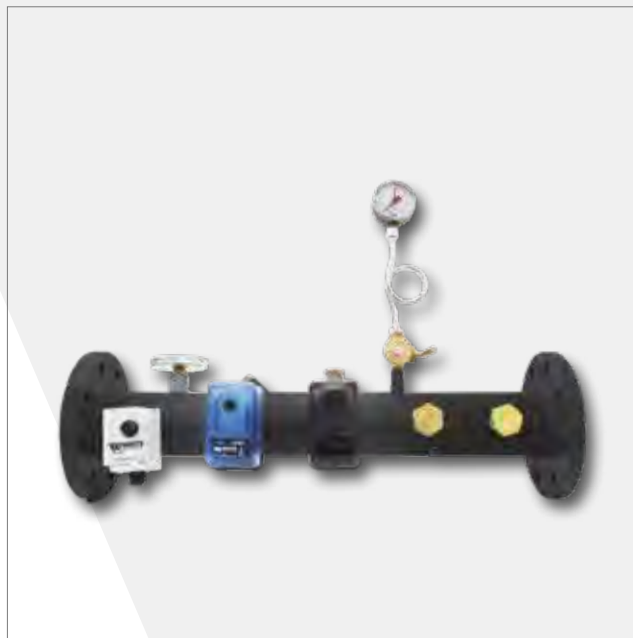


Chapter 1

Boiler room components

TRI - Instrument manifold



Quick installation
Horizontal or vertical fitting

WATTS®

Chapter 1.1

Safety, protection and control devices

SAFETY VALVES

VST

Diaphragm safety valve, fixed setting. CW617N brass body and cap. FF connections with reinforced outlet. Overpressure: 10%; Blowdown: 20%; PN 10.

Operating temperature range: -10÷120°C. Fluids: water with glycol up to 50%.

INAIL approved and set.

Compliant with Directive: PED 2014/68/EU Identification number CE1115.

Part Number	DN	bar	Qty/Box	Box/Carton
0212135	1/2" x 3/4"	3,5	1	20
0212145	1/2" x 3/4"	4,5	1	20
0213160	3/4" x 1"	6	1	20
0214122	1" x 1.1/4"	2,25	1	20
0214130	1" x 1.1/4"	3	1	20
0214140	1" x 1.1/4"	4	1	20

Dimensions at the end of the section.



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.

PT-684

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: $92\pm 3^{\circ}\text{C}$. Fluids: domestic water.

Compliant with EN 1490, WRAS and Directive PED 2014/68/EU.

Part Number	DN	bar	Qty/Box	Box/Carton
68403	1/2"MF	7	1	1
68404	1/2"MF	10	1	1
68450	3/4"MF	3	1	1
68451	3/4"MF	4	1	1
68452	3/4"MF	6	1	1
68453	3/4"MF	7	1	1
68455	3/4"MF	10	1	1

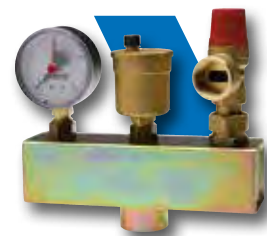
Dimensions at the end of the section.

KSG30

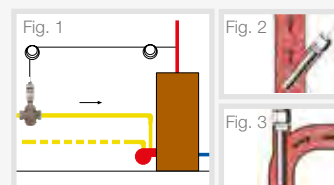
Safety unit for closed heating systems in accordance with EN 12828, installed on a galvanised stainless steel manifold, complete with MV series air vent valve, SV series 1/2" safety valve (3 bar) and pressure gauge (4 bar) with check valve.

1" F safety unit connection. PN 10. Maximum temperature: 110°C .

Part Number	Connection	bar	Qty/Box	Box/Carton
0270150	1" F	PN10	1	1

**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 0.5 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 (Italian Normative) 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 , maximum drain capacity temperature: 107°C . Maximum drain capacity: 6500 l/h at 8 bar.

SVGW approved.

Compliant with PED Directive 2014/68/EU Identification number CE1115.

Part Number	DN	Capillary	Qty/Box	Box/Carton
0232120	3/4" F	Double safety 1300 mm	1	20
0232220	3/4" F	Double safety 2000 mm	1	20

Dimensions at the end of the section.



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, maximum drain capacity temperature: 107°C. Maximum drain capacity: 6500 l/h at 8 bar. DN 3/4” F.

Compliant with PED Directive 2014/68/EU Identification number CE1115.

Part Number	T°C	Capillary	Qty/Box	Box/Carton
0232620	97	1300 mm	1	20
0232624	103	1300 mm	1	20

Dimensions at the end of the section.



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÷100°C.

Part Number	Stroke	Temperature	Qty/Box	Box/Carton
0234100	60 mm	125 cm	1	10
0234200	80 mm	125 cm	1	10

Dimensions at the end of the section.



