	60 µ	20	20
<b>70302/01A</b>	001.0054.004	Stainless steel pleated cartridge	100 µ	20	20

Other packs available to order - Dimensions on page 391

### 70302P



Strainer filter for diesel, fuel oil and air with aluminium cover and transparent plastic bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 1/2" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70302/0015PP</b>	001.0055.001	Paper filter	15 µ	20	20
<b>70302/006P</b>	001.0055.003	Stainless steel pleated cartridge	60 µ	20	20
<b>70302/01P</b>	001.0055.004	Stainless steel pleated cartridge	100 µ	20	20

Other packs available to order - Dimensions on page 391

**ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
70358	014.0051.000	Fixing bracket and screws	filter Mod. 70370/RE	1	1

**SERIES 70310**

**70313A**



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1/4" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
70313/0015AP	001.0070.001	Paper filter	15 µ	10	10
70313/006A	001.0070.003	Stainless steel pleated cartridge	60 µ	10	10
70313/01A	001.0070.004	Stainless steel pleated cartridge	100 µ	10	10
70313/03A	001.0070.005	Galvanized steel cartridge	300 µ	10	10

Dimensions on page 392

**70313P**



Strainer filter for diesel, fuel oil and air with aluminium cover and transparent plastic bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 1/4" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
70313/0015PP	001.0071.001	Paper filter	15 µ	10	10
70313/006P	001.0071.003	Stainless steel pleated cartridge	60 µ	10	10
70313/01P	001.0071.004	Stainless steel pleated cartridge	100 µ	10	10
70313/03P	001.0071.005	Galvanized steel cartridge	300 µ	10	10

Dimensions on page 392

**70311A**



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 3/8" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
70311/0015AP	001.0072.001	Paper filter	15 µ	10	10
70311/006A	001.0072.003	Stainless steel pleated cartridge	60 µ	10	10
70311/01A	001.0072.004	Stainless steel pleated cartridge	100 µ	10	10
70311/03A	001.0072.005	Galvanized steel cartridge	300 µ	10	10

Dimensions on page 392

### 70311P



Strainer filter for diesel, fuel oil and air with aluminium cover and transparent plastic bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 3/8" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70311/0015PP</b>	001.0073.001	Paper filter	15 μ	10	10
<b>70311/006P</b>	001.0073.003	Stainless steel pleated cartridge	60 μ	10	10
<b>70311/01P</b>	001.0073.004	Stainless steel pleated cartridge	100 μ	10	10
<b>70311/03P</b>	001.0073.005	Galvanized steel cartridge	300 μ	10	10

Dimensions on page 392

### 70312A



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1/2" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70312/0015AP</b>	001.0074.001	Paper filter	15 μ	10	10
<b>70312/006A</b>	001.0074.003	Stainless steel pleated cartridge	60 μ	10	10
<b>70312/01A</b>	001.0074.004	Stainless steel pleated cartridge	100 μ	10	10
<b>70312/03A</b>	001.0074.005	Galvanized steel cartridge	300 μ	10	10

Dimensions on page 392

### 70312P



Strainer filter for diesel, fuel oil and air with aluminium cover and transparent plastic bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 1/2" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70312/0015PP</b>	001.0075.001	Paper filter	15 μ	10	10
<b>70312/006P</b>	001.0075.003	Stainless steel pleated cartridge	60 μ	10	10
<b>70312/01P</b>	001.0075.004	Stainless steel pleated cartridge	100 μ	10	10
<b>70312/03P</b>	001.0075.005	Galvanized steel cartridge	300 μ	10	10

Dimensions on page 392

### ACCESSORIES

Type	Part no.	Description	Notes	Pcs. pack	Package
<b>70358</b>	014.0051.000	Fixing bracket and screws	filter Mod. 70300	1	1



## SERIES 70100

### 70107



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1/2" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70107/006</b>	001.0110.002	Stainless steel pleated cartridge	60 µ	6	6
<b>70107/01</b>	001.0110.003	Stainless steel pleated cartridge	100 µ	6	6
<b>70107/03</b>	001.0110.004	Galvanized steel cartridge	300 µ	6	6

Dimensions on page 392

### 70104



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 3/4" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70104/006</b>	001.0112.002	Stainless steel pleated cartridge	60 µ	6	6
<b>70104/01</b>	001.0112.003	Stainless steel pleated cartridge	100 µ	6	6
<b>70104/03</b>	001.0112.004	Galvanized steel cartridge	300 µ	6	6

Dimensions on page 392

### 70101



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70101/006</b>	001.0111.002	Stainless steel pleated cartridge	60 µ	6	6
<b>70101/01</b>	001.0111.003	Stainless steel pleated cartridge	100 µ	6	6
<b>70101/03</b>	001.0111.004	Galvanized steel cartridge	300 µ	6	6

Dimensions on page 392

## SERIES 70500

### 70501



Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1" threaded connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70501/006</b>	001.0140.002	Stainless steel pleated cartridge	60 µ	1	1
<b>70501/01</b>	001.0140.003	Stainless steel pleated cartridge	100 µ	1	1
<b>70501/03</b>	001.0140.004	Galvanized steel cartridge	300 µ	1	1

Dimensions on page 393

**70502**

Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1.1/4" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70502/006</b>	001.0141.002	Stainless steel pleated cartridge	60 µ	1	1
<b>70502/01</b>	001.0141.003	Stainless steel pleated cartridge	100 µ	1	1
<b>70502/03</b>	001.0141.004	Galvanized steel cartridge	300 µ	1	1

Dimensions on page 393

**70503**

Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1.1/2" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70503/006</b>	001.0142.002	Stainless steel pleated cartridge	60 µ	1	1
<b>70503/01</b>	001.0142.003	Stainless steel pleated cartridge	100 µ	1	1
<b>70503/03</b>	001.0142.004	Galvanized steel cartridge	300 µ	1	1

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**70504**

Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 2" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70504/006</b>	001.0143.002	Stainless steel pleated cartridge	60 µ	1	1
<b>70504/01</b>	001.0143.003	Stainless steel pleated cartridge	100 µ	1	1
<b>70504/03</b>	001.0143.004	Galvanized steel cartridge	300 µ	1	1

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**ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
-	-	Supplement for hole with plug for resistor	-	1	1
<b>70516</b>	014.0053.000	Wall-mounting bracket	filter Mod. 70500	1	1
<b>1543</b>	014.0052.000	Fixing bracket and screws	filter Mod. 70100	1	1

## SERIES 70700

### 70700

Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 2" threaded connections.



Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70700/006</b>	001.0160.002	Stainless steel pleated cartridge	60 μ	1	1
<b>70700/01</b>	001.0160.003	Stainless steel pleated cartridge	100 μ	1	1
<b>70700/03</b>	001.0160.004	Galvanized steel cartridge	300 μ	1	1

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### 70700F

Strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. DN50" flanged connections.



Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70700/006F</b>	001.0161.002	Stainless steel pleated cartridge	60 μ	1	1
<b>70700/01F</b>	001.0161.003	Stainless steel pleated cartridge	100 μ	1	1
<b>70700/03F</b>	001.0161.004	Galvanized steel cartridge	300 μ	1	1

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### ACCESSORIES

Type	Part no.	Description	Notes	Pcs. pack	Package
<b>1809</b>	014.0017.000	Magnetic insert	-	1	1
<b>1604</b>	014.0025.000	300 W resistor (NL type), setting 70°C	-	1	1
<b>1603</b>	014.0024.000	300 W resistor (GL type), setting 35°C	-	1	1
<b>586</b>	014.0054.000	Wall-mounting bracket	filter Mod. 70700	1	1

## Magnetic filters

### 70157M

Magnetic strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1/2" connections.



Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70157/006M</b>	001.0200.001	Stainless steel pleated cartridge	60 μ	1	1
<b>70157/01M</b>	001.0200.002	Stainless steel pleated cartridge	100 μ	1	1
<b>70157/03M</b>	001.0200.003	Galvanized steel cartridge	300 μ	1	1

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**70151M**

Magnetic strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70151/006M</b>	001.0201.001	Stainless steel pleated cartridge	60 µ	1	1
<b>70151/01M</b>	001.0201.002	Stainless steel pleated cartridge	100 µ	1	1

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**ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
<b>1543</b>	014.0052.000	Fixing bracket and screws	filter Mod. 70100	1	1

**70501M**

Magnetic strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70501/006M</b>	001.0210.001	Stainless steel pleated cartridge	60 µ	1	1
<b>70501/01M</b>	001.0210.002	Stainless steel pleated cartridge	100 µ	1	1
<b>70501/03M</b>	001.0210.003	Galvanized steel cartridge	300 µ	1	1

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**70502M**

Magnetic strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1.1/4" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70502/006M</b>	001.0211.001	Stainless steel pleated cartridge	60 µ	1	1
<b>70502/01M</b>	001.0211.002	Stainless steel pleated cartridge	100 µ	1	1
<b>70502/03M</b>	001.0211.003	Galvanized steel cartridge	300 µ	1	1

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**70503M**

Magnetic strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1.1/2" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70503/006M</b>	001.0212.001	Stainless steel pleated cartridge	60 µ	1	1
<b>70503/01M</b>	001.0212.002	Stainless steel pleated cartridge	100 µ	1	1
<b>70503/03M</b>	001.0212.003	Galvanized steel cartridge	300 µ	1	1

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**ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
70516	014.0053.000	Wall-mounting bracket	filter Mod. 70500	1	1

**Filters with electronic heater**

**70371RE**



Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 3/8" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
70371/01RE	001.0170.001	100 W electronic resistor	100 μ	5	5

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**70372RE**



Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1/2" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
70372/01RE	001.0171.001	100 W electronic resistor	100 μ	5	5

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**ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
70358	014.0051.000	Fixing bracket and screws	filter Mod. 70370/RE	1	1

**70157GL/NL**



Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1/2" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
70157/006GL	001.0180.001	Electronic resistor, setting 35°C	60 μ	1	1
70157/006NL	001.0180.002	Electronic resistor, setting 70°C	60 μ	1	1
70157/01GL	001.0180.003	Electronic resistor, setting 35°C	100 μ	1	1
70157/01NL	001.0180.004	Electronic resistor, setting 70°C	100 μ	1	1
70157/03GL	001.0180.005	Electronic resistor, setting 35°C	300 μ	1	1
70157/03NL	001.0180.006	Electronic resistor, setting 70°C	300 μ	1	1

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**70151GL/NL**

Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. NBR gaskets. 1" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
<b>70151/006GL</b>	001.0181.001	Electronic resistor, setting 35°C	60 μ	1	1
<b>70151/006NL</b>	001.0181.002	Electronic resistor, setting 70°C	60 μ	1	1
<b>70151/01GL</b>	001.0181.003	Electronic resistor, setting 35°C	100 μ	1	1
<b>70151/01NL</b>	001.0181.004	Electronic resistor, setting 70°C	100 μ	1	1
<b>70151/03GL</b>	001.0181.005	Electronic resistor, setting 35°C	300 μ	1	1
<b>70151/03NL</b>	001.0181.006	Electronic resistor, setting 70°C	300 μ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
<b>1543</b>	014.0052.000	Fixing bracket	filter Mod. 70150	1	1
<b>1616</b>	014.0026.000	100 W electronic resistor	-	1	1
<b>1603</b>	014.0024.000	300W GL resistor, setting 35°C IP65	-	1	1
<b>1604</b>	014.0025.000	300W NL resistor, setting 70°C IP65	-	1	1

**70501GL/NL**

Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
<b>70501/006GL</b>	001.0190.001	Electronic resistor, setting 35°C	60 μ	1	1
<b>70501/006NL</b>	001.0190.002	Electronic resistor, setting 70°C	60 μ	1	1
<b>70501/01GL</b>	001.0190.003	Electronic resistor, setting 35°C	100 μ	1	1
<b>70501/01NL</b>	001.0190.004	Electronic resistor, setting 70°C	100 μ	1	1
<b>70501/03GL</b>	001.0190.005	Electronic resistor, setting 35°C	300 μ	1	1
<b>70501/03NL</b>	001.0190.006	Electronic resistor, setting 70°C	300 μ	1	1

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**70502GL/NL**



Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1.1/4" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
<b>70502/006GL</b>	001.0191.001	Electronic resistor, setting 35°C	60 µ	1	1
<b>70502/006NL</b>	001.0191.002	Electronic resistor, setting 70°C	60 µ	1	1
<b>70502/01GL</b>	001.0191.003	Electronic resistor, setting 35°C	100 µ	1	1
<b>70502/01NL</b>	001.0191.004	Electronic resistor, setting 70°C	100 µ	1	1
<b>70502/03GL</b>	001.0191.005	Electronic resistor, setting 35°C	300 µ	1	1
<b>70502/03NL</b>	001.0191.006	Electronic resistor, setting 70°C	300 µ	1	1

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**70503GL/NL**



Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1.1/2" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
<b>70503/006GL</b>	001.0192.001	Electronic resistor, setting 35°C	60 µ	1	1
<b>70503/006NL</b>	001.0192.002	Electronic resistor, setting 70°C	60 µ	1	1
<b>70503/01GL</b>	001.0192.003	Electronic resistor, setting 35°C	100 µ	1	1
<b>70503/01NL</b>	001.0192.004	Electronic resistor, setting 70°C	100 µ	1	1
<b>70503/03GL</b>	001.0192.005	Electronic resistor, setting 35°C	300 µ	1	1
<b>70503/03NL</b>	001.0192.006	Electronic resistor, setting 70°C	300 µ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
<b>70516</b>	014.0053.000	Wall-mounting bracket for 70500	filter Mod. 70500	1	1
<b>1603</b>	014.0024.000	300W GL resistor, setting 35°C IP65	-	1	1
<b>1604</b>	014.0025.000	300W NL resistor, setting 70°C IP65	-	1	1

## Magnetic filters with electronic heater

### 70501GLM/NLM



Magnetic strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
<b>70501/006GLM</b>	001.0220.001	Electronic resistor, setting 35°C	60 μ	1	1
<b>70501/006NLM</b>	001.0220.002	Electronic resistor, setting 70°C	60 μ	1	1
<b>70501/01GLM</b>	001.0220.003	Electronic resistor, setting 35°C	100 μ	1	1
<b>70501/01NLM</b>	001.0220.004	Electronic resistor, setting 70°C	100 μ	1	1
<b>70501/03GLM</b>	001.0220.005	Electronic resistor, setting 35°C	300 μ	1	1
<b>70501/03NLM</b>	001.0220.006	Electronic resistor, setting 70°C	300 μ	1	1

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### 70502GLM/NLM



Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1.1/4" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
<b>70502/006GLM</b>	001.0221.001	Electronic resistor, setting 35°C	60 μ	1	1
<b>70502/006NLM</b>	001.0221.002	Electronic resistor, setting 70°C	60 μ	1	1
<b>70502/01GLM</b>	001.0221.003	Electronic resistor, setting 35°C	100 μ	1	1
<b>70502/01NLM</b>	001.0221.004	Electronic resistor, setting 70°C	100 μ	1	1
<b>70502/03GLM</b>	001.0221.005	Electronic resistor, setting 35°C	300 μ	1	1
<b>70502/03NLM</b>	001.0221.006	Electronic resistor, setting 70°C	300 μ	1	1

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### 70503GLM/NLM



Strainer filter with electronic heater for diesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 4. NBR gaskets. 1.1/2" connections.

Type	Part no.	Resistor	Filtration	Pcs. pack	Package
<b>70503/006GLM</b>	001.0222.001	Electronic resistor, setting 35°C	60 μ	1	1
<b>70503/006NLM</b>	001.0222.002	Electronic resistor, setting 70°C	60 μ	1	1
<b>70503/01GLM</b>	001.0222.003	Electronic resistor, setting 35°C	100 μ	1	1
<b>70503/01NLM</b>	001.0222.004	Electronic resistor, setting 70°C	100 μ	1	1
<b>70503/03GLM</b>	001.0222.005	Electronic resistor, setting 35°C	300 μ	1	1
<b>70503/03NLM</b>	001.0222.006	Electronic resistor, setting 70°C	300 μ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
70516	014.0053.000	Wall-mounting bracket for 70500	filter Mod. 70500	1	1
1603	014.0024.000	300W GL resistor, setting 35°C IP65	-	1	1
1604	014.0025.000	300W NL resistor, setting 70°C IP65	-	1	1

## Special filters

### 70370



Water separator filter for diesel, fuel oil and air with aluminium cover and transparent bowl. Max. temperature: 50°C. PN 2. NBR gaskets. 3/8" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70370/006</b>	001.0080.002	Stainless steel cartridge	60 μ	10	10
<b>70370/01</b>	001.0080.003	Stainless steel cartridge	100 μ	10	10

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### ACCESSORIES

Type	Part no.	Description	Notes	Pcs. pack	Package
<b>70358</b>	014.0051.000	Fixing bracket and screws	filter Mod. 70370	1	1

### 70351A



Two-way strainer filter for diesel, fuel oil and air with aluminium cover and bowl. Screw valve on suction and check valve on return. Max. temperature: 50°C. PN 2. NBR gaskets. 3/8" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70351/0015AP</b>	001.0060.001	Paper filter	15 μ	10	10
<b>70351/006A</b>	001.0060.003	Stainless steel pleated cartridge	60 μ	10	10
<b>70351/01A</b>	001.0060.004	Stainless steel pleated cartridge	100 μ	10	10

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### 70351P



Two-way strainer filter for diesel, fuel oil and air with aluminium cover and transparent bowl. Screw valve on suction and check valve on return. Max. temperature: 50°C. PN 2. NBR gaskets. 3/8" connections.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>70351/0015PP</b>	001.0061.001	Paper filter	15 μ	10	10
<b>70351/006P</b>	001.0061.003	Stainless steel pleated cartridge	60 μ	10	10
<b>70351/01P</b>	001.0061.004	Stainless steel pleated cartridge	100 μ	10	10

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**RG2**



Two-way strainer filter for diesel, with large filtration area, bowl fastened with ring-nut. Screw valve on suction and check valve on return, complete with fixing bracket. CW617N brass body and ring-nut. Transparent plastic bowl. 3/8" F connections with bushes for Ø 6x8, 8x10 and 10x12 mm pipes.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>RG2</b>	0130100	-	260 µ	1	32

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**RV2**



Two-way strainer filter for diesel with screw valve on suction and check valve on return, complete with fixing bracket. CW617N brass body and ring-nut. Transparent plastic bowl. 3/8" F connections with bushes for Ø 6x8, 8x10 and 10x12 mm pipes. Burner side connections: 3/8" F.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>RV2</b>	0133100	-	200 µ	1	50

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**RV1**



One-way strainer filter for diesel, with screw valve and fixing bracket. CW617N brass body. Transparent plastic bowl. Burner side 3/8" F connections, with bushes for Ø 6x8, 8x10 and 10x12 mm pipes. Tank side 3/8" F connection. Filtering capacity 200 microns.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>RV1</b>	0135100	-	200 µ	1	50

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**V1**



One-way strainer filter for diesel, like RV1 but without shut-off valve.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>V1</b>	0138100	-	200 µ	1	50

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**RZ**


Recirculation filter for diesel that makes it possible to eliminate the return pipe to the tank, with screw valve on suction and by-pass valve on return. Complete with fixing bracket. CW617N brass body. Transparent plastic bowl. 2 burner side 3/8" F connections, with bushes for Ø 4x6, 6x8, 8x10 and 10x12 mm pipes. Tank side 3/8" F connection.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>RZ</b>	0137100	-	200 µ	1	40

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**ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
<b>70358</b>	014.0051.000	Fixing bracket and screws	filter Mod. 70370	1	1

**TC3110A**


Multi-function diesel degassing filter complete with fixing bracket, for eliminating air from the circuit. Equipped with filter, pressure gauge on outlet to burner and shut-off valve for device maintenance. Connection for diesel return from the burner with bypass for use as a daily supply tank. Pump connection, 3/8" male thread and tank connection 3/8" female thread. Maximum nozzle capacity 110 L/h. Maximum de-aeration capacity 110 L/h. Maximum operating temperature 60°C. Maximum/minimum pressure: +0.5/-0.6 bar.

Type	Part no.	Cartridge type	Filtration	Pcs. pack	Package
<b>TC3 110A</b>	520131TE	-	75 µ	1	1

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**70450**


Special strainer filter for biodiesel, petrodiesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. Viton gaskets. Filtration 100 microns.

Type	Part no.	Cartridge type	Connections	Pcs. pack	Package
<b>70452/01AGE</b>	001.0030.007	Stainless steel pleated cartridge. Viton seals	1/4"	10	10
<b>70451/01AGE</b>	001.0032.007	Stainless steel pleated cartridge. Viton seals	3/8"	10	10

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**70310**


Special strainer filter for biodiesel, petrodiesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. Viton gaskets. Filtration 100 microns.

Type	Part no.	Cartridge type	Connections	Pcs. pack	Package
<b>70311/01AE</b>	001.0072.006	Stainless steel pleated cartridge. Viton seals	3/8"	10	10
<b>70312/01AE</b>	001.0074.006	Stainless steel pleated cartridge. Viton seals	1/2"	10	10

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**70100**



Special strainer filter for biodiesel, petrodiesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. Viton gaskets. Filtration 100 microns.

Type	Part no.	Cartridge type	Connections	Pcs. pack	Package
<b>70107/01E</b>	001.0110.005	Stainless steel pleated cartridge. Viton seals	1/2"	6	6
<b>70104/01E</b>	001.0112.005	Stainless steel pleated cartridge. Viton seals	3/4"	6	6
<b>70101/01E</b>	001.0111.005	Stainless steel pleated cartridge. Viton seals	1"	6	6

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**70500**



Special strainer filter for biodiesel, petrodiesel, fuel oil and air with aluminium cover and bowl. Max. temperature: 90°C. PN 2. Viton gaskets. Filtration 100 microns.

Type	Part no.	Cartridge type	Connections	Pcs. pack	Package
<b>70501/01E</b>	001.0140.005	Stainless steel pleated cartridge. Viton seals	1"	1	1
<b>70502/01E</b>	001.0141.005	Stainless steel pleated cartridge. Viton seals	1.1/4"	1	1
<b>70503/01E</b>	001.0142.005	Stainless steel pleated cartridge. Viton seals	1.1/2"	1	1

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**ACCESSORIES**

Type	Part no.	Description	Notes	Pcs. pack	Package
<b>70410</b>	014.0050.000	Fixing bracket and screws	filter Mod. 70450	1	1
<b>70358</b>	014.0051.000	Fixing bracket and screws	filter Mod. 70310	1	1
<b>1543</b>	014.0052.000	Fixing bracket and screws	filter Mod. 70100	1	1

**PARTS FOR STRAINER FILTERS**

**60450**

Pleated cartridges for filters 70451 - 70452 - AL, AG, PL, PG, AGE, AP, PP. Pleated cartridge only for filter 70370.



Type	Part no.	Description	Filtration	Pcs. pack	Package
<b>60450/0015P</b>	014.0390.000	Paper filter	15 µ	1	1
<b>60450/006G</b>	014.4031.002	Stainless steel pleated cartridge	60 µ	1	1
<b>60450/006L</b>	014.4032.001	Stainless steel cylindrical cartridge	60 µ	1	1
<b>60450/01G</b>	014.4031.003	Stainless steel pleated cartridge	100 µ	1	1
<b>60450/01L</b>	014.4032.002	Stainless steel cylindrical cartridge	100 µ	1	1

**60300**

Pleated cartridges for filters 70301- 70302- 70303- 70351- A, AP, P, PP. For filters 70371RE and 70372RE.



Type	Part no.	Description	Filtration	Pcs. pack	Package
<b>60300/0015P</b>	014.4050.001	Paper filter	15 µ	1	1
<b>60300/006</b>	014.4051.002	Stainless steel pleated cartridge	60 µ	1	1
<b>60300/01</b>	014.4051.003	Stainless steel pleated cartridge	100 µ	1	1
<b>60300/01RE</b>	014.4051.004	Stainless steel pleated cartridge for Mod. 70370/RE	100 µ	1	1

**60200**

Pleated cartridges for filters 70311 - 70312- 70313- 70207- A, AP, P, PP.



Type	Part no.	Description	Filtration	Pcs. pack	Package
60200/0015P	014.4070.001	Paper filter	15 μ	1	1
60200/006	014.4071.002	Stainless steel pleated cartridge	60 μ	1	1
60200/01	014.4071.003	Stainless steel pleated cartridge	100 μ	1	1
60200/03	014.4071.004	Galvanized steel cartridge	300 μ	1	1

**60100**

Pleated cartridges for filters 70101 - 70104 - 70107.



Type	Part no.	Description	Filtration	Pcs. pack	Package
60100/006	014.4110.002	Stainless steel pleated cartridge	60 μ	1	1
60100/01	014.4110.003	Stainless steel pleated cartridge	100 μ	1	1
60100/03	014.4110.004	Galvanized steel cartridge	300 μ	1	1

**60150**

Pleated cartridges for filters 70151 - 70157 - GL, NL, M.



Type	Part no.	Description	Filtration	Pcs. pack	Package
60150/006	014.4180.002	Stainless steel pleated cartridge	60 μ	1	1
60150/01	014.4180.003	Stainless steel pleated cartridge	100 μ	1	1
60150/03	014.4180.004	Galvanized steel cartridge	300 μ	1	1

**60500**

Pleated cartridges for filters 70501 - 70502 - 70503 - GL, NL, M, GLM, NLM.



Type	Part no.	Description	Filtration	Pcs. pack	Package
60500/006	014.4140.002	Stainless steel pleated cartridge	60 μ	1	1
60500/01	014.4140.003	Stainless steel pleated cartridge	100 μ	1	1
60500/03	014.4140.004	Galvanized steel cartridge	300 μ	1	1



**60504**

Pleated cartridges for filters 70504.

Type	Part no.	Description	Filtration	Pcs. pack	Package
60504/006	014.4141.002	Stainless steel pleated cartridge	60 μ	1	1
60504/01	014.4141.003	Stainless steel pleated cartridge	100 μ	1	1
60504/03	014.4141.004	Galvanized steel cartridge	300 μ	1	1



**60700**

Pleated cartridges for filters 70700.

Type	Part no.	Description	Filtration	Pcs. pack	Package
60700/006	014.4160.002	Stainless steel pleated cartridge	60 μ	1	1
60700/01	014.4160.003	Stainless steel pleated cartridge	100 μ	1	1
60700/03	014.4160.005	Galvanized steel cartridge	300 μ	1	1



**SS**

Replacement cartridge for filters RG2, RV2-RV1-RZ-V1, TC3 110A.

Type	Part no.	Description	Filtration	Pcs. pack	Package
SS	0199010	Replacement cylindrical cartridge for RG2 filter	260 μ	1	10
SS	0199016	Replacement cylindrical cartridge for RV2-RV1-RZ-V1 filter	200 μ	1	10
SS	43001	Replacement cylindrical cartridge for TC3110A filter	75 μ	1	1

## GASKET KIT

Type	Part no.	Filter Model	Cartridge type	Pcs. pack	Package
<b>3198</b>	014.0065.002	70450	Cylindrical and Paper. NBR seals	1	1
<b>3198V</b>	014.0065.005	70450	Cylindrical. VITON seals	1	1
<b>3199</b>	014.0065.003	70450	Pleated. NBR seals	1	1
<b>3204</b>	014.0066.001	70300	Pleated Paper. NBR seals	1	1
<b>3204V</b>	014.0066.002	70300	Pleated. VITON seals	1	1
<b>3203</b>	014.0067.001	70310	Pleated Paper. NBR seals	1	1
<b>3202</b>	014.0068.001	70351	Pleated Paper. NBR seals	1	1
<b>3205</b>	014.0069.001	70200	Pleated Paper. NBR seals	1	1
<b>3205V</b>	014.0069.002	70200	Pleated. VITON seals	1	1
<b>3207</b>	014.0070.001	70100	Pleated. NBR seals	1	1
<b>3207V</b>	014.0070.002	70100	Pleated. VITON seals	1	1
<b>3206</b>	014.0071.001	70150	Pleated. NBR seals	1	1
<b>3201</b>	014.0072.001	70370	Pleated. NBR seals	1	1
<b>3200</b>	014.0073.001	70370/RE	Pleated. NBR seals	1	1
<b>3197</b>	014.0074.001	70500	Pleated. NBR seals	1	1
<b>3197V</b>	014.0074.002	70500	Pleated. VITON seals	1	1
<b>3196</b>	014.0075.001	70700	Pleated. NBR seals	1	1
<b>3196V</b>	014.0075.002	70700	Pleated. VITON seals	1	1
<b>OR</b>	0199013	RG2	Cylindrical. NBR seals	10	10
<b>OR</b>	0199022	RV2-RV1-RZ-V1	Cylindrical. NBR seals	10	10

## COVER KIT

Type	Part no.	Filter Model	Notes	Pcs. pack	Package
<b>506.0184.000</b>	014.0350.000	70451	-	1	1
<b>506.0186.000</b>	014.0351.000	70452	-	1	1
<b>C70301</b>	014.0352.000	70301 - 70311	-	1	1
<b>C70302</b>	014.0353.000	70302 - 70312	-	1	1
<b>C70303</b>	014.0354.000	70303 - 70313	-	1	1
<b>C70351</b>	014.0355.000	70351	-	1	1
<b>C70370</b>	014.0356.000	70370	-	1	1
<b>C70107</b>	014.0358.000	70107	-	1	1
<b>C70104</b>	014.0364.000	70104	-	1	1
<b>C70101</b>	014.0359.000	70101	-	1	1
<b>C70501</b>	014.0360.000	70501	-	1	1
<b>C70502</b>	014.0361.000	70502	-	1	1
<b>C70503</b>	014.0362.000	70503	-	1	1
<b>C70512</b>	014.0363.000	70504	-	1	1

## BOWL KIT

Type	Part no.	Filter Model	Notes	Pcs. pack	Package
<b>B70450P</b>	014.0400.000	70450P	-	1	1
<b>B70450A</b>	014.0405.000	70450A	-	1	1
<b>B70300P</b>	014.0401.000	70300P - 70350P	-	1	1
<b>B70300A</b>	014.0406.000	70300A - 70350A	-	1	1
<b>B70310P</b>	014.0402.000	70310P - 70370	-	1	1
<b>B70310A</b>	014.0407.000	70310A	-	1	1
<b>B70150</b>	014.0403.000	70150	-	1	1
<b>B70100</b>	014.0409.000	70100	-	1	1
<b>B70500</b>	014.0410.000	70500	-	1	1
<b>B70500T</b>	014.0404.000	70500T/M/GL/NL	-	1	1
<b>TK</b>	0199012	RG2	-	1	10
<b>TK</b>	0199017	RV2-RV1-RZ-V1	-	1	10



## Self-cleaning filters

### 21003



Self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1"x1"x1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>21003/01</b>	003.0040.001	100 µ	1	1
<b>21003/03</b>	003.0040.002	300 µ	1	1
<b>21003/06</b>	003.0040.003	600 µ	1	1

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### 21005



Self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1/2"x1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>21005/01</b>	003.0042.001	100 µ	1	1
<b>21005/03</b>	003.0042.002	300 µ	1	1
<b>21005/06</b>	003.0042.003	600 µ	1	1

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### 21008



Self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1"x1" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>21008/01</b>	003.0043.001	100 µ	1	1
<b>21008/03</b>	003.0043.002	300 µ	1	1
<b>21008/06</b>	003.0043.003	600 µ	1	1

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### 31003



Self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1"x1"x1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>31003/01</b>	003.0050.001	100 µ	1	1
<b>31003/03</b>	003.0050.002	300 µ	1	1
<b>31003/06</b>	003.0050.003	600 µ	1	1

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### 31008



Self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1"x1" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>31008/01</b>	003.0051.001	100 µ	1	1
<b>31008/03</b>	003.0051.002	300 µ	1	1
<b>31008/06</b>	003.0051.003	600 µ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Pcs. pack	Package
1328	015.0040.001	230V 50-60 Hz motor for Mod. 21000 - 31000	1	1
1328/L	015.0040.002	Motor + torque limiter for Mod. 21000 - 31000	1	1
1616	014.0026.000	100 W electronic resistor	1	1
3240	014.0130.001	Shaft seal kit for Mod. 11012, 21000, 31000, 41000	1	1
1494	014.0030.000	Electric motor for Mod. 1328, 1328L, 1329, 1329L	1	1
1339	014.0128.000	Torque limiter for Mod. 1328, 1328L, 1329, 1329L	1	1
1345	014.0031.000	Motor support for torque limiter for Mod. 1328L and 1329L	1	1

**41000**



Self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1.1/2"x1.1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
41000/01	003.0060.001	100 µ	1	1
41000/03	003.0060.002	300 µ	1	1
41000/06	003.0060.003	600 µ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Pcs. pack	Package
1809	014.0017.000	Magnetic insert	1	1
1603	014.0024.000	300W GL resistor, setting 35°C IP65	1	1
1604	014.0025.000	300W NL resistor, setting 70°C IP65	1	1
1329	015.0050.001	230V 50-60 Hz motor for Mod. 41000	1	1
1329/L	015.0050.002	Motor + torque limiter for Mod. 41000	1	1

**51000**



Self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 2"x2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
51000/025	003.0070.001	250 µ	1	1
51000/05	003.0070.002	500 µ	1	1
51000/075	003.0070.003	750 µ	1	1

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**51000F**



Self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. DN50 flanged connections.

Type	Part no.	Filtration	Pcs. pack	Package
51000/025F	003.0071.001	250 µ	1	1
51000/05F	003.0071.002	500 µ	1	1
51000/075F	003.0071.003	750 µ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Pcs. pack	Package
1670	014.0018.000	Magnetic insert	1	1
1603	014.0024.000	300W GL resistor, setting 35°C IP65	1	1
1604	014.0025.000	300W NL resistor, setting 70°C IP65	1	1
1324	015.0060.001	230V 50-60 Hz single-phase motor for Mod. 51000	1	1
1325	015.0060.002	230/380V 50-60 Hz three- phase motor for Mod. 51000	1	1
586	014.0054.000	Wall-mounting bracket	1	1
3240	014.0130.001	Shaft seal kit for Mod. 21000, 31000, 41000	1	1
1494	014.0030.000	Electric motor for Mod. 1328, 1328L, 1329, 1329L	1	1
1339	014.0128.000	Torque limiter for Mod. 1328, 1328L, 1329, 1329L	1	1
1345	014.0031.000	Motor support for torque limiter for Mod. 1328L and 1329L	1	1

## High-pressure self-cleaning filters

### 45000



High-pressure self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 15. 1.1/2"x1.1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
45000/01	003.0090.001	100 µ	1	1
45000/03	003.0090.002	300 µ	1	1
45000/06	003.0090.003	600 µ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Pcs. pack	Package
3370	015.0080.001	230V 50-60 Hz single-phase motor for Mod. 45000	1	1
3371	015.0080.002	230/380V 50-60 Hz three- phase motor for Mod. 45000	1	1
F3361	014.0005.000	Counter-flange kit for Mod. 45000	1	1

### 21005FE



High-pressure self-cleaning filter for diesel and fuel oil with galvanised steel cover and bowl. PN 30. 1/2"x1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
2100501FE	003.0045.101	100 µ	1	1
2100503FE	003.0045.102	300 µ	1	1
2100506FE	003.0045.103	600 µ	1	1

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## 21008FE



High-pressure self-cleaning filter for diesel and fuel oil with galvanised steel cover and bowl. PN 30. 1"x1" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>2100801FE</b>	003.0047.001	100 µ	1	1
<b>2100803FE</b>	003.0047.002	300 µ	1	1
<b>2100806FE</b>	003.0047.003	600 µ	1	1

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## 31008FE



High-pressure self-cleaning filter for diesel and fuel oil with galvanised steel cover and bowl. PN 30. 1"x1" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>3100801FE</b>	003.0052.101	100 µ	1	1
<b>3100803FE</b>	003.0052.102	300 µ	1	1
<b>3100806FE</b>	003.0052.103	600 µ	1	1

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## Heated self-cleaning filters

### 21005/RE



Heated self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1/2"x 1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>21005/01RE</b>	003.0042.004	100 µ	1	1
<b>21005/03RE</b>	003.0042.005	300 µ	1	1
<b>21005/06RE</b>	003.0042.006	600 µ	1	1

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### 31003/RE



Heated self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1"x1"x 1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>31003/01RE</b>	003.0050.004	100 µ	1	1
<b>31003/03RE</b>	003.0050.005	300 µ	1	1
<b>31003/06RE</b>	003.0050.006	600 µ	1	1

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### 31008/RE



Heated self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1"x1" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>31008/01RE</b>	003.0051.004	100 µ	1	1
<b>31008/03RE</b>	003.0051.005	300 µ	1	1
<b>31008/06RE</b>	003.0051.006	600 µ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Pcs. pack	Package
1328	015.0040.001	230 V 50-60 Hz motor for Mod. 21000 - 31000	1	1
1328/L	015.0040.002	Motor + torque limiter for Mod. 21000 - 31000	1	1
1010	014.0020.000	100 W electronic resistor	1	1

**41000NL**



Heated self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 1.1/2"x1.1/2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
41000/01NL	003.0060.015	100 µ	1	1
41000/03NL	003.0060.008	300 µ	1	1
41000/06NL	003.0060.016	600 µ	1	1

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**PARTS AND ACCESSORIES**

Type	Part no.	Description	Pcs. pack	Package
1809	014.0017.000	Magnetic insert	1	1
1603	014.0024.000	300W GL resistor, setting 35°C IP65	1	1
1604	014.0025.000	300W NL resistor, setting 70°C IP65	1	1
1329	015.0050.001	230V 50-60 Hz motor for Mod. 41000	1	1
1329/L	015.0050.002	Motor + torque limiter for Mod. 41000	1	1
3240	014.0130.001	Shaft seal kit for Mod. 21000, 31000, 41000	1	1
1494	014.0030.000	Electric motor for Mod.1328, 1328L, 1329, 1329L	1	1
1339	014.0128.000	Torque limiter for Mod. 1328, 1328L, 1329, 1329L	1	1
1345	014.0031.000	Motor support for torque limiter for Mod. 1328L and 1329L	1	1

**51000NL**



Heated self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. 2"x2" threaded connections.

Type	Part no.	Filtration	Pcs. pack	Package
51000/025NL	003.0070.022	250 µ	1	1
51000/05NL	003.0070.023	500 µ	1	1
51000/075NL	003.0070.024	750 µ	1	1

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## 51000FNL



Heated self-cleaning filter for diesel and fuel oil with aluminium cover and bowl. PN 4. DN50 flanged connections.

Type	Part no.	Filtration	Pcs. pack	Package
<b>51000/025FNL</b>	003.0071.027	250 µ	1	1
<b>51000/05FNL</b>	003.0071.028	500 µ	1	1
<b>51000/075FNL</b>	003.0071.029	750 µ	1	1

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## PARTS AND ACCESSORIES

Type	Part no.	Description	Pcs. pack	Package
<b>1670</b>	014.0018.000	Magnetic insert	1	1
<b>1603</b>	014.0024.000	300W GL resistor, setting 35°C IP65	1	1
<b>1604</b>	014.0025.000	300W NL resistor, setting 70°C IP65	1	1
<b>1324</b>	015.0060.001	230V 50-60 Hz single-phase motor for Mod. 51000	1	1
<b>1325</b>	015.0060.002	230/380V 50-60 Hz three-phase motor for Mod. 51000	1	1
<b>586</b>	014.0054.000	Wall-mounting bracket	1	1

## Waste oil filter

## FOEX



Filter for waste oil, comprising magnetic strainer filter with rating of 300 microns and heated self-cleaning filter with rating of 100 microns. PN 4.

Type	Part no.	Description	Pcs. pack	Package
<b>FOEX25</b>	003.0080.001	70501/03M + 31008/01RE 1" connections	1	1
<b>FOEX40</b>	003.0081.001	70503/03M + 41000/01NL 1.1/2" connections	1	1
<b>FOEX50F</b>	003.0083.001	70700/03FM + 51000/0 25NL DN50 connections	1	1

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## PARTS AND ACCESSORIES

Type	Part no.	Description	Pcs. pack	Package
<b>1328</b>	015.0040.001	230V 50-60 Hz motor for Mod. 31000	1	1
<b>1328/L</b>	015.0040.002	230V 50-60 Hz motor + torque limiter for Mod. 31000	1	1
<b>1329</b>	015.0050.001	230V 50-60 Hz single-phase motor for Mod. 41000	1	1
<b>1329/L</b>	015.0050.002	Motor + torque limiter for Mod. 41000	1	1
<b>1324</b>	015.0060.001	230V 50-60 Hz single-phase motor for Mod. 51000	1	1
<b>1325</b>	015.0060.002	230/380V 50-60 Hz three-phase motor Mod. 51000	1	1


**PARTS FOR SELF-CLEANING FILTERS**
**U11012**

Part for self-cleaning filter, comprising cover and filter element.

