



Rev. 07/2015

## **TERMOFLEX**

4-way valve with thermostatic option for single pipe circuits.

# TERMOFLUX

4-way valve with thermostatic option for single pipe circuits.



## PRODUCTION RANGE

Code	Size	Max operating temperature [°C]	Max operating pressure [bar]	Radiator connection	System connection	Probe length [mm]
1028.04.00	1/2"	110	10 (1000 kPa)	M UNI-EN ISO 228	Standard RBM	295
1028.05.00	3/4"	110	10 (1000 kPa)	M UNI-EN ISO 228	Standard RBM	295

## ACCESSORIES

Code	Description
590.00.00	Thermostatic head with TL10 liquid expansion sensor
590.00.10	Thermostatic head with TL20 remote sensor
306.00.02	2 wire NC electrothermal servomotor. Voltage: 230VAC
306.00.12	2 wire NC electrothermal servomotor. Voltage: 24VAC
306.00.42	4 wire NC electrothermal servomotor. Voltage: 230VAC
306.00.52	4 wire NC electrothermal servomotor. Voltage: 24VAC



## DESCRIPTION

The **4-way valves with thermostatic option for RBM TERMOFLUX** single pipe system are used as shut-off and adjustment parts for the heating bodies in single pipe heating systems.

The **RBM TERMOFLUX** valves are supplied with connection to 1/2" and 3/4" heating body and with RBM standard connection to the system. Specific fitting is provided for connection to the system, as indicated in the technical data sheet.

The valves are also equipped with probe to separate the delivery flow in the heating body from the return flow. The probe takes the heat-carrying fluid to the farthest area of the heating body with respect to its inlet, thus improving its heat exchange.

The opening and closing of the **RBM TERMOFLUX** valves is manually adjusted by acting on the handwheel.

The **RBM TERMOFLUX** can be equipped with RBM thermostatic head or with electrothermal commands.

The thermostatic head allows the valve to self-actuate its opening and closing based on that set on the valve's head.

Whereas, the electrothermal commands allow adjusting the valve opening and closing automatically and can be controlled from adjustment and control devices such as room thermostats or programmable thermostats to make this operation fully automatic.

## THE PURPOSE

Although not real and proper calibration parts, the **RBM TERMOFLUX** valves can balance the hydraulic system by adjusting the stroke of the shutter present.

## THE INSTALLATION

The **RBM TERMOFLUX** can be installed on heating systems of any type of civil or industrial building, old or new.

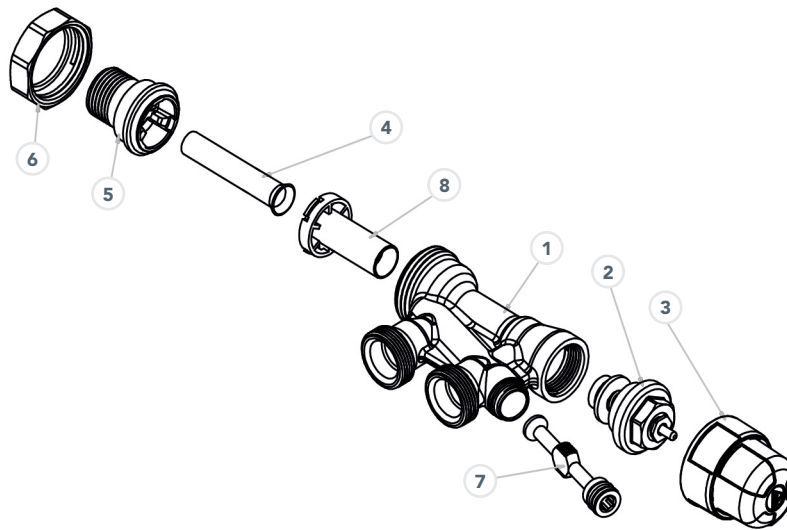
The **RBM TERMOFLUX** valves can be mounted on connections facing the wall or the floor.

During installation, **follow the arrows printed on the valve body** with regard to the heat-carrying fluid circulation inside the valve itself.

The **RBM TERMOFLUX** valves are equipped with lockshield valves to separate the heating body from the single pipe system without interrupting the fluid circulation in the system itself. This is advantageous if wanting to service the heating body.