FILLING 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. Maximum upstream pressure 10 bar. Adjustable downstream pressure 0.3÷4 bar.

Part Number	DN	Qty/Box	Box/Carton
0240100	1/2” MF	1	30

Dimensions at the end of the section.



ALM

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

Part Number	DN	Qty/Box	Box/Carton
0240200	1/2” MF	1	20

Dimensions at the end of the section.



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. Maximum upstream pressure: 10 bar. Adjustable downstream pressure: 0.3÷4 bar. Set pressure: 1 bar. Setting ratio: 1 rev. = 0.4 mWG

Part Number	DN	Qty/Box	Box/Carton
3110C12	1/2” MF	1	15

Dimensions at the end of the section.



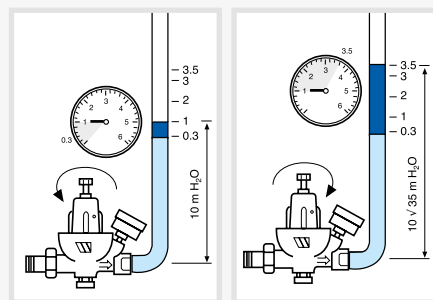
TECHNICAL NOTE - Filling valves**Setting**

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****466 - THERMATIC**

Relief valve for systems with manual or automatic shut-off elements on the radiators (thermostatic valves, two-way zone valves).

CW617N brass body and ABS cap. PN 10. Overpressure: 10-15%.

Maximum operating temperature: 110°C. Fluids: water with glycol up to 50%.

Part Number	DN	bar	Qty/Box	Box/Carton
4660C12	1/2" FF	0,05 - 0,7	1	1
4662C1	1" FF	0,05 - 0,7	1	1

Dimensions at the end of the section.

**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 Number	DN	bar	Qty/Box	Box/Carton
0265220	3/4" FM	0,03 - 0,50	1	30
0265225	1" FM	0,03 - 0,55	1	20
0265232	1.1/4" FM	0,06 - 0,46	1	15

Dimensions at the end of the section.

**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.

Maximum temperature: 130°C.

Part Number	DN	Connection	Qty/Box	Box/Carton
0262125	1"	FF	1	20
0262132	1.1/4"	FF	1	20

Dimensions at the end of the section.



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÷90°C (tolerance ± 3°C). Sensitive bulb with 1/2”M sheath 100 mm long. Plastic case with external setting knob. Contact rating: 16(5) A 250V; 400V 10(1)A.

 **ENEC 03 compliant**
INAIL approved. Compliant with LVD 2014/35/EU



Part Number	Protection	Qty/Box	Box/Carton
0405101TU	IP 40	1	50

Dimensions at the end of the section.

TS TU

Immersion shut-off thermostat with positive safety, manual resetting and fixed set-point. Shuts off the heat supply when the water temperature reaches the set-point. Set temperature: 97°C (tolerance +3÷-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 (Italian normative) approved. Compliant with LVD 2014/35/EU



Part Number	Protection	Qty/Box	Box/Carton
0405201TU	IP 43	1	50

Dimensions at the end of the section.

TRS TU

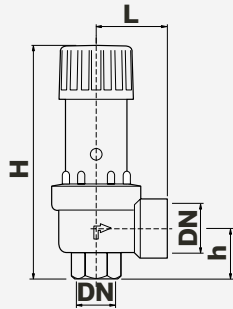
Immersion control and shut-off bi-thermostat with manual resetting. Control temperature: 30÷90°C (tolerance ± 3°C). Shut-off temperature 95°C. Sensitive bulb with 1/2” M sheath 100 mm long. Plastic case with external setting knob and manual resetting. Contact rating: 16(5) A 250V; 400V 10(1)A.

 **ENEC 03 compliant**
INAIL (Italian normative) approved. Compliant with LVD 2014/35/EU.

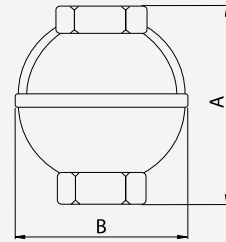


Part Number	Protection	Qty/Box	Box/Carton
0405301TU	IP 40	1	25

Dimensions at the end of the section.

