Direct supply unit for heating and cooling systems

165 series

01398/25 EN
replaces 01398/23 EN

Function

The direct supply unit performs the function of supplying the circuits of heating systems at high temperature or air-conditioning systems. Complete with high-efficiency electronic circulator, flow and return temperature gauges on secondary circuit, secondary circuit shut-off valves and pre-formed shell insulation suitable for heating and cooling systems. The unit is reversible: in fact, the flow direction can be inverted from right to left, depending on installation requirements. This unit can be coupled with the SEPCOLL 559 series separator/distribution manifold and on 550 series manifolds with 125 mm centre distance connections.

Product range

Code 165600A2L	Direct supply unit for **heating and cooling systems**. With UPM3K Auto 25-70 circulator. Centre distance 125 mm	DN size 25 (1”)
Code 165601UPM	Direct supply unit for **heating systems**. With UPML 25-105 circulator. Centre distance 125 mm	DN size 32 (1 1/4”)
Code 165640HE3	Direct supply unit for **heating and cooling systems**. With PARA 25/7 circulator. Centre distance 125 mm	DN size 25 (1”)
Code 165641HE4	Direct supply unit for **heating and cooling systems**. With PARA 25/9 circulator. Centre distance 125 mm	DN size 32 (1 1/4”)
Code 165640HE5	Direct supply unit for **heating and cooling systems**. With EVOSTA2 70/130 circulator. Centre distance 125 mm	DN size 25 (1”)

Technical specifications

Materials

Connection pipes
Material: Fe 360 steel

Check valve
Body: brass EN 12164 CW614N
Obturator: PPAG40

Shut-off valves
Body: brass EN 12165 CW617N

Performance

Medium: water, glycol solutions
Max. percentage of glycol: 30 %
Maximum working pressure: 1000 kPa (10 bar)
Minimum working pressure: 80 kPa (0,8 bar)
Primary inlet working temperature range: 5–100 °C

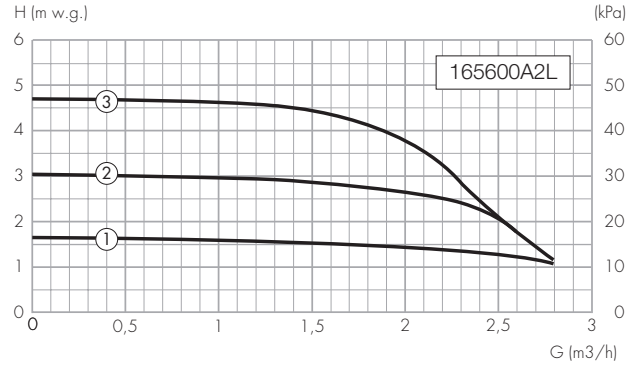
Connections: - system side: (code 165600A2L) 1” F (ISO228-1)
(code 165601UPM) 1 1/4” F (ISO228-1)
(code 165640HE3) 1” F (ISO 228-1)
(code 165641HE4) 1 1/4” F (ISO 228-1)
(code 165640HE5) 1” F (ISO228-1)
- boiler side: 1 1/2” M (ISO 228-1)
- connection centre distance: 125 mm

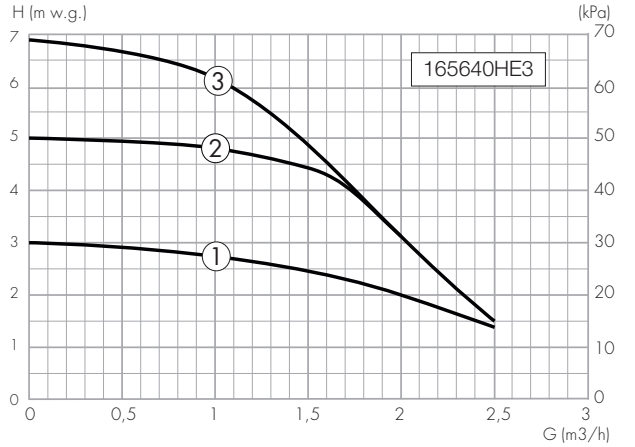
Insulation
Material: EPP
Thickness: 20 mm
Thermal conductivity: 0,037 W/(m·K) at 10 °C
Density: 45 kg/m³
Working temperature range: -5–120 °C
Reaction to fire (UL 94): HBF class