The **RBM TERMOFLUX** valves are essential when the heating system connections are adjacent. They can replace RBM single-flow, uniflux and biflux valves.

## CONSTRUCTION FEATURES

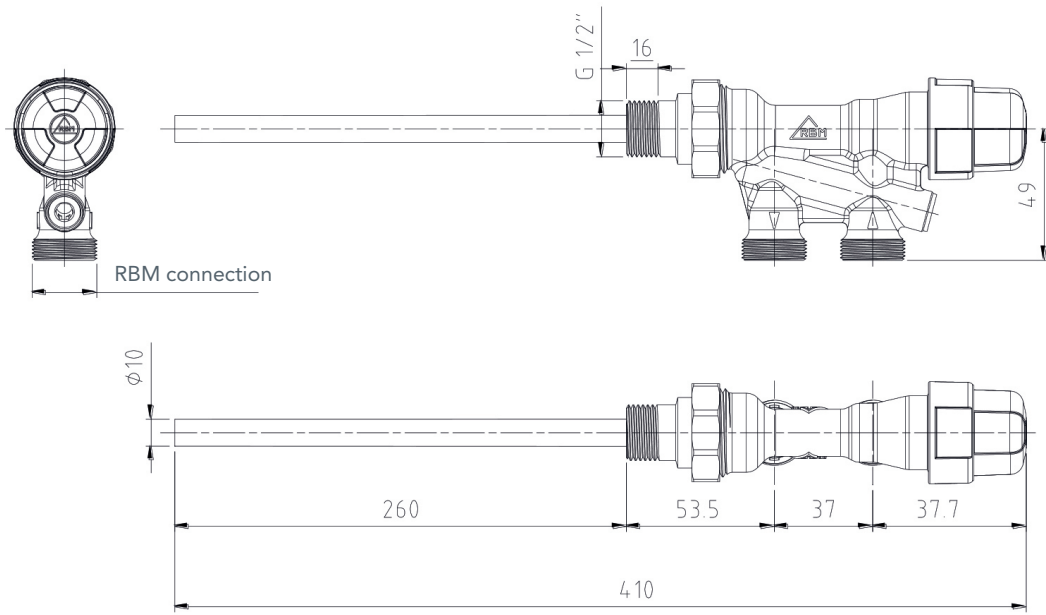


TERMOFLUX 4-way thermostatically-controlled radiator valve main components:

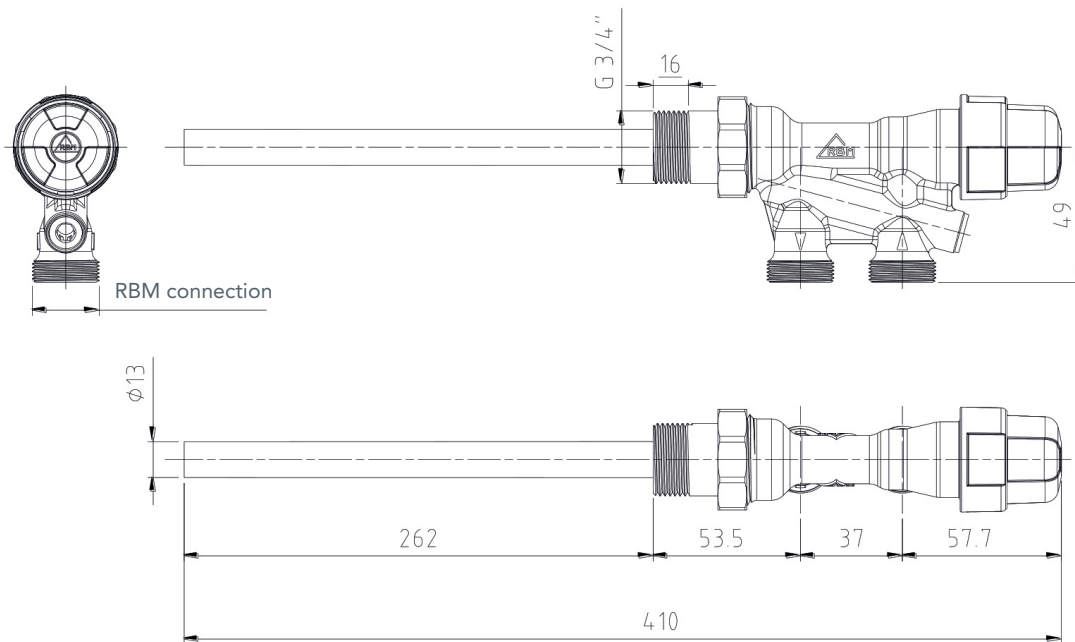
- 1 Printed TERMOFLUX valve body: Brass CW617N
- 2 Thermostatically-controlled cap unit
- 3 Terminal valve adjustment handwheel: ABS
- 4 Probe: PA66 with addition of 30% glass fibre
- 5 Ball unit
- 6 Octagon: Brass CW617N
- 7 Obturator valve unit
- 8 Flow separator: PA66