OVERALL DIMENSIONS**VST**

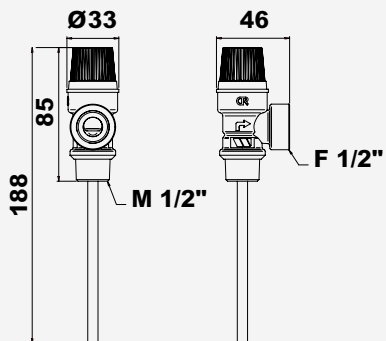
DN	L	H	h
1/2" x 3/4"	37	119	25
3/4" x 1"	48	165	29
1" x 1.1/4"	54	173	34.5

IS

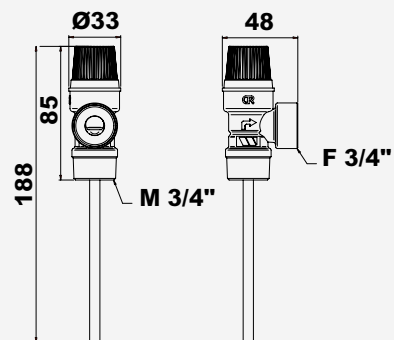
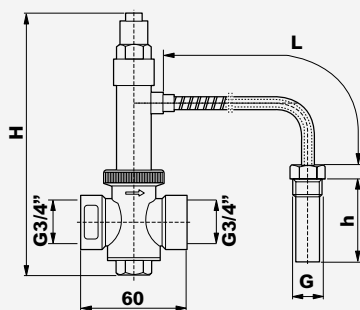
DN	A	B
1/2"	61	45
3/4"	65	57
1"	78	68
1.1/4"	113	97