Type	Part no.	Type - Filtration	Pcs. pack	Package
U11012/01	004.0030.001	11012 / 21005RE - 100 $\mu$	1	1
U11012/03	004.0030.002	11012 / 21005RE - 300 $\mu$	1	1
U11012/06	004.0030.003	11012 / 21005RE - 600 $\mu$	1	1


**U21002**

Ricambio per filtro autopulente formato da coperchio e gruppo lamellare.

Type	Part no.	Type - Filtration	Pcs. pack	Package
U21002/01	004.0041.001	21005 - 100 $\mu$	1	1
U21002/03	004.0041.002	21005 - 300 $\mu$	1	1
U21002/06	004.0041.003	21005 - 600 $\mu$	1	1


**U21008**

Ricambio per filtro autopulente formato da coperchio e gruppo lamellare.

Type	Part no.	Type - Filtration	Pcs. pack	Package
U21008/01	004.0040.001	21003/21008/31003RE/31008RE - 100 $\mu$	1	1
U21008/03	004.0040.002	21003/21008/31003RE/31008RE - 300 $\mu$	1	1
U21008/06	004.0040.003	21003/21008/31003RE/31008RE - 600 $\mu$	1	1


**U31000**

Part for self-cleaning filter, comprising cover and filter element.

Type	Part no.	Type - Filtration	Pcs. pack	Package
U31000/01	004.0050.001	31003 / 31008 - 100 $\mu$	1	1
U31000/03	004.0050.002	31003 / 31008 - 300 $\mu$	1	1
U31000/06	004.0050.003	31003 / 31008 - 600 $\mu$	1	1



**U41000**

Part for self-cleaning filter, comprising cover and filter element.

Type	Part no.	Type - Filtration	Pcs. pack	Package
U41000/01	004.0060.001	41000/41000RB/41000NL - 100 μ	1	1
U41000/03	004.0060.002	41000/41000RB/41000NL - 300 μ	1	1
U41000/06	004.0060.003	41000/41000RB/41000NL - 600 μ	1	1



**U45000**

Part for self-cleaning filter, comprising cover and filter element.

Type	Part no.	Type - Filtration	Pcs. pack	Package
U45000/01	004.0080.001	45000 - 100 μ	1	1
U45000/03	004.0080.002	45000 - 300 μ	1	1
U45000/06	004.0080.003	45000 - 600 μ	1	1



**U51000**

Part for self-cleaning filter, comprising cover and filter element.

Type	Part no.	Type - Filtration	Pcs. pack	Package
U51000/025	004.0070.001	51000/51000RB/51000N- L/51000F/51000FRB/51000FNL - 250 μ	1	1
U51000/05	004.0070.002	51000/51000RB/51000N- L/51000F/51000FRB/51000FNL - 500 μ	1	1
U51000/75	004.0070.003	51000/51000RB/51000N- L/51000F/51000FRB/51000FNL - 750 μ	1	1

**GASKET KIT**

Type	Part no.	Type - Material	Pcs. pack	Package
21018	014.0001.000	11012/21000/31000 - CENTELLEN	1	1
OR231	014.0002.001	41000 - NBR	1	1
OR8775	014.0076.000	51000 - NBR	1	1
OR4350V	014.0004.000	45000 - VITON	1	1



## System components

### GS1FF



Normally closed (NC) automatic solenoid valve for automatic diesel shut-off in burner fuel lines. For diesel and fuel oil applications with threaded filters. Quick opening and closing. Brass body.

Type	Part no.	Connections - Power supply	Pcs. pack	Package
<b>GS1FF</b>	005.0070.001	1/8" - Power supply 230 VAC	1	1

### M10M15



Normally closed (NC) solenoid valve for automatic diesel shut-off in burner fuel lines. For diesel and fuel oil applications with threaded filters. Brass body. IP rating: IP65. Ambient temperature: -5 to 60°C. PN 4.

Type	Part no.	Connections - Power supply	Pcs. pack	Package
<b>M10M15</b>	0150210	3/8" - Power supply 230 VAC	1	25
<b>M10M15</b>	0150215	1/2" - Power supply 230 VAC	1	25

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### SVG



Normally closed automatic solenoid valve for diesel and fuel oil with threaded connections. Quick opening and closing. Aluminium body. Protection rating IP65. Room temperature: -10 to 60°C. PN.8.

Type	Part no.	Connections - Power supply	Pcs. pack	Package
<b>SV20</b>	005.0140.001	3/4" - Power supply 230 VAC	1	1
<b>SV20</b>	005.0140.002	3/4" - Power supply 24 VAC/VDC	1	1
<b>SV20</b>	005.0140.003	3/4" - Power supply 12 VDC	1	1
<b>SV25</b>	005.0141.001	1" - Power supply 230 VAC	1	1
<b>SV25</b>	005.0141.002	1" - Power supply 24 VAC/VDC	1	1
<b>SV25</b>	005.0141.003	1" - Power supply 12 VDC	1	1
<b>SV32</b>	005.0142.001	1.1/4" - Power supply 230 VAC	1	1
<b>SV32</b>	005.0142.002	1.1/4" - Power supply 24 VAC/VDC	1	1
<b>SV32</b>	005.0142.003	1.1/4" - Power supply 12 VDC	1	1
<b>SV40</b>	005.0143.001	1.1/2" - Power supply 230 VAC	1	1
<b>SV40</b>	005.0143.002	1.1/2" - Power supply 24 VAC/VDC	1	1
<b>SV40</b>	005.0143.003	1.1/2" - Power supply 12 VDC	1	1
<b>SV50</b>	005.0144.001	2" - Power supply 230 VAC	1	1
<b>SV50</b>	005.0144.002	2" - Power supply 24 VAC/VDC	1	1
<b>SV50</b>	005.0144.003	2" - Power supply 12 VDC	1	1

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**PRO/PROH**

Pressure regulator for diesel and oil. Brass body. Max. temperature: 250°C.



Type	Part no.	Connections - Adjustment - Flow rate	Pcs. pack	Package
<b>PRO10</b>	505.0260.990	3/8" - Adjustment 1-5 bar. Flow rate 600 l/h	1	1
<b>PRO20</b>	505.0261.990	3/4" - Adjustment 1-5 bar. Flow rate 2,000 l/h	1	1
<b>PRO25</b>	505.0262.990	1" - Adjustment 1-5 bar. Flow rate 6,000 l/h	1	1
<b>PRO32</b>	505.0263.990	1.1/4" - Adjustment 1-5 bar. Flow rate 10,000 l/h	1	1
<b>PROH10</b>	505.0264.990	3/8" - Adjustment 5-25 bar. Flow rate 1,000 l/h	1	1
<b>PROH20</b>	505.0265.990	3/4" - Adjustment 5-25 bar. Flow rate 2,500 l/h	1	1

Dimensions on page 397

**PARTS FOR DIESEL SOLENOID VALVES**

**PARTS AND ACCESSORIES**

Type	Part no.	Description	Pcs. pack	Package
<b>922</b>	014.0325.001	230V 50-60Hz coil for Mod. GS1FF	1	1
<b>511.0216.990</b>	014.0304.001	230V 50-60Hz coil for Mod. SV	1	1
<b>511.0218.990</b>	014.0313.001	24V AC/DC coil for Mod. SV	1	1
<b>511.0217.990</b>	014.0322.001	12VDC coil for Mod. SV	1	1
<b>2104</b>	014.0277.001	230V RAC connector for Mod. SV	1	1
<b>226</b>	014.0279.001	24V AC/DC RAC connector for Mod. SV	1	1
<b>2105</b>	014.0275.001	12VDC RAC connector for Mod. SV	1	1

## Level indicators, probes and accessories

### TLM - TELEVAR



Universal remote pneumatic level indicator. For tanks of any shape and height between 900 and 3000 mm (item 103) and between 3000 and 5000 mm (item 105). Standard dial in percentage volume for cylindrical tanks. Tank connection suitable for pipe with external diameter of 6mm. Case with 3 external mounting slots.

Type	Part no.	Description	Pcs. pack	Package
<b>TLM</b>	0101103	Max tank height 3m	1	10
<b>TLM</b>	0101105	Tank height 3 to 5m	1	10

Dimensions on page 398

### PE50



Polythene hose for connecting TELEVAR remote indicator to G20 Series diesel probe. Hose Ø 4x6 mm. Roll length: 50 metres.

Type	Part no.	Description	Pcs. pack	Package
<b>PE50</b>	0105150	50m roll	50	1

### G20



Diesel probe. Fitted on tank for connection to TELEVAR remote indicator. 1" metal fitting with connection for 6 mm hose (external Ø). Perbunan pick-up tube with bottom spacer.

Type	Part no.	Connections - Length	Pcs. pack	Package
<b>G20</b>	0104120	1" - 220cm	1	10
<b>G20</b>	0104130	1" - 320cm	1	5
<b>G20</b>	0104150	1" - 520cm	1	5

### MECAV



Universal mechanical level indicator with vertical reading, complete with seal for tight tank connection. Set by means of external screw. High-impact plastic case and cover. Measuring range: 0-2000 mm.

Type	Part no.	Connections	Pcs. pack	Package
<b>MECAV</b>	0103100	1.1/2"	1	20

Dimensions on page 398

### MECAH



Universal mechanical level indicator with horizontal reading, complete with seal for tight tank connection. Set by means of external screw. High-impact plastic case and cover. Measuring range: 0-2000 mm.

Type	Part no.	Connections	Pcs. pack	Package
<b>MECAH</b>	0103200	1.1/2"	1	20

Dimensions on page 398

## RDA



Double angle fitting for tanks, complete with kit of fittings for connection to Ø 6x8, 8x10 and 10x12 mm pipes. CW617N brass body. 1”M tank connection. 3/8”F suction and return connection.

Type	Part no.	Connections	Pcs. pack	Package
<b>RDA</b>	0120120	1” M x 3/8” F	1	20

## VRU



Check valve for diesel lines, complete with kit of fittings for connection to Ø 6x8, 8x10 and 10x12 mm pipes. CW617N brass body. Pressure drop at 50 l/h: 11 mbar. Pressure drop at 100 l/h: 18 mbar.

Type	Part no.	Connections	Pcs. pack	Package
<b>VRU</b>	0120140	3/8” F	1	50

## VFU



Foot valve for diesel tanks, complete with kit of fittings for connection to Ø 6x8, 8x10 and 10x12 mm pipes. CW617N brass body. Plastic bottom spacer.

Type	Part no.	Connections	Pcs. pack	Package
<b>VFU</b>	0120160	3/8” F	1	50

## Pick-up assemblies

### MB - MULTIBLOC



Multi-function pick-up unit with counterweight for connection between fuel tank and burner. Combines 5 functions: burner suction and return, check valve, quick shut-off lever and connection for TELEVAR remote level indicator, complete with kit of fittings. CW617N brass body. Perbunan pick-up pipes. 1”M tank connection. 3/8”F suction and return connections. TELEVAR indicator, Ø 4x6 mm pipe.

Type	Part no.	Connections - Length	Pcs. pack	Package
<b>MB</b>	0108100	1” M x 3/8” F - 220cm	1	25
<b>MB</b>	0108500	1” M x 3/8” F - 320cm	1	10

Dimensions on page 398

### MKF200



Multi-function pick-up unit, as per MB but with overlapping 3/8”M connections and metal bushes for Ø 8x10 mm pipe. The body is fitted with an additional 3/8”M connection for suction from a second bank-mounted tank. The return pipe from the burner is routed all the way to the bottom of the tank.

Type	Part no.	Connections - Length	Pcs. pack	Package
<b>MKF200</b>	0115110	1” - 200 cm	1	10

Dimensions on page 398

## TECAL



PVC-clad aluminium pipe. Mainly for use as a connection line between the fuel tank (diesel) and burner. The cladding serves to protect the pipe against chemicals and humidity from the outdoor environment. Leak tested at 30 bar (before cladding with PVC). PVC cladding (0.75 mm thick).

Type	Part no.	Connections - Length	Pcs. pack	Package
<b>TECAL</b>	0701210	internal Ø 8 - external Ø 10 - 50m roll	50m	
<b>TECAL</b>	0701212	internal Ø 10 - external Ø 12 - 50m roll	50m	

## Fittings

### DM



Straight male connector, double taper. Complete with cap and double taper teflon ferrule. CW614N brass body and cap. Maximum pressure: 10 bar. Max. temperature: 110°C.

Type	Part no.	Connections	Pcs. pack	Package
<b>DM</b>	0702210	3/8" x 10	10	10
<b>DM</b>	0702212	3/8" x 12	10	10
<b>DM</b>	0702310	1/2" x 10	10	10
<b>DM</b>	0702312	1/2" x 12	10	10

### DI



Straight bulkhead fitting, double taper-double taper. Complete with 2 caps and 2 teflon ferrules. Specifications as per DM Series fitting.

Type	Part no.	Connections	Pcs. pack	Package
<b>DI</b>	0703010	10 x 10	10	10
<b>DI</b>	0703012	12 x 12	10	10

### DF



Straight female connector, double taper. Complete with cap and teflon ferrule. Specifications as per DM Series fitting.

Type	Part no.	Connections	Pcs. pack	Package
<b>DF</b>	0704210	3/8" x 10	10	10
<b>DF</b>	0704212	3/8" x 12	10	10
<b>DF</b>	0704310	1/2" x 10	10	10
<b>DF</b>	0704312	1/2" x 12	10	10

## Diesel safety

### SIC10 - SICUREX



Diaphragm valve for automatic diesel shut-off in burner fuel lines. Replaces solenoid valve M10 M15. Die-cast aluminium body. 3/8" F connections and bushes for Ø 6x8, 8x10 and 10x12mm mm pipes. Opening negative pressure: 50 mbar.

Type	Part no.	Connections	Pcs. pack	Package
<b>SIC10</b>	0150110	3/8"	1	20

Dimensions on page 398

### SW90N



Load limiting valve for diesel tanks. Die-cast aluminium body. Oil-resistant plastic float switch. 2" M bottom connection and 2" F top connection.

Type	Part no.	Connections	Pcs. pack	Package
<b>SW90N</b>	0152150	2" MF	1	1

### LACPT



Fire-safety lever for cable-operation of Multibloc and RIS shut-off valves. Complete with transparent protective cover. Base plate and red lever made of special plastic. Complete with 10m of PVC-clad flexible steel cable, 3 intermediate slots and 3 cable clamps for connection of ends. The lever must be located outside the boiler room.

Type	Part no.	Pcs. pack	Package
<b>LACPT</b>	0153130	1	1

Dimensions on page 398

### RIS



Diesel shut-off valve with pull-out lever remotely controlled by LACPT Series cable and fire-safety lever, complete with kit of fittings for Ø 6x8, 8x10 and 10x12mm pipes. CW brass body.

Type	Part no.	Connections	Pcs. pack	Package
<b>RIS</b>	0120100	3/8" F	1	1

Dimensions on page 398

### CL50



PVC-clad, flexible, steel-braid cable for operating shut-off devices by means of a fire-safety lever. Sold in 50m rolls with 10 cable clamps.

Type	Part no.	Description	Pcs. pack	Package
<b>CL50</b>	0154050	cable Ø 1.87mm	1 (50 metres)	

### TCS



Tank filler cap with slots for padlock and chain. Tropicalised zamak body and cover. 2" F connection to tank. 2.1/2" M connection for filler pipe.

Type	Part no.	Connections	Pcs. pack	Package
<b>TCS</b>	0155100	2" F x 2.1/2" M	1	90

## CTS



Cap for tank vent pipe, without thread, with fixed spacers for adaptation to press-fit pipes, with fastening screws. High-impact plastic body, metal mesh.

Type	Part no.	Connections	Pcs. pack	Package
<b>CTS</b>	0160125	1" - 1.1/4"	10	10
<b>CTS</b>	0160140	1.1/2" - 2"	10	10

## Leak detector systems

### LAG14 ER



Leak detector system for double-skin tanks designed for flammable liquid storage, consisting of electronic control unit with visual (LED) and acoustic alarm indicator and additional output contact, anti-static tank for leak detector fluid that can be installed in hazard zones and intrinsic safety probe. Power supply 230 V, 50 Hz.

Maximum probe connection distance 50m with shielded cable. Suitable for in-ground tanks with a capacity of up to approximately 60,000 litres and for above-ground tanks with a capacity of up to approximately 20,000 litres.

To fit the detector system, use the complete set of LAGMS Series accessories.

**Compliant with Directives LVD 2014/35/EU - EMC 2014/30/EU - ATEX 2014/34/EU. ATEX classification: G EEx ia IIC / EEx ia IIB.**

Type	Part no.	Description	Pcs. pack	Package
<b>LAG 14 ER</b>	0190150	Complete control unit	1	1
<b>BA14</b>	0191006	Additional tank	1	1

Dimensions on page 398

### LAGMS



Complete set of accessories for fitting the LAG 14 ER Series leak detector system on double-skin tanks, consisting of threaded nipple (1") for connection to tank, complete with EPDM pipe, fittings for connection with the leak detector fluid tank, threaded nipple (1") with test and bleed valve.

Type	Part no.	Connections	Pcs. pack	Package
<b>LAGMS</b>	0196150	-	1	1

#### TECHNICAL NOTE - Leak detector operation

The LAG 14 ER Series leak detector monitors the intermediate chamber (control chamber) of the tank, filled with detector fluid, and detects any leakage onto the inner or outer skin. The device consists of an indicator device (electronic control unit) capable of triggering a visual and acoustic alarm, and an indicator fluid tank with transducer (probe) connected to the tank's control chamber by a pipe.

Must be used exclusively with the same type of fluid as stored in the control chamber of the main tank. The fluid must be BAM-certified.

Examples of suitable BAM certified fluids:

Glyco Shell 1	(Deutsche Shell AG - Hamburg - D)
Antifrogen N	(Hoechst AG - Gendorf - D)
Glymin NF	(BASF Ludwigshafen - D)
Ilexan	(Hüls AG - Marl - D)

and other equivalent fluids with minimum electrical conductivity of 0.05 µS/cm.

## Nozzles

### NOZZLES



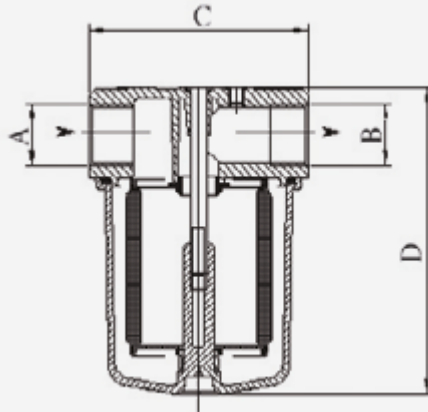
Burner nozzles, individually packaged in boxes of 12. Diesel and fuel oil.  
**EN 293 compliant.**

Type	Cone	Flow rate	Pcs. pack	Package
<b>R</b>	Solid cone 45° - 60° - 80°	Flow rate 0.40 gph to 0.65 gph	12	1
<b>R</b>	Solid cone 45° - 60° - 80°	Flow rate 0.70 gph to 3.50 gph	12	1
<b>NS</b>	Hollow cone 45° - 60° - 80°	Flow rate 0.50 gph to 0.65 gph	12	1
<b>NS</b>	Hollow cone 45° - 60° - 80°	Flow rate 0.70 gph to 2.00 gph	12	1
<b>AR</b>	Special solid cone 45° - 60° - 80°	Flow rate 0.50 gph to 0.65 gph	12	1
<b>AR</b>	Special solid cone 45° - 60° - 80°	Flow rate 0.70 gph to 3.50 gph	12	1
<b>PLP</b>	Semi-solid cone 45° - 60° - 80°	Flow rate 2.25 gph to 50.00 gph	12	1
<b>PL</b>	Hollow cone 45° - 60° - 80°	Flow rate 2.25 gph to 50.00 gph	12	1



## Overall dimensions

### 70450 - 70450A - 70450P

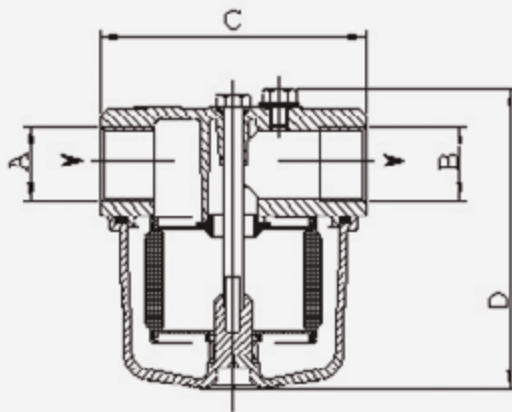


Note:  
measurement "D" in the table is divided  
for versions with aluminium bowl (Al.) and  
versions with transparent bowl (Pl.).

Item	Dimensions						Filtration rating	Filtration area cm <sup>2</sup>			
	A	B	C	D	D	E		P	G	L	
	A - B: UNI-ISO 7/1 threads C - D - E: dimensions in mm							Microns **			
				Al.	Pl.						
70451 *	Rp 3/8"	Rp 3/8"	61	75	75	-	15 ***				
70452 *	Rp 1/4"	Rp 1/4"	61	75	75	-	60 - 100	190	50	28	

\* These models are available with transparent bowl  
\*\* Standard filtration rating (other ratings available to order)  
P - \*\*\*: paper filter  
G: pleated steel cartridge  
L: smooth steel cartridge

### 70300A - 70300P



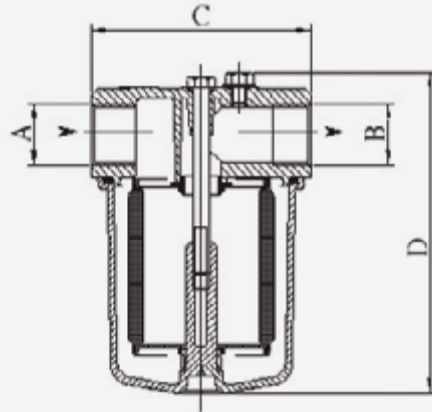
Note:  
measurement "D" in the table is divided  
for versions with aluminium bowl (Al.) and  
versions with transparent bowl (Pl.).

Item	Dimensions						Filtration rating	Filtration area cm <sup>2</sup>			
	A	B	C	D	D	E		P	G	L	
	A - B: UNI-ISO 7/1 threads C - D - E: dimensions in mm							Microns **			
				Al.	Pl.						
70301 *	Rp 3/8"	Rp 3/8"	81	85	89	-	15 ***				
70302 *	Rp 1/2"	Rp 1/2"	81	85	89	-	60 - 100	360	85	-	
70303 *	Rp 1/4"	Rp 1/4"	81	85	89	-					

\* These models are available with transparent bowl  
\*\* Standard filtration rating (other ratings available to order)  
P - \*\*\*: paper filter  
G: pleated steel cartridge

## Overall dimensions

### 70310- 70310A- - 70310P

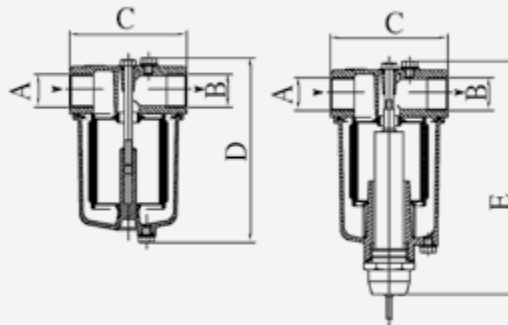


Note:  
measurement "D" in the table is divided  
for versions with aluminium bowl (Al.)  
and versions with transparent bowl (Pl.).

Item	Dimensions						Filtration rating	Filtration area cm <sup>2</sup>		
	A	B	C	D Al.	D Pl.	E		P	G	L
70311 *	Rp 3/8"	Rp 3/8"	81	117	140	-	15 *** 60 - 100 - 300	750	185	-
70312 *	Rp 1/2"	Rp 1/2"	81	117	140	-				
70313 *	Rp 1/4"	Rp 1/4"	81	117	140	-				

\* These models are available with transparent bowl  
\*\* Standard filtration rating (other ratings available to order)  
P - \*\*\*: paper filter  
G: pleated steel cartridge

### 70100 - 70150

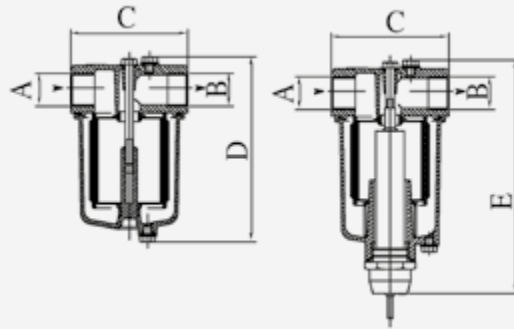


Item	Dimensions						Filtration rating	Filtration area cm <sup>2</sup>		
	A	B	C	D Al.	D Pl.	E		P	G	L
70101	Rp 1"	Rp 1"	120	175	N/A	-	60 100 - 300	-	330	-
70104	Rp 3/4"	Rp 3/4"	120	175	N/A	-				
70107	Rp 1/2"	Rp 1/2"	120	175	N/A	-				
70151 NL/GL	Rp 1"	Rp 1"	120	-	N/A	235				
70154 NL/GL	Rp 3/4"	Rp 3/4"	120	-	N/A	235				
70157 NL/GL	Rp 1/2"	Rp 1/2"	120	-	N/A	235				
70151 M	Rp 1"	Rp 1"	120	-	N/A	205				
70154 M	Rp 3/4"	Rp 3/4"	120	-	N/A	205				
70157 M	Rp 1/2"	Rp 1/2"	120	-	N/A	205				

\*\* Standard filtration rating (other ratings available to order)  
P - \*\*\*: paper filter  
G: pleated steel cartridge

## Overall dimensions

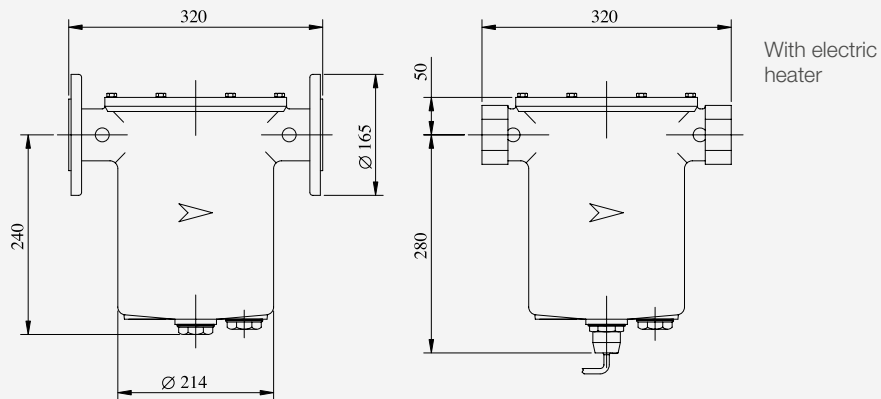
### 70500



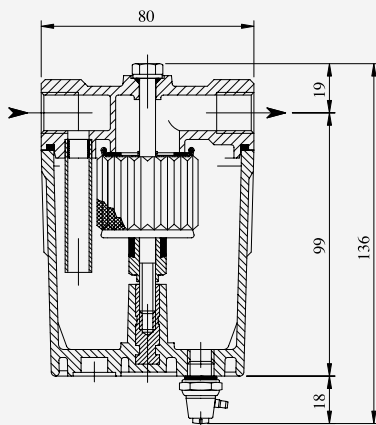
Item	Dimensions						Filtration rating		Filtration area cm <sup>2</sup>	
	A	B	C	D Al.	D Pl.	E	Microns **	P	G	L
70501	Rp 1"	Rp 1"	190	255	N/A	-	60 100 - 300	-	820	-
70502	Rp 1.1/4"	Rp 1.1/4"	190	255	N/A	-				
70503	Rp 1.1/2"	Rp 1.1/2"	190	255	N/A	-				
70504	Rp 2"	Rp 2"	182	275	N/A	-				
70501 NL/GL/M/NLM/GLM	Rp 1"	Rp 1"	190	-	N/A	300				
70502 NL/GL/M/NLM/GLM	Rp 1.1/4"	Rp 1.1/4"	190	-	N/A	300				
70503 NL/GL/M/NLM/GLM	Rp 1.1/2"	Rp 1.1/2"	190	-	N/A	300				
70504 NL/GL/M/NLM/GLM	Rp 2"	Rp 2"	182	-	N/A	220				

\*\* Standard filtration rating (other ratings available to order).  
G: pleated steel cartridge.

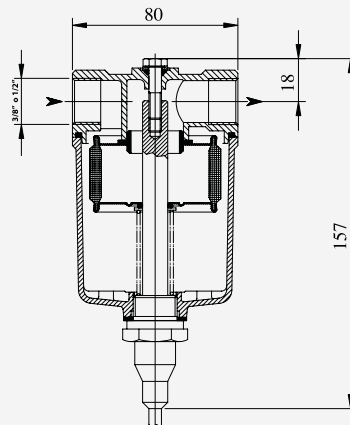
### 70700 - 70700F



### 70370

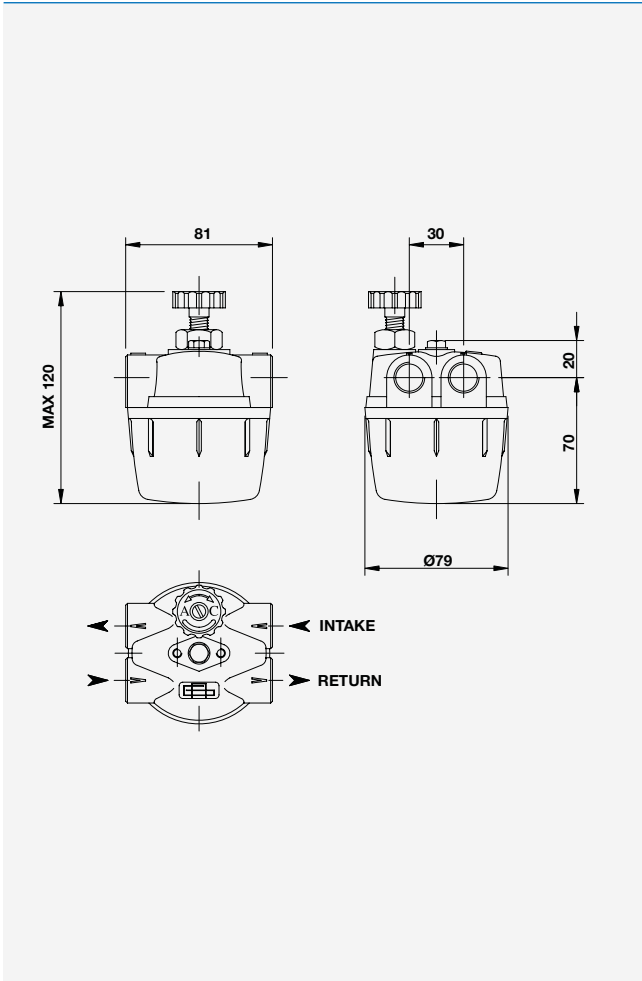


### 70371RE - 70372RE

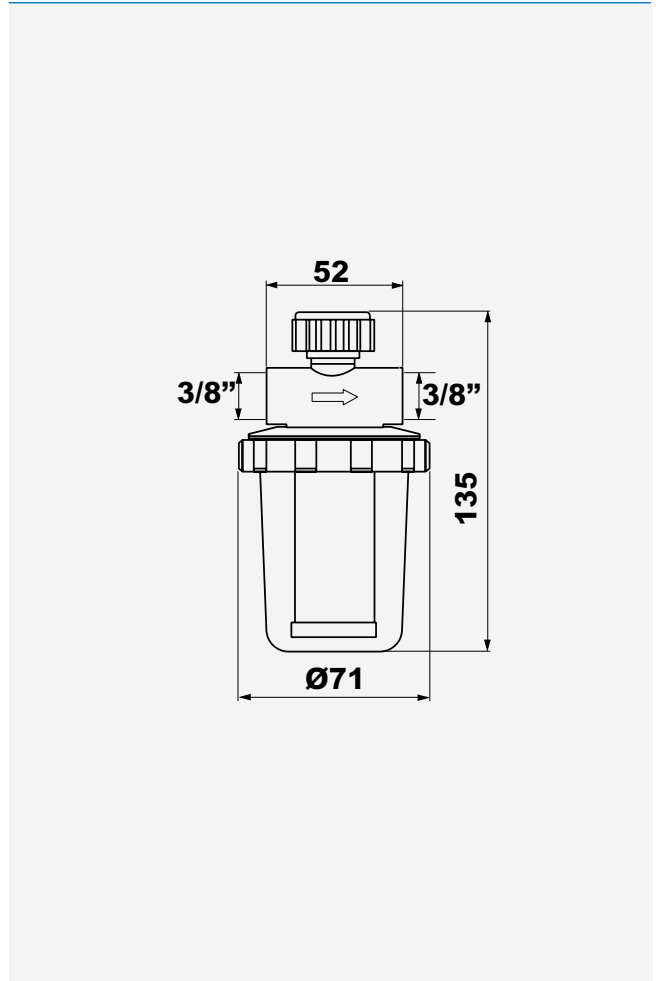


## Overall dimensions

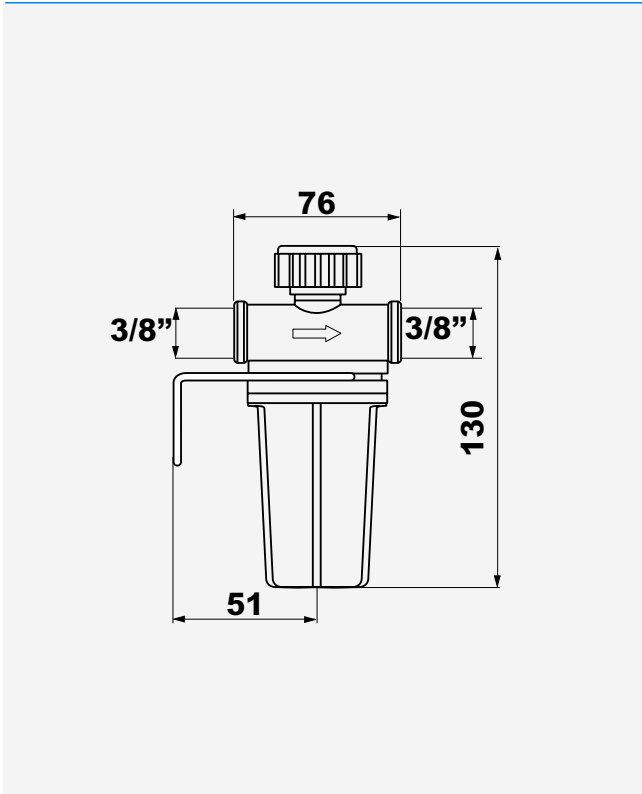
70350- 70351A- - 70351P



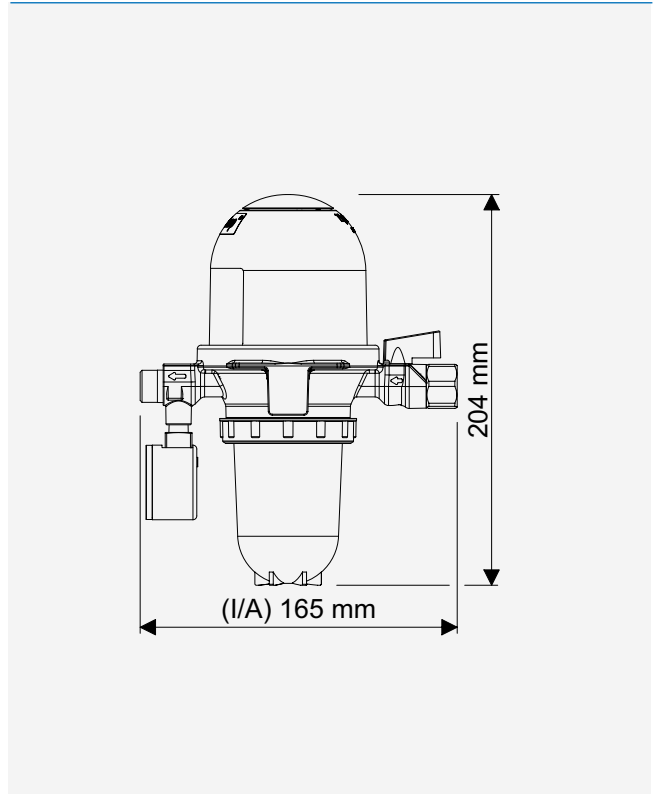
RG2



RV2/RV1/RZ/V1

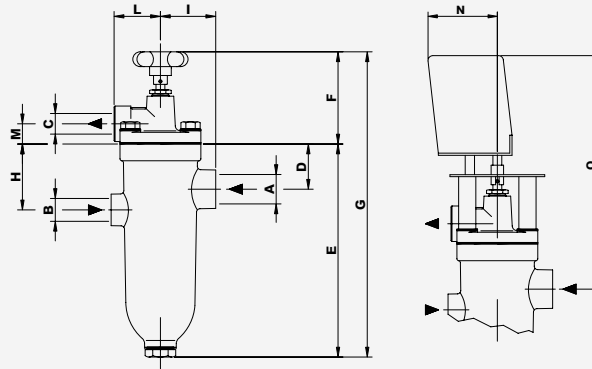


TC3 110A



## Overall dimensions

### 21000 - 31000



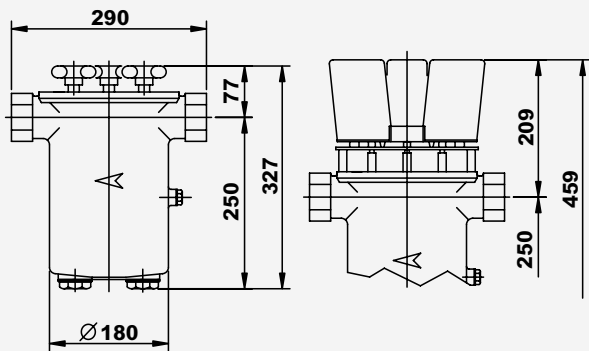
**CONNECTIONS**

- A - inlet
- B - return
- C - outlet

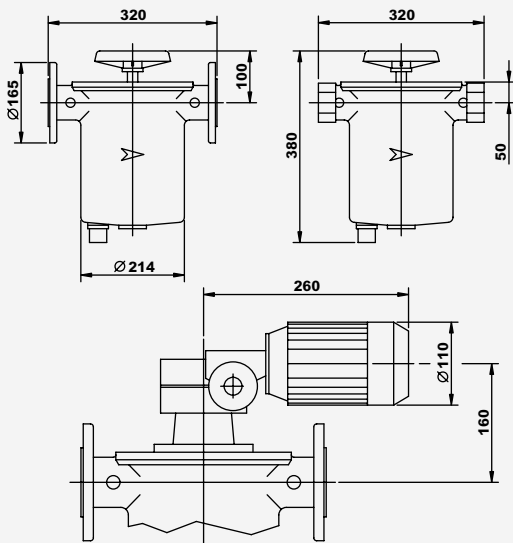
With electric motor.