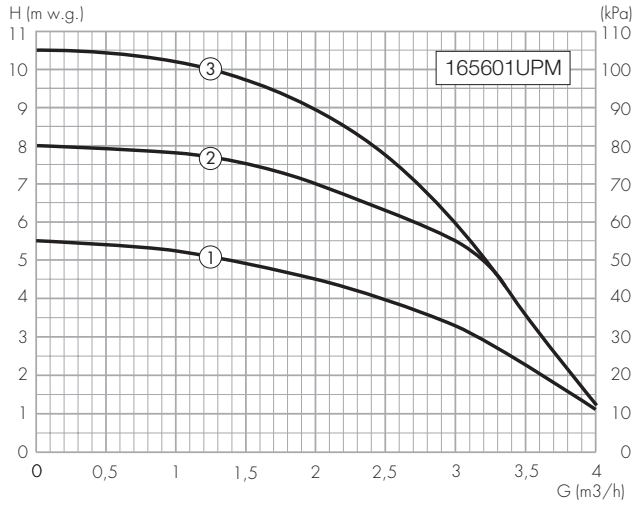
Circulator CE
High-efficiency circulator: - code 165600A2L UPM3K Auto 25-70
- code 165601UPM UPML 25-105
- code 165640HE3 PARA 25/7
- code 165641HE4 PARA 25/9
- code 165640HE5 EVOSTA2 70/130
Body: cast iron
Electric supply: 230 V - 50/60 Hz
Maximum ambient temperature/humidity: refer to specific instruction sheet
Protection class: - UPM3K Auto 25-70: IPX4D
- UPML 25-105: IPX2D
- PARA 25/7: IPX4D
- PARA 25/9: IPX4D
- EVOSTA2 70/130: IPX5
Circulator centre distance: 130 mm
Circulator connections: 1 1/2” (ISO 228-1) with nut
Product compliance with applicable directives

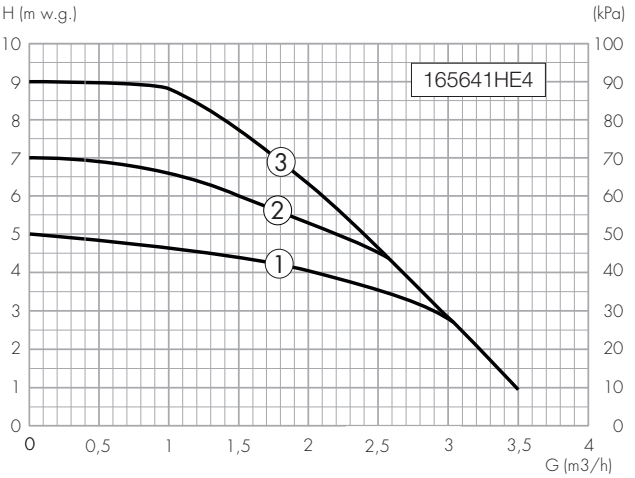
Temperature gauges
Double scale: 0–80 °C (32–176 °F)

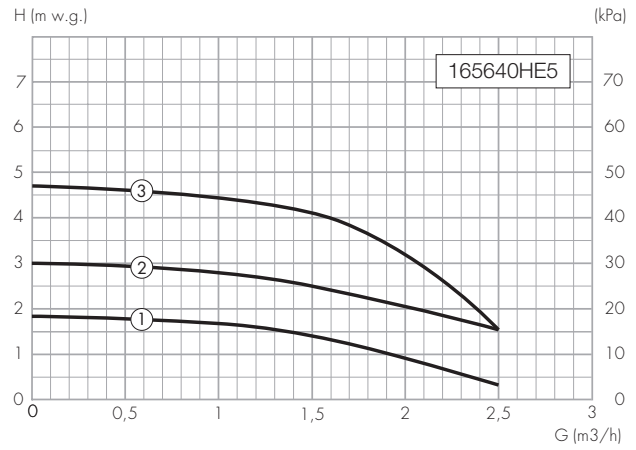
Available head at unit connections
Tests carried out with constant circulator head.