PT-684

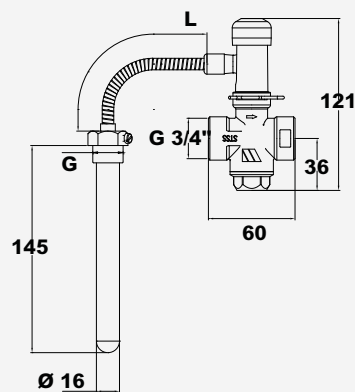
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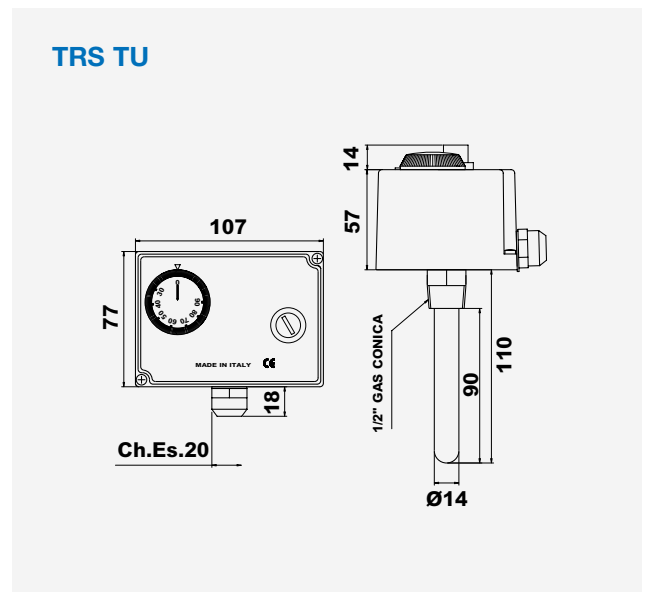
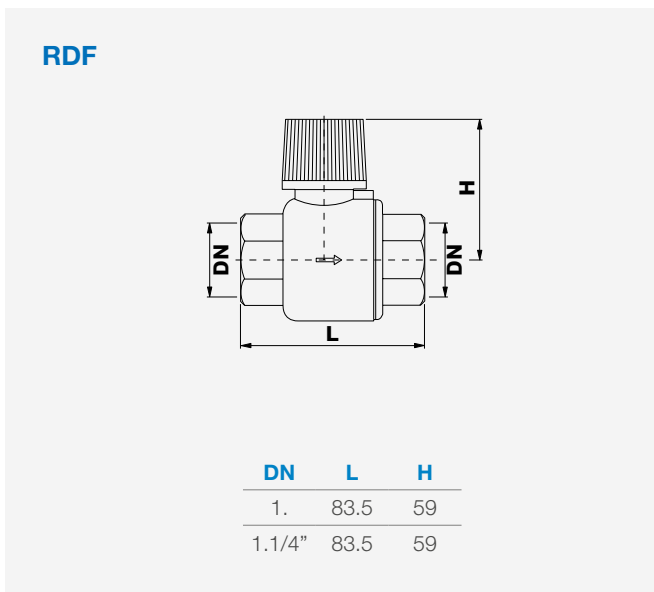
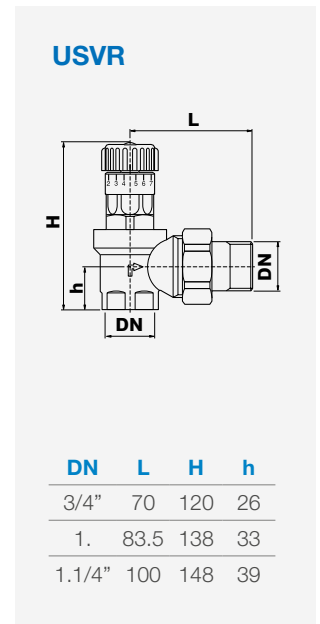
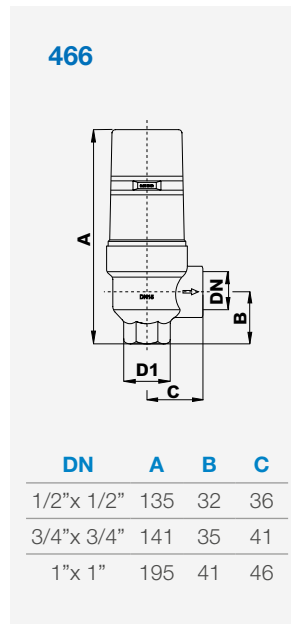
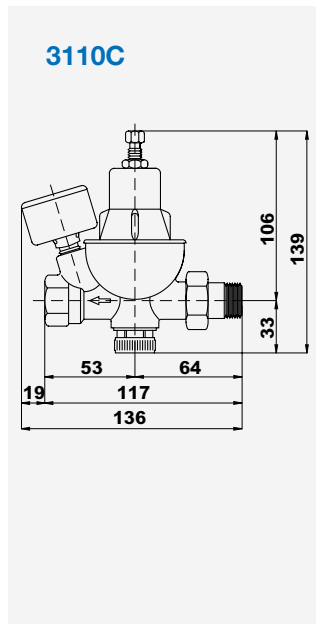
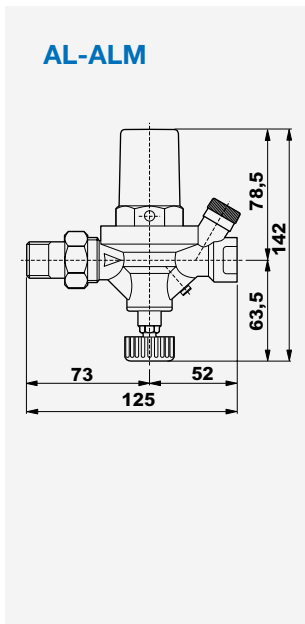
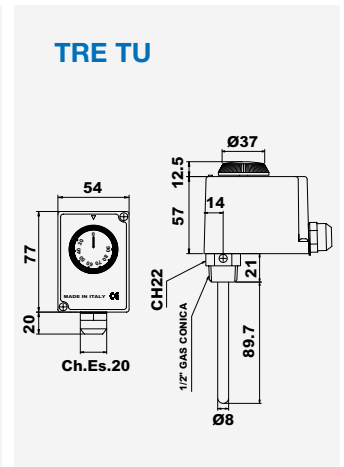
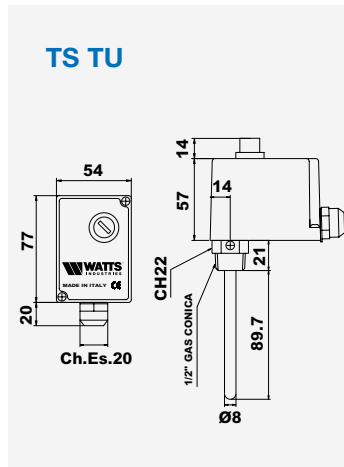
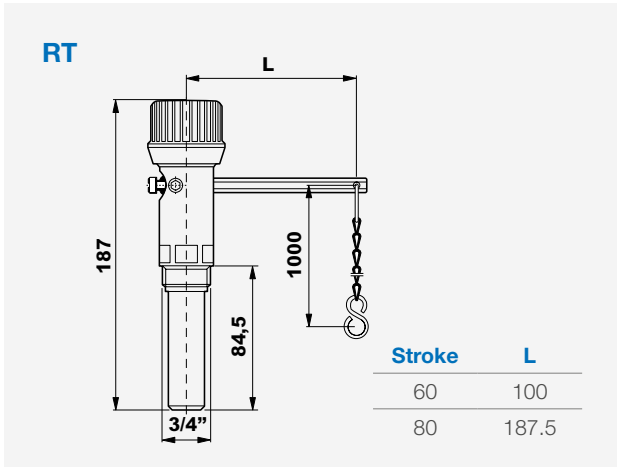
**STS/STSR**

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

OVERALL DIMENSIONS



Chapter 1.2

Modular distribution units

MIXING UNITS

PAS

Compact, pre-assembled 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, gravity flow stop system, EPP insulation, fittings and bracket for wall mounting. Supplied without pump, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready), with different centre distances. PN 10. Operating temperature range: $-10\div 40^{\circ}\text{C}$. Fluid temperature: 90°C .