Type	A	B	C	D	E	F	G	H	I	L	M	N	O
21003	Rp 1"	Rp 1/2"	Rp 1"										
21005	Rp 1/2"	-	Rp 1/2"	28	185	92	277	46	55	60	24	85	255
21008	Rp 1"	-	Rp 1"										
31003	Rp 1"	Rp 1/2"	Rp 1"	28	273	92	365	46	55	60	24	85	255
31008	Rp 1"	-	Rp 1"										

### 41000 - 41000NL

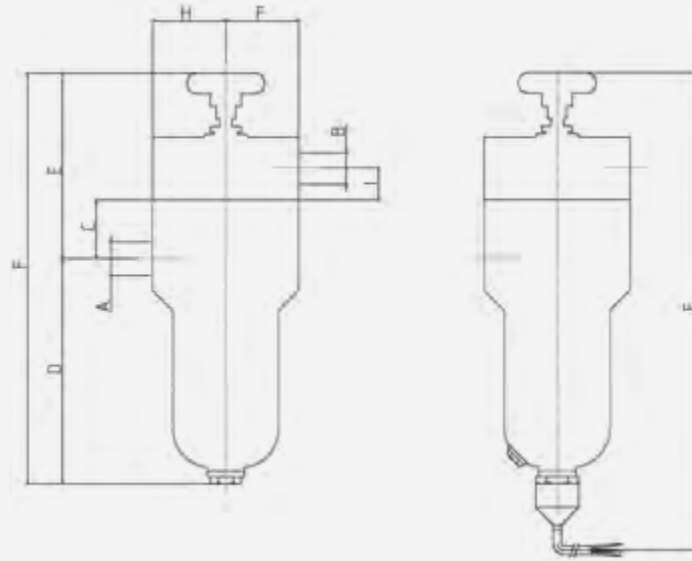


### 51000 - 51000NL - 51000FNL



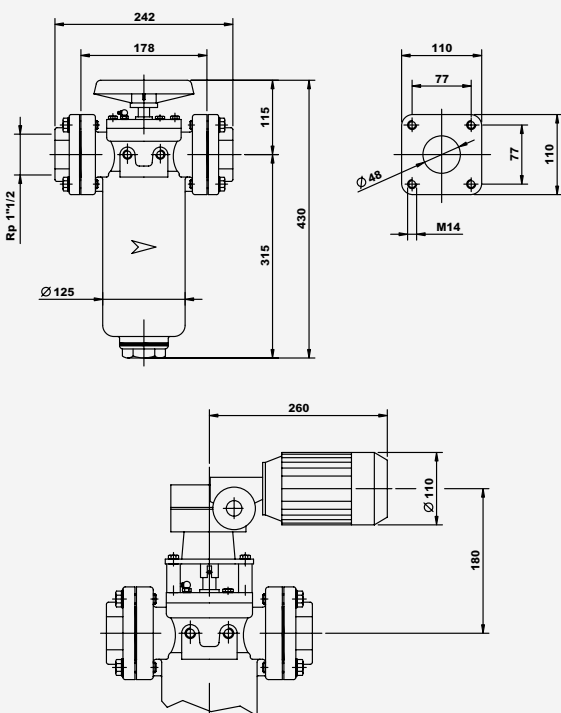
## Overall dimensions

### 21000FE - 31000FE

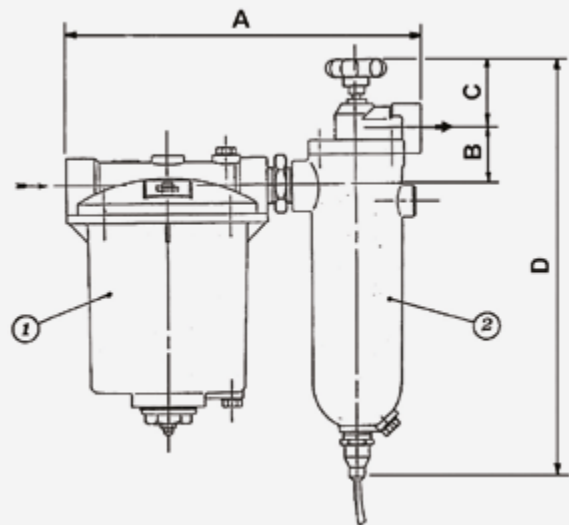


Type	A	B	C	D	E	F	G	H	I
21005FE	Rp 1/2"	Rp 1/2"	35	206	87	293	53	65	17
21008FE	Rp 1"	Rp 1"	35	206	87	293	53	74	17
31008FE	Rp 1"	Rp 1"	42	290	92	381	53	74	23
21005FERE	Rp 1/2"	Rp 1/2"	35	266	87	353	53	74	17
21008FERE	Rp 1"	Rp 1"	35	266	87	353	53	74	17
31008FERE	Rp 1"	Rp 1"	42	350	92	441	53	74	23

### 45000



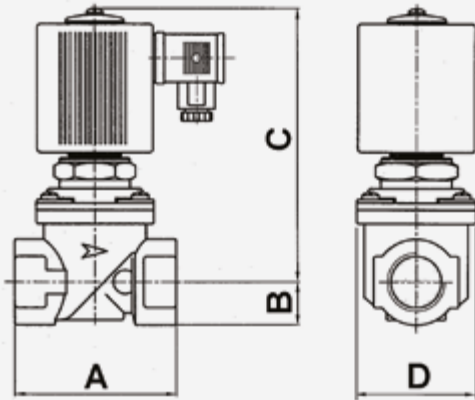
### FOEX



Type	A	B	C	D
FOEX25	340	52	68	395
FOEX40	506	-	-	353
FOEX50F	642	-	-	378

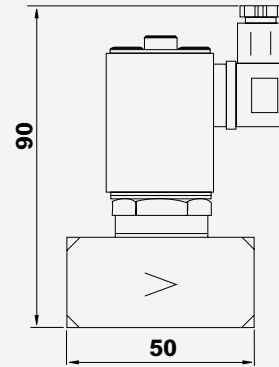
## Overall dimensions

### SVG

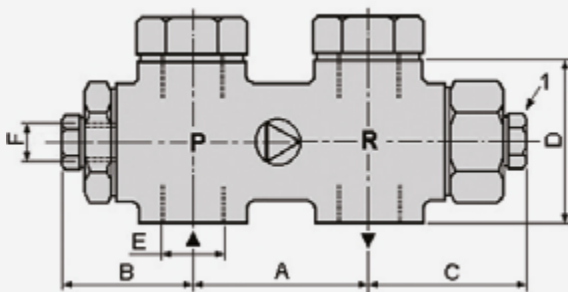


Type	Rp 3/4"	Rp 1"	Rp 1.1/4"	Rp 1.1/2"	Rp 2"
Mod.	SV20	SV25	SV32	SV40	SV50
A	96	96	154	154	173
B	25	25	31	31	39
C	160	160	188	188	191
D	70	70	105	105	127

### M10 M15



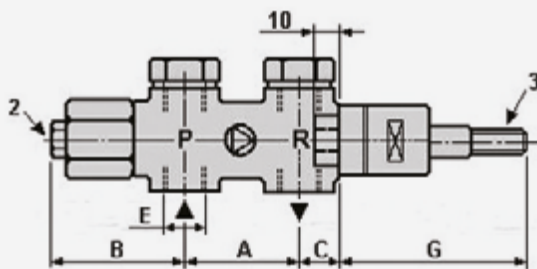
## PRO - PROH



F: pressure gauge connection

#### Mod. PRO

To adjust the pressure, turn the screw under cap 1. Turn clockwise to increase the pressure and anticlockwise to reduce it.



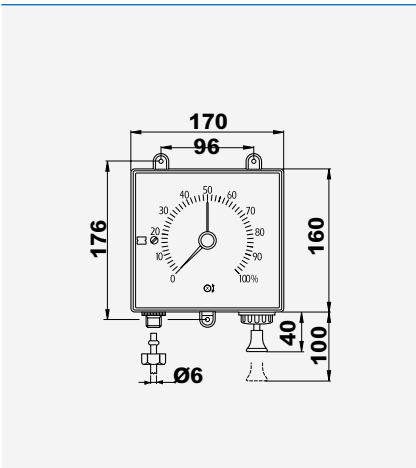
#### Mod. PROH

To adjust the minimum, turn the screw under cap 2. Modulation: stroke 8 - 9 mm (3).

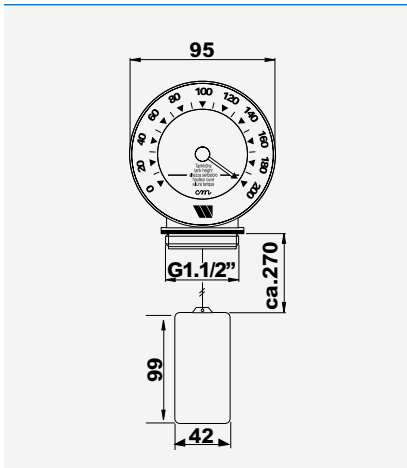
Type	Max. capacity	A	B	C	D	E	F	G
PRO10	600	55	46	55	52	G 3/8"	G 1/4"	-
PRO20	2000	63	50	60	73	G 3/4"	G 1/4"	-
PRO25	6000	80	48	58	86	G 1"	G 1/4"	-
PRO32	10000	80	48	58	86	G 1 1/4"	G 1/4"	-
PROH10	1000	55	71	16	52	G 3/8"	-	85
PROH20	2500	69	74	43	73	G 3/4"	-	85

## Overall dimensions

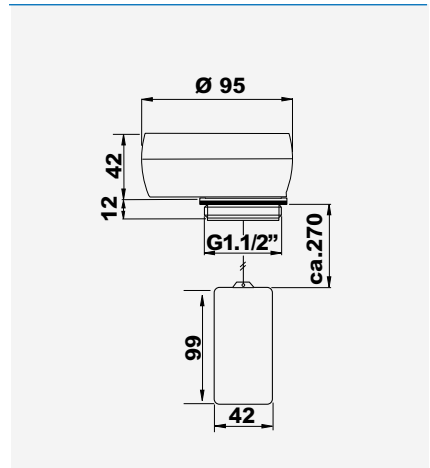
**TLM**



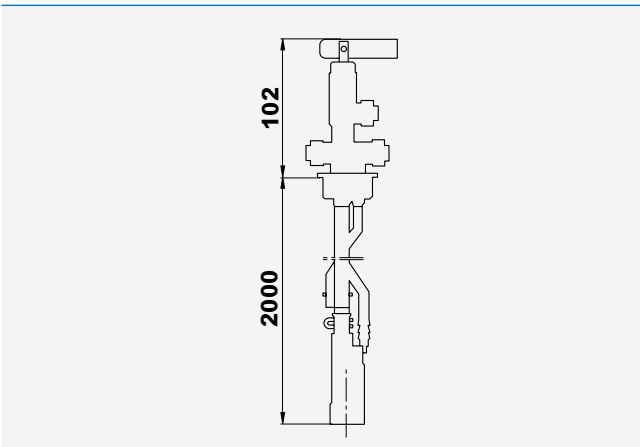
**MECAV**



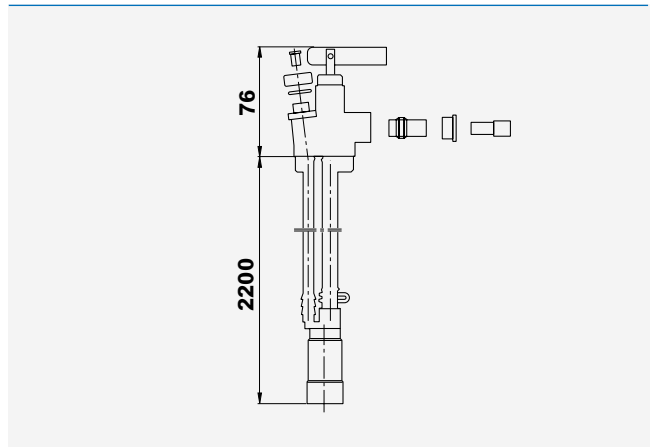
**MECAH**



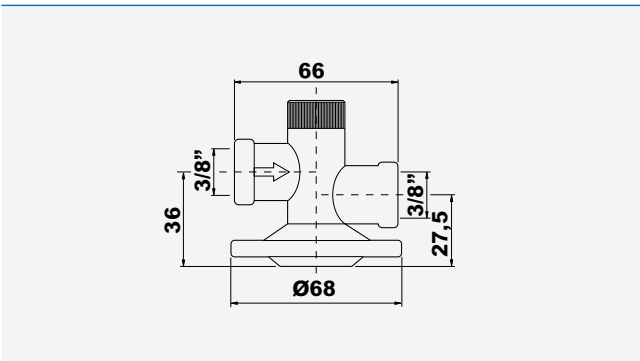
**MKF200**



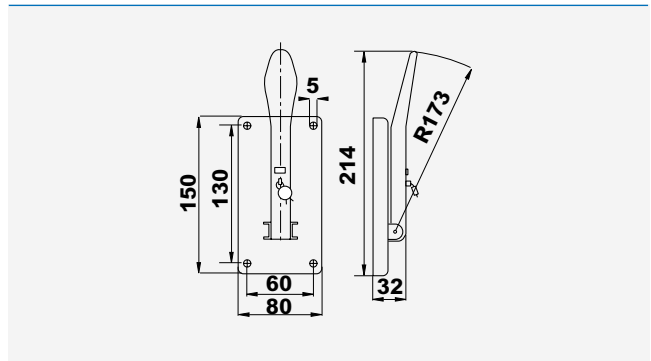
**MB**



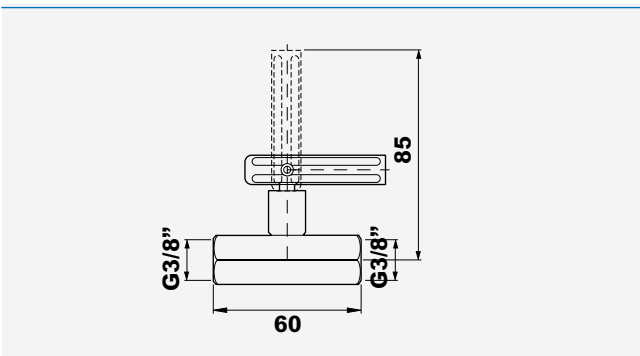
**SIC10**



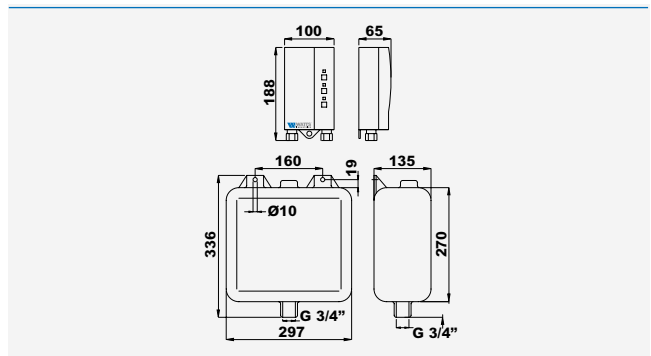
**LACPT**



**RIS**



**LAG14 ER**





## Chapter 11

Anti-scale system,  
control and  
protection of  
water distribution  
systems

**WATTS®**



ONEFLOW®  
Anti-scale system

An effective and sustainable system for  
preventing the build-up of limescale

## Chapter 11.1

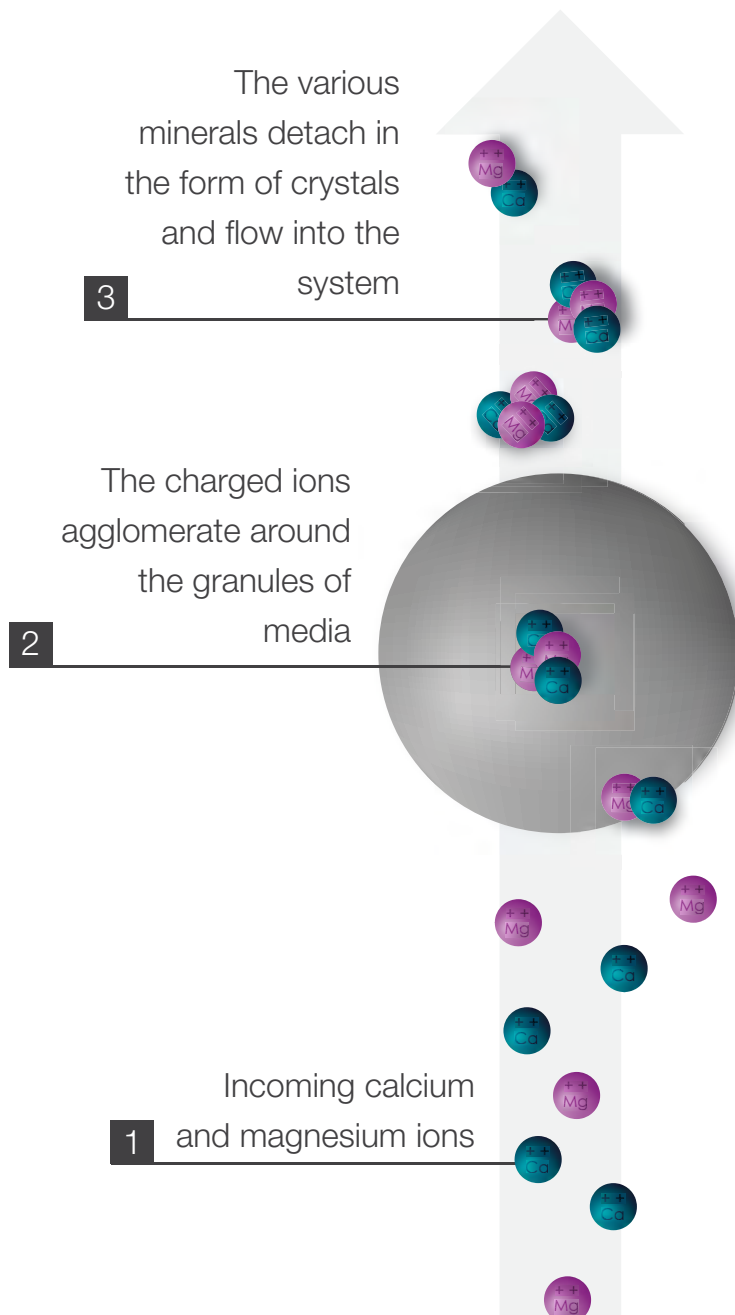
# ANTI-SCALE SYSTEM

### ONEFLOW®

OneFlow® is the Watts environmentally friendly anti-scale system.

It works on the basis of innovative technology and contains plastic micro-spheres that attract the calcium and magnesium found in hard water and turn them into microscopic crystals. These inert crystals then flow away in the water instead of sticking to surfaces. This prevents the build-up of limescale in pipes, heating elements, taps, etc.

By using this technology, OneFlow® preserves the properties of the water, thus avoiding the need to add salts or chemicals.



## THE BENEFITS OF ONEFLOW®



### **No salts or chemical additives needed**

No substances are added to the water.



### **No electricity needed**

OneFlow® works independently. No power sockets needed.



### **No waste water generated**

Unlike conventional water softeners, it does not require backwashing, so avoids needless water consumption.



### **Innovative, environmentally-friendly technology**

Avoids water wastage and requires neither electricity nor the addition of salts.



### **Compact and easy to install**

OneFlow® is a compact device that can be wall-mounted or floor-mounted, depending on model.



### **Safe for pipes and electrical appliances**

OneFlow® is an effective system for the long-term removal of limescale from pipes and electrical appliances.



### **Low maintenance**

No maintenance contract. The cartridge or granules need to be changed every one/three years, depending on model.



### **Saves energy**

Minimal water consumption and a reduction in limescale translate into higher efficiency for all electrical appliances that use water.



### **Preserves water quality**

The water retains all its essential minerals, such as calcium and magnesium.



## ONEFLOW® MODELS



To help you select the right model, there is a dedicated calculation tool on our website <https://wattswater.it/technical-support/online-tools/>

For further information, visit the product-specific website: [watts-oneflow.com](https://watts-oneflow.com)

### ONEFLOW® OF110-1 SERIES



OneFlow® anti-scale system OF110-1 Series with cartridge included. Optimises the efficiency of water heating devices and the components of downstream plumbing systems, by preventing the formation of deposits on the internal surfaces of pipes. **Max. flow rate: 4 L/min**; maximum pressure: 6.2 bar; maximum temperature: 38°C; minimum temperature: 5°C. Connections: 1/2".

Part no.	Description	Pcs. pack	Package
S0002148	OneFlow® anti-scale system (including cartridge) 1/2" - 130x200x340 mm	1	1
S0002161	OneFlow® anti-scale cartridge for model OF110-1 (service life 1 year)	1	1

### ONEFLOW® OFTWH-R SERIES



OneFlow® OFTWH-R Series anti-scale system with cartridge included. Optimises the efficiency of water heating devices and the components of downstream plumbing systems, by preventing the formation of deposits on the internal surfaces of pipes. **Max. flow rate: 23 L/min**; maximum pressure: 6.2 bar; maximum temperature: 38°C; minimum temperature: 5°C. Connections: 3/4".

Part no.	Description	Pcs. pack	Package
S0002188EU	OneFlow® anti-scale system (including cartridge) 3/4" - 190x190x630mm	1	1
S0002189EU	OneFlow® anti-scale cartridge for model OFTW-R (service life 2 years)	1	1

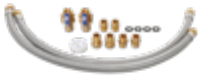
## ONEFLOW® OFTWH SERIES



OneFlow® OFTWH Series anti-scale system with cartridge included. Optimises the efficiency of water heating devices and the components of downstream plumbing systems, by preventing the formation of deposits on the internal surfaces of pipes. **Max. flow rate: 38 L/min**; maximum pressure: 6.2 bar; maximum temperature: 38°C; minimum temperature: 5°C. Connections: 3/4".

Part no.	Description	Pcs. pack	Package
<b>S0002182EU</b>	OneFlow® anti-scale system (including cartridge) 3/4" - 190x190x630mm	1	1
<b>S0002183EU</b>	OneFlow® anti-scale cartridge for OFTW model (service life 2 years)	1	1

## ONEFLOW® CONNECTION KIT



The connection kit for the 23 and 38 L/min models includes 2 x 100 cm hoses, 2 shut-off valves with non-return system, 4 EPDM seals, 2 x 3/4" nipples, 2 x 90° 3/4" MM brass fittings, 2 x 3/4" - 15 mm compression fittings and 2 x 3/4" - 22 mm compression fittings.

Part no.	Description	Pcs. pack	Package
<b>S0002134</b>	OneFlow® 3/4" connection kit	1	1

## ONEFLOW™+ OFPSYS SERIES



OneFlow™+ OFPSYS Series anti-scale system with cartridges included and **activated carbon filter**. As well as preventing the build-up of limescale, it keeps the water free from unpleasant tastes and odours. Optimises the efficiency of water heating devices and the components of downstream plumbing systems, by preventing the formation of deposits on the internal surfaces of pipes. **Max. flow rate: 38 L/min**; maximum pressure: 6.2 bar; maximum temperature: 38°C; minimum temperature: 5°C. Connections: 1".

Part no.	Description	Pcs. pack	Package
<b>7100638</b>	OneFlow™+ anti-scale system (including cartridge) 1/2" - 210x290x480 mm	1	1
<b>7100640</b>	OneFlow™+ anti-scale cartridge (service life 3 years)	1	1
<b>7100639</b>	OneFlow™+ activated carbon element (service life 1 year)	1	1
<b>7100641</b>	OneFlow™+ anti-scale cartridge + activated carbon element assembly	1	1

## ONEFLOW® OF948-16-C SERIES



OneFlow® OF948-16-C Series anti-scale system. Optimises the efficiency of water heating devices and the components of downstream plumbing systems, by preventing the formation of deposits on the internal surfaces of pipes. **Max. flow rate: 60 L/min**; maximum pressure: 6.9 bar; maximum temperature: 38°C; minimum temperature: 5°C. Connections: 1".

Part no.	Description	Pcs. pack	Package
<b>M0002112</b>	OneFlow® anti-scale system (including granules) 1" - 230x230x1334 mm	1	1
<b>A0002156</b>	OneFlow® anti-scale granules for model OF948-16-D (service life 3 years)	1	1
<b>2182946</b>	OneFlow by-pass control valve for models 60 to 75 l/min	1	1

## ONEFLOW® OF1054-20-D SERIES



OneFlow® OF1054-20-D Series anti-scale system. Optimises the efficiency of water heating devices and the components of downstream plumbing systems, by preventing the formation of deposits on the internal surfaces of pipes. **Max. flow rate: 75 L/min**; maximum pressure: 6.9 bar; maximum temperature: 38°C; minimum temperature: 5°C. Connections: 1 1/4".

Part no.	Description	Pcs. pack	Package
<b>M0002118</b>	OneFlow® anti-scale system (including granules) 1 1/4" - 255x255x1511 mm	1	1
<b>A0002157</b>	OneFlow® anti-scale granules for model OF1054-20-D (service life 3 years)	1	1
<b>2182946</b>	OneFlow by-pass control valve for models 60 to 75 l/min	1	1

## WHOF1 - SELF-CLEANING FILTER



Self-cleaning filter for water with backwashing system for the effective removal of sediment. Suitable for all OneFlow® models \*.

Backwashing is activated manually by opening the drain valve.

Transparent PET container. Reinforced polypropylene head.

90 micron stainless steel mesh filter included.

Drain funnel with backflow prevention system.

Max. operating temperature: 45°C (113° F)

Min. operating temperature: 4°C (39.2° F)

Max. operating pressure: 8 bar (116 psi)

Accessories included: wall bracket with screws and wrench.

\* 1" F/F head connection Included in the package of adapters for 3/4" and 1 1/4" connections.

Part no.	Description	Pcs. pack	Package
<b>WHOF1</b>	Self-cleaning filter for OneFlow - 390x120x107 mm	1	1

## ONEFLOW® KIT + SELF-CLEANING FILTER



Kit comprising One Flow system + WHOF1 self-cleaning filter

Part no.	Description	Pcs. pack	Package
<b>KIT. WHOF1+OF23</b>	OneFlow OFTWH-R anti-scale system kit (23 l/min) + Self-cleaning filter WHOF1"	1	1
<b>KIT. WHOF1+OF38</b>	OneFlow OFTWH anti-scale system kit (38 l/min)+ Self-cleaning filter WHOF1"	1	1
<b>KIT. WHOF1+OF38+</b>	OneFlow+ OFPSYS anti-scale system kit (38 l/min with activated carbon element)+ Self-cleaning filter WHOF1"	1	1
<b>KIT. WHOF1+OF60</b>	OneFlow OF948-16-C anti-scale system kit (60 l/min) + Self-cleaning filter WHOF1"	1	1
<b>KIT. WHOF1+OF75</b>	OneFlow OF1054-20-D anti-scale system kit (75 l/min)+ Self-cleaning filter WHOF1"	1	1

## Chapter 11.2

# CONTROL DEVICES

### Pressure reducing valves with compensated seat

The mains water pressure may be too high or non-continuous (e.g., between day and night). Watts has a wide range of pressure regulators and pressure reducing valves designed to provide a stable inlet pressure suited to the use of the equipment, so as to keep it in good long-term working order and save more water.

#### DRV/E



Compact diaphragm pressure reducing valve with compensated seat. CW602N brass body and reinforced plastic cap. FF threaded connections. 1/4" pressure gauge connection. PN25. Adjustable downstream pressure: 1.5 to 6 bar. Max. fluid temperature: 30°C. Suitable for water, compressed air and inert gases.

Part no.	DN	Pcs. pack	Package
0502015	1/2" FF	1	30
0502020	3/4" FF	1	15

Dimensions on page 425

#### REDUBAR



Nickel-plated brass ultra-compact pressure reducing valve. PN15. Adjustable downstream pressure: 1.5 to 4 bar (factory settings 3±0.5 bar). Max. operating temperature: 70°C. Available in version with 1/2" F - 3/4" M multi-thread connections on both sides and with 3/4" M connection for 3/4" F union nut.

**Compliant with: ACS (Attestation de Conformité Sanitaire)**

Part no.	Connections	Pcs. pack	Package
82500	3/4" M union nut 3/4" F	1	40
82501	1/2" F / 3/4" M 1/2" F / 3/4" M	1	40

Dimensions on page 425

#### REDUBLOC



Compact brass pressure reducing valve offering 3 functions in 1:

- pressure reduction;
- controllable check valve;
- shut-off valve.

PN15. Adjustable downstream pressure: 1.5 to 4 bar (factory settings 3±0.5 bar).

Max. operating temperature: 70°C. 1/2" F - 3/4" M downstream connections and 3/4" M upstream connections with union nut for direct connection to flow meters.

**Check valve to French standards (NF).**

Part no.	Connections	Pcs. pack	Package
82900	1/2" F / 3/4" M union nut 3/4" F	1	18

Dimensions on page 425

**DRV**



Diaphragm pressure reducing valve with compensated seat complete with unions. CW617N brass body and cap. Stainless steel strainer. Plastic valve seat. Interchangeable filter-regulator unit. PN25. Adjustable downstream pressure: 1.5to6 bar. Can be used for water, compressed air and neutral gases up to 30°C. Pressure drops less than 1.3 bar at DIN characteristic flow rate. Noise < 20 dB - Class 1 in Germany.

**Compliant with DVGW, SVGW, TIN, NF (DN 1/2" and 3/4" only).**

Part no.	DN	Pcs. pack	Package
<b>0501115</b>	1/2" MM	1	20
<b>0501120</b>	3/4" MM	1	20
<b>0501125</b>	1" MM	1	12
<b>0501132</b>	1.1/4" MM	1	1
<b>0501140</b>	1.1/2" MM	1	1
<b>0501150</b>	2" MM	1	1

Dimensions on page 425

**DRVM**

As per DRV but with M1-ABS50 pressure gauge.



Part no.	DN	Pcs. pack	Package
<b>0501315</b>	1/2" MM	1	20
<b>0501320</b>	3/4" MM	1	20
<b>0501325</b>	1" MM	1	12
<b>0501332</b>	1.1/4" MM	1	1
<b>0501340</b>	1.1/2" MM	1	1
<b>0501350</b>	2" MM	1	1

Dimensions on page 425

**TECHNICAL NOTE - Cavitation diagram for DRV Series pressure reducing valves**

**CAVITATION**

The cavitation diagram shows three operating zones of the pressure reducing valve plotted against the upstream and downstream pressures:

- Zone C:** normal duty, no cavitation
- Zone B:** medium duty, risk of cavitation
- Zone A:** heavy duty, the pressure reducing valve shows cavitation. Continuous operation in the red cavitation zone could cause rapid deterioration of the internal parts.

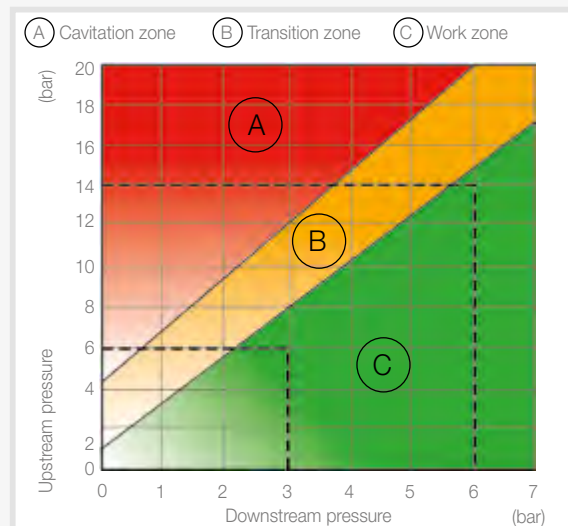
**SIZING**

**Example 1 (cavitation)**

Pressure reducing valve with:  
 Inlet pressure P1 = 14 bar  
 Outlet pressure P2 = 3 bar  
 From the cavitation diagram it can be seen that the pressure reducing valve is constantly working in the red zone. To avoid rapid deterioration, two pressure reducing valves could be used, one connected upstream of the other.

**Upstream pressure reducing valve:** pressure drop from 14 to 6 bar (green zone).

**Downstream pressure reducing valve:** pressure drop from 6 to 3 bar (green zone).





**DRVN**

Patented diaphragm pressure reducing valve with compensated seat, outlet pressure adjuster knob and external graduated scale for easy reading of set pressure. Complete with unions. Pressed, shotblasted CW617N brass body. Stainless steel filter cartridge. Pressure gauge connection on both sides: 1/4". Materials in contact with fluids are KTW certified. PN25.

Adjustable downstream pressure: 1.5 and 6 bar. Max. operating temperature: 30°C. Can be used for water, air and neutral gases. Noise < 20 dB - Class 1 in Germany.

Part no.	DN	Pcs. pack	Package
<b>0502515</b>	1/2" MM	1	20
<b>0502520</b>	3/4" MM	1	20
<b>0502525</b>	1" MM	1	15
<b>0502532</b>	1.1/4" MM	1	1
<b>0502540</b>	1.1/2" MM	1	1
<b>0502550</b>	2" MM	1	1

Dimensions on page 425

**DRVMN**

As per DRVN but with M3A-ABS50 pressure gauge.

Part no.	DN	Pcs. pack	Package
<b>0502615</b>	1/2" MM	1	20
<b>0502620</b>	3/4" MM	1	20
<b>0502625</b>	1" MM	1	15
<b>0502632</b>	1.1/4" MM	1	1
<b>0502640</b>	1.1/2" MM	1	1
<b>0502650</b>	2" MM	1	1

Dimensions on page 425

**RDRV PARTS**

Pair of replacement unions complete with nut and gaskets for DRV Series pressure reducing valves.

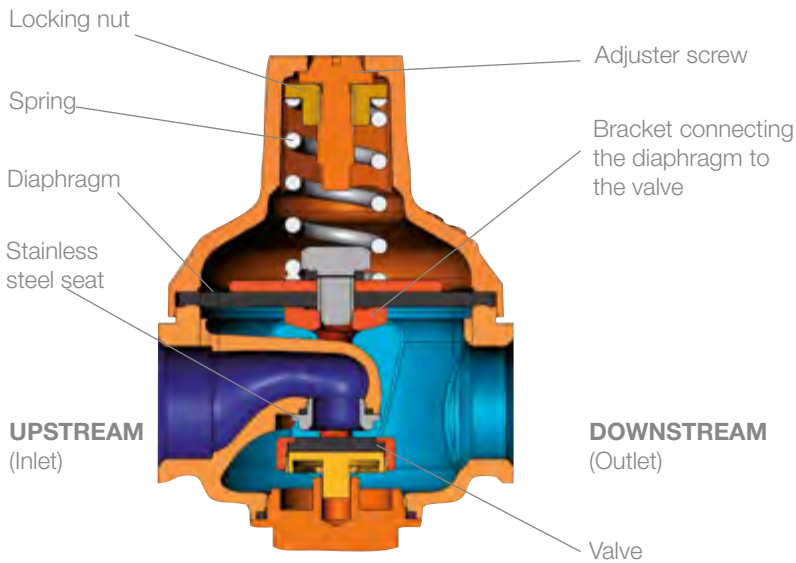


Part no.	DN	Pcs. pack	Package
<b>0599001</b>	1/2" MM	1	10
<b>0599002</b>	3/4" MM	1	10
<b>0599003</b>	1" MM	1	10
<b>0599004</b>	1.1/4" MM	1	10
<b>0599005</b>	1.1/2" MM	1	10
<b>0599006</b>	2" MM	1	10

## Desbordes pressure reducing valves

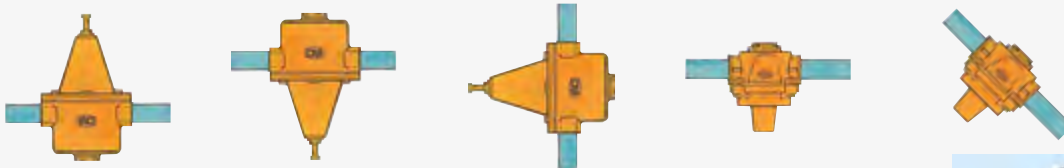
Desbordes pressure reducing valves have a bronze body, are unaffected by limescale or debris and do not require an internal strainer, which may become clogged and cause pressure drops. Maintenance-free. They are equipped with two side outlets for pressure gauges (1/4"). They can be installed in any position provided that the flow direction indicated by the arrow is observed. With EPDM seal, they are suitable for water and for compressed air only if free from oil and grease. Diaphragms in other materials available to order.

**Desbordes pressure reducing valves are guaranteed for 5 years.**



When there is no demand for flow, the entire lower surface of the regulator diaphragm is subject to the downstream pressure. The force exerted by this pressure compresses the spring and when it exceeds the force of the latter, it closes the valve. The downstream pressure is therefore kept at the set value.

When there is demand for water, the downstream pressure tends to fall and the spring exerts pressure on the diaphragm again, thus opening the valve. In the event of prolonged flow, the valve opening self-adjusts. The DESBORDES pressure reducing valve is therefore a pressure regulator.

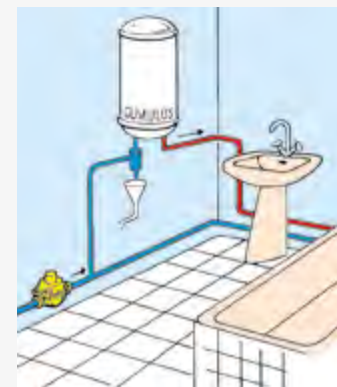


### INSTALLATION

For the domestic water line, DESBORDES pressure reducing valves are fitted immediately after the meter and therefore protect the whole installation.

If there is any risk of freezing, they must be bled.

They can be fitted in any position provided that the flow direction indicated by the arrow is observed.



## SERIE 10

Diaphragm pressure reducing valve with bronze body and two side outlets for pressure gauges (1/4"). **Series for high flow rates.** Max. upstream pressure: 25 bar, maximum temperature: 80°C.

Downstream adjustment range: 1 to 6 bar (indicative value to EN1567). **EPDM diaphragm: for water (standard). Diaphragms for other fluids: available to order.**

**Approvals: ACS (Attestation de Conformité Sanitaire).**



**10 BIS:** female inlet, female outlet.

Part no.	DN mm	DN"	Connection	Pcs. pack	Package
149B7003	10	3/8	FF	1	1
149B7004	15	1/2	FF	1	1
149B7005	20	3/4	FF	1	1
149B7006	25	1	FF	1	1
149B7007	32	1 1/4	FF	1	1
149B7008	40	1 1/2	FF	1	1
149B7009	50	2	FF	1	1
149B7011	65	2 1/2	FF	1	1
149B7012	80	3	FF	1	1
149B7225	100	4	FF	1	1

Dimensions on page 425

**10 TER:** with PN16 flanges.



Part no.	DN mm	DN"	Connection	Pcs. pack	Package
149B7032	32	1 1/4	FLANGED	1	1
149B7033	40	1 1/2	FLANGED	1	1
149B7034	50	2	FLANGED	1	1
149B7036	65	2 1/2	FLANGED	1	1
149B7037	80	3	FLANGED	1	1
149B7226	100	4	FLANGED	1	1

Dimensions on page 425

## SERIE 11

Diaphragm pressure reducing valves with bronze body, stainless steel seat and two side outlets for pressure gauges (1/4"). Max. upstream pressure: 25 bar, maximum temperature: 80°C. Downstream adjustment range: 1 to 5.5 bar (indicative value to EN 1567). Supplied pre-set to 3 bar. Fitting a compensation spring (RC) provides downstream adjustments from 0.5 bar (11RC and 11BIS RC models). **EPDM diaphragm: for water (standard). Diaphragms for other fluids: available to order.**

**Approvals: ACS (Attestation de Conformité Sanitaire).**



**11:** male inlet/male outlet.

Part no.	DN mm	DN"	Connection	Pcs. pack	Package
149B7054	15	1/2	MM	1	1
149B7055	20	3/4	MM	1	1
149B7489	25	1	MM	1	1
149B7548	32	1 1/4	MM	1	1
149B7567	40	1 1/2	MM	1	1
149B7565	50	2	MM	1	1

Dimensions on page 426

**11BIS:** female inlet, female outlet



Part no.	DN mm	DN"	Connection	Pcs. pack	Package
149B7056	15	1/2	FF	1	1
149B7057	20	3/4	FF	1	1
149B7314	25	1	FF	1	1
149B7549	32	1 1/4	FF	1	1
149B7558	40	1 1/2	FF	1	1
149B7561	50	2	FF	1	1

Dimensions on page 426



**11DO:** male inlet and outlet with unions

Part no.	DN mm	DN"	Connection	Pcs. pack	Package
149B7640	15	1/2	MM	1	1
149B7641	20	3/4	MM	1	1
149B7228	25	1	MM	1	1
149B7550	32	1 1/4	MM	1	1
149B7559	40	1 1/2	MM	1	1
149B7562	50	2	MM	1	1
149B7218	20*	3/4	MM	1	1

\* Discontinued part number, available while stocks last - with composite top cap that allows direct reading of the setting.

