VTRE

Three-way Mixing Valve

The VTRE is a 3-way rotating sleeve valve, designed to be used either as a mixing or a diverting valve.

Typical applications include hydronic heating and air handling systems with moderate demands on differential pressure and leakage.

The VTRE valve can be used in systems containing up to 50% glycol.

The VTRE valve is delivered with a handle for manual operation.

The actuator is supplied separately.

SPECIFICATIONS

Valve type . . . . . rotating sleeve
Characteristic . . . . . see flow diagram
Operating angle . . . . . 90°
Pressure rating . . . . . PN 6

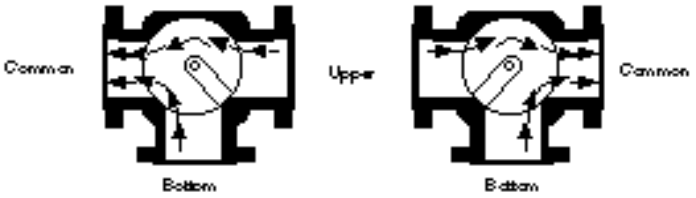
Water temperature

Max. . . . . 110 °C
Min. . . . . –10 °C
Max pressure drop . . . . . 50 kPa
Leakage . . . . . max. 1 % of KV

Materials

Body . . . . . cast iron
Sleeve . . . . . brass
Connections . . . . . flanged DIN 2531

OPERATION



OPERATION

The water flow through the valve is controlled by a sleeve which is rotated. The stem has a 90° rotation.

The ports are unmarked. The valve is delivered with a pointer. The pointer indicates the mid-part of the sleeve.

The VTRE is symmetrical with regard to the opposing ports, shown horizontal in figure 1. The combined flow port will in the left figure be the left port and in the right figure the right port.

The other two ports can serve either as control port or bypass port.

Figures show mixing operation. When VTRE is used for diverting operation, flows will be reversed.

Schneider Electric

INSTALLATION

The valve should, whenever possible, be mounted in the return line in order not to expose the actuator to unnecessarily high temperatures. The actuator should not be mounted under the valve.

A filter should be mounted upstream of the valve, if the medium contains suspended solids.

VTRE can be installed either as mixing or diverting valve. Figures 2 to 5 show some typical installations.

The following should be noted:

When installed according to figures 2 and 5, never install a circulating pump between the boiler and the valve.

When installed according to figures 3 and 4, and when there are two or more secondary circuits, balancing valves should be fitted to balance water flows.

SELECTION OF ACTUATOR

The M9 actuator is controlled with a 24 V AC increase/decrease signal and is intended for control of heating systems.

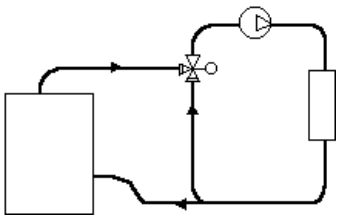
The EM9 actuator is controlled with a 2-10 V signal and are intended for air handling systems.

NOTE! The VTRE valves require that the actuators be adjusted for 90° rotational travel, see below.

No mounting kit is required for attaching VTRE valves to theM9 and EM9 actuators.

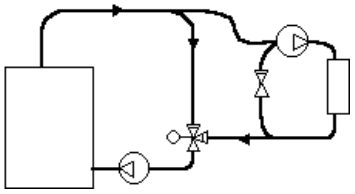
M9, EM9		Valve type	
Valve size		Diverting kPa	Mixing kPa
DN	20	50	50
DN	25	50	50
DN	32	50	50
DN	40	50	50
DN	50	50	50
DN	65	50	50
DN	80	50	50
DN	100	50	50
DN	125	50	50
DN	150	50	50

INSTALLATION



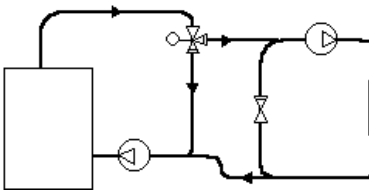
Mixing valve in the supply line.

Fig 2



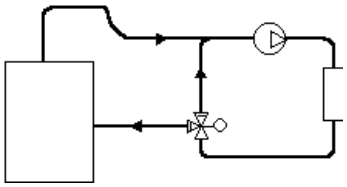
Mixing valve in the return line.

Fig 3



Diverting valve in the supply line.

