Multibox

Flush Individual Room Control for Floor Heating Systems

To be precise.

Heimeier

Multibox

Contents

Multibox

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 hysterisis, 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/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).

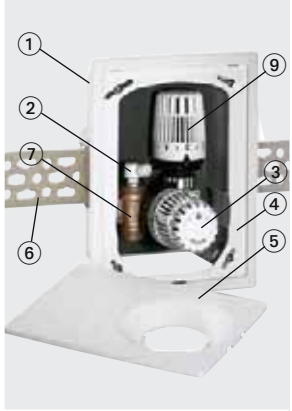
Pipe guide channel for easy pipe/valve attachment – see Accessories.

Construction

Multibox K

Multibox RTL

Multibox K-RTL



① Flush box
② Venting/flushing valve
③ Thermostatic head K
④ Frame
⑤ Cover plate
⑥ Fixing bar
⑦ Valve chamber of corrosion resistant gunmetal
⑧ Shutoff/regulating spindle
⑨ Return temperature limiter (RTL)

- **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.

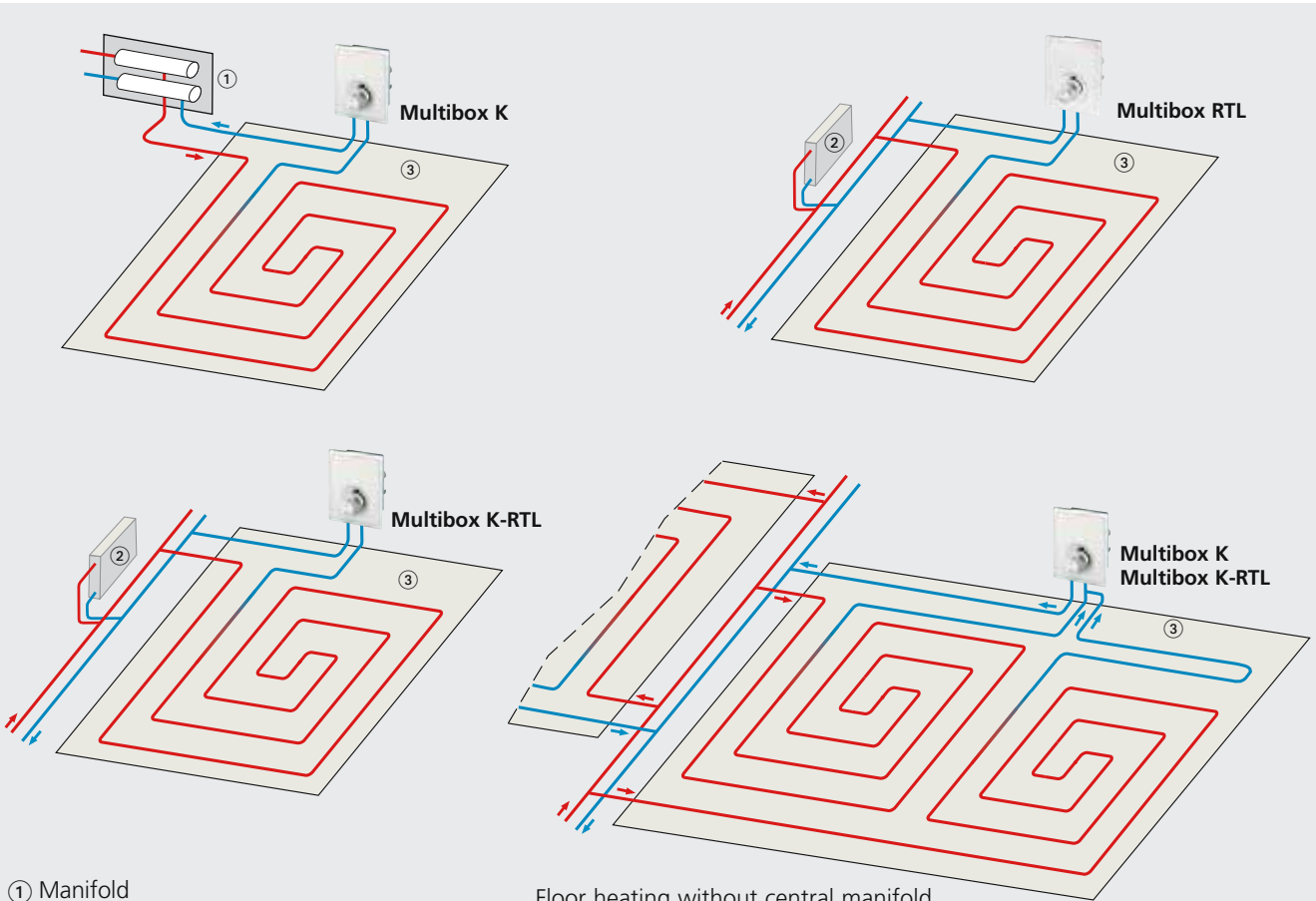
Use the shutoff/regulating spindle for hydraulic balancing.

