

Characteristics

- Nominal pressure PN 25
- Pressure balanced valve
- Regulating capability $\frac{k_{vs}}{k_{vr}} > 25$
- Single-seated, balanced
- Quadratic characteristic

Applications

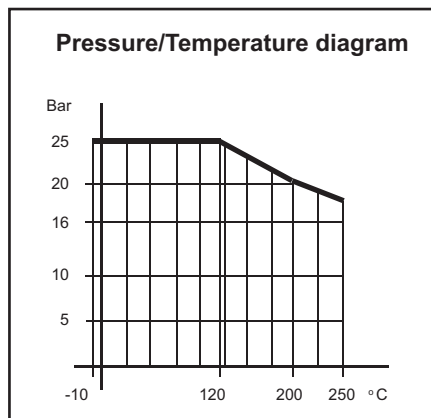
Balanced control valves type G1FBN are designed for regulating hot water, steam and hot oil systems.

Balanced valves are used in installations where the system pressure necessitates a closing force greater than available in the actuator programme for a standard single seated valve, and where the leakage rate for a double-seated valve is unacceptable.

The valves are used in conjunction with our temperature- or pressure differential regulators for controlling industrial processes, district or central heating plants or marine installations.

Dimensioning

For sizing of control valves and selection of actuators, please see "Quick Choice" leaflet no. 9.0.00.



Design

The valve components - spindle, seat, cone - are made of stainless steel.

The valve body is made of nodular cast iron EN-GJS-400-15 with flanges drilled according to EN 1092-2 or ANSI B16.5 Class 150. The thread for the actuator connection is G1B ISO 228.

The valves are single-seated and designed for tight closure. The leakage rate is less than 0.05% of the full flow (according to VDI/VDE 2174).

Quality assurance

All valves are manufactured under an ISO 9001 certification and are pressure and leakage tested before shipment. For marine applications the valves can be supplied with relevant test certificates from recognized classification societies.

Function

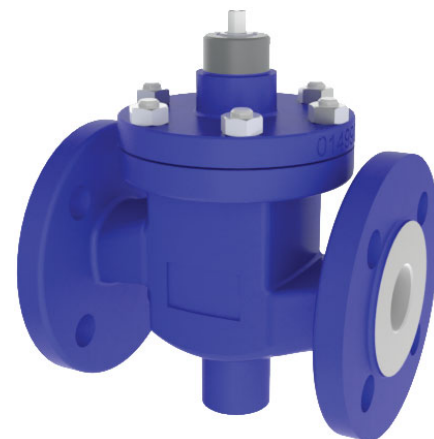
Without an actuator being connected, the valve is held in open position by means of a spring. With force on the spindle the valve will close.

In connection with our thermostats or electric actuators, the valves will close at rising temperatures. For cooling circuits a reverse acting double-seated valve can be used.

The quadratic characteristic will not cease until the flow has dropped below 4% of the full flow.

Technical data

Materials:	
- Valve body	Nodular Cast iron EN-GJS-400-15
- Components	Stainless steel
- Nuts, bolts	24 CrMo 5/A4
Nominal pressure	PN 25
Seating	Single-seated



Valve characteristic	Quadratic
Regulating capability	$\frac{k_{vs}}{k_{vr}} > 25$
Leakage	$\leq 0.05\%$ of k_{vs}
Temperature range	See pressure/temperature diagram
Flanges drilled according to	EN 1092-2 PN 25 or ANSI B16.5 Class 150
Colour	Blue

Definition of k_{vs} -value

The k_{vs} -value is identical to the IEC flow coefficient k_v and defined as the water flow rate in m^3/h through the fully open valve by a constant differential pressure, Δp_v , of 1 bar.

Mounting

Up to 170°C the valve can be installed vertically as well as horizontally. For media temperature above 170°C, a cooling unit of type KS has to be applied. It must then be installed with electric actuator/thermostat downwards, and according to the following instructions:

Valve Temperature	Cooling Unit	Suitable for
170°C - 250°C	KS-4	All actuators
250°C - 300°C	KS-5	Thermostats
250°C - 300°C	KS-6	El. actuators

Strainer

It is recommended to use a strainer in front of the control valve if the liquid contains suspended particles.

