

Ceramic thermal comfort floor

Schlüter®-BEKOTEC-THERM



2

Return temperature limit valves Function, installation and operation

ENGLISH



PROFILE OF INNOVATION



Floor heating for individual heating circuits

Return temperature limit valve – RTB

Schlüter®-BEKOTEC-THERM-RTB is a return temperature limit valve for installation in the wall. The control unit is used in cases where the required low system temperatures for a heating circuit of the **Schlüter®-BEKOTEC-THERM** ceramic thermal comfort floor are not protected with suitable temperature limiters, mixing valves or the heating system. It can be installed for the systematic temperature control of a secondary heating system for the floor. The unit is installed in combination with a heating system, using a supply temperature of max. 65 °C. Prior to installation, the control technology and hydraulic installations must be reviewed by a qualified engineer.



Schlüter®-BEKOTEC-THERM-RTB
Return temperature limit valve

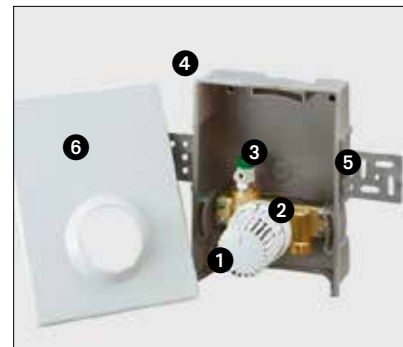


Floor heating for individual heating circuits

Function – RTB

Schlüter®-BEKOTEC-THERM-RTB

Schlüter®-BEKOTEC-THERM-RTB limits the return temperature of a heating circuit. Select the installation position in such a way that the heating water first flows through the **Schlüter®-BEKOTEC-THERM** heating circuit and then through the **Schlüter®-BEKOTEC-THERM-RTB** valve. The heating medium cools down on its way from the floor surface to the return temperature limit valve. Depending on the temperature, the Schlüter®-BEKOTEC-THERM-RTB valve and the sensor element in the Schlüter®-BEKOTEC-THERM-RTB thermostat regulate and limit the flow. The return temperature is set at the knob ❶ of the thermostat. Changing the settings of the knob affects the floor surface temperature and, accordingly, the room temperature.

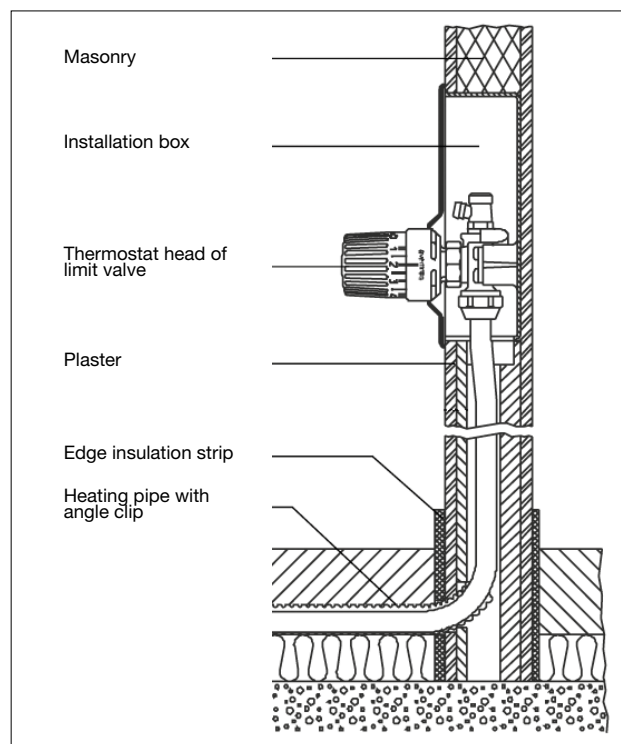
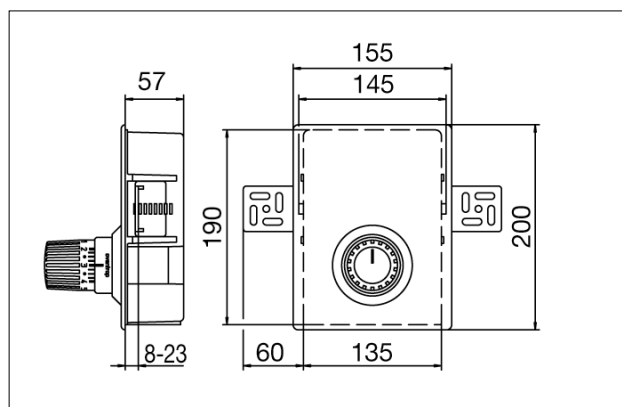


