

# 2-way Control Valve type M2FR

Cast iron, PN 16, DN 100 – 150 mm, Reverse acting

0-2.3.07-I

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## APPLICATIONS

Valve type M2FR are mainly intended for control of cooling systems. The valves are used in conjunction with temperature or pressure differential regulators. As the reverse acting valves are held in closed position by means of a built-in spring, the max. differential pressure,  $\Delta p_L$ , against which a valve can close depends on the spring and when opening the valve, the actuator has to overcome the spring force. On the next page please find the max. allowable values of  $\Delta p_L$  as well as the max. allowable inlet pressures for opening the valve,  $p_{1_{max}}$  for various actuator forces.

## DESIGN

The valve components - spindle, seats and cone - are made of stainless steel. The valve body is made of cast iron EN-GJL-250 with flanges drilled according to EN 1092-2. The connection thread for the actuator is G1B ISO 228. The valves are double-seated. The leakage rate is less than 0.5% of the full flow (according to VDI/VDE 2174).

## FUNCTION REVERSE ACTING

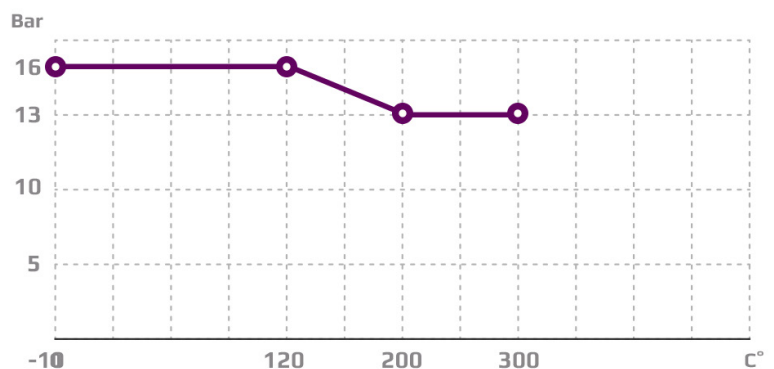
Without an actuator being connected, the valve is held in closed position by means of a spring. With pressure on the spindle the valve opens. In connection with our thermostats, the valves act as "cooling" valves, i.e. they open at rising temperatures. The linear characteristic will not cease until the flow has dropped below 4% of the full flow.

## FEATURES

- Simple design secures reliable controls.
- Location of the pack box in the actuator makes the valve service friendly
- Reliable and secure due to internal parts of stainless steel

## PRESSURE/TEMPERATURE DIAGRAM

According to DIN 2401



## TECHNICAL DATA

<b>Materials:</b>	
- Valve body	Cast iron EN-GJS-400-15
- Trim	Stainless steel
- Nuts, bolts	24 CrMo 4/A4
- Gasket	Graphite
Nominal pressure	PN 16
Seating	Double-seated
Flow characteristic	Quadratic
Function	Opening with pressure on spindle
Leakage rate	$\leq 0,5\%$ of Kvs
Regulating capability	Kvs/Kvr > 25
Flanges	EN 1092-2 PN 16
Counter flanges	DIN 2633 / D5623

Reverse acting (normally closed)  
For cooling water and lubrications

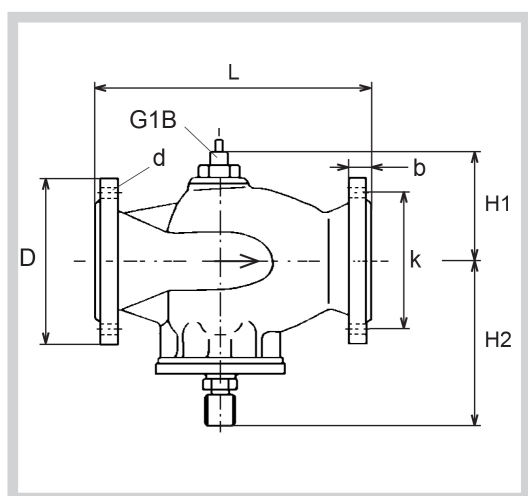
Subject to change without notice.

## MOUNTING

The valve can be installed with vertical as well as horizontal spindles. For valve temperatures of max. 170 °C, the thermostat/ actuator can be fitted below or above the valve. For valve mounted with thermostats in media temperatures above 170 °C, a cooling unit has to be applied with connection downwards (please refer to data sheet for thermostat accessories). For electric actuators a high temperature adaptor must be used (please refer to data-sheets for the electric actuators).



## DIMENSION SKETCH



Type	L mm	H1 mm	H2 mm	D (dia.) mm	b mm	k (dia.) mm	d mm dia. (number)
100 M2FR	350	145	240	220	24	180	18x(8)
125 M2FR	400	160	260	250	26	210	18x(8)
150 M2FR	400	180	293	285	26	240	22x(8)

## SPECIFICATIONS

Type	Flange connection Dn in mm	Opening mm	$k_{vs}$ -value m <sup>3</sup> /h	Lifting height mm	Max. $\Delta p_L$ bar	Actuat. force N	Weight kg
100 M2FR	100	100	125	20	12.1	800	39
125 M2FR	125	125	215	20	9	800	53
150 M2FR	150	150	310	20	7.5	800	73