



KEMPER 'Eta-Therm', automatic valve



- Hydraulic balance of circuits
- Automatic thermostatic regulating valve with minimum flow capability $k_{v,min} = 0.05$, $k_{v,max} = 0.4$
- Water contacting parts made of bronze
- Multifunction isolation and regulation head
- Available as a concealed valve
- In-line servicing- Integrated pasteurisation function

KEMPER 'Eta-Therm'

A potential problem in secondary domestic hot water systems is Legionnaire's disease resulting from the growth of the Legionella bacteria. Legionella bacteria starts to multiply between 30°C to 45°C but is minimised at temperatures over 50°C. It is recommended that the system is run between 55°C and 60°C.

The KEMPER 'Eta-Therm' automatic regulating valve is designed for use on small recirculating secondary hot water systems to maintain the water temperature between 56°C and 58°C. It is generally used on individual circuits of less than 12m in length, or to control individual bathrooms or apartments. When set at its normal operating position the valve never isolates there-

fore it prevents stagnation and stops the temperature dropping below 50°C. During periods of low, or no demand the valve automatically regulates to maintain the set water temperature.

This also has the advantage of keeping the supply pipe work to the outlets 'live', preventing water wastage; when running off water waiting for the supply temperature to increase. Regulating valves in the riser helps the function of the 'Eta-Therm' due to the valve's authority.

Therefore, 'Eta-Therm' must not be installed in the riser. When the system requires thermal disinfection, this is achieved without any manual adjustment of the valve, which responds automatically to the increasing circulation temperature.

The valves should be installed at the end of the secondary circuit to ensure the water upstream of the valve is maintained between 56°C and 58°C. If the design specification or site conditions require a different set temperature this can be easily achieved within the range of 56 to 58°C.

Technical Specification

The KEMPER 'Eta-Therm' valve is WRAS approved for use on potable water systems. The valve is manufactured in bronze to BS EN 1982 CC491K and is therefore dezincification resistant.

The valve can be manual isolated eliminating the need to install a separate isolating valve on the return. 'Eta-therm' valves are also available fitted with a preformed insulation shell and extended neck for concealed installation.

The 'Eta-Therm' valve is normally supplied with a male parallel thread for use with union tails, Mapress copper, press-fit copper or with male taper threads to BS EN 10226-2.

Adjustable control range	56°C to 58°C
Factory pre-set temperature	58°C
Max. permissible operating temperature	90°C
Control accuracy	±1K
Maximum static pressure	PN16
Operating pressure range	0 to 6 bar
Nominal sizes DN 15	kv-ranges in m ³ /h at Δp = 100 kPa 0.05 to 0.4
Valve type	Figure 130 regulating valve for exposed installation Figure 540 concealed regulating valve

Valve Seat Cleaning

In order to regulate low flow rates the seat orifice and regulating disk must create a very small flow path. One concern for valves in these conditions is the collection of fine debris around the seat area which could block the valve.

Should this occur the seat can be cleaned without the need to drain down, or remove the valve from the system.

Correct Sizing

As with all regulating valves it is important they are sized correctly to give the optimum performance. It is important to keep the water velocity as high as possible so installing over sized pipe work or valves may allow bio films to form and cause further problems.

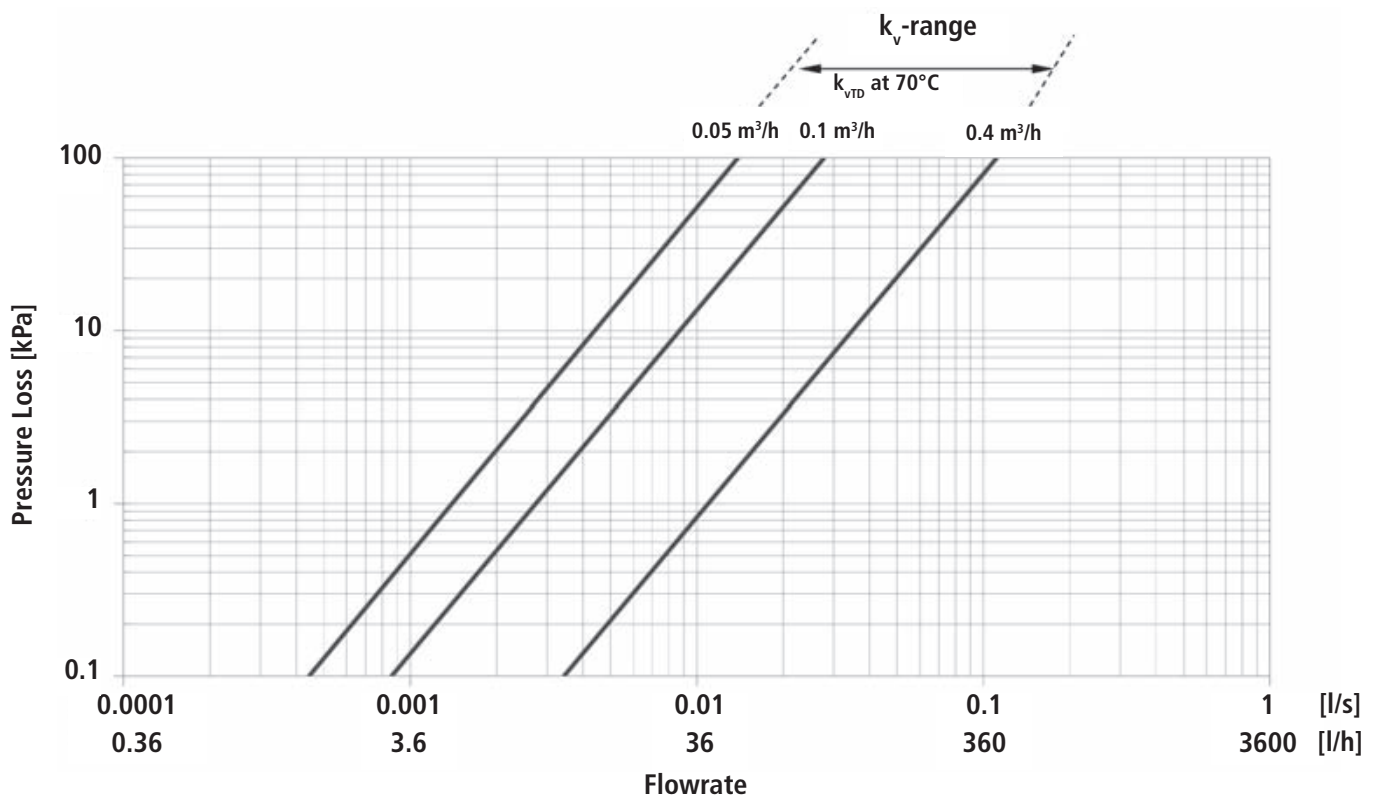
For large systems KEMPER has developed the Dendrit program which considers the complete hot water system and recommends sizes of 'Multi-Therm', 'Eta-Therm' and 'Multi-Fix' valves in addition to pipe sizes for the main pipework and individual branches. For smaller or individual circuits a spread sheet is available to enable the designer to accurately size valves and pipework. Flow data charts are available to relate required flow rate to pressure loss through the valve.

