

4.12

Sandwich flow control valve

Type Z2FRM10

Flow control valve

Type 2FRM10K

Size 10
Up to 210 bar
Up to 60L/min



Contents

Function and configuration	02
Symbols	03
Ordering code	03
Technical data	04
Characteristic curves	04
Unit dimensions	05-07

Features

- Sandwich plate valve
- Porting pattern to DIN 24 340 Form A, without locating pin hole (standard)
- Porting pattern to ISO 4401 and CETOP-RP 121 H
- With 1 or 2 flow control cartridges
- Adjustment element with internal hexagon

Function and configuration

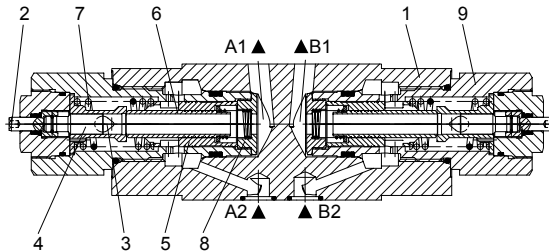
The valve type Z2FRM10 is a 2-way flow control valve of sandwich plate design and type 2FRM10K is a 2-way flow control cartridge valve. The former is used for maintaining a constant flow and is independent of the pressure and temperature.

The valve basically consists of a housing (1) and one or two flow control cartridges type 2FRM10K (9).

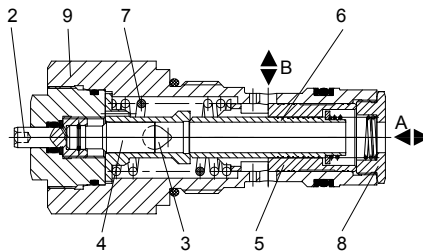
The throttling of the flow from port A1/B1 (A) to port A2/B2 (B) occurs at the throttle area (3). The throttle bolt (4) is driven by the adjustment element (2). To maintain a constant flow in port A2/B2(B) which is independent of pressure, a pressure compensator (5) is fitted downstream of the throttle area (3). The pressure compensator (5) is pressed against the plug (8), via a compression spring (7). When there is no oil flow, pressure compensator (5) keeps in open position. If there is flow through the valve then the pressure in port A1/B1 (A) acts on the pressure compensator (5). Then the pressure compensator (5) moves until the forces are balanced. If the pressure in port A1/B1 (A) increases, then the pressure compensator (5) moves in the closing direction until the forces are balanced again. Due to the continuous compensation by the pressure compensator, a constant flow is achieved.

Free flow from port A2/B2 (B) to port A1/B1 (A) is via check valve (6).

Type Z2FRM 10 C...

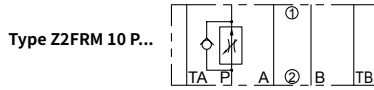
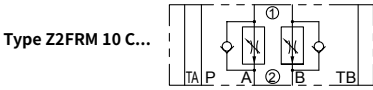
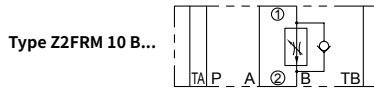
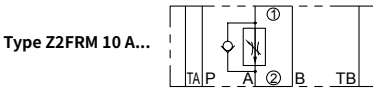


Flow control valve
Type 2FRM 10 K...

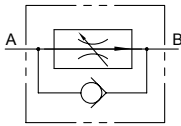


Symbols (① =valve side ② = sub-plate side)

• Sandwich flow control valve Type Z2FRM10



• Flow control valve Type 2FRM10K...



Ordering code

• Sandwich flow control valve Type Z2FRM10

Z2FRM	10		2	L2X	/	60	R		*
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Sandwich flow control valve
 Size 10 = 10
 Flow control function (meter-out control) in
 Port A = A
 Port B = B
 Ports A and B = C
 Port P = P
 Adjustment element with internal hexagon = 2

Further details in clear text
 No code = NBR seals
 V = FKM seals
 R = With check valve
 60Q = Flow A to B = up to 60 L/min
 L2X = Series L20 to L29 (L20 to L29: unchanged installation and connection dimensions)

• Flow control valve Type 2FRM10K

2FRM	10	K	2	L1X	/	60Q	R		*
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Flow control valve
 Size 10 = 10
 Insert cartridge = K
 Internal hexagon adjustment unit = 2
 Series L10 to L19 = L1X (L10 to L19: unchanged installation and connection dimensions)

