

FLOW METER

AI.FGP4



The AI.FGP4 flow meter is based on the thermal mass flow measurement and is ideal for measuring the flow of compressed air and gases in pipes from DN50 (2") to DN300 (12").

With the AI.FGP4 the consumption of compressed air, nitrogen, CO2 or other non-corrosive and non-flammable gases can be measured up to a pressure of 16 bar (232 PSI), for example.

Patented non-return protection for secure mounting

The AI.FGP4 flow meter set new standards in terms of safety and easy assembly. The patented non-return protection combines three functions in one device:

- Non-return protection

The sensor can only be pushed in one direction during installation. The sensor cannot return at all, even if it is released.

- Seal

By means of an encapsulated O-ring, no compressed air can escape under pressure during assembly.

- Precise mounting

The precise positioning with respect to immersion depth and orientation is easy to perform, guaranteeing accurate measurement results.

The high measurement accuracy of 2.5% from reading results from the application-oriented factory adjustments, which are undertaken at 9 bar (130 PSI) pressure. For optimum adaptation to different measurement tasks, you can choose between two measuring ranges 0.2...100 Nm/s (40...19685 SFPM) or 0.2...200 Nm/s (40...39370 SFPM) and two different probe lengths with a maximum immersion depth of 165 mm (6.5") or 315 mm (12.4"). The inner diameter of the distribution pipe which is measured can be entered via the USB port and the included configuration software.

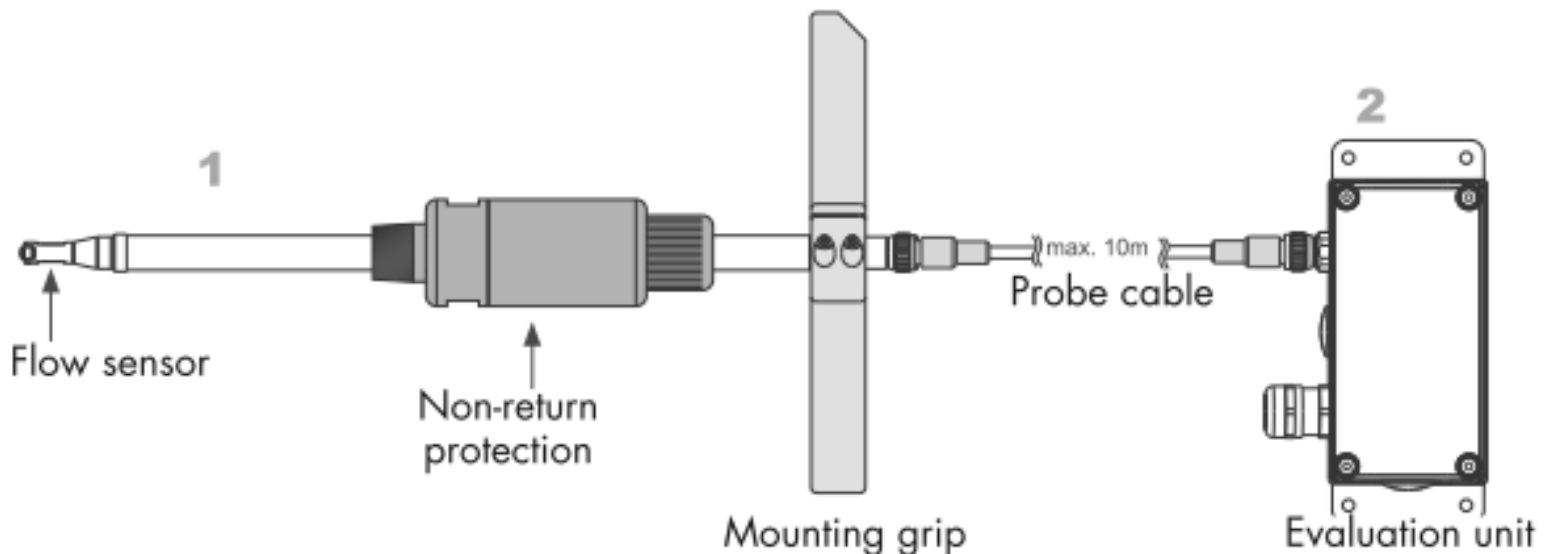
Two signal outputs are available to output the measured values. Depending on the application, these can be configured as an analogue output (current or voltage), switching output or pulse output for consumption measuring.

