

B6R: 3-way valve with female thread, PN 16 (el.)

How energy efficiency is improved

Efficiency means precise and reliable control

Features

- Regulating valve free of silicone grease with female thread DIN/EN ISO 228-1 G for the control of cold/hot water in closed circuits
- In combination with valve actuators AVM 322, AVM 322S, AVM 234S, AVF 234S
- Equal-percentage or linear characteristic, can be set with SUT valve actuators (SAUTER Universal Technology) to linear or equal-percentage
- Control passage A–AB closed when the spindle is moved out
- Can be used as a control valve or a distribution valve
- Valve body and seat made of gunmetal
- Stuffing box made of brass with wiper ring and double O-ring seal made of EPDM
- Stainless steel spindle

Technical data

Parameters		
Control ratio		> 50:1
Leakage rate of control passage A-AB		≤ 0.05% of k_{VS} value
Leakage rate of mixing passage B-AB		≤ 1% of k_{VS} value
Valve stroke		14 mm
Valve characteristic, mixing passage		Linear
Ambient conditions		
Operating temperature ¹⁾		–15...130 °C
Operating pressure up to 120 °C		16 bar
Operating pressure up to 130 °C		13 bar
Standards and directives		
Pressure and temperature data		DIN 2401
Flow parameters		VDI/VDE 2173

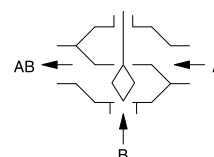
Overview of types

Type	Nominal diameter	k_{VS} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
B6R15F330	DN 15	1 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
B6R15F320	DN 15	1.6 m³/h	equal-percentage	Stainless steel	G½"	1.2 kg
B6R15F310	DN 15	2.5 m³/h	equal-percentage	brass	G½"	1.2 kg
B6R15F300	DN 15	4 m³/h	equal-percentage	brass	G½"	1.2 kg
B6R15F200	DN 15	4 m³/h	linear	brass	G½"	1.2 kg
B6R25F310	DN 25	6.3 m³/h	equal-percentage	brass	G1"	1.6 kg
B6R25F300	DN 25	10 m³/h	equal-percentage	brass	G1"	1.6 kg
B6R25F210	DN 25	6.3 m³/h	linear	brass	G1"	1.6 kg
B6R25F200	DN 25	10 m³/h	linear	brass	G1"	1.6 kg
B6R40F310	DN 40	16 m³/h	equal-percentage	brass	G1½"	3.4 kg
B6R40F300	DN 40	25 m³/h	equal-percentage	brass	G1½"	3.4 kg
B6R40F210	DN 40	16 m³/h	linear	brass	G1½"	3.4 kg

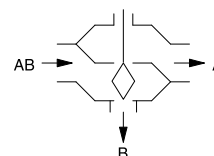
¹⁾ At temperatures below 0 °C, use stuffing box heater (accessory)



B6R25F300



Control valve



Distribution valve



Type	Nominal diameter	k_{VS} value	Valve characteristic	Materials for valve plug	Type of connection	Weight
B6R40F200	DN 40	25 m³/h	linear	brass	G1½"	3.4 kg
B6R50F300	DN 50	35 m³/h	equal-percentage	brass	G2"	4.6 kg
B6R50F200	DN 50	35 m³/h	linear	brass	G2"	4.6 kg

Accessories

Type	Description
0217268001	Stuffing box heater 15 W, 24 V
0217268004	Stuffing box heater 15 W, 230 V
0360391015	Screw fitting, DN 15, incl. seal, 3 pcs. required
0360391025	Screw fitting, DN 25, incl. seal, 3 pcs. required
0360391040	Screw fitting, DN 40, incl. seal, 3 pcs. required
0360391050	Screw fitting, DN 50, incl. seal, 3 pcs. required
0360429000	Adhesive label for distribution valve
0378034001	Stuffing box; with synthetic lubricant; max. 130 °C

💡 **0217268***** Stuffing box heater 15 W, light alloy housing, IP 54, 3 × 0.75 mm² power cable, earth connector, length 1 m, ferrule

💡 **0360429** Sheet with 21 adhesive labels for flow change; see combinations

Combination of B6R with electrical actuators

i **Warranty:** The technical data and pressure differences indicated here are applicable only in combination with SAUTER valve actuators. The warranty does not apply if used with valve actuators from other manufacturers.

i **Definition of Δp_s :** Maximum admissible pressure drop in the event of a malfunction (pipe break after the valve) at which the actuator reliably closes the valve by means of a return spring.

i **Definition of Δp_{max} :** Maximum admissible pressure drop in control mode at which the actuator reliably opens and closes the valve.

