

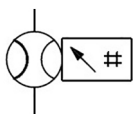
## PFM7, 2-Color Display, Digital Flow Switch, Integrated Display

### PFM750S-F01-B

Datasheet

### General series information

- Compact and light weight.
- Digital 2 color indication.
- Elbow piping can be used.
- Integrated flow adjustment valve.
- Several combinations are possible.
- Different mounting methods are possible.



Flow meter with digital display

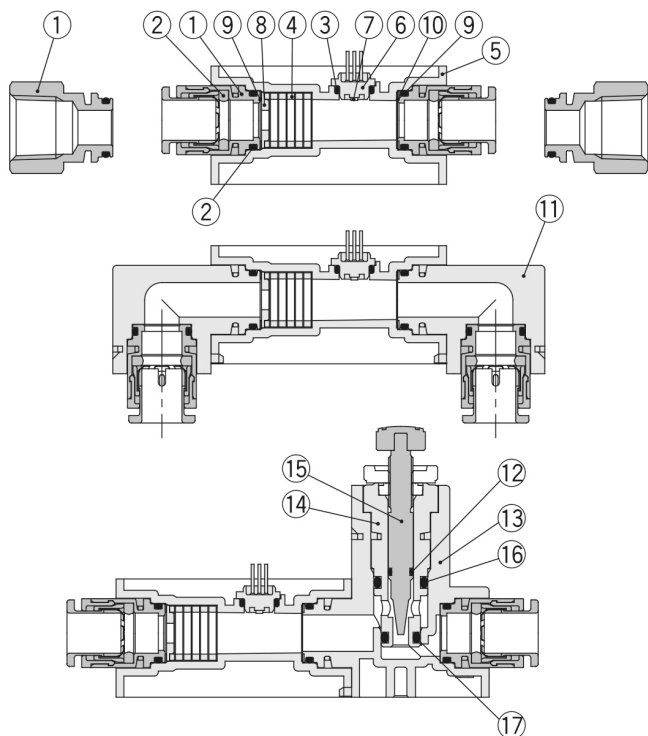
### Standard specifications

|                             |  |
|-----------------------------|--|
| Flow Rate Range             | 50 [1 to 50 (25 for CO <sub>2</sub> ) l/min]                         |
| Flow Adjustment Valve       | S (Yes)  |
| Port Size                   | F01 (G1/8)   |
| Piping Entry Direction      | Straight   |
| Output Specification        | B (2 PNP Outputs)  |
| Unit Specification          | Unit Switching Function  |
| Instruction Manual          | With Instruction Manual  |
| Calibration Certificate     | None   |
| Connector                   | Lead Wire w/Connector (2 m)  |
| Option                      | None   |
| Made to Order               | None   |
| Maximum operating pressure  | 750 kPa  |
| Minimum operating pressure  | -100 kPa   |
| Proof pressure              | 1 MPa  |
| Maximum ambient temperature | Operating: 50 °C / Stored: 60°C                                      |
| Minimum ambient temperature | Operating: 0 °C / Stored: -10 °C (with no freezing and condensation) |