Part Number	DN	Description	Qty/Box	Box/Carton
10026450	25	Pumping group	1	1
10026881	32	Pumping group	1	1
PA-130	25	Pump adaptor 130 mm	1	1

Dimensions at the end of the section.



PASF

Compact, pre-assembled, fixed-point domestic hot water and mixing unit for DN 25 heating systems with thermostatic mixing valve adjustable from 20 to 43°C . Complete with shut-off valves with built-in thermometer, gravity flow stop system, EPP insulation, fittings and bracket for wall mounting. Supplied without pump, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready) with centre distances of 130 and 150 mm. PN 10. Operating temperature range: $-10\div 40^{\circ}\text{C}$. Fluid temperature: 90°C .

Part Number	DN	Description	Qty/Box	Box/Carton
10027565	25	Pumping group and mixing	1	1

Dimensions at the end of the section.



PASM

Compact, pre-assembled, 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 230V 3-point modulating electronic actuator. Complete with shut-off valves with built-in thermometer, gravity flow stop system, EPP insulation, fittings and bracket for wall mounting. Supplied without 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 10. Operating temperature range: $-10\div 40^{\circ}\text{C}$. Fluid temperature: 90°C .

Part Number	DN	Description	Qty/Box	Box/Carton
10026451	25	Mixing valve $K_{vs}=6,3$	1	1
10026883	32	Mixing valve $K_{vs}=18$	1	1
PA-130	25	Pump adaptor 130 mm	1	1

Dimensions at the end of the section.



HK

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

Part Number	DN	Pump wheelbase	Qty/Box	Box/Carton
10027651	40	220 mm	1	1
10027652	50	280 mm	1	1

Dimensions at the end of the section.



HKM

Pre-assembled, 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, built-in thermometer, gravity flow stop system and EPP insulation. Supplied without pump, it suits all system requirements. Compatible with high-efficiency pumps (ErP ready).

Part Number	DN	Pump wheelbase	Qty/Box	Box/Carton
10027653	40	220 mm	1	1
10027650	50	280 mm	1	1

Dimensions at the end of the section.



HYDRAULIC SWITCHES AND DISTRIBUTION MANIFOLDS

HW-Q60/80

Compact stainless steel hydraulic switch for PAS, PASF and PASM 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 manifolds (maximum 2 circuits). PN 6.

Part Number	Flow	Notes	Qty/Box	Box/Carton
10010424	1,5 m3/h – 17 kW (ΔT = 10 K)	-	1	1

Dimensions at the end of the section.



HW

Steel hydraulic switch for VB32 and HKV50 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 switch to VB32 manifolds. PN 6.

Part Number	Description	Connection	Qty/Box	Box/Carton
10010376	Separator 4 m3/h – 44 kW (ΔT = 10 K)	1. 1/2"	1	1
10010419	Separator 10 m3/h – 114 kW (ΔT = 10 K)	2"	1	1
10010378	Pair of pipes to connect HK80/120 to manifolds VB32	-	1	1
10006335	Set of two swivel fittings	1.1/2"Fx1"F	1	1

Dimensions at the end of the section.



VB32

Steel distribution manifold for PAS, PASF and PASM 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 Number	Description	Notes	Qty/Box	Box/Carton
10025900	per 2 pumping group	-	1	1
10025901	per 3 pumping group	-	1	1
10026672	per 4 pumping group	-	1	1
10026931	per 5 pumping group	-	1	1
10026388	Wall fixing kit	-	1	1

Dimensions at the end of the section.

TECHNICAL NOTE - Selection Guide

Modular connection of PAS, PASF and PASM domestic hot water and mixing units

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



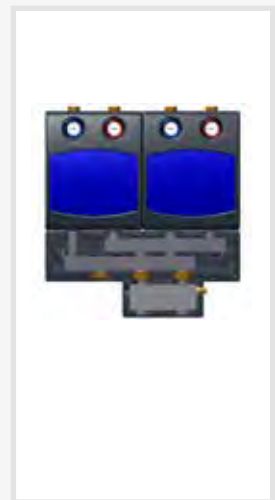
Connection with HW80/120 and primary flow on left



Connection with HW80/120 and primary flow on right



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



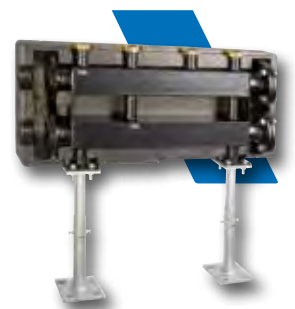
Connection with HW-Q60/80 and primary flow on right

HKV 50

Steel distribution manifold for HK and HKM DN 40 and DN 50 domestic hot water and mixing units complete with EPP insulation, compatible with systems with flow from either left or right. Compatible with PAS, PASF and PASM DN25 and DN32 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 Number	Description	Notes	Qty/Box	Box/Carton
10011282	2 secondary circuits	-	1	1
10011283	3 secondary circuits	-	1	1



Dimensions at the end of the section.