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



① Manifold
② Radiator
③ Floor heating area

Floor heating without central manifold
with e.g. two equally long heating circuits per room and Multibox (see Planning Information on Page 12).

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)

Multibox

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.

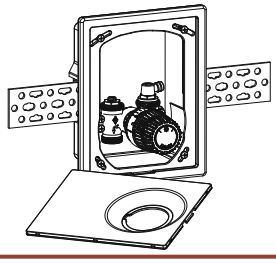
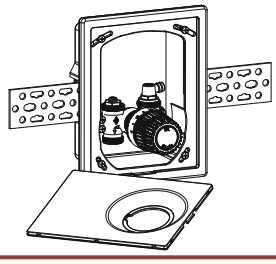
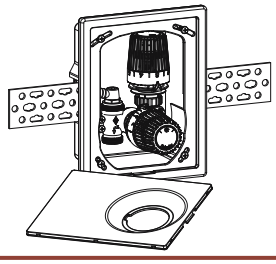
Multibox K-RTL

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 Cover and thermostatic head K chrome-plated	**9302-00.800** **9302-00.801**
	**Multibox RTL** with return temperature limiter (RTL)	Cover and RTL thermostatic head white RAL 9016 Cover and RTL thermostatic head chrome-plated	**9304-00.800** **9304-00.801**
	**Multibox K-RTL** with thermostatic valve and return temperature limiter (RTL)	Cover and thermostatic head K white RAL 9016 Cover and thermostatic head K chrome-plated	**9301-00.800** **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 hysterisis, 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.

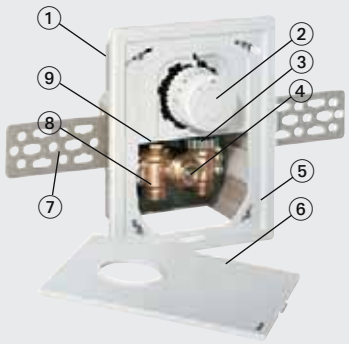
Pipe-side G $^{3}/_{4}$ adaptor with cone – suitable for compression fittings for plastic, copper, precision steel and multi-layer pipe.

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

- **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**

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F

Application

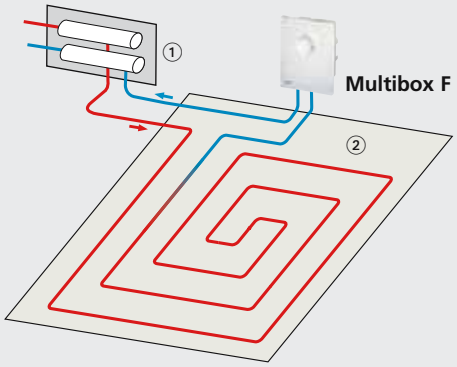
Multibox F

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).

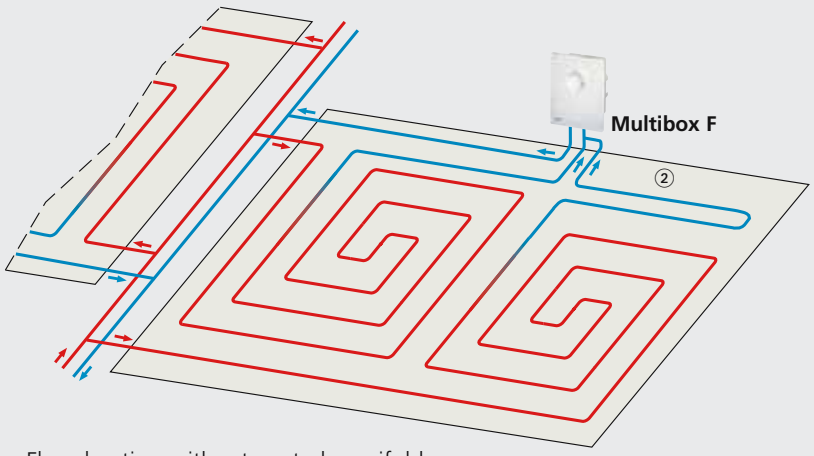
Multibox F is also used in wall heating systems.