|  |  |
|--|--|
| Approvals                                  | CE   |
| Flow rate                                  | 1 - 50 l/min (Dry air, N2, Ar) / 1 - 25 l/min (CO2)  |
| Response time                              | 1 s (50 ms, 0.5 s, 2 s can be selected)  |
| Operating humidity range                   | Operating, Stored: 35 - 85%R.H. (with no condensation)   |
| Internal voltage drop                      | NPN output: 1 V or less (at 80 mA) / PNP output: 1.5 V or less (at 80 mA)  |
| Current consumption                        | 55 mA or less  |
| Enclosure                                  | IP40   |
| Repeatability                              | ±1%F.S. or less (Fluid: Dry air) / Analogue output accuracy: ±3%F.S. or less   |
| Linearity                                  | Display accuracy: ±3%F.S. or less (Fluid: Dry air) / Analogue output accuracy: ±5%F.S. or less   |
| Applicable fluid                           | Dry air, N2, Ar, CO2 (Air quality grade is ISO8573.1-1, 1.2 to 1.6.2.)   |
| Rated pressure range                       | -70 kPa - 750 kPa  |
| Power supply voltage                       | 24 VDC ±10%  |
| Switch output                              | NPN or PNP open collector output   |
| Maximum load current                       | 80 mA  |
| Flow display range                         | 1 - 52.5 l/min (Dry air, N2, Ar) / 1 - 26.2 l/min (CO2)  |
| Applied voltage                            | 28 VDC (at NPN output)   |
| Vibration resistance                       | Without orifice: 10 to 500 Hz with a 1.5 mm amplitude or 98 m/s <sup>2</sup> acceleration, in each X, Y, Z direction for 2 hrs, whichever is smaller / With orifice: 10 to 150 Hz with a 1.5 mm amplitude or 19.6 m/s <sup>2</sup> acceleration, in each X, Y, Z direction for 2 hrs, whichever is smaller |
| Impact resistance                          | 490 m/s <sup>2</sup> in X, Y, Z directions 3 times each  |
| Display                                    | 3-digit, 7-segment LED / 2-colour display (Red/Green) / Renewed cycle: 10 times/sec  |
| Indicator light                            | OUT1: Illuminates when output is turned ON (Green) / OUT2: Illuminates when output is turned ON (Red)  |
| Withstand voltage                          | 1000 VAC for 1 min. between external terminal and case   |
| Insulation resistance                      | 50 MΩ or more (at 500 VDC measured via Megohmmeter) between external terminal and case   |
| Temperature characteristics                | ±2%F.S. (15 - 35 °C) / ±5%F.S. (0 - 50 °C)   |
| Maximum fluid temperature                  | 50 °C  |
| Minimum fluid temperature                  | 0 °C (with no freezing and condensation)   |
| Accumulated volume per pulse               | 0.1 l/pulse  |
| Pressure characteristics                   | ±5%F.S. or less (based on 0.35 MPa)  |
| Switch output protection                   | Short-circuit protection, Overcurrent protection   |
| External input type                        | No-voltage input (Reed or Solid state)   |
| External input time                        | Input 30 ms or more  |
| Minimum display unit                       | 0.1 l/min  |
| Display unit                               | Real-time flow rate l/min, CFM x 10 <sup>-2</sup> / Accumulated flow l, ft <sup>3</sup> x 10 <sup>-1</sup>   |
| Accumulated flow range                     | Max. 999999 l  |
| Set flow range                             | 1 - 52.5 l/min (Dry air, N2, Ar) / 1 - 26.2 l/min (CO2)  |
| Hysteresis                                 | Variable   |
| Analogue output response time              | 1.5 s or less (90% response)   |
| Analogue voltage output - Output Impedance | 1 - 5 V / 1 kΩ   |
| Analogue current output                    | 4 - 20 mA  |
| Analogue current output - Load Impedance   | 50 - 600 Ω   |
| Weight                                     | 0.170 Kg   |



## Constructions



## Component Parts

| No. | Description                           | Material            | Note                      |
|-----|---------------------------------------|---------------------|---------------------------|
| 1   | <b>Fitting for piping</b>             | Brass               | Electroless nickel plated |
| 2   | <b>O-ring</b>                         | FKM                 | Fluoro coated             |
| 3   | <b>O-ring</b>                         | HNBR                | Fluoro coated             |
| 4   | <b>Rectifying module</b>              | Stainless steel 304 |                           |
| 5   | <b>Body</b>                           | PBT                 |                           |
| 6   | <b>Sensor housing</b>                 | LCP                 |                           |
| 7   | <b>Sensor chip</b>                    | Silicon             |                           |
| 8   | <b>Orifice</b>                        | Brass               | Electroless nickel plated |
| 9   | <b>Seal</b>                           | FKM                 | Fluoro coated             |
| 10  | <b>Mesh</b>                           | Stainless steel 304 |                           |
| 11  | <b>Bottom piping adapter</b>          | PBT                 |                           |
| 12  | <b>O-ring</b>                         | HNBR                | Fluoro coated             |
| 13  | <b>Flow adjustment valve assembly</b> | PBT                 |                           |
| 14  | <b>Body B</b>                         | Brass               | Electroless nickel plated |
| 15  | <b>Needle</b>                         | Brass               | Electroless nickel plated |
| 16  | <b>O-ring</b>                         | HNBR                | Fluoro coated             |
| 17  | <b>O-ring</b>                         | HNBR                | Fluoro coated             |

## Additional information

|                           |   |
|---------------------------|---|
| Catalogue                 | <a href="#">PFM_EU.pdf</a>  |
| Declaration of conformity | <a href="#">DoC_PFx_TFM0005-C.pdf</a><br><a href="#">newDoC_PFM_TF1V117EN.pdf</a> |
| Installation manuals      | <a href="#">IM_PFM7_TF2Z077EN.pdf</a>   |
| Operation manuals         | <a href="#">PFM7_quickguide.pdf</a><br><a href="#">OM_PFM7_OMJ0006EN-J.pdf</a>    |