

RTL-TH BASIC Regulation Box



Work on heating systems must only be done by qualified professional personnel and in accordance with the respective applicable regulations, guidelines and rules of engineering.

Refer in particular to:

DIN EN 1264 Surface integrated heating and cooling systems

DIN EN 12828 Heating systems in buildings

DIN 18 380 Heating systems and central hot water heating systems

VDE 0100 Creating low voltage systems

VDI 2035 Scale formation in domestic water heating systems and water heating systems

BGV German Professional Association Regulations (accident prevention regulations)

DIN = The German Institute for Standardisation

EN = European Standards

VDE = German Association for Electrical, Electronic & Information Technologies

VDI = Association of German Engineers



Features

Features	RTL-TH BASIC Regulation Box
Room temperature regulation	✓
Return flow temperature limitation	40 °C
Ventilation	✓
Flowmeter	✓
Electro-thermal actuator	✓
“easy-connect” plug-in connection	✓

The RTL-TH BASIC Regulation Box can be combined with conventional room thermostats 230 V / 50 Hz.

Areas of Application

Heating systems

For combined radiator-surface heatings the RTL-TH BASIC Regulation Box is used for the **room temperature-dependent regulation** of the surface heating while limiting the return flow temperature.

Technical Description

The **regulation box** consists of a wall insulation box with a pre-mounted valve module, an electro-thermal actuator, a protective cap, an air vent plug, a flowmeter for measuring and regulating the volume flow and a wall cover.

For the operation, a **room temperature controller** with the following characteristics is required:

Operating voltage: 230 V AC 50 Hz
Switching current: >0.5 A
Contact type: break contact

Caution:

The maximum permissible supply flow temperature of the surface heating must be respected.

The **valve module** is provided with a 3/4" male thread (Euro taper) for a connection via Simplex compression adapter on the pipe side.

The integrated **safety switch** shuts the valve down at a supply flow temperature of approx. 40 °C.

Even if heat is required by a connected electrical room thermostat, this safety shut-down stays active until a return flow temperature of 38 °C is reached. If this temperature falls below this value, the safety switch releases the valve automatically.

Installation

Note for arranging the regulating box in rooms with showers or bathtubs: **1**

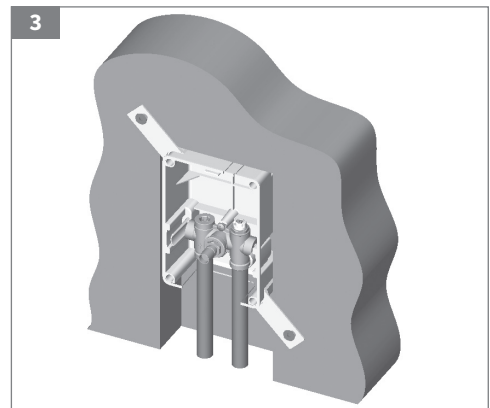
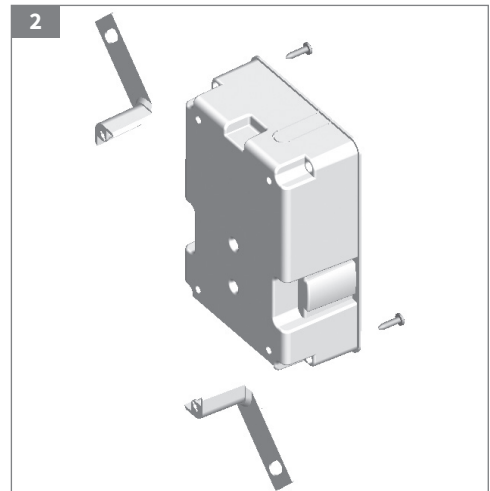
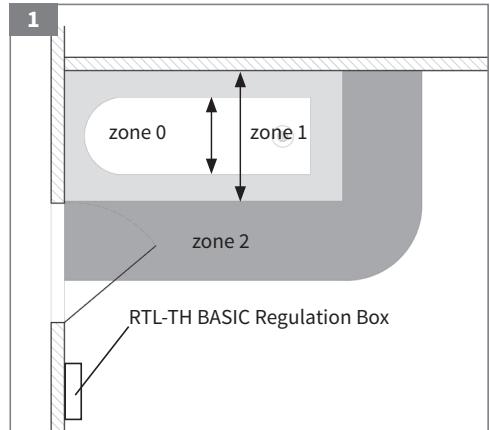
The regulation box has to be arranged outside of the zones 0, 1 and 2 in conformity with DIN VDE 0100-701 to prevent contact with splashing water.

