

RTL



Floor Heating Controller
Return temperature limiter

*Engineering
GREAT Solutions*

RTL

Among other things, the return temperature limiter RTL is used to limit the return temperatures of radiators or combined floor/radiator systems to equalize the temperature of smaller floor surfaces (up to ca. 15 m²).



Key features

- > **Body made of corrosion-resistant gunmetal**
- > **Outer O-ring can be replaced while under pressure**
- > **Stainless spindle with double O-ring seal**
- > **Concealed limiting or blocking using stop clips**

Technical description

Applications area:

Heating systems

Functions:

Maximum limitation of the return temperature.

Shut-off.

Temperature range is limited on both ends and can be blocked using covered stop clips.

Control behavior:

Proportional controller without auxiliary energy.

Dimensions:

DN 15

Pressure class:

PN 10

Temperature:

Max. working temperature: 120°C

Min. working temperature: 2°C

Maximum sensor temperature:

60° C

Specific extension:

0.10 mm/K,
Valve stroke limiter

Marking:

THE, flow direction arrow,
DN -Designation. II -Designation.

Material:

RTL thermostatic head:
ABS, PA6.6GF30, brass, steel,
Thermostat filled with an expansible medium.

Valve body: corrosion resistant Gunmetal

O-rings: EPDM rubber

Valve disc: EPDM rubber

Return spring: Stainless steel

Valve insert: Brass

Spindle: Niro-steel spindle with double O-ring sealing. The outer O-ring can be replaced under pressure.

Colour:

White RAL 9016

Surface treatment:

Valve body and fittings are nickel-plated.

Connection:

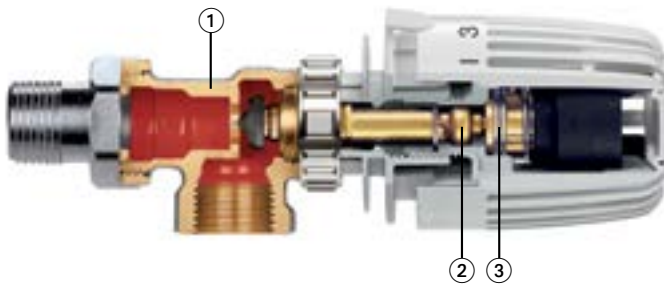
Attention: The RTL return temperature limiter is constructed from a special valve body and sensor element. Thermostatic valve bodies cannot be used.

Pipe connection:

The female-threaded version is designed for connection to threaded pipe, or in conjunction with compression fittings, to copper precision steel or multi-layer pipe (only DN 15). The male-threaded version, in conjunction with the appropriate compression fittings, permits connection to plastic pipe.

Construction

RTL – return temperature limiter



1. Valve body
2. Sensor
3. Overstroke safety

Function

The return temperature limiter RTL is an automatic thermostatic controller. The temperature of the flowing medium is transferred to the sensor via conductivity. This keeps the specified value

constant within a proportional band necessary for control. The valve only opens when the set limiting value has not been reached.

Application

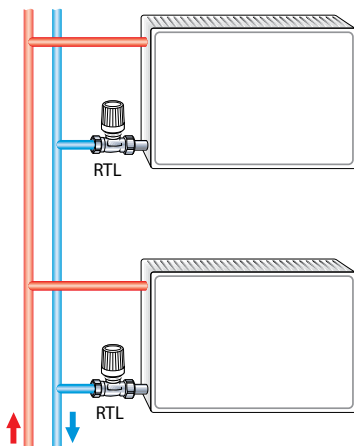
Among other things, the return temperature limiter RTL is used to limit the return temperatures of radiators or combined floor/radiator systems to equalize the temperature of smaller floor surfaces (up to ca. 15 m²). The return temperature is constantly controlled.

With floor heating systems, it is important to note that the flow temperature controlled by the system is appropriate for the particular system installed.

Please make sure the setting value is not below the ambient temperature of the return temperature limiter, as this would then no longer open (carefully choose location of installation). This may also be the case if the return temperature limiter is influenced by transferred heat, e.g. by mounting a floor heating circuit distributor directly on the return collector.

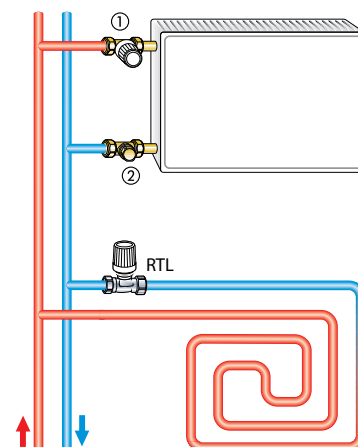
Sample application

Return temperature limiting on radiators



1. Thermostatic valve
2. Regulux lockshield

Floor heating



Note

The composition of the heat transfer medium should be one which avoids damage or the accumulation of stones in hot water heating systems, in accordance with VDI guide line 2035. For industrial and long-distance energy systems, see applicable codes VdTÜV and 1466/AGFW FW 510.

