

Multibox

Flush Individual Room Control for Floor Heating Systems



To be precise.



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K, RTL and K-RTL

Description



HEIMEIER Multibox K, Multibox RTL and Multibox K-RTL flush box with frame, cover plate and fixing bars, for controlling, for instance, floor heating systems without auxiliary power.

Multibox K

for the individual room temperature control with thermostatic valve of, for instance, floor heating systems.

Multibox RTL

for maximum limitation of the return temperature with return temperature limiter of, for instance, combined floor/radiator heating systems.

Multibox K-RTL

for the individual room temperature control and maximum limitation of the return temperature with thermostatic valve and return temperature limiter of, for instance, combined floor/radiator heating systems.

All models optionally with cover and visible graduation cap in white RAL 9016 or chrome-plated.

The flush box has an overall depth of 60 mm.

Flexible mounting thanks to variable spacing between flush box and cover of up to 30 mm.

The cover can compensate for slanted mounting of the flush box of up to 6° on each side.

Thermostatic head K with liquid-filled thermostat. High actuating power, minimum hysteresis, optimum shutting time. Stable control properties even with small design control differences (<1 K). Meets EnEV and/or DIN V 4701-10. Cue number 1-5. Anti-freeze protection. Temperature range 6° C - 28° C.

Return Temperature Limiter (RTL) with expanding substance-filled thermostat. Cue number 1-5. Temperature range 10° C - 50° C.

Body made of gunmetal. Thermostatic inserts with stainless steel spindle and double O-ring seal. Outer O-ring can be replaced without system drainage.

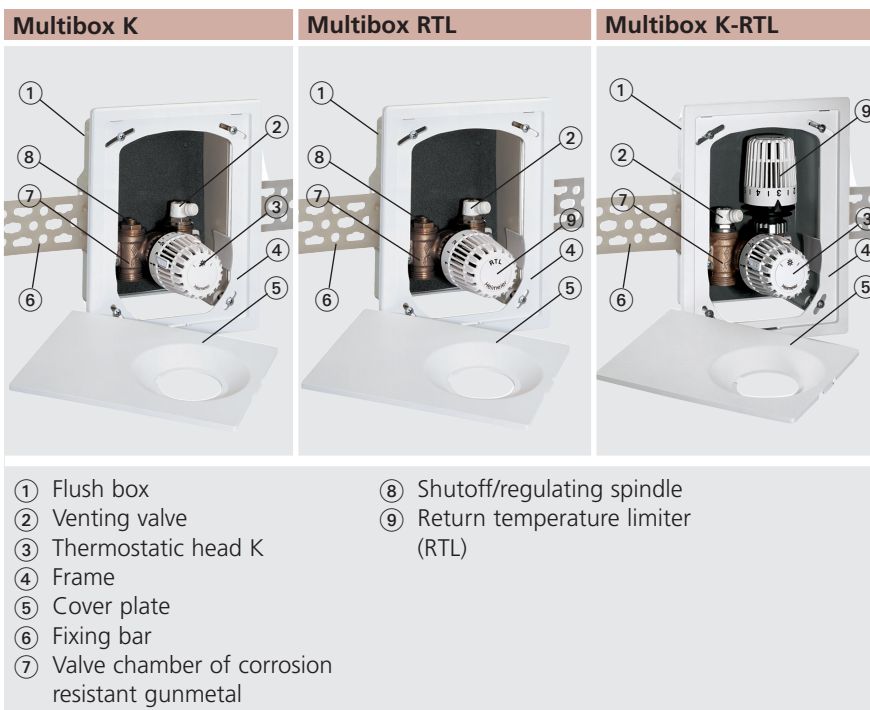
All models are equipped with a venting valve.

Pipe-side G 3/4 adaptor with cone suitable for compression fittings for plastic, copper, precision steel and multi-layer pipe.

For HEIMEIER valves, only use the corresponding, designated HEIMEIER compression fittings (designation e.g. 15 THE).

Pipe guide channel for easy pipe/valve attachment – see Accessories.

Construction



- For out-of-true installation offsetting up to 6° on each side
- Cover with concealed screw connection
- Small installation depth
- Designs with cover and visible graduation cap in white or chrome-plated
- Adjustable fitting for all wall structures, 30 mm depth compensation
- Pipe guide channel as accessory
- Valve chamber of corrosion-resistant gunmetal
- Universal connection possibilities

Multibox

K, RTL and K-RTL

Application

Multibox K

Multibox K is used for the individual room temperature control of, for instance, floor heating systems in association with low temperature heating systems (see information on Page 12).
Multibox K is also used in wall heating systems.
Use the shutoff/regulating spindle for hydraulic balancing.

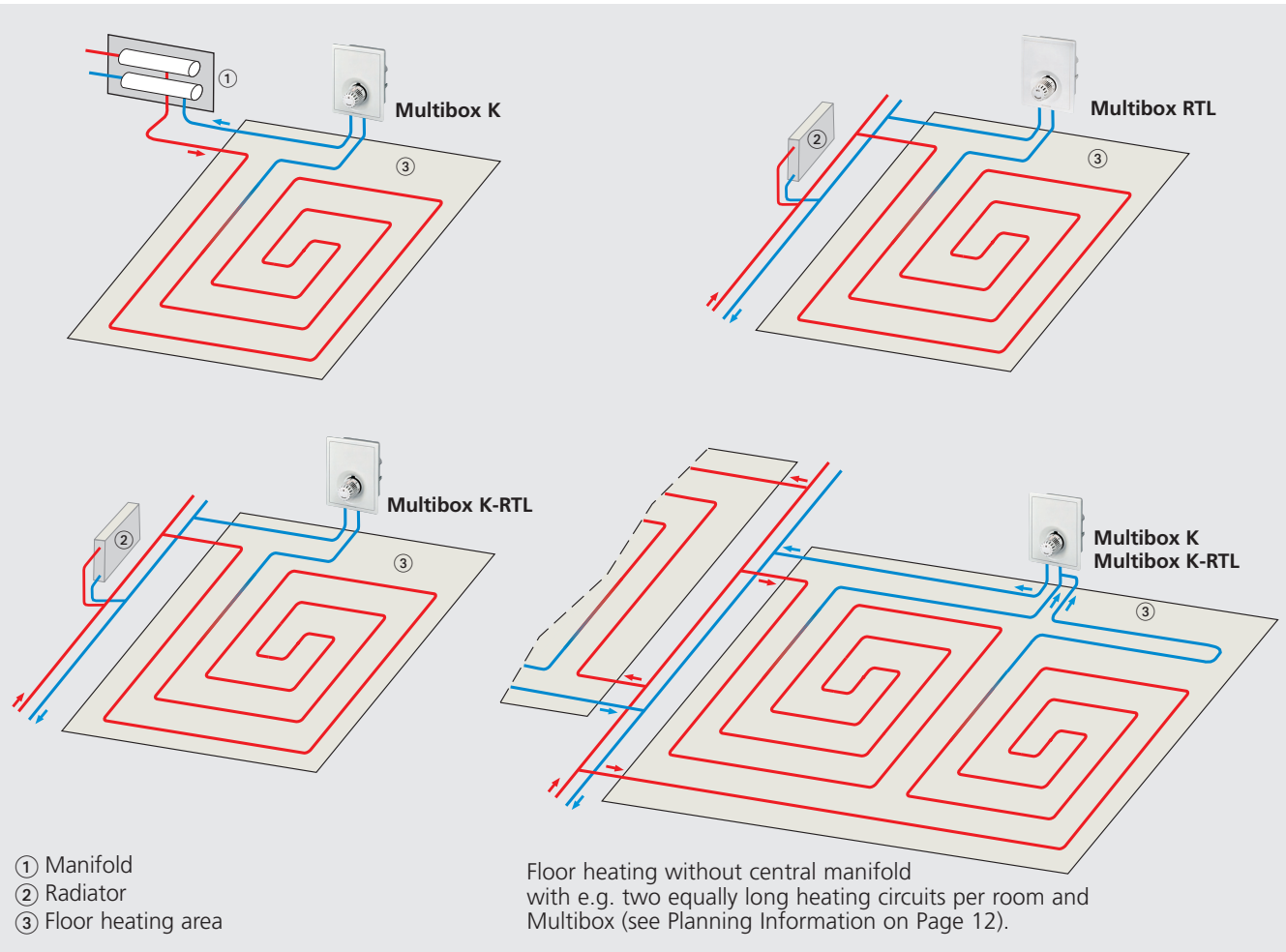
Multibox RTL

Multibox RTL is used for maximum limitation of the return temperature with, for instance, combined floor/radiator heating systems for temperature control of floor areas (see information on Page 12). Only the return temperature is controlled.
Use the shutoff/regulating spindle for hydraulic balancing.