Use the shutoff/regulating spindle for hydraulic balancing.

Examples of use



① Manifold
② Heating area



Floor heating without central manifold
with e.g. two equally long heating circuits per room and Multibox (see also Planning information on Page 12).

Temperature Setting

Thermostatic head F

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

Multibox

F

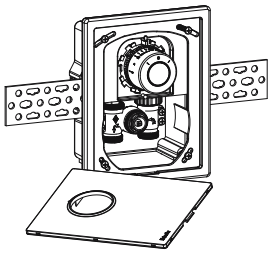
Function

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**

Multibox

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.

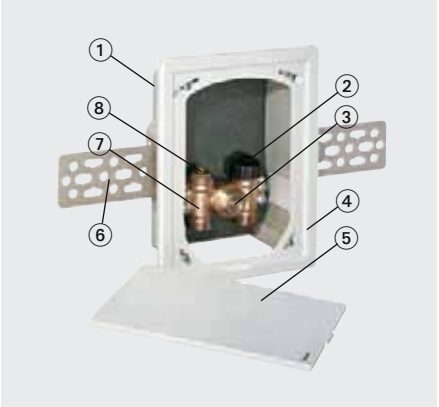
Pipe-side G $^{3}/_{4}$ adaptor with cone suitable for compression fittings for plastic, copper, precision steel and multi-layer pipe.

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.

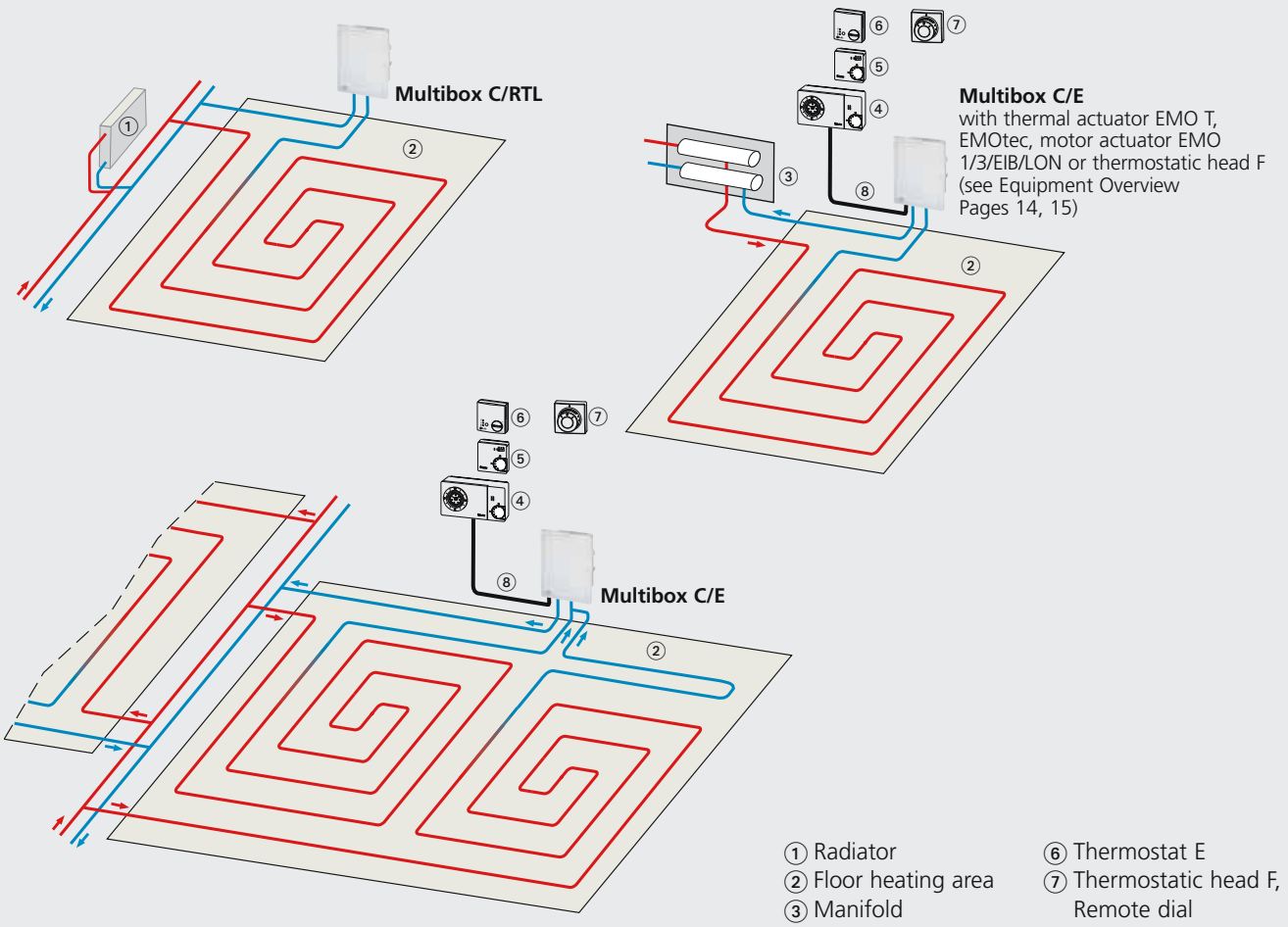
Use the shutoff/regulating spindle for hydraulic balancing.

