

Data Sheet

FHM-Cx

Mixing Shunts for Floor Heating

Application



Mixing shunt
FHM-C1

Mixing shunt
FHM-C5/C6

The Danfoss compact mixing shunts are used for regulation of flow and supply temperature in hydronic floor heating systems. The compact, flexible design allows mounting the mixing shunt directly to the manifold on both left and right side, with the primary pipe connection from the side or below.

A self-acting proportional regulator is used to regulate the supply temperature. The regulator ensures that the desired supply temperature to the underfloor heating system always remains constant. A built-in check valve ensures correct flow direction. An air-vent on top and a thermometer completes the mixing shunt. An optional thermostat protects the floor against too high temperatures.

FHM-C1 is equipped with a low-energy, variable speed pump (Grundfos UPM3). FHM-C5 and -C6 have a standard 3-speed pump (UPS).

The FHM-Cx compact mixing shunts can be mounted directly to the Danfoss manifold system without the use of special equipment. By using Danfoss floor heating controls all expectations of a professional floor heating system are fulfilled.

Ordering

| Product | Max. effect at sec. $\Delta t = 5K$ | Max. effect at sec. $\Delta t = 10K$ ¹⁾ | Pump type, Grundfos | Code no. |
|---------|-------------------------------------|--|---------------------|-----------------|
| FHM-C1 | 7 kW | 15 kW | UPM3 | 088U0094 |
| FHM-C5 | 4.5 kW | 9 kW | UPS 15-40 | 088U0093 |
| FHM-C6 | 7 kW | 13 kW | UPS 15-60 | 088U0096 |

¹⁾ Max. effect at $\Delta t = 30K$ in primary (70/40) and $\Delta t = 5K$ (10K) in secondary line with heatloss 50 W/m².

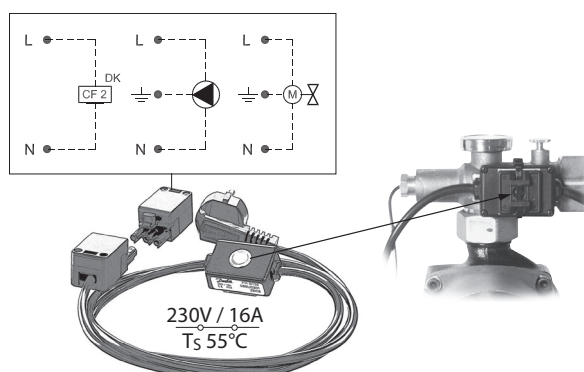
Accessories

| Product | Type | Code no. |
|----------------------------------|---------|-----------------|
| Thermometer 0-60 °C, Ø35 mm | FHD-T | 088U0029 |
| Safety thermostat | FH-ST55 | 088U0301 |
| Temperature controller, 15-50 °C | FTC | 013G5081 |
| Measuring set for needles | FHM-MS | 088U0304 |
| Angle fittings (set of 2 pcs.) | FHM-AF | 088U0305 |

Technical specifications

| | |
|---|--|
| Supply voltage | 230 V AC |
| Primary connection | ½" |
| Max. differential pressure with Danfoss Floor Heating manifolds | 0.6 bar |
| Max. working pressure | PN10 |
| Max. flow temperature | 90 °C |
| FTC flow temperature control | 18 - 50 °C |
| FH-DT supply flow thermometer | 0 - 60 °C |
| Integrated check valve | POM / Stainless steel |
| Body, unions and other metal parts | Brass / Stainless steel |
| O-rings and seals | EPDM |
| Weight | approx. 3.5 to 4 kg (depending on model) |

FH-ST55
Safety thermostat



Electrical connection

The FH-ST safety thermostat is fixed on the tube and protects floor and system against too high temperatures, especially important for wooden floors. The FH-ST thermostat switches off the power supply of the floor heating base unit, when the temperature reaches 55 °C.

By switching off the power supply of the floor heating base unit, the actuators (NC) will close

automatically and the floor heating system is protected.

The FH-ST55 can also be connected to a pump or a zone valve.

Note! The electrical installation must be carried out by an authorized installer only (230 V DC).

| | |
|----------------------|-----------------|
| Code no. | 088U0301 |
| Shut-off temperature | 55 °C |
| Switch difference | 4 K |
| Classification | IP 40 (mounted) |

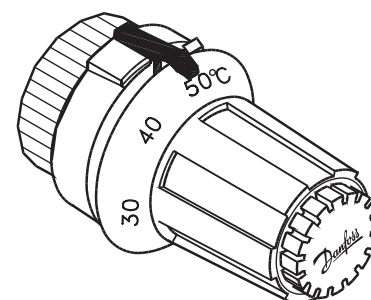
FTC **Temperature controller**

FTC is a self-acting thermostatic sensor used for flow temperature control of floor heating.