Multibox K-RTL

Multibox K-RTL is used for the individual room temperature control and maximum limitation of the return temperature with, for instance, combined floor/radiator heating systems (see information on Page 12).
Multibox K-RTL is also used in wall heating systems.

Examples of use



Temperature Setting

| | | | | | | | |
|-----------------------|---|----|----|----|-----|----|----|
| Thermostatic head K | | | | | | | |
| Cue number | ❄ | 1 | 🌙 | 2 | 3 ❄ | 4 | 5 |
| Room temperature [°C] | 6 | 12 | 14 | 16 | 20 | 24 | 28 |

| | | | | | |
|----------------------------------|----|----|----|----|----|
| Return temperature limiter (RTL) | | | | | |
| Cue number | 1 | 2 | 3 | 4 | 5 |
| Return temperature [°C] | 10 | 20 | 30 | 40 | 50 |

(Opening temperature)

K, RTL and K-RTL

Function

Multibox K

From the control aspect, the thermostatic valve integrated in Multibox K is a constant proportional controller (P-controller) without any auxiliary power. It does not need any electrical connection or other outside power source.

The change of the room air temperature (controlled variable) is proportional to the change of the valve lift (correcting variable). A rise in the room air temperature e.g. from the sun's rays, results in an expansion of the liquid in the temperature sensor and it acts on the bellows. By means of the valve spindle, this cuts back on the supply of water in the floor heating circuit. The procedure is reversed given a falling room air temperature.

Multibox RTL

From the control aspect, the return temperature limiter integrated in Multibox RTL is a constant proportional controller (P-controller) without any auxiliary power. It does not need any electrical connection or other outside power source.

The temperature change of the fluid flowing through (controlled variable) is proportional to the change of the valve lift (correcting variable) and is transferred to the sensor by means of thermal conduction. Any rise in the return temperature due to, for instance, to lowered heating output of the floor heating system as a result of outside thermal effects causes the substance in the temperature sensor to expand and act on the diaphragm plunger. By means of the valve spindle, this cuts back on the supply of water in the floor heating circuit. The procedure is reversed given a falling fluid temperature.

The valve opens when the set limiting figure is exceeded.

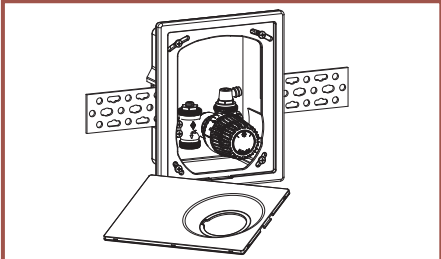
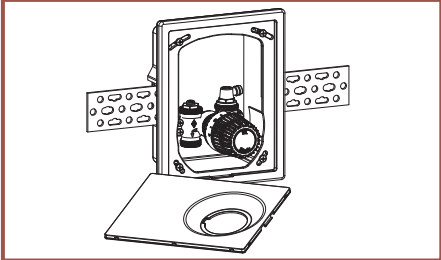
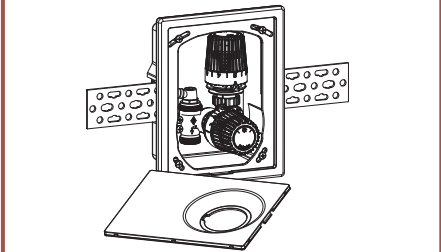
Multibox K-RTL

From the control aspect, the thermostatic valve integrated in Multibox K-RTL is a constant proportional controller (P-controller) without any auxiliary power. It does not need any electrical connection or other outside power source.

The change of the room air temperature (controlled variable) is proportional to the change of the valve lift (correcting variable). A rise in the room air temperature e.g. from the sun's rays, results in an expansion of the liquid in the temperature sensor of the thermostatic head and it acts on the bellows. By means of the valve spindle, this cuts back on the supply of water in the floor heating circuit. The procedure is reversed given a falling room air temperature.

Multibox K-RTL is additionally provided with a return temperature limiter (RTL) which stops the set return temperature from being exceeded. The valve opens when the set limiting figure is exceeded.

Article Numbers

| Illustration | Article | Colour | Art. No. |
|---|---|--|--------------------|
|  | Multibox K with thermostatic valve | Cover and thermostatic head K white RAL 9016 | 9302-00.800 |
| | | Cover and thermostatic head K chrome-plated | 9302-00.801 |
|  | Multibox RTL with return temperature limiter (RTL) | Cover and RTL thermostatic head white RAL 9016 | 9304-00.800 |
| | | Cover and RTL thermostatic head chrome-plated | 9304-00.801 |
|  | Multibox K-RTL with thermostatic valve and return temperature limiter (RTL) | Cover and thermostatic head K white RAL 9016 | 9301-00.800 |
| | | Cover and thermostatic head K chrome-plated | 9301-00.801 |

Multibox

F

Description



HEIMEIER Multibox F flush box with frame including thermostatic head, cover plate and fixing bars for the individual room temperature control with thermostatic valve of, for instance, floor heating systems, without auxiliary power.

Through a capillary tube, the temperature sensor liquid of the thermostatic head acts on the bellows in the valve adaptor. There is therefore never any change in the appearance of the cover with thermostatic head – irrespective of the installation depth.

All models with cover and visible graduation cap in white RAL 9016.

The flush box has an overall depth of 60 mm.

Adjustable mounting thanks to variable spacing between flush box and cover of up to 30 mm.

The cover can compensate for slanted mounting of the flush box up to 6° on each side.

Thermostatic head with liquid-filled thermostat. High actuating power, low

level of hysteresis, optimum shutting time. Stable control properties even with small design control differences (<1 K). Meets EnEV and/or DIN V 4701-10. Cue number 1-5. Anti-freeze protection. Zero position (valve opens at approx. 0° C). Temperature range 6° C - 27° C.

Body made of gunmetal. Thermostatic insert with stainless steel spindle and double O-ring seal. Outer O-ring can be replaced without system draining.

Multibox F is provided with a venting valve.

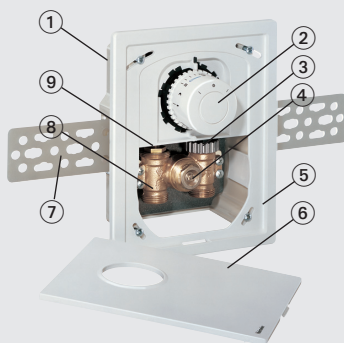
Pipe-side G 3/4 adaptor with cone – suitable for compression fittings for plastic, copper, precision steel and multi-layer pipe.

For HEIMEIER valves, only use the corresponding, designated HEIMEIER compression fittings (designation e.g. 15 THE).

Pipe guide channel for easy pipe/valve attachment, see Accessories.

Construction

Multibox F



- | | |
|---|---|
| ① Flush box | ⑥ Cover plate |
| ② Thermostatic head with capillary tube | ⑦ Fixing bar |
| ③ Adaptor | ⑧ Valve chamber of corrosion resistant gunmetal |
| ④ Venting valve | ⑨ Shutoff/reg. spindle |
| ⑤ Frame | |

- No change in appearance irrespective of installation depth
- Elegant and easy-to-clean graduation cap
- For out-of-true installation offsetting up to 6° on each side
- Cover with concealed screw connection
- Small installation depth
- Adjustable mounting for all wall structures, 30 mm depth compensation
- Pipe guide channel as accessory
- Valve chamber of corrosion-resistant gunmetal
- Universal connection possibilities

