

# 3-way Control Valve type G3FM-TM (AB-Middle)

Nodular cast iron, PN16, DN 80 - 250 mm / PN10, DN 300 - 450 mm

0-2.6.03.02-B

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## APPLICATIONS

Control valve type G3FM-TM is a three-way control valve with a slide for quarter turn operation designed for regulating of fresh water, lubricating oil and other liquid media. The valves are designed for use in conjunction with industrial processes, district heating and marine installations with large water or lubricating oil volumes:

- Engine Jacket Cooling Water System
- Lubricating Oil Cooling
- Central Cooling Water System, etc.

The valves are designed for use in conjunction with valve motor type CAR with handle for manual operation or for use in conjunction with a pneumatic actuator.

## DESIGN

The valve body and the valve slide are made of nodular cast iron. The valve flanges are drilled according to EN 1092-2 (JIS B 2210 option).

## FUNCTION

The slide is firmly connected with the motor spindle. When the slide is in the one outer position by turning the spindle, connection A-AB is fully open and connection B-AB is fully closed. In the other outer position connection A-AB is fully closed and connection B-AB is fully open. In the intermediate positions the opening degrees change proportionally. The valve has a small tolerance between body and slide. To minimize the leakage an O-ring is mounted in a groove on the slide.

## TECHNICAL DATA

### Materials:

|                       |                                    |
|-----------------------|------------------------------------|
| - Valve body, slide   | Nodular cast iron<br>EN-GJS-400-15 |
| - O-ring              | NBR 70A                            |
| - U-ring              | PTFE                               |
| Flow characteristic   | Almost linear                      |
| Leakage rate          | Max. 0.5%                          |
| Regulating capability | Kvs/Kvr > 25                       |

|          |                    |
|----------|--------------------|
| Flanges  | EN 1092-2 PN 10/16 |
| - Option | JIS B 2210 5K      |

Counter flanges (suggested for EN 1092-2) DIN 2633 – PN 16

Max. pressure  $\Delta p_L$ , against which the valve can close:

- DN 250 16 Bar
- DN 450 10 Bar

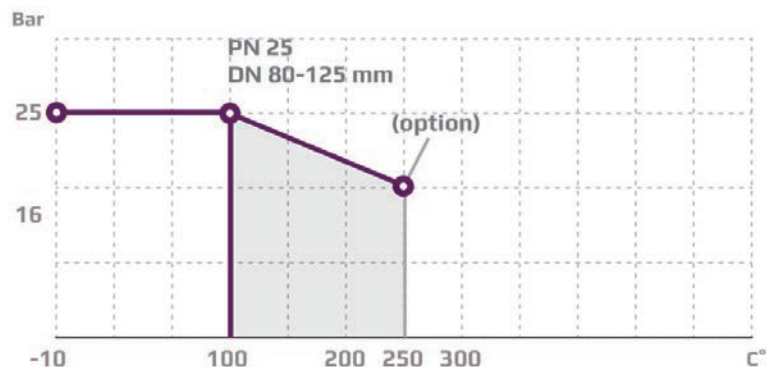
### Nominal pressure

|             |                    |
|-------------|--------------------|
| - DN 250 mm | PN 16, max. 100°C  |
| - DN 450 mm | PN 10, max. 100 °C |

Slide in Nodular cast iron

## FEATURES

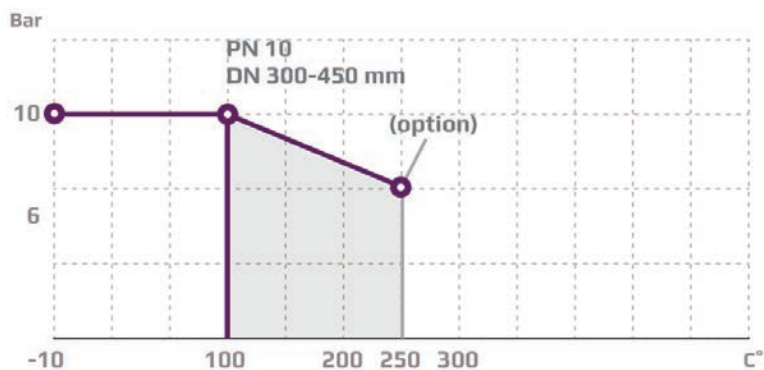
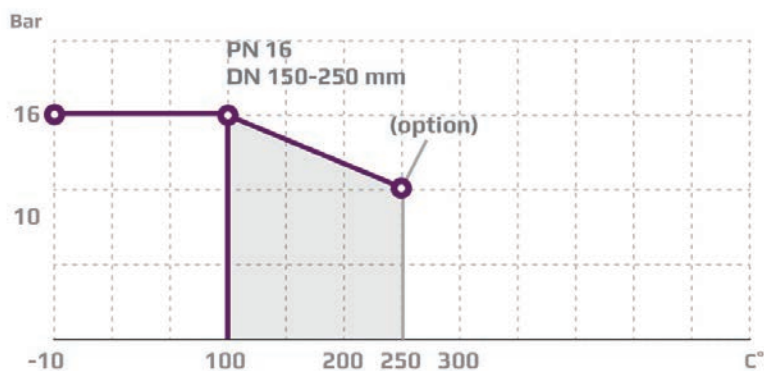
- Simple design secures reliable controls and reduces costly downtime.
- Low leakage rate secures energy savings.
- Flexible choice of port placement



