FVR

2-way zone valve

The zone valve is intended for zone control systems together with the thermal actuators in the RTA(O) M100 series. The valve can control water flow to cooling as well as heating batteries, such as convectors, cooling ceilings etc.

- ✓ Size DN10...DN20
- ✓ Adjustable kvs between 0.01...1.1
- ✓ Media temperature 2…90°C
- ✓ Pressure rating PN10
- ✓ Compact design

Function

The valve is normally open. When using a NC actuator the valve is closed when no voltage is applied. Using a NO actuator will give the opposite result.

The valve is closed when the stem is in its lowest position and completely open in the highest position.

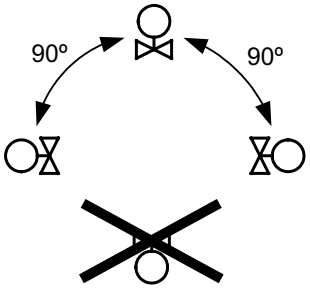
Setting of kvs value

The series has a setting device hidden under the packing-box. Adjustment is made using adjustment spanner FN2 to open a certain numbers of revs according to a pressure-drop diagram. The tool FV5 can be used to further simplify the adjustment.

Installation

The valves are delivered with a grey protection-cap. During the system installation the protection-cap can be used to manually open/close the valve. Turning the cap clockwise to its end position closes the valve.

- Before installation of the control valve, ensure that the pipe is clean. Make sure that pipe scale, metal chips, welding slag and other foreign materials are removed.
- The valve should never be mounted at an angle of more than 90°.



- Install the valve according to the fluid direction arrow shown on the valve.
- The actuator is mounted on the valve with the adapter (VA54) which is supplied with the actuator.

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REGIN THE CHALLENGER

Technical data

Application	Heating systems, cooling systems, radiators
Pressure rating	PN10
Connection, actuator	M28 x 1.5
Max. leakage	0 % of the kvs value
Media	Hot water, cold water, glycol-mixed water (max. 30 % glycol)
Media temperature	2…90 °C
Stroke	1.7 mm

Material

Body	Chromed brass CW614N
Seat	Brass CW614N
Stem	Stainless steel 1.4305
Packing box	EPDM
Bonnet	Brass CW614N

Models

Article	Nominal diameter	Connection, internal thread	Connection, external thread	Kvs (adjustable)	ΔPmax	ΔPs	Actuator
FVR10	DN10	G3/8" (inlet)	M22 x 1.5 (outlet)	0.01…0.9	30 kPa	150 kPa	RTA(O)M100
FVR15	DN15	G1/2" (inlet)	M26 x 1.5 (outlet)	0.01…0.9	30 kPa	150 kPa	RTA(O)M100
FVR20	DN20	G3/4" (inlet)	M34 x 1.5 (outlet)	0.01…1.1	30 kPa	150 kPa	RTA(O)M100

ΔPs constitutes the max. permitted differential pressure at which the valve actuator can safely close against the pressure.

ΔPmax constitutes the max. permitted differential pressure over the flow path of the valve for the entire actuating range of the actuator (i.e. open valve).

Valve connections, outlet

Article	Description	Connection	Valve
4161201	Tail and nut, for valve outlet (external metric thread on the valve)	3/8" (M22 x 1.5)	RTV10, FVR10
4161202	Tail and nut, for valve outlet (external metric thread on the valve)	1/2" (M26 x 1.5)	RTV15, FVR15
4161203	Tail and nut, for valve outlet (external metric thread on the valve)	3/4" (M34 x 1.5)	FVR20

Valve connections, outlet, copper tubing

Article	Description	Connection	Valve
4161841	Nut and olive, for valve outlet (external metric thread on the valve)	3/8" (M22 x 1.5), K12	RTV10, FVR10
4160801	Nut and olive, for valve outlet (external metric thread on the valve)	1/2" (M26 x 1.5), K15	RTV15, FVR15

Valve connections, inlet, copper tubing

Article	Description	Connection	Valve
4161402	Nut and olive, for valve inlet (internal pipe thread on the valve)	3/8', K10	RTV10, FVR10
4161403	Nut and olive, for valve inlet (internal pipe thread on the valve)	3/8', K12	RTV10, FVR10
4161101	Nut and olive, for valve inlet (internal pipe thread on the valve)	1/2", K10	RTV15, FVR15
4161102	Nut and olive, for valve inlet (internal pipe thread on the valve)	1/2", K12	RTV15, FVR15
4161103	Nut and olive, for valve inlet (internal pipe thread on the valve)	1/2", K15	RTV15, FVR15