F

Application

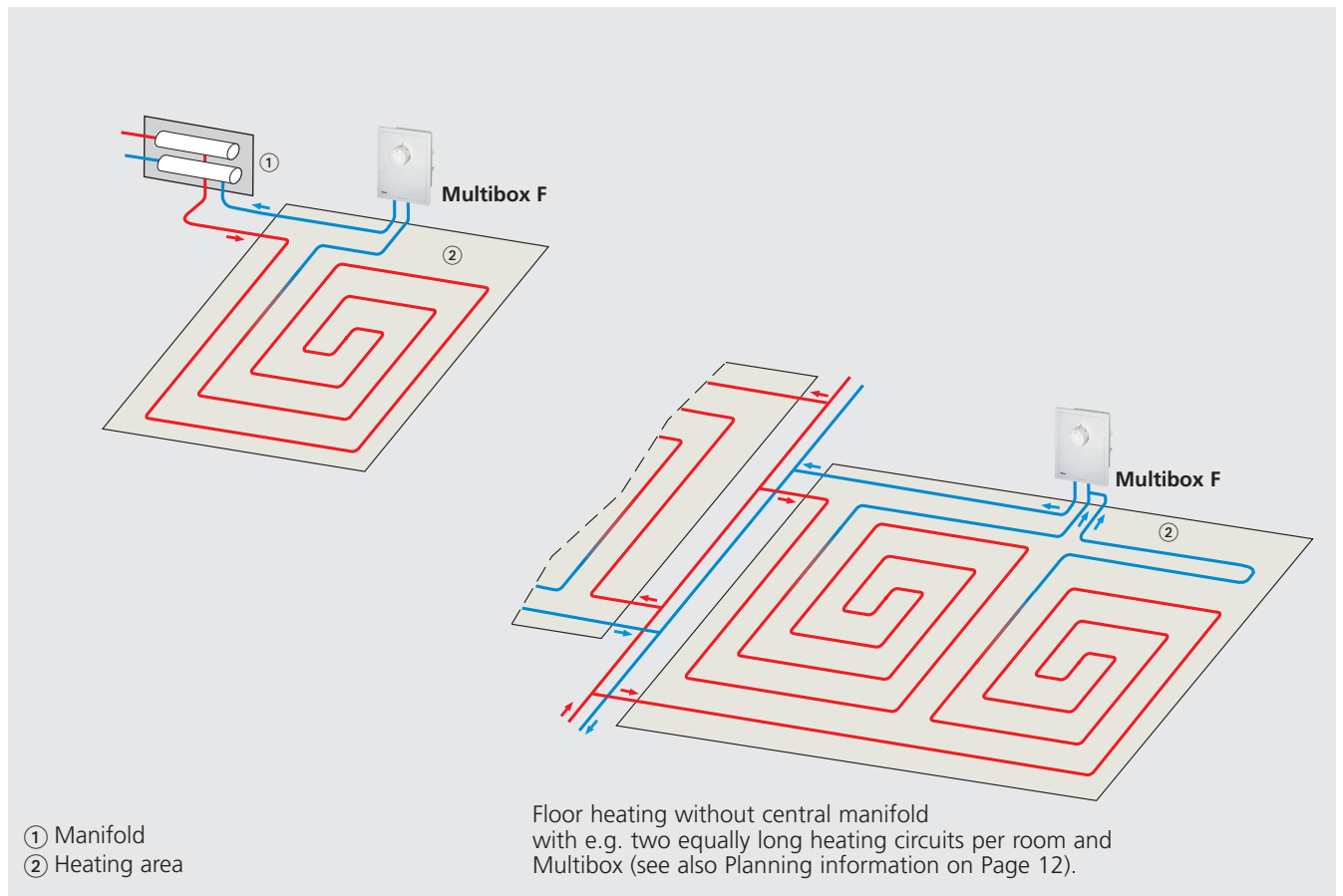
Multibox F

Multibox F is used for the individual room temperature control of, for instance, floor heating systems in association with low temperature heating systems (see information on Page 12).

Multibox F is also used in wall heating systems.

Use the shutoff/regulating spindle for hydraulic balancing.

Examples of use



Temperature Setting

Thermostatic head F

| Cue number | | 1 | | 2 | 3 | 4 | 5 |
|-----------------------|---|----|----|----|----|----|----|
| Room temperature [°C] | 6 | 12 | 14 | 16 | 20 | 24 | 27 |

Multibox

F

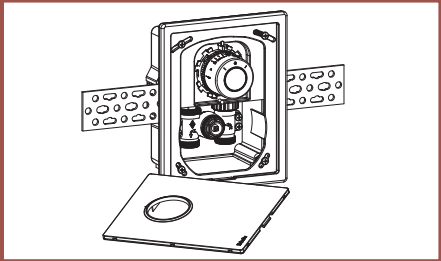
Function

Multibox F

From the control aspect, the thermostatic valve integrated in Multibox F is a constant proportional controller (P-controller) without any auxiliary power. It does not need any electrical connection or other outside power source.

Change of the room air temperature (controlled variable) is proportional to the change of the valve lift (correcting variable). A rise in the room air temperature e.g. from the sun's rays, results in an expansion of the liquid in the temperature sensor and it acts through the capillary tube on the bellows in the valve adaptor. By means of the valve spindle, this cuts back on the supply of water in the floor heating circuit. The procedure is reversed given a falling room air temperature.

Article Numbers

| Illustration | Article | Colour | Art. No. |
|--|--|--|--------------------|
|  | Multibox F with thermostatic valve | Cover and thermostatic head white RAL 9016 | 9306-00.800 |

C/E and C/RTL

Description



HEIMEIER Multibox C/E and Multibox C/RTL flush box with frame, closed cover plate and fixing bars for controlling, for instance, floor heating systems.

Multibox C/E

for individual room temperature control of, for instance, floor heating systems with thermal or motor actuators and/or with remote dial thermostatic head F (see Equipment overview - Pages 14,15).

Multibox C/RTL

for maximum limitation of the return temperature with return temperature limiter of, for instance, combined floor/radiator heating systems.

All models with closed cover in white RAL 9016.

The flush box has an overall depth of 60 mm.

Adjustable mounting from variable spacing between flush box and cover of up to 30 mm.

The cover can compensate for slanted mounting of the flush box up to 6° on each side.

Return temperature limiter (RTL) with expanding substance-filled thermostat Cue number 1-5. Temperature range 10° C - 50° C.

Body made of gunmetal. Thermostatic inserts with stainless steel spindle and double O-ring seal. Outer O-ring can be replaced without system drainage.

All models are equipped with a venting/flushing valve.

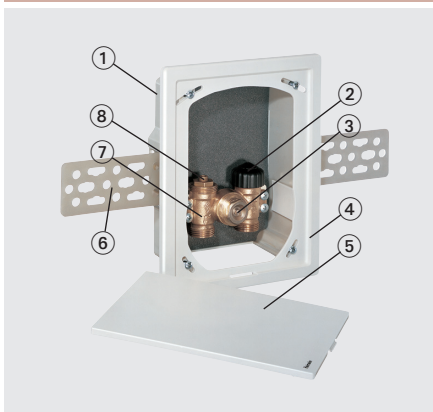
Pipe-side G 3/4 adaptor with cone suitable for compression fittings for plastic, copper, precision steel and multi-layer pipe.

For HEIMEIER valves, only use the corresponding, designated HEIMEIER compression fittings (designation e.g. 15 THE).

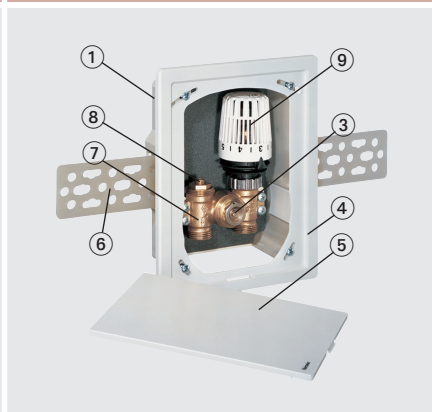
Pipe guide channel for easy pipe/valve attachment, see Accessories.

Construction

Multibox C/E



Multibox C/RTL



- ① Flush box
- ② Thermostatic insert for attachment of actuators or remote dials
- ③ Venting valve
- ④ Frame
- ⑤ Cover plate

- ⑥ Fixing bar
- ⑦ Valve chamber of corrosion-resistant gunmetal
- ⑧ Shutoff/regulating spindle
- ⑨ Return temperature limiter (RTL)

- Closed cover plate
- Multibox C/E suitable for actuators or remote dials
- For out-of-true installation offsetting up to 6° on each side
- Cover with concealed screw connection
- Small installation depth
- Adjustable fitting for all wall structures, 30 mm depth compensation
- Valve chamber of corrosion-resistant gunmetal
- Universal connection possibilities

Multibox

C/E and C/RTL

Application

Multibox C/E

Multibox C/E is used for the individual room temperature control of, for instance, floor heating systems in association with low temperature heating systems (see information on Page 12).