VB50/80-ECK

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

Part Number	Connection	Pressure	Qty/Box	Box/Carton
10011284	Flange DN80	PN6	1	1



HKV-FUSS

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

Part Number	Height	Notes	Qty/Box	Box/Carton
10011285	Adjustable from 650 to 850mm	-	1	1

Dimensions at the end of the section.



REDU

Adaptor for connecting PAS, PASF and PASM DN25 and DN32 domestic hot water and mixing units to HKV50 distribution manifolds, complete with EPP insulation.

Part Number	Connection	Notes	Qty/Box	Box/Carton
10011286	2" M x 1.1/2" F	free nut	1	1



TECHNICAL NOTE - Selection Guide

Modular connection of PAS, PASF and PASM domestic hot water and mixing units

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



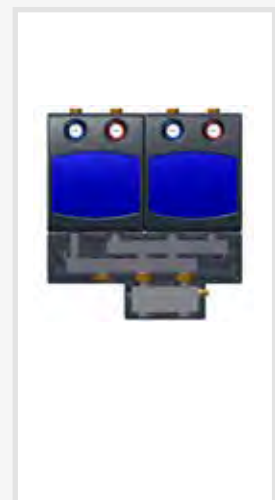
Connection with HW80/120 and primary flow on left



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

BOILER ROOM ACCESSORIES

ERD - EUROVENT

Automatic/manual double de-aerator with expansion vessel. Tropicalised sheet steel body. OT58 brass cover. PN 8. Maximum temperature: 115°C.

Part Number	DN	Qty/Box	Box/Carton
0253625	1"	1	20
0253640	1.1/2"	1	12

Dimensions at the end of the section.



SA

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

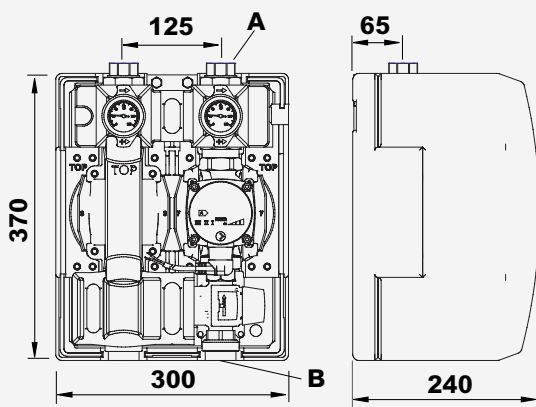
Part Number	DN	Qty/Box	Box/Carton
0260125	1"	1	1
0260132	1.1/4"	1	1
0260140	1.1/2"	1	1
0260150	2"	1	1
0260165	2.1/2"	1	1
0260180	3"	1	1

Dimensions at the end of the section.