## DIMENSIONAL FEATURES\*

1028.04.00



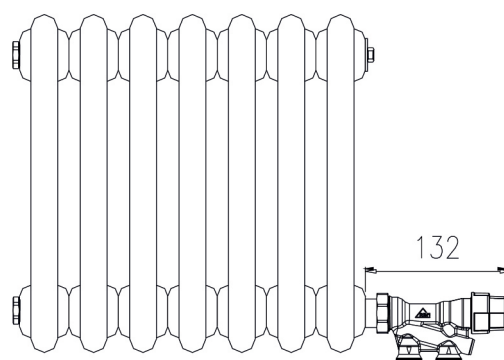
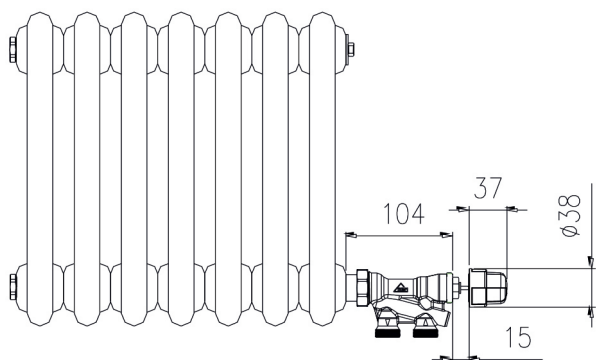
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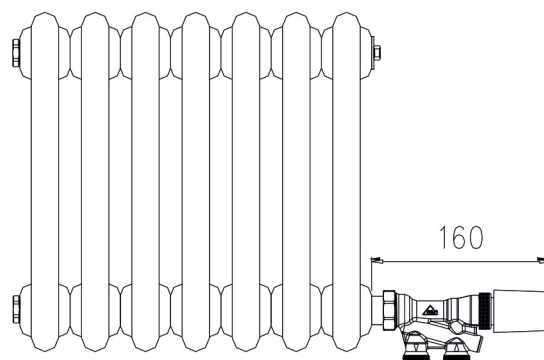
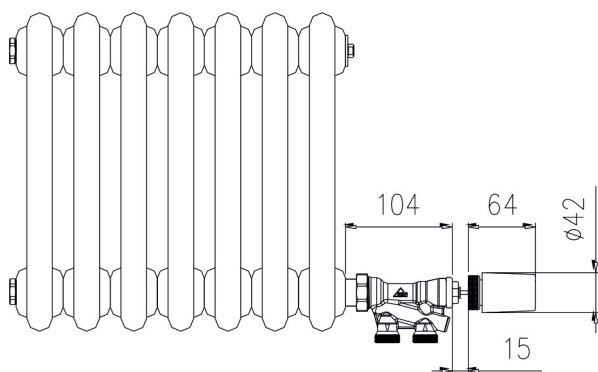
\* Where not specifically indicated, the unit of measure used is mm