The individual room temperature is controlled by room thermostats in association with thermal or motor actuators and/or without auxiliary power with the thermostatic head F remote dial.

Multibox C/E is also used in wall heating systems.

Use the shutoff/regulating spindle for hydraulic balancing.

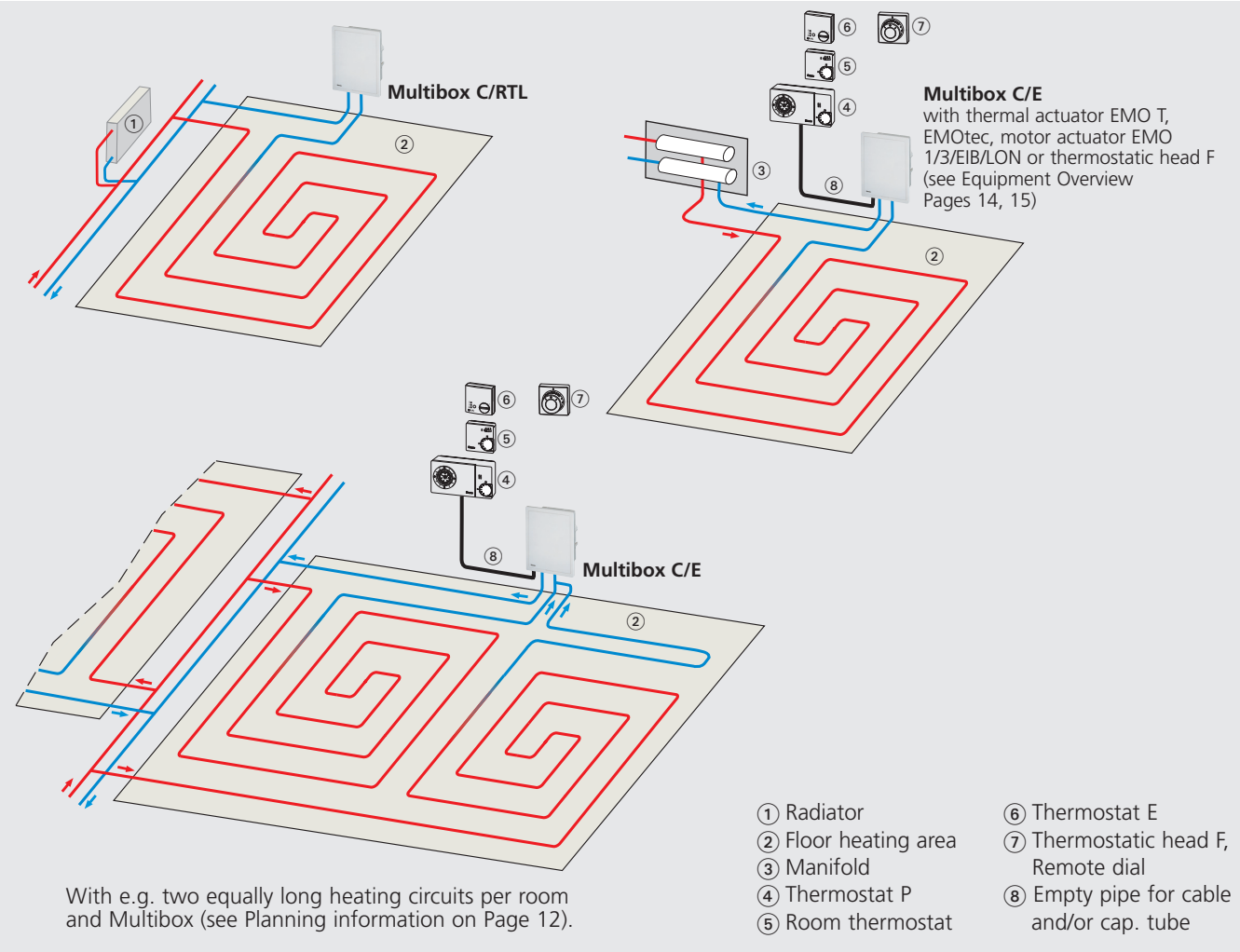
Multibox C/RTL

Multibox C/RTL is used for maximum limitation of the return temperature with, for instance, combined floor/radiator heating systems for the temperature control of floor areas (see Information on Page 12).

Only the return temperature is controlled.

Use the shutoff/regulating spindle for hydraulic balancing.

Examples of uses



Temperature Setting

Return temperature limiter (RTL)

| Cue number | 1 | 2 | 3 | 4 | 5 | |
|-------------------------|----|----|----|----|----|-----------------------|
| Return temperature [°C] | 10 | 20 | 30 | 40 | 50 | (Opening temperature) |

C/E and C/RTL

Function

Multibox C/E

From the control aspect, the thermostatic valve integrated in Multibox C/E – in association with the F thermostatic valve – is a constant proportional controller (P-controller) without auxiliary power. It does not need any electrical connection or other outside power source.

Change of the room air temperature (controlled variable) is proportional to the change of the valve lift (correcting variable). A rise in the room air temperature e.g. from the sun's rays, results in an expansion of the temperature sensor liquid and it acts through the capillary tube on the corrugated tube in the valve adaptor. By means of the valve spindle, this cuts back on the supply of water in the floor heating circuit. The procedure is reversed given a falling room air temperature.

Together with thermal or motor actuators, room thermostats control individual room temperature.

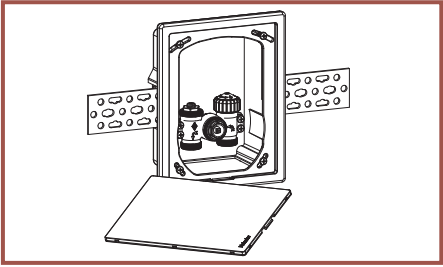
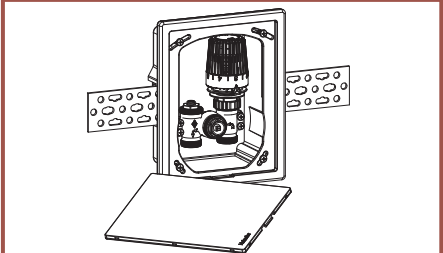
Multibox C/RTL

From the control aspect, the return temperature limiter integrated in Multibox C/RTL is a constant proportional controller (P controller) without any auxiliary power. It does not need any electrical connection or other outside power source.

Temperature change of the fluid flowing through (controlled variable) is proportional to the change of the valve lift (correcting variable) and is transferred to the sensor by means of thermal conduction. Any rise in the return temperature due to, for instance, to a lowered heating output of the floor heating system as a result of outside thermal effects causes the substance in the temperature sensor to expand and act on the diaphragm plunger. By means of the valve spindle, this cuts back on the supply of water in the floor heating circuit. The procedure is reversed given a falling fluid temperature.

The valve opens when the set limiting figure is exceeded.

Article Numbers

| Illustration | Article | Colour | Art. No. |
|---|---|----------------------|--------------------|
|  | Multibox C/E with thermostatic insert for actuator or remote dial | Cover white RAL 9016 | 9308-00.800 |
|  | Multibox C/RTL with return temperature limiter (RTL) | Cover white RAL 9016 | 9303-00.800 |

Multibox

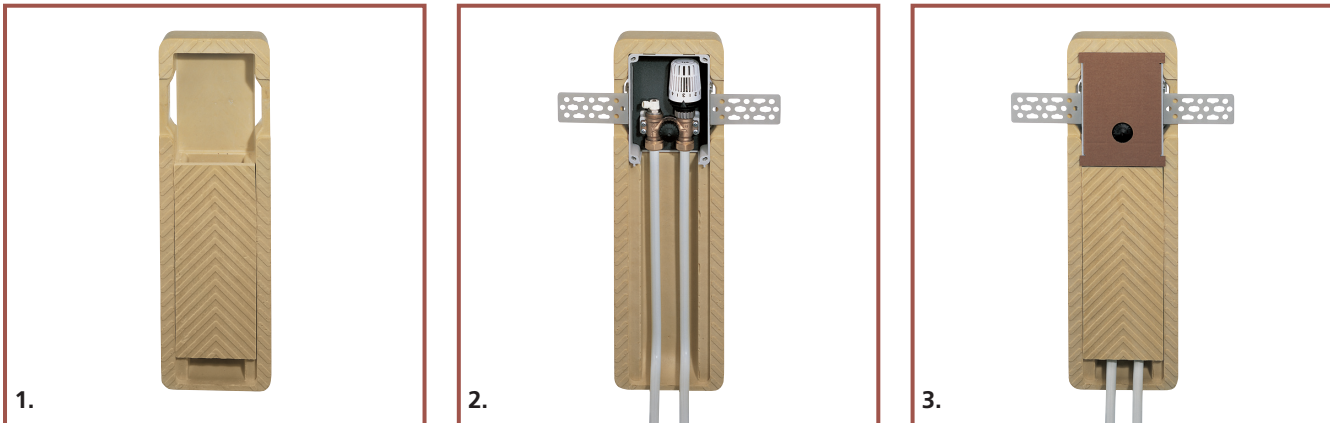
Pipe Guide Channel

PU pipe guide channel for easy mounting of all HEIMEIER Multibox models and for convenient pipe-valve attachment.