Schlüter®-BEKOTEC-THERM-RTB

- ❶ Thermostatic head control of the return temperature limit valve
- ❷ Valve to connect the heating pipes, with additional clamp attachments BTZ 2 KV ...
- ❸ Flushing and venting valve
- ❹ Installation box
- ❺ Attachment angle
- ❻ Front panel (white)

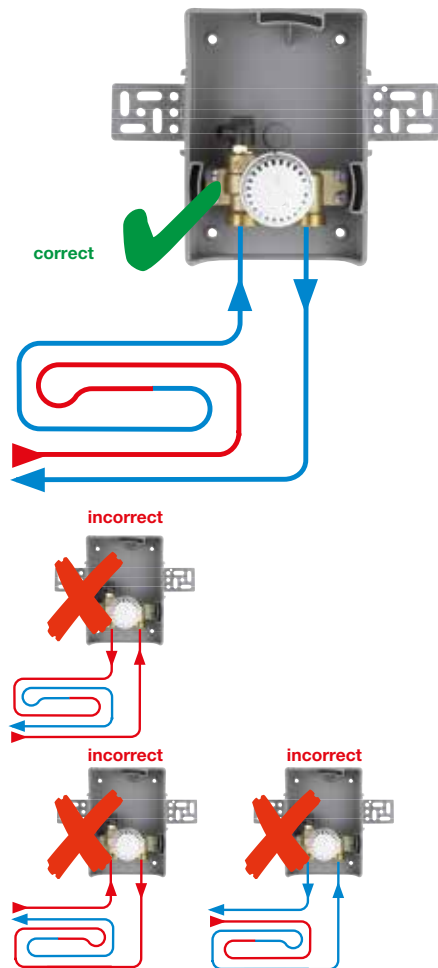
The heat up and start up instructions of the manufacturer must be observed.

The valve is operated in a room with additional radiator. In this case, the floor temperature covers the basic heat requirements, while the radiator regulates the room temperature.



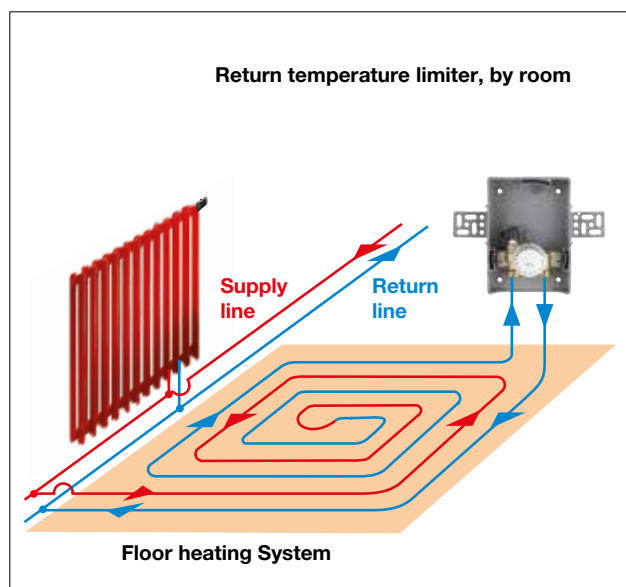
Floor heating for individual heating circuits