## OVERALL DIMENSIONS\*

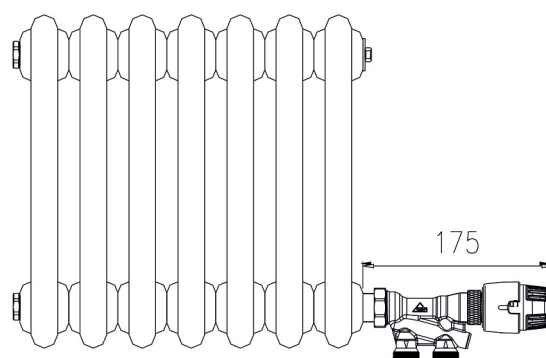
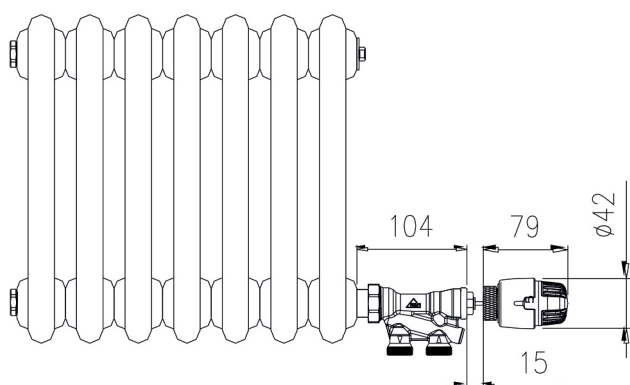
### Termoflux valve overall dimensions with standard supplied mounted manual adjustment handwheel



### Termoflux valve overall dimensions with mounted electrothermal servo control, series 306.00.X2



### Termoflux valve overall dimensions with mounted thermostatic head, series TL10 code 590.00.00

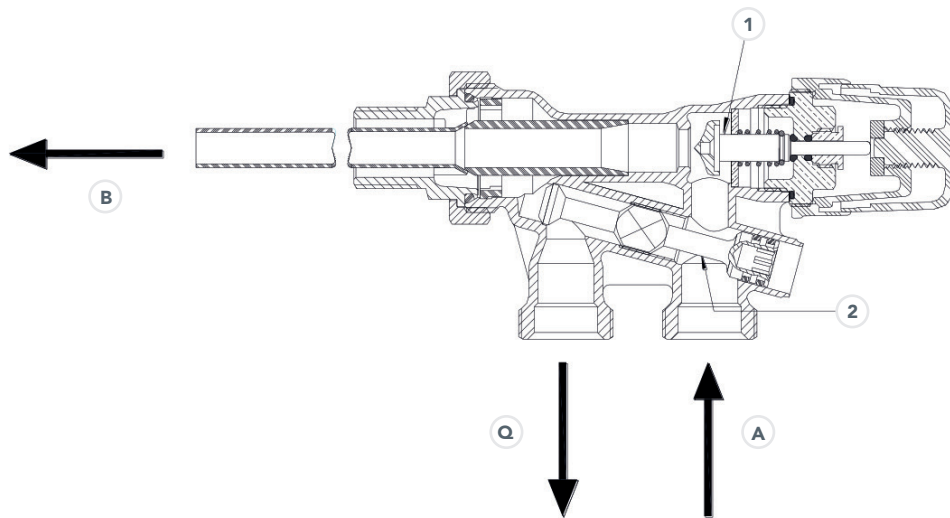


\* Where not specifically indicated, the unit of measure used is mm

## FUNCTIONAL LAYOUT

### MAIN ELEMENTS:

- **Lockshield valves:** acts as by-pass. The lockshield valve stroke is limited in its seat from which it cannot come out.
- **Thermostatically-controlled unit:** opens and closes the valve. These operations can be carried out:
  - by turning the valve's handwheel clockwise;
  - with the help of an electrothermal servo control operable from an ambient control device, such as a thermostat or a programmable thermostat;
  - with the help of a self-actuated thermostatic head.