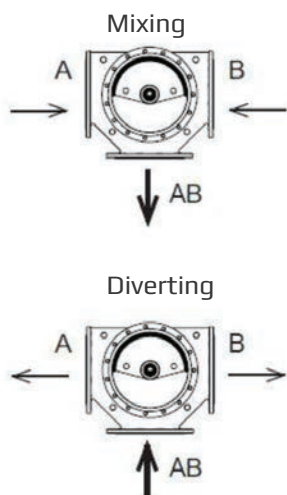
Subject to change without notice.

**PRESSURE/TEMPERATURE DIAGRAM**

According to DIN 2401



**PORT NUMBERING**



**MOUNTING**

The valve connections are marked A, B and AB. The slide is operating between A and B. Check slide position before installation in the pipe. The slide position is marked on the top of the shaft. The valves can be installed with vertical as well as horizontal spindles. The valves must be mounted in a way that the valve actuator will be exposed to a minimum of moisture and unnecessary vibrations. Valves can also be supplied in AB-Right configuration (data sheet 0.2.6.02.01) or AB-Left (data sheet 0.2.6.03).

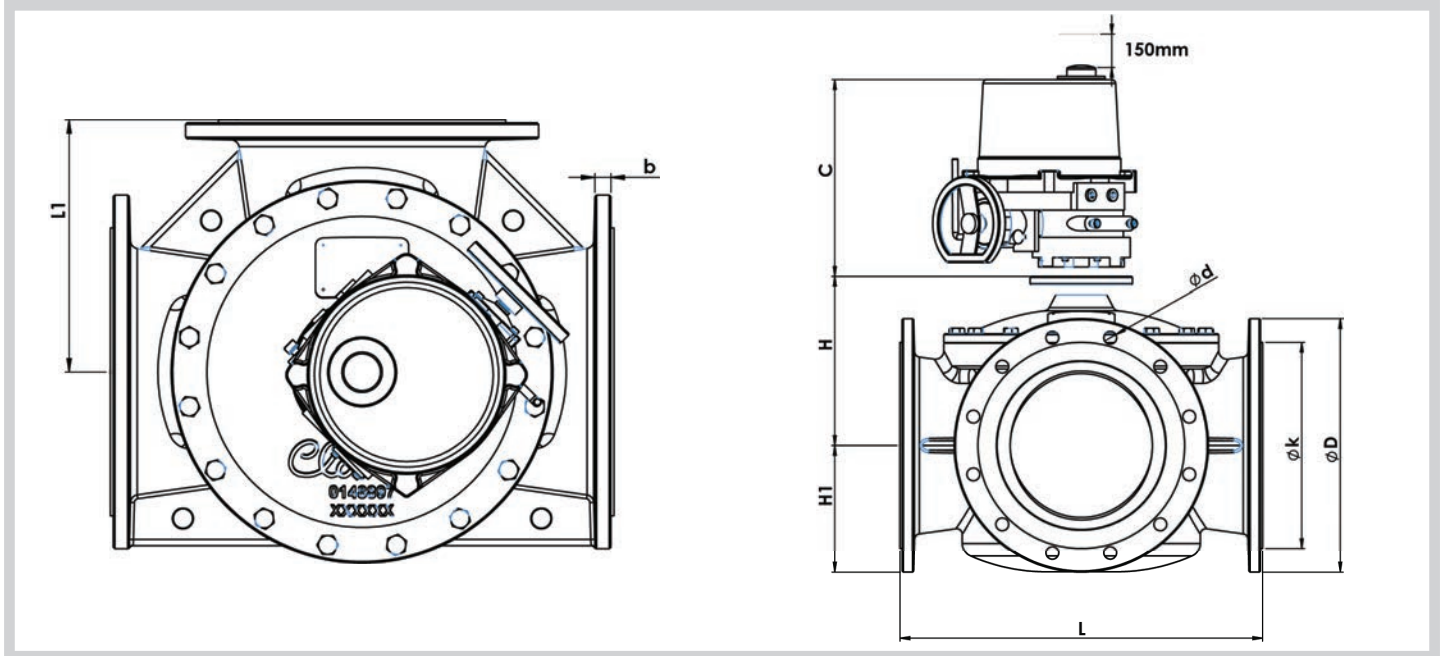
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## DIMENSION SKETCH



