

## Two Ways Flow Control Valve

Model: 2FRM5...3X



- ◆ Size 5
- ◆ Maximum working pressure 210 bar
- ◆ Maximum working flow 15 L/min

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### Features

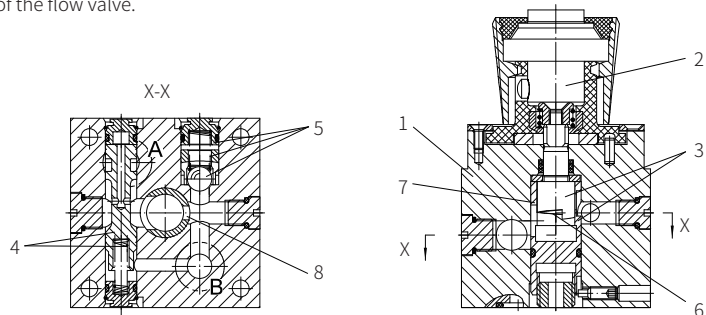
- Optional pressure compensator stroke limiter
- Start-up jump reduction
- Lockable knob
- Flow control in both direction by means of rectifier sandwich plate

## Function description, sectional drawing

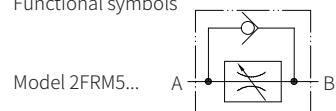
2FRM model flow valve is two ways flow control valve. This valve mainly includes the valve body (1), the adjusting element (2), the throttle body (3), optional pressure compensator (4) with stroke limiter and check valve (5), it is used for the throttling of the flow from A to B at throttle port (6).

The curve bolt (7) can adjust the throttling cross section. The pressure compensator needs to be connected to keep the flow constant at the throttle port (8) and without affection of pressure. The orifice is designed with sharp edges, so the throttling is not easily affected by temperature. The free flow return from B to A is via the check valve (5).

The rectifier sandwich plate Z4S5-1XJ/ is installed under the flow valve to control the flow in both directions of the flow valve.

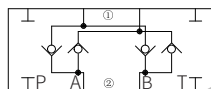


Functional symbols



Model Z4S5...

①=Valve side  
②=Subplate side



## Models and specifications

### Two ways flow control valve

2FRM5 3X		more information in text
3X series (30 to 39 series installation and =3X connection size unchanged)		sealing material
		No code = NBR seals
		V= FKM seals
		(consult for other seals)
nonlinearity	nonlinearity	No code= pressure compensator, without stroke limiter B= pressure compensator, with stroke limiter
0.2L/min=0.2Q	10L/min=10Q	
0.6L/min=0.6Q	15L/min=15Q	
1.2L/min=1.2Q	flow direction A → B	
3L/min=3Q		
6L/min=6Q		

### Rectifier sandwich plate

Z4S5 1X		more information in text
1X series (10 to 19 series installation and connection size unchanged)		sealing material
		No code = NBR seals
		V= FKM seals
		(consult for other seals)

## Technical parameters

Oil fluid	Mineral hydraulic oil or phosphate ester hydraulic oil
Oil temperature range °C	-30 to +80 (NBR seals) -20 to +80 (FKM seals)
Viscosity mm²/s range	10 to 800

### Rectifier sandwich plate

Rated flow L/min	15
Working pressure bar	to 210
Cracking pressure bar	1
Weight kg	0.6

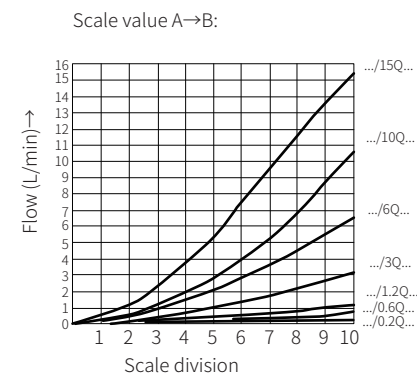
### Two ways flow control valve

Maximum flow		L/min	0.2	0.6	1.2	3.0	6.0	10.0	15.0	
ΔP with free return flow B → A qv-dependent			bar	0.5	0.5	0.6	0.9	1.8	3.6	6.7
Flow control	Temperature stability			±5%	±3%	±2%				
	Pressure stability (to ΔP=210)		bar	±2%					±4%	
Working pressure at port A			bar	to 20						
Minimum pressure drop			bar	3 to 5					6 to 8	
Degree of contamination			μm	25(Q<5L/min)			10(Q<0.5L/min)			
Weight			kg	1.6						

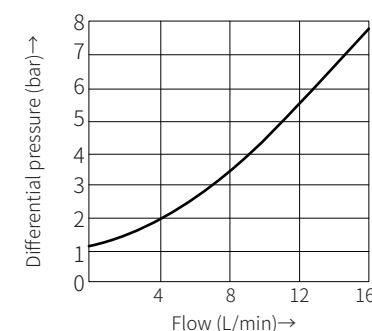
For the application of other technical conditions, please consult us.

## Characteristic curve

(Measured when using HLP 46,  $t_{oil}$  = 40°C ± 5°C)

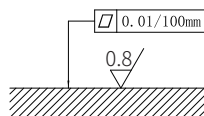


### Pressure drop of the rectifier sandwich plate

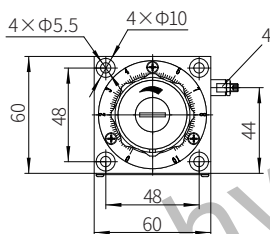
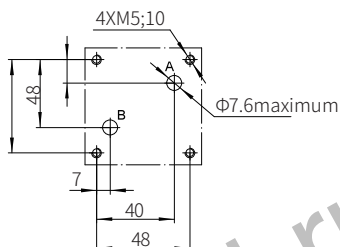


Technical drawing of the 'LJFY' device. The drawing shows a cross-section of the device with the following dimensions and components:

- Overall height: 122
- Height of the upper section: 92.5
- Height of the middle section: 12
- Height of the lower section: 44
- Height of the base: 42
- Height of the bottom section: 24
- Width of the base: 14
- Top diameter:  $\Phi 43$
- Component 1: The upper section, labeled 'LJFY'.
- Component 2: The middle section.
- Component 3: The base.



### Required surface finishing of mating components



O ring 12x2 (for oil port A, B)  
M5x50-10.9 stage GB/T70.1-2000  
Tightening torque  $M_A=7.8\text{Nm}$   
Subplate model:  
G44/01(G1/4") ; G44/02(M14x1.5)  
G45/01(G1/2") ; G45/02(M22x1.5)

## Size unit: mm

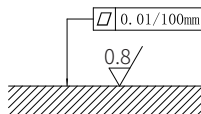
Technical drawing of a valve assembly showing three views: front, top, and side. The drawing includes dimensions in millimeters and a legend.

**Dimensions:**

- Front View: Overall width 60, bore diameter 10, flange thickness 6, valve body height 48, valve body width 41, valve body offset 10, valve body thickness 6.
- Top View: Overall width 60, bore diameter 10, flange thickness 6, valve body height 48, valve body width 41, valve body offset 10, valve body thickness 6.
- Side View: Overall width 60, bore diameter 10, flange thickness 6, valve body height 48, valve body width 41, valve body offset 10, valve body thickness 6.

**Legend:**

- 1 O ring
- 2 Name plate
- 3 Valve fixing



### Required surface finishing of mating components

- 1 O ring 12x2 (for oil port A, B)
- 2 Name plate
- 3 Valve fixing screw hole