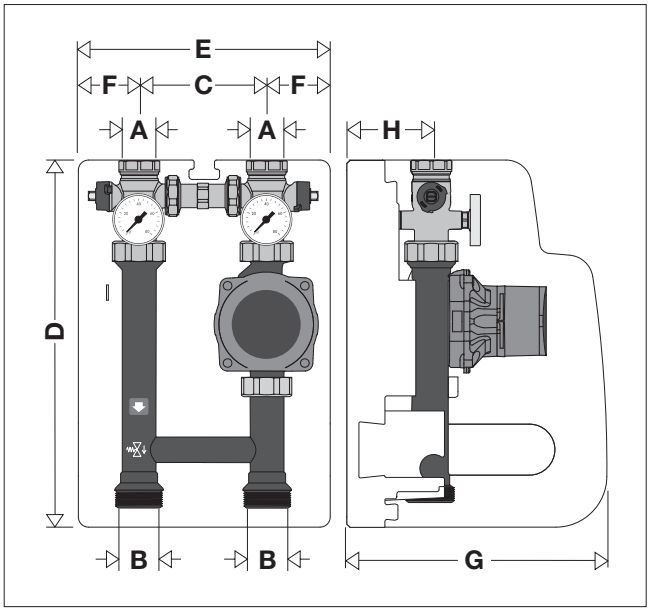






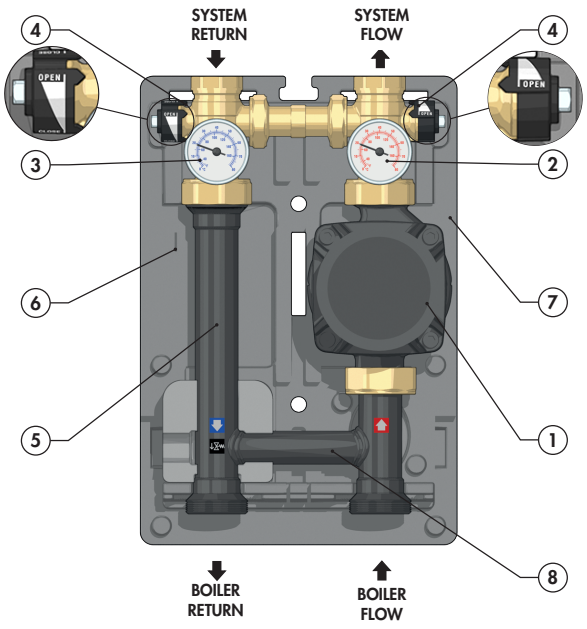


Dimensions

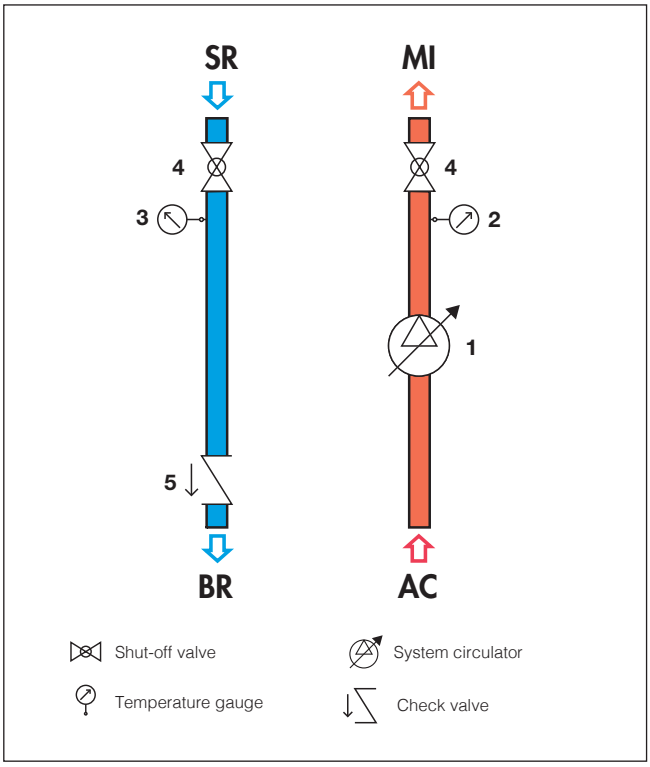


Code	A	B	C	D	E	F	G	H	Mass (kg)
165600A2L	1″	1 1/2″	125	360	250	62,5	255	80	5,4
165601UPM	1 1/4″	1 1/2″	125	379	250	62,5	255	80	6,1
165640HE3	1″	1 1/2″	125	360	250	62,5	255	80	5,7
165641HE4	1 1/4″	1 1/2″	125	379	250	62,5	255	80	5,9
165640HE5	1″	1 1/2″	125	360	250	62,5	255	80	6,0

Note:
The pumps can operate at constant speed (UPM3, PARA and EVOSTA2 only) with constant or proportional pressure control, which adapts the performance to the system requirements.
For further details, see the installation instruction sheet supplied with the circulator.