Dimensions on page 426

## SERIE 7

Diaphragm pressure reducing valves with bronze body. Side outlets for pressure gauges (1/4"). Max. upstream pressure: 16 bar, maximum temperature: 80°C. Downstream adjustment range: 1 to 5.5 bar (indicative value to EN 1567). Supplied pre-set to 3 bar (only with EPDM seal).

Approvals: ACS (Attestation de Conformité Sanitaire).



**MULTI 7:** includes 3 fittings, which allow 16 possible 1/2" and 3/4" connections.

Part no.	Description	DN mm	DN"	Feature	Pcs. pack	Package
149B7540	RDP MULTI7 DN20	20	3/4	Multi-fittings	1	1

Dimensions on page 426



**7 BIS:** female inlet, female outlet. EPDM diaphragm: for water (standard). Diaphragms for other fluids: available to order.

Part no.	DN mm	DN"	Connection	Pcs. pack	Package
149B7209	15	1/2	FF	1	1
149B7210	20	3/4	FF	1	1
149B7552	25	1	FF	1	1
149B7553	32	1 1/4	FF	1	1
149B7554	40	1 1/2	FF	1	1
149B7555	50	2	FF	1	1

Dimensions on page 426

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PRESSURE GAUGE HOLDER

Female/male with 1/4" female square socket. Made of bronze.



Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
149B7179	PRESSURE GAUGE HOLDER	15/21	1/2	-	1	1
149B7180	PRESSURE GAUGE HOLDER	20/27	3/4	-	1	1
149B7181	PRESSURE GAUGE HOLDER	26/34	1	-	1	1
149B7182	PRESSURE GAUGE HOLDER	33/42	1 1/2	-	1	1
149B7183	PRESSURE GAUGE HOLDER	40/49	1 1/2	-	1	1
149B7184	PRESSURE GAUGE HOLDER	50/60	2	-	1	1
149B7185	PRESSURE GAUGE HOLDER	60/70	2 1/2	-	1	1
149B7186	PRESSURE GAUGE HOLDER	66/76	2 1/2	-	1	1
149B7187	PRESSURE GAUGE HOLDER	80/90	3	-	1	1

**DRVD16**

Flanged pressure reducing valve with single spring-compensated seat with 1/4" pressure gauge connections upstream and downstream. Cast iron body, cap and flanges with epoxy paint finish. PN16. Adjustable downstream pressures: standard execution: 1.5 to 6 bar.

Special execution: 2 to 8 bar/4 to 12 bar. Pressure control: turn clockwise to increase pressure, turn anticlockwise to reduce pressure. Suitable for installation on horizontal pipes, observing the direction of flow. For use with water. Temperature: 0 to 80°C. Flanged connections, UNI 1092-2.

Part no.	DN	bar	Pcs. pack	Package
0504053	50	1.5 - 6	1	1
0504068	65	1.5 - 6	1	1
0504083	80	1.5 - 6	1	1
0504103	100	1.5 - 6	1	1
0504128	125	1.5 - 6	1	1
0504153	150	1.5 - 6	1	1
0504203	200	1.5 - 6	1	1
0504054	50	2 - 8	1	1
0504069	65	2 - 8	1	1
0504084	80	2 - 8	1	1
0504104	100	2 - 8	1	1
0504129	125	2 - 8	1	1
0504154	150	2 - 8	1	1
0504204	200	2 - 8	1	1
0504055	50	4 - 12	1	1
0504070	65	4 - 12	1	1
0504085	80	4 - 12	1	1
0504105	100	4 - 12	1	1
0504130	125	4 - 12	1	1
0504155	150	4 - 12	1	1
0504205	200	4 - 12	1	1

Dimensions on page 426

**DRVD25**

As per DRVD16 but with PN25. Also available in PN40 version.

Part no.	DN	bar	Pcs. pack	Package
0504050	50	1.5 - 6	1	1
0504065	65	1.5 - 6	1	1
0504080	80	1.5 - 6	1	1
0504100	100	1.5 - 6	1	1
0504125	125	1.5 - 6	1	1
0504150	150	1.5 - 6	1	1
0504200	200	1.5 - 6	1	1
0504051	50	2 - 8	1	1
0504066	65	2 - 8	1	1
0504081	80	2 - 8	1	1
0504101	100	2 - 8	1	1
0504126	125	2 - 8	1	1
0504151	150	2 - 8	1	1
0504201	200	2 - 8	1	1
0504052	50	4 - 12	1	1
0504067	65	4 - 12	1	1
0504082	80	4 - 12	1	1
0504102	100	4 - 12	1	1
0504127	125	4 - 12	1	1
0504152	150	4 - 12	1	1
0504202	200	4 - 12	1	1

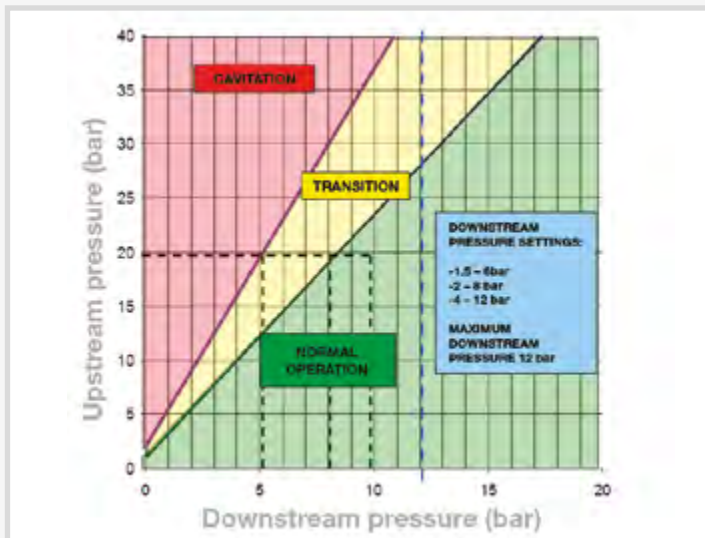
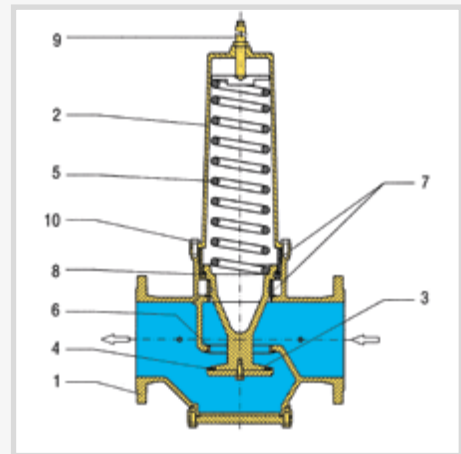
Dimensions on page 426

**TECHNICAL NOTE - DRVD Series pressure reducers**

The DRVD Series spring-compensated pressure reducing valve is capable of automatically reducing and stabilising the pressure of the downstream fluid at a constant pre-set value, irrespective of upstream changes in pressure and flow rate.

It is used at the supply pipe inlet for **safety** reasons (to keep the downstream network pressure below the permitted maximum) and for the purposes of **practicality** (to run the downstream network at a constant pressure and reduce consumption).

- |             |           |                        |
|-------------|-----------|------------------------|
| <b>Key:</b> | 1 Body    | 6 Seal ring            |
|             | 2 Cap     | 7 Guide bushings       |
|             | 3 Disc    | 8 Lip seal             |
|             | 4 Packing | 9 Setting spring       |
|             | 5 Spring  | 10 Cap mounting screws |



**CAVITATION DIAGRAM**

The cavitation diagram shows three operating zones of the pressure reducing valve plotted against the upstream and downstream pressures. Avoid continuous operation in the transition and cavitation zones.

**Example:**

Upstream P = 20 bar  
Downstream P = 10 bar

In this case there are no cavitation problems and the downstream pressure can briefly fall to between 5 to 8.5 bar.

**PR500**

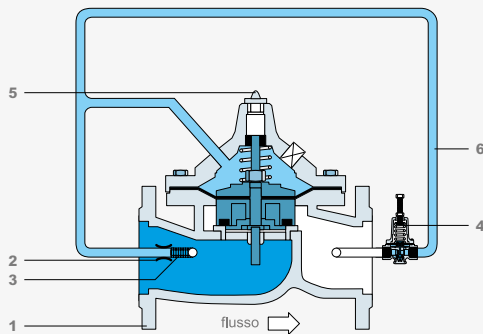


Pilot-operated pressure reducing valve designed to reduce and stabilise downstream pressure. Easy to install and simple to adjust. Body: GGG40 ductile iron. Internal and external epoxy finish. Diaphragm: NBR. Max. operating temperature: +70°C. PN 16 and PN 25. Adjustment range of pilot: Standard: 1.4to12 bar. Available to order: 0.1to2 bar, 7to21 bar. Fluid: water.

Part no.	DN	Pn	Pcs. pack	Package
149F049790	50	16	1	1
149B049308	65	16	1	1
149F049791	80	16	1	1
149B049309	100	16	1	1
149B049310	125	16	1	1
149B049311	150	16	1	1
149F049793	200	16	1	1
149B041486	50	25	1	1
149B045777	65	25	1	1
149B050120	80	25	1	1
149B046159	100	25	1	1
149B047065	125	25	1	1
149B046870	150	25	1	1
149B049503	200	25	1	1

Dimensions on page 426

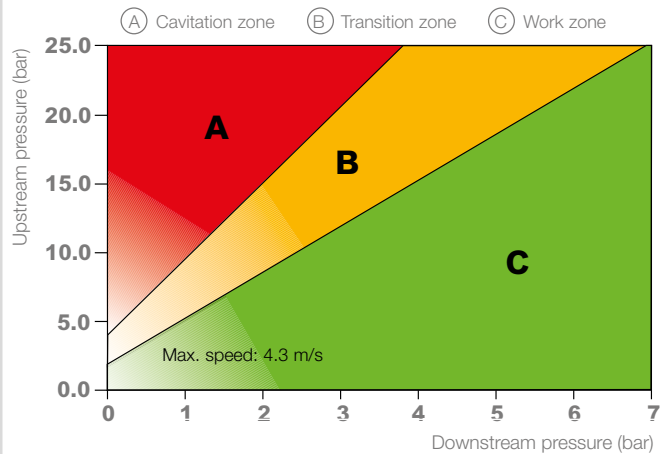
**TECHNICAL NOTE**



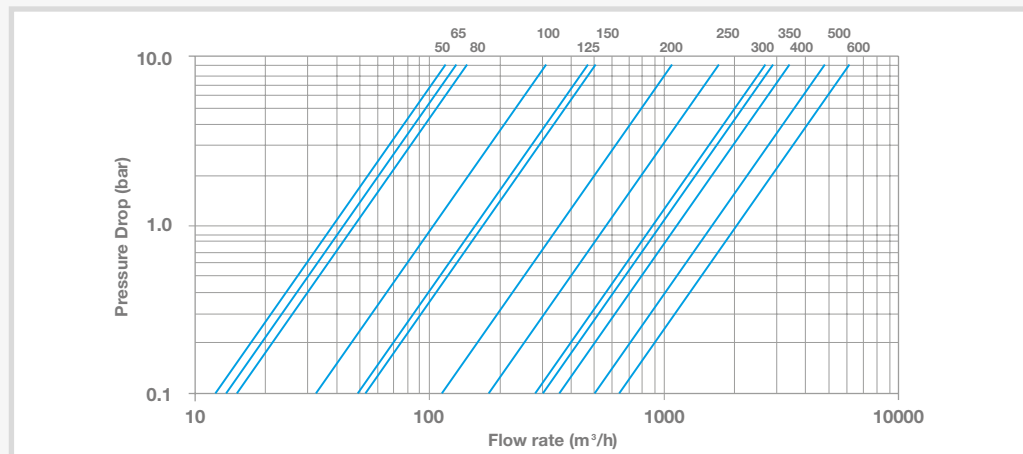
**PR500**

- 1 Body/Main valve
- 2 Fixed orifice
- 3 Flow strainer
- 4 Pilot valve
- 5 Air vent
- 6 Flexible tubing

**CAVITATION DIAGRAM**

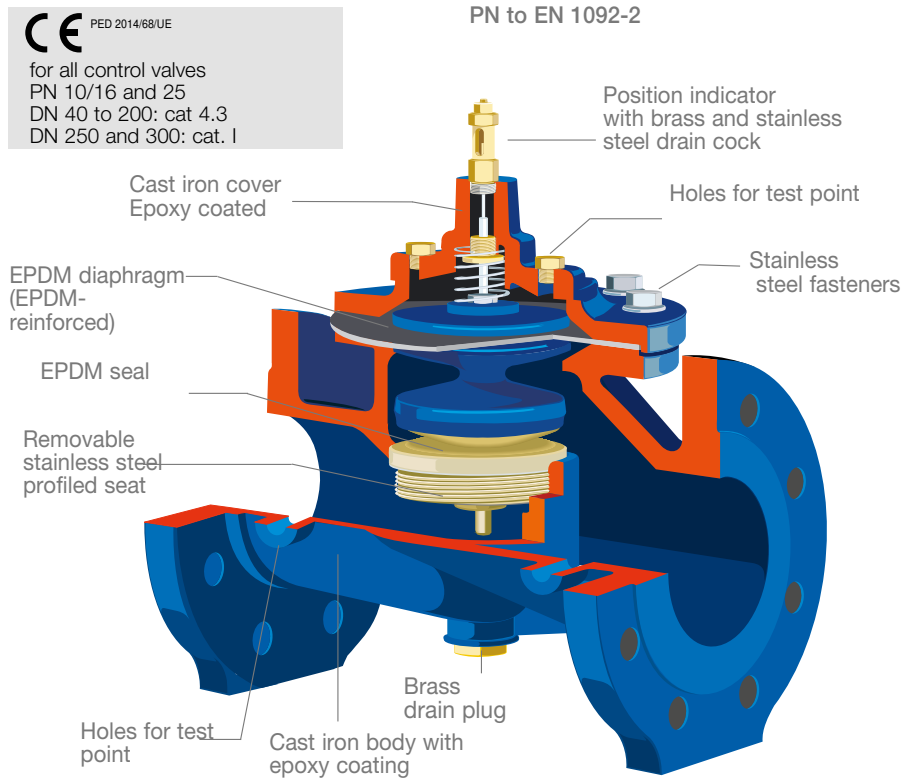


**FLOW RATE/  
PRESSURE DROP  
DIAGRAM**



## Control valves

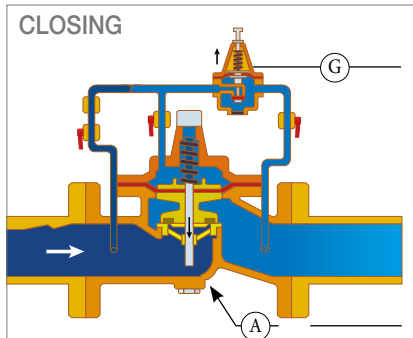
Control valves balance the water distribution in the system at various levels for the convenience of the user and to maximise the effectiveness of the supply for minimum expenditure of energy.



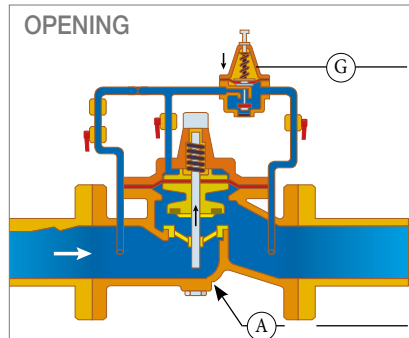
### PRESSURE TABLES FOR CONTROL VALVES

DN "	mm	PN bar	PFA	PS		Cat
				L1	L2	
1 1/2"		10/16	16	16	16	x x 4.3
40 and 50		10/16	16	16	16	x x 4.3
	65	10/16	16	16	16	x x 4.3
80	10/16	16	16	16	x x 4.3	
100	10/16	16	16	16	x x 4.3	
125	10/16	16	16	16	x x 4.3	
150	10/16	16	16	16	x x 4.3	
200	10	10	10	10	x x 4.3	
250	10	10	10	10	x x I	
300	10	10	10	10	x x I	
1 1/2"		25	25	25	25	x x 4.3
40 and 50		25	25	25	25	x x 4.3
	65	25	25	25	25	x x 4.3
80	25	25	25	25	x x 4.3	
100	25	25	20	25	x x 4.3	
125	25	25	16	25	x x 4.3	
150	25	25	13	25	x x 4.3	
200	25	25	10	25	x x 4.3	
250	25	25	10	25	x x I	
300	25	25	10	25	x x I	

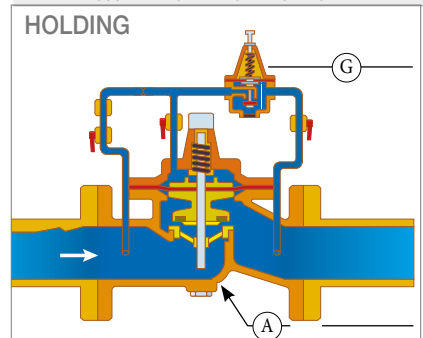
### OPERATING PRINCIPLES (C101 downstream stabiliser)



When the downstream pressure increases, the pilot G closes, the pressure in the circuit is exerted on the diaphragm of valve A and closes the valve disc.



When the downstream pressure decreases, the pilot G opens, the pressure in the circuit is exerted more lightly on the diaphragm of valve A and opens the valve disc.



When the pilot opens or closes, the pressure is exerted variably on the valve diaphragm and the valve disc opens or closes as a result.



## C101 - DOWNSTREAM STABILISERS



Controls and maintains a constant pre-set, reduced downstream pressure irrespective of fluctuations in demand and upstream pressure.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
<b>149B001149</b>	C101 DN 40 (F/F)	-	1 1/2 (FF)	-	1	1
<b>149B001158</b>	C101 DN 40	40	-	10/16/25	1	1
<b>149B001175</b>	C101 DN 50	50	-	10/16/25	1	1
<b>149B10106N</b>	C101 DN 65	65	-	10/16/25	1	1
<b>149B10108N</b>	C101 DN 80	80	-	10/16/25	1	1
<b>149B10110N</b>	C101 DN 100	100	-	10/16 <sup>1)</sup>	1	1
<b>149B10111N</b>	C101 DN 125	125	-	10/16 <sup>1)</sup>	1	1
<b>149B10112N</b>	C101 DN 150	150	-	10/16 <sup>1)</sup>	1	1
<b>149B10114N</b>	C101 DN 200	200	-	10 <sup>2)</sup>	1	1
<b>149B10115N</b>	C101 DN 250	250	-	10 <sup>2)</sup>	1	1
<b>149B10116N</b>	C101 DN 300	300	-	10 <sup>2)</sup>	1	1

<sup>1)</sup> PN25 available to order

<sup>2)</sup> PN16 and PN25 available to order

Dimensions on technical data sheets

## C301 - UPSTREAM STABILISERS



Controls and maintains a pre-set upstream pressure irrespective of fluctuations in downstream demand.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
<b>149B007871</b>	C301 DN 40 (F/F)	-	1 1/2 (FF)	-	1	1
<b>149B007872</b>	C301 DN 40	40	-	10/16/25	1	1
<b>149B007875</b>	C301 DN 50	50	-	10/16/25	1	1
<b>149B30106N</b>	C301 DN 65	65	-	10/16/25	1	1
<b>149B30108N</b>	C301 DN 80	80	-	10/16/25	1	1
<b>149B30110N</b>	C301 DN 100	100	-	10/16 <sup>1)</sup>	1	1
<b>149B30111N</b>	C301 DN 125	125	-	10/16 <sup>1)</sup>	1	1
<b>149B30112N</b>	C301 DN 150	150	-	10/16 <sup>1)</sup>	1	1
<b>149B30114N</b>	C301 DN 200	200	-	10 <sup>2)</sup>	1	1
<b>149B30115N</b>	C301 DN 250	250	-	10 <sup>2)</sup>	1	1
<b>149B30116N</b>	C301 DN 300	300	-	10 <sup>2)</sup>	1	1

<sup>1)</sup> PN25 available to order

<sup>2)</sup> PN16 and PN25 available to order

Dimensions on technical data sheets

## C701 - FLOAT-OPERATED ALTITUDE VALVE



Controls the level of a tank and keeps it constant by means of a float. (10/12 mm pipe connecting float to valve not included). PFA max.10 bar.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
<b>149B010456</b>	C701 DN 40 (F/F)	-	1 1/2 (FF)	-	1	1
<b>149B010458</b>	C701 DN 40	40	-	10/16/25	1	1
<b>149B010463</b>	C701 DN 50	50	-	10/16/25	1	1
<b>149B70106N</b>	C701 DN 65	65	-	10/16/25	1	1
<b>149B70108N</b>	C701 DN 80	80	-	10/16/25	1	1
<b>149B70110N</b>	C701 DN 100	100	-	10/16 <sup>1)</sup>	1	1
<b>149B70111N</b>	C701 DN 125	125	-	10/16 <sup>1)</sup>	1	1
<b>149B70112N</b>	C701 DN 150	150	-	10/16 <sup>1)</sup>	1	1
<b>149B70114N</b>	C701 DN 200	200	-	10 <sup>2)</sup>	1	1
<b>149B70115N</b>	C701 DN 250	250	-	10 <sup>2)</sup>	1	1
<b>149B70116N</b>	C701 DN 300	300	-	10 <sup>2)</sup>	1	1

1) PN25 available to order

2) PN16 and PN25 available to order

Dimensions on technical data sheets

## C717 - FLOAT-OPERATED ALTITUDE VALVE



Keeps the volume of water in a tank within a certain range by means of a float with 2 positions. Closes at a pre-set upper limit and opens at a given lower limit. Maximum level difference 3.6 metres. 4/6 mm hose for connecting the valve to the float is not supplied. PFA max.10 bar.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
<b>149B050498</b>	C717 DN 40 (F/F)	-	1 1/2 (FF)	-	1	1
<b>149B010543</b>	C717 DN 40	40	-	10/16/25	1	1
<b>149B010544</b>	C717 DN 50	50	-	10/16/25	1	1
<b>149B71706N</b>	C717 DN 65	65	-	10/16/25	1	1
<b>149B71708N</b>	C717 DN 80	80	-	10/16/25	1	1
<b>149B71710N</b>	C717 DN 100	100	-	10/16 <sup>1)</sup>	1	1
<b>149B71711N</b>	C717 DN 125	125	-	10/16 <sup>1)</sup>	1	1
<b>149B71712N</b>	C717 DN 150	150	-	10/16 <sup>1)</sup>	1	1
<b>149B71714N</b>	C717 DN 200	200	-	10 <sup>2)</sup>	1	1
<b>149B71715N</b>	C717 DN 250	250	-	10 <sup>2)</sup>	1	1
<b>149B71716N</b>	C717 DN 300	300	-	10 <sup>2)</sup>	1	1

1) PN25 available to order - 2) PN 16 and PN25 available to order

Dimensions on technical data sheets

## C707 - ELECTRICALLY OPERATED ALTITUDE VALVE



Keeps the volume of water in a tank within a certain range by means of electric level sensors (not supplied). Closes at a pre-set upper limit and opens at a given lower limit. Electric altitude valves.  
**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
149B012402	C707 DN 40 (F/F)	-	1 1/2 (FF)	-	1	1
149B010496	C707 DN 40	40	-	10/16/25	1	1
149B010498	C707 DN 50	50	-	10/16/25	1	1
149B70706N	C707 DN 65	65	-	10/16/25	1	1
149B70708N	C707 DN 80	80	-	10/16/25	1	1
149B70710N	C707 DN 100	100	-	10/16 <sup>1)</sup>	1	1
149B70711N	C707 DN 125	125	-	10/16 <sup>1)</sup>	1	1
149B70712N	C707 DN 150	150	-	10/16 <sup>1)</sup>	1	1
149B70714N	C707 DN 200	200	-	10 <sup>2)</sup>	1	1
149B70715N	C707 DN 250	250	-	10 <sup>2)</sup>	1	1
149B70716N	C707 DN 300	300	-	10 <sup>2)</sup>	1	1

1) PN25 available to order - 2) PN 16 and PN25 available to order  
 Dimensions on technical data sheets

## C401 - OVERPRESSURE RELIEF VALVE



Discharges accidental overpressure from the system. Special requirements: to be installed in parallel.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
149B008013	C401 DN 40 (F/F)	-	1 1/2 (FF)	-	1	1
149B008015	C401 DN 40	40	-	10/16/25	1	1
149B008022	C401 DN 50	50	-	10/16/25	1	1
149B40106N	C401 DN 65	65	-	10/16/25	1	1
149B40108N	C401 DN 80	80	-	10/16/25	1	1
149B40110N	C401 DN 100	100	-	10/16 <sup>1)</sup>	1	1
149B40111N	C401 DN 125	125	-	10/16 <sup>1)</sup>	1	1
149B40112N	C401 DN 150	150	-	10/16 <sup>1)</sup>	1	1
149B40114N	C401 DN 200	200	-	10 <sup>2)</sup>	1	1
149B40115N	C401 DN 250	250	-	10 <sup>2)</sup>	1	1
149B40116N	C401 DN 300	300	-	10 <sup>2)</sup>	1	1

1) PN25 available to order - 2) PN 16 and PN25 available to order  
 Dimensions on technical data sheets

## C801/C802 - ELECTRICALLY-OPERATED ON/OFF VALVE



**C801:** Normally closed valve. The valve opens when contact is made. PN according to control solenoid valve.

**C802:** Normally open valve. The valve stops when contact is made.

Valves operating in full opening or closure.

Electric ON/OFF control.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
<b>149B010596</b>	C801 DN 40 (F/F)	-	1 1/2 (FF)	-	1	1
<b>149B010597</b>	C801 DN 40	40	-	10/16/25	1	1
<b>149B010600</b>	C801 DN 50	50	-	10/16/25	1	1
<b>149B80106N</b>	C801 DN 65	65	-	10/16/25	1	1
<b>149B80108N</b>	C801 DN 80	80	-	10/16/25	1	1
<b>149B80110N</b>	C801 DN 100	100	-	10/16 <sup>1)</sup>	1	1
<b>149B80111N</b>	C801 DN 125	125	-	10/16 <sup>1)</sup>	1	1
<b>149B80112N</b>	C801 DN 150	150	-	10/16 <sup>1)</sup>	1	1
<b>149B80114N</b>	C801 DN 200	200	-	10 <sup>2)</sup>	1	1
<b>149B80115N</b>	C801 DN 250	250	-	10 <sup>2)</sup>	1	1
<b>149B80116N</b>	C801 DN 300	300	-	10 <sup>2)</sup>	1	1

1) PN25 available to order

2) PN16 and PN25 available to order

Dimensions on technical data sheets

## C901 - FLOW CONTROL



Monitors and maintains a pre-set maximum outflow rate through the valve regardless of upstream and downstream pressure changes.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	PN	Pcs. pack	Package
<b>149B011432</b>	C901 DN 40	40	-	10/16/25	1	1
<b>149B011441</b>	C901 DN 50	50	-	10/16/25	1	1
<b>149B90106N</b>	C901 DN 65	65	-	10/16/25	1	1
<b>149B90108N</b>	C901 DN 80	80	-	10/16/25	1	1
<b>149B90110N</b>	C901 DN 100	100	-	10/16 <sup>1)</sup>	1	1
<b>149B90111N</b>	C901 DN 125	125	-	10/16 <sup>1)</sup>	1	1
<b>149B90112N</b>	C901 DN 150	150	-	10/16 <sup>1)</sup>	1	1
<b>149B90114N</b>	C901 DN 200	200	-	10 <sup>2)</sup>	1	1
<b>149B90115N</b>	C901 DN 250	250	-	10 <sup>2)</sup>	1	1
<b>149B90116N</b>	C901 DN 300	300	-	10 <sup>2)</sup>	1	1

1) PN25 available to order

2) PN16 and PN25 available to order

Dimensions on page 426

### OTHER AUTOMATIC CONTROL VALVE MODELS AVAILABLE TO ORDER

#### PRESSURE GAUGES

10 bar, 16 bar, 25 bar pressure gauges: see MG1-INOX63 models in chapter 4

**3/8" – 1/4" M/F adaptor KIT for pressure gauge connection – Ref. 149F010741**

## Thermostatic mixers

The use of thermostatic mixers keeps the mixed water temperature at the set value regardless of changes in the temperature of the incoming hot and cold water.

Watts has a wide range of mixers, which can be divided as shown in the tables below.

### Temperature control at point of use – Aquamix Models



#### 61C

Setting range: 32–50°C FF connections



#### 61CM

Setting range: 32–50°C MM union connections



#### 62C

Setting range: 42–60°C FF connections

### Temperature control at inlet For collective installations Ultramix models



#### TX90 - ULTRAMIX

Temperature control range: 10–50°C and 30–70°C

### Temperature control at inlet For collective installations with high flow rates and industrial applications T70 models



#### T70

Adjustment range: 10 to 50°C.

### Anti-legionella system with programmable thermal disinfection, for collective installations



e-ULTRAMIX® is a latest-generation system designed to electronically control (locally or remotely) the temperature of the mixed water in collective installations.

It is equipped with a smart control unit for automatic programming of thermal disinfection cycles, thus preventing the risks associated with legionella. It also includes 3 sensors for temperature measurement.

The data recorded by the programming unit can be recovered by using a micro-SD card, or by remote connection to a BMS (Modbus) using the appropriate interface.

## Thermostatic mixing valves

### 61C - AQUAMIX



Thermostatic mixing valve with 4 setpoint positions. Anti-scald safety.  
Setting range: 32 to 50°C. Max. differential pressure: 2 bar. Female connections.  
**Compliant with EN 1111 and EN 1287.**

Part no.	DN	Pcs. pack	Package
<b>6109C12</b>	1/2" F	1	36
<b>6110C34</b>	3/4" F	1	36
<b>6111C1</b>	1" F	1	36

Dimensions on page 428

### 61CM - AQUAMIX



Thermostatic mixing valve with 4 setpoint positions. Anti-scald safety.  
Setting range: 32 to 50°C. Max. differential pressure: 2 bar. Male union connections.  
**Compliant with EN 1111 and EN 1287.**

Part no.	DN	Pcs. pack	Package
<b>61CM12</b>	1/2" M	1	24
<b>61CM34</b>	3/4" M	1	24
<b>61CM1</b>	1" M	1	24

Dimensions on page 428

### 62C - AQUAMIX



Thermostatic mixing valve with 4 setpoint positions. Anti-scald safety.  
Setting range: 42 to 60°C. Max. differential pressure: 2 bar. Female connections.  
**Compliant with EN 1111 and EN 1287.**

Part no.	DN	Pcs. pack	Package
<b>6209C12</b>	1/2" F	1	36
<b>6210C34</b>	3/4" F	1	36
<b>6211C1</b>	1" F	1	36

Dimensions on page 428

## Thermostatic mixing valves for collective facilities

### e-ULTRAMIX®



Anti-legionella system with programmable thermal disinfection, consisting of:

- bimetallic strip thermostatic mixing valve with male threaded connections, brass body, anti-seize mechanism with strainers and check valves, anti-scald protection, PN 10, max. hot water inlet temperature: 85°C, recommended operating pressure: 2-4 bar, minimum inlet/outlet temperature differential: 5°C;
- electronic control unit for programming disinfection cycles and saving data on micro SD card. CE compliant, IP20. Power supply: 90-230 V AC - 50/60 Hz. Temperature control range: 30 to 70°C, disinfection temperature: 50 to 70°C. With auxiliary relays for controlling drainage, circulation, DHW production (10A / 250V AC NO) and alarms (8 A / 250 V AC NO/NC). Remote management interface;
- mixed water probe (L=2m)
- DHW contact probes and recirculation return probes (L=3m);
- electric actuator (0-10 V DC, consumption 1.5W, IP54) Length of actuator/control unit cable 2m.

Part no.	Description	l/min	No. of consumers	Pcs. pack	Package
<b>22TX91E37ELECV3</b>	e-ULTRAMIX 3/4"	5-56	1-7	1	1
<b>22TX92E37ELECV3</b>	e-ULTRAMIX 3/4"	5-80	1-10	1	1
<b>22TX93E37ELECV3</b>	e-ULTRAMIX 1"	5-120	1-15	1	1
<b>22TX94E37ELECV3</b>	e-ULTRAMIX 1 1/4"	5-175	1-21	1	1
<b>22TX95E37ELECV3</b>	e-ULTRAMIX 1 1/2"	8-260	1-32	1	1
<b>22TX96E37ELECV3</b>	e-ULTRAMIX 2"	8-400	1-50	1	1

Dimensions on page 428

### e-KIT



e-ULTRAMIX®cartridge

Actuator. Programming unit. Micro SD card. Cable and probes (mixing valve and return).

Part no.	For models	l/min	No. of consumers	Pcs. pack	Package
<b>22TX1E37EKITV3</b>	e-KIT 3/4"	5-56	1-7	1	1
<b>22TX2E37EKITV3</b>	e-KIT 3/4"	5-80	1-10	1	1
<b>22TX3E37EKITV3</b>	e-KIT 1"	5-120	1-15	1	1
<b>22TX4E37EKITV3</b>	e-KIT 1 1/4"	5-175	1-21	1	1
<b>22TX5E37EKITV3</b>	e-KIT 1 1/2"	8-260	1-32	1	1
<b>22TX6E37EKITV3</b>	e-KIT 2"	8-400	1-50	1	1

Dimensions on page 428

### e-ULTRAMIX® PARTS

Replacement cartridge for e-ULTRAMIX®thermostatic mixing valve



Part no.	For models	l/min	No. of consumers	Pcs. pack	Package
<b>22TX1E37ECARTV3</b>	e-CARTRIDGE 3/4"	5-56	1-7	1	1
<b>22TX2E37ECARTV3</b>	e-CARTRIDGE 3/4"	5-80	1-10	1	1
<b>22TX3E37ECARTV3</b>	e-CART 1"	5-120	1-15	1	1
<b>22TX4E37ECARTV3</b>	e-CART 1 1/4"	5-175	1-21	1	1
<b>22TX5E37ECARTV3</b>	e-CART 1 1/2"	8-260	1-32	1	1
<b>22TX6E37ECARTV3</b>	e-CART 2"	8-400	1-50	1	1

## E-ULTRAMIX ACCESSORIES



Anti-scald protection. Chrome-plated brass body. Maximum pressure: 10bar, dynamic: 5bar.

Part no.	For models	Pcs. pack	Package
<b>2297155</b>	ANTI-SCALD PROTECTION MF 1/2"	1	1
<b>2297156</b>	ANTI-SCALD PROTECTION M 24X1 WITH AERATOR	1	1

## NORMALLY CLOSED SOLENOID VALVE



Anti-scald accessory for the mixing valve (outside thermal disinfection phase)  
Alarm relay managed as control of the normally closed valve.  
Solution to be used together with anti-scald protection.  
Does not protect the draw-off points during thermal disinfection.

Code 220V / 50 Hz	Code 24V / 50 Hz	Code 24V DC	Diameter	Pcs. pack	Package
<b>149B6969</b>	<b>149B6982</b>	<b>149B6995</b>	3/4"	1	1
<b>149B6970</b>	<b>149B6983</b>	<b>149B6996</b>	1"	1	1
<b>149B6971</b>	<b>149B6984</b>	<b>149B6997</b>	1 1/4"	1	1
<b>149B6972</b>	<b>149B6985</b>	<b>149B6998</b>	1 1/2"	1	1
<b>149B6973</b>	<b>149B6986</b>	<b>149B6999</b>	2"	1	1

## MOMENTARY POWER FAILURE PROTECTION DEVICE (D.E.R.)



Keeps the solenoid valve open during a momentary power failure (4 to 10 seconds). Does not protect the draw-off points during thermal disinfection.

Part no.	Dimensions	Pcs. pack	Package
<b>22L0908905</b>	165 x 140 x 155	1	1

## REMOTE PROBE KIT



Installed on domestic hot water networks, with or without a recirculating loop, and measures the temperature of the mixed water. The measuring probe is equipped with a pocket and can be connected directly to the probe inlets of the e-ULTRAMIX® (mixed water, return loop, DHW, etc.) or to other components with a 10 KΩa NTC electrical resistance at 25°C. Accuracy of ± 0.5 °C.

Part no.	DN "	DN mm	Outlets *	Pcs. pack	Package
<b>22029700</b>	3/4"	20 x 27	1_10	1	1
<b>22029701</b>	1"	26 X 34	1_15	1	1
<b>22029702</b>	1 1/4"	33 X 42	1_21	1	1
<b>22029703</b>	1 1/2"	40 X 49	1_32	1	1
<b>22029704</b>	2"	50 X 60	1_50	1	1

\*Number of draw-off points given as an indication. Take into account the number of draw-off points connected to the network and the simultaneous use correction factor.

## e-ULTRAMIX® IP 55 WATERTIGHT CASE



Watertight wall cabinet with IP 55 protection, ideal for protecting the devices connected to the electricity network against all aggressive agents (dust, damp, splashes of water, etc.). Equipped with a case and plate subassembly for fixing the e-ULTRAMIX® programming control unit.  
Cable outlet with cable gland (4 x ISO16 and 1 x ISO20) and plugs.  
Four wall-mounting bracket. Wall mounting screws not provided.

Part no.	Dimensions	Pcs. pack	Package
<b>22029800</b>	240 X 190 X 94	1	1



## TX90 - ULTRAMIX



Visible thermostatic mixing valves for collective facilities such as swimming pools, sports centres, schools, military bases, factories, camp sites, hospitals, spas, etc., for setting the mixed water to a constant temperature and keeping it at that temperature even in the event of pressure fluctuations (max. 1.5 bar). Brass body.

Grey epoxy cover with blue graduated knob (Code E).

Chrome-plated cover with white graduated knob (Code C).

Anti-seize mechanism with strainers and check valves.

Steel bimetallic strip coated with rilsan to protect against scale formation.

Temperature control range: 10 to 50°C and 30 to 70°C (only for models with epoxy cover) with locking function. Anti-scald protection: water shut off in less than two seconds in the absence of cold water.

PN10. Max. hot water temperature: 85°C.

Flow rates guaranteed with upstream dynamic pressure: 3 bar.

Hot water inlet on left, mixed water outlet at the top.

Minimum inlet/outlet temperature differential: 5°C.

**Compliant with EN 1111/00 and UNI EN 1287/02.**

Part no.	DN	Temp. adjust.	No. of consumers	l/min	Pcs. pack	Package
<b>TX91E</b>	3/4"M	10-50°C	1-7	3-56 *	1	1
<b>TX92E</b>	3/4"M	10-50°C	1-10	3-80 *	1	1
<b>TX93E</b>	1"M	10-50°C	1-15	3-120 *	1	1
<b>TX94E</b>	1.1/4"M	10-50°C	1-21	5-175 *	1	1
<b>TX95E</b>	1.1/2"M	10-50°C	1-32	5-260 *	1	1
<b>TX96E</b>	2"M	10-50°C	1-50	6-400 *	1	1
<b>TX91C</b>	3/4"M	10-50°C	1-7	3-56 *	1	1
<b>TX92C</b>	3/4"M	10-50°C	1-10	3-80 *	1	1
<b>TX93C</b>	1"M	10-50°C	1-15	3-120 *	1	1
<b>TX94C</b>	1.1/4"M	10-50°C	1-21	5-175 *	1	1
<b>TX95C</b>	1.1/2"M	10-50°C	1-32	5-260 *	1	1
<b>TX96C</b>	2"M	10-50°C	1-50	6-400 *	1	1
<b>TX91E37</b>	3/4"M	30-70°C	1-7	3-56 *	1	1
<b>TX92E37</b>	3/4"M	30-70°C	1-10	3-80 *	1	1
<b>TX93E37</b>	1"M	30-70°C	1-15	3-120 *	1	1
<b>TX94E37</b>	1.1/4"M	30-70°C	1-21	5-175 *	1	1
<b>TX95E37</b>	1.1/2"M	30-70°C	1-32	5-260 *	1	1
<b>TX96E37</b>	2"M	30-70°C	1-50	6-400 *	1	1

Dimensions on page 429

## CAR-TX90 PARTS

Replacement cartridge for TX90 ULTRAMIX Series thermostatic mixing valves.