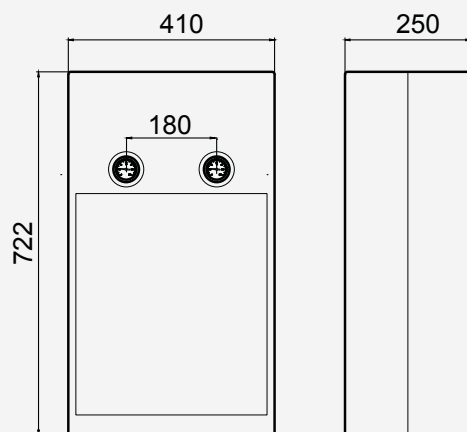
OVERALL DIMENSIONS

PAS, PASF, PASM



DN	A	B
25	1"F	1.1/2"M
35	1.1/4"F	2"M

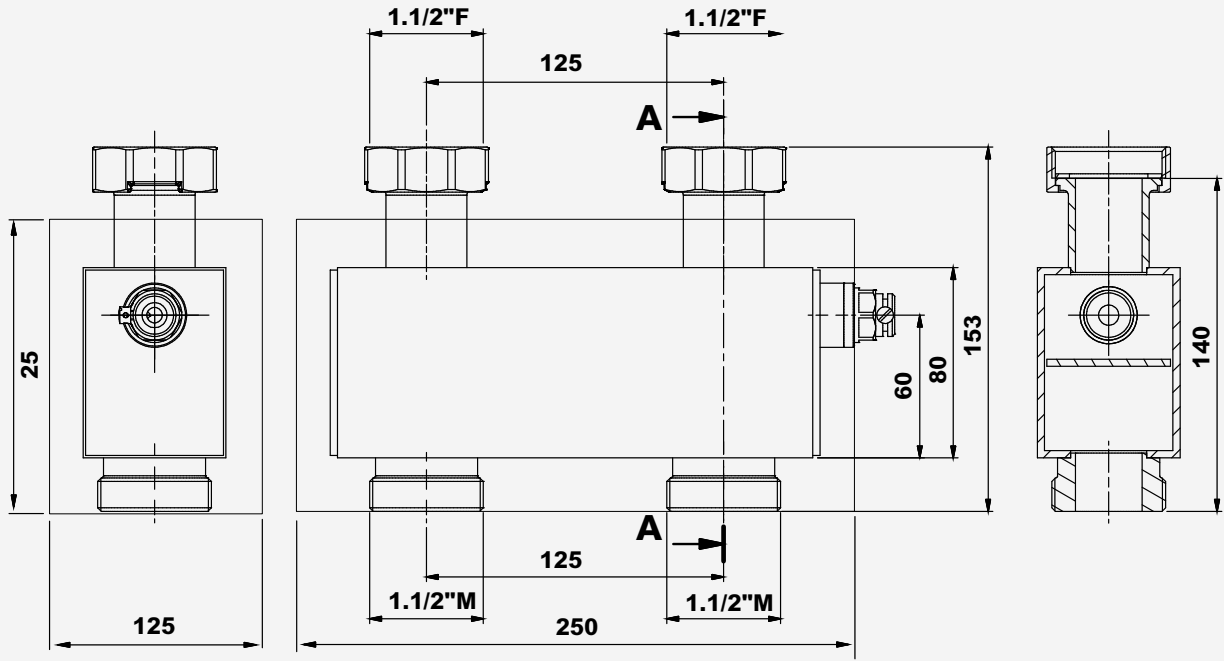
HK, HKM



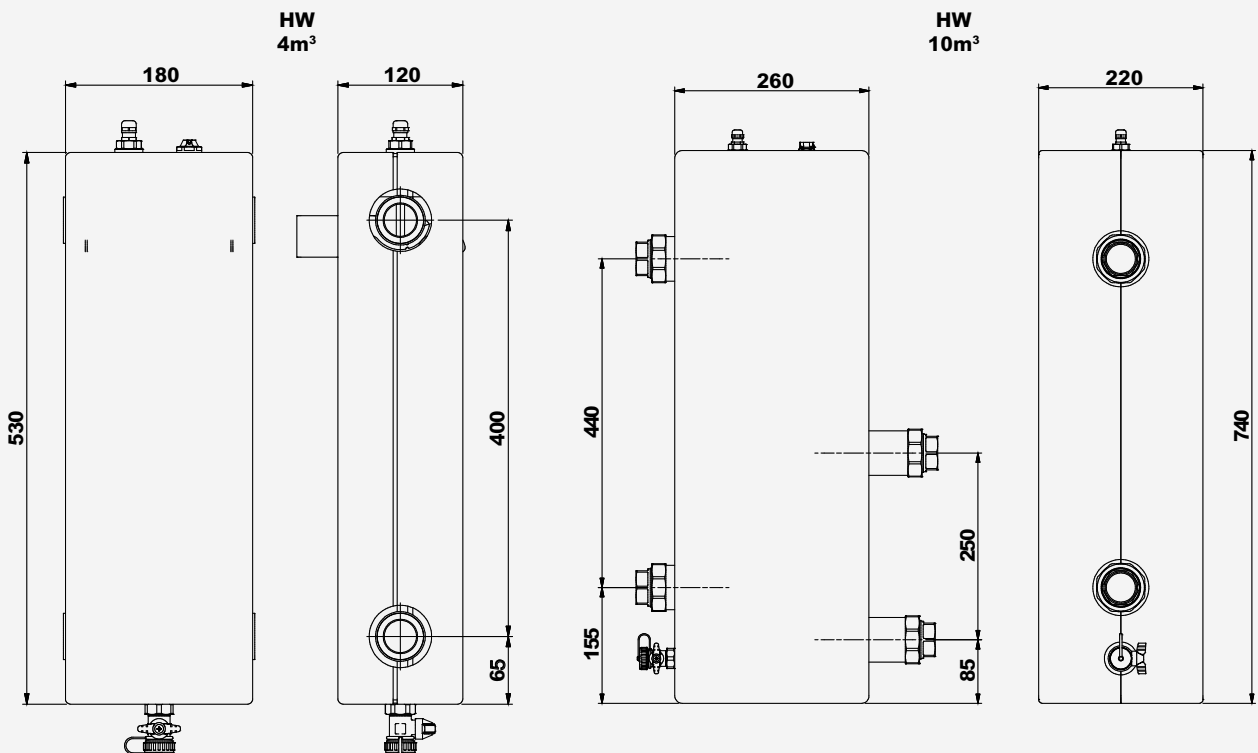
DN	A
40	528F
50	288

OVERALL DIMENSIONS

HW-Q60/80

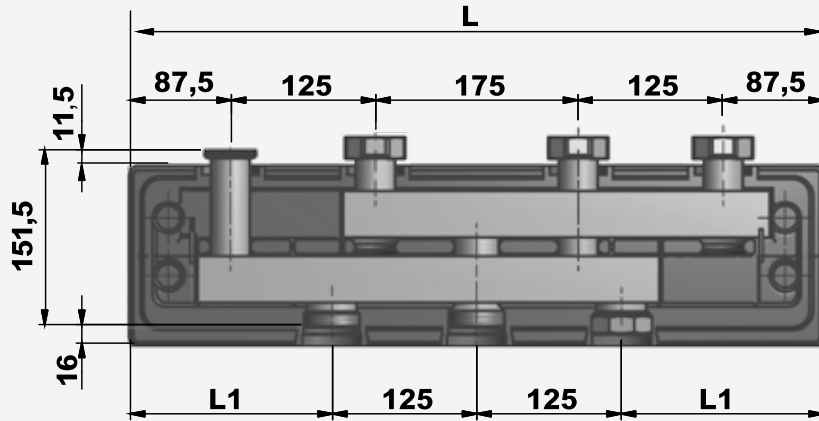


HW



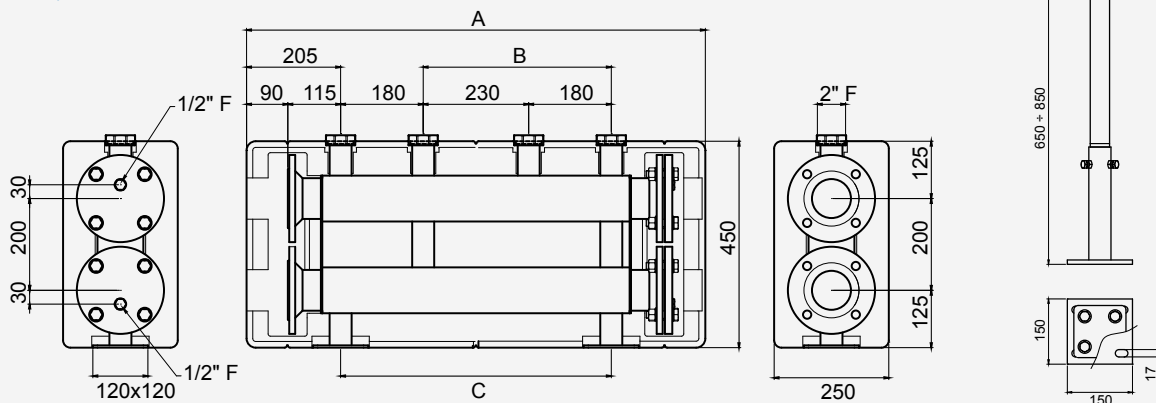
OVERALL DIMENSIONS

VB32



Type	Circuits	L	L1
VB32-2	2	600	175
VB32-3	3	900	325