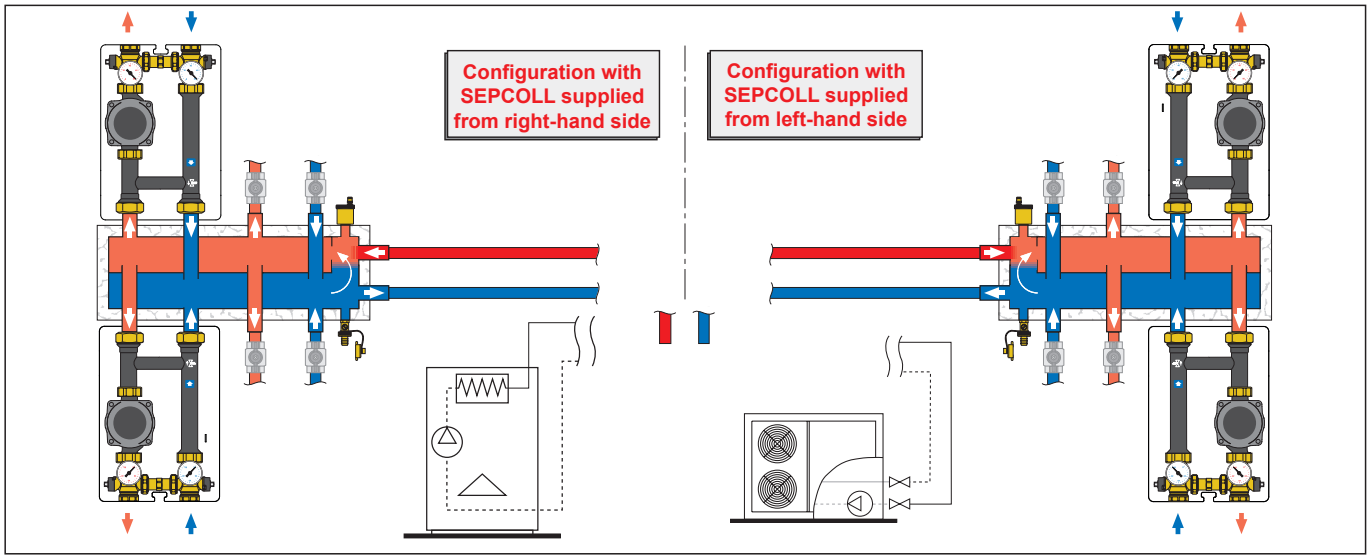
Hydraulic diagram



Characteristic components

1 High-efficiency circulator
2 Flow temperature gauge
3 Return temperature gauge
4 Shut-off valves on secondary circuit
5 Connection pipe (with check valve)
6 Operating wrench for shut-off valves on secondary circuit
7 Insulation
8 Structural element (spacer)

Installation

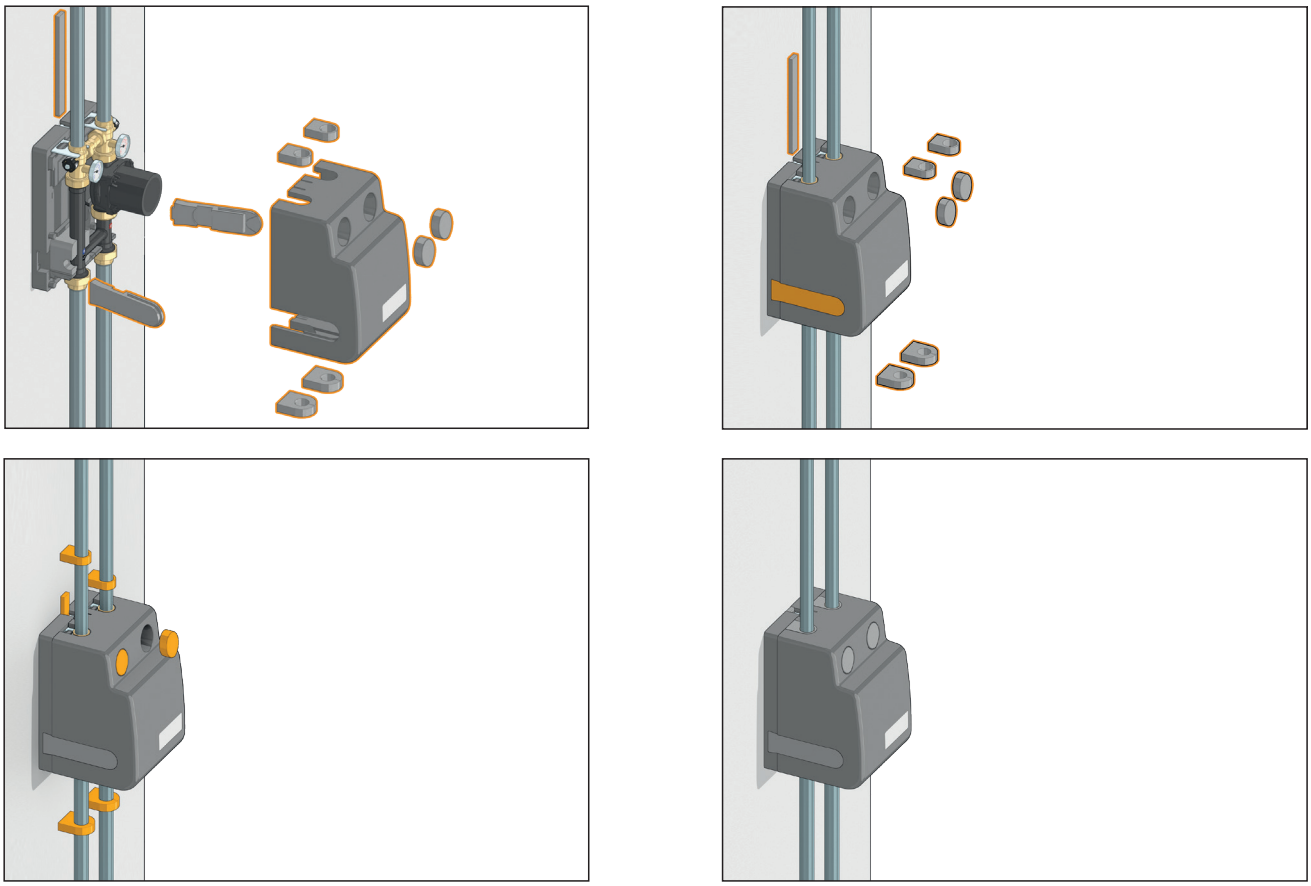


Note:
The direct supply unit is reversible, meaning the flow direction can be changed.
For further details, see the installation instruction sheet supplied with the circulator.