Heat transfer media containing mineral oils or lubricants containing mineral oil can have seriously negative effects on the

source apparatus and usually lead to the disintegration of EPDM seals.

When using nitrite-free frost and corrosion resistance solutions with an ethylene glycol base, pay close attention to the details outlined in the manufacturers' documentation, particularly details concerning concentration and specific additives.

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 anticlockwise to open valve or turn RTL head to Position 5.

Refer to the screed manufacturer's information!

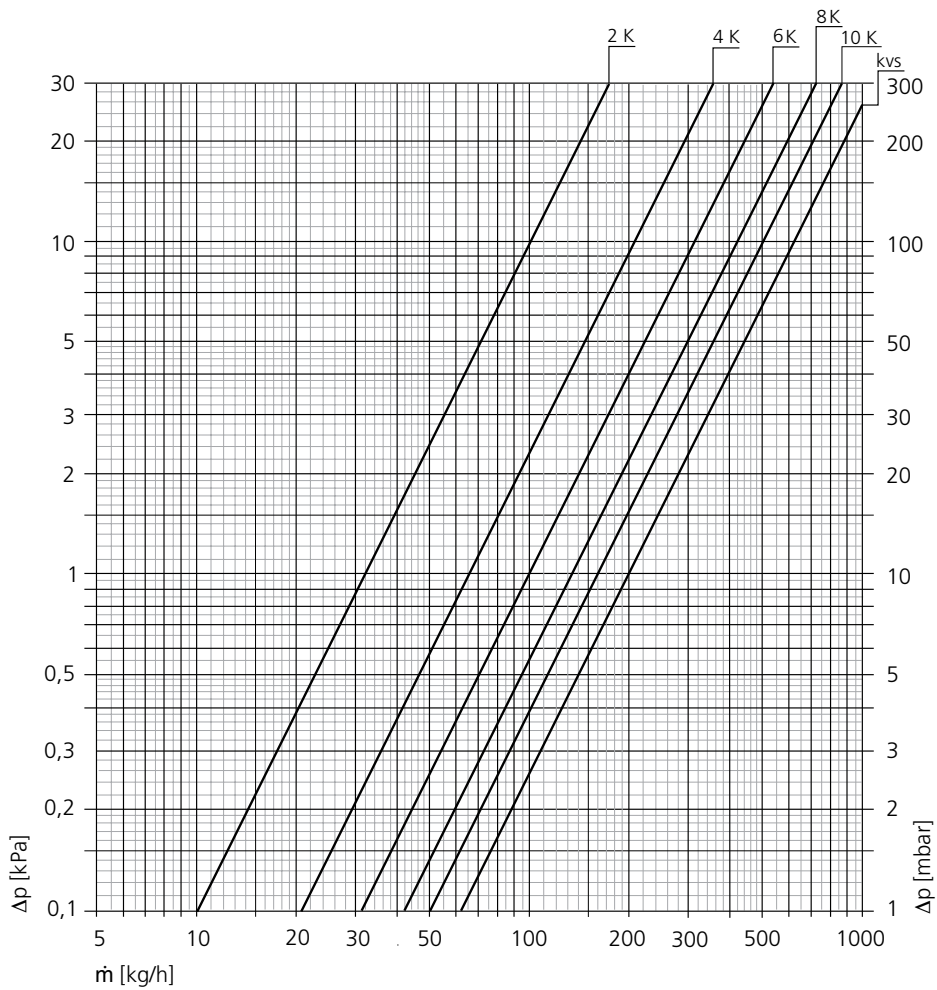
Do not exceed maximum floor temperature at the heating pipes:

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

Settings

Number on dial	0	1	2	3	4	5
Return temperature t_R [°C]	0	10	20	30	40	50
Return temperature t_R [°F]	32	50	68	86	104	122

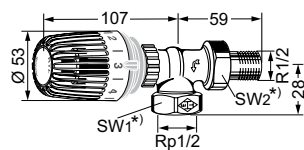
Technical data



Controller with valve body (angle, straight)

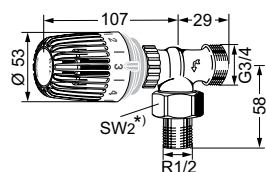
DN 15 (1/2")	Kv P-band xp [K]					Kvs	Permitted differential pressure at which the return temperature limiter still closes Δp [bar]
	2	4	6	8	10		
	0,32	0,66	1,00	1,34	1,60	2,00	4

Articles



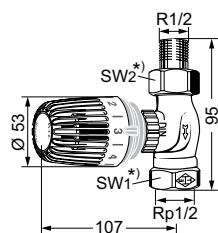
Angle

Connection	Kvs	EAN	Article No
R1/2	2,00	4024052285716	9173-02.800



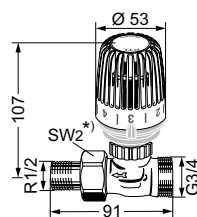
Angle

Connection	Kvs	EAN	Article No
G3/4	2,00	4024052285013	9153-02.800



Straight

Connection	Kvs	EAN	Article No
R1/2	2,00	4024052285914	9174-02.800



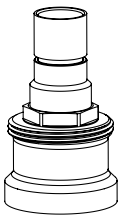
Straight

Connection	Kvs	EAN	Article No
G3/4	2,00	4024052285112	9154-02.800

*) SW1: 27 mm; SW2: 30 mm

Kvs = m³/h at a pressure drop of 1 bar and fully open valve.