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



With e.g. two equally long heating circuits per room and Multibox (see Planning information on Page 12).

Temperature Setting

Return temperature limiter (RTL)

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

Multibox

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.

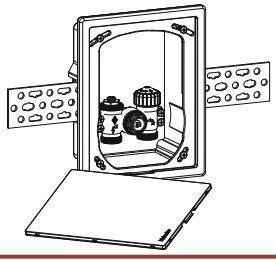
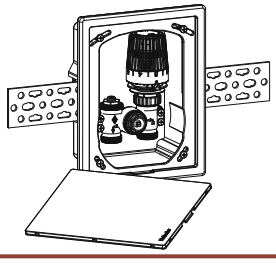
Multibox C/RTL

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

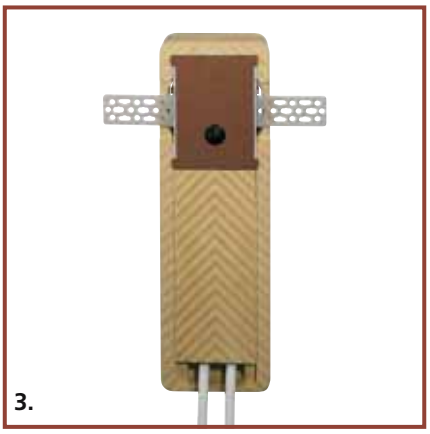
PU pipe guide channel for easy mounting of all HEIMEIER Multibox models and for convenient pipe-valve attachment. Mounting, for instance, in wall gaps or in front wall plumbing.

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

Examples of mounting


1.


2.


3.

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 exeed 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. The VdTÜV instructional leaflet 466/AGFW instructional leaflet 5/15 is to be heeded in respect of industrial and district heating systems.

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

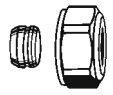
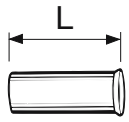
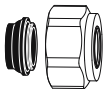
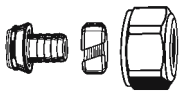
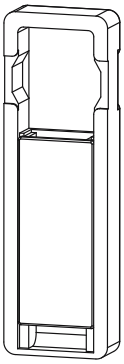
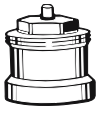
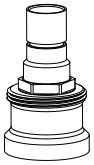
Begin 20 °C - 25 °C flow temperature and maintain for 3 days. Then set maximum design temperature and maintain for 4 days. Flow temperature can be regulated by controlling the heat generator. Turn the protective cap anti-clockwise to open valve or turn RTL head to Position 5.

Refer to the screed manufacturer's information!

Do not exceed maximum floor temperature at the heating pipes:

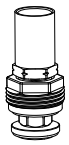
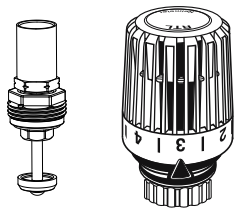
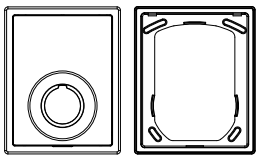
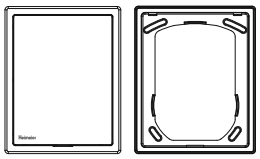
– Cement and anhydrite screed: 55 °C
– Poured asphalt screed: 45 °C
– according to screed manufacturer`s technical advice!