Part no.	For models	l/min	Pcs. pack	Package
<b>TX1</b>	TX91E, TX91C	3-56	1	1
<b>TX2</b>	TX92E, TX92C	3-80	1	1
<b>TX3</b>	TX93E, TX93C	3-120	1	1
<b>TX4</b>	TX94E, TX94C	5-175	1	1
<b>TX5</b>	TX95E, TX95C	5-260	1	1
<b>TX6</b>	TX96E, TX96C	6-400	1	1

## T70



Thermostatic mixing valve for central DHW systems with high flow rates: apartment complexes, factories, hotels, hospitals, schools, etc. Cast iron body and bronze/brass internal parts. PN16 flanged series. Adjustment range: 10 to 50°C. 30 to 70°C available to order. PN10. Max. temperature: 85°C.

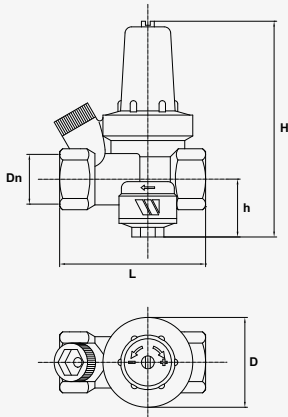
Flow rates guaranteed with upstream dynamic pressures: 3 bar. Max. dynamic pressure: 6 bar. Hot water inlet on left and cold water inlet on right, mixed water outlet at the top. A strainer and check valve should be installed at the hot/cold water inlets. Adoption of this unit discharges obligation under Italian Presidential Decree no. 412/93 governing domestic hot water production. **Compliant with EN 1111/00 and UNI EN 1287/00.**

Part no.	DN	Temp. adjust.	l/min	Pcs. pack	Package
<b>T70065</b>	65	1-36°C	10-360*	1	1
<b>T70080</b>	80	1-70°C	12-700*	1	1
<b>T70100</b>	100	2-120°C	14-1200*	1	1

Dimensions on page 429

## Overall dimensions

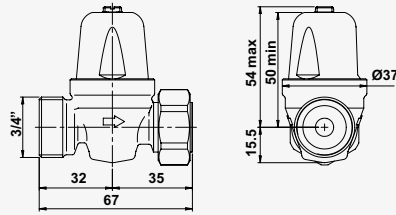
### DRV/E



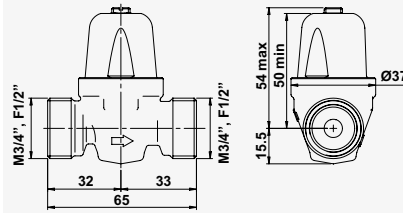
DN	L	D	H	h
1/2"	64	42	93	23
3/4"	75	45	112	30

### REDUBAR

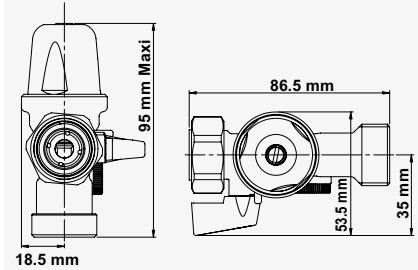
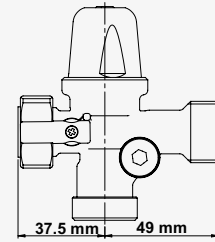
part number 82500



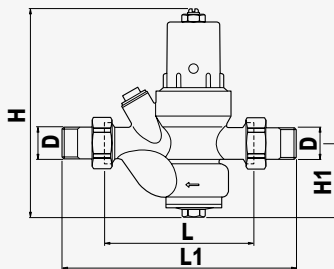
part number 82501



### REDUBLOC

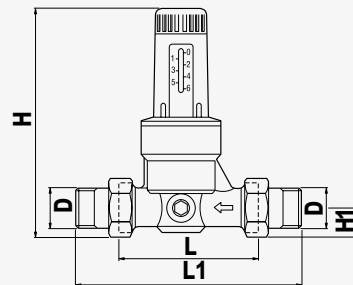


### DRV/DRVM



DN	L	L1	H	H1
1/2"	97	152	135	48
3/4"	110	171	155	58
1"	120	191	182	66
1.1/4"	140	211	227	75
1.1/2"	160	246	255	82
2"	175	261	262	88

### DRVN/DRVMN



DN	L	L1	H	H1
1/2"	84	135	113	16.5
3/4"	94	151	133	20.5
1"	104	161	140	26
1.1/4"	109	175	192	29.5
1.1/2"	134	214	200	36
2"	144	224	205	42

### 10BIS

### 10TER

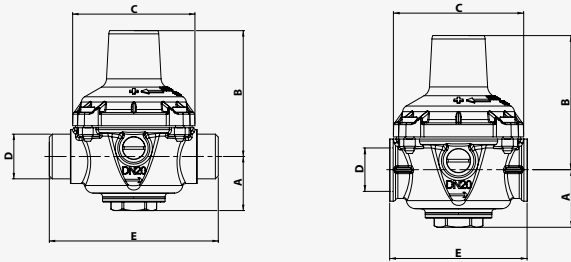


DN	D mm	D "	A mm	B mm	C mm	F mm	G mm
10	3/8	12/17	48	120	92	-	92
15	1/2	15/21	48	120	92	-	92
20	3/4	20/27	55	130	108	-	108
25	1	26/34	60	160	123	-	123
32	1 1/4	33/42	77	180	155	240	155
40	1 1/2	40/49	84	205	172	260	172
50	2	50/60	105	235	198	288	198
65	2 1/2	66/76	118	270	215	305	215
80	3	80/90	143	300	234	330	234

## Overall dimensions

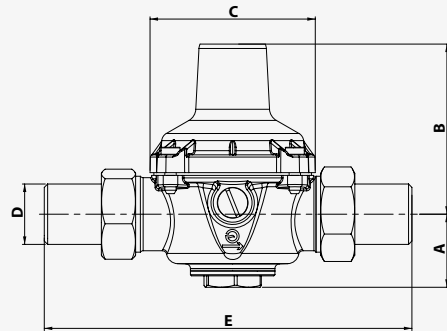
11

11BIS



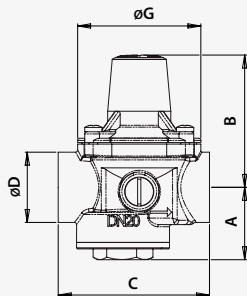
DN	D mm	D "	A mm	B mm	C mm	E 11 mm	E11BIS mm
15	15/21	1/2	230	160	85	165	85
20	20/27	3/4	290	170	85	165	95
25	26/34	1	310	175	85	265	95
32	33/42	1 1/4	350	190	120	210	100
40	40/49	1 1/2	350	190	120	210	110
50	50/60	2	400	200	150	285	125

11DO



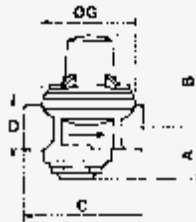
DN	D mm	D "	A mm	B mm	C mm	E mm
15	15/21	1/2	31	60	59	140
20	20/27	3/4	32	75	73	160
25	26/34	1	40	102	94	180
32	33/42	1 1/4	51	179	104	200
40	40/49	1 1/2	46	185	104	220
50	50/60	2	54	194	104	250

MULTI 7



DN	D mm	D "	A mm	B mm	C mm	G mm
20	20/27	3/4	33	61	70	57

7BIS

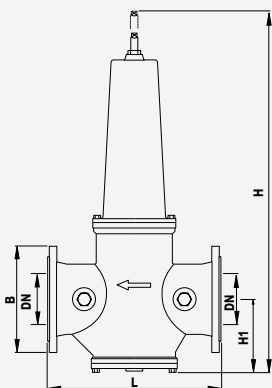


DN	D mm	D "	A mm	B mm	C mm	E mm	F "	G mm	H "
15	15/21	1/2	30	56	64.5	92	3/4	50	-
20	20/27	3/4	33.5	61	70	95	3/4	57	3/4
25	26/34	1	30	68	81	-	-	70	-
32	33/42	1 1/4	34.5	91	97	-	-	81	-
40	40/49	1 1/2	36.5	106	110	-	-	92	-
50	50/60	2	45.5	106	135	-	-	120	-

7SP



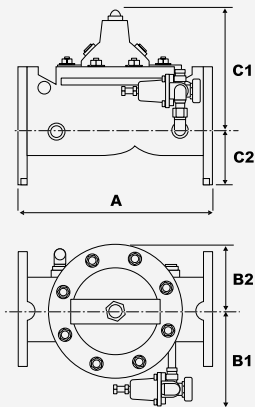
DRVD16 - DRVD25



DN	L	H	H1	B (PN16)	B (PN25)
50	230	383	83	165	165
65	290	440	90	185	185
80	310	490	100	200	200
100	350	561	121	220	235
125	400	712	152	250	270
150	450	839	169	285	300
200	550	1684	234	340	360

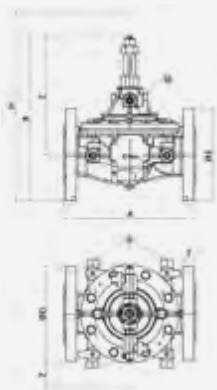
## Overall dimensions

### PR500



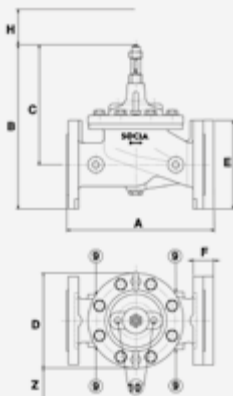
DN	PN	A	B1	B2	C1	C2
50	10/16/25	230	160	85	165	85
65/80	10/16/25	290	170	85	165	95
80	10/16/25	310	175	85	265	95
100	10/16	350	190	120	210	100
100	25	350	190	120	210	110
125	10/16	400	200	150	285	125
125	25	400	200	150	285	145
150	10/16	480	210	150	285	170
150	25	480	210	150	285	150

### BASIC VALVE (EXCEPT FOR C901)



DN "	A mm	B mm	C mm	ØD mm	ØE mm	F mm	H mm	Z mm	9 "	10 "
1 1/2 (F/F)	230	267	210	170	6 pans	-	400	254	1/4	3/8
40	230	285	210	170	152	23	400	254	1/4	3/8
50	230	285	210	170	161	23	400	254	1/4	3/8
65	290	352	257	200	185	24	470	254	3/8	1/4
80	310	372	272	217	200	26	500	254	3/8	3/8
100	350	423	302	241	235	28	510	254	3/8	3/8
125	400	506	371	296	270	30	570	254	3/8	3/8
150	480	551	401	363	300	20	650	254	3/8	3/8
200	600	709	529	467	360	22	750	254	3/8	3/8
250	730	844	631	587	425	24	900	254	1/2	1/2
300	850	975	730	680	486	27	1100	254	1/2	1/2

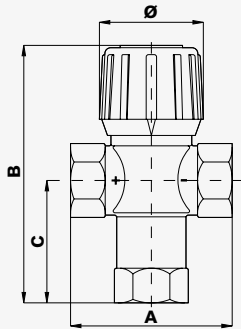
### C901



DN "	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Z mm	9 "	10 "
40	274	285	210	170	152	23	57	55	254	1/4	3/8
50	274	285	210	170	161	23	57	55	254	1/4	3/8
60	314	352	257	200	185	24	48	76	254	3/8	1/4
65	334	372	272	217	200	26	50	90	254	3/8	3/8
100	374	423	302	241	235	28	52	90	254	3/8	3/8
125	430	506	371	296	270	30	60	100	254	3/8	3/8
150	512	551	401	363	300	20	52	100	254	3/8	3/8
200	626	709	529	467	360	22	48	114	254	3/8	3/8
250	760	844	631	587	425	24	54	127	254	1/2	1/2
300	880	975	730	680	486	27	57	140	254	1/2	1/2

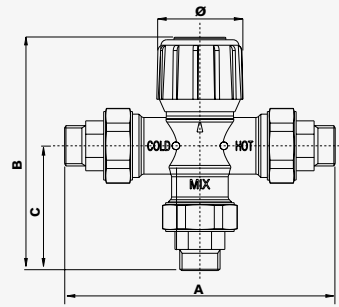
## Overall dimensions

### 61C/62C



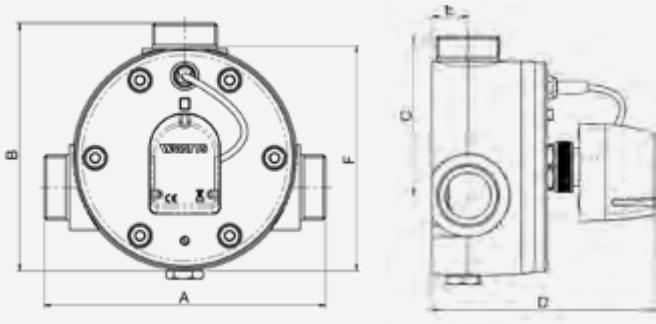
DN	A	B	C	Ø
1/2"	70	107	52	45
3/4"	70	107	52	45
1"	80	110	52	45

### 61CM



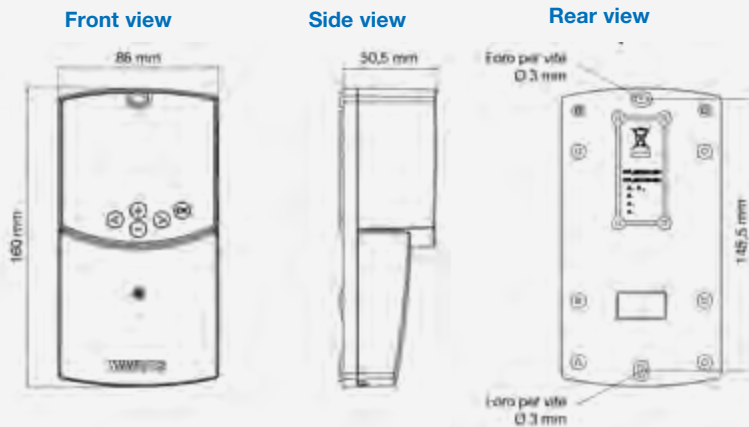
DN	L	D	H	h
1/2"	136	122	65	45
3/4"	140	124	67	45
1"	154	131	74	45

## E-ULTRAMIX THERMOSTATIC MIXING VALVE WITH ACTUATOR



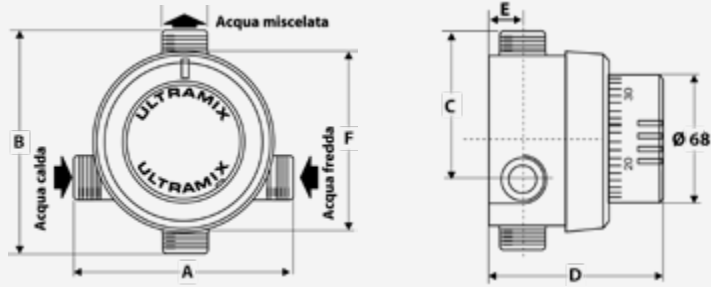
	A mm	B mm	C mm	D mm	E mm	F mm	Ø fitting mm
3/4"	117	120	81	133	19	98	G 3/4"
1"	144	142	96	141	23	116	G 1"
1 1/4"	182	160	108	156	24	145	G 1 1/4"
1 1/2"	218	200	129	171	36	175	G 1 1/2"
2"	242	217	144	181	36	198	G 2"

## E-ULTRAMIX ELECTRONIC CONTROL UNIT



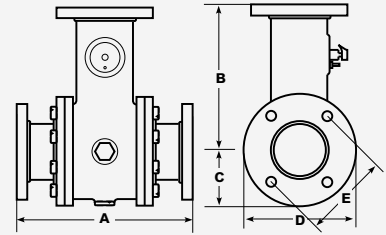
## Overall dimensions

### TX90



DN	A	B	C	D	E	F
3/4"M	117	120	81	93	18	98
1"M	144	142	95	101	23	116
1.1/4"M	182	166	107	116	24	145
1.1/2"M	218	199	129	127	32	175
2"M	242	224	144	141	36	198

### T70



DN	A	B	C	D	E
2.1/2"	294	215	90	185	145
3"	336	270	105	200	160
4"	404	270	125	220	180

## Chapter 11.3

# PROTECTION OF WATER DISTRIBUTION SYSTEMS

### SYSTEMS FOR THE PROTECTION OF DRINKING WATER NETWORKS

Farming, chemicals, food, collective and individual residences, craft and commerce: every sector of activity is connected to the same drinking water distribution network, so the risk of pollution from the backflow of contaminated water from these users is very high.

The choice of protection system must be made according to the hazard posed by the fluids in question.

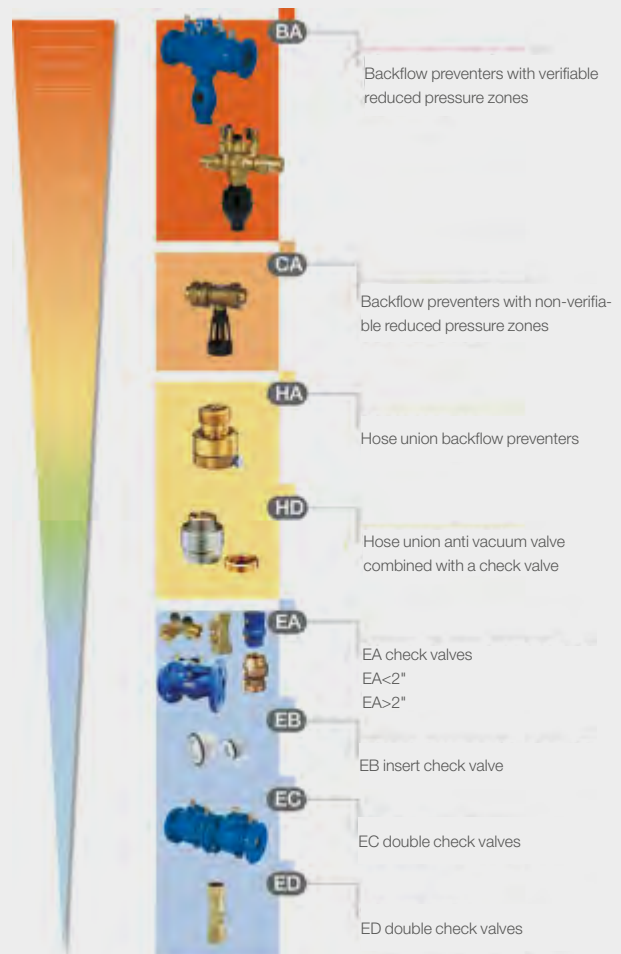
### HOW TO SELECT PROTECTION DEVICES

Specific reference should be made to the types of fluids that UNI EN 1717 divides into 5 categories, with which the various configurations of backflow preventer must be compatible:

#### FLUID CATEGORIES:

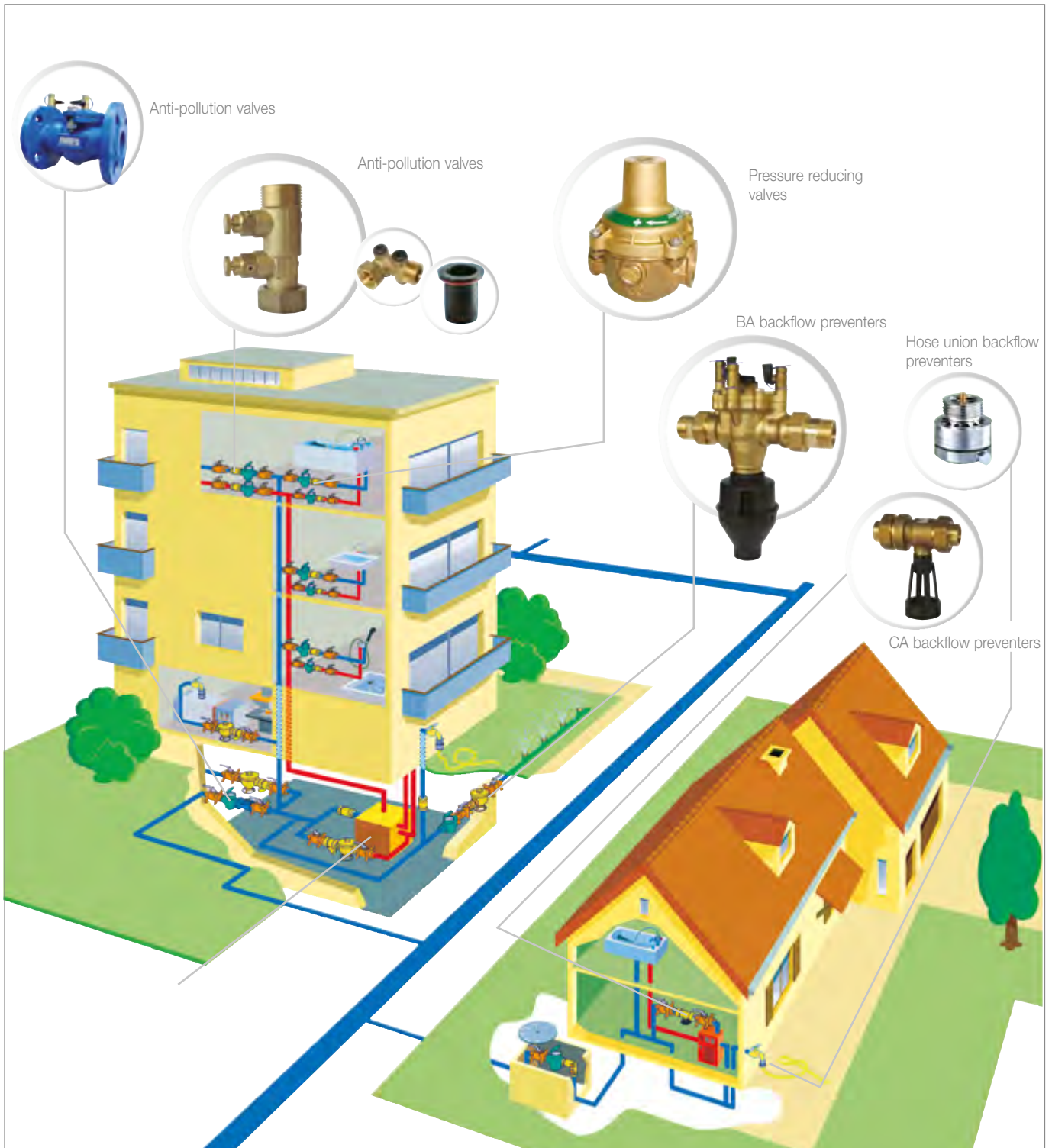
- 1 HUMAN CONSUMPTION**  
Water to be used for human consumption coming directly from a potable water distribution system.
- 2 NO HUMAN HEALTH HAZARD**  
Fluid recognized as being fit for human consumption, including water taken from a potable water distribution system, which can have undergone a change in taste, odour, colour or temperature (heating or cooling).
- 3 SLIGHT HUMAN HEALTH HAZARD**  
Fluid representing some human health hazard due to the presence of one or more "low-toxicity" substances.
- 4 SIGNIFICANT HUMAN HEALTH HAZARD**  
Fluid presenting a human health hazard due to the presence of one or more "toxic substances".
- 5 SERIOUS HUMAN HEALTH HAZARD**  
Fluid presenting a human health hazard due to the presence of "pathogenic organisms, radioactive substances or highly toxic substances".

### WATTS-SOCLA ANTI-POLLUTION RANGE





## A COMPREHENSIVE RANGE



## Threaded backflow preventers

### BABM



Compact threaded backflow preventer with regulated reduced pressure zone to EN 1717 and EN 12729 standards. Max. operating temperature 65°C (max. peak 90°C hour/day). PN10. CW602N DZR brass body. It is mandatory to fit an F21NOR Series Y-strainer upstream.

For horizontal installation. BA protection.

**Certified to UNI EN 12729.**

**Compliant with Kiwa, DVGW, NF, BELGAQUA, SITAC, SVGV, ACS (Attestation de Conformité Sanitaire) and UK Reg4.**

Part no.	Description	DN mm	DN"	Connection	Pcs. pack	Package
<b>149B70000</b>	BABM DN15	15	1/2	Threaded MM	1	1
<b>149B70001</b>	BABM DN20	20	3/4	Threaded MM	1	1
<b>149B70002</b>	BABM DN25	25	1	Threaded MM	1	1
<b>149B70003</b>	BABM DN32	32	1 1/4	Threaded MM	1	1
<b>149B70004</b>	BABM DN40	40	1 1/2	Threaded MM	1	1
<b>149B70005</b>	BABM DN50	50	2	Threaded MM	1	1

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#### TECHNICAL NOTE

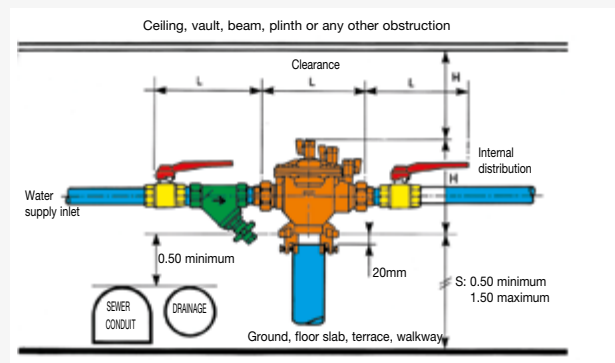
It is mandatory for controllable reduced pressure zone backflow preventers to be equipped with the following:

- UPSTREAM: • a manual stop valve,  
• a strainer with rinsing tap

- DOWNSTREAM: • a manual stop valve.

The following accessories are recommended:

- Manual ball stop valve, DN 1/2" to 2" full bore.
- DN 65 to 250 mm butterfly valve.
- Inclined strainer with rinsing tap, 1/2" to 2" threaded.
- Inclined strainer with flange-type rinsing tap PN 10 from DN 65 to 250 for BA 4760.
- Built-in evacuation funnel.
- Horizontal installation.



#### PRECAUTIONS:

- If there is a shut-off upstream in the vicinity of the backflow preventer, install a check valve between the two.
- Always operate the upstream valve gently, to ensure gradual pressurisation of the backflow preventer.

### F21NOR



Brass Y-strainer with removable stainless steel mesh (AISI 304). Plug with O-ring seal. FF ISO 228 threaded connections (equivalent DIN 259 and BS 2779).

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	DN	Kvs	Filtration rating	Pcs. pack	Package
<b>F21NOR15</b>	1/2"	3.8	500 µm	15	15
<b>F21NOR20</b>	3/4"	7.2	500 µm	10	10
<b>F21NOR25</b>	1"	11	500 µm	10	10
<b>F21NOR32</b>	1.1/4"	13	500 µm	5	5
<b>F21NOR40</b>	1.1/2"	15	500 µm	2	2
<b>F21NOR50</b>	2"	28	500 µm	2	2
<b>F21NOR65F</b>	2.1/2"	77	800 µm	1	1
<b>F21NOR80F</b>	3"	93	800 µm	1	1
<b>F21NOR100F</b>	4"	146	800 µm	1	1

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**RBM1 PARTS**

Replacement first check valve (upstream) for BA BM backflow preventer, consisting of check valve, gasket and cover closing bolt.

Part no.	DN	Pcs. pack	Package
<b>149B050111</b>	DN15 and DN20	1	1
<b>149B050115</b>	DN25 and DN32	1	1
<b>149B049561</b>	DN40 and DN50	1	1



**RBM2 PARTS**

Replacement second check valve (downstream) for BA BM backflow preventer, consisting of check valve, gasket and cover closing bolt.

Part no.	DN	Pcs. pack	Package
<b>149B050112</b>	DN15 and DN20	1	1
<b>149B050116</b>	DN25 and DN32	1	1
<b>149B049562</b>	DN40 and DN50	1	1



**RBMS PARTS**

Replacement drain valve for BA BM backflow preventer, consisting of drain valve, drain valve extraction bolt, gasket and cover closing bolt.

Part no.	DN	Pcs. pack	Package
<b>149B049835</b>	DN15 and DN20	1	1
<b>149B050114</b>	DN25 and DN32	1	1
<b>149B049563</b>	DN40 and DN50	1	1

**BABM CD**



Threaded backflow preventer with regulated reduced pressure zone with elbow funnel for vertical installation.

Body: brass. PA polyamide drain valve unit. POM polyoxymethylene check valves. PFA pressure 10 bar. Max. temperature: 65°C. Special requirements: vertical descending installation. **Certified to UNI EN12729.**

**Approvals: ACS (Attestation de Conformité Sanitaire), NF, BELGAQUA, KIWA, DVGW.**

Part no.	Description	DN mm	DN"	Connection	Pcs. pack	Package
<b>149B70018</b>	BABM CD D15	15	1/2	Threaded MM	1	1
<b>149B70019</b>	BABM CD D20	20	3/4	Threaded MM	1	1
<b>149B70020</b>	BABM CD D25	25	1	Threaded MM	1	1
<b>149B70021</b>	BABM CD D32	32	1 1/4	Threaded MM	1	1
<b>149B70022</b>	BABM CD D40	40	1 1/2	Threaded MM	1	1
<b>149B70023</b>	BABM CD D50	50	2	Threaded MM	1	1

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## Flanged backflow preventers

### BA4760



Compact flanged backflow preventer with regulated reduced pressure zone to EN 1717 and EN 12729 standards. Cast iron body with epoxy finish. Stainless steel springs. Complete with drain system with cast iron funnel. Max. operating temperature: 65°C. PN10. It is mandatory to fit an Y333P Series Y-strainer upstream. Flanged connections: EN 1092-2. BA protection.

**Certified to UNI EN 12729.**

**Compliant with NF, ACS (Attestation de Conformité Sanitaire) and UK Reg4.**

**Its construction and test characteristics make it suitable for installation in fire-suppression systems with maximum pressure of 12 bar.**

Part no.	Description	DN mm	DN"	Feature	Pcs. pack	Package
149B3486	BA4760 DN65	65	2 1/2	Flanged PN10	1	1
149B3097	BA4760 DN80	80	3	Flanged PN10	1	1
149B3098	BA4760 D100	100	4	Flanged PN10	1	1
149B3400	BA4760 D150	150	6	Flanged PN10	1	1
149B3401	BA4760 D200	200	8	Flanged PN10	1	1
149B3402	BA4760 D250	250	10	Flanged PN10	1	1

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### Y333P



Y-strainer in GG25 cast iron (DN40 and 50) or GGG40 cast iron (DN65 to 400), with internal and external epoxy finish, stainless steel mesh 1/2" brass rinsing tap. Filtration Ø: 500 microns (DN40 and 50), 800 microns (DN65), 1250 microns (DN80 to 200), 1600 microns (DN250 to 400). Maximum pressure: 16 bar (DN40 to 150), 10 bar (DN200 to 400). Max. temperature: 100°C.

**Approvals: ACS (Attestation de Conformité Sanitaire), PED 2014/68/EU, BUREAU VERITAS.**

Part no.	Description	DN mm	DN"	PN	PFA water	Package
149B3280	STRAINER Y333P DN40	40	1 1/2	16	16	1
149B3281	STRAINER Y333P DN50	50	2	16	16	1
149B3282	STRAINER Y333P DN65	65	2 1/2*	16	16	1
149B3283	STRAINER Y333P DN80	80	3**	16	16	1
149B3284	STRAINER Y333P DN100	100	4	16	16	1
149B3285	STRAINER Y333P DN125	125	5	16	16	1
149B3286	STRAINER Y333P DN150	150	6	16	16	1
149B3287	STRAINER Y333P DN200	200	8	10	10	1
149B3288	STRAINER Y333P DN250	250	10	10	10	1
149B3289	STRAINER Y333P DN300	300	12	10	10	1

\* Double drilling DN65/DN60 - \*\* Double drilling 4 and 8 holes.

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### PN16 DRILLINGS

Part no.	Description	DN mm	DN"	PN	PFA water	Package
149B23118	STRAINER Y333P DN200	200	8	16	10	1
149B23120	STRAINER Y333P DN250	250	10	16	10	1
149B23122	STRAINER Y333P DN300	300	12	16	10	1

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### UPSTREAM VALVE PARTS

Part no.	DN mm	DN"	Feature	Pcs. pack	Package
149B055301	65	2 1/2	for BA4760	1	1
149B055370	80	3	for BA4760	1	1
149B055371	100	4	for BA4760	1	1
149B055372	150	6	for BA4760	1	1
149B055373	200	8	for BA4760	1	1
149B055373	250	10	for BA4760	1	1



**DOWNSTREAM VALVE PARTS**



Part no.	DN mm	DN"	Feature	Pcs. pack	Package
149B055374	65	2 1/2	for BA4760	1	1
149B055375	80	3	for BA4760	1	1
149B055376	100	4	for BA4760	1	1
149B055377	150	6	for BA4760	1	1
149B055378	200	8	for BA4760	1	1
149B055378	250	10	for BA4760	1	1

**VALVE ASSEMBLY PARTS**



Part no.	DN mm	DN"	Feature	Pcs. pack	Package
149B055379	65	2 1/2	for BA4760	1	1
149B055380	80	3	for BA4760	1	1
149B055381	100	4	for BA4760	1	1
149B055382	150	6	for BA4760	1	1
149B055383	200	8	for BA4760	1	1
149B055383	250	10	for BA4760	1	1

**COMPLETE PARTS KIT for BA4760**

Upstream and downstream valve units, and valve assembly.



Part no.	DN mm	DN"	Feature	Pcs. pack	Package
149B19	65	2 1/2	for BA4760	1	1
149B20	80	3	for BA4760	1	1
149B21	100	4	for BA4760	1	1
149F017922	150	6	for BA4760	1	1
149B25	200	8	for BA4760	1	1
149B25	250	10	for BA4760	1	1

**BA BACKFLOW PREVENTER TEST KIT**



Kit for testing BA backflow preventers. Equipped with one pressure gauge upstream, one downstream and one for measuring the differential pressure. Includes brass adaptors for connecting BA backflow preventers to the test valves. The unit is supplied in a rugged carrying case.

Part no.	Description	DN mm	DN"	Feature	Pcs. pack	Package
149B053592	TEST KIT	-	-	for BA backflow preventers	1	1

**Other backflow preventers and anti-pollution valves**

**CA9C**



Non-controllable different pressure zone backflow preventer with built-in strainer. Simple and effective in preventing back-siphonage and contamination of drinking water supply lines. (Class 3 fluids). Developed for DN 1/2" and 3/4" connections to the water supply line and heating systems rated > 45 kW. FF unions. Body: DZR bronze. Springs: stainless steel. Seals: rubber. Drain funnel: plastic. Connection to funnel: Ø 40. PN10. Max. operating temperature: 65°C. Protection: CA. **Compliant with: EN1717. Approvals: BELGAQUA, KIWA, NF.**

Part no.	Description	DN	Pcs. pack	Package
407015290	CA9C	1/2" FF	1	10
407020290	CA9C	3/4" FF	1	10

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## CA 2096



Non-controllable reduced pressure zone backflow preventer with built-in funnel. Body: brass. Valves: POM (polyacetal) and brass. Diaphragm and gaskets: NBR (nitrile) and EPDM. Female fittings with fastening nut. Springs: stainless steel. PFA pressure 10 bar. Temperature: 65°C.

Options: Special versions in MM and nickel-plated versions in MM and FF available to order. Special requirements: Horizontal installation. Application: Heating systems with power of less than 70 Kw.

**Approvals: NF, BELGAQUA, KIWA, SVGW, ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN	DN"	Connection	Pcs. pack	Package
<b>149B3781</b>	CA 2096	15	1/2	Threaded FF	1	10
<b>149B3782</b>	CA 2096	20	3/4	Threaded FF	1	10

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## EA291NF



Body: Brass FF with 2 x 1/4" drilled bosses. Plugs: POM (polyacetal). Guide + disc: POM Seal: EPDM. Spring: stainless steel.

Temperature: -10°C +80°C. Maximum pressure: 10 bar.

Applications: Clear liquids, inert gases, protection of drinking water networks.

**Approvals: ACS, NF, Bureau Veritas, Belgaqua.**

Part no.	PFA water	DN	DN"	Connection	Pcs. pack	Package
<b>149B2220</b>	10	15	1/2"	FF	1	1
<b>149B2212</b>	10	20	3/4"	FF	1	1
<b>149B2222</b>	10	25	1"	FF	1	1
<b>149B2213</b>	10	32	1 1/4"	FF	1	1
<b>149B2214</b>	10	40	1 1/2"	FF	1	1
<b>149B2215</b>	10	50	2"	FF	1	1
<b>149B2216</b>	10	50	2 fittings 2 1/2"	FF	1	1

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## BASIC CC



Anti-pollution valve equipped with a check valve on the downstream side, an integrated ball valve on the upstream side and four test points where air vents or other accessories can be installed. Body, fittings, ball, plugs: brass. Built-in check valve: POM. Steel lever. Seal: EPDM. Fittings: compression, female/female, male/male or union nut.

Min. temperature: 5°C / Continuous 65°C / Peak (1h/day): 90°C.

Applications: construction, water distribution, protection of drinking water networks

**Approvals: ACS, Belgaqua DN15-20-25, Kiwa DN15-20-25.**

Part no.	PFA water	DN mm	DN"	Connection	Pcs. pack	Package
<b>149B044125</b>	10	15	1/2"	Compression 15mm	1	1
<b>149B044127</b>	10	20	3/4"	Compression 22mm	1	1
<b>149F047926</b>	10	25	1"	Compression 28mm	1	1
<b>149F047922</b>	10	15	1/2"	FF	1	1
<b>149F047924</b>	10	20	3/4"	FF	1	1
<b>149F047927</b>	10	25	1"	FF	1	1
<b>149F047923</b>	10	15	3/4"	MM	1	1
<b>149F047925</b>	10	20	1"	MM	1	1
<b>149F047928</b>	10	25	1 1/4"	MM	1	1
<b>149B051272</b>	10	15	3/4"	Union nut M	1	1
<b>149F048946</b>	10	20	1"	Union nut M	1	1
<b>149F047930</b>	10	32	1 1/4"	FF	1	1
<b>149F047932</b>	10	40	1 1/2"	FF	1	1
<b>149F047933</b>	10	50	2"	FF	1	1
<b>149F047931</b>	10	32	1 1/2"	MM	1	1
<b>149F048584</b>	10	40	2"	MM	1	1

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**DAWS**



Anti-siphon vacuum breaker for sanitary appliances. Recommended whenever there is a risk of flowback when immersing a hose in a bath or sink. Chrome-plated brass body. Stainless steel spring. Max. temperature: 60°C. PN10. Protection: HA. Vertical descending installation. **ASSE, CSA and ANSI compliant.**

Part no.	DN	Pcs. pack	Package
<b>1505315</b>	1/2" MF	1	50

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**DAWNF**



Anti-siphon vacuum breaker device for washing and watering taps outside the home. Install between the tap and the hose. Equipped with an anti-freeze device to allow valve drainage. Brass body. Stainless steel spring. Max. temperature: 60°C. PN10. Protection: HA. Vertical descending installation.

**ASSE, CSA and ANSI compliant.**

Part no.	DN	Pcs. pack	Package
<b>1505320</b>	3/4" MF	1	50

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**HD206**



Anti-siphon vacuum breaker for taps and sanitary appliances. Particularly suitable for shower hoses. To be installed without downstream closure device. Chrome-plated brass body, POM (polyacetal) guide, POM disc, NBR diaphragm. Vertical ascending installation.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Connection F"	M"	Pcs. pack	Package
<b>149B2179</b>	3/4	1/2	1	1

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**DAWN**



Anti-siphon vacuum breaker device for constant pressure applications. To be installed on the tap end-piece at the water outlet. As it is equipped with a direct safety drain it is installed above the service pipework. Chrome-plated brass body. Stainless steel internal components. PN10. Max. temperature: 60°C. Protection: HA. Vertical descending installation.

**ASSE, CSA and ANSI compliant.**

Part no.	DN	Pcs. pack	Package
<b>1505330</b>	3/8" FF	1	50

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## Solenoid valves

## WKB2



Diaphragm solenoid valve, indirect control, normally closed, 2-way. Brass body. Brass and stainless steel internal system. F/F fittings. EPDM diaphragm (-10 to 140°C). Fluoroelastomer (FKM) diaphragm (-10 to 140°C). Protection: IP65 with connector (included in the package). Optional: manual control.

