MP-FN80

Single model NPT1 (25 A)

*Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.

Specifications

Model		MP-FN80
Type		Single model
Connection bore diameter		NPT1" (25A)
Supported gases		Air and non-corrosive gases
Supported gas temperature		-5 to +50°C, 23 to 122°F
Operating pressure range		0.2 to 1 MPa, 2 to 10 bar, 29 to 145 psi *1
Pressure resistance		1.5 MPa, 15 bar, 217.5 psi
Flow rate	Detection principle	Heat based (mass flow rate)
	Rated flow range (normal)	12 to 8000 L/min 0.7 to 480.0 m³/h 24.72 to 16951.04 ft³/h 0.4 to 282.5 CFM
	Zero cut flow rate	12 L/min, 0.7 m³/h 24.72 ft³/h, 0.4 CFM
	Measurement accuracy	±(1.5% of RD + 0.5% of F.S.) *2 *3
	Repeatability	±1.0% of F.S. (with an averaging time of 1.0 s)
	Display resolution	1 L/min, 0.1 m³/h 3.53 ft³/h, 0.1 CFM
	Response time	150 ms (63% response) *4
	Averaging time	OFF/100 ms/200 ms/500 ms/1.0 s/3.0 s/5.0 s/10 s/30 s (selectable)
Pressure (Digital value, gauge pressure)	Rated pressure range	0.000 to 1.000 MPa, 0.00 to 10.00bar, 0.0 to 145.0 psi
	Measurement accuracy	±2.0% of F.S.
	Repeatability	±0.2% of F.S. (with a response time of 50 ms)
	Display resolution	0.001 MPa, 0.01 bar, 0.1 psi
	Response time	Selectable from 10 ms, 50 ms, 100 ms, 500 ms, 1.0 s, and 5.0 s *4
Humidity (Dew point)	Rated relative humidity range/ dew point range	15 to 100%RH (no condensation)/Corresponds to the relative humidity range *5 *6
	Measurement accuracy	±4°C, ±7°F *5 *6
	Display resolution	5%RH/1°C, 1°F *5 *6
Temperature	Measurement accuracy	±2.0°C, ±3.6°F *7
	Display resolution	0.1°C, 0.1°F *7
Shut-off valve	Response time	1 s or less (closed → open)
	Leakage amount	50 mL/min 0.002 CFM (N) or less
Filter/regulator (Standard model only)	Pressure adjustment range	—
	Filtration degree	
	Drainage cup capacity	
Check valve		Available
Display		Color LCD, status indicator
Data accumulation	Accumulation period	Accumulated data: approx. 2 years/Instantaneous data: approx. 2 weeks
	Data reading	USB 2.0/Ethernet

I/O	Control output (Ch.1/2/3/4/5)	NPN/PNP setting switchable, open collector output 30 VDC or less, N.O./N.C. setting switchable, max. 100 mA/Ch., residual voltage: 2.5 V or less
	Analog output (Ch.1/2)	4 to 20 mA, load resistance: 260 Ω or less *4
	External input (Ch.2/3/6)	Short-circuit current: 1.5 mA or less, input time: 20 ms or more
Protection circuit		Power supply reverse connection protection, power supply surge protection, reverse connection protection for each I/O, surge protection for each I/O, overcurrent protection for each output
Power supply	Power voltage	24 VDC +25%/-20% (including ripple), Class 2 or LPS
	Power consumption	1.2 A (300 ms) when opening/closing valve, 100 mA at all other times *8 (standalone usage; excluding load current)
Communication interface		USB2.0
Network compatibility		When using only this unit: IO-Link (Specification v1.1/COM3) *9 When connecting MP-FEN1 : EtherNet/IP™, PROFINET, Modbus/TCP, MC protocol/SLMP
Environmental resistance	Enclosure rating	IP67 (IEC60529) *10
	Ambient temperature	−5°C to +50°C 23°F to 122°F (no freezing) *11
	Relative humidity	35%RH to 85%RH (no condensation)
	Vibration resistance	10 to 500 Hz; power spectral density: 0.204 G^2/Hz; X, Y, and Z directions
	Shock resistance	300 m/s^2, XYZ axes, 10 times for each axis
Material		Sensor part : PET/PPS/PBT/POM/aluminum/SPHC Filter/regulator : Aluminum/POM/HDPE/NBR/Nylon *12
Weight		Approx. 1920 g 67.73 oz

*1 An upstream side pressure of 0.2 MPa or less (a filter/regulator adjustment pressure of 0.2 MPa or less for the standard model) worsens the flow rate characteristic of the shut-off valve.
*2 This value is guaranteed by KEYENCE inspection facilities while testing with air. Errors will be introduced by factors such as the gas type, gas temperature, and ambient temperature.
*3 Value in an environment with a constant temperature of 25°C 77°F and compressed air evaluated as purity class 1*1 (ISO 8573-1 (2010)/JIS B 8392-1 (2012)).±(5.5% of RD + 0.5% of F.S.) when equivalent to purity class 3*4.
*4 15 ms is added to the analog output response time.
*5 Measurable when at least 2% of F.S. worth of gas is flowing.
*6 The prescribed accuracy may not be met or the unit may be damaged if the compressed air contains a large amount of oil mist, organic solvent, or other gas. (For details, see “Gas Being Measured” on page 4.)
*7 When the flow is 5% of F.S. or higher. Errors due to heat generated by the main unit occur when the flow is too small.
*8 When connecting MP-FEA1 and/or MP-FEN1, add each device’s current consumption (2.1 A or less including load current).
*9 Use an IO-Link master that can supply 1.2 A or more. (1.6 A or less when connecting an MP-FEA1 and an MP-FEN1.) IO-Link is a registered trademark or trademark of PROFIBUS Nutzerorganisation e.V. (PNO).
*10 When protection is provided to prevent dust and liquid from intruding through the exhaust port. The IP67 enclosure rating is lost when a USB connection is established.
*11 If this product is used with a power supply voltage of 26.4 V or more, the upper limit on the ambient temperature is 45°C 113°F.
*12 Nylon is only used on the MP-Fx20R.