

Mass Flow Controller for Gases (MFC)

8713

Direct flow measurement by MEMS - technology for nominal flow rates from 10 ml_N/min to 80 l_N/min (N₂)

- High accuracy
- Short settling time
- Compact design
- Digital communication via RS485



Type 8713 controls the mass flow of gases that is relevant for most applications in process technologies. The measured value will be compared in the digital control electronics with the predefined set point according to the signal; if a control difference is present, the control value output to the proportional valve will be modified using a PI-control algorithm. Due to the fact that the sensor is directly in contact with the gas a very fast response time of the MFC is reached. In this way, the mass flow can be maintained at a fixed value or a predefined profile can be followed, regardless of pressure variations or other changes in the system. Type 8713 can optionally be calibrated for two different gases, the user is able to switch between these two gases. As control element a direct-acting proportional valve guarantees a high sensitivity and a good control characteristics of the MFC. This instrument communicates digitally with master devices, no further A/D conversions needed. The MassFlowCommunicator software can be used for parameterization and diagnosis.

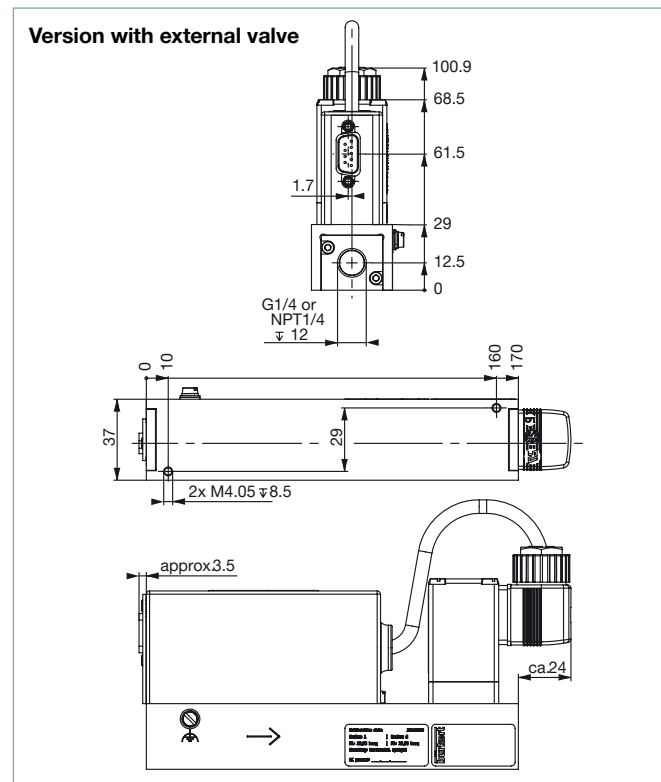
Technical Data

Turn-down ratio	1:50, higher turn-down ratio on request
Operating gas	Neutral, non-contaminated gases, others available on request
Calibration gas	Operating gas or air with conversion factor
Max operating pressure (inlet pressure)	145 PSI (10 bar) depending on the orifice of the valve
Gas temperature	14°F to 158°F (-10°C to 70°C) (-10°C to 60°C with oxygen)
Ambient temperature	14°F to 122°F (-10°C to 50°C)
Accuracy (after 1 min. warm up time)	±0.8% o. R. ±0.3% F.S.
Repeatability	±0.1% F.S.
Settling time (t_{95%})	<300 ms
Body material	Aluminium or stainless steel
Port connection	NPT 1/4", G 1/4", screw-in fitting or sub-base, others on request
Communication	Digital via RS485 (half-duplex or full duplex), RS422
Power supply	24 V DC
Voltage tolerance	±10%
Power consumption	3.5 W - 11.5 W (depending on control valve used)

Nominal Flow Ranges (other gases on request)

Gas	Min. Q _{nom} [l _N /min]	Max. Q _{nom} [l _N /min]
Air	0.01	80
Helium	0.01	500
Carbon dioxide	0.02	40

Dimensions [mm] (see datasheet for more details)



Measuring Principle