Prepare the insulation box for the mounting by inserting the fixing clips from the backside into the drill holes at the corner points of the box and securing them with the supplied screws so that they cannot fall out. **2**

The fixing clips are arranged crossed-over. The clips can also be exchanged in any way depending upon the construction site situation. The clips can be moved horizontally in order to create a depth compensation as long as the screws have not been finally fixed.

The box is positioned to fixing clips on the rough wall in a sufficiently large wall recess (approx. 180 x 230 mm). Please pay attention to the mark of the protective cap to the surface of the finished wall in order to adjust the box optimally in the depth. Afterwards fix the box with the adjusting screws.

Before the connection of the pipings, the notches on the box are to be formed by breaking out the walls at the corresponding positions.



Please pay attention to a tension-free installation and the correct flow direction (supply flow left - see arrow mark!) when connecting the piping system. Reversely mounted connections cause valve noises and a bad control behaviour. Tension-free compression connection must also be guaranteed when the system is in operation, i.e. expansion loops or appropriate securing of the pipeline must be provided.

Before starting the plaster and wall covering works, the box is to be covered with a protective cap. The remaining space between the box and the wall notch can be filled with PU foam. **3** After finishing the wall covering works, the final mounting is done by removing the protective cap and putting on the wall cover.

Electrical Connection

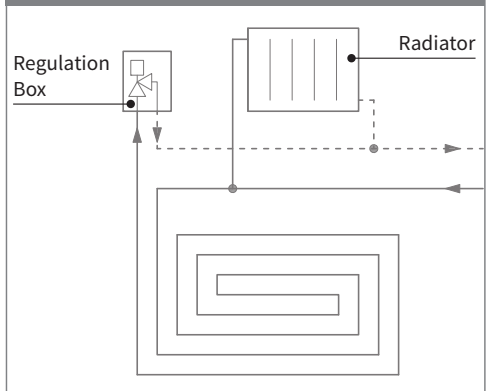
Caution: The electrical connection may only be performed by a qualified electrician!

You can use any common room thermostat with 230 V switching output for an electro-thermal actuator for room temperature-dependent regulation.

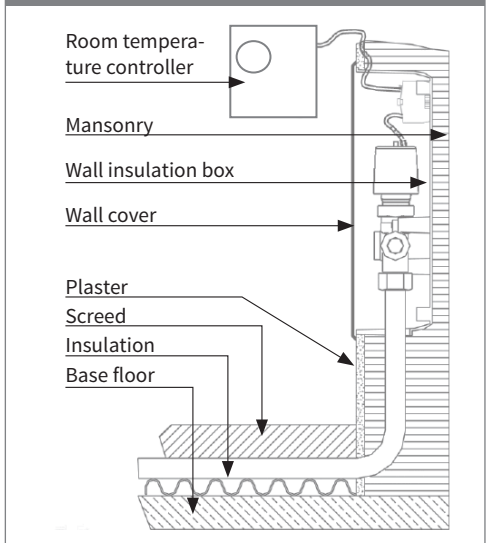
The installation of the room thermostat is to be performed according to the respective manufacturer's indications. Remove the splash guard for connecting terminal in the box. **6**

The connection of the actuator and the safety switch is performed via a 2-lead copper cable on plug position 1 and plug position 4 of the terminal block installed in the regulation box. On the valve side, the terminal block is pre-wired and must be left in the as-delivered condition. The protective earth is prewired on the housing and can be connected to the terminal block using the prepared 2-pin terminal connector.