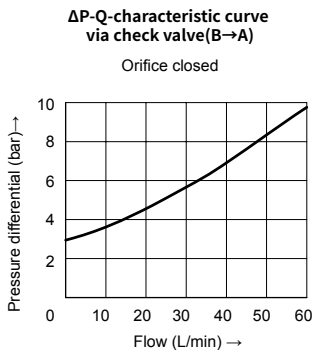
Further details in clear text
 No code = NBR seals
 V = FKM seals
 R = With check valve
 60Q = Flow A to B up to 60 L/min

Technical data

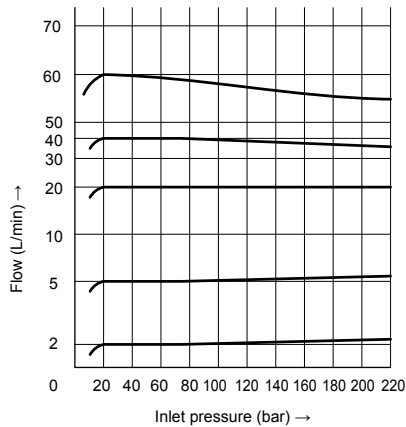
		Sandwich flow control valve type Z2FRM10	Flow control valve type 2FRM10K
Mounting style		Flat mounting interface	Install position: optional
Connection type		Indirect connection via a subplate or block, porting pattern to DIN 24 340 form A, ISO 4401 and CETOP-RP 121 H	
Weight	kg	4.7 (flow control function in ports A, B or P) 5.3 (flow control function in ports A and B)	0.6
Nominal pressure	bar	210	
Fluid		Mineral oil, Phosphoric acid ester	
Fluid temperature range	°C	-20 to +80	
Viscosity range	mm ² /s	10 to 800	
Flow range	L/min	0.5~60	
Degree of contamination		Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406	
Min. pressure drawdown	bar	18 (Flow control valve type 2FRM6K)	
Pressure stable up to $\Delta P=210$ bar	%	± 3 (Qmax)	

Characteristic curves (Measured at $\vartheta_{oil}=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$, using HLP46)

• Flow control valve Type Z2FRM10K



Flow Q in relation to the inlet pressure P

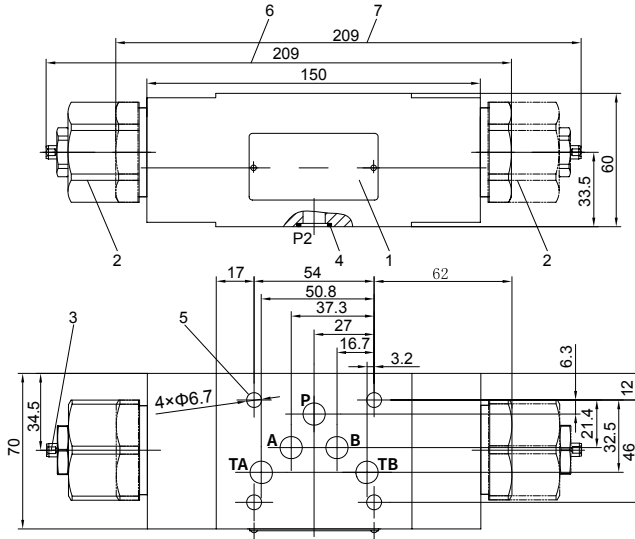


Unit dimensions:

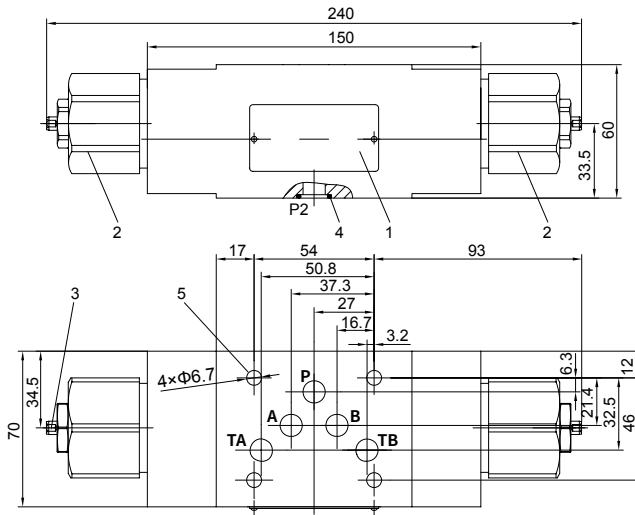
(Dimensions in mm)

• Sandwich flow control valve Type Z2FRM10

Type Z2FRM 10 A... and Z2FRM 10 B...