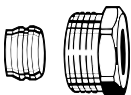
Accessories



Spindle extension for RTL

Brass, nickel-plated.

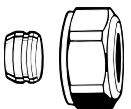
L	EAN	Article No
20	4024052500215	9153-20.700



Compression fitting

for copper or precision steel pipe according to DIN EN 1057/10305-1/2. Female thread connection Rp1/2. Metal-to-metal joint. Brass nickel-plated. Support sleeves should be used for a pipe wall thickness of 0.8 – 1 mm. Follow the specifications of the pipe manufacturer.

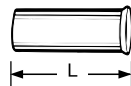
Ø Pipe	EAN	Article No
15	4024052175017	2201-15.351
16	4024052175116	2201-16.351



Compression fitting

for copper or precision steel pipe according to DIN EN 1057/10305-1/2. Connection male thread G 3/4 according to DIN EN 16313 (Eurocone). Metal-to-metal joint. Brass nickel-plated. With a pipe wall thickness of 0.8-1 mm insert supporting sleeves. Heed pipe manufacturer's technical advice.

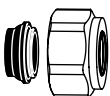
Ø Pipe	EAN	Article No
12	4024052214211	3831-12.351
15	4024052214617	3831-15.351
16	4024052214914	3831-16.351
18	4024052215218	3831-18.351



Support sleeve

for copper or precision steel pipe with a 1 mm wall thickness. Brass.

Ø Pipe	L	EAN	Article No
12	25,0	4024052127016	1300-12.170
15	26,0	4024052127917	1300-15.170
16	26,3	4024052128419	1300-16.170
18	26,8	4024052128815	1300-18.170



Compression fitting

for copper or precision steel pipe according to DIN EN 1057/10305-1/2. Connection male thread G 3/4 according to DIN EN 16313 (Eurocone). Soft sealed, max. 95°C. Nickel-plated brass.

Ø Pipe	EAN	Article No
15	4024052515851	1313-15.351
18	4024052516056	1313-18.351



Compression fitting

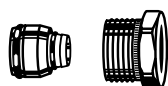
for plastic pipe according to DIN 4726, ISO 10508. PE-X: DIN 16892/16893, EN ISO 15875; PB: DIN 16968/16969. Connection male thread G 3/4 according to DIN EN 16313 (Eurocone). Nickel plated brass.

Ø Pipe	EAN	Article No
14x2	4024052134618	1311-14.351
16x2	4024052134816	1311-16.351
17x2	4024052134915	1311-17.351
18x2	4024052135110	1311-18.351
20x2	4024052135318	1311-20.351


Compression fitting

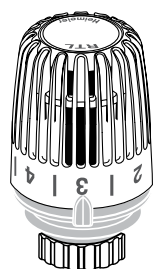
for Alu/PEX multi-layer pipe according to DIN 16836. Connection male thread G 3/4 according to DIN EN 16313 (Eurocone). Nickel-plated brass.

Ø Pipe	EAN	Article No
16x2	4024052137312	1331-16.351


Compression fitting

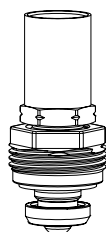
for Alu/PEX multi-layer pipe according to DIN 16836. Female thread connection Rp 1/2. Nickel-plated brass.

Ø Pipe	EAN	Article No
16x2	4024052138616	1335-16.351


RTL thermostatic head

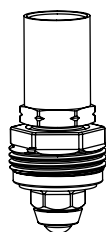
As spare part for return temperature limiter RTL.

Colour	EAN	Article No
white RAL 9016	4024052275311	6500-00.500
chrome	4024052478521	6500-00.501


Insert for RTL

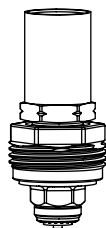
Since 2012 (II marking on the valve body). With 25 mm brass sleeve.

EAN	Article No
4024052909711	1305-02.300


Insert for RTL

Since 1996 to end of 2011 (Boss marking on the valve body). With 25 mm brass sleeve.

EAN	Article No
4024052529216	2004-02.300


Special insert for RTL

Since 1996 to end of 2011 (Boss marking on the valve body). With 25 mm brass sleeve. For reversed flow direction.

EAN	Article No
4024052529117	2004-24.300