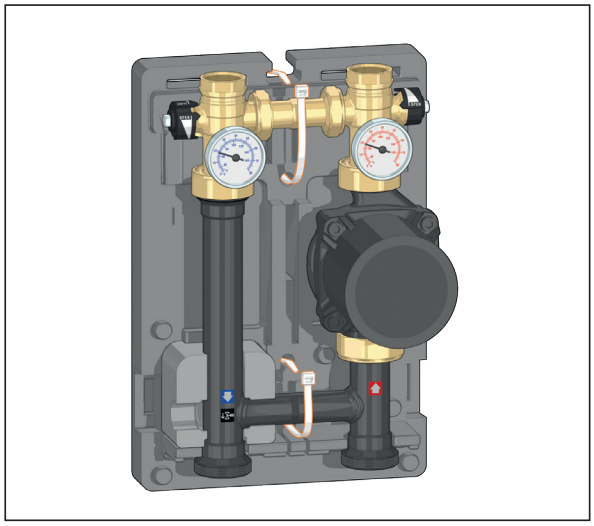
Construction details

Pre-formed shell insulation

If used in **heating and cooling systems**, use the special inserts which help to improve insulation and minimise condensation build-up.



Note: if the maximum medium flow temperature is greater than 60 °C, the two circular front caps have to be removed to prevent the circulator from overheating.



When fitting the rear shell to the assembly, it is recommended to use two clamps, as shown in the figure, to ensure that the insulation adheres perfectly to the pipes and to minimise the likelihood of condensation build-up.

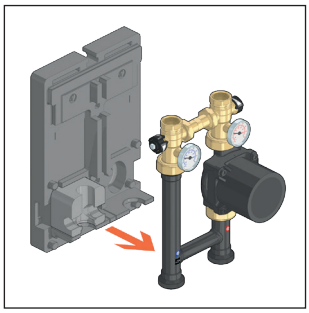
Right hand-left hand reversibility

The unit is assembled in the factory with right-hand side upward flow (equivalent to left-hand side downward flow). If necessary, the flow direction can be exchanged. For this reason, the nuts on the unit are not fully tightened in the factory, making it easier to carry out this procedure if required.

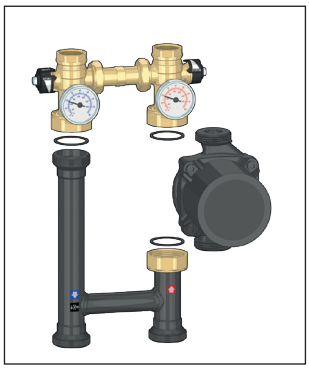
We recommend always checking that the nuts have been fully tightened during installation.

To make the exchange, proceed as follows:

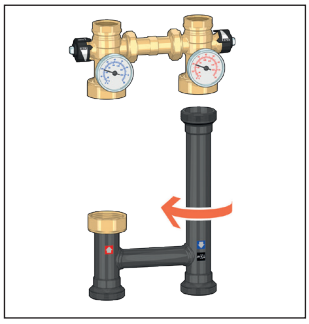
1. Remove the insulation. The front and rear shells are easy to remove as they are slightly interlocked with each other.



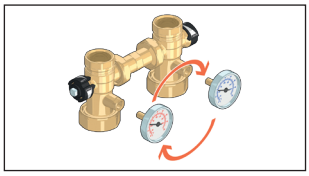
2. Completely unscrew the captive nuts (using suitable spanners) located under the flow and return shut-off valves. Remove the circulator.



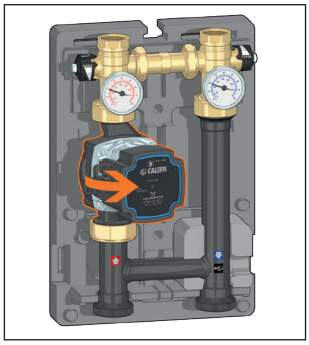
3. Position the connecting pipe on the right-hand side, rotating it on its axis by 180°.

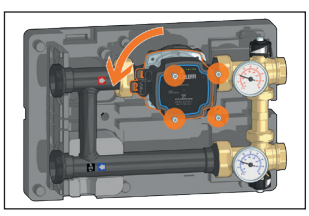


4. Invert the flow and return temperature gauges.

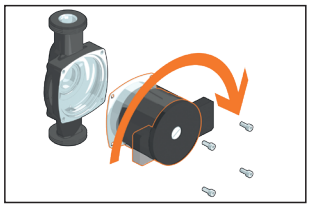


In versions with UPM3K Auto 25-70 circulator, rotate the circulator on its axis until the insulation cannot be closed off, taking care to position the anti-condensation drain hole at the bottom. In the case of horizontal or upside-down installation, the electronic part of the circulator should be rotated, unscrewing the four screws and making sure the motor shaft remains in a horizontal position with the condensation drain at the bottom.