Type Z2FRM 10 C...

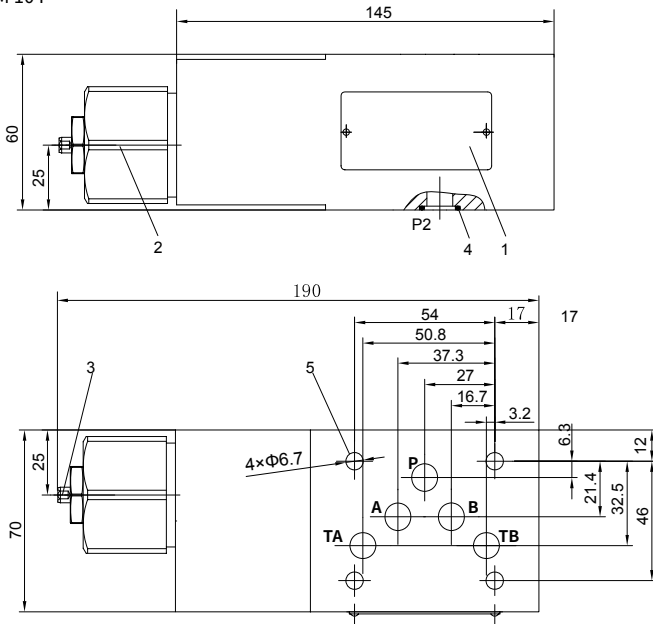


Unit dimensions:

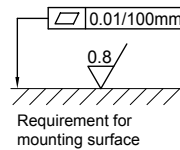
(Dimensions in mm)

· Sandwich flow control valve Type Z2FRM10

Type Z2FRM 10 P



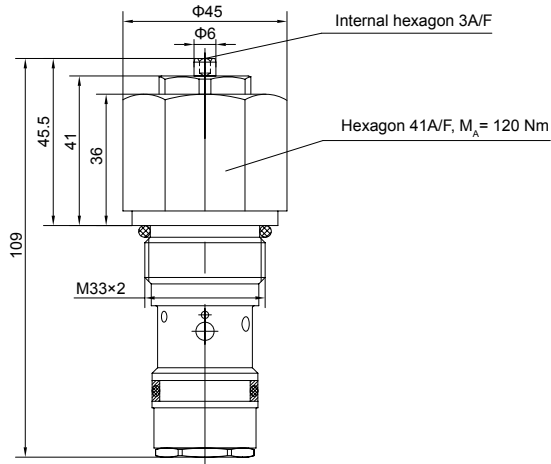
- 1 Name plate
- 2 Flow control cartridge type 2FRM10K
hexagon 41A/F, $M_A = 120 \text{ Nm}$
- 3 Adjustment element with internal hexagon 3A/F
- 4 O-rings 12×2 (Ports A2, B2, P2, TA2, TB2)
- 5 Valve fixing screws, M6 x ** GB/T70.1-10.9
tightening torque $M_A = 15.5 \text{ Nm}$,
the screws length accords to the sandwich valves
- 6 Z2FRM10A2...flow control in port A
- 7 Z2FRM10B2...flow control in port B



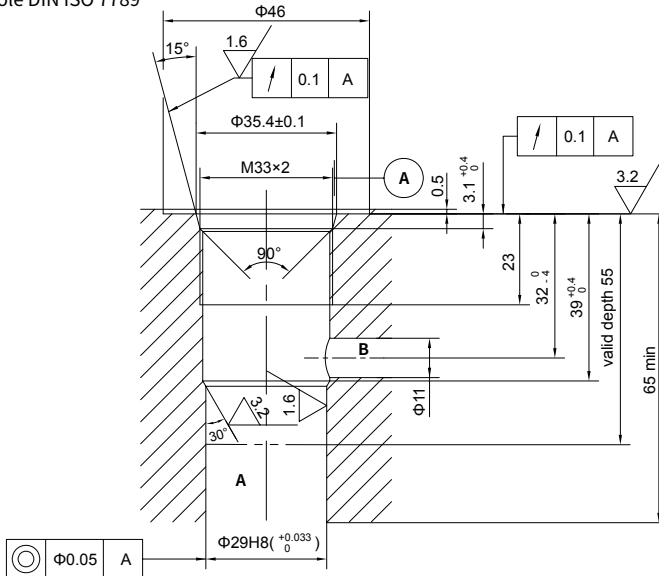
Unit dimensions:

(Dimensions in mm)

• Flow control valve Type 2FRM10K



Insert hole DIN ISO 7789



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