V22: Small straight-way valves

The 2-way valves of the type V22 serve for the regulation of heating and cooling systems. They are ideally appropriate for the use with thermo-electric actuators for the energy-efficient single room control in the area of building services and automation.

The valve body made of cast brass, the spindle made of nickel-plated brass, and the cone with soft seal made of EPDM in conjunction with compression glands with O-ring sealing, allow a leakproof operation of these high-quality valves. Combined with a thermal actuator, the valve is controlled to the positions "Open" and "Closed". The force necessary for pressing the spindle and thus for closing the valve comes from the thermal actuator; the resetting action is performed by the spring in the valve.

1.1 Features

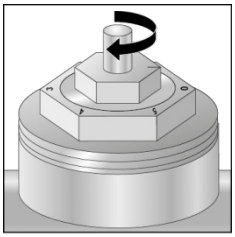
- Nominal pressure 16 bar
- Nominal width DN10 to DN20
- Characteristic curve On/Off, almost linear
- Adjustable Kv value
- Standard variant flat sealing
- The valve is closed when the spindle is pressed in
- Closing action against the load
- Valve with exterior thread according to DIN EN ISO 228-1 class B
- Valve body made of cast brass
- Spindle made of nickel-plated brass
- Cone with soft seal of EPDM
- Compression gland with O-ring sealing

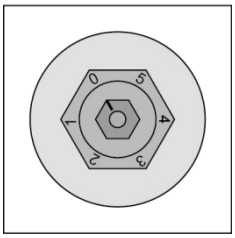
1.2 Variants

The V22 valves are available in different variants with different connections and adjustable KV values:

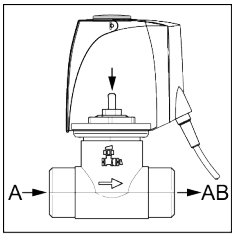
Type	Nominal width DN	K_{VS} value (in m³/h) in basic setting 0	Valve travel (in mm)	Adjustable KV values (in m³/h)		Connections	Sealing type	Max. differential pressure at 100 N (in bar)	Weight (in g)	Order No.
				Position	Value					
V22 10101-21N	10	0.63	3	5	0.60	G1/2B	flat sealing	2.5	180	126785
				4	0.55					
				3	0.50					
				2	0.40					
				1	0.20					
V22 10101-11N	10	1.0	3	5	0.85	G1/2B	flat sealing	2.5	180	126784
				4	0.63					
				3	0.40					
				2	0.30					
				1	0.20					
V22 10101-01N	10	1.6	3	5	1.50	G1/2B	flat sealing	2.5	180	126783
				4	1.30					
				3	1.00					
				2	0.63					
				1	0.20					
V22 10151-11N	15	2.5	3	5	2.40	G3/4B	flat sealing	1.8	280	126787
				4	2.20					
				3	1.90					
				2	1.10					
				1	0.30					
V22 10151-01N	15	3.5	4	5	3.10	G3/4B	flat sealing	1.8	280	126786
				4	2.90					
				3	2.50					
				2	1.90					
				1	1.00					
V22 10201-01N	20	4.5	4	5	4.20	G1B	flat sealing	1.0	330	126788
				4	3.90					
				3	3.00					
				2	1.90					
				1	1.00					

2 Preparation, installation and function



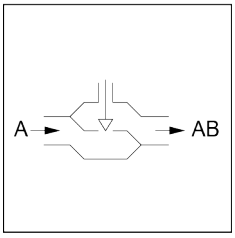


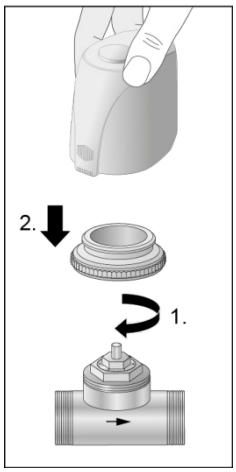
The desired K_V value is adjusted by means of a 7 mm open-end wrench. The valves have marks allowing a precise adjustment of the desired value.
In the basic setting 0 (factory setting) the valve is set to the engraved K_{VS} value, which corresponds to the maximum flow rate.



The straight-way valve (pass A-AB) is closed when the thermal actuator presses in the spindle. Resetting is performed by the force of the spring in the valve. Thus, the thermal actuator sets the valve to the positions "Open" or "Closed".

Combined with actuators of the design "normally closed" the control passage of the valve is closed in case of a voltage breakdown.



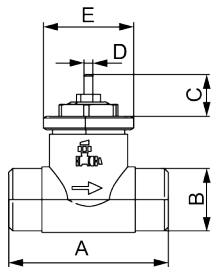


The installation of the thermal actuator is very comfortable; neither tools nor big forces are necessary for this:
The adapter of the actuator is screwed onto the V22 valve.
In continuation, the actuator is simply plugged onto the valve; it is now ready to use.

3 Technical data

Thread type		Exterior thread according to DIN EN ISO 228-1 class B	
Nominal pressure		PN 16	
max. operating pressure		16 bar (up to 120°C)	
admissible operating temperature		2 to 120°C	
Characteristic curve		On/Off, almost linear	
Valve travel		3 mm / 4 mm (see section 1.2 Ausführungen)	
Leakage rate		0.0001% of K_{VS}	
Material	Valve body	Brass	
	Spindle	Nickel-plated brass	
	Soft seal	EPDM (ethylene-propylene-diene rubber)	

3.1 Dimensions



	V22 10101-21N	V22 10101-11N	V22 10101-01N	V22 10151-11N	V22 10151-01N	V22 10201-01N
A	52 mm	52 mm	52 mm	56 mm	56 mm	65 mm
B	G 1/2 B	G 1/2 B	G 1/2 B	G 3/4 B	G 3/4 B	G 1 B
C	11.5 mm	11.5 mm	11.5 mm	11.5 mm	11.5 mm	11.5 mm
D	3 mm	3 mm	3 mm	3 mm	4 mm	4 mm
E	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5	M30 x 1.5

4 Planning and installation notes

The thermal actuator can be mounted in any position. In order to prevent interfering flow noise in quiet rooms, the pressure difference across the valve must not exceed 0.6 bar.
The valve has a factory setting of the highest K_V value (position 0). When other K_V values are used, the stroke is reduced to almost 0.5 mm. In order to ensure that impurities in the water (e. g. welding beads or particles of rust, etc.) are retained and the spindle seal is not damaged, it is advisable to install collective filters, e. g. per floor or per section. The water composition requirements apply according to VDI 2035. The compression gland can only be exchanged if the valve is free from pressure. The compression gland is sealed against the medium with a seal. The medium contains cooling agent as e. g. glycol; min. 16% and max. 40%.
If the small valve is insulated, it my only be insulated up to the height of the cap nut or the bayonet ring of the actuator.

Pressure loss table for V22 valves