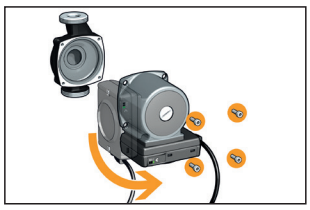




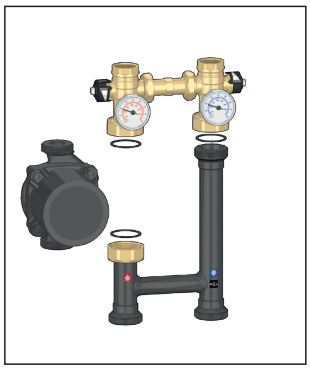
In versions with an EVOSTA2 circulator, the electronic part of the circulator must be rotated by unscrewing the four screws, as indicated by the arrows, and turning the body clockwise by 180°. If this step is not performed, it will not be possible to fit the unit back inside the insulation.



In versions with a UPML 25-105 circulator, the electronic part of the circulator must be rotated by unscrewing the four screws, as indicated by the arrows, and turning the body anticlockwise by 90°. If this step is not performed, it will not be possible to fit the unit back inside the insulation.

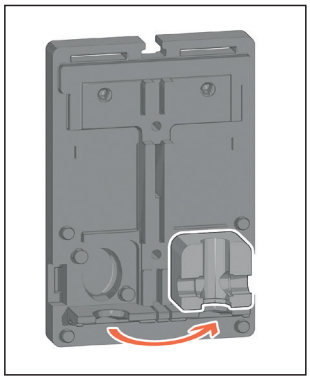


5. Assemble the unit as shown in the figure, fully tightening the captive nuts and taking care to position the seals correctly.

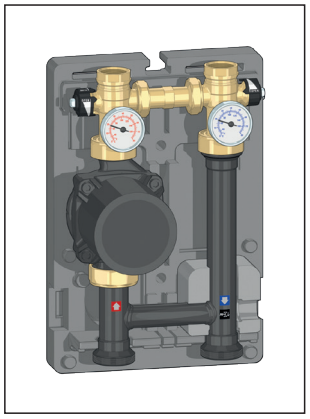


6. Move the square spacer and fit it on the right-hand side.

Note: The central notch in the insulation can be used to house the circulator electrical wiring cables.



7. Assemble the insulation.



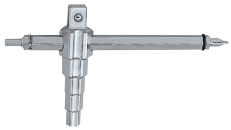
Accessories

165006

Pair of eccentric tailpieces.
Centre distance: 105–145 mm.
Connections:
1 1/2" F with captive nut x 1" F.

165002

Female union with captive nut, complete with seal.
Connections: 1 1/2" F with captive nut x 1" F.



3871

Universal key.
Can be used for unions from 3/8" to 1".

Code
387127

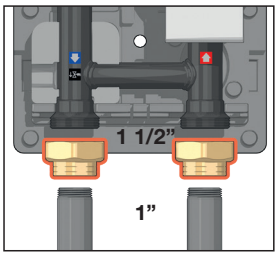
519

Differential by-pass
for 165, 166 and 167 series units.
Setting range: 1–6 m w.g.
Maximum working pressure: 10 bar.
Maximum working temperature: 100 °C.

Code
519006

Installation example

The union with captive nut allows installation of the 165 series unit on any 1" M pipe.



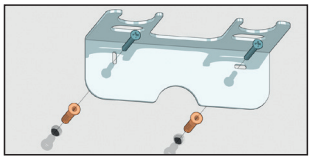
Mounting bracket

165001

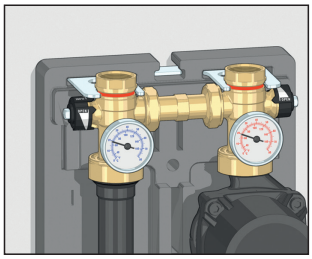
Mounting bracket.
In stainless steel.