Pressure differences

Actuator	AVM234SF132	AVF234SF132 AVF234SF232	AVM322F120 AVM322F122	AVM322SF132
Actuating power	2500 N	2000 N	1000 N	1000 N
Control signal	2-/3-pt., 0...10 V, 4...20 mA	2-/3-pt., 0...10 V, 4...20 mA	2-/3-point	2-/3-pt., 0...10 V, 4...20 mA
Running time	28/56/84 s	28/56/84 s	120/240 s	120/80 s

Δp [bar]

As control valve	Δp_{max}	Δp_{max}	Δp_s	Δp_{max}	Δp_{max}
B6R15F330 B6R15F320 B6R15F310 B6R15F300 B6R15F200 B6R25F310 B6R25F300 B6R25F210 B6R25F200	4.0	4.0	16.0	4.0	4.0
B6R40F310 B6R40F300 B6R40F210 B6R40F200	3.0	3.0	11.5	3.0	3.0
B6R50F300 B6R50F200	2.0	2.0	8.6	2.0	2.0

Actuator	AVM234SF132	AVF234SF132 AVF234SF232	AVM322F120 AVM322F122	AVM322SF132
As distribution valve				
B6R15F330 B6R15F320 B6R15F310 B6R15F300 B6R15F200	3.0	3.0	16.0	4.0
B6R25F310 B6R25F300 B6R25F210 B6R25F200	2.0	2.0	16.0	4.0
B6R40F310 B6R40F300 B6R40F210 B6R40F200	1.5	1.5	16.0	3.0
B6R50F300 B6R50F200	1.0	1.0	16.0	2.0

⚡ Accessories required: Mounting set 0372338001 for AVM 234 and AVF 234

⚡ Accessories required: Mounting set 0510240012 for AVM 322(S)

Description of operation

The valve can be moved to any intermediate position with an electric or hydraulic actuator.

Used as a control valve	Used as a distribution valve

Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product documents must also be adhered to. Changing or converting the product is not admissible.

Engineering and fitting notes

In any position except suspended - see related actuator.

When the actuator is mounted on the valve, make sure the plug is not twisted on the two stops (seats) (this can damage the sealing surface).

When insulating the valve, it may only be insulated up to the connecting clip of the actuator.

To increase the functional reliability of the valves, the system should conform to DIN/EN 14336 (heating systems in buildings). DIN EN 14336 states, amongst other things, that the system has to be flushed through before being put into service. Water quality as per VDI 2035.

Additional technical data

Type	Δp_v	
B6R15F*30	4	(3)
B6R15F*20	4	(3)
B6R15F*10	4	(3)
B6R15F*00	4	(3)
B6R25F*10	4	(2)
B6R25F*00	4	(2)
B6R40F*10	4	(1.5)
B6R40F*00	4	(1.5)
B6R50F*00	3	(1)

Δp_v in bar = maximum pressure difference over the valve at every stroke position, limited by noise level and erosion (maximum values without limitation by actuating force). The values in brackets apply to "using as a distribution valve".

Technical information

SAUTER slide rule for valve sizing	7090011001
Manual on slide rule	7000129001
Technical manual on control units Parameters, fitting instructions, control Pneumatic control units, general information	7000477001

Version information

Valve body with female thread. Sealing surface metallic. Flat seal on body made of copper. Stuffing box with ethylene-propylene O-ring.

Material number as per DIN

	DIN material no.	DIN designation
Valve body	2.1096.01	G-Cu Sn 5 Zn Pb (Rg 5)
Valve seat	2.1096.01	G-Cu Sn 5 Zn Pb (Rg 5)
Spindle	1.4305	X 12 Cr Ni S 18 8
Plug	2.0402.26	Cu Zn 40 Pb 2 F43
Plug V6R15F*20...F*50	1.4305	X 12 Cr Ni S 18 8
Stuffing box	2.0401.10	Cu Zn 39 Pb 3 F36

Additional details on the definitions of pressure difference

Δp_v :

Maximum admissible pressure difference over the valve at every stroke position, limited by noise level and erosion.

With this parameter, the valve is characterised as a flow element with specific hydraulic behaviour. Monitoring the cavitation and erosion along with the associated noise increases the service life and the operational capacity.

Δp_{max} :

Maximum admissible pressure difference over the valve at which the actuator can reliably open and close the valve.

The following are considered: Static pressure and flow effects. This value ensures trouble-free stroke movement and closing of the valve. The value Δp_v of the valve is never exceeded.

Δp_s :

Maximum admissible pressure difference over the valve in the event of a malfunction (e.g. power failure, excessive temperature or pressure, pipe break) at which the actuator can close the valve tightly and, if necessary, maintain the full operating pressure against atmospheric pressure. Because this is a safety function with a rapid stroke movement, Δp_s can be greater than Δp_{max} or Δp_v . The disruptive flow effects that arise here are quickly passed through and are of minor importance in this mode of operation.