TYPICAL APPLICATION

- Measurement of consumption of compressed air
- Compressed air counter
- Compressed air monitoring
- Mass flow measurement of industrial gases
- High accuracy $\pm 2,5\%$ of reading.
- Exceptional reproducibility
- Non-return protection for secure mounting
- Assembly / disassembly under pressure without flow interruption
- Easy and accurate positioning
- Wide measuring range
- Pipe diameters DN 65; 2 1 / 2 " bis DN 300 (12")

DESIGN

The AI.FGP4 flow meter has a modular design and consists of probes (1) and evaluation electronics (2). The probe includes sensor and measuring electronics, in which the factory adjustment data is stored. The evaluation electronics communicates digitally with the probe and can be located up to 10 m (32.8 ft) from the probe. The PA.FGP4 holds an integrated counter for the usage. The amount is stored and the data will not be lost due to a power outage. The availability of the consumption amount as a free configurable pulse output is another helpful feature.

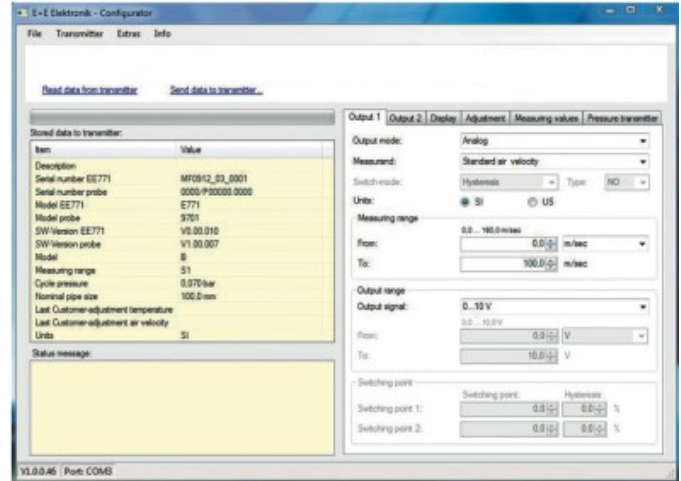


CONFIGURATION SOFTWARE

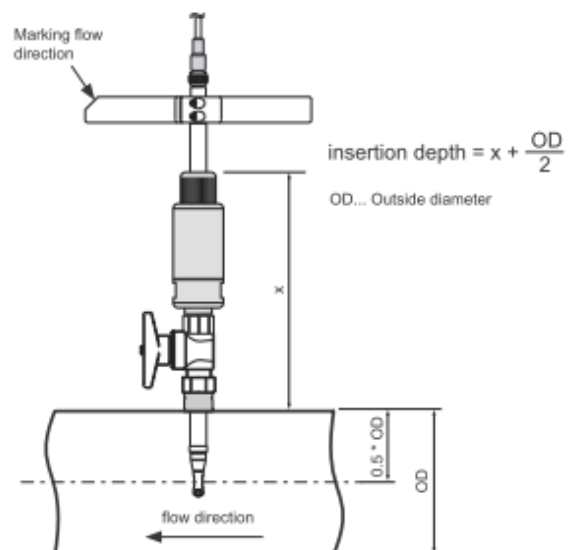
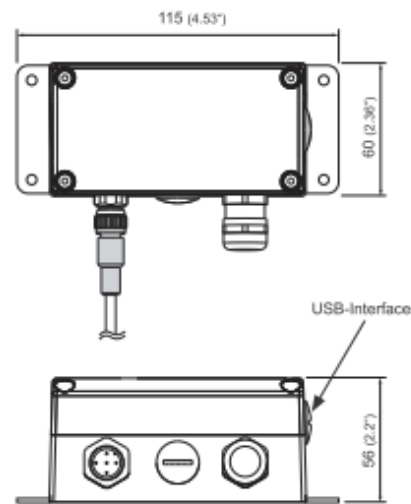
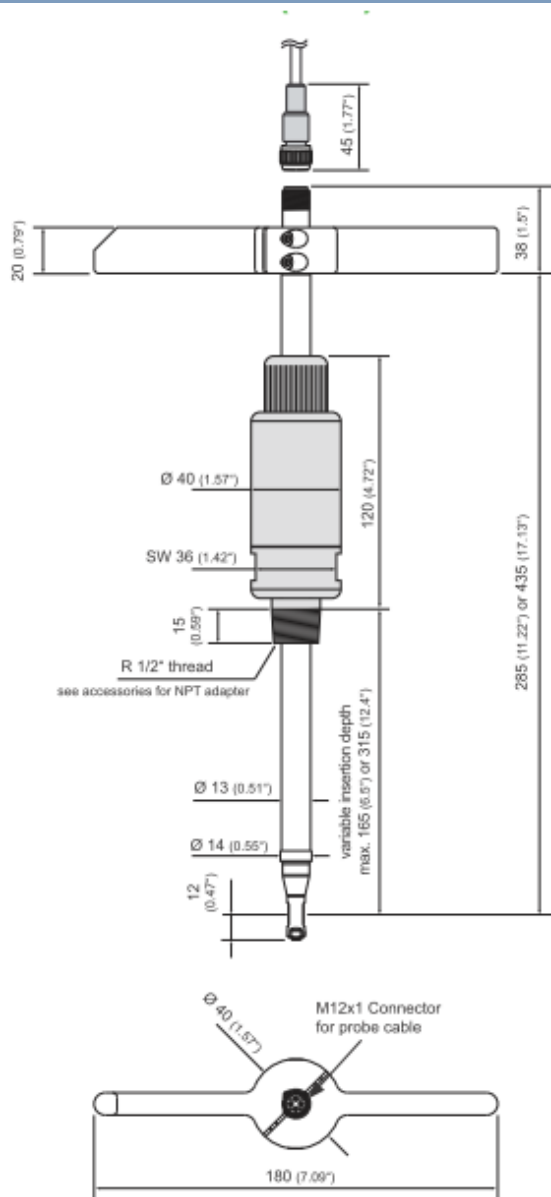
The flowguardPRO flowmeter can be configured conveniently, to meet the requirements of the application with the standard configuration soft-ware and the integrated USB interface.