- ① Thermostatically-controlled unit
- ② Lockshield valve
- Ⓐ Inlet
- Ⓑ Radiator inlet
- Ⓚ Outlet

**CONFIGURATION 1: Open lockshield valves and open thermostatically-controlled unit.**

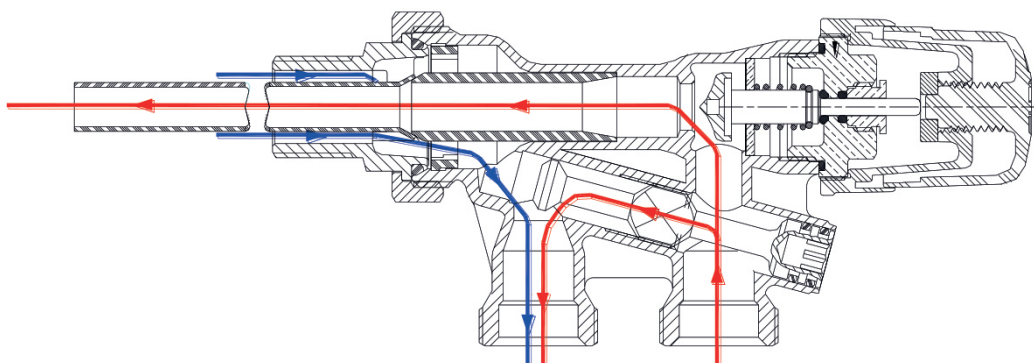
The valves are operated by means of the manual movement of the obturator that intercepts the heat-carrying fluid. The fluid entering the valve from inlet (A) splits in one part intended for the heat exchange to the heating body and the other directed to the next radiator.

The valves are operated by means of the manual movement of the obturator that intercepts the heat-carrying fluid. The fluid entering the valve from inlet (A) splits in one part that supplies the serviced radiator and the other for the next radiator.

The temperature of the fluid feeding the subsequent heating bodies

can be modified by acting on the adjustment lockshield valves of the by-pass; by operating on the obturator stroke, you can calibrate the flow of fluid destined to mixing with the fluid returning from the heating body.

The by-pass flow ranges from a minimum of 50% (lockshield valve completely open anti-clockwise) to a maximum of 100% (lockshield valve completely closed clockwise).

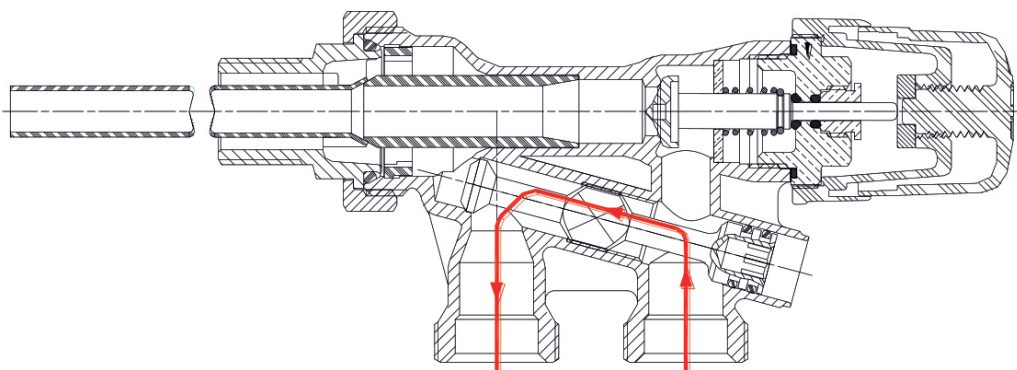


**CONFIGURATION 2: Detentore e gruppo termostattizzabile chiusi.**

To close the valve, rotate the lockshield valve and the thermostatically-controlled unit of the valve all the way clockwise.

