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Hydronic Solutions

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Thermostatic regulator for domestic hot water recirculation circuits

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code 116451 AUS

Installation, commissioning and servicing instructions

Function

The thermostatic regulator, installed on each return branch of the recirculation circuit, automatically maintains the set temperature. This device modulates the medium flow rate in accordance with the water inlet temperature by means of the action of a dedicated internal thermostatic cartridge. When the water temperature approaches the set value, the obturator progressively reduces the passage. The medium flow rate supplied by the recirculation pump is thus distributed to the other network branches, resulting in effective automatic thermal balancing.

Product range

116451 AUS DN 20 (*3/4"*)

116010
Included as standard on 116451 AUS

Lead Free
WMTS 468
WM-040195

Dimensions

Code	DN	A	B	C	D	Mass (kg)
116451 AUS	20	3/4"	76,5	21,5	71,5	0,472

Technical specifications

Materials

Body:	LOW LEAD dezincification resistant alloy EN 12165 CW724R
Adjustable cartridge	PSU
Hydraulic seals:	EPDM
Adjustment knob:	ABS
Springs:	stainless steel EN 10270-3 (AISI 302)

Connections

3/4” F (DN 20) ((EN 10226-1)

Thermometer/probe pocket:	Ø 10 mm

Performance

Kv max (m^3/h):	1,8
Kv min (m^3/h):	0,3 ± 20 %
Kv (Δt = 5 °C) (m^3/h):	0,6
Max. working pressure:	1600 kPa
Max. differential pressure:	100 kPa
Adjustment temperature range:	40–65 °C
Factory setting:	58 °C
Max. inlet temperature:	90 °C
Temperature gauge	Scale 0–80 °C
	Ø 40 mm
Complies with:	WMTS468:2016 Hot Water System. Recirculation valves
	It complies with WMK Lead Free and Clause A5G4 of NCC 2022 Volume Three (Plumbing Code of Australia)

Function

On reaching the set temperature, the obturator (1), governed by the thermostatic sensor (2), modulates the closure of the hot water outlet (3), thereby aiding circulation towards the other connected circuits. If the temperature decreases, there is the opposite action and the passage reopens, so as to ensure that all the branches of the system reach the required temperature. The characteristic curve of the valve is shown, below.

Installation

Installation of the thermostatic regulator has to be performed by an authorised plumber in accordance with AS/NZS 3500 and local legislation. Before fitting the thermostatic regulator, the pipes must be flushed to ensure that impurities will not reduce its performance. We recommend always installing strainers of sufficient capacity at the inlet from the water mains. System flushing, cleaning and disinfection of the pipework to which the valve is installed shall be performed by suitably qualified persons in accordance with the system component manufacturer's instructions, AS/NZS 3500 along with any other applicable local authority requirements. Exceeding the maximum stated chemical concentrations and/or duration of exposure may negatively impact on the performance of the system and/or components installed such as the pressure reducing valve. Chemical dosed products must be chemically compatible with materials used for the construction of the thermostatic regulator, specified in its technical documentation. The thermostatic regulator can be fitted in any position, vertical or horizontal, by respecting the flow direction indicated by the arrow on the valve body. The thermostatic regulator must be installed according to the diagrams given in this manual. It must be installed in such a way as to allow free access to the device, for checking operation and maintenance; it is advisable to install isolating valves.

Temperature adjustment

The temperature is set at the desired value by turning the special knob. The graduated scale shows the temperatures at which the indicator can be set. It is advisable to set the valve temperature at a value about 5 °C higher than the inlet temperature, taking into account the heat losses along the line, to limit the head required at the recirculation pump. Take care to ensure the minimum flow rate at the mixing valves in the central heating system.

Adjustment locking

After adjusting the temperature, the setting can be locked at the desired value using the control knob. For this purpose, unscrew the locking screw at the top of the control knob, remove the knob and then put it back on so that the internal reference couples with the protrusion on the knob holder nut.
Caution when this block is used, the reference of the indication of the temperature values on the knob is lost. To restore it, completely unscrew the regulating headwork counter-clockwise. Reposition the knob on MAX value. Tighten the locking screw.

Maintenance

The adjustment cartridge can be removed from the valve body for checking, cleaning or replacement (with the system cold and empty).

Application diagrams

Safety

If the thermostatic regulator is not installed, commissioned and maintained properly in accordance with the instructions contained in this manual, it may not operate correctly, and may cause damage to objects and/or persons.

Make sure that all the connections are water-tight.

When installing the thermostatic regulator, make sure not to over-tighten the connections to the valve, as, over time, a failure can occur with subsequent water leakage causing damage.

In the case of highly aggressive water, arrangements must be made to treat the water before it enters the thermostatic regulator valve, in accordance with current legislation. Otherwise, the thermostatic regulator may be damaged and not function correctly.

Leave this manual for the user

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