Mounting, for instance, in wall gaps or in front wall plumbing.

Dimensions:
180 mm x 575 mm x 70 mm (B x H x D).
Also see Accessories Page 13.

Examples of mounting



Information

Planning

- For all Multibox models, ensure that the system supply temperature is suitable for setting up the floor heating system.
- All Multibox models are to be connected to the return pipe at the end of the floor heating circuit. Heed direction of flow (see Examples of use).
- Depending on piping pressure loss, all Multibox models are suitable for heating areas up to approx. 20 m².
- The length of 12 mm internal diameter pipe in any heating circuit should not exceed 100 m.
- With heating areas >20 m² and/or pipe lengths >100 m, a T-piece, for instance, should be used to connect two equally long heating circuits to the Multibox. (see Examples of use).
- To ensure low-noise system operation, differential pressure over the valve should not exceed 0.2 bar.
- The floor heating pipe is to be laid spirally in the flooring screed (see Examples of use).
- The set value of the RTL should not be below ambient temperature - otherwise it will not open.

Thermal fluid

To stop any damage and scale in hot water heating systems, the composition of the thermal fluid is to conform to VDI Directive 2035. For industrial and long-distance energy systems, see applicable codes VdTÜV and 1466/AGFW FW 510.

Mineral oil in the thermal fluid and/or all kinds of lubricants containing mineral oil lead to considerable swelling and, in most cases, to the failure of EPDM seals.

When using nitrite-free antifreeze and anti-corrosive based on ethylene glycol,

technical advice – especially on additive concentration – is to be taken from the anti-freeze/anti-corrosive manufacturer's documentation.

Functional heating

Carry out functional heating of heating screed conforming to standards in keeping with EN 1264-4.

Earliest start for functional heating:

- Cement screed: 21 days after laying
- Anhydrite screed 7 days after laying

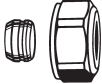
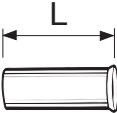
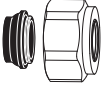


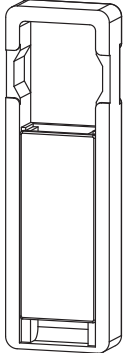
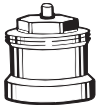
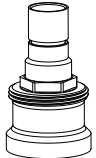
Begin 20 °C - 25 °C flow temperature and maintain for 3 days. Then set maximum design temperature and maintain for 4 days. Flow temperature can be regulated by controlling the heat generator. Turn the protective cap anti-clockwise to open valve or turn RTL head to Position 5.

Refer to the screed manufacturer's information!

Do not exceed maximum floor temperature at the heating pipes:


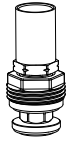
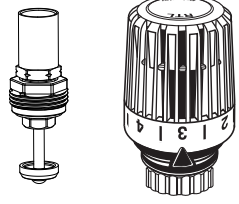
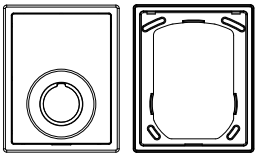
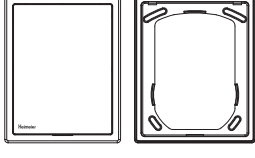
- Cement and anhydrite screed: 55 °C
- Poured asphalt screed: 45 °C
- according to screed manufacturer's technical advice!

Accessories

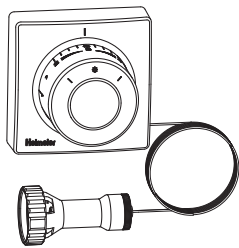
| Illustration | Description | L [mm] | Ø Pipe | Art. No. |
|---|---|--------|--------|--------------------|
|  | Compression fitting for copper or precision steel pipe Brass nickel-plated With a pipe wall thickness of 0.8-1 mm insert supporting sleeves. Heed pipe manufacturer's technical advice. | | 12 | 3831-12.351 |
| | | | 15 | 3831-15.351 |
| | | | 16 | 3831-16.351 |
| | | | 18 | 3831-18.351 |
|  | Support sleeves for copper or precision steel pipe with a 1 mm wall thickness. Brass nickel-plated | 25.0 | 12 | 1300-12.170 |
| | | 26.0 | 15 | 1300-15.170 |
| | | 26.3 | 16 | 1300-16.170 |
| | | 26.8 | 18 | 1300-18.170 |
|  | Compression fitting for copper or precision steel pipe. Brass nickel-plated. Soft sealed. | | 15 | 1313-15.351 |
| | | | 16 | 1313-16.351 |
| | | | 18 | 1313-18.351 |
|  | Compression fitting for plastic pipe. Brass nickel-plated | | 14 x 2 | 1311-14.351 |
| | | | 16 x 2 | 1311-16.351 |
| | | | 17 x 2 | 1311-17.351 |
| | | | 18 x 2 | 1311-18.351 |
| | | | 20 x 2 | 1311-20.351 |
|  | Compression fitting for multi-layer pipe. Brass nickel-plated. | | 16 x 2 | 1331-16.351 |
|  | Pipe guide channel made of PU, for easy mounting of all HEIMEIER Multibox models and convenient pipe-valve attachment. 180 mm x 575 mm x 70 mm (B x H x D). | | | 9300-00.553 |
|  | Spindle extension for K thermostatic head with Multibox K and Multibox K-RTL when maximum installation depth exceeded. Brass nickel-plated. | 20 | | 2201-20.700 |
| | | 30 | | 2201-30.700 |
| | | 15 | | 2001-15.700 |
| | | 30 | | 2002-30.700 |
|  | Spindle extension for RTL thermostatic head with Multibox RTL when maximum installation depth exceeded. Brass nickel-plated. | 20 | | 9153-20.700 |

Multibox

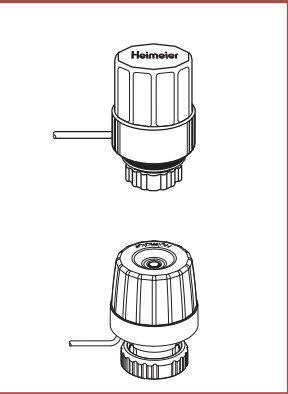
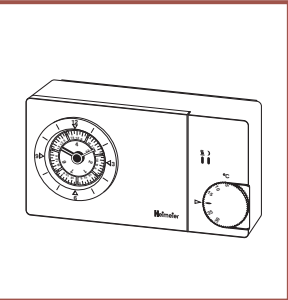
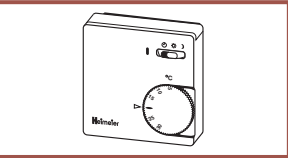
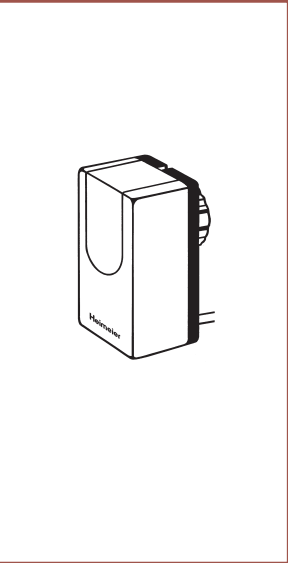
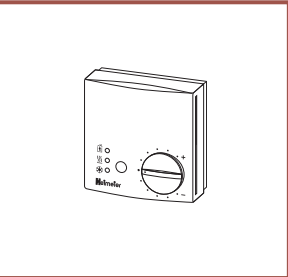
Accessories

| Illustration | Description | Colour | Art.-No. |
|--|--|--------------------------|----------------------------|
|  | Special insert for Multibox K and Multibox K-RTL for reversed direction of flow with switched supply and return flow. | | 9302-03.300 |
|  | Special insert for Multibox RTL for reversed direction of flow with switched supply and return flow. | | 9304-03.300 |
|  | RTL insert and RTL thermostatic head specially for converting Multibox K into Multibox K-RTL. RTL insert and RTL thermostatic head | | 9303-00.300 6500-00.500 |
|  | Frame and cover plate Replacement for Multibox K, Multibox RTL and Multibox K-RTL | white RAL 9016 chrome | 9300-00.800 9300-00.801 |
|  | Frame and cover plate Replacement for Multibox C/RTL and Multibox C/E. | white RAL 9016 | 9300-03.800 |