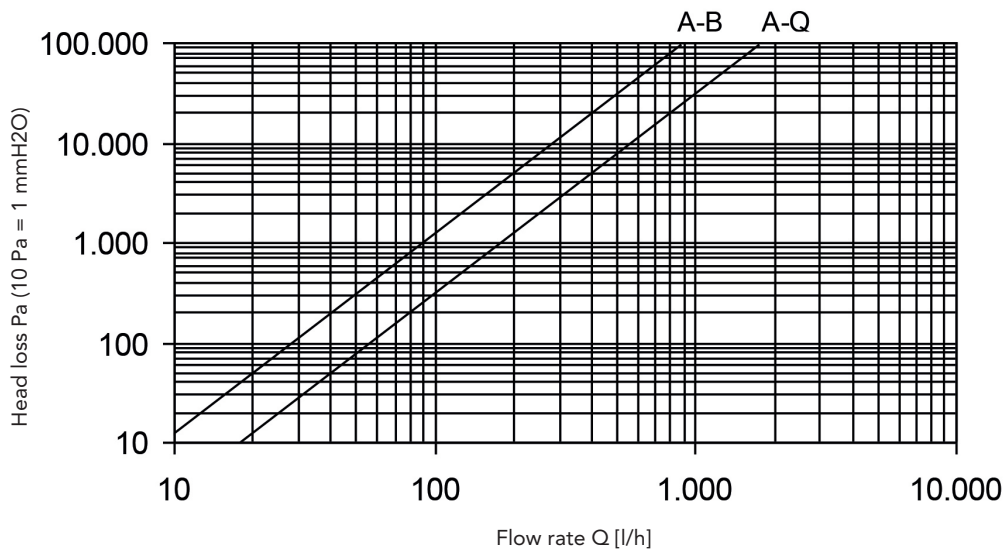
In this configuration, the lockshield valve acts as by-pass. The fluid

entering the valve from inlet (A) directly comes out from the valve through its outlet (Q). This allows excluding the radiator from the heating system, without interrupting the circuit.



## FLUID DYNAMICS FEATURES

### HEAD LOSS OF THE VALVE



Test carried out with lockshield valve open at 50% and valve without thermostatic head.

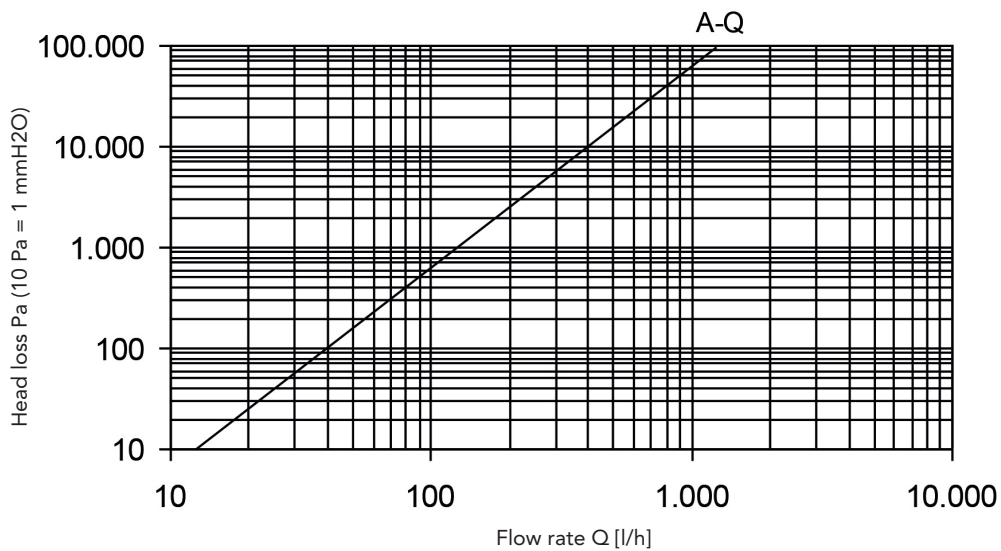
**With path A-B: Kvs = 0.89 m³/h**  
**With path A-Q: Kvs = 1.78 m³/h**

Path A-B: pressure drop between valve inlet (A) and inlet to heating body (B).

The heating body is reached by 50% of the flow rate entering A

Path A-Q: pressure drop to system connections of the valve.

### HEAD LOSS IN BY-PASS



Test carried out with valve without thermostatic head  
 Thermostatically-controlled unit closed  
 Lockshield valve closed

**With path A-Q: Kvs = 1.25 m³/h**

Valve tested in by-pass: pressure drop to system connections of the valve.

All heat-carrying fluid entering in A exits from Q

## THERMOSTATIC HEAD ASSEMBLY

In order to assemble the thermostatic valve on the TERMOFLUX valve, follow the instructions below:

1. Remove the manual adjustment handwheel by loosening it anti-clockwise.
2. Bring the thermostatic head numbered knob to position no.5, reached by turning it anti-clockwise.
3. Position the thermostatic head on the valve's body by leaving the adjustment reference window upwards or, however, in visible position.
4. Tighten the knurled metal ring nut of the thermostatic head on the valve's body until blocked. Once the head is assembled, turn the numbered knob a few times from position "5" to position "\*", for the parts to adjust.