Part no.	Coil	DN mm	DN"	Feature	Pcs. pack	Package
149B6967	30E: 220/230V-50/60HZ-8VA	10	3/8	EPDM - 220V/50Hz AC	1	1
149B6968	30E: 220/230V-50/60HZ-8VA	15	1/2	EPDM - 220V/50Hz AC	1	1
149B6969	30E: 220/230V-50/60HZ-8VA	20	3/4	EPDM - 220V/50Hz AC	1	1
149B6970	30E: 220/230V-50/60HZ-8VA	25	1	EPDM - 220V/50Hz AC	1	1
149B6971	30E: 220/230V-50/60HZ-8VA	32	1 1/4	EPDM - 220V/50Hz AC	1	1
149B6972	20E: 220/230V-50/60HZ-15VA	40	1 1/2	EPDM - 220V/50Hz AC	1	1
149B6973	20E: 220/230V-50/60HZ-15VA	50	2	EPDM - 220V/50Hz AC	1	1
149B6974	30E: 220/230V-50/60HZ-8VA	15	1/2	FKM - 220V/50Hz AC	1	1
149B6975	30E: 220/230V-50/60HZ-8VA	20	3/4	FKM - 220V/50Hz AC	1	1
149B6976	30E: 220/230V-50/60HZ-8VA	25	1	FKM - 220V/50Hz AC	1	1
149B6977	30E: 220/230V-50/60HZ-8VA	32	1 1/4	FKM - 220V/50Hz AC	1	1
149B6978	20E: 220/230V-50/60HZ-15VA	40	1 1/2	FKM - 220V/50Hz AC	1	1
149B6979	20E: 220/230V-50/60HZ-15VA	50	2	FKM - 220V/50Hz AC	1	1
149B6980	30B: 24V-50/60HZ-8VA	10	3/8	EPDM - 24V/50Hz AC	1	1
149B6981	30B: 24V-50/60HZ-8VA	15	1/2	EPDM - 24V/50Hz AC	1	1
149B6982	30B: 24V-50/60HZ-8VA	20	3/4	EPDM - 24V/50Hz AC	1	1
149B6983	30B: 24V-50/60HZ-8VA	25	1	EPDM - 24V/50Hz AC	1	1
149B6984	30B: 24V-50/60HZ-8VA	32	1 1/4	EPDM - 24V/50Hz AC	1	1
149B6985	20B: 24V-50/60HZ-15VA	40	1 1/2	EPDM - 24V/50Hz AC	1	1
149B6986	20B: 24V-50/60HZ-15VA	50	2	EPDM - 24V/50Hz AC	1	1
149B6987	30B: 24V-50/60HZ-8VA	15	1/2	FKM - 24V/50Hz AC	1	1
149B6988	30B: 24V-50/60HZ-8VA	20	3/4	FKM - 24V/50Hz AC	1	1
149B6989	30B: 24V-50/60HZ-8VA	25	1	FKM - 24V/50Hz AC	1	1
149B6990	30B: 24V-50/60HZ-8VA	32	1 1/4	FKM - 24V/50Hz AC	1	1
149B6991	20B: 24V-50/60HZ-15VA	40	1 1/2	FKM - 24V/50Hz AC	1	1
149B6992	20B: 24V-50/60HZ-15VA	50	2	FKM - 24V/50Hz AC	1	1
149B6993	301: 24VDC-6.5W	10	3/8	EPDM - 24 VDC	1	1
149B6994	301: 24VDC-6.5W	15	1/2	EPDM - 24 VDC	1	1
149B6995	301: 24VDC-6.5W	20	3/4	EPDM - 24 VDC	1	1
149B6996	301: 24VDC-6.5W	25	1	EPDM - 24 VDC	1	1
149B6997	301: 24VDC-6.5W	32	1 1/4	EPDM - 24 VDC	1	1
149B6998	201: 24V/DC-10W	40	1 1/2	EPDM - 24 VDC	1	1
149B6999	201: 24V/DC-10W	50	2	EPDM - 24 VDC	1	1
149B12400	301: 24VDC-6.5W	15	1/2	FKM - 24 VDC	1	1
149B12401	301: 24VDC-6.5W	20	3/4	FKM - 24 VDC	1	1
149B12402	301: 24VDC-6.5W	25	1	FKM - 24 VDC	1	1
149B12403	301: 24VDC-6.5W	32	1 1/4	FKM - 24 VDC	1	1
149B12404	201: 24V/DC-10W	40	1 1/2	FKM - 24 VDC	1	1
149B12405	201: 24V/DC-10W	50	2	FKM - 24 VDC	1	1

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**WZB2**



Diaphragm solenoid valve, indirect control, normally open, 2-way. Brass body. Brass and stainless steel internal system. F/F fittings. EPDM diaphragm (-10 to 140°C). Fluoroelastomer (FKM) diaphragm (-10 to 140°C). Protection: IP65 with connector (included in the package). Optional: manual control.

Part no.	Coil	DN mm	DN"	Feature	Pcs. pack	Package
149B12406	30E: 220/230V-50/60HZ-8VA	10	3/8	EPDM - 220V/50Hz AC	1	1
149B12407	30E: 220/230V-50/60HZ-8VA	15	1/2	EPDM - 220V/50Hz AC	1	1
149B12408	30E: 220/230V-50/60HZ-8VA	20	3/4	EPDM - 220V/50Hz AC	1	1
149B12409	30E: 220/230V-50/60HZ-8VA	25	1	EPDM - 220V/50Hz AC	1	1
149B12410	30E: 220/230V-50/60HZ-8VA	32	1 1/4	EPDM - 220V/50Hz AC	1	1
149B12411	20E: 220/230V-50/60HZ-15VA	40	1 1/2	EPDM - 220V/50Hz AC	1	1
149B12412	20E: 220/230V-50/60HZ-15VA	50	2	EPDM - 220V/50Hz AC	1	1
149B12413	30E: 220/230V-50/60HZ-8VA	15	1/2	FKM - 220V/50Hz AC	1	1
149B12414	30E: 220/230V-50/60HZ-8VA	20	3/4	FKM - 220V/50Hz AC	1	1
149B12415	30E: 220/230V-50/60HZ-8VA	25	1	FKM - 220V/50Hz AC	1	1
149B12416	30E: 220/230V-50/60HZ-8VA	32	1 1/4	FKM - 220V/50Hz AC	1	1
149B12417	20E: 220/230V-50/60HZ-15VA	40	1 1/2	FKM - 220V/50Hz AC	1	1
149B12418	20E: 220/230V-50/60HZ-15VA	50	2	FKM - 220V/50Hz AC	1	1
149B12419	30B: 24V-50/60HZ-8VA	10	3/8	EPDM - 24V/50Hz AC	1	1
149B12420	30B: 24V-50/60HZ-8VA	15	1/2	EPDM - 24V/50Hz AC	1	1
149B12421	30B: 24V-50/60HZ-8VA	20	3/4	EPDM - 24V/50Hz AC	1	1
149B12422	30B: 24V-50/60HZ-8VA	25	1	EPDM - 24V/50Hz AC	1	1
149B12423	30B: 24V-50/60HZ-8VA	32	1 1/4	EPDM - 24V/50Hz AC	1	1
149B12424	20B: 24V-50/60HZ-15VA	40	1 1/2	EPDM - 24V/50Hz AC	1	1
149B12425	20B: 24V-50/60HZ-15VA	50	2	EPDM - 24V/50Hz AC	1	1
149B12426	30B: 24V-50/60HZ-8VA	15	1/2	FKM - 24V/50Hz AC	1	1
149B12427	30B: 24V-50/60HZ-8VA	20	3/4	FKM - 24V/50Hz AC	1	1
149B12428	30B: 24V-50/60HZ-8VA	25	1	FKM - 24V/50Hz AC	1	1
149B12429	30B: 24V-50/60HZ-8VA	32	1 1/4	FKM - 24V/50Hz AC	1	1
149B12430	20B: 24V-50/60HZ-15VA	40	1 1/2	FKM - 24V/50Hz AC	1	1
149B12431	20B: 24V-50/60HZ-15VA	50	2	FKM - 24V/50Hz AC	1	1
149B12432	301: 24VDC-6.5W	10	3/8	EPDM - 24 VDC	1	1
149B12433	301: 24VDC-6.5W	15	1/2	EPDM - 24 VDC	1	1
149B12434	301: 24VDC-6.5W	20	3/4	EPDM - 24 VDC	1	1
149B12435	301: 24VDC-6.5W	25	1	EPDM - 24 VDC	1	1
149B12436	301: 24VDC-6.5W	32	1 1/4	EPDM - 24 VDC	1	1
149B12437	201: 24V/DC-10W	40	1 1/2	EPDM - 24 VDC	1	1
149B12438	201: 24V/DC-10W	50	2	EPDM - 24 VDC	1	1
149B12439	301: 24VDC-6.5W	15	1/2	FKM - 24 VDC	1	1
149B12440	301: 24VDC-6.5W	20	3/4	FKM - 24 VDC	1	1
149B12441	301: 24VDC-6.5W	25	1	FKM - 24 VDC	1	1
149B12442	301: 24VDC-6.5W	32	1 1/4	FKM - 24 VDC	1	1
149B12443	201: 24V/DC-10W	40	1 1/2	FKM - 24 VDC	1	1
149B12444	201: 24V/DC-10W	50	2	FKM - 24 VDC	1	1

Dimensions on page 453

## WBI2



Diaphragm solenoid valve, indirect control (except for 1/4", which is direct control), normally closed, 2-way. 316 stainless steel body and stainless steel internal system. F/F fittings. Fluoroelastomer (FKM) diaphragm (-10 to +140°C). Protection: IP65 with connector (included in the package). Optional: manual control, except DN 1/4".

Part no.	Coil	DN mm	DN"	Feature	Pcs. pack	Package
149B12445	30E: 220/230V-50/60HZ-8VA	4,5	1/4	FKM - 220V/50Hz AC	1	1
149B12446	30E: 220/230V-50/60HZ-8VA	15	1/2	FKM - 220V/50Hz AC	1	1
149B12447	30E: 220/230V-50/60HZ-8VA	20	3/4	FKM - 220V/50Hz AC	1	1
149B12448	30E: 220/230V-50/60HZ-8VA	25	1	FKM - 220V/50Hz AC	1	1
149B12449	GDV14230AY: 220/240V-50/60HZ-31VA	32	1 1/4	FKM - 220V/50Hz AC	1	1
149B12450	GDV14230AY: 220/240V-50/60HZ-31VA	40	1 1/2	FKM - 220V/50Hz AC	1	1
149B12451	20B: 24V-50/60HZ-8VA	4,5	1/4	FKM - 24V/50Hz AC	1	1
149B12452	30B: 24V-50/60HZ-8VA	15	1/2	FKM - 24V/50Hz AC	1	1
149B12453	30B: 24V-50/60HZ-8VA	20	3/4	FKM - 24V/50Hz AC	1	1
149B12454	30B: 24V-50/60HZ-8VA	25	1	FKM - 24V/50Hz AC	1	1
149B12455	GDV14024DY: 24V-50/60HZ	32	1 1/4	FKM - 24V/50Hz AC	1	1
149B12456	GDV14024DY: 24V-50/60HZ	40	1 1/2	FKM - 24V/50Hz AC	1	1
149B12457	201: 24VDC-6.5W	4,5	1/4	FKM - 24 VDC	1	1
149B12458	301: 24VDC-6.5W	15	1/2	FKM - 24 VDC	1	1
149B12459	301: 24VDC-6.5W	20	3/4	FKM - 24 VDC	1	1
149B12460	301: 24VDC-6.5W	25	1	FKM - 24 VDC	1	1
149B12461	GDV14024CY: 24V/DC-14W	32	1 1/4	FKM - 24 VDC	1	1
149B12462	GDV14024CY: 24V/DC-14W	40	1 1/2	FKM - 24 VDC	1	1

Dimensions on page 453

## HK2

Direct-control assisted-lift solenoid valve, normally closed, 2-way. DZR brass body. Brass and stainless steel internal system. F/F fittings. EPDM diaphragm (-10 to 140°C). Protection: IP65 with connector (included in the package).



Part no.	Coil	DN mm	DN"	Feature	Pcs. pack	Package
149B12472	20E: 220/230V-50/60HZ-30VA	10	3/8	EPDM - 220V/50Hz AC	1	1
149B12473	52E: 220/230V-50/60HZ-30VA	15	1/2	EPDM - 220V/50Hz AC	1	1
149B12474	52E: 220/230V-50/60HZ-30VA	20	3/4	EPDM - 220V/50Hz AC	1	1
149B12475	52E: 220/230V-50/60HZ-30VA	25	1	EPDM - 220V/50Hz AC	1	1
149B12476	20B: 24V-50/60HZ-30VA	10	3/8	EPDM - 24V/50Hz AC	1	1
149B12477	52B: 24V-50/60HZ-30VA	15	1/2	EPDM - 24V/50Hz AC	1	1
149B12478	52B: 24V-50/60HZ-30VA	20	3/4	EPDM - 24V/50Hz AC	1	1
149B12479	52B: 24V-50/60HZ-30VA	25	1	EPDM - 24V/50Hz AC	1	1
149B12480	201: 24V/DC-27W	10	3/8	EPDM - 24 VDC	1	1
149B12481	521: 24V/DC-27W	15	1/2	EPDM - 24 VDC	1	1
149B12482	521: 24V/DC-27W	20	3/4	EPDM - 24 VDC	1	1
149B12483	521: 24V/DC-27W	25	1	EPDM - 24 VDC	1	1

Dimensions on page 453

**AKB2**



Direct-control solenoid valve for diesel, normally closed, 2-way.  
 Brass body. Brass and stainless steel internal system. F/F fittings.  
 Fluoroelastomer (FKM) diaphragm (-10 to 140°C).  
 Protection: IP65 with connector (included in the package).

Part no.	Coil	DN mm	DN"	Feature	Pcs. pack	Package
<b>149B12484</b>	20E: 220/230V-50/60HZ-15VA	3	1/4	FKM - 220V/50Hz AC	1	1
<b>149B12485</b>	20E: 220/230V-50/60HZ-15VA	4,5	1/4	FKM - 220V/50Hz AC	1	1
<b>149B12486</b>	20E: 220/230V-50/60HZ-15VA	4,5	3/8	FKM - 220V/50Hz AC	1	1
<b>149B12487</b>	20E: 220/230V-50/60HZ-15VA	8	1/2	FKM - 220V/50Hz AC	1	1
<b>149B12488</b>	20B: 24V-50/60HZ-15VA	3	1/4	FKM - 220V/50Hz AC	1	1
<b>149B12489</b>	20B: 24V-50/60HZ-15VA	4,5	1/4	FKM - 24V/50Hz AC	1	1
<b>149B12490</b>	20B: 24V-50/60HZ-15VA	4,5	3/8	FKM - 24V/50Hz AC	1	1
<b>149B12491</b>	20B: 24V-50/60HZ-15VA	8	1/2	FKM - 24V/50Hz AC	1	1
<b>149B12492</b>	201: 24V/DC-10W	3	1/4	FKM - 24V/50Hz AC	1	1
<b>149B12493</b>	201: 24V/DC-10W	4,5	1/4	FKM - 24 VDC	1	1
<b>149B12494</b>	201: 24V/DC-10W	10	3/8	FKM - 24 VDC	1	1
<b>149B12495</b>	201: 24V/DC-10W	8	1/2	FKM - 24 VDC	1	1

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**NEW MODEL COILS**

Part no.	Model	DN mm	DN"	Voltage	Pcs. pack	Package
<b>149B12504</b>	201	-	-	24VDC/10W	1	1
<b>149B12507</b>	301	-	-	24VDC/6.5W	1	1
<b>149B12506</b>	521	-	-	24VDC/27W	1	1
<b>149B12501</b>	20B	-	-	24 V. 50/60HZ.15VA	1	1
<b>149B12497</b>	20E	-	-	220/230V.50/60HZ.15VA	1	1
<b>149B12503</b>	30B	-	-	24 V. 50/60HZ.8VA	1	1
<b>149B12499</b>	30E	-	-	220/230V.50/60HZ.8VA	1	1
<b>149B12502</b>	52B	-	-	24 V. 50/60HZ.30VA	1	1
<b>149B12498</b>	52E	-	-	220/230V.50/60HZ.30VA	1	1
<b>149B12505</b>	GDV14024CY	-	-	24VDC/14W	1	1
<b>149B12607</b>	GDV14024DY	-	-	24V/50Hz AC	1	1
<b>149B12500</b>	GDV14230AY	-	-	220/240V.50/60HZ.31VA	1	1

12VDC version available to order

SPARE CONNECTOR: Contact our sales offices

**REPLACEMENT COILS FOR NON-CATALOGUE SERIES**

Coil without connector for solenoid valve: WZB2-WKB2-WKE2-WBI2-HK2-AKB2 (IP65 with solenoid valve). Max. roomtemperature : 40°C.



Part no.	Description	DN mm	DN"	Voltage	Pcs. pack	Package
<b>149B5290</b>	220/230V.50HZ.9W	-	-	220/230V 50Hz 9W	1	1
<b>149B5291</b>	380/400V 50HZ.9W	-	-	380/400V 50Hz 9W	1	1
<b>149B5292</b>	24V/50HZ.9W	-	-	24V 50Hz 9W	1	1
<b>149B5294</b>	110V/50HZ.9W	-	-	110V 50Hz 9W	1	1
<b>149B5295</b>	12V/CC.15W	-	-	12 VDC 15 W	1	1
<b>149B5296</b>	24V/DC.15W	-	-	24 VDC 15 W	1	1
<b>149B11137</b>	12V/50HZ.10W	-	-	12V 50Hz 10W	1	1
<b>149B5583</b>	48V/50HZ.9W	-	-	48V 50Hz 9W	1	1

Part no.	Description	Pcs. pack	Package
<b>149F012019</b>	connector for coils	1	1

850T



Solenoid valve for water and air. Operating temperature range: -10to90°C.  
 Available in normally closed (NC) and normally open (NO) versions.  
 Max. differential pressure: 16 bar.

**IMPORTANT:** the PG9 connector must always be ordered together with the valve.

Part no.	DN	Power supply	Version	Pcs. pack	Package
850T38W220	3/8"	230V	NC	1	24
850T38W24	3/8"	24V	NC	1	24
850T12W220	1/2"	230V	NC	1	24
850T12W24	1/2"	24V	NC	1	24
850T34W220	3/4"	230V	NC	1	13
850T34W24	3/4"	24V	NC	1	13
850T1W220	1"	230V	NC	1	13
850T1W24	1"	24V	NC	1	13
850T114W220	1.1/4"	230V	NC	1	1
850T112W220	1.1/2"	230V	NC	1	1
850T38W220NA	3/8"	230V	NO	1	24
850T38W24NA	3/8"	24V	NO	1	24
850T12W220NA	1/2"	230V	NO	1	24
850T12W24NA	1/2"	24V	NO	1	24
850T34W220NA	3/4"	230V	NO	1	13
850T34W24NA	3/4"	24V	NO	1	13
850T1W220NA	1"	230V	NO	1	13
850T1W24NA	1"	24V	NO	1	13
850T114W220NA	1.1/4"	230V	NO	1	1
850T112W220NA	1.1/2"	230V	NO	1	1
P99035	Single connector			1	100

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**RB850T PARTS**

Replacement coil for 850T Series solenoid valves.



Part no.	Power supply	Pcs. pack	Package
RB850T230V	230V	1	1
RB850T24VCA	24 VAC	1	1
RB850T24VCC	24 VDC	1	1
RB850T12VCA	12 VAC	1	1
RB850T12VCC	12 VDC	1	1

## Dielectric joints

### GDWMF



Dielectric joints for joining pipes of different metals, thus eliminating corrosion risks due to stray currents or electrolytic phenomena. Use for water. Galvanised steel body F connection and brass M connection.

PN12. Max. temperature: 110°C at 10 bar. Electrical insulation up to 600 V with dry piping. Exclusive Watts GA1425 insulator.

Part no.	DN	Pcs. pack	Package
<b>1505501</b>	1/2" MF	12	12
<b>1505502</b>	3/4" MF	12	12

Dimensions on page 453

### GDWFF



Dielectric joints for joining pipes of different metals, thus eliminating corrosion risks due to stray currents or electrolytic phenomena. Use for water. Galvanised steel body F connection and brass F connection.

PN12. Max. temperature: 110°C at 10 bar. Electrical insulation up to 600 V with dry piping. Exclusive Watts GA1425 insulator.

Part no.	DN	Pcs. pack	Package
<b>1505515</b>	1/2" FF	12	12
<b>1505520</b>	3/4" FF	12	12
<b>1505525</b>	1" FF	12	12
<b>1505532</b>	1.1/4" FF	12	12
<b>1505540</b>	1.1/2" FF	6	6
<b>1505550</b>	2" FF	6	6

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## Vibration-damping joints

### ZKB



Expansion joint  
EPDM

Vibration-damping joint with galvanised steel flanges. Available to order: stainless steel flanges, PN 25 flanges and vacuum ring.

Part no.	Product	DN mm	PFA WATER (Bar)	PN	Pcs. pack	Package
149B12552C	EPDM	32	16	10/16	1	1
149B12553C	EPDM	40	16	10/16	1	1
149B12554C	EPDM	50	16	10/16	1	1
149B12555C	EPDM	65	16	10/16	1	1
149B12556C	EPDM	80	16	10/16	1	1
149B12557C	EPDM	100	16	10/16	1	1
149B12558C	EPDM	125	16	10/16	1	1
149B12559C	EPDM	150	16	10/16	1	1
149B12560C	EPDM	200	10	10	1	1
149B12561C	EPDM	250	10	10	1	1
149B12562C	EPDM	300	10	10	1	1
149B12563C	EPDM	350	8	10	1	1
149B12564C	EPDM	400	8	10	1	1
149B12565C	EPDM	450	8	10	1	1
149B12566C	EPDM	500	8	10	1	1
149B12567C	EPDM	600	8	10	1	1

Expansion joint  
EPDM:

Part no.	Product	DN mm	PFA WATER (Bar)	PN	Pcs. pack	Package
149B054065	EPDM	200	16	16	1	1
149B054066	EPDM	250	16	16	1	1
149B054067	EPDM	300	16	16	1	1
149B054068	EPDM	350	8	16	1	1
149B054069	EPDM	400	8	16	1	1
149B054070	EPDM	450	8	16	1	1
149B054080	EPDM	500	8	16	1	1
149B054071	EPDM	600	8	16	1	1

Expansion joint  
NBR

Part no.	Product	DN mm	PFA WATER (Bar)	PN	Pcs. pack	Package
149B12552N	NBR	32	16	10/16	1	1
149B12553N	NBR	40	16	10/16	1	1
149B12554N	NBR	50	16	10/16	1	1
149B12555N	NBR	65	16	10/16	1	1
149B12556N	NBR	80	16	10/16	1	1
149B12557N	NBR	100	16	10/16	1	1
149B12558N	NBR	125	16	10/16	1	1
149B12559N	NBR	150	16	10/16	1	1
149B12560N	NBR	200	10	10	1	1
149B12561N	NBR	250	10	10	1	1
149B12562N	NBR	300	10	10	1	1
149B12563N	NBR	350	8	10	1	1
149B12564N	NBR	400	8	10	1	1
149B12565N	NBR	450	8	10	1	1
149B12566N	NBR	500	8	10	1	1
149B12567N	NBR	600	8	10	1	1

Expansion joint  
NBR.

Part no.	Product	DN mm	PFA WATER (Bar)	PN	Pcs. pack	Package
149B054074	NBR	200	16	16	1	1
149B054072	NBR	250	16	16	1	1
149B054073	NBR	300	16	16	1	1
149B054075	NBR	350	8	16	1	1
149B054076	NBR	400	8	16	1	1
149B054077	NBR	450	8	16	1	1
149B054078	NBR	500	8	16	1	1
149B054079	NBR	600	8	16	1	1

Dimensions on page 454

**ZKT**



EPDM expansion joint

Vibration-damping joint with galvanised ductile iron unions. Optional: bronze fittings in case of electrolytic risk: available to order.

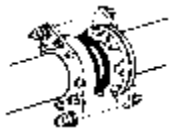
Part no.	Product	DN mm	DN"	PFA WATER	Pcs. pack	Package
149B12568C	EPDM	20	3/4	10	1	1
149B12569C	EPDM	25	1	10	1	1
149B12570C	EPDM	32	1 1/4	10	1	1
149B12571C	EPDM	40	1 1/2	10	1	1
149B12572C	EPDM	50	2	10	1	1
149B12573C	EPDM	65	2 1/2	10	1	1
149B12574C	EPDM	80	3	10	1	1

NBR expansion joint

Part no.	Product	DN mm	DN"	PFA WATER	Pcs. pack	Package
149B12568N	NBR	20	3/4	10	1	1
149B12569N	NBR	25	1	10	1	1
149B12570N	NBR	32	1 1/4	10	1	1
149B12571N	NBR	40	1 1/2	10	1	1
149B12572N	NBR	50	2	10	1	1
149B12573N	NBR	65	2 1/2	10	1	1
149B12574N	NBR	80	3	10	1	1

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**CONTROL ROD KITS ZKB**

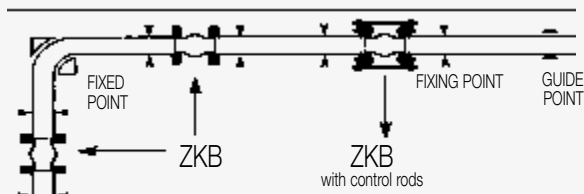


Galvanised steel control rods.

Part no.	Description	DN mm	DN"	Connection	No. pcs. per kit	Package
149B5436	CONTROL ROD KIT ZKB	32	1 1/4	for flange PN10/16	1	1
149B5437	CONTROL ROD KIT ZKB	40	1 1/2	for flange PN10/16	1	1
149B12577	CONTROL ROD KIT ZKB	50	2	for flange PN10/16	2	1
149B5439	CONTROL ROD KIT ZKB	65	2 1/2	for flange PN10/16	1	1
149B12579	CONTROL ROD KIT ZKB	80	3	for flange PN10/16	4	1
149B5441	CONTROL ROD KIT ZKB	100	4	for flange PN10/16	1	1
149B5442	CONTROL ROD KIT ZKB	125	5	for flange PN10/16	1	1
149B12582	CONTROL ROD KIT ZKB	150	6	for flange PN10	2	1
149B5444	CONTROL ROD KIT ZKB	200	8	for flange PN10	1	1
149B5445	CONTROL ROD KIT ZKB	250	10	for flange PN10	2	1
149B5446	CONTROL ROD KIT ZKB	300	12	for flange PN10	2	1
149B5447	CONTROL ROD KIT ZKB	350	14	for flange PN10	2	1
149B5448	CONTROL ROD KIT ZKB	400	16	for flange PN10	2	1
149B5449	CONTROL ROD KIT ZKB	450	18	for flange PN10	2	1
149B5450	CONTROL ROD KIT ZKB	500	20	for flange PN10	2	1
149B5451	CONTROL ROD KIT ZKB	600	24	for flange PN10	2	1
149B008940	CONTROL ROD KIT ZKB	200	8	for flange PN16	1	1
149B008941	CONTROL ROD KIT ZKB	250	10	for flange PN16	2	1
149B008942	CONTROL ROD KIT ZKB	300	12	for flange PN16	2	1
149B008943	CONTROL ROD KIT ZKB	350	14	for flange PN16	2	1
149B008944	CONTROL ROD KIT ZKB	400	16	for flange PN16	2	1
149B008945	CONTROL ROD KIT ZKB	450	18	for flange PN16	2	1
149B008947	CONTROL ROD KIT ZKB	500	20	for flange PN16	2	1
149B008948	CONTROL ROD KIT ZKB	600	24	for flange PN16	2	1

**TECHNICAL NOTE**

**RECOMMENDED CONFIGURATION**



## Water hammer arrestors

### 15M2



Piston-type copper water hammer arrestor with O-ring and EPDM. Can be installed in any position in relation to the pipe. Maintenance-free. Suitable for washing-machines, dishwashers, sinks, sanitary systems, etc.

Copper body, polypropylene piston, brass connection, EPDM gaskets.

Pre-charge pressure: 4.2 bar. Operating pressure: 10.3 bar.

Operating temperature range: 0.5 to 82°C.

Part no.	DN	Protection	Pcs. pack	Package
471015002	1/2" M	A	1	1
471020002	3/4" M	B	1	1
471025002	1" M	C	1	1
471032002	1.1/4" M	D	1	1
471040002	1.1/2" M	E	1	1
471050002	2" M	F	1	1

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### Selection of 15M2 Series arrestors

Each model of the 15M2 Series is able to offer a specified cushioning action (table 1); accordingly, to facilitate a selection we provide a table (table 2) with load unit values assigned to each of the shut-off components (or units) commonly installed in plumbing and heating systems.

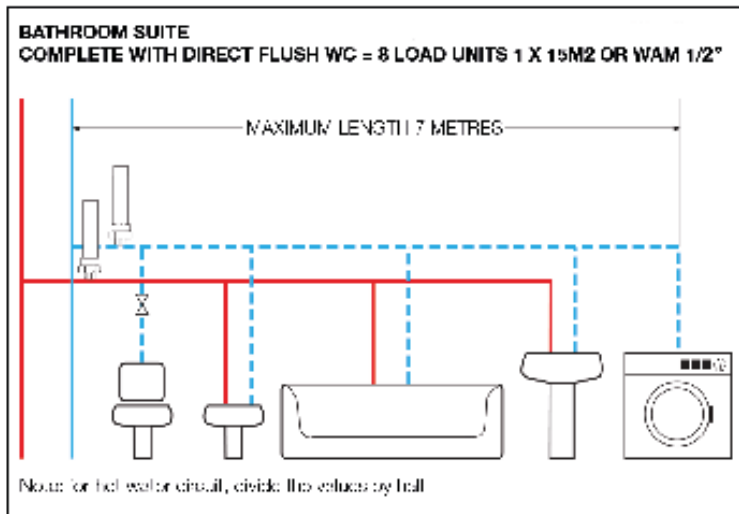
**Important:** the water hammer arrestor must be installed as close as possible to the shut-off component causing the water hammer.

Table 1

MODEL	DN	Protection	Load unit
15M2 - WAM	1/2" M	A	1 - 11
15M2	3/4" M	B	12 - 32
15M2	1" M	C	33 - 60
15M2	1.1/4" M	D	61 - 113
15M2	1.1/2" M	E	114 - 154
15M2	2" M	F	155 - 330

Table 2

APPLIANCE	LOAD UNIT
WC with direct flushing system	6
WC with float valve or siphon flush	3
Wash basin	1
Bath tub	2
Acet	1
Shower	1
Washing machine/dishwasher	2
Sink	2
Bathroom suite complete with direct flush WC	8
Bathroom suite complete with siphon flush WC	6



### WAM



Water hammer arrestor, suitable for washing-machines, dishwashers, sinks, sanitary systems, etc. Can be installed in any position in relation to the pipe. Painted steel body. Operating pressure 10.3 bar. Elastomer diaphragm. Max. temperature: 82°C. Pre-charge pressure: 3 bar. Peak pressure: 13 bar.

Part no.	DN	Protection	Pcs. pack	Package
1505400	1/2" M	A	1	12

Dimensions on page 454



## SERIE 21

Water hammer arrestors for cold or hot water. Max. temperature: 80°C. To be installed as close as possible to the point from which the water hammer originates. Operating pressure 3 bar, maximum 5 bar (for higher pressures see AB900 Series, available to order). **ACS (Attestation de Conformité Sanitaire).**



**21:** straight installation.

Part no.	Description	Product	DN mm	DN"	Connection	Package
<b>149B7138</b>	21	MM straight	20	3/4	MM	1

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**21BIS D:** for a single point.

Part no.	Description	Product	DN mm	DN"	Connection	Package
<b>149B7243</b>	21BIS D	FF straight	15	1/2	FF	1

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**21BIS E:** right-angle.

Part no.	Description	Product	DN mm	DN"	Connection	Package
<b>149B7244</b>	21BIS E	FF right-angle	15	1/2	FF	1

Dimensions on page 454



**21BIS EB:** installation at end of riser.

Part no.	Description	Product	DN mm	DN"	Connection	Package
<b>149B7245</b>	21BIS EB	F installed at end of riser	20	3/4	F	1

Dimensions on page 455



**21BIS FLEX:** straight installation with hose.

Part no.	Description	Product	DN mm	DN"	Connection	Package
<b>149B7246</b>	21BISFLEX	F with hose	15	1/2	FF	1

Dimensions on page 455

## Expansion vessels, pressure switches and flow meters

### ACS CE



Interchangeable diaphragm expansion vessels suitable for domestic cold and hot water, heating, chilling and autoclaves. Operating temperature range: -10 to 100°C.

**Compliant with PED 2014/68/EU. The 2 and 5 litre models do not require CE marking.**

Part no.	Description	Pmax	Pre-charge	Connection	Pcs. pack	Package
<b>06510242WAV</b>	DHW 2 l	10 bar	3.5	1/2" M	1	1
<b>06510542WAV</b>	DHW 5 l	10 bar	2.5	3/4" M	1	1
<b>06510842WAV</b>	CE DHW 8 l	10 bar	2.5	3/4" M	1	1
<b>06511242WAV</b>	CE DHW 12 l	10 bar	2.5	3/4" M	1	1
<b>06511842WAV</b>	CE DHW 18 l	8 bar	2.5	3/4" M	1	1
<b>06512442WAV</b>	CE DHW 24 l	8 bar	2.5	1" M	1	1

Dimensions on page 455

## PA5



Pressure switch for pumps and autoclaves. Adjustment range: 1 to 5 bar. Factory setting: 1.4 bar (close contacts) 2.8 bar (open contacts). Differential 0.5 to 2.5 bar. Contact rating: 16A (10). Max. fluid temperature: 90°C. Max. room temperature: 55°C. IP rating: IP44.

**TÜV approved (part number 0402202). Compliant with VDE 0660 CEI 61-1 EEC. Compliant with Directives EMC 2014/35/EU and LVD 2014/30/EU.**

Part no.	DN	Rated voltage	Pcs. pack	Package
0402202	1/4"	250V - Single-phase	1	50
0402105	1/4"	500V - Three-phase	1	50

Dimensions on page 455

## PA12



Pressure switch for pumps and autoclaves. Adjustment range: 2 to 12 bar. Factory setting: 5 bar (close contacts). 7 bar (open contacts). Differential 1.5 to 4 bar. Other specifications as per PA5.

Part no.	DN	Rated voltage	Pcs. pack	Package
0402206	1/4"	250V - Single-phase	1	50
0402205	1/4"	500V - Three-phase	1	50

Dimensions on page 455

## WACOPUMP2



Electronic system for pump control. Starts and stops the pump when any tap or valve in the system opens or closes.

When the pump starts, it keeps running as long as any connected tap remains open, sending constant flow rate and pressure to the network. Equipped with special anti-water-hammer check valve and pressure gauge with scale 0 to 10 bar. Supply voltage: 220/240 V. Max. current: 10(6) A. Frequency: 50/60 Hz. Degree of protection: IP65. Max. water temperature: 60°C. Max. flow rate: 10,000 l/h. PN10 bar. Re-start pressure: 1.5 to 2.5 bar. Max. pump power: 1.5HP (1100 W). Inlet-outlet connection: 1"M. Pressure gauge 0 to 10 bar. Manual RESET pushbutton. POWER LED. Pump ON LED.

FAILURE LED (safety system triggered). Replacement electronic card available to order.

**Compliant with: LVD 2006/95/EC, EMC 2004/108/EC.**

Part no.	Power supply	Pcs. pack	Package
0605226	220/240 VAC	1	1

Dimensions on page 455



### RSW PARTS

Replacement electronic card for Wacopump2 electronic system.

Part no.	Pcs. pack	Package
RSW10378	1	1

## Air vent valves

### VE320



GGG40 ductile iron body, PA 6.6 (polyamide) spindle, stainless steel drain cock, nitrile drain cock seal. Large orifice seal in polyurethane or NBR (DN 100). The isolator valve enables maintenance to be carried out without stopping the water. Max. temperature: 60°C.

Triple function for clear water.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

Part no.	Description	DN mm	DN"	Connection	Pcs. pack	Package
149B5884	PFA 16 bar	40-50-60	-	flange PN16	1	
149B5885	PFA 16 bar	65	-	flange PN16	1	1
149B5886	PFA 16 bar	80	-	flange PN16	1	1
149B5887	PFA 16 bar	100	-	flange PN16	1	1
149B009166	PFA 25 bar	40-50-60	-	flange PN25	1	1
149B009168	PFA 25 bar	65	-	flange PN25	1	1
149B009170	PFA 25 bar	80	-	flange PN25	1	1
149B009171	PFA 25 bar	100	-	flange PN25	1	1

**With shut-off valve.**



Part no.	Description	DN mm	DN"	Connection	Pcs. pack	Package
149B5884R	PFA 16 bar	40-50-60	-	PN16	1	1
149B5885R	PFA 16 bar	65	-	PN16	1	1
149B009167	PFA 25 bar	40-50-60	-	PN25	1	1
149B009169	PFA 25 bar	65	-	PN25	1	1

Dimensions on page 455

### VE330



Body in GGG40 ductile iron (DN80 and 100) or steel (DN 150), PA 6.6 (polyamide) spindle, stainless steel drain cock, polyurethane seal. Large orifice seal in polyurethane or NBR (DN 100).

Triple function for waste water.

Part no.	Description	DN mm	DN"	Connection	Pcs. pack	Package
149B5888	PFA 16 bar	80	-	flange PN16	1	1
149B5889	PFA 16 bar	100	-	flange PN16	1	1
149B5890	PFA 16 bar	150	-	flange PN16	1	1

Dimensions on page 455

### VE120

GGG40 ductile iron body, PA 6.6 (polyamide) spindle, stainless steel drain cock, nitrile drain cock seal. Large orifice seal in polyurethane or NBR (DN 100). Maximum pressure: 16 bar. Max. temperature: 60°C.

**Approvals: ACS (Attestation de Conformité Sanitaire).**

**VE120 - PN16**



Part no.	Description	DN mm	DN"	Feature	Pcs. pack	Package
149B2867	PFA 16 bar	25	1	Valve F	1	1
149B2867BR	PFA 16 bar	25	1	Valve, fitting, flange*	1	1
149B2867RM	PFA 16 bar	25	1	Valve, fitting M	1	1
149B2867VA	PFA 16 bar	25	1	Valve, ball valve	1	1
149B2867VB	PFA 16 bar	25	1	Valve, ball valve, flange*	1	1

\*Flange DN 40/50/60

**VE120 - PN25**



Part no.	Description	DN mm	DN"	Feature	Pcs. pack	Package
149B2868	PFA 25 bar	25	1	Valve F	1	1
149B2868BR	PFA 25 bar	25	1	Valve, fitting, flange*	1	1
149B2868RM	PFA 25 bar	25	1	Valve, fitting M	1	1
149B2868VA	PFA 25 bar	25	1	Valve, ball valve	1	1
149B2868VB	PFA 25 bar	25	1	Valve, ball valve, flange*	1	1

\*Flange DN 40/50/60 Dimensions on page 455

## ACCESSORIES FOR PUMPS



### PULSAIR 3

Air supply valve. For submersible pump without foot valve. Brass body, PA12 (polyamide) disc, EPDM O-ring.

Part no.	DN mm	DN"	Connection	Pcs. pack	Package
149B123	-	1	FF	1	1
149B133	-	1 1/4	FF	1	1
149B143	-	1 1/2	FF	1	1
149B153	-	2	FF	1	1



### PULSAIR 3A

Vent valve for fitting on a TEE.

Part no.	DN mm	DN"	Connection	Pcs. pack	Package
149F013552	-	1/2"	-	1	1



### PULSAIR 4

Polyacetal air regulator. Without pressure gauge connection.

Part no.	DN mm	DN"	Feature	Pcs. pack	Package
149B33	-	1 1/4	without pressure gauge connection	1	1



### INSUFLAIR 65+300

Membrane air injector for tanks up to 300 litres (65 model) or 750 litres (300 model). Supplied with 5/7 stainless steel braided hose and fittings. Maximum pressure: 5 bar. Max. temperature: 40°C.

