

# Balanced 2-way Control Valve type M1FBN

Cast iron, PN 16, DN 15 – 80 mm

0-2.3.03.01-F



## TECHNICAL DATA

|                              |                                         |
|------------------------------|-----------------------------------------|
| <b>Materials:</b>            |                                         |
| - Valve body                 | Cast iron<br>EN-GJS-400-15              |
| - Components                 | Stainless steel                         |
| - Nuts, bolts                | 24 CrMo 5/A4                            |
| - O-ring                     | A.75H FEPM                              |
| - Gasket                     | Graphite                                |
| Nominal pressure             | PN 16                                   |
| Pressure balanced valve      |                                         |
| Seating                      | Single-seated,<br>balanced              |
| Flow characteristic          | Quadratic                               |
| Leakage rate                 | $\leq 0.05\%$ of Kvs                    |
| Regulating capability        | Kvs/Kvr > 25                            |
| Flanges drilled according to | EN 1092-2<br>or ANSI B16.5<br>Class 150 |

## APPLICATIONS

Balanced control valves type M1FBN 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.

## DESIGN

The valve components, spindle, seat and cone - are made of stainless steel. The valve body is made of 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. The leakage rate is less than 0.05% of the full flow (according to VDI/VDE 2174).

## FUNCTION

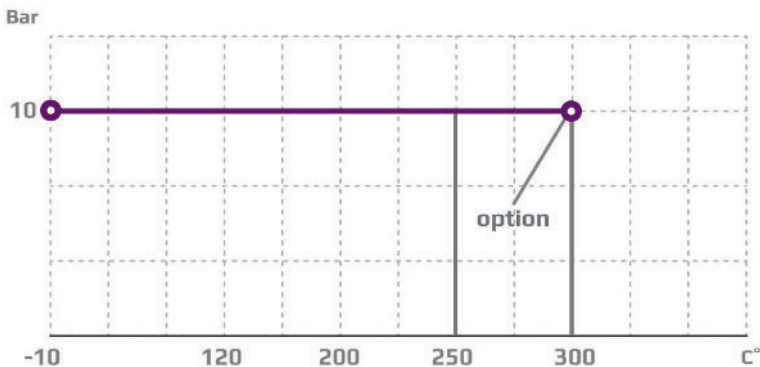
Without an actuator being connected, the valve is held in open position by means of a spring. With force on the spindle the valve will close. In connection with our thermostats, pneumatic or electric actuators, the valves will close at rising temperatures. For cooling circuits the valve can be used in conjunction with a reverse acting electric actuator. The quadratic 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
- Low leakage rate reduces the risk of overheating

## PRESSURE/TEMPERATURE DIAGRAM

According to DIN 2401

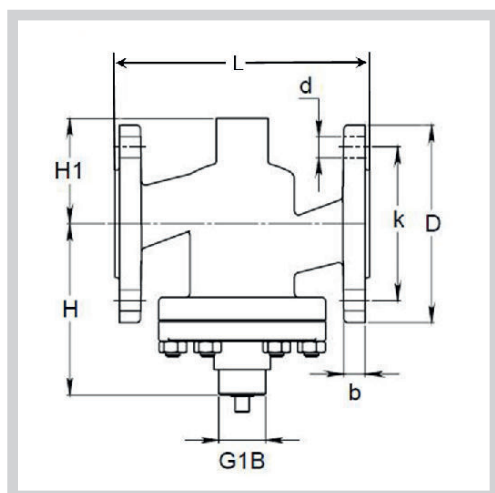


Subject to change without notice.

## 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<br>mm | H<br>mm | H1<br>mm | D (dia.)<br>mm | b<br>mm | k (dia.)<br>mm | d mm dia.<br>(number) |
|----------|---------|---------|----------|----------------|---------|----------------|-----------------------|
| 15 M1FBN | 130     | 101     | 80       | 95             | 14      | 65             | 14x(4)                |
| 20 M1FBN | 150     | 107     | 85       | 105            | 16      | 75             | 14x(4)                |
| 25 M1FBN | 160     | 112     | 70       | 115            | 16      | 85             | 14x(4)                |
| 32 M1FBN | 180     | 122     | 75       | 140            | 18      | 100            | 18x(4)                |
| 40 M1FBN | 200     | 125     | 85       | 150            | 19      | 110            | 18x(4)                |
| 50 M1FBN | 230     | 140     | 95       | 165            | 19      | 125            | 18x(4)                |
| 65 M1FBN | 290     | 154     | 110      | 185            | 19      | 145            | 18x(4)                |
| 80 M1FBN | 310     | 164     | 115      | 200            | 19      | 160            | 19x(8)                |

## SPECIFICATIONS

| Type     | Flange<br>connection<br>DN in mm | Opening<br>mm | $k_{vs}$ -value<br>$m^3/h$ | Lifting height<br>mm | Weight<br>kg |
|----------|----------------------------------|---------------|----------------------------|----------------------|--------------|
| 15 M1FBN | 15                               | 15            | 4                          | 7.5                  | 4            |
| 20 M1FBN | 20                               | 20            | 6.3                        | 7.5                  | 5            |
| 25 M1FBN | 25                               | 25            | 10                         | 9                    | 6            |
| 32 M1FBN | 32                               | 32            | 16                         | 10                   | 9            |
| 40 M1FBN | 40                               | 40            | 25                         | 11                   | 13           |
| 50 M1FBN | 50                               | 50            | 35                         | 11.5                 | 16           |
| 65 M1FBN | 65                               | 65            | 58                         | 14.5                 | 23           |
| 80 M1FBN | 80                               | 80            | 80                         | 16                   | 38           |