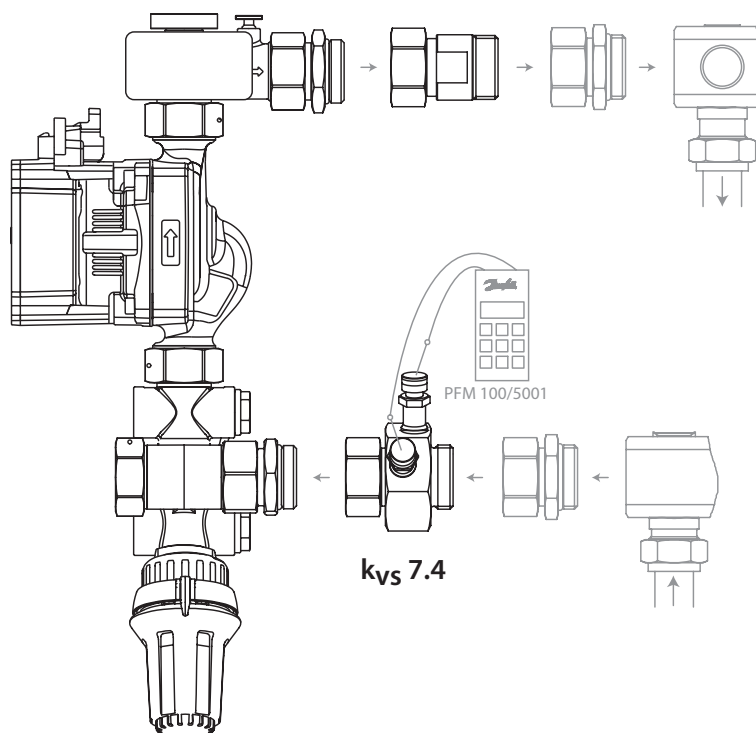
The water temperature is measured by a surface sensor. The snap-lock connector of the sensor element secures a firm connection to the valve.

Features:

- Closes on rising sensor temperature.
- Temperature range: 15 to 50 °C



FHM-MS **Measuring set**



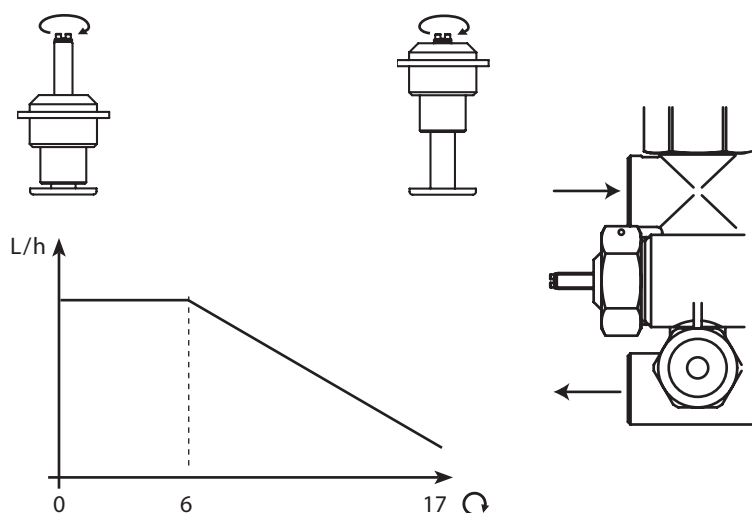
FHM-MS measuring set

The flow running through the FHM-MS (fixed orifice) can be measured by using the Danfoss measuring instruments PFM 100/5001 or other brands of measuring equipment.

The FHM-MS valve is supplied with two measuring nipples for 3 mm needles. The measuring nipples are placed across a fixed orifice and the differential pressure can be measured across this orifice.

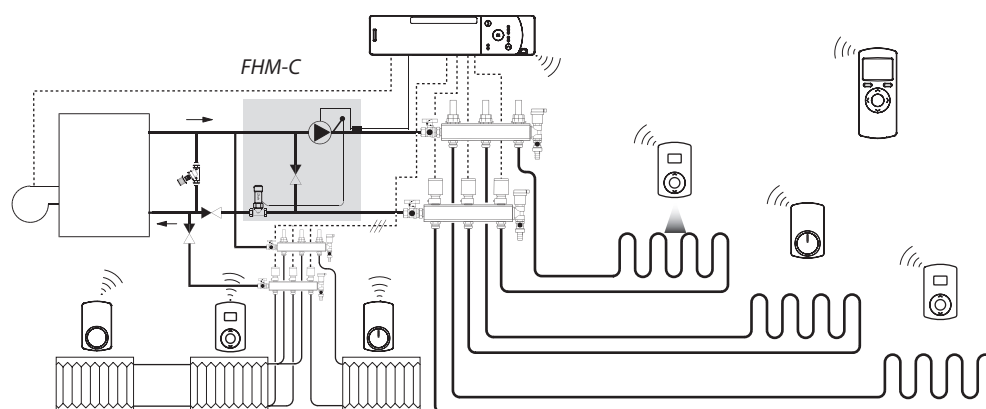
The value of the fixed orifice ($k_{vs} 7.4$) and the differential pressure will be used in the measuring equipment to define the flow. Measuring on a fixed orifice valve is very fast and easy.