Bracket installation

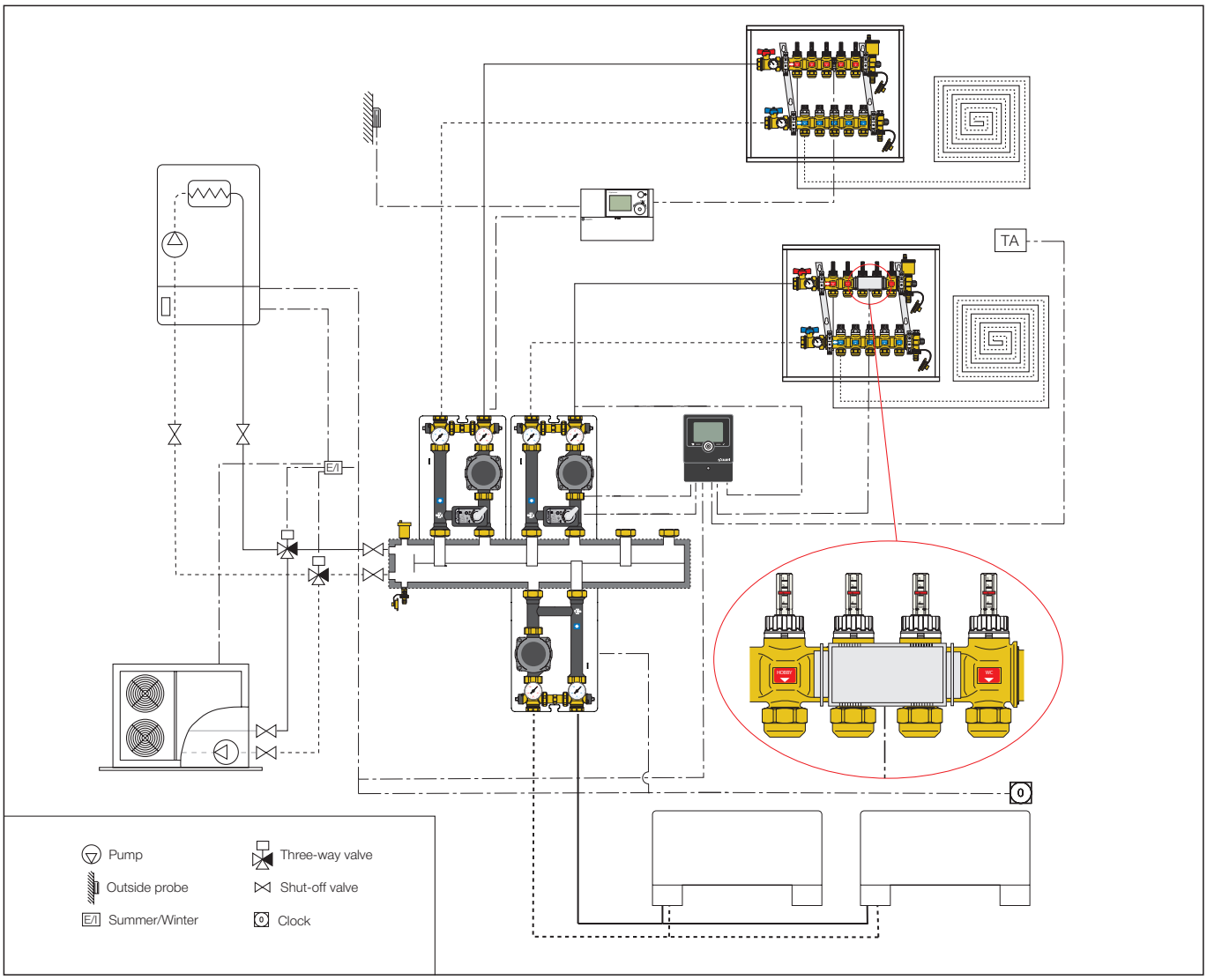
The mounting bracket for wall installation must be secured using wall anchors, using the corresponding holes on the base.