Mounting instruction

Important:

Before installing the 'Eta-Therm' valve the pipework has to be flushed and to be clean.

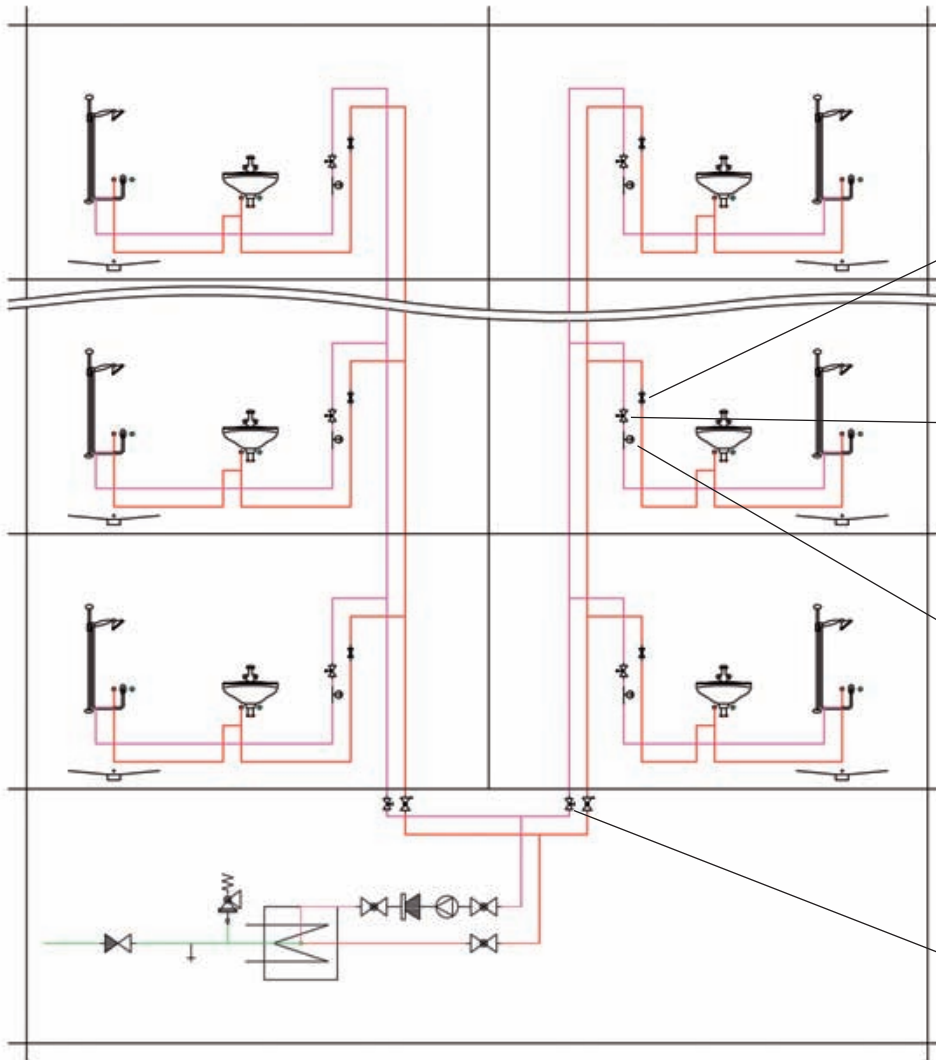
Flow chart 'Eta-Therm' floor regulating valve, DN 15



Schematic – Extract from a major project



KEMPER 'Eta-Therm' thermostatic regulating valve for meeting the hygiene and comfort demands in individual sanitary installations (as in a hotel, hospital or nursing home). Also available as a flush mounted valve.



Maximum flow isolating ball valve (VAV) Figure 385 or Figure 585



'Eta-Therm' Figure 130 or Figure 540



'Multi-tee' Figure 129 or Figure 128 (optional applications)



'Multi-Fix' Figure 150 or Figure 151

Schematic with 'Eta-Therm' and 'Multi-Tee' in the bathrooms and 'Multi-Fix' on the riser.

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