| Type        | L<br>(mm) | L1<br>(mm) | H<br>(mm) | H1<br>(mm) | b<br>(mm) | C<br>(mm) | EN 1092-2           |                     |                          | ANSI Class 150      |                     |                          | JIS B 2210 5K    |                  |                          | JIS B 2210 10K   |                  |                          |
|-------------|-----------|------------|-----------|------------|-----------|-----------|---------------------|---------------------|--------------------------|---------------------|---------------------|--------------------------|------------------|------------------|--------------------------|------------------|------------------|--------------------------|
|             |           |            |           |            |           |           | D<br>(dia.)<br>(mm) | k<br>(dia.)<br>(mm) | d mm<br>dia.<br>(number) | D<br>(dia.)<br>(mm) | k<br>(dia.)<br>(mm) | d mm<br>dia.<br>(number) | D (dia.)<br>(mm) | k (dia.)<br>(mm) | d mm<br>dia.<br>(number) | D (dia.)<br>(mm) | k (dia.)<br>(mm) | d mm<br>dia.<br>(number) |
| 80 G3FM-TM  | 292       | 146        | 140       | 94         | 20        | 273       | 200                 | 160                 | 19x(8)                   | 190                 | 190.8               | 19x(8)                   | 180              | 145              | 19x(4)                   | 185              | 150              | 19x(8)                   |
| 100 G3FM-TM | 350       | 175        | 158       | 112        | 17        | 273       | 235                 | 190                 | 23x(8)                   | 230                 | 190.9               | 19x(8)                   | 200              | 165              | 19x(8)                   | 210              | 175              | 19x(8)                   |
| 125 G3FM-TM | 400       | 200        | 179       | 123        | 17        | 273       | 270                 | 220                 | 28x(8)                   | 255                 | 216                 | 22x(8)                   | 235              | 200              | 19x(8)                   | 250              | 210              | 23x(8)                   |
| 150 G3FM-TM | 438       | 219        | 196       | 139        | 20        | 276       | 290                 | 240                 | 23x(8)                   | 280                 | 241                 | 22x(8)                   | 265              | 230              | 19x(8)                   | 280              | 240              | 23x(8)                   |
| 200 G3FM-TM | 530       | 270        | 236       | 175        | 21        | 361       | 340                 | 295                 | 23x(12)                  | 343                 | 299                 | 23x(8)                   | 320              | 280              | 23x(8)                   | 320              | 290              | 23x(12)                  |
| 250 G3FM-TM | 592       | 300        | 273       | 205        | 23        | 361       | 400                 | 355                 | 28x(12)                  | 407                 | 362                 | 26x(12)                  | 385              | 345              | 23x(12)                  | 400              | 355              | 25x(12)                  |
| 300 G3FM-TM | 649       | 330        | 305       | 230        | 25.5      | 361       | 455                 | 410                 | 28x(12)                  | 483                 | 432                 | 26x(12)                  | 430              | 390              | 23x(12)                  | 445              | 400              | 25x(16)                  |
| 350 G3FM-TM | 717       | 360        | 337       | 255        | 25.5      | 361       | 505                 | 460                 | 23x(16)                  | 534                 | 477                 | 29x(12)                  | 480              | 435              | 25x(12)                  | 490              | 445              | 25x(16)                  |
| 400 G3FM-TM | 770       | 385        | 375       | 285        | 26        | 361       | 565                 | 515                 | 28x(16)                  | 597                 | 540                 | 29x(16)                  | 540              | 495              | 25x(16)                  | 560              | 510              | 27x(16)                  |
| 450 G3FM-TM | 820       | 410        | 391       | 310        | 26.5      | 556       | 615                 | 565                 | 28x(20)                  | 635                 | 578                 | 32x(16)                  | 605              | 555              | 25x(16)                  | 620              | 565              | 27x(20)                  |

## SPECIFICATIONS

| Type        | Flange connection<br>DN in mm | $k_{vs}$ -value <sup>(1)</sup><br>Mixing valve<br>m <sup>3</sup> /h | $k_{vs}$ -value <sup>(1)</sup><br>Diverting valve<br>m <sup>3</sup> /h | Torque<br>Nm | Weight<br>kg |
|-------------|-------------------------------|---|--|--------------|--------------|
| 80 G3FM-TM  | 80                            | 122   | 154  | 100          | 29           |
| 100 G3FM-TM | 100                           | 220   | 248  | 120          | 41           |
| 125 G3FM-TM | 125                           | 369   | 437  | 220          | 58           |
| 150 G3FM-TM | 150                           | 510   | 600  | 235          | 71           |
| 200 G3FM-TM | 200                           | 807   | 1100   | 420          | 114          |
| 250 G3FM-TM | 250                           | 1500  | 2100   | 590          | 159          |
| 300 G3FM-TM | 300                           | 2000  | 2650   | 590          | 207          |
| 350 G3FM-TM | 350                           | 2530  | 3380   | 1200         | 278          |
| 400 G3FM-TM | 400                           | 3050  | 3950   | TBC          | 346          |
| 450 G3FM-TM | 450                           | 3680  | 4480   | 1750         | 433          |

<sup>1)</sup> $k_{vs}$ -value for port A and B 50% open.