Installation – RTB

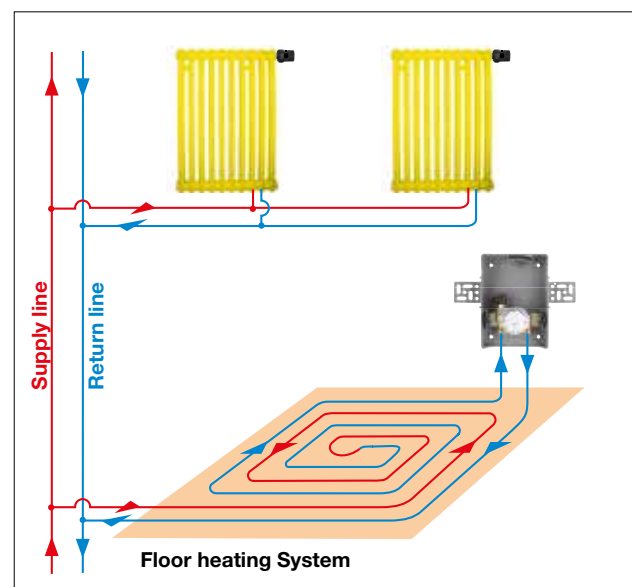


- Do not position the **Schlüter®-BEKOTEC-THERM-RTB** thermostat in direct sunlight or near to other heat sources e.g. radiators.
- The unit is installed at least 20 cm above the finished floor (a comfortable operating height is 1.20 m), measured from the bottom edge of the installation box, which is open on the underside. Align the front edge flush with the finished wall covering. Use the supplied installation angles to align and attach the installation box. They are installed on the side.
- Slide on the protective covering to keep the valve clean.
- The final attachment is made with plaster or mortar.
- Once the connection to the supply line of the dual pipe heating system has been made, the heating circuit must be installed in a coiled pattern. The self-sealing connection fitting BTZ 2 AN... or the connector angle BTZ 2 AW... with ½" external threading can be used for connecting the heating circuit to the supply and return line (use special valves and connectors for single pipe systems).
- The return temperature limit valve is connected at the end of the heating circuit, using the clamp attachments for **Schlüter®-BEKOTEC-THERM** (item no. BTZ2KV ...). The flow direction is indicated with an arrow on the body of the valve.
- In a next step, a direct connection from the valve to the return line of the dual pipe heating system is established. The self-sealing connection fitting BTZ 2 AN ... or the connector angle BTZ 2 AW ... with ½" external threading can be used for connecting the heating circuit to the supply and return line.
- The heating system is then filled and vented at the valve.
- The **Schlüter®-BEKOTEC-THERM** ceramic thermal comfort floor is now ready to perform a pressure test according to the procedure.
- Set the white front panel in and align it.
- For information about settings and start up, see *page GB6*.

Integrating a heating circuit into a floor level distribution



Integrating a heating circuit into a riser

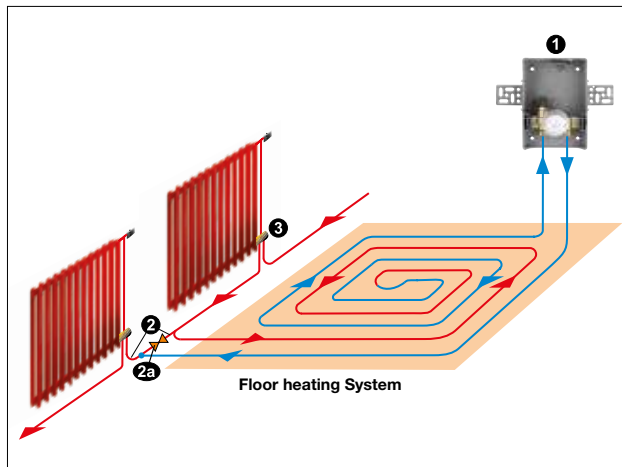




Floor regulation for individual heating circuits

Installation – RTB

Integrating a heating circuit into a **single pipe heating system**



Installation in single pipe heating systems

Select the installation location in such a way that part of the heating water flows through the BEKOTEC heating circuit and another through controllable transfer sections **2** in the existing single pipe circuit. The return temperature limit valve **1** must be positioned in such a way that the heating water first flows through the heating circuit and then through the RTB valve.





The heating circuit return line is connected after the transfer section. The transfer section **2** must at least have the same pipe diameter as the existing single pipe circuit and must be equipped with a controllable valve **2a** (return screw/ string control valve). The volume flow can be controlled with the settings of the limit valve **2a** in accordance with the hydraulic conditions. Adjustable single pipe valves **3** should also be installed at the radiators.

As a general rule, the hydraulic conditions of the single pipe system must be reviewed for this application.

Heating circuit lengths and output data

... in conjunction with the Schlüter®-BEKOTEC-THERM-RTB return temperature limit valve

Approximate values for bathrooms with interior temperatures of **24 °C** and an average return temperature setting of approx. 35 °C, with a minimum supply temperature of **min. 50 °C**.

