

# FF-AM50

Pre-configured product, available with ModBus/FLOW-BUS or EtherNet based communication



## Technical specifications

### Measurement & control

|                                     |  |
|-------------------------------------|--|
| Type of media                       | Gases  |
| Flow range                          | 0...500 l/min  |
| Accuracy                            | ±0.8% Rd plus ±0.2% FS (N <sub>2</sub> /Air/O <sub>2</sub> )   |
| Repeatability                       | < ±0.2% Rd   |
| Turndown ratio                      | 1:500  |
| Multi fluid capability              | embedded gas data for 22 unique gases plus any mixture of these gases  |
| Pre-installed gases                 | C <sub>2</sub> H <sub>2</sub> , Air, C <sub>3</sub> H <sub>4</sub> , Ar, CO <sub>2</sub> , CO, C <sub>3</sub> H <sub>6</sub> , D <sub>2</sub> , C <sub>2</sub> H <sub>6</sub> , C <sub>2</sub> H <sub>4</sub> , He, H <sub>2</sub> , Kr, CH <sub>4</sub> , Ne, N <sub>2</sub> , N <sub>2</sub> O, O <sub>2</sub> , C <sub>3</sub> F <sub>8</sub> , C <sub>3</sub> H <sub>6</sub> , C <sub>3</sub> H <sub>8</sub> , C <sub>3</sub> H <sub>4</sub> |
| Settling time (in control, typical) | <1 sec   |
| Control stability                   | < ± 0.1% FS (typical for 1 l/min N <sub>2</sub> )  |
| Response time (sensor)              | <30 ms   |
| Operating temperature               | 0...+50 °C (32 - 122°F)  |
| Temperature sensitivity             | Flow sensor: zero 0.015% FS/°C; span 0.05% Rd/°C; Pressure sensors: zero 0.16 mbar/°C; span 0.05% Rd/°C  |
| Leak integrity, outboard            | tested < 2 x 10 <sup>-9</sup> mbar l/s He  |
| Long term stability                 | <0.5% FS over period of 3 years, then <0.2% FS per year  |
| Pressure sensitivity                | standard: < 0.15% Rd/bar typical N <sub>2</sub> ; with pressure correction: typical factor 5 improved  |
| Pressure range sensor               | 0...17 bar(a)  |
| Leak-by through closed valve        | typical < 0.1% FS<br>Note: a minimum ΔP of 1 bard is required to ensure max. 0.1% FS leak-by rate.   |
| Mounting                            | any position, attitude sensitivity negligible  |
| Warm-up time                        | 30 min   |
| Storage/transport conditions        | 0...+50°C, max. 95% RH (non-condensing)  |

### Approvals

|         |                       |
|---------|-----------------------|
| Marking | CE, RoHS, WEEE, REACH |
|---------|-----------------------|

### Mechanical specs

|                                |   |
|--------------------------------|---|
| Pressure rating (PN) - in barg | 16  |
| Ingress protection             | IP40  |
| Surface roughness wetted parts | <1.6 μm Ra (<0.8 μm Ra for stainless steel body)  |
| Material wetted parts          | aluminium, stainless steel, silicon nitride, epoxy, aluminiumoxide, glas, FKM   |
| Sealing material               | FKM 51415   |
| Plunger material               | FFKM with PI (polyimide) foil   |
| Process connections            | 1/2"BSPP female thread (ISO1179-1); compression type, push-in or face seal (VCR/VCO) couplings to be ordered seperately |
| Max. ΔP                        | 16 bar(d)   |
| Weight                         | 627 g; add 50 g for Ethernet interface  |

### Electrical properties

|                       |   |
|-----------------------|---|
| Power supply          | +24 Vdc ± 10%   |
| Power consumption     | 2.5 Watt (typical, in control); add 0.9 Watt for EtherNet communication                     |
| Digital communication | Modbus-RTU, Modbus-ASCII, FLOW-BUS, EtherCAT®, EtherNet/IP, Modbus-TCP, POWERLINK, PROFINET |

### Electrical interfaces

|   |                    |
|---|--------------------|
| Service interface   | USB-C, Bluetooth   |
| Power (main connector)                                      | 9-pin D-sub (male) |
| Function (instrument connector)                             | RS485              |
| Modbus RTU/ASCII/FLOW-BUS                                   | 9-pin D-sub (male) |
| Modbus TCP / EtherNet/IP / EtherCAT® / PROFINET / POWERLINK | 2x RJ45            |