## THERMOSTATIC HEAD WITH REMOTE SENSOR

If the heating body is located where the heat stores, e.g. behind curtains, inside cabinets, underneath shelves or where solar radiations directly cover the valve, use the **thermostatic head with sensor at a distance** (mod. TL 20 code **590.00.10**). This allows placing the sensitive element in the most suitable place to correctly detect room temperature.



## TEMPERATURE ADJUSTMENT

Adjust by turning the numbered knob so the symbol corresponding to the wanted temperature is positioned in the window of reference. (Approximate values)

Symbol	*	1	2	<b>3</b>	4	5
Value °C	7	10	15	<b>20</b>	25	30

(\*) It indicates the anti-freeze position where the valve only opens when the room temperature drops below 7°C. It is recommended during long absence or when wanting to ventilate the room.

## WARNING

It is a good rule to remove the RBM thermostatic head from the valve during the summer, when the heating system is inactive, to protect the RBM thermostatic head's good operation.

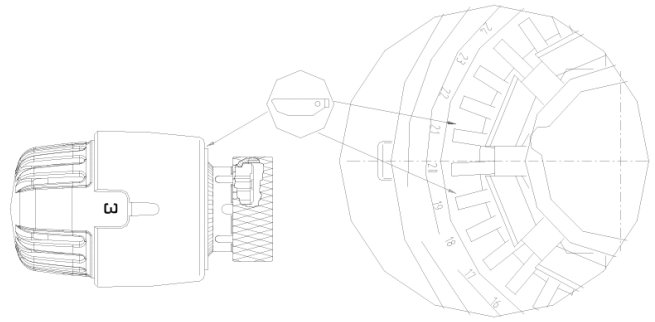
## TEMPERATURE LIMIT

We recommend blocking the knob at the temperature or limit its field of intervention, once temperature is adjusted. Example of handwheel blocking on position: **3 (20 °C)**.

- Highlight no. 3 in the symbols' display window;
- The knob is set-up with numbers referring to the temperature adjusted by the thermostatic head;
- Search for no. 20 (corresponding to 20°C);
- Introduce the relative inserts in the compartments near no. 20;
- The knob will remain blocked on the position of the symbol **3**.

Move the inserts to wanted positions, if wanting to limit adjustment to a higher value.

To block or limit movement, use the inserts with code **209.00.00** available as accessory.



## SERVOMOTOR FOR THERMOSTATIC VALVE

When wanting to control the opening and closing of the **TERMOFLUX** valve, you can use the servomotor for electrothermally-controlled valves (code **306.00.x2**). The servomotor is applied on the valve by means of the present threaded ring nut.

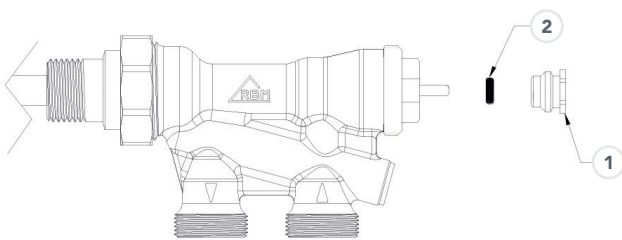
There are two types of electrothermally controlled servomotors: 2 wires (code **306.00.02** power supply 230V AC, **306.00.12** power supply 24V AC) and 4-wire (code **306.00.42** power supply 230V AC, **306.00.52** power supply 24V AC) with auxiliary microswitch.

The servomotor brings the normally closed valve to pressure, when without voltage.

The servomotor can be connected to a room temperature control device like a timed thermostat or room thermostat, adjusting its opening and closing. Refer to the wiring diagrams of the chosen control and command devices' technical sheets, for the electric connection between servomotor and valve.



## MAINTENANCE INTERVENTIONS



Maintenance interventions can be carried out on the **Termoflux** valve. In fact, the valve's OR can be replaced with system running.