Pre-set tooling

Article	Description
FV5	Pre-set tooling, key and scale (FVR valves)
FN2	Pre-set tooling, basic key (FVR valves)

Suitable valve actuators

Valve actuator	Supply voltage	Control signal
RTAM100-24	24 V AC/DC	On/off, NC
RTAOM100-24	24 V AC/DC	On/off, NO
RTAM100-24A	24 V AC	0...10 V DC, NC
RTAOM100-24A	24 V AC	0...10 V DC, NO
RTAM100-230	230 V AC	On/off, NC
RTAOM100-230	230 V AC	On/off, NO

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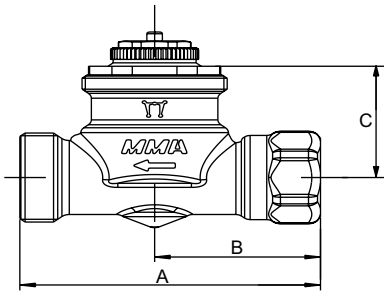
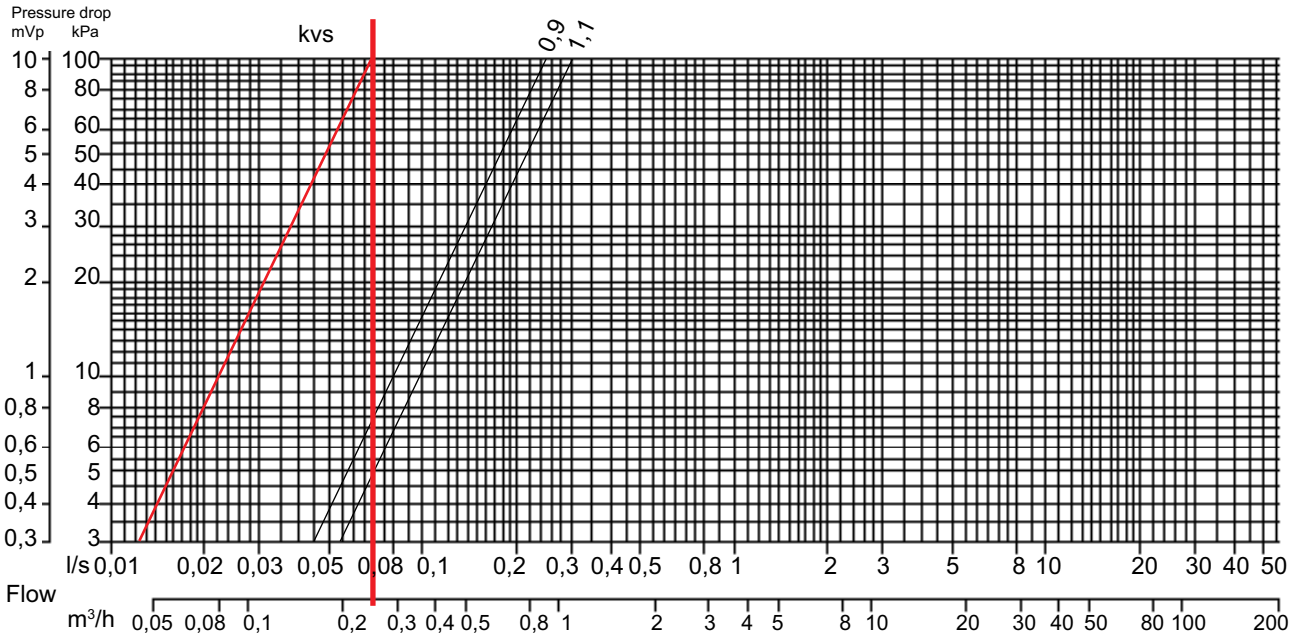
Dimensions



Model	A	B	C	Weight (g)
FVR10	51	29	33	150
FVR15	58	32	33	180
FVR20	68	35	30	275

Measurements in mm unless otherwise specified.

Pressure drop diagram



The valves have adjustable kvs value (kvs = the flow in m3/h at a pressure drop of 100 kPa).

To draw a curve for other settings than the pre-drawn values:
Draw a vertical line through the flow. The starting point of the angled line is where the vertical line intersects the top of the chart (at 100 kPa). The angled line should be parallel to the pre-drawn lines.
In the example above, the kvs value = 0.25.