Equipment overview

| Illustration | Description | Capillary tube | Art.No. |
|---|---|----------------|-------------|
|  | Thermostatic head F For connection to Multibox C/E | | |
| | Remote dial. | 2.00 m | 2802-00.500 |
| | Cue number 1-5. | 5.00 m | 2805-00.500 |
| | Liquid-filled thermostat. | 8.00 m | 2808-00.500 |
| | High degree of control precision. | 10.00 m | 2810-00.500 |
| | Setting range 6° C - 27° C. | 12.00 m | 2812-00.500 |
| | | 15.00 m | 2815-00.500 |
| | For swimming pools | | |
| | medicinal baths | 2.00 m | 2822-00.500 |
| | Setting range 15° C - 35° C. | 5.00 m | 2825-00.500 |

Equipment overview

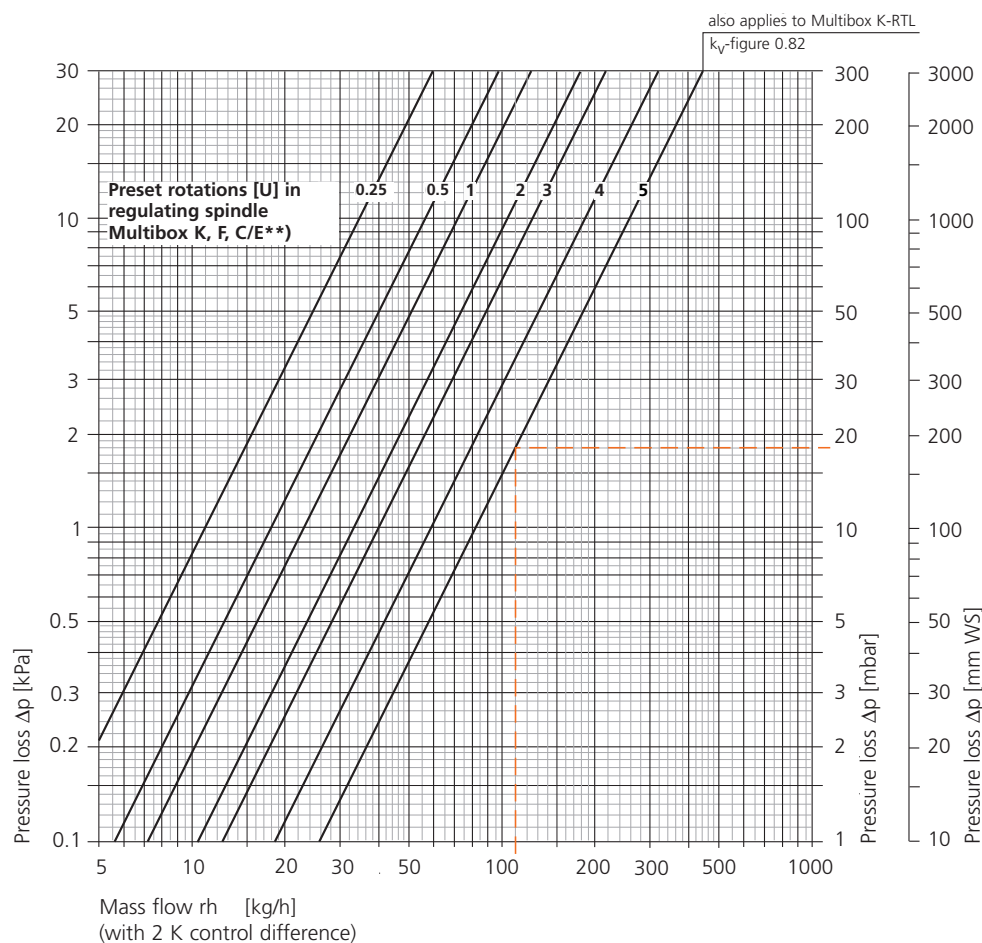
| Illustration | Description | Model | Art. No. |
|---|---|--|--|
|  | Thermal actuators Suitable for Multibox C/E. | | |
| | EMO T Thermal two-point actuator for heating, ventilation and air conditioning systems. With incorporated overvoltage protection with 230 V model. | 230 V no-current closed (NC) 24 V no-current closed (NC) 230 V no-current opened (NO) 24 V no-current opened (NO) | 1831-00.500 1841-00.500 1835-00.500 1845-00.500 |
| | EMOTec Thermal two-point actuator for floor heating systems. With position indicator given no-current closed (NC) model. | 230 V no-current closed (NC) 24 V no-current closed (NC) 230 V no-current opened (NO) 24 V no-current opened (NO) | 1807-00.500 1827-00.500 1809-00.500 1829-00.500 |
| | Specifications catalogue EMO T and/or EMOTec | | |
|  | Thermostat P electronic two-point room thermostat for time-dependent control of room temperature, with analogue 7-day switch clock, Pulse-Width Modulation output signal (PWM) and voltage-free change-over contact. | 230 V 24 V | 1932-00.500 1942-00.500 |
| | Protective casing lockable, surface-mounted casing for thermostat P, transparent. | | 1930-02.433 |
| | Specifications catalogue Thermostat P | | |
|  | Room thermostat with thermal return, controls room temperature together with thermal actuators. | 230 V without temperature drop 230 V with temperature drop 24 V without temperature drop 24 V with temperature drop | 1936-00.500 1938-00.500 1946-00.500 1948-00.500 |
| | Specifications catalogue – Room thermostat | | |
|  | Motor actuators Suitable for Multibox C/E. | | |
| | Only in conjunction with spindle extension, see below! | | |
| | | EMO 1 Proportional actuator | 1860-00.500 0-10 V DC |
| | | EMO 3 Three point actuator | 1880-00.500 |
| | | EMO EIB for attaching directly to the European Installation Bus | Standard 1865-00.500 with 2 binary inputs 1864-00.500 |
| | | EMOLON for use in LONWORKS®-Networks | 1867-00.500 LP variant (FT variant on request) |
| | Specifications Catalogue EMO, EMO EIB and EMOLON | | |
| | Spindle extension plastic, black | Length 30 mm | 2002-30.700 |
|  | Electronic room temperature controller Thermostat E 1 and Thermostat E 3 are incorporated in conjunction with the EMO 1 or EMO 3 electrical-motor actuators. For operating voltage supply (24 V AC) use safety transformers meeting EN 60742, e.g. HEIMEIER transformer (Art. No. 1600-00.000). | | |
| | | Thermostat E 1 Continuous controller | 1960-01.500 |
| | | Thermostat E 3 Three-point controller | 1980-01.500 |
| | Specifications catalogue Thermostat E | | |

Multibox

K, K-RTL, F and C/E

Specifications

Diagram: Multibox K, K-RTL, F and C/E**)



| Controller with valve body | Control diff. Th. head [K] | k _V -figure [m³/h] Multibox K, F, C/E**) | | | | | | | k _V -figure [m³/h] Multibox K-RTL | k _{VS} -figure [m³/h] | Safe operating temp. TB [°C] | Safe operating gauge pressure PB [bar] |
|----------------------------|----------------------------|---|------|------|------|------|------|------|--|--------------------------------|------------------------------|--|
| | | Preset rotations [U] Regulating spindle | | | | | | | | | | |
| | | 0.25 | 0.5 | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | | | | |
| DN 15 | 1 | 0.10 | 0.17 | 0.21 | 0.28 | 0.32 | 0.39 | 0.43 | 0.43*) | 1.35 | 90 | 10 |
| | 2 | 0.11 | 0.18 | 0.23 | 0.33 | 0.40 | 0.59 | 0.82 | 0.82*) | | | |