Follow the indications below:

- Loosen the valve's handwheel anti-clockwise. Remove the handwheel, uncover the stuffing box housing an OR gasket to be replaced.
- Loosen the stuffing box using CH 10 wrench and replace the OR with the RBM OR (code **5001.045**). Appropriately dispose of the replaced OR.
- Using the specific wrench, tighten the stuffing box in its seat and then the valve's handwheel.

1 Stuffing box

2 OR

## COMBINED FITTINGS

### POLYETHYLENE PIPING

Type of fitting	Number of Threaded connections	Type of threaded connection	Code
FITTING A TIGHTEN	1	Standard RBM Nut	71.12...20.X0 122.12...20.00

### MULTILAYER POLYETHYLENE PIPING

Type of fitting	Number of Threaded connections	Type of threaded connection	Code
FITTING A TIGHTEN	1	Standard RBM Nut	70.10...20.X0 1216.14...16.00

Type of fitting	Number of Threaded connections	Press connections	Code
RACCORDO A PRESS	1 Standard RBM	1	826.14...20.X0

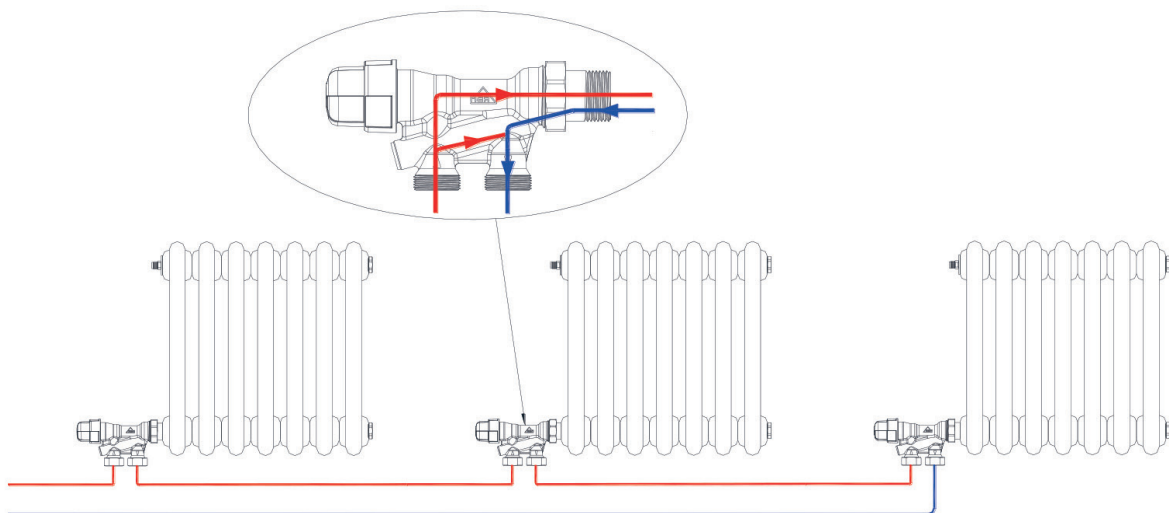
### COPPER PIPING

Type of fitting	Number of Threaded connections	Type of threaded connection	Code
FITTING A TIGHTEN	1	Standard RBM Nut	602.10...16.00 41.10...16.20 41.18.20* (Ø18 pipe only)

\* Provide a reduction, code **57.18.00**, for fitting connection for copper pipe Ø18

## APPLICATIONS

Typical connection diagram  
of the RBM 4-way TERMOFLUX valves



## SPECIFICATION ITEMS

### SERIES 1028

"Termoflux" 4-way valve with thermostatic option for single pipe circuits. Nickel plated brass body. Built-in micrometric lockshield valve. Seals in ethylene-propylene elastomer and nitrile elastomer. Shockproof ABS cap and handwheel. Polymer probe. In-line connections, centre distance 37 mm M standard RBM thread for copper, polyethylene and multilayer pipe fittings. Threaded radiator connection M UNI-EN-ISO 228. Max temperature 110°C. Max operating pressure 10 bar. Probe length 295 mm. Probe outside diameter size 1/2" 10 mm. Probe outside diameter size 3/4" 13 mm. Available sizes 1/2" and 3/4".

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