

F-231MX

High-Pressure Mass Flow Controller for Gases, Ex-Protected style



Technical specifications

Measurement & control

Type of media	Gases
Flow range	min. 10...500 mL _N /min max. 0.2...10 l _N /min
Accuracy	±1% FS (incl. linearity, based on actual calibration)
Repeatability	< ±0.2% Rd
Turndown ratio	1:50 (2...100%)
Control stability	≤ ±0.1% FS typical
Operating temperature	EX-FLOW sensor: -10...+70°C; XB-coil: -40...+65°C XC-coil: -40...+65°C
Temperature sensitivity	zero: < ±0.05% FS/°C; span: < ±0.05% Rd/°C
Leak integrity, outboard	tested < 2 x 10 ⁻⁹ mbar l/s He
Mounting	max. error at 90° off horizontal 0,2% at 1 bar, typical N2
Warm-up time	30 minutes
Storage/transport conditions	0...+50°C, max. 95% RH (non-condensing)

Approvals

Marking	CE, UKCA, RoHS, WEEE, REACH
Ex-Protection	ATEX Zone 1, ATEX Zone 2, IECEx Zone 1, IECEx Zone 2, TIIS/JP Ex, KCs

Mechanical specs

Pressure rating (PN) - in barg	400
Ingress protection	IP65
Material wetted parts	stainless steel 316L or comparable
Housing material	anodized aluminum
Sealing material	standard: FKM/Viton®; options: EPDM, FFKM/Kalrez®
Process connections	compression type or face seal (VCR/VCO) couplings
Min. ΔP	6 bar(d)
Max. ΔP	350 bar(d)

Electrical properties

Analog output	15...20 mA (linear). Additional power supply and readout unit required
Analog setpoint	For MFC, additional power supply, readout and control unit required
Coils	XB-coil - Coil voltage max. 28 V/110 mA; 295 Ohm at 20°C XC-coil - Coil voltage max. 24 V; 65 Ohm at 20°C, Pmax = 9 W at 20°C

Electrical interfaces

Function (instrument connector)	Analog
Measuring head	Terminal connection, cable gland M16x1,5