Fig 4



Diverting valve in the supply line.

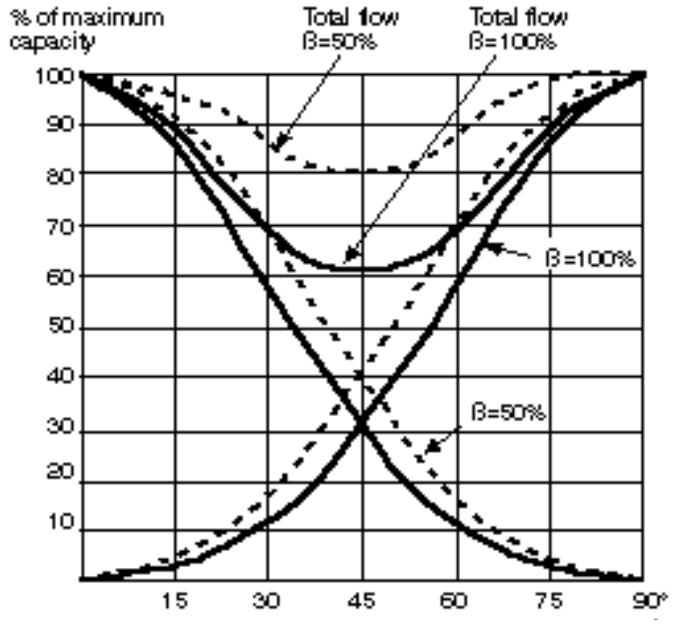
Fig 5

ACCESSORIES

Part numbers for the M9 and EM9 actuators.

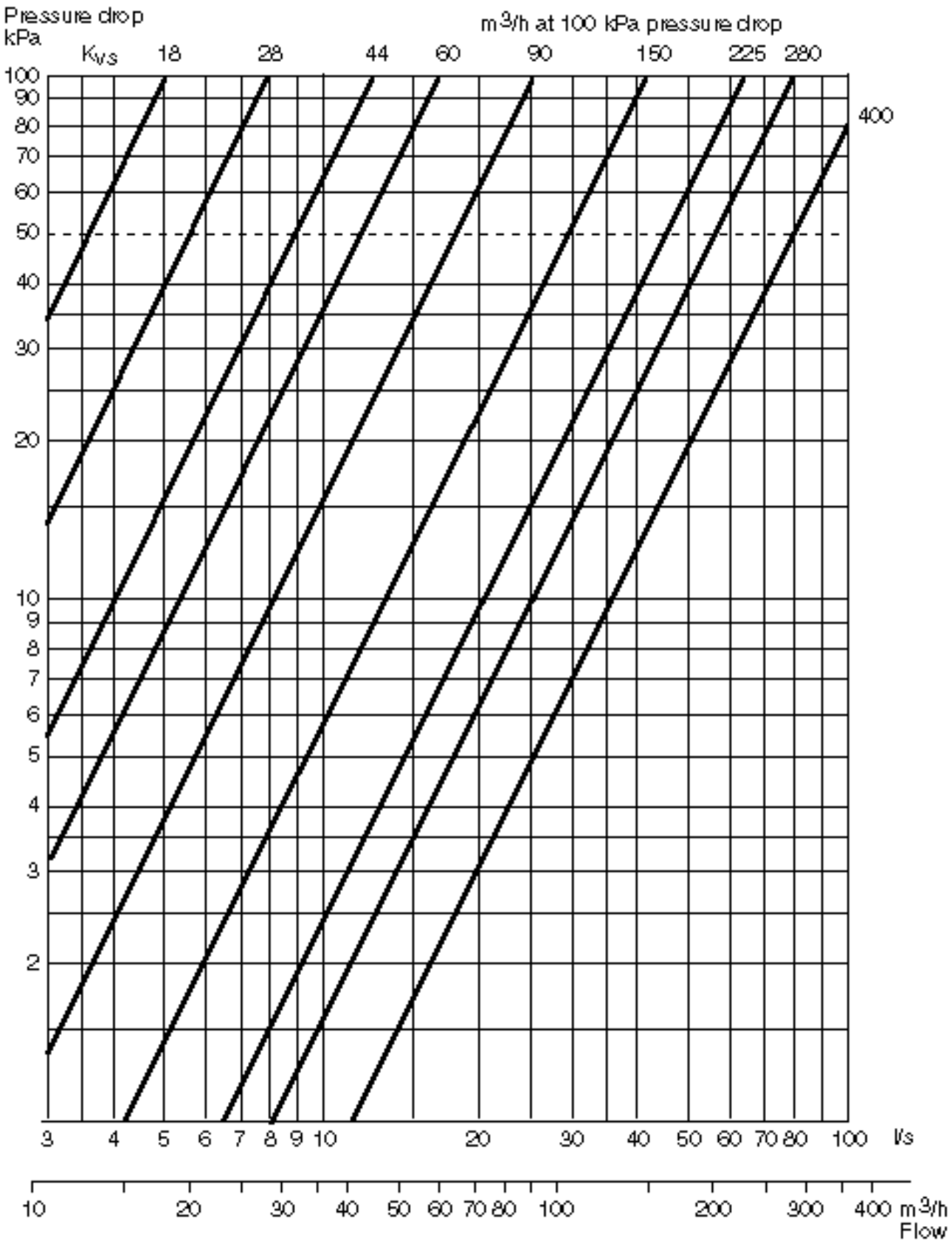
Part number	
M9B-24	860-1010-000
M9B-230	860-1020-000
EM9	860-1110-000