*) when RTL fully opened

**) together with thermostatic head F

Worked example

To be found: Pressure loss Multibox K, F, C/E, K-RTL at 2 K control difference

Given: Thermal flux $\dot{Q} = 1025 \text{ W}$
Temperature spread $\Delta t = 8 \text{ K (44/36° C)}$

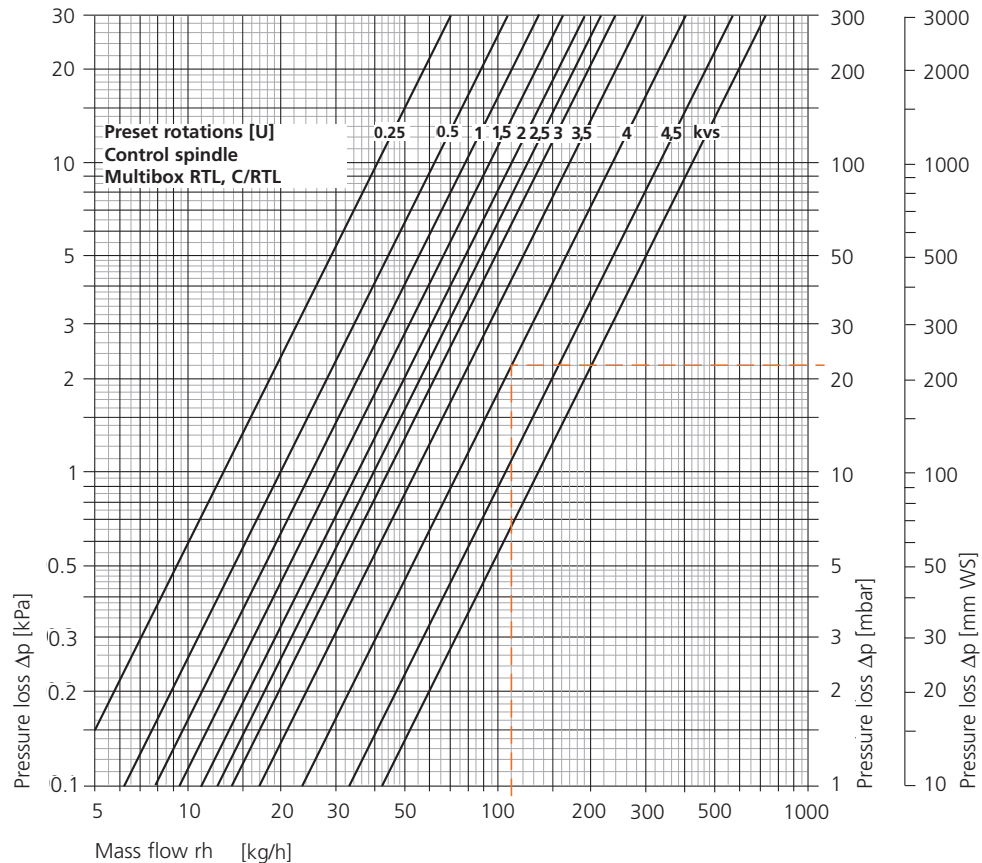
Solution: Mass flow $\dot{m} = \frac{\dot{Q}}{c \cdot \Delta t} = \frac{1025}{1.163 \cdot 8} = 110 \text{ kg/h}$

Pressure loss as diagram $\Delta p_v = 18 \text{ mbar}$

RTL and C/RTL

Specifications

Diagram: Multibox RTL and C/R



| Controller with valve body | k _V -figure [m³/h] Multibox RTL, C/RTL | | | | | | | | | | k _{VS} -figure [m³/h] | Safe operating temp. TB [°C] | Safe operating gauge pressure PB [bar] |
|----------------------------|---|------|------|------|------|------|------|------|------|------|--------------------------------|------------------------------|--|
| | Preset rotations [U] Regulating spindle | | | | | | | | | | | | |
| | 0.25 | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | | |
| DN 15 | 0.13 | 0.20 | 0,25 | 0.30 | 0.35 | 0.39 | 0.44 | 0.54 | 0.74 | 1.06 | 1.35 | 90 | 10 |

Worked example

To be found: Preset figure Multibox RTL, C/RTL

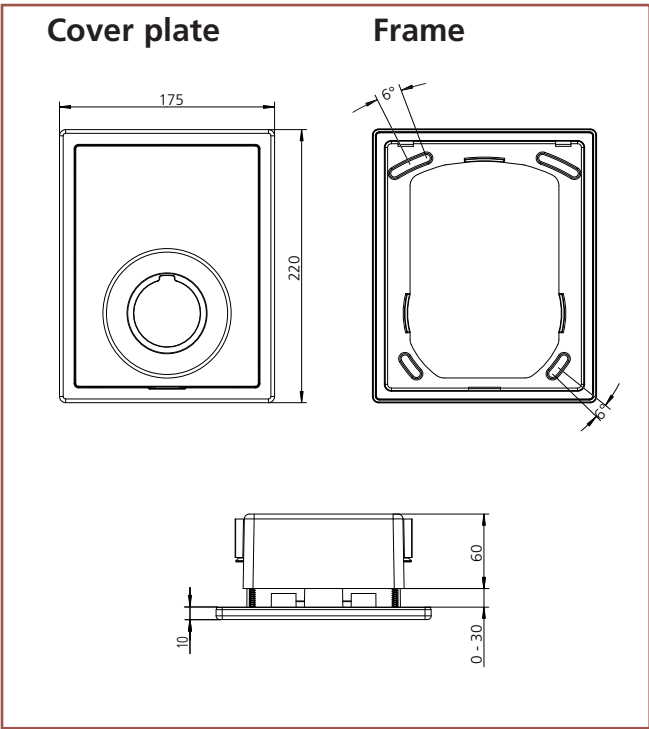
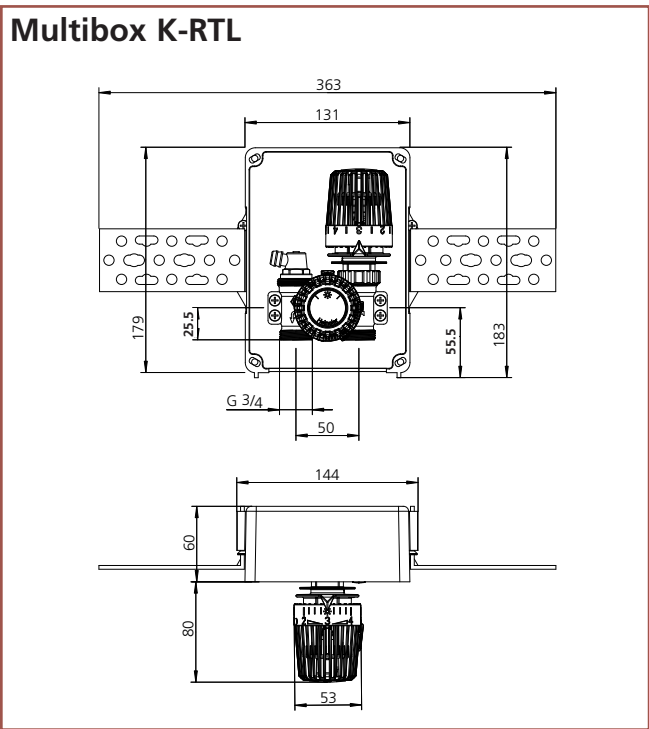
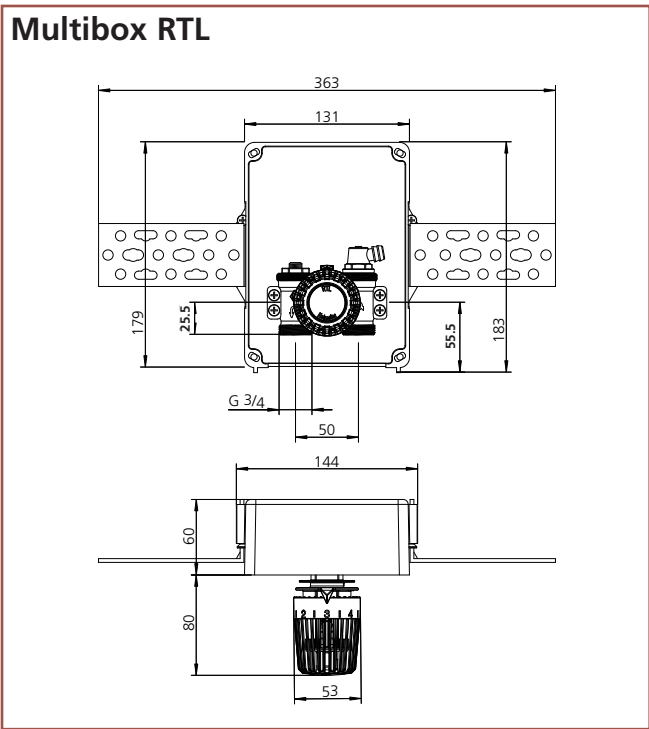
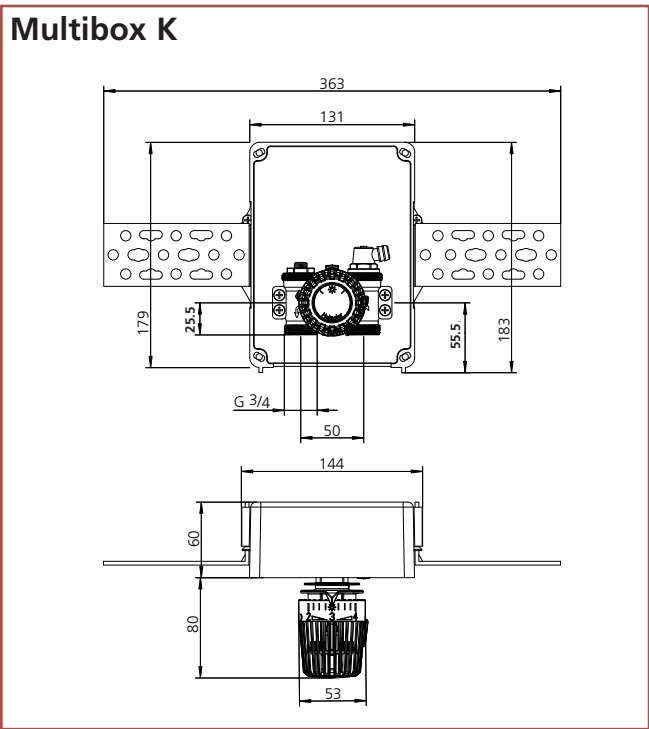
Given: Thermal flux $\dot{Q} = 1025$ W
 Temperature spread $\Delta t = 8$ K (44/36° C)
 Pressure loss Multibox RTL: $\Delta p_v = 22$ mbar