System pipe dimension	Installation spacing	Max. heating circuit length	Max. heating area	Spec. Heat output*	Pressure loss incl. limit valve	Volume flow
mm	mm	m	m ²	W/m ²	mbar	kg/h
 16 x 2 mm for BEKOTEC-EN/P and EN/PF	75	90	6.5	95	40	45
	150	90	12	80	65	55
 14 x 2 mm for BEKOTEC-EN 23 F	75	80	5.5	95	65	41
	150	80	11	80	85	50
 12 x 1,5 mm for BEKOTEC-EN 18 FTS	100	60	5.5	90	70	30
	150	60	8.5	80	85	36
 10 x 1,3 mm for BEKOTEC-EN 12 FK	100	55	5.0	90	60	49
	150	55	7.5	80	85	31

* Output data apply to ceramic surface coverings

For additional performance data of the Schlüter®-BEKOTEC-THERM systems, see the diagrams in the technical manual.



Floor heating for individual heating circuits

Setting and start up – RTB

The Schlüter®-BEKOTEC-THERM ceramic thermal comfort floor is ready for heating only 7 days after the installation of the floor covering. Please observe the instructions of data sheets 9.1 to 9.5, Schlüter®-BEKOTEC. It is especially important not to exceed the maximum surface temperatures. Close the valves with protective caps to ensure that no heating can take place during the installation of the screed and surface covering.

Once the construction work is complete, remove the protective cap and open the thermostat head.

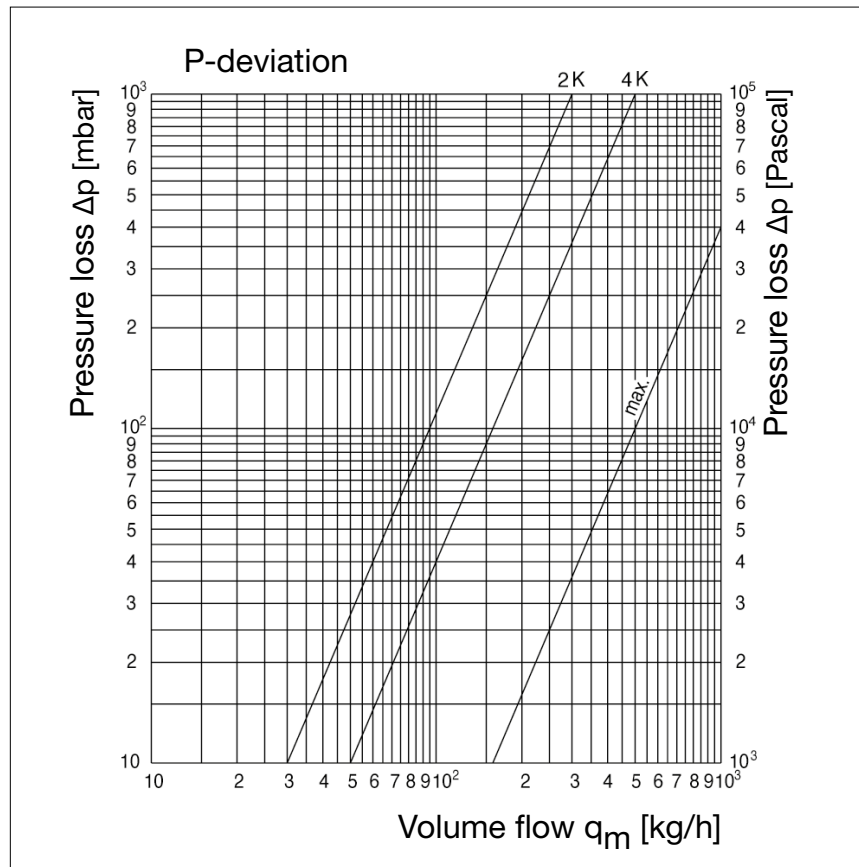
The recommended setting range of the thermostat is between **1.5 (approx. 25 °C)** and **2.5 (approx. 35 °C)**. The target value is set to position 3 by default.

The Schlüter®-BEKOTEC-THERM ceramic thermal comfort floor is ready for heating only 7 days after the completion of the cover construction. This setting value is increased by < 0.5 every day to a maximum of 2.5, starting with setting 1 at the return temperature limit valve.

	Setting value at RTB thermostat head	Return temperature
	0	closed
	1	approx. 20 °C
Recommended setting range	1.5	approx. 25 °C
	2	approx. 30 °C
	2.5	approx. 35 °C
	3	approx. 40 °C

Pressure loss diagram for **Schlüter®-BEKOTEC-THERM-RTB**

4K P deviation; factory default setting



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