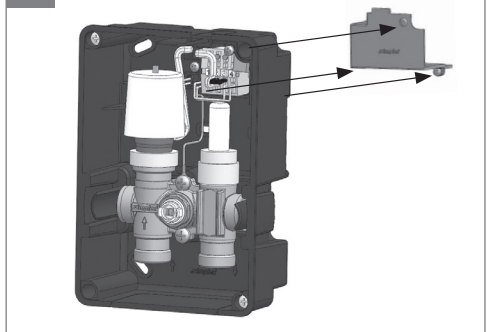
4 Functional diagram

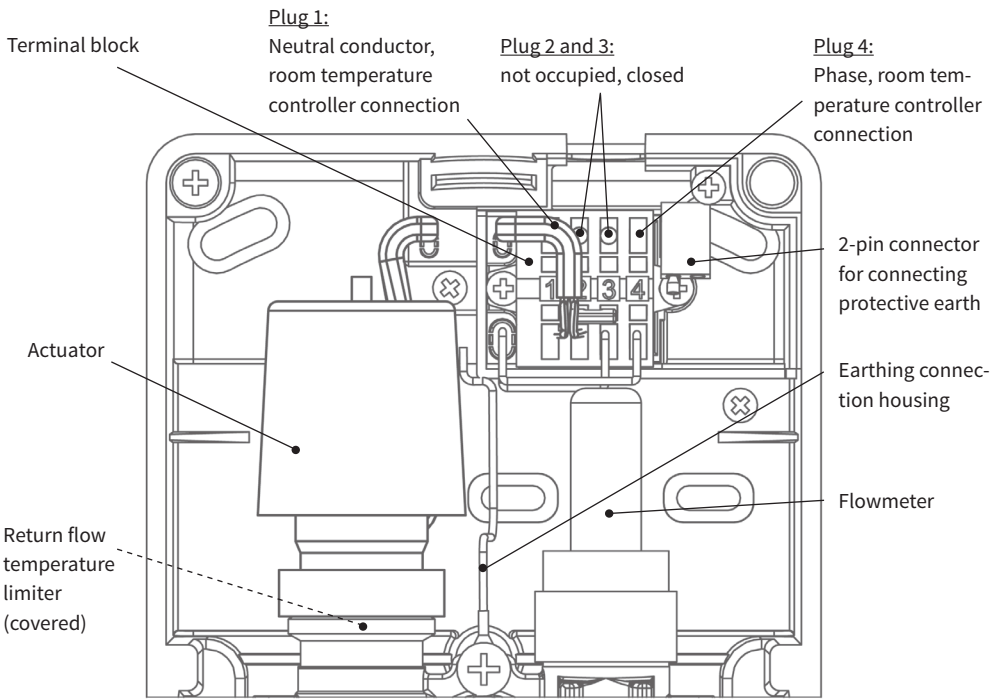


5 Installation diagram



6





Technical Data

Dimensions

Angle compensation box	6°
Angle compensation cover	6°
Depth compensation	23 mm
Axial distance valve	50 mm
Connecting dimensions for the pipeline	3/4" male thread, Euro taper DIN EN 16313
Safety shutdown	40 °C (switch-back point 38 °C)
Electrical connection	2-lead; 0.5 mm ²
Range of regulate room temperature	according to the connected room thermostat
Cable layout	0.5 mm ² ; 2-lead

Actuator

Connection thread	M 30 x 1.5
Rated voltage	230 V ~
Maximum switch-on	0.5 A
Continuous output	2.5 - 3 W
Design	normally closed
Degree of protection / Protection class	IP42 / II
Overtension protection / Position indication	present

Ventilation

The system can be ventilated as necessary using the ventilation valve installed.

Flowmeter

Flowmeter regulating valve for the regulating the volume flow. The upper part of the valve consists of a valve cone with a rising spindle and a hand-wheel for adjustment. The sight glass is installed in the hand wheel where the flow can be read directly in L/min on the printed scale depending upon the position of indicator unit. The adjustment on the flowmeter can be blocked by the delivered stop cap and sealed if desired.

Volume Flow Regulation

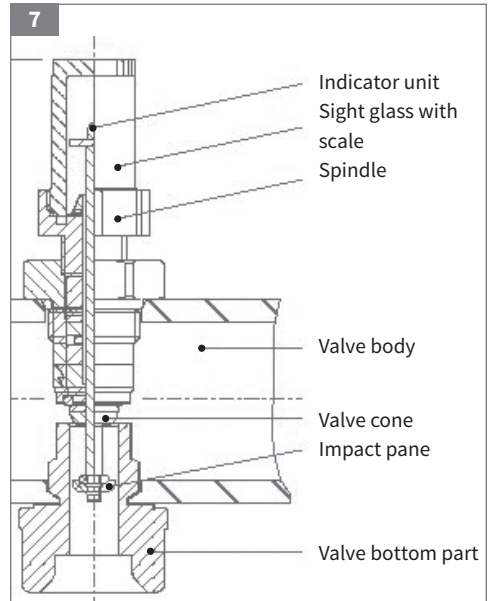
Remove the lock cap. The control is performed by turning the black handwheel whereby the valve cone will be turned down when turning to the right. The volume flow will decrease until reaching the complete blocking. The opening of the valve is performed by turning it in the opposite direction.