FLOW DIAGRAM



The curve shows total flow and control port flows for valve authorities (ß) of 100 % and 50 %, respectively.

PRESSURE DROP CHART



SPARE PARTS

Reconditioning kit

Note! Only valid for valves marked “S”.

Complete reconditioning kit containing all parts, except valve body.

Part number

DN 65. 080-5665-005
DN 80. 080-5666-005
DN 100. 080-5667-005
DN 125. 080-5668-005
DN 150. 080-5669-005

Gasket kit

Bonnet gasket and two O-rings.

Part number

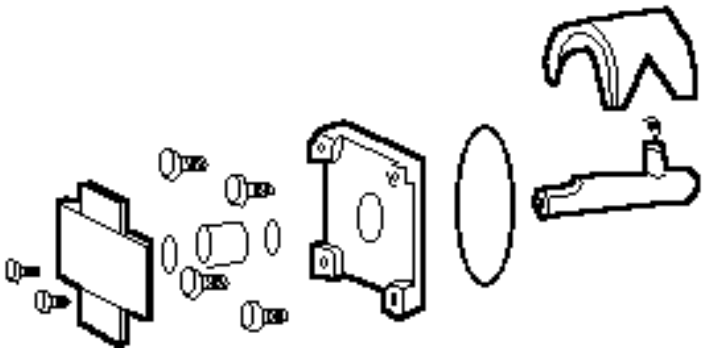
DN 65. 080-5098-005
DN 80-150 080-5099-005

PART NUMBERS, KVS VALUE

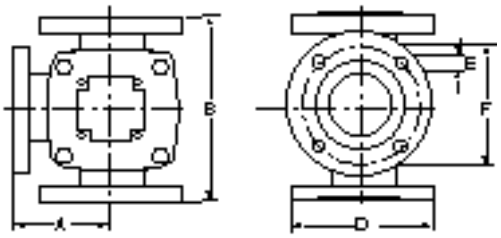
Size DN	K_{VS}	Part Number
20	12	731-7039-000
25	18	731-7041-000
32	28	731-7045-000
40	44	731-7049-000
50	60	731-7053-000
65	90	731-7057-000
80	150	731-7061-000
100	225	731-7065-000
125	280	731-7067-000
150	400	731-7069-000

K_{VS} values (m^3/h at 100 kPa –1 bar–pressure drop).

RECONDITIONING KIT



DIMENSIONS AND WEIGHT



Size DN	K_{VS}	Dimension (mm)					Weight kg
		A	B	D	E	F	
20	12	70	140	90	4×11.5	65	2.7
25	18	75	150	100	4×11.5	75	3.5
32	28	80	160	120	4×15	90	4.6
40	44	87.5	175	130	4x15	100	5.6
50	60	97.5	195	140	4×15	110	7.9
65	90	100	200	160	4x15	130	9.2
80	150	120	240	190	4×18	150	14.2
100	225	132.5	265	210	4x18	170	19.0
125	280	150	300	240	8×18	200	25.8
150	400	175	350	265	8x18	225	35.5