For 3-way valves, the values only apply to the control passage.

Δp_{stat} :

Line pressure behind the valve. This essentially corresponds to the idle pressure when the pump is switched off, caused for example by the fluid level in the system, increased pressure due to pressure tanks, steam pressure, etc.

For valves that close with pressure, the static pressure plus the pump pressure are used.

Disposal

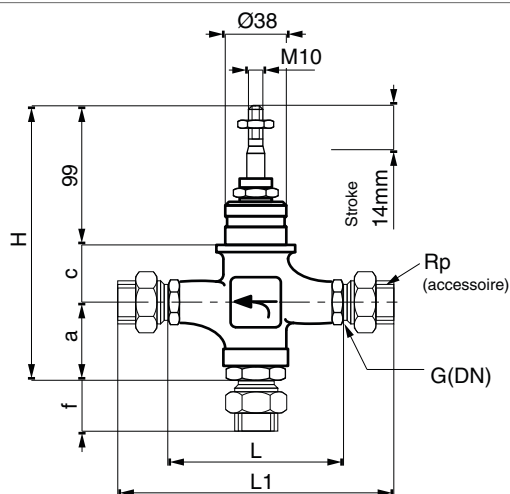
When disposing of the product, observe the currently applicable local laws.

More information on materials can be found in the Declaration on materials and the environment for this product.

Dimension drawing

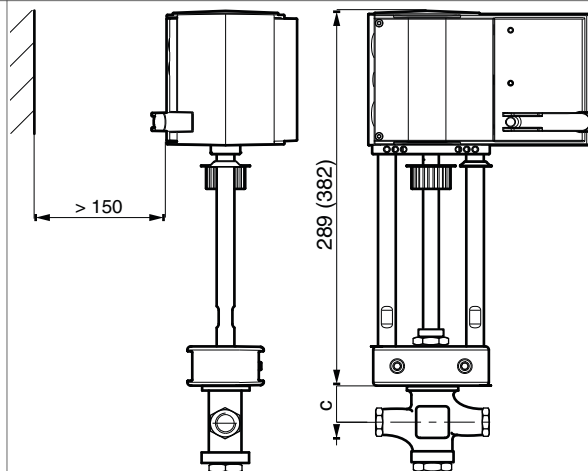
5M100

B6R

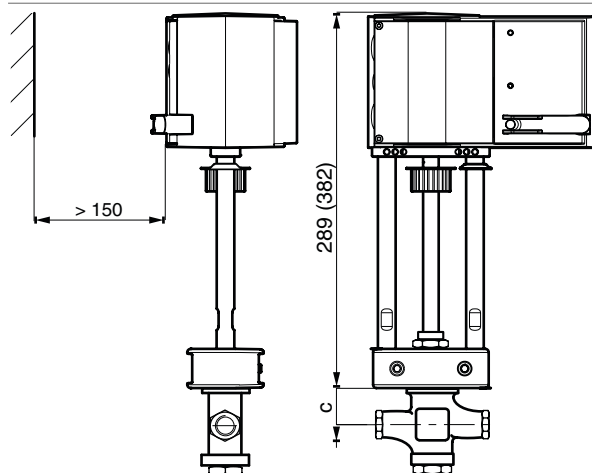


DN		a	c	f	H	L	L1	G	Rp
15	1/2"	59	29	37	187	85	159	1/2	1/2
25	1"	69	33	43	201	110	196	1	1
40	1 1/2"	76	47	53	222	150	256	1 1/2	1 1/2
50	2"	98	57	57	254	180	294	2	2

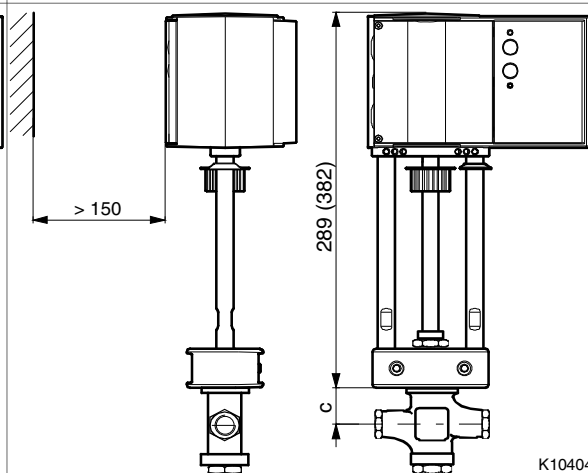
AVM 2**



AVF 2**



AVN 2..



K10404

Determining the length:

Take dimension "c" from the valve dimension drawing