Cleaning Flowmeter

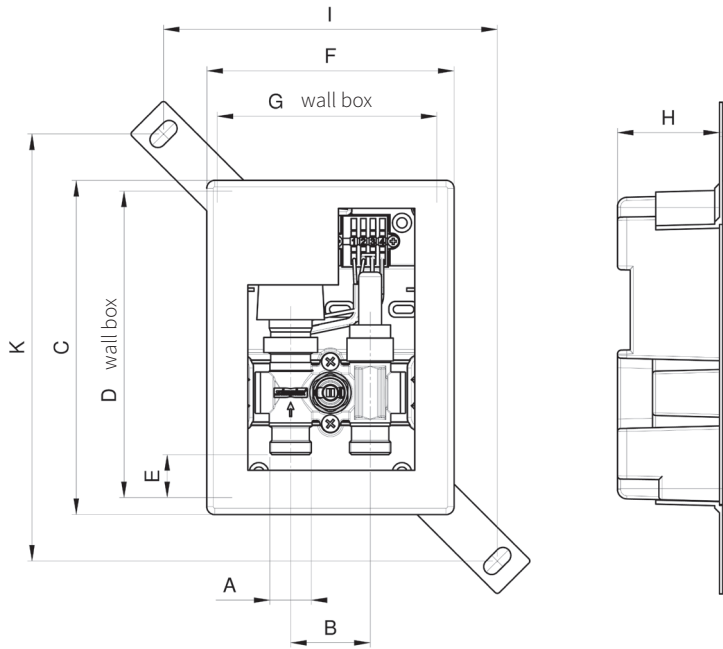
The sight glass and measuring spring can be removed for maintenance and cleaned, even at full system pressure. In order to do so, hold the black hand wheel firmly and turn to the left to remove the sight glass.

Do not use any tools when removing the sight glass! Risk of breakage!

Unscrew the sight glass quickly and removed, together with the spring located inside. The flowmeter locks automatically once the sight glass and spring have been removed. In this condition, there may be some slight water loss from the valve. Clean the sight glass quickly and screw together again in the opposite order.



Dimensional Drawing



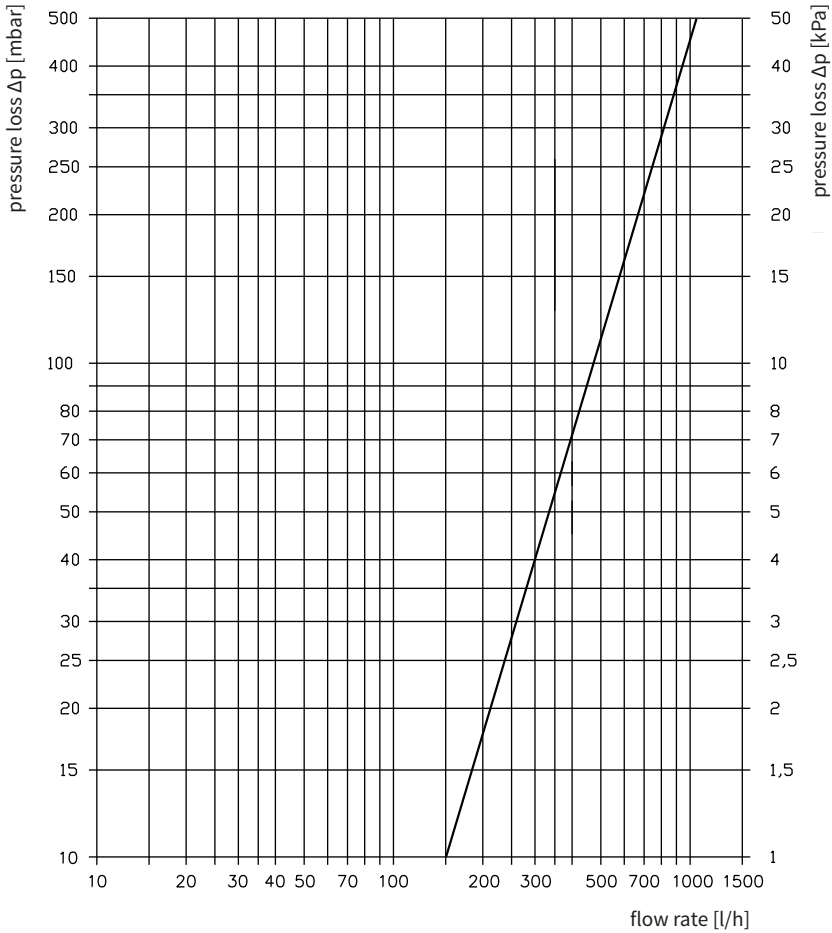
A	B	C	D	E	F	G	H	I	K
G3/4m Euro taper	50	211	197	27	156	138	64	210	270

Gm = parallel male thread in inches [""] according to DIN EN ISO 228-1

Data in mm

Pressure Loss Diagramm

completely open; k_{VS} - value [m³/h]: 1,48



The illustrations are symbolic and may differ from the respective product.
Errors and technical changes reserved.

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