Part no.	Model	Tanks (litres)	Feature	Pcs. pack	Package
149B5371	65	300	suction height >2m	1	1
149B5372	300	750	suction height >2m	1	1

Note: Insuflair 65 and 300 require a minimum suction height of 2 metres to operate.



### INSUFLAIR 600+SURPRESS 2

Float air injector for tanks up to 1000 litres (INSUFLAIR 600) or 2000 litres (SURPRESS 2). Supplied with stainless steel braided hose (1.5m 8/10 for INSUFLAIR 600 or 0.3m 10/12 for SURPRESS 2). Maximum pressure: 10 bar. Max. temperature: 40°C.

Part no.	Model	Tanks (litres)	Feature	Pcs. pack	Package
149B5373	600	1000	With/without suction	1	1
149B5374	Surpress 2	2000	With/without suction	1	1

Note: operates with or without suction.



### INSUFLAIR DOSING DEVICE

Brass air inlet dosing device for submerged pumps. Accessories not included.

Part no.	Description	DN mm	DN"	Feature	Pcs. pack	Package
149B5376	26/34	26/34	1	for submersible pumps	1	1



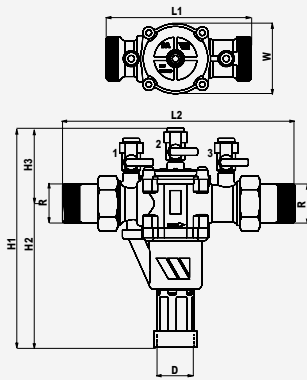
### ELETTO INSUFLAIR

Float air injector complete with electronic programmer. For water tanks from 500 to 10000 litres. Includes 1m PA 12 (polyamide) 8/10 hose, solenoid valve and programmer. Maximum pressure: 10 bar. Max. temperature: 40°C.

Part no.	Model	Tanks (litres)	Feature	Pcs. pack	Package
149B5375	Electro	from 500 to 10000	with electronic programmer	1	1

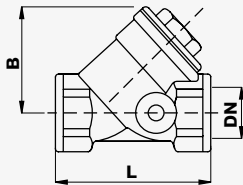
## Overall dimensions

### BABM



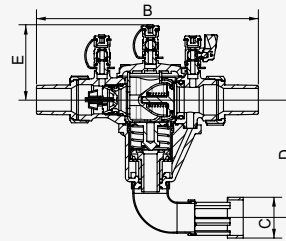
DN	R	D	L1	L2	H1	H2	H3	W	L
15	1/2"	32	122	201	168.5	103	65.5	53	1.2
20	3/4"	32	122	201	168.5	103	65.5	53	1.2
25	1"	40	157	252	238	156	82	76	2.7
32	1.1/4"	40	157	252	238	156	82	76	2.7
40	1.1/2"	50	220	336	303.5	202.5	101	115	6.5
50	2"	50	220	336	303.5	202.5	101	115	6.5

### F21NOR



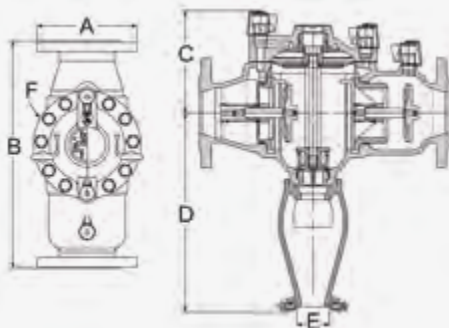
DN	L	B
1/2"	58	40
3/4"	70	48
1"	87	56
1.1/4"	96	64
1.1/2"	106	73
2"M	126	89

### BABM CD



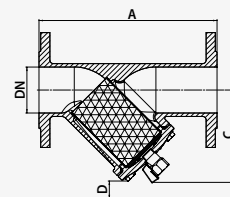
A	B	C	D	E
"	mm	mm	mm	mm
1/2"	201	32	76	65.5
3/4"	201	32	76	65.5
1"	252	40	116	82
1.1/4"	252	40	116	82
1.1/2"	336	50	150	101
2"	336	50	150	101

### BA4760



DN	R	A	B	C	D	ØE	F
65	2"1/2"	185	356	155	326	63	180
80	3"	200	440	173	337	63	200
100	4"	220	530	201	434	80	255
150	6"	285	630	230	456	80	310
200	8"	340	763	272	499	80	390
250	10"	395	763	272	499	80	390

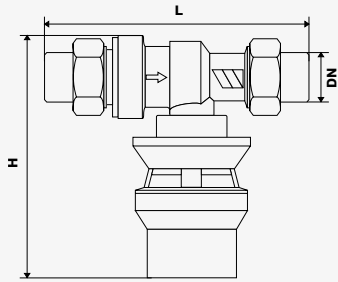
### Y333P



ø	A	C	D
mm	mm	mm	mm
40	200	130	35
50	230	145	50
65	290	137	65
80	310	159	75
100	350	187	90
125	400	249	125
150	480	301	170
200	600	403	220
250	730	472	200
300	850	508	250

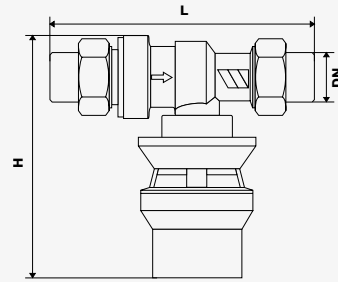
## Overall dimensions

### CA9C



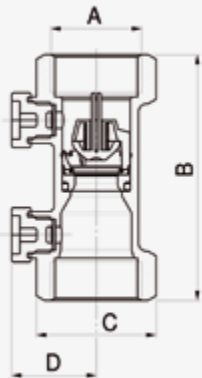
DN	L	H
1/2"	122	129
3/4"	153	129

### CA 2096

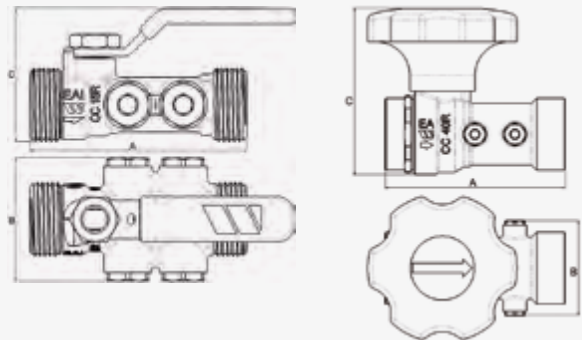


DN mm	DN "	B mm	C mm	D mm	E mm
15	1/2	105	59	44	40
20	3/4	105	59	44	40

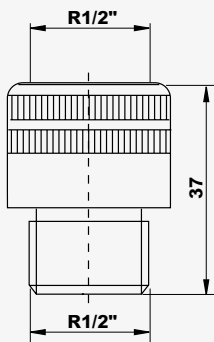
### EA291NF



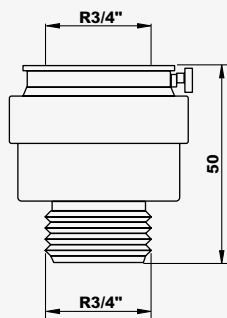
### BASIC CC



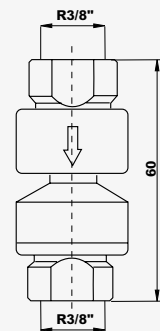
### DAWS



### DAWNF

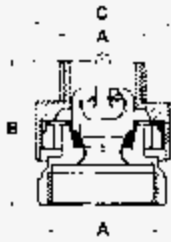


### DAWN



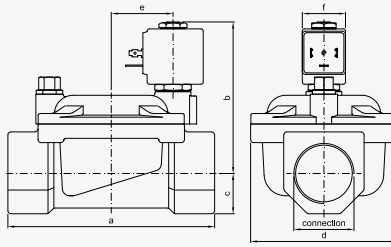
## Overall dimensions

### HD206



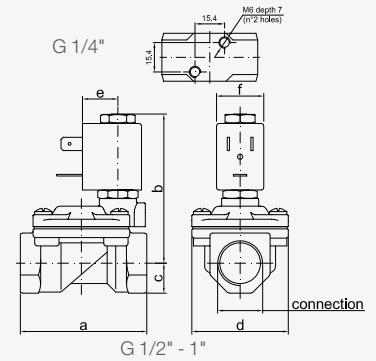
A" Inlet F	A" Outlet M	B mm	C mm
3/4"	1/2"	36	33

### WKB2-WZB2



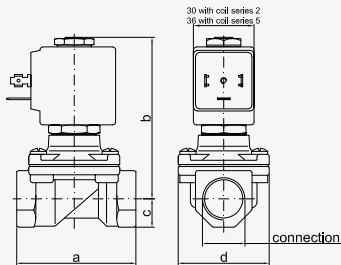
DN "	Ori- fice	A mm	B mm	C mm	D mm	E mm	F mm
3/8	12	59	70	14	45	16	22
1/2	12	59	70	14	45	16	22
3/4	18	79	76	18	55	16	22
1	25	96	85	20	72	16	22
1 1/4	30	119	92	25	85	16	22
1 1/2	37	142	105	28	102	21	30
2	50	158	115	35	119	21	30

### WBI2



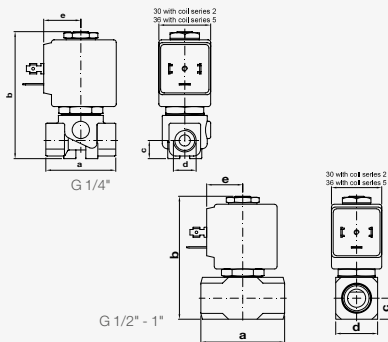
DN "	Ori- fice	A mm	B mm	C mm	D mm	E mm	F mm
1/4	2.5	44	73.5	12.5	25	21.5	30
1/2	12	59	70	13	45	16	22
3/4	18	79	76	18	55	16	22
1	25	96	85	20	72	16	22

### HK2



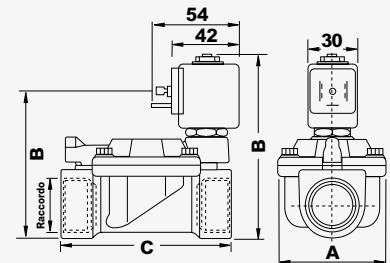
DN "	Orifice	A mm	B mm	C mm	D mm
3/8	12	59	83	14	45
1/2	12	59	83	14	45
3/4	18	79	90	18	55
1	25	96	101	20	72

### AKB2



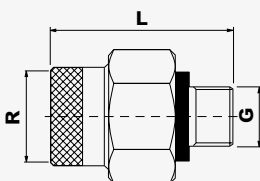
DN "	Orifice	A mm	B mm	C mm	D mm	E mm
1/4	2.5	40.5	73.5	10.5	25	21.5
3/8	12	50	73.5	12.5	25	21.5
1/2	12	58	73.5	12.5	25	21.5

### 850T



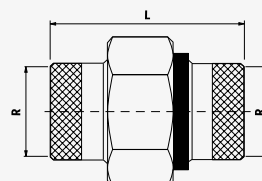
DN "	A mm	B mm	C mm
3/8"	40	103	72
1/2"	40	103	72
3/4"	65	105	104
1"	65	112	104

### GDWMF



R	G	L
1/2"	1/2"	55
3/4"	3/4"	61

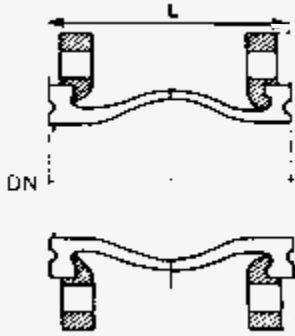
### GDWFF



R	L
1/2"	53
3/4"	57
1"	65
1.1/4"	70
1.1/2"	70
2"	79

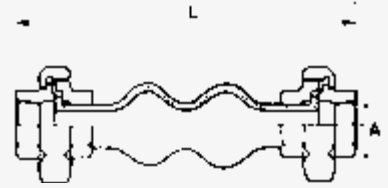
## Overall dimensions

### ZKB



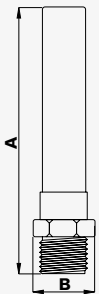
DN "	A mm	L mm
1 1/4	32	95
1 1/2	40	95
2	50	105
2 1/2	65	115
3	80	130
4	100	135
5	125	170
6	150	180
8	200	205
10	250	240
12	300	260
14	350	265
16	400	265
18	450	265
20	500	265
24	600	265

### ZKT



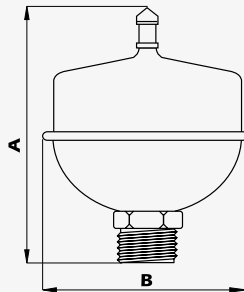
A "	A mm	L mm
3/4	20	200
1	25	200
1 1/4	32	200
1 1/2	40	200
2	50	200
2 1/2	65	240
3	80	240

### 15M2



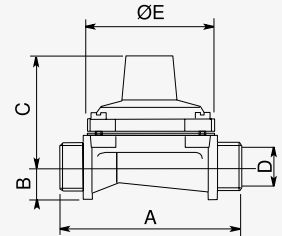
DN	A	B
1/2"	152	29
3/4"	200	29
1"	229	35
1.1/4"	264	42
1.1/2"	283	54
2"	330	67

### WAM



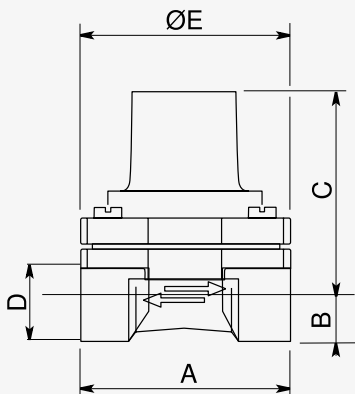
DN	A	B
1/2"	110	87

### 21



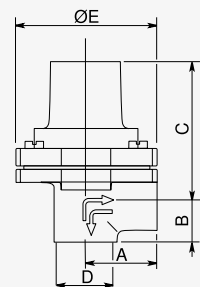
DN "	D mm	D mm	A mm	B mm	C mm	E mm
20	20/27	3/4	100	18.0	61.0	72.5

### 21 BIS D



DN "	D mm	D mm	A mm	B mm	C mm	E mm
15	15/21	1/2	59.0	13.5	59.0	59.0

### 21 BIS E

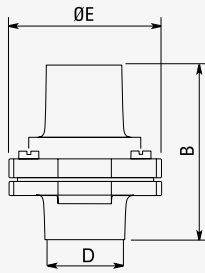


DN "	D mm	D mm	A mm	B mm	C mm	E mm
15	15/21	1/2	29.5	17.0	59.0	59.0



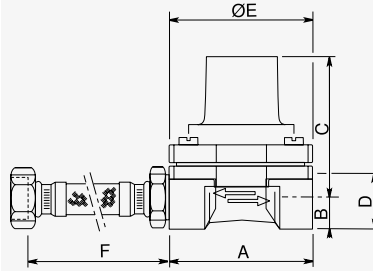
## Overall dimensions

### 21 BIS EB



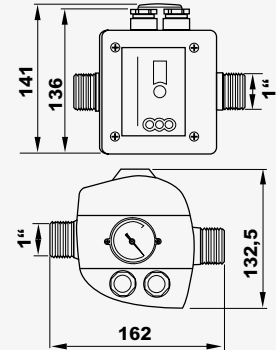
DN	D	D	A	B
"	mm	mm	mm	mm
20	20/27	3/4	59.0	66.0

### 21 BIS FLEX

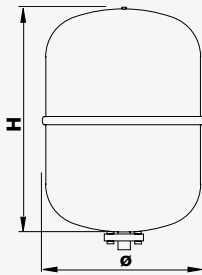


DN	D	D	A	B	C	E	F
"	mm	"	mm	mm	mm	mm	mm
15	15/21	1/2	59.0	13.5	59.0	59.0	130

### WACOPUMP2

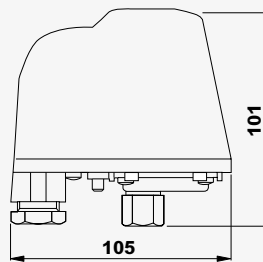


### ACS CE



Capacity (L)	Ø	H
2	120	240
5	170	275
8	220	305
12	260	315
18	260	380
24	260	490

### PA5/PA12

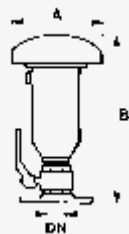


### VE330



DN	For pipe ø mm	A mm	B mm
80	80 to 200	325	580
100	200 to 600	325	580
150	> 600	360	650

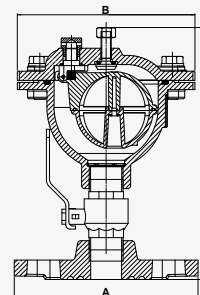
### VE320



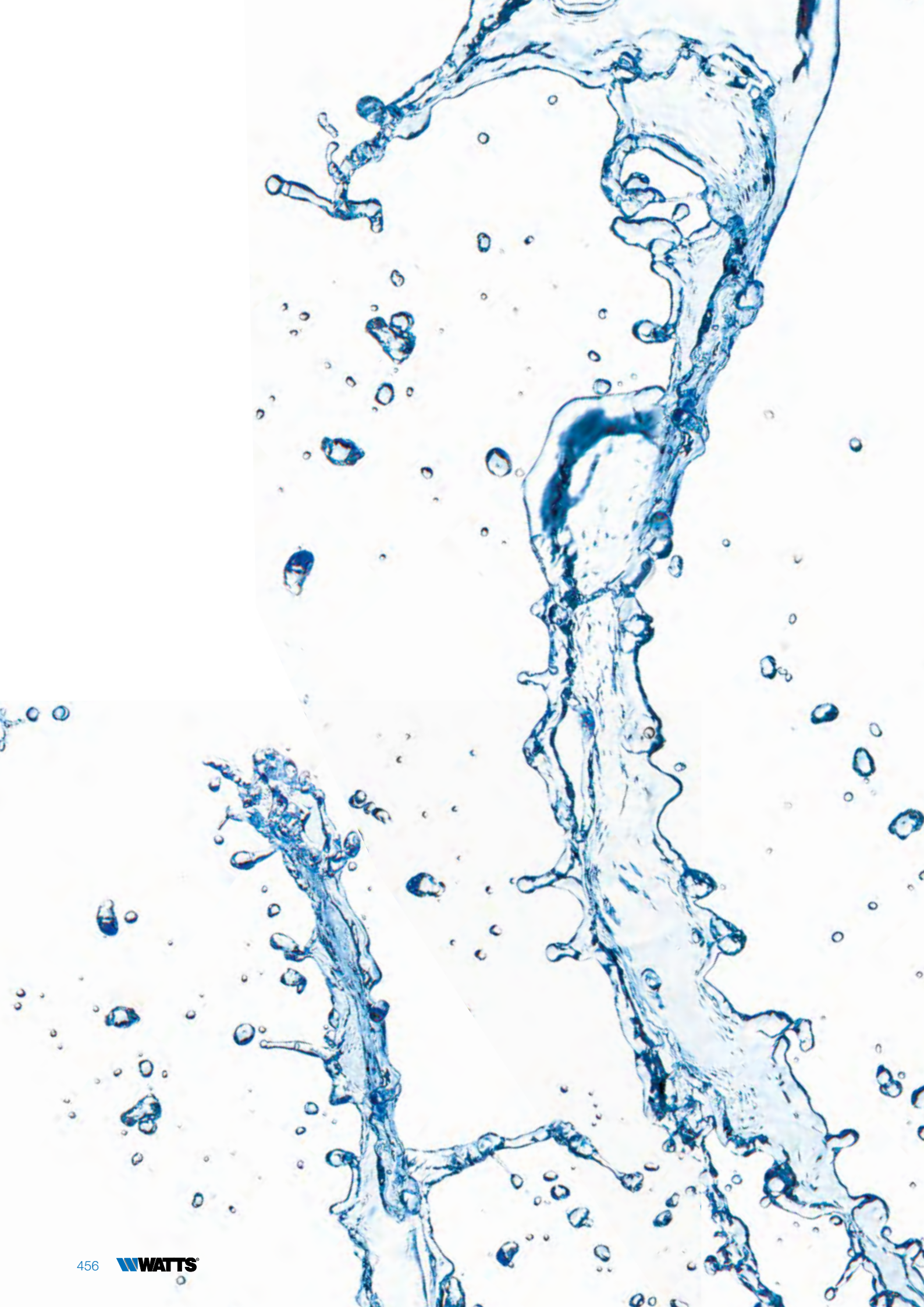
With stop valve

DN	For pipe ø mm	A mm	B mm
40/50/60	≤ 200	196	380
65	≤ 200	196	375
80	≤ 500	224	350
100	≤ 500	224	400

### VE120



	A mm	B mm	Total height mm
Valve only F1"		175	158
Valve+fitting+flange 40/50/60	185	175	214
Valve+fitting M1"		175	180
Valve+valve M1"		175	218
Valve+valve+flange 40/50/60	185	175	246



## Chapter 12

### Components for renewable energy systems

**WATTS®**



### MMV-S Thermostatic mixing valve

Thermostatic  
Internal anti-scale coating  
Anti-scald safety

## Chapter 12

# SYSTEM COMPONENTS COMPONENTS FOR RENEWABLE ENERGY SYSTEMS

## Solar thermal

### SOLARKIT



Thermostatic unit for thermal integration of solar thermal systems and boilers, consisting of an MMV-S Series mixing valve, a T-fitting and a diverter valve. CW602N DZR brass body. Setting positions: 5. Mixed water temperature:  $30-65 \pm 2^\circ\text{C}$ .

Flow rate at 3 bar: 63 l/min - Minimum flow rate: 5 l/min. PN 10. Operating pressure: 0.2 to 5 bar. Mixing valve side hot water operating temperature: 52 to  $110^\circ\text{C}$ . Mixing valve side cold water operating temperature: 5 to  $20^\circ\text{C}$ . Diverter valve opening temperature:  $45^\circ\text{C}$ .

Part no.	DN	Pos. Setting	Pcs/ pack	Package
97590	1" M	5	1	1

Dimensions on page 466

### MMV-S



Thermostatic mixing valve for solar energy systems. Nickel-plated brass body.

Setting positions: 5. Mixed water temperature:  $30-65 \pm 2^\circ\text{C}$ . Flow rate at 3 bar: 63 l/min. Minimum flow rate: 5 l/min. PN10. Operating pressure: 0.2 to 5 bar.

Hot water operating temperature: 52 to  $110^\circ\text{C}$ . Cold water operating temperature: 5 to  $25^\circ\text{C}$ .

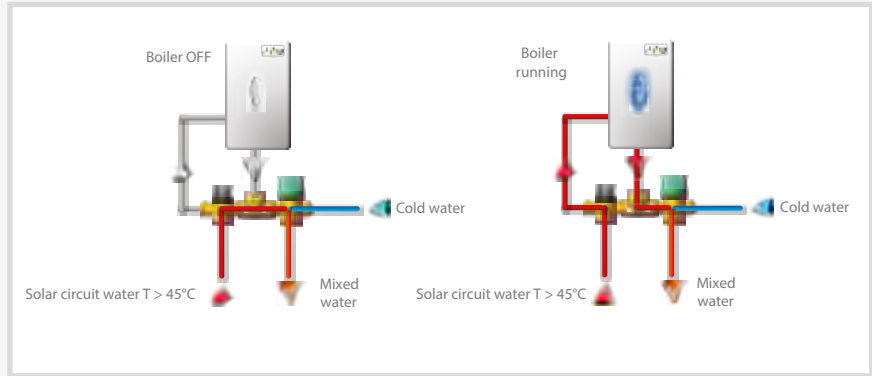
**Compliant with EN 1111/00 and EN 1287/02.**

Part no.	DN	Finish	Pcs/ pack	Package
97500	1" with 1/2" M fitting	Brass	1	1
97501	1" with 3/4" M fitting	Brass	1	1
97560	1" M	Brass	1	1
97530	1" with 1/2" M fitting	Nickel-plated	1	1
97531	1" with 3/4" M fitting	Nickel-plated	1	1
97561	1" M	Nickel-plated	1	1

Dimensions on page 466

**TECHNICAL NOTE**  
**SOLARKIT operation**

The SOLARKIT thermostatic unit for thermal integration of solar thermal systems and boilers is a fully automatic component for controlling solar thermal systems for domestic hot water production. Without drawing energy from any external sources, the unit uses thermostats to divert the water to a back-up boiler when there is not enough solar energy to heat the domestic hot water to the desired temperature.



**SVE-SOL**



Diaphragm safety valve for solar energy systems. CW617N brass body and cap, EN 12165-99. Elastomer diaphragm. Pre-set and sealed discharge pressure. Max. operating temperature: -10 to 160°C. Fluids: water with glycol up to 50% as per DIN 4757 Part 1.  
**TÜV SOLAR certified. Compliant with PED Directive 2014/68/EU.**

Part no.	DN	bar	Pcs/ pack	Package
<b>0215825</b>	1/2" x 3/4"	2.5	1	40
<b>0215830</b>	1/2" x 3/4"	3	1	40
<b>0215835</b>	1/2" x 3/4"	3.5	1	40
<b>0215840</b>	1/2" x 3/4"	4	1	40
<b>0215860</b>	1/2" x 3/4"	6	1	40
<b>0215880</b>	1/2" x 3/4"	8	1	40
<b>0215899</b>	1/2" x 3/4"	10	1	40

Dimensions on page 466

**SOL - SOLARVENT**



Automatic air vent valve for solar thermal systems with unscrewable inspection cover. CW617N brass body and cover, EN 1265-99. High-strength polythene float switch. Connection between reservoir and cover sealed with a reinforced polyamide gasket. DN 3/8" connection. AISI 304 stainless steel vacuum breaker. Max. operating pressure: 12bar. Max. operating temperature: 160°C.

Part no.	DN	Temp. Max	Pcs/ pack	Package
<b>0248410</b>	3/8"	160°C	10	60
<b>0248410-K10</b>	3/8"	160°C	10	60

Dimensions on page 466

## RIA/MV-SOL



Automatic shut-off valve for SOLARVENT Series air vent valves. Makes it possible to change the valve with the system running. CW614N brass body, EN 12164-01.

Gasket: high-strength elastomer. Plug: high-strength polymer.

Spring: stainless steel. MF 3/8" and 1/2" DIN - ISO 228/1 connections.

Part no.	DN	Spring	Pcs/ pack	Package
<b>0259310</b>	3/8" x 3/8"	stainless steel	10	10
<b>0259315</b>	1/2" x 1/2"	stainless steel	10	400
<b>0259320WK</b>	3/8" - 1/2"	stainless steel	10	10

Dimensions on page 466

## SOLAR



Expansion vessel for solar thermal systems. PN 10. Pre-charge pressure: 2.5 bar.

Operating temperature range: -10 to 100°C.

**Compliant with PED Directive 2014/68/EU.**

Part no.	Capacity litres	Connections	Pcs/ pack	Package
<b>06400012WS</b>	12	3/4" M	1	1
<b>06400018WS</b>	18	3/4" M	1	1
<b>06400024S</b>	24	3/4" M	1	1
<b>06400035S</b>	35	3/4" M side and foot	1	1
<b>06400050S</b>	50	3/4" M side and foot	1	1

Dimensions on page 467

## WH-MAG



SK-SOL Series wall bracket with quick coupling for expansion vessel.

For installation of the expansion vessel connected to the FlowBox Solar Series module.

Part no.	Description	Notes	Pcs/ pack	Package
<b>WID4188117</b>	Vessels up to 18 litres	-	1	1
<b>WID4188118</b>	24 litre vessels	-	1	1

Dimensions on page 467

## SK-SOL



Quick coupling for solar thermal systems. Enables you to test and replace expansion vessels in solar thermal systems without draining the system.  
Max. operating temperature: 160°C.

Part no.	Connection	Temp. Max	Pcs/ pack	Package
<b>0608102</b>	quick coupling	160°C	10	50

Dimensions on page 467

## QUICKFILL



Brass filling valve for solar circuits, equipped with double closure valve to facilitate filling and draining the system.

Quick to install, in any position.

Part no.	Description	Notes	Pcs/ pack	Package
<b>3499615</b>	with 15 mm compression fitting	-	1	1
<b>3499620</b>	with 18 mm compression fitting	-	1	1
<b>3499635</b>	with 22 mm compression fitting	-	1	1
<b>3499625</b>	DN 3/4" M eurocone	-	1	1
<b>3499630</b>	DN 1" M	flat seal	1	1

## KFE



Full-bore ball valve for domestic water, heating and solar thermal systems, with pre-sealed threaded hose coupling and plug. PN 10. KTW approved gasket.  
Max. operating temperature: 160°C.

Part no.	DN	Temp. Max	Pcs/ pack	Package
<b>0553615</b>	1/2"	160°C	1	1

## FBS20E



FlowBox Solar Series ready-to-fit, compact circulation unit for solar thermal systems. Equipped with pre-wired high-efficiency pump, WattFlow balancing valve complete with fill/drain cock, safety unit with pressure gauge, vent pipe, solar safety relief valve set to 6 bar and fill/drain cock. Wall-mounting bracket with hose for connection to expansion vessel. Ball-valves with built-in thermometer and gravity flow stop (check valve), which can be disabled by turning the knob to 45°. EPP heat insulation.

Available to order:  
solar safety relief valves with set pressure of 2.5/3/4/8/10 bar, compression fitting for 12/15/18 mm copper pipe for 3/4" Eurocone or 15/18/22 mm for M28x1.5.

Part no.	Description	Notes	Pcs/ pack	Package
<b>10084618</b>	0.5- 6 l/min	WILO PARA PWM/7	1	1
<b>10084619</b>	2 -16 l/min	WILO PARA PWM/7	1	1
<b>10084620</b>	4 -36 l/min	WILO PARA PWM/8	1	1

Dimensions on page 468

## FBS20S



FlowBox Solar Series ready-to-fit, compact single circulation unit for the return circuit of solar thermal systems. Equipped with pre-wired high-efficiency pump, WattFlow balancing valve complete with fill/drain cock, safety unit with pressure gauge, solar safety relief valve set to 6 bar and fill/drain cock. Wall-mounting bracket with hose for connection to expansion vessel. Ball-valve with built-in thermometer and gravity flow stop (check valve), which can be disabled by turning the knob to 45°. EPP heat insulation.

Available to order:  
solar safety relief valves with set pressure of 2.5/3/4/8/10 bar, compression fitting for 12/15/18mm copper pipe for 3/4" Eurocone or 15/18/22 mm for M28x1.5.

Part no.	Description	Notes	Pcs/ pack	Package
<b>10084616</b>	2 -16 l/min	WILO PARA PWM/7	1	1
<b>10084617</b>	4 -36 l/min	WILO PARA PWM/8	1	1

## ST



Pt1000 temperature sensors:

- in silicone sheath, up to 105°C, length 3 metres (suitable for tank);
- in PVC sheath, up to 180°C, length 1.5 metres (suitable for solar collector).

Part no.	Length	Temp. Max	Pcs/ pack	Package
<b>PPLELE00061</b>	1.5m	- 180 °C	1	1
<b>PPLELE00060</b>	3.0m	- 105 °C	1	1



**BASIC**



Electronic control unit for solar panel systems with LED operating status indicator lights. Pt1000 solar collector sensors (ST Series-part no. PPLELE00060) and auxiliary tank included as standard. 2 x 230VAC-8A relay outputs for controlling heating circuit and solar circuit circulation pumps (ON-OFF). Easy to use, with just three pushbuttons. Solar circuit pump starts up automatically according to the temperature difference between the solar collector and the tank: 4 to 30°C (default 8°C). Maximum tank temperature control: 30 to 90°C (default 90°C). Tank temperature control with auxiliary sensor: 0 to 85°C (default 50°C).

**Solar circuit protection:**

- against overtemperature: 100 to 200°C (default 140°C);
  - with operation of pump for 15 sec. if unused for 5 days.
- Power supply: 230 VAC - 50 Hz.

Part no.	No. of sensors	IP rating	Pcs/ pack	Package
<b>P03686</b>	2 (one L = 3 m + one L = 1.5 m)	IP42	1	38

Dimensions on page 467

**TECHNICAL NOTE - Control unit for solar thermal systems**

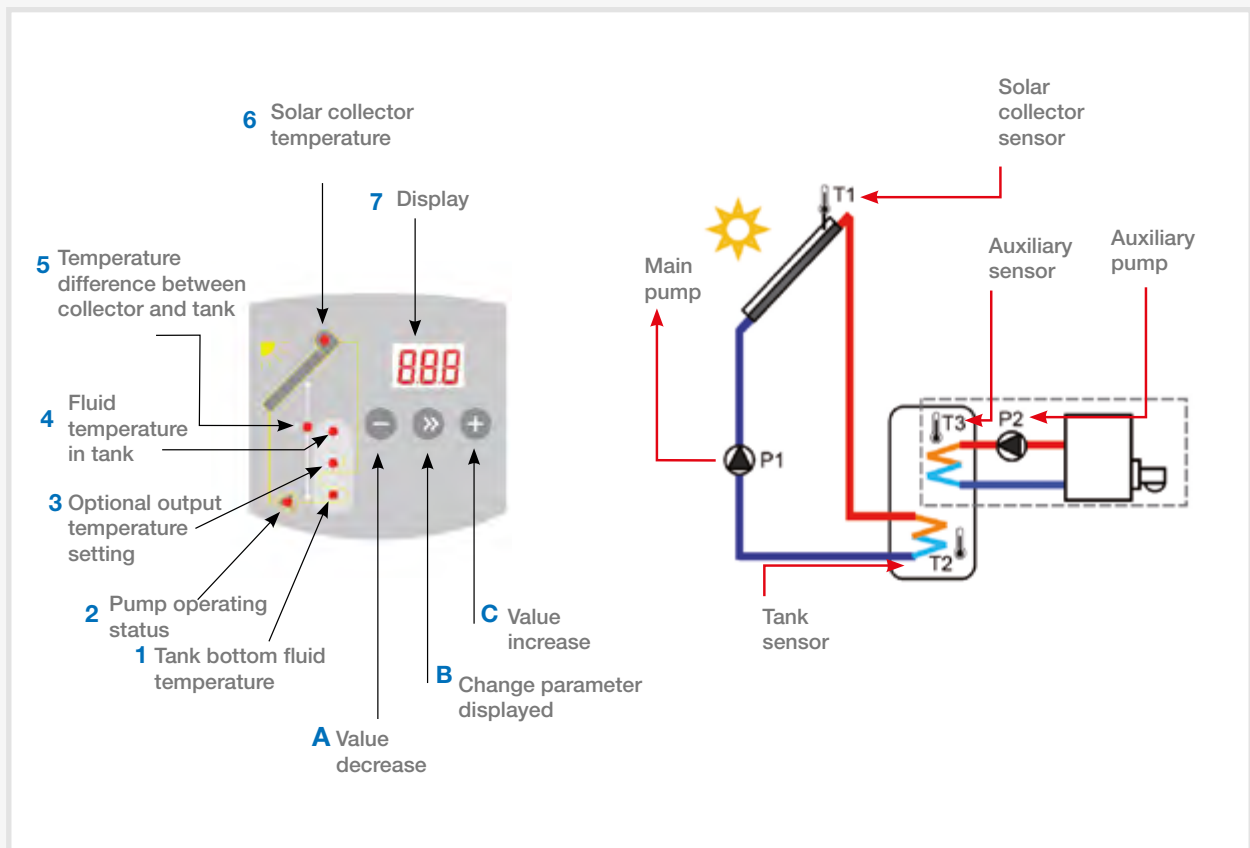
Depending on the parameter selected (pushbutton B), the display (7) shows:

- tank bottom fluid temperature (1)
- fluid temperature in tank (4)
- temperature difference between collector and tank (5)
- solar collector temperature (6)
- optional output temperature setting (3)

The LED (2) shows the pump operating status

Changing the settings: pushbutton A (decrease), C (increase)

The recommended installation height is approximately 1.5 m from the ground.



## Components for biomass systems

### KLS25



Compact circulation unit for solid-fuel-fired boilers with thermostatic anti-condensation unit. Pre-wired circulation pump (centre distance 180mm), dynamic anti-condensation bypass with boiler return temperature of  $58\pm 2^{\circ}\text{C}$ . Shut-off valves with built-in thermometer and manual/automatic check valve. 1" M union connections and wall-mounting bracket. EPP insulation. Suitable for heat output of up to 50 KW.

Part no.	Description	Connections	Pcs/ pack	Package
10084645	GRUNDFOS UPM3A/7	1"	1	1
10084158	WILO PARA SC 25/6	1"	1	1
10027902	WITHOUT PUMP	1"	1	1

### KLV



Thermostatic anti-condensation valve for solid-fuel-fired boilers with boiler return temperature of  $58\pm 2^{\circ}\text{C}$ .

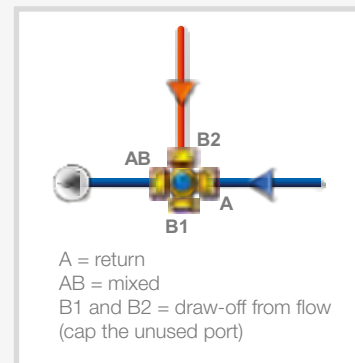
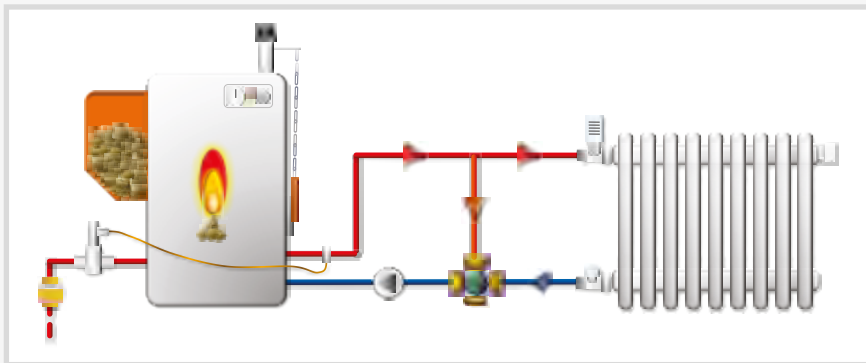
1.1/2" M x 1.1/2" F x 1.1/4" M connections. Suitable for heat output of up to 50 KW.

Part no.	Description	Notes	Pcs/ pack	Package
3402100	KLV	up to 50KW	1	1

#### TECHNICAL NOTE - KLV thermostatic anti-condensation valve

During combustion in a boiler, the moisture naturally present in biomass is released into the flue gases in the form of water vapour. If cooled at a temperature below the dew point, this vapour (which is often acidic) condenses, causing the boiler to corrode and drastically reducing its service life.

When the boiler starts up, the KLV thermostatic anti-condensation valve brings the system rapidly up to temperature, and if the water in the return circuit gets too cold during normal operation, the KLV valve mixes it with flow water before it reaches the boiler.



## Components for geothermal systems

### SOLEBOX



Unit for pumping fluid from underground for transfer to the chiller circuit of a heat pump. Predisposed for connection to the expansion vessel.  
Safety unit. EPP thermal insulation.  
Pre-wired circulation pump (L=180 mm).

Part no.	DN	Notes	Pcs/ pack	Package
<b>Available to order</b>	25	-	1	1

### INDU2054-M



1.1/2" ready-to-mount brass manifold unit:  
- flow manifold with shut-off valves;  
- return manifold with pre-set valves;  
- 2" MF head connections and 1/2" F filler union at top;  
- side outlets complete with fitting for PE-x 25 x 2.3 pipe.  
Can be combined up to a maximum of 24 outlets.

Part no.	Side outlets	Notes	Pcs/ pack	Package
<b>3421302</b>	2 - 3/4" EUROCONE	-	1	1
<b>3421303</b>	3 - 3/4" EUROCONE	-	1	1
<b>3421304</b>	4 - 3/4" EUROCONE	-	1	1
<b>3421305</b>	5 - 3/4" EUROCONE	-	1	1
<b>3421306</b>	6 - 3/4" EUROCONE	-	1	1

Dimensions on page 468

### WH-INDU



Pair of brackets for the installation of INDU2054-M Series manifolds. Galvanised steel frame and anti-vibration mountings. Suitable for horizontal or wall-mounting of the manifolds.