VB32-4	4	1200	475
VB32-5	5	1500	625

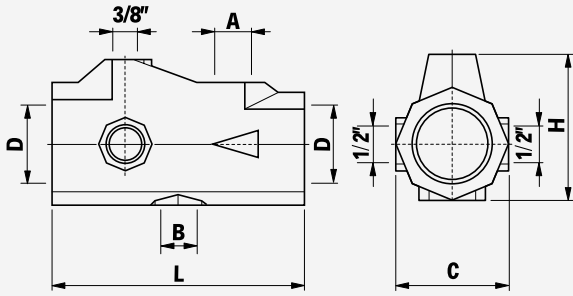
HKV50, HKV-FUSS



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

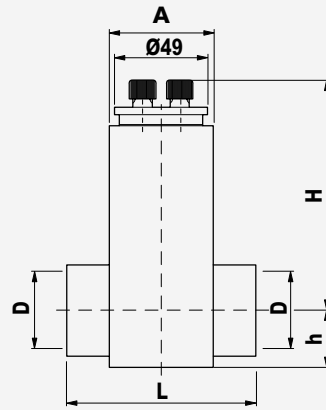
OVERALL DIMENSIONS

SA



DN	A	B	C	L	H
1.	1/2"	3/4"	70	152	87
1.1/4"	1/2"	3/4"	70	152	87
1.1/2"	1/2"	3/4"	70	152	87
2.	3/4"	1.	87	189	115
1.1/2"	1.	1.	128	300	203
3.	1.	1.	128	300	203

ERD



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