Subject to changes without notice.

Specifications					
Type	Flange connection DN in mm	Opening mm	k_{vs} -value m^3/h	Lifting height mm	Weight kg
15 G1FBN	15	15	4	7.5	4
20 G1FBN	20	20	6.3	7.5	5
25 G1FBN	25	25	10	9	6
32 G1FBN	32	32	16	10	9
40 G1FBN	40	40	25	11	13
50 G1FBN	50	50	35	11.5	16
65 G1FBN	65	65	58	14.5	23
80 G1FBN	80	80	80	16	38

Balanced 2-way Control Valves type G1FBN

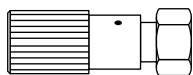
Nodular cast iron, PN 25, DN 15 – 80 mm

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GB-2

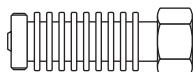
Accessories

Manual adjusting device



The device has a built-in stuffing box. For sealing and manual operation of valves when an actuator has not been fitted, e.g. during periods of construction.

Cooling unit KS-4



Cooling unit protecting the stuffing box of the electric actuator / thermostat. To be applied at valve temperatures between 170°C and 250°C.

Cooling Unit KS-5

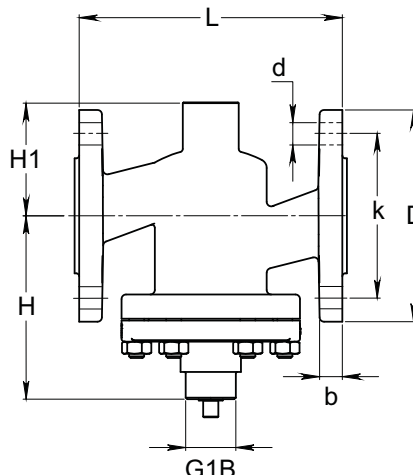


Cooling Unit KS-6



Cooling units with built-in bellow glands, replacing stuffing box of thermostat (KS-5) or electric valve actuator (KS-6). Must be applied at valve temperatures above 250°C.

Dimension sketch



Dimensions

Type	L mm	H mm	H1 mm	D (dia.) mm	b mm	k (dia.) mm	d mm dia. (number)
15 G1FBN	130	101	80	95	14	65	14x(4)
20 G1FBN	150	107	85	105	16	75	14x(4)
25 G1FBN	160	112	70	115	16	85	14x(4)
32 G1FBN	180	122	75	140	18	100	18x(4)
40 G1FBN	200	125	85	150	19	110	18x(4)
50 G1FBN	230	140	95	165	19	125	18x(4)
65 G1FBN	290	154	110	185	19	145	18x(8)
80 G1FBN	310	164	115	200	19	160	19x(8)

Dimensioning

Type	Water / Steam	Thermostats			Valve actuators		Pressure differential controllers	
		V2	V4	V8	V / AV	VB / VBA	TD66-4	TD66-8
15 G1FBN	Water: Δp_1 & max. p_1 bar	10	16	16	16	16	16	16
	Steam: Δp_1 & max. p_1 bar	9						
20 G1FBN	Water: Δp_1 & max. p_1 bar	9						
	Steam: Δp_1 & max. p_1 bar	8						
25 G1FBN	Water: Δp_1 & max. p_1 bar	8						
	Steam: Δp_1 & max. p_1 bar	7						
32 G1FBN	Water: Δp_1 & max. p_1 bar	7						
	Steam: Δp_1 & max. p_1 bar	6						
40 G1FBN	Water: Δp_1 & max. p_1 bar	-	10					
	Steam: Δp_1 & max. p_1 bar	-	9					
50 G1FBN	Water: Δp_1 & max. p_1 bar	-	9					
	Steam: Δp_1 & max. p_1 bar	-	8					
65 G1FBN	Water: Δp_1 & max. p_1 bar	-	7					
	Steam: Δp_1 & max. p_1 bar	-	6					
80 G1FBN	Water: Δp_1 & max. p_1 bar	-	5					
	Steam: Δp_1 & max. p_1 bar	-	4					

p_1 = absolute pressure

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