Part no.	DN	Notes	Pcs/ pack	Package
<b>4225100</b>	FOR PIPE Ø 1.1/2"	-	1	1

### EK-KFE

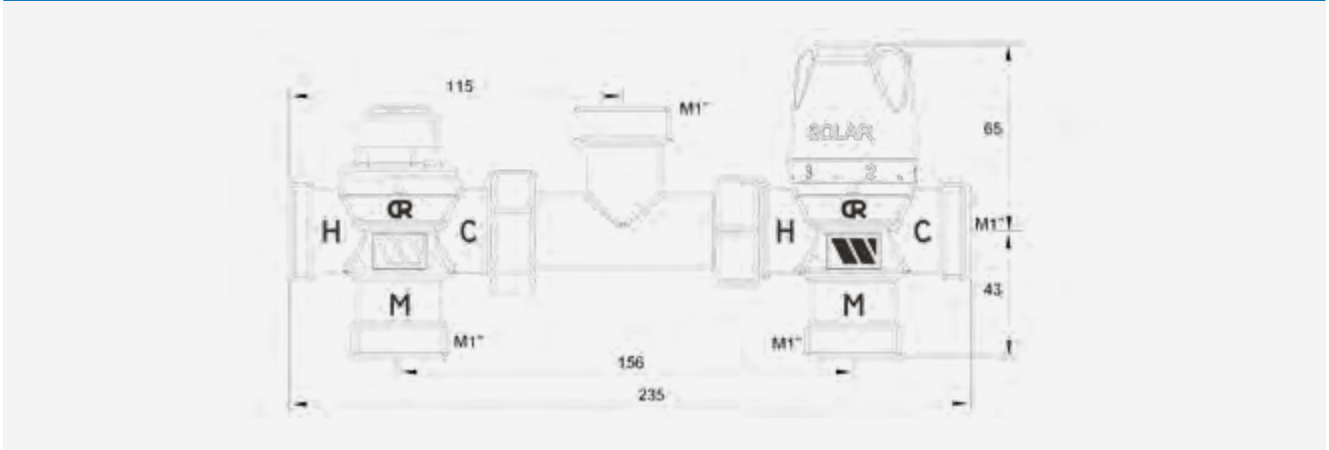


Accessory kit for INDU2054-M Series manifolds, consisting of:  
- 2 x 2" F end caps;  
- 2 x 1/2" M system fill/drain valves complete with safety cap.

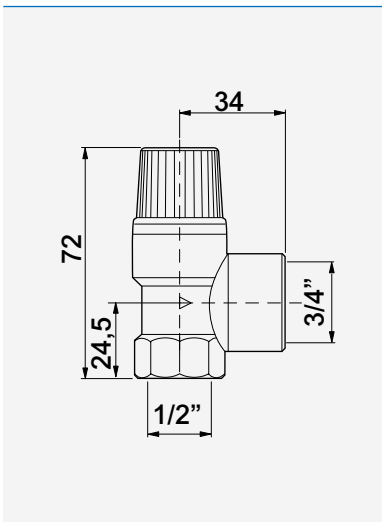
Part no.	Description	Notes	Pcs/ pack	Package
<b>3126150</b>	EK-KFE	-	1	1

## Overall dimensions

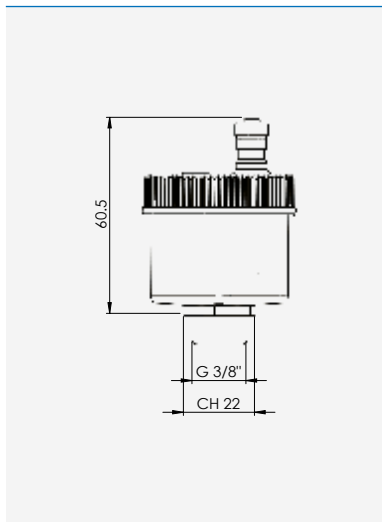
### SOLARKIT



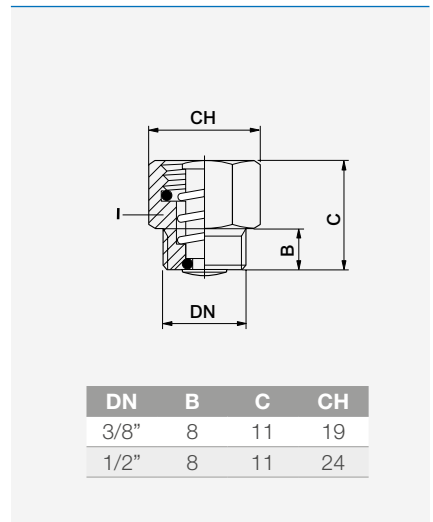
### SVE-SOL



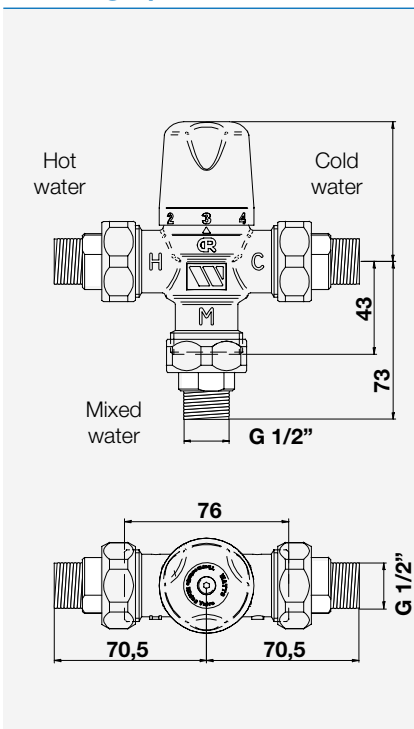
### SOL



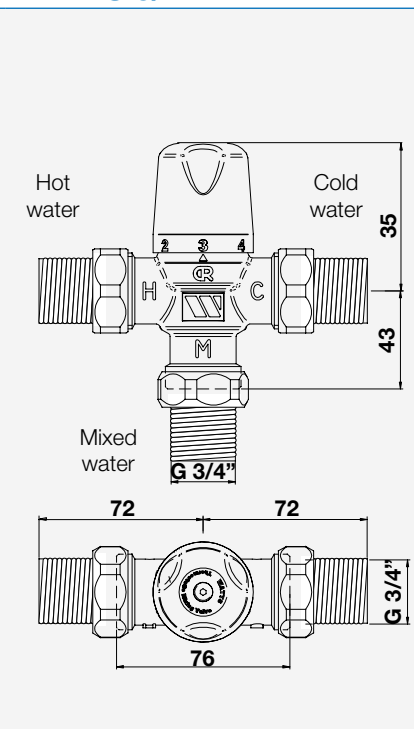
### RIA/MV-SOL



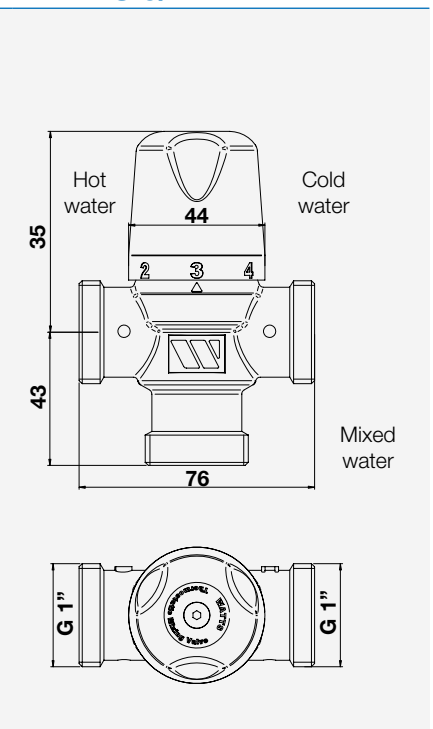
### MMV-S 1/2"



### MMV-S 3/4"

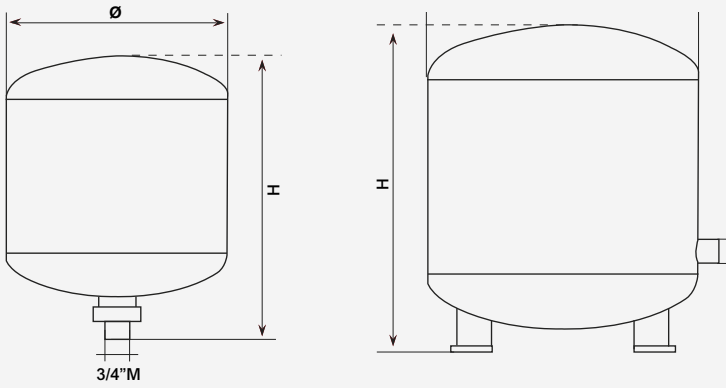


### MMV-S 3/4"



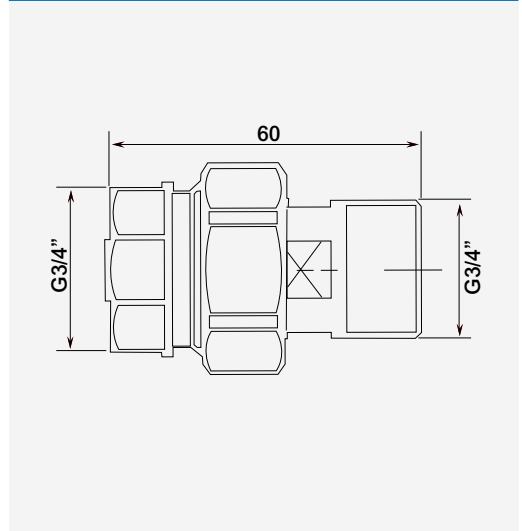
## Overall dimensions

**SOLAR 12 TO 24 litres**    **SOLAR 35 TO 50 litres**

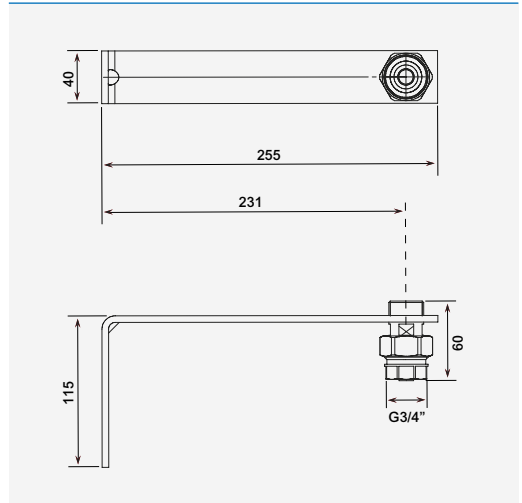


CAPACITY	Δ	H
12	260	315
18	260	380
24	260	490
35	380	535
50	380	565

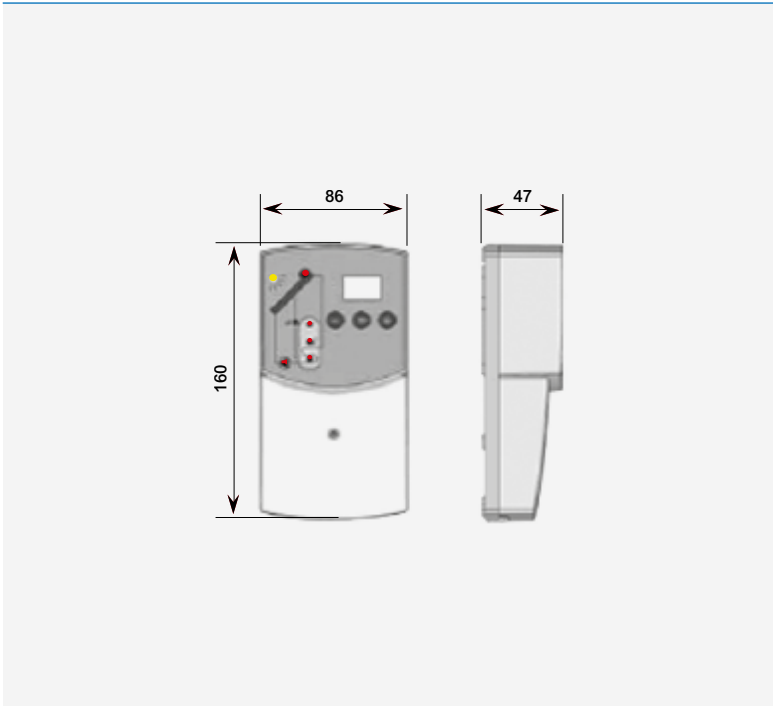
## SK-SOL



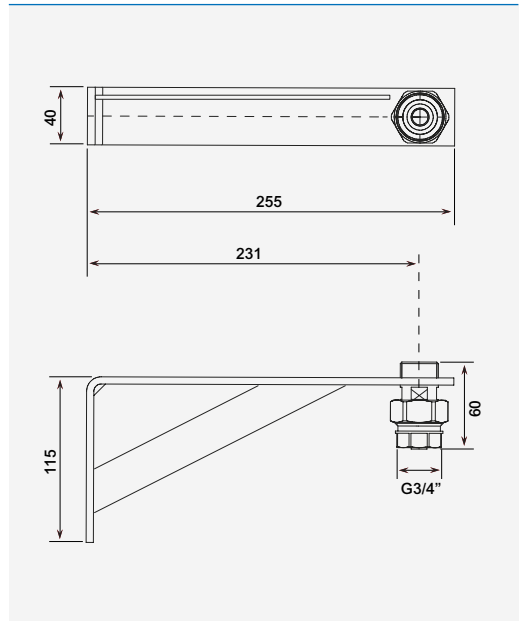
## WH-MAG -WID 4188117



## BASIC

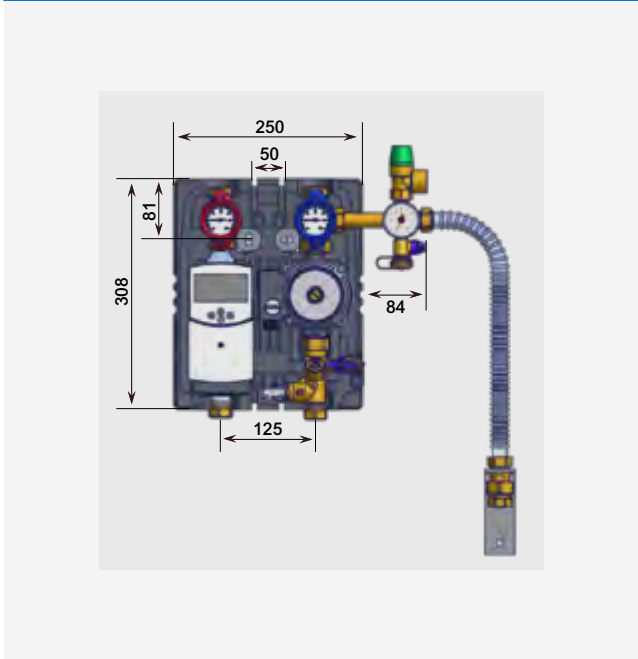


## WH-MAG -WID 4188118

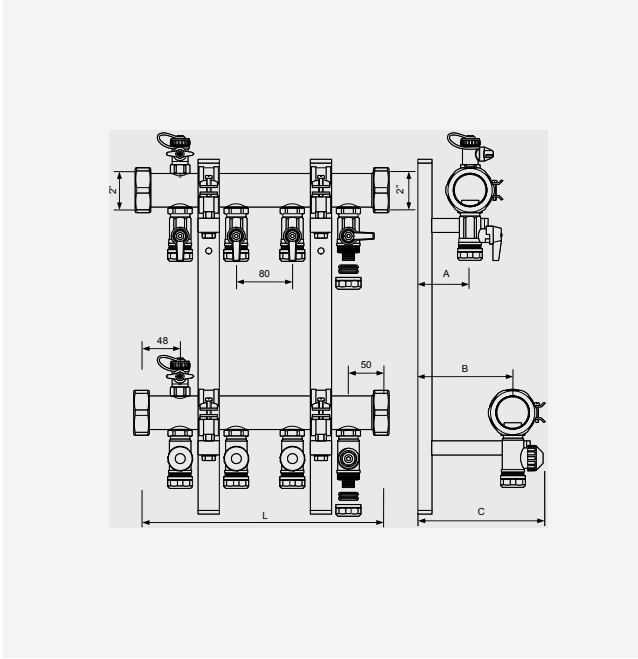


# Overall dimensions

## FBS20E



## INDU2054-M



# Chapter 13

## Fittings

**WATTS®**



RAFIT + Soft-seal  
fitting.

Quick installation: cuts connection times  
Cutting ring withstands high pull-out  
forces on the pipe  
Compact dimensions

## Chapter 13

# FITTINGS

### Fittings for copper pipe

#### 872M - RAFIT+



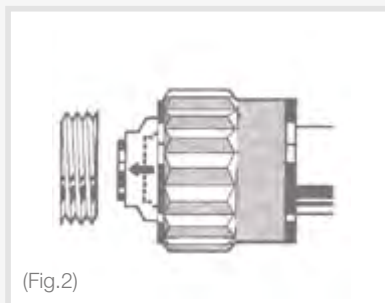
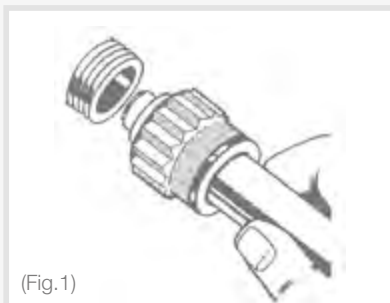
Soft-seal one-piece fitting for quick connection of copper pipes (UNI EN 1057) to male-threaded valves, lockshields and manifolds. EPDM taper ferrule with steel reinforcement core. High pull-out strength (cutting ring).

Part no.	DN	Ø pipe	Pcs. pack	Package
872M3810	3/8"	10	40	480
872M3812	3/8"	12	40	480
872M1210	1/2"	10	25	300
872M1212	1/2"	12	25	300
872M1214	1/2"	14	25	300
872M1215	1/2"	15	25	300
872M1216	1/2"	16	25	300
872M12S18	1/2"S *	18	10	150

\* 1/2"S M24x1.5 thread (for 102S and 119SX single-pipe valves with 1/2"S pipe-side connection)  
Dimensions on page 476

#### TECHNICAL NOTE - Installation of RAFIT one-piece quick fittings

- 1 - When cutting the pipe, carefully deburr the ends if necessary.
- 2 - Insert the pipe in the fitting by pushing it in until it butts up against the end stop (Fig.1) and holding it still in this position during tightening; the seal will thus be thrust outwards from the fitting body (Fig.2).
- 3 - Approach the fitting to the threaded end-piece until the head of the taper ferrule engages inside it, then tighten by hand.
- 4 - Fully tighten with the appropriate wrench (829M Series) (Fig.3), in accordance with the tightening torques for DN 3/8" 15to18Nm fittings and for DN 1/2" 20to25Nm fittings.





## 873M - VELOFIT



Compact soft-seal one-piece fitting for quick connection of copper pipes (UNI EN 1057) to male threads of valves, lockshields and manifolds.

Stainless steel cutting ring.

Part no.	DN	Ø pipe	Pcs. pack	Package
<b>873M3810</b>	3/8"	10	10	300
<b>873M3812</b>	3/8"	12	10	300
<b>873M1210</b>	1/2"	10	10	300
<b>873M1212</b>	1/2"	12	10	300
<b>873M1214</b>	1/2"	14	10	200
<b>873M1215</b>	1/2"	15	10	200
<b>873M1216</b>	1/2"	16	10	200
<b>873M1216-12</b>	1/2"***	16	10	200
<b>873M12S16-24</b>	1/2"S****	16	10	200
<b>873M12S18</b>	1/2"S *	18	10	200
<b>873M3418</b>	3/4" **	18	10	200
<b>873M122</b>	1" **	22	10	100

\*1/2"S thread M24x1.5 (for 102M and 119SX single-pipe valves with 1/2"S pipe-side connection) compatible with 1378...-24, 1388...-24, 1395...-24, 1379...-24, 1389...-24, 1396...-24, 378...-24, 388...-24, 395...-24, 379...-24, 389...-24, 396...-24, 102M...-24, 119S...M24SX Series valves

\*\* For connection to valves only

\*\*\* Compatible with 1378...-12, 1388...-12, 1395...-12, 1379...-12, 1389...-12, 1396...-12, 378...-12, 388...-12, 395...-12, 379...-12, 389...-12, 396...-12 Series valves

\*\*\*\* Compatible with 1378...-24, 1388...-24, 1395...-24, 1379...-24, 1389...-24, 1396...-24, 378...-24, 388...-24, 395...-24, 379...-24, 389...-24, 396...-24, 102M...-24, 119S...M24SX Series valves

Dimensions on page 476

## 820R



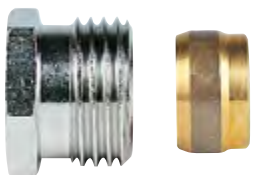
Three-piece compression fitting for copper pipes (chrome-plated pipe lock nut, brass taper ferrule and reinforcement core) for connecting copper pipes to male-threaded valves, lockshields and manifolds. Metal seal.

Part no.	DN	Ø pipe	Pcs. pack	Package
<b>820R3812</b>	3/8"	12	10	200
<b>820R1210</b>	1/2"	10	10	150
<b>820R1212</b>	1/2"	12	10	150
<b>820R1214</b>	1/2"	14	10	150
<b>820R1215</b>	1/2"	15	10	150
<b>820R1216</b>	1/2"	16	10	150
<b>820R3422</b>	3/4"	22	10	100

\* 1/2"S M24x1.5 thread (for 102M and 119SX single-pipe valves with 1/2"S pipe-side connection)

Dimensions on page 476

## 197



Adaptor fitting with metal seal for connecting copper pipes (1mm wall thickness) to valves and lockshields with iron series female connections. Nickel-plated brass threaded ring-nut and brass biconical ring.

Part no.	DN	Ø pipe	Pcs. pack	Package
<b>197SN3810</b>	3/8"	10	1	300
<b>197SN3812</b>	3/8"	12	1	300
<b>197SN1214</b>	1/2"	14	1	300
<b>197SN1216</b>	1/2"	16	1	300

Dimensions on page 476

## 829M



Steel wrench for tightening RAFIT+ and 820R fittings.

Part no.	DN	Pcs. pack	Package
<b>829M2025</b>	3/8" - 1/2"	1	1
<b>829M2527</b>	1/2" - 1/2"S	1	1

## Fittings for cross-linked polyethylene and multi-layer pipes

### 817M



Three-piece nickel-plated compression fitting for **cross-linked polyethylene pipes** to UNI 9338. EPDM O-rings are not suitable for contact with oil.

Part no.	DN	Ø pipe	Pcs. pack	Package
<b>817MC12142</b>	1/2"	14 x 2.0	1	200
<b>817MC1215</b>	1/2"	15 x 2.5	1	200
<b>817MC121612</b>	1/2"	16 x 2.0	1	200
<b>817MC1216</b>	1/2"	16 x 2.2	1	150
<b>817MC12S18</b>	1/2"S*	18 x 2.5	1	150
<b>817MC341612</b>	3/4"	16 x 2.0	1	150
<b>817MC341713</b>	3/4"	17 x 2.0	1	150
<b>817MC341814</b>	3/4"	18 x 2.0	1	150
<b>817MC342016</b>	3/4"	20 x 2.0	1	100

\* 1/2"S M24x1.5 thread (for 102M and 119SX single-pipe valves with 1/2"S pipe-side connection)  
Dimensions on page 476

### 817MS



Three-piece compression fitting for **multi-layer pipes**. Hose connections with EPDM O-rings are not suitable for contact with oil. Teflon washer to protect against stray current.

Part no.	DN	Ø pipe	Pcs. pack	Package
<b>817MSC121420</b>	1/2"	14 x 2.0	1	200
<b>817MSC121620</b>	1/2"	16 x 2.0	1	150
<b>817MSC12162-12</b>	1/2"***	16 x 2.0	1	150
<b>817MSC1216225</b>	1/2"	16 x 2.25	1	150
<b>817MSC12S162-24</b>	1/2"S***	16 x 2.0	1	150
<b>817MSC12S182-24</b>	1/2"S***	18 x 2.0	1	150
<b>817MSC341820</b>	3/4"	18 x 2.0	1	150
<b>817MSC341620</b>	3/4"	16 x 2.0	1	150
<b>817MSC3416225</b>	3/4"	16 x 2.25	1	150
<b>817MSC342020</b>	3/4"	20 x 2.0	1	150
<b>817MSC342025</b>	3/4"	20 x 2.5	1	150
<b>817MSC121626R</b>	1/2" *	16.2 x 2.6	1	200
<b>817MSC342029R</b>	3/4" *	20 x 2.9	1	150

\* REHAU three-piece compression fitting for multi-layer pipes.

\*\* Compatible with 1378...-12, 1388...-12, 1395...-12, 1379...-12, 1389...-12, 1396...-12, 378...-12, 388...-12, 395...-12, 379...-12, 389...-12, 396...-12 Series valve

\*\*\* Compatible with 1378...-24, 1388...-24, 1395...-24, 1379...-24, 1389...-24, 1396...-24, 378...-24, 388...-24, 395...-24, 379...-24, 389...-24, 396...-24, 102M...-24, 119S...M24SX Series valves

Dimensions on page 476

### ECP



Three-piece DN 3/4" EUROCONE compression fitting for connecting PEX pipe to valves and manifolds. EPDM O-rings are not suitable for contact with oil.

Part no.	DN	Ø pipe	Pcs. pack	Package
<b>ECP1620</b>	3/4" EUROCONE	16 x 2.0	10	150
<b>ECP1720</b>	3/4" EUROCONE	17 x 2.0	10	150
<b>ECP1820</b>	3/4" EUROCONE	18 x 2.0	10	150
<b>ECP2020</b>	3/4" EUROCONE	20 x 2.0	10	150

### ECM



Three-piece DN 3/4" EUROCONE compression fitting for connecting multi-layer pipe to valves and manifolds. EPDM O-rings are not suitable for contact with oil.

Part no.	DN	Ø pipe	Pcs. pack	Package
<b>ECM1620-M</b>	3/4" EUROCONE	16 x 2.0	2	150
<b>ECM16225</b>	3/4" EUROCONE	16 x 2.25	10	150
<b>ECM2020</b>	3/4" EUROCONE	20 x 2.0	10	150

## Nipples, elbows, solder alloy

### 220



Three-piece nickel-plated elbow fitting.

Part no.	DN	Pcs. pack	Package
<b>220SN38</b>	3/8"	10	100
<b>220SN12</b>	1/2"	10	100
<b>220SN34</b>	3/4"	10	65
<b>220SN1</b>	1"	10	35

Dimensions on page 476

### 221



Three-piece nickel-plated straight fitting.

Part no.	DN	Pcs. pack	Package
<b>221SN38</b>	3/8"	10	10
<b>221SN12</b>	1/2"	10	100
<b>221SN34</b>	3/4"	10	60
<b>221SN1</b>	1"	10	35

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### 893GL

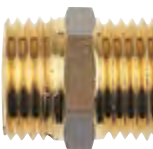


Nipple fitting with male/female threaded connections (brass extensions).

Part no.	DN	Pcs. pack	Package
<b>893GL38</b>	3/8" MF	10	300
<b>893GL12</b>	1/2" MF	10	250
<b>893GL34</b>	3/4" MF	10	100

Dimensions on page 477

### 892GL



Nipple fitting with male threaded connections.

Part no.	DN	Pcs. pack	Package
<b>892GL38</b>	3/8" MM	10	500
<b>892GL12</b>	1/2" MM	10	300
<b>892GL34</b>	3/4" MM	10	100

Dimensions on page 477

### 890GL



Elbow nipple fitting with male threaded connections.

Part no.	DN	Pcs. pack	Package
<b>890GL12</b>	1/2" MM	10	150

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### 833M



Brass male/male adaptor.

Part no.	DN	Pcs. pack	Package
<b>833M3812</b>	3/8" - 1/2"	10	300
<b>833M3834</b>	3/8" - 3/4"	10	150
<b>833M1234</b>	1/2" - 3/4"	10	150
<b>833M121</b>	1/2" - 1"	10	50
<b>833M341</b>	3/4" - 1"	10	100

Dimensions on page 477

## 821M



Brass male/female adaptor.

Part no.	DN	Pcs. pack	Package
<b>821M38M12F</b>	3/8" M x 1/2" F	10	250
<b>821M12M38F</b>	1/2" M x 3/8" F	10	300
<b>821M12M34F</b>	1/2" M x 3/4" F	10	150
<b>821M12F34M</b>	1/2" F x 3/4" M	10	200
<b>821M12M1F</b>	1/2" M x 1" F	10	10
<b>821M12F12SM</b>	1/2" SM x 1/2" F	10	200
<b>821M34M38F</b>	3/4" M x 3/8" F	10	250
<b>821M34M1F</b>	3/4" M x 1" F	48	48

## 834M



Brass female plugs.

Part no.	DN	Pcs. pack	Package
<b>834M38</b>	3/8"	10	800
<b>834M12</b>	1/2"	10	400
<b>834M34</b>	3/4"	10	50
<b>834M1</b>	1"	10	50

Dimensions on page 477

## 4D



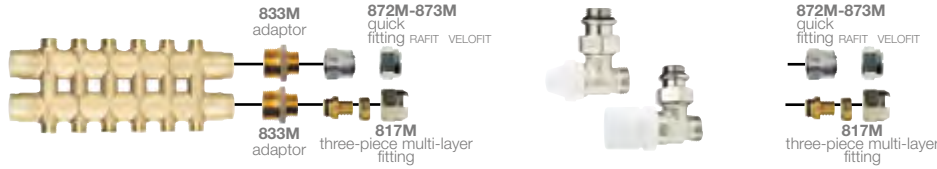
Eutectic solder alloy 96.55 Sn – 3.5% Ag.

Part no.	Pcs. pack	Package
<b>410D</b>	1	50

FITTINGS TABLE

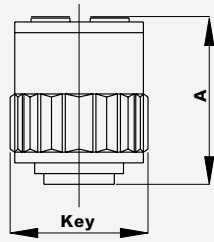
The meeting point between the pipe row and the thread column shows the correct fitting to use.

Tube Ø	Terminale filettato maschio 3/8" (valvole, detentori, attacchi laterali collettori)	Terminale filettato maschio 1/2" (valvole, detentori, attacchi laterali collettori)	Terminale filettato maschio 3/4" (valvole, detentori, attacchi laterali collettori)	Terminale filettato maschio 1" (attacchi di testa collettori)
<b>FRAME</b>				
8	riduzione 821M38M12F+820R3808			
10	820R3810	riduzione 821M12M34F+racordo 820R1210		nipple 833M121+racordo 820R1210
12	820R3812	820R1212	riduzione 821M12M34F+racordo 820R1212	nipple 833M121+racordo 820R1212
14	riduzione 821M12M38F+ 820R1214	820R1214	riduzione 821M12M34F+racordo 820R1214	nipple 833M121+racordo 820R1214
15	-	820R1215	riduzione 821M12M34F+racordo 820R1215	nipple 833M121+racordo 820R1215
16	riduzione 821M12M38F+ 820R1216	820R1216	riduzione 821M12M34F+racordo 820R1216	nipple 833M121+ racordo 820R1216
22	-	-	820R3422	nipple 833M341+racordo 820R3422
<b>con raccordo a tenuta morbida (RAFIT+)</b>				
10	872M3810	872M1210	riduzione 821M12M34F+racordo 872M1210	nipple 833M121+racordo 872M1210
12	872M3812	872M1212	riduzione 821M12M34F+racordo 872M1212	nipple 833M121+racordo 872M1212
14	riduzione 821M12M38F+ racordo 872M1214	872M1214	riduzione 821M12M34F+racordo 872M1214	nipple 833M121+ racordo 872M1214
16	riduzione 821M12M38F+ racordo 872M1216	872M1216	riduzione 821M12M34F+racordo 872M1216	nipple 833M121+racordo 872M1216
18	-	-	-	-
22	-	-	-	-
<b>con raccordo a tenuta morbida (VELOFIT)</b>				
10	873M3810	873M1210	riduzione 821M12M34F+racordo 873M1210	nipple 833M121+racordo 873M1210
12	873M3812	873M1212	riduzione 821M12M34F+racordo 873M1212	nipple 833M121+racordo 873M1212
14	riduzione 821M12M38F+racordo 873M1214	873M1214	riduzione 821M12M34F+racordo 873M1214	nipple 833M121+racordo 873M1214
15	riduzione 821M12M38F+racordo 873M1215	873M1215	riduzione 821M12M34F+racordo 873M1215	nipple 833M121+racordo 873M1215
16	riduzione 821M12M38F+ racordo 873M1216	873M1216	riduzione 821M12M34F+racordo 873M1216	nipple 833M121+racordo 873M1216
18	-	-	-	-
22	-	-	-	-
<b>con raccordo a compressione (Serie 817M)</b>				
14 x 2,0	riduzione 821M12M38F+racordo 817MC12142	817MC12142	riduzione 821M12M34F+racordo 817MC12142	nipple 833M121+racordo 817MC12142
15 x 2,5	riduzione 821M12M38F+racordo 817MC1215	817MC1215	riduzione 821M12M34F+racordo 817MC1215	nipple 833M121+racordo 817MC1215
16 x 2,0	riduzione 821M12M38F+racordo 817MC121612	817MC121612	817MC341620	nipple 833M121+racordo 817M121612
16 x 2,2	riduzione 821M12M38F+racordo 817MC1216	817MC1216	riduzione 821M12M34F+racordo 817MC1216	nipple 833M121+racordo 817M1216
17 x 2,0	-	-	817MC341713	nipple 833M341+racordo 817MC341713
18 x 2,0	-	-	817MC341814	nipple 833M341+racordo 817MC341814
18 x 2,5	-	-	817MC341813	nipple 833M341+racordo 817MC341813
20 x 2,0	-	-	817MC342016	nipple 833M341+racordo 817MC342016
<b>MULTISTRATO</b>				
14 x 2,0	riduzione 821M12M38F+racordo 817MSC121420	817MSC121420	riduzione 821M12M34F+racordo 817MSC121420	nipple 833M121+racordo 817MSC121420
16 x 2,0	riduzione 821M12M38F+racordo 817MSC121620	817MSC121620	riduzione 821M12M34F+ racordo 817MSC121620	nipple 833M121+racordo 817M121620
16 x 2,25	riduzione 821M12M38F+racordo 817MSC1216225	817MSC1216225	riduzione 821M12M34F+racordo 817MSC1216225	nipple 833M121+racordo 817M1216225
16,2 x 2,6	riduzione 821M12M38F+racordo 817MSC121626R	817MSC121626R	riduzione 821M12M34F+racordo 817MSC121626R	nipple 833M121+racordo 817M121626R
18 x 2,0	-	-	817MSC341820	nipple 833M341+racordo 817MC341820
20 x 2,0	-	-	817MSC342020	nipple 833M341+racordo 817MC342020
20 x 2,5	-	-	817MSC342025	nipple 833M341+racordo 817MC342025
20 x 2,9	-	-	817MSC342029R	nipple 833M341+racordo 817MC342029R



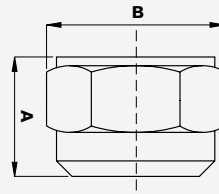
## Overall dimensions

### 872M



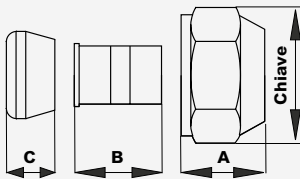
DN	A	Rafit wrench
3/8"	25	20
1/2"	27	25
1/2"S	29	27

### 873M



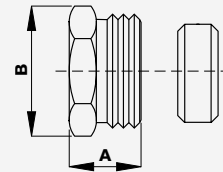
DN	A	B	Hex wrench
3/8" x 10	17.5	24	21
3/8" x 12	17	24	21
1/2" x 12	18.5	28	25
1/2" x 14	18.5	28	25
1/2" x 15	18.5	28	25
1/2" x 16	18	30	27
1/2"S x 18	17.5	30	27
3/4" x 18	18	30	--

### 820R



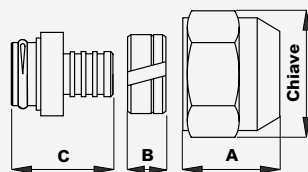
DN	A	B	C	Wrench
3/8"	17	24	9	20
1/2"	19	24	10	25
1/2"S	20	24	11	25
3/4"	20	24	11	32

### 197



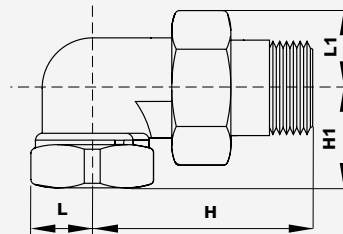
DN	A	B
3/8"	11	20
1/2"	14	24
3/4"	18	31

### 817M - 817MS



DN	A	B	C	Wrench
1/2"	23	8	21	20
1/2"S	26	8	22	25
3/4"	24	8	22	32

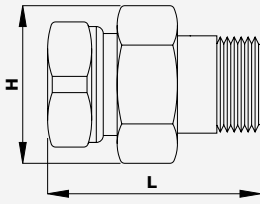
### 220



DN	H	H1	L	L1
3/8"MF	47	27	14	14
1/2"MF	53	34	16	18
3/4"MF	60	37	19	21
1"MF	77	46	23	27

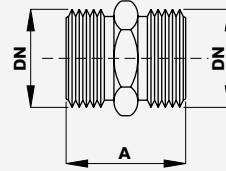
## Overall dimensions

### 221



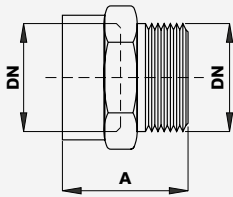
DN	H	L
3/8"MF	28	43
1/2"MF	35	51
3/4"MF	42	58
1"MF	54	62

### 892GL



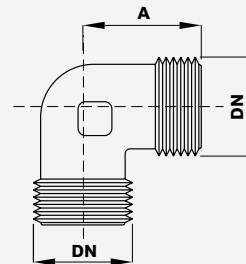
DN	A
3/8"	22
1/2"	25
3/4"	28

### 893GL



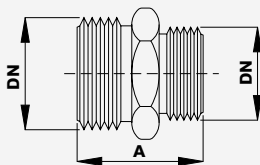
DN	A
3/8"	20
1/2"	23
3/4"	32

### 890GL



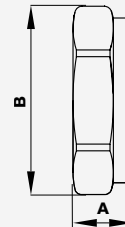
DN	A
1/2"	26

### 833M



DN	A	DN	A
3/8" x 1/2"	24	1/2" x 1"	34
3/8" x 3/4"	28	3/4" x 1"	35
1/2" x 3/4"	30		

### 834M



DN	A	B
3/8"	7	19
1/2"	9	25
3/4"	18	35
1"	18	38

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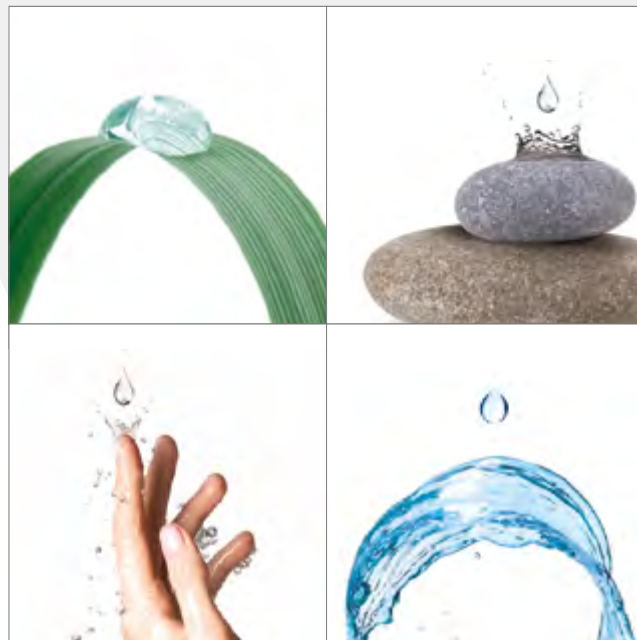








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