Accessories

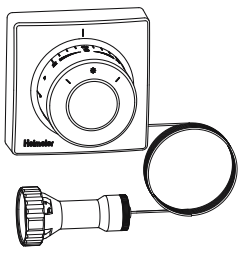
Illustration	Description	L [mm]	Ø Pipe	Art. No.
	**Compression fitting** for copper or precision steel pipe brass. With a pipe wall thickness of 0.8-1 mm insert supporting sleeves. Heed pipe manufacturer's technical advice.		10 12 14 15 16 18	**1300-10.351** **1300-12.351** **1300-14.351** **1300-15.351** **1300-16.351** **1300-18.351**
	**Support sleeves** for copper or precision steel pipe with a 1 mm wall thickness. Brass.	18.5 25.0 25.0 26.0 26.3 26.8	10 12 14 15 16 18	**1300-10.170** **1300-12.170** **1300-14.170** **1300-15.170** **1300-16.170** **1300-18.170**
	**Compression fitting** for copper or precision steel pipe. Nickel plated brass. Soft sealed.		12 14 15 16 18	**1313-12.351** **1313-14.351** **1313-15.351** **1313-16.351** **1313-18.351**
	**Compression fitting** for plastic pipe. Brass.		12 x 2 14 x 2 16 x 2 17 x 2 18 x 2 18 x 2,5 20 x 2 21 x 2,5	**1301-12.351** **1301-14.351** **1301-16.351** **1301-17.351** **1301-18.351** **1302-18.351** **1301-20.351** **1301-21.351**
	**Compression fitting** for multi-layer pipe. Brass.		14 x 2 16 x 2 18 x 2	**1330-14.351** **1330-16.351** **1330-18.351**
	**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. Plastic, black	 20 30 30		 **2201-20.700** **2201-30.700** **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

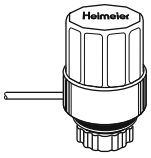
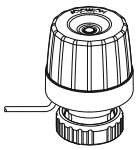
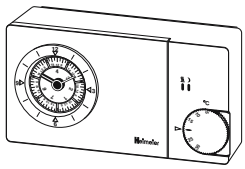
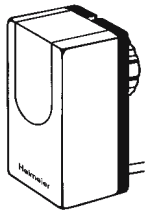
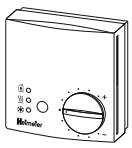
Accessories

Illustration	Descriptiion	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

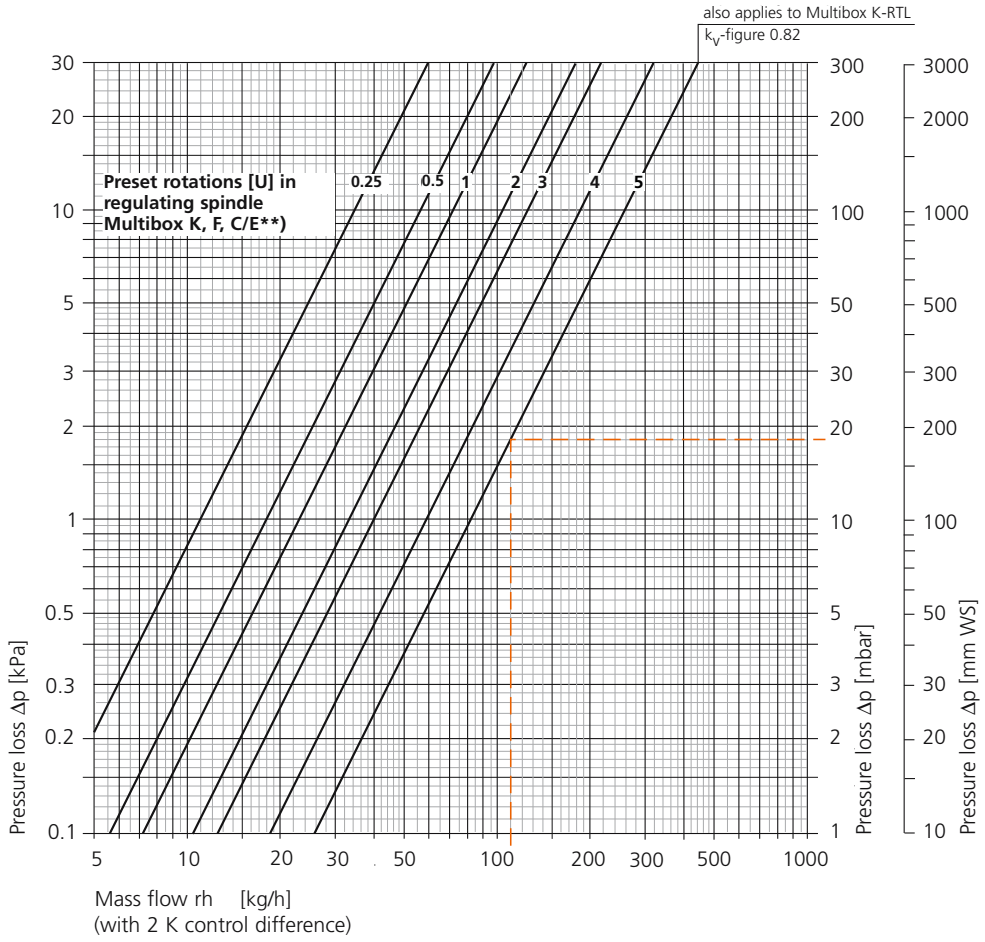
Illustration	Description	Model	Art. No.
 	**Thermal actuators** **Suitable for Multibox C/E.**		
	EMO T Thermal two-point actuator for heating, ventilation and air conditioning systems. With incorporated overvoltage protection with 230 V model.	230 V no-current closed (NC) 24 V no-current closed (NC) 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**) Preset rotations [U] Regulating spindle 0.25	0.5	1.0	2.0	3.0	4.0	5.0	k_V-figure [m³/h] Multibox K-RTL	k_{VS}-figure [m³/h]	Safe operating temp. TB [°C]	Safe operating gauge pressure PB [bar]
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