FHM-FL
Flow limiter

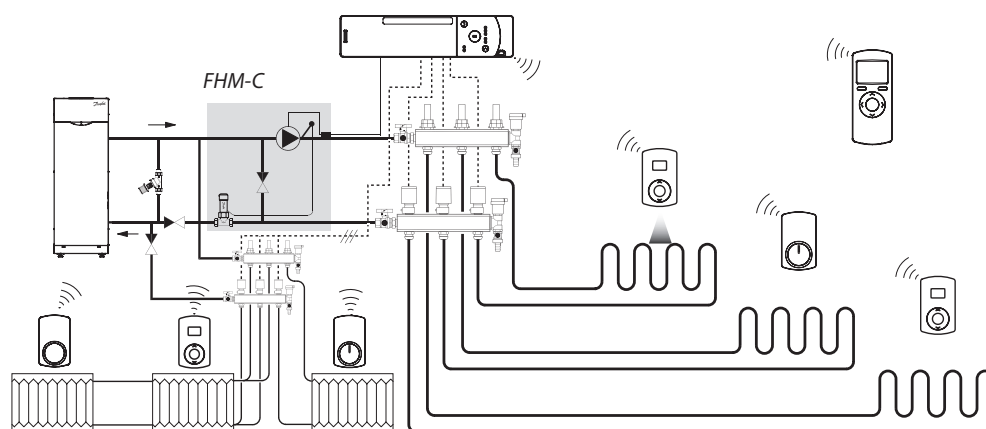


FHM-FL flow limiter

System

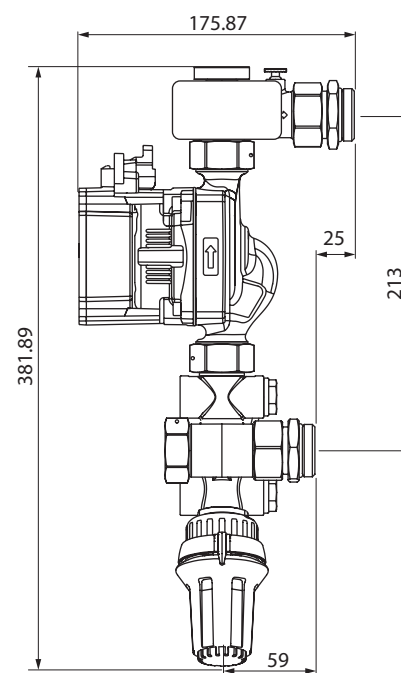
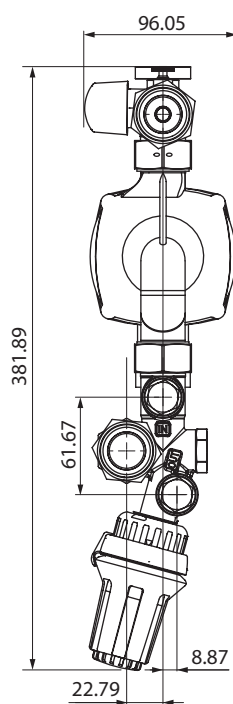


Combined floor heating system with boiler

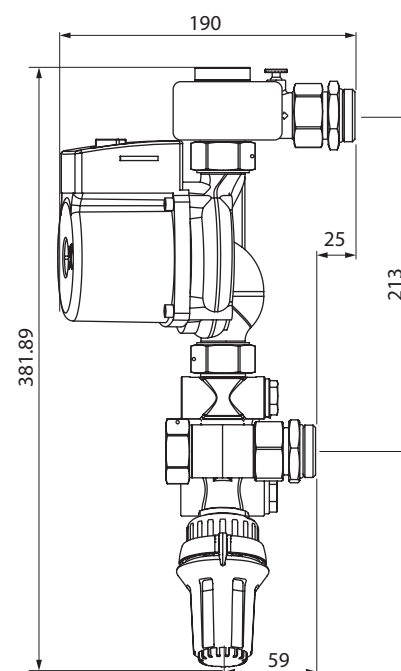
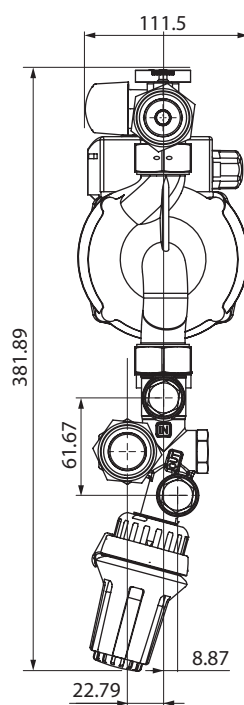


Combined floor heating system with heat pump

Dimensions



FHM-C1



FHM-C5 & FHM-C6



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