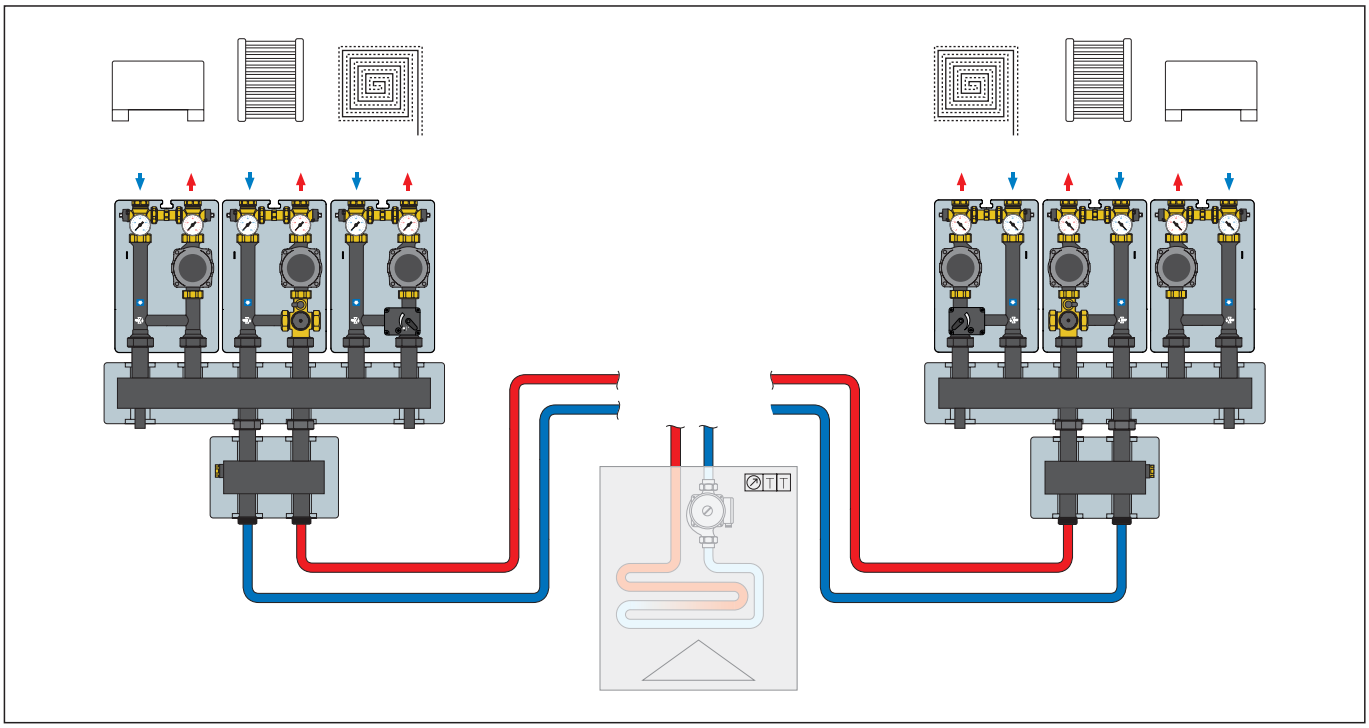


The unit should be applied to the bracket, using the corresponding seats under the hexagonal part of the shut-off valves.



Application diagrams





SPECIFICATION SUMMARY

165 series (code 165601UPM)
Direct supply unit for heating systems. Right-left swappable. Connections to primary circuit 1 1/2" M (ISO 228-1). Connections to secondary circuit 1 1/4” F (ISO 228-1). Connections centre distance 125 mm. Maximum working temperature 100 °C. Maximum working pressure 1000 kPa (10 bar). Minimum working pressure 80 kPa (0,8 bar). Complete with UPML 25-105 high-efficiency circulator, protection class IPX2D. Dual-scale temperature gauges: 0–80 °C (32–176 °F). Secondary circuit shut-off valves. Connection pipe in Fe 360 steel. Check valve with brass body, obturator in PPAG40. With pre-formed shell insulation in EPP.

165 series (code 165600A2L)
Direct supply unit for heating and cooling systems. Right-left swappable. Connections to primary circuit 1 1/2" M (ISO 228-1). Connections to secondary circuit 1” F (ISO 228-1). Connections centre distance 125 mm. Maximum working temperature 100 °C. Maximum working pressure 1000 kPa (10 bar). Minimum working pressure 80 kPa (0,8 bar). Complete with UPM3K Auto 25-70 high-efficiency circulator, protection class IPX4D. Dual-scale temperature gauges: 0–80 °C (32–176 °F). Secondary circuit shut-off valves. Connection pipe in Fe 360 steel. Check valve with brass body, obturator in PPAG40. With pre-formed shell insulation in EPP.

165 series (code 165640HE3 - 165641HE4)
Direct supply unit for heating and cooling systems. Right-left swappable. Connections to primary circuit 1 1/2” M (ISO 228-1). Connections to secondary circuit 1” F (ISO 228-1) (code 165640HE3); 1 1/4” F (ISO 228-1) (code 165641HE4). Connections centre distance 125 mm. Primary inlet working temperature range: 5–100 °C. Maximum working pressure 1000 kPa (10 bar). Minimum working pressure 80 kPa (0,80 bar). Complete with: high-efficiency circulator PARA 25/7 (PARA 25/9), protection class IPX4D, dual-scale temperature gauges 0–80 °C (32–176 °C) and secondary circuit shut-off valves. Connection pipe in Fe 360 steel. Check valve with brass body, obturator in PPAG40. With pre-formed shell insulation in EPP for heating and cooling systems.

165 series (code 165640HE5)
Direct supply unit for heating and cooling systems. Right-left swappable. Connections to primary circuit 1 1/2" M (ISO 228-1). Connections to secondary circuit 1” F (ISO 228-1). Connections centre distance 125 mm. Primary inlet working temperature range: 5–100 °C. Maximum working pressure 1000 kPa (10 bar). Minimum working pressure 80 kPa (0,80 bar). Complete with: high-efficiency circulator EVOSTA2 70/130, protection class IPX5, dual-scale temperature gauges 0–80 °C (32–176 °C) and secondary circuit shut-off valves. Connection pipe in Fe 360 steel. Check valve with brass body, obturator in PPAG40. With pre-formed shell insulation in EPP for heating and cooling systems.

Code 165001
Stainless steel mounting bracket.

Code 165002
Female union with captive nut, complete with seal. Connections 1 1/2" F captive nut x 1" F (ISO 228-1).

Code 165006
Pair of eccentric tailpieces. Connections 1 1/2" F captive nut x 1" F (ISO 228-1). Centre distance 105–145 mm.

Code 519006
Differential by-pass valve. Brass body. Connections 1” M x 1” M. Stainless steel spring. Setting range 1–6 m w.g. (10-60 kPa). Maximum working pressure 10 bar. Maximum working temperature 100 °C.

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