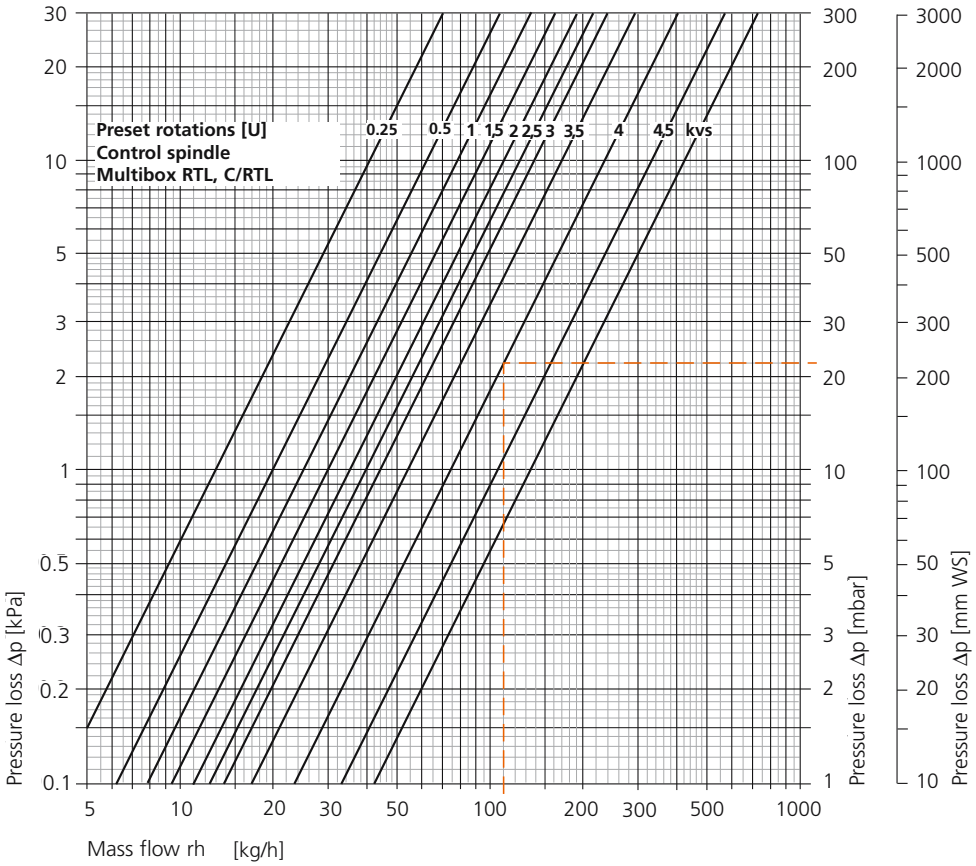
Given: Thermal flux $\dot{Q}$ = 1025 W
Temperature spread Δt = 8 K (44/36° C)

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

Pressure loss as diagram Δp_V = 18 mbar

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 Δt = 8 K (44/36° C)
- Pressure loss Multibox RTL: Δp_V = 22 mbar