FUNCTIONALITY

- Configuration of the output (scale / set point)
- Setting the pipe diameter
- 2-point user calibration for flow and temperature
- Readout of the counter values
- Reset of min / max values and counter
- Indication of the measurement value



DIMENSIONS (mm)



Measuring value

Flow

Measurand	Volumetric flow at standard conditions acc. DIN 1343 $p_0 = 1013,24 \text{ mbar}$ $t_0 = 0^\circ\text{C} (273,15\text{K})$
Measuring range	0,2...100 Nm/s (standard) or 0,2...200 Nm/s (high)
Accuracy (in air at 7bar, 23°C)	+ 2,5% of measuring value + 0,5% of full scale
Temperature coefficient	+ 0,1% of measuring value / °C
Pressure coefficient	+ 0,5% of measuring value / bar
Response time t_{90}	< 1 sec.
Measuring range	0,5 sec.

Temperature

Measuring range	-20...80°C
Accuracy at 20°C	+ 0,7 °C

Outputs

Ausgangssignal und Abbildungsbereich sind frei skalierbar

Analogue output	voltage	0 - 10 V	max. 1 mA
	current (3-wire)	0 - 20 mA and 4 - 20 mA	$R_L < 500 \text{ Ohm}$
Switching output		potential free max. 44 VDC, 500 mA switching capacity	
Pulse output		Totalizer, pulse length: 0,02...2 sec.	
Digital interface		USB (for configuration)	

Input

Optional pressure compensation	4 - 20 mA (2-wire, 15V) for pressure sensor
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General

Supply voltage	18 - 30 V AC/DC
Current consumption	max. 200 mA (with display)
Temperature range	ambient temperature: -20...60°C medium temperature: -20...80°C storage temperature: -20...60°C
Nominal pressure	PN 16 (232 psi)
Humidity	no condensation
Medium	compressed air or none corrosive gases
Connection	cable gland M 16x1,5 (optional connector M 12x1 8pol.)
Electromagnetic compatibility	EN 61326-1; EN 61326-2-3; Industrial Environment
Housing protection	IP 65 / NEMA 4
Material	housing: metal (AlSi3Cu) probe: stainless steel sensor head: plastics (PBT)



TECHNICAL DATASHEET

Flow measuring range in dependence on pipe diameter

pipe		d _{inner}	Measuring range in Nm	
DN	Zoll	mm	standard	high
DN 50	2"	54,5	1,7...893 Nm	1,7...1.679 Nm
DN 65	2 1/2"	72,1	2,9...1.469 Nm	2,9...2.938 Nm
DN 80	3"	84,9	4,1...2.037 Nm	4,1...4.074 Nm
DN 100	4"	110,3	6,9...3.438 Nm	6,9...6.876 Nm
DN 125	5"	135,7	10,4...5.203 Nm	10,4...10.407 Nm
DN 150	6"	164,3	15,32...7.628 Nm	15,32...15.257 Nm
DN 200	8"	215,1	26,2...13.075 Nm	26,2...26.150 Nm
DN 250	10"	269	40,9...20.449 Nm	40,9...40.898 Nm
DN 300	12"	319,9	57,8...28.920 Nm	57,8...57.840 Nm
DN 350	14"	339,6	65,2...32.591 Nm	65,2...65.183 Nm
DN 400	16"	388,8	85,4...42.719 Nm	85,4...85.438 Nm
DN 500	20"	486	133,5...66.749 Nm	133,5...133.498 Nm
DN 600	24"	585	193,4...96.712 Nm	193,4...193.425 Nm
DN 700	28"	682,6	263,4...131.675 Nm	263,4...263.350 Nm

Display:

2 - line LCD - display, background illuminated
material: metall (AlSi3Cu)

**plug for supply and outputs:****weld on nipple:****ball-valve 1 / 2 " for parallel measurement:**

suitable:

- For assembly / disassembly under pressure
- Connection of a second measurement device
(for example dewpoint transmitter)





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