Solution: Mass flow $\dot{m} = \frac{\dot{Q}}{c \cdot \Delta t} = \frac{1025}{1.163 \cdot 8} = 110$ kg/h
 Preset figure from diagram: 4

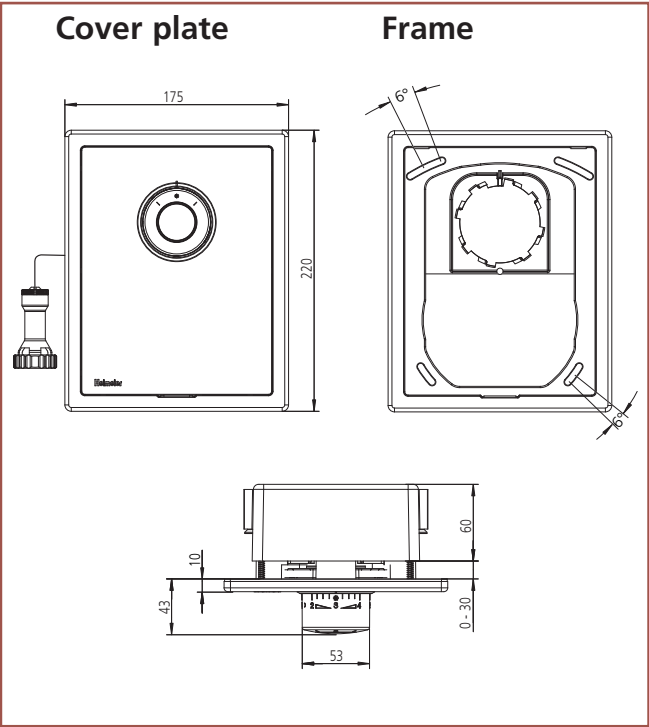
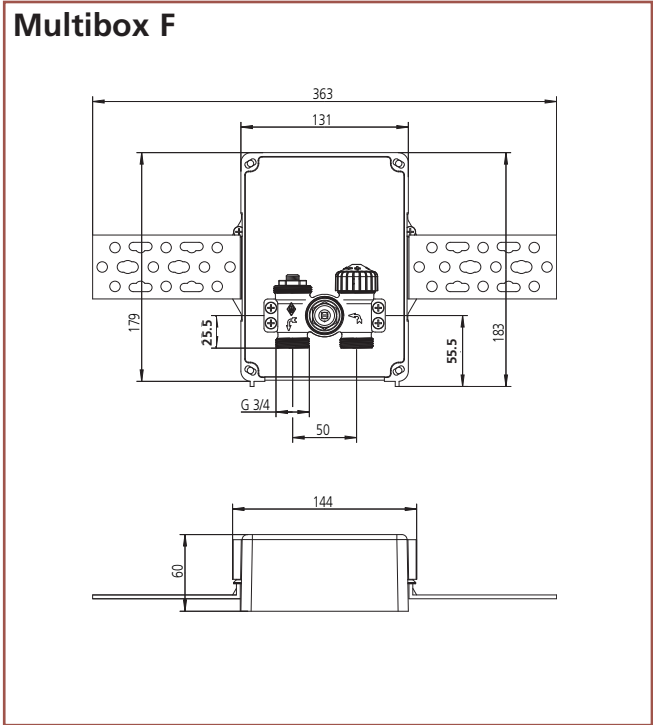
Multibox

K, RTL and K-RTL

Dimensional Sheet



Dimensional Sheet

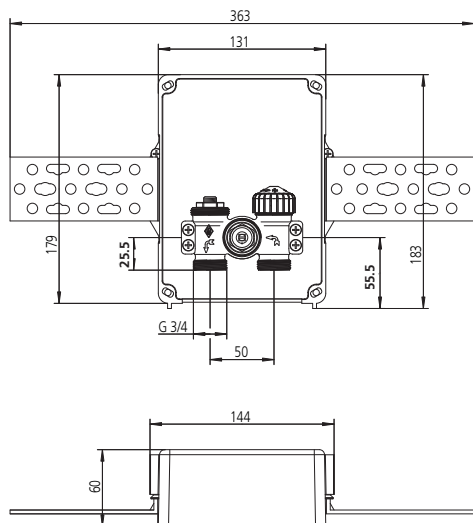


Multibox

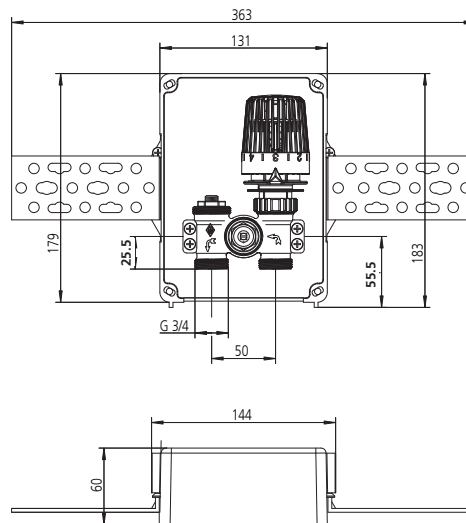
C/E and C/RTL

Dimensional Sheet

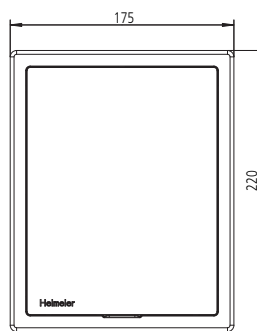
Multibox C/E



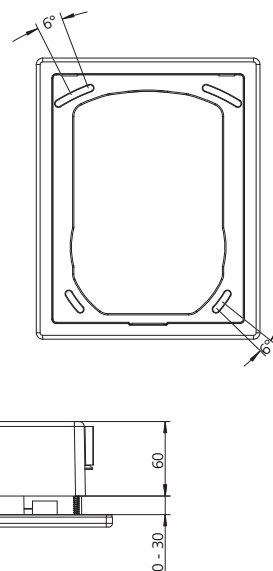
Multibox C/RTL



Cover plate



Frame



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