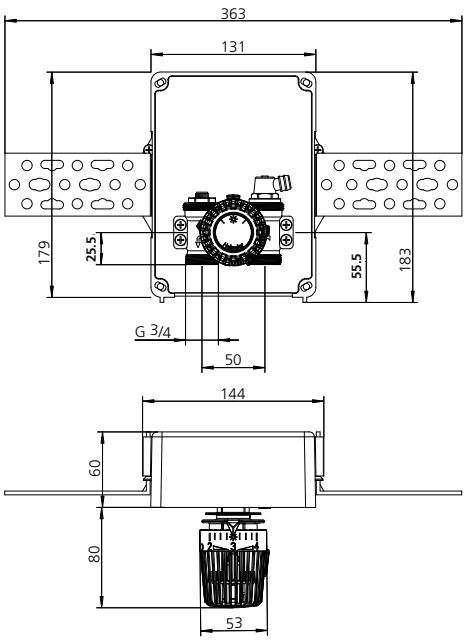
Solution:
- Mass flow $\dot{m} = \frac{\dot{Q}}{c \cdot \Delta t} = \frac{1025}{1.163 \cdot 8} = 110$ kg/h
- Preset figure from diagram: 4

Multibox

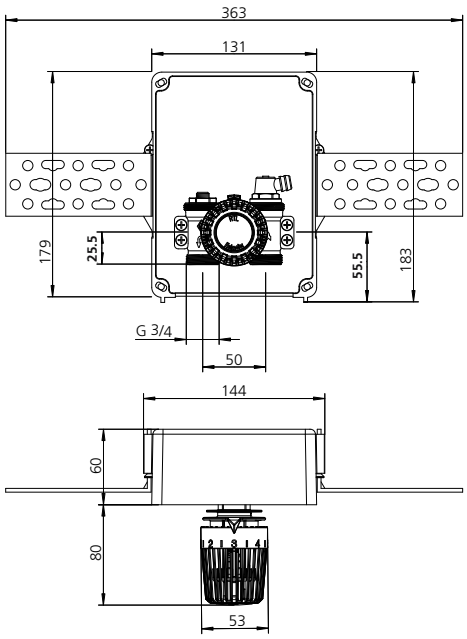
K, RTL and K-RTL

Dimensional Sheet

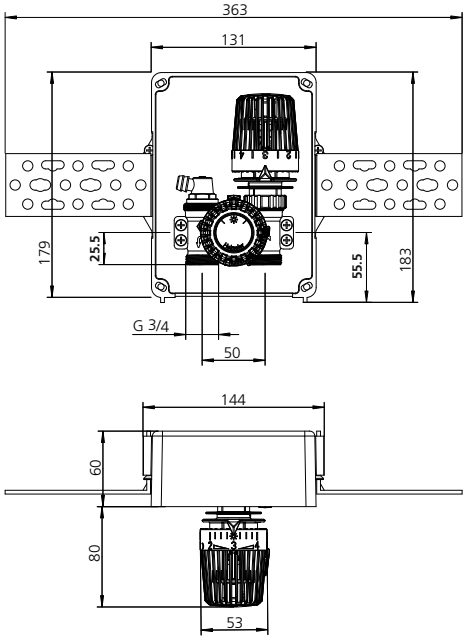
Multibox K



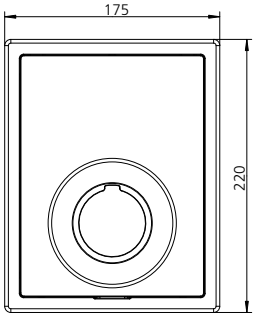
Multibox RTL



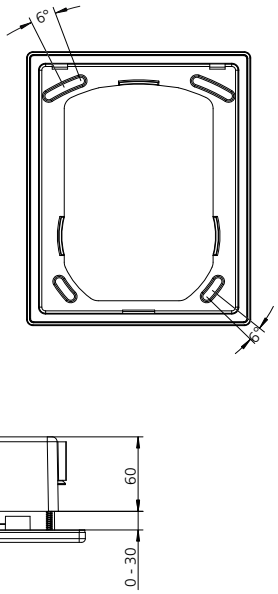
Multibox K-RTL



Cover plate

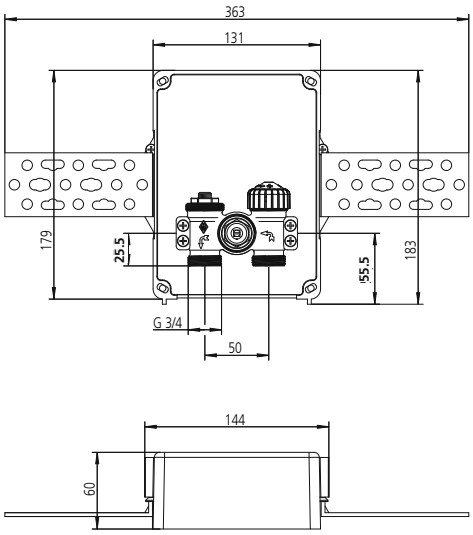


Frame



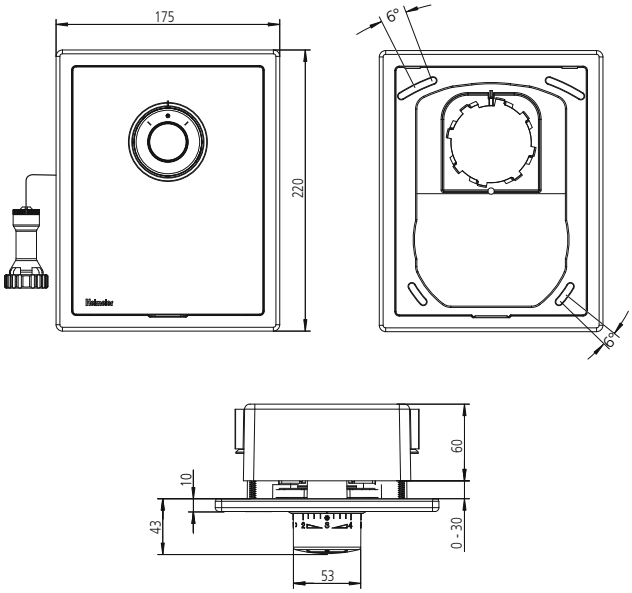
Dimensional Sheet

Multibox F



Cover plate

Frame

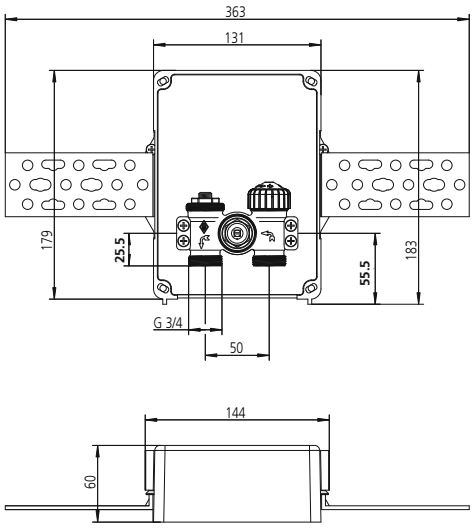


Multibox

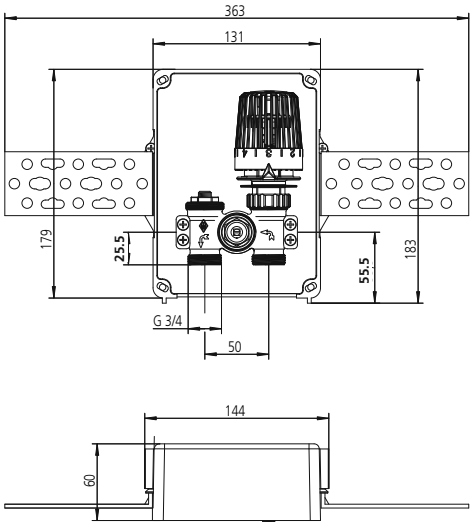
C/E and C/RTL

Dimensional Sheet

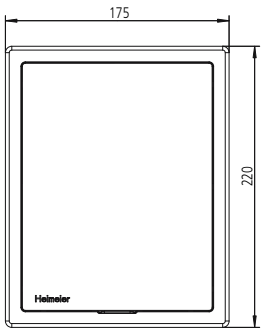
Multibox C/E



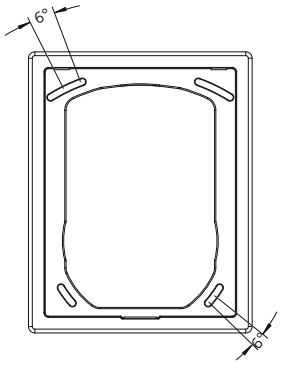
Multibox C/RTL

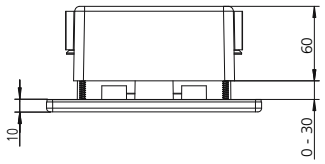


Cover plate



Frame





Theodor Heimeier Metallwerk GmbH
P.O. Box 1124, 59592 Erwitte, Germany
Phone + 49 (0)2943 891-0
Fax + 49 (0)2943 891-100
www.heimeier.com

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3600-18.483 / 04.07