



Technical Data Sheet flowguardPRO 4-20

Measuring value

Flow

Measurand	Volumetric flow at standard conditions acc. DIN 1343 P ₀ = 1013.25 mbar (14.7 PSI); t ₀ = 0 °C (32 °F)
Measuring range	0.2...100 Nm/s (40...19685 SFPM) or 0.2...200 Nm/s (40...39370 SFPM)
Accuracy in air at 9bar (130.5psi) (abs) and 23°C (73°F) ¹⁾	± (2.5% of measuring value + 0.5% of full scale)
Temperature coefficient	± (0.1% of measuring value / °C)
Pressure coefficient ²⁾	+ 0.5% of measuring value / bar
Response time t ₉₀	< 1 sec.
Sample rate	0.5 sec.

Temperature

Measuring range	-20...80 °C (-4...176 °F)
Accuracy at 20°C (68°F)	± 0.7 °C (1.26 °F)

Outputs

Output signal and display ranges are freely scalable

Analogue output	voltage	0 - 10 V	max. 1 mA
	current (3-wire)	0 - 20 mA and 4 - 20 mA	R _L < 500 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; 15 V) for pressure sensor
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General

Supply voltage	18 - 30 V AC/DC		
Current consumption	max. 200 mA		
Temperature range	ambient temperature:	-20...60 °C (-4...140 °F)	
	medium temperature:	-20...80 °C (-4...176 °F)	
	storage temperature:	-20...60 °C (-4...140 °F)	
Humidity working range	0...99 %RH no condensation		
max. working pressure	16 bar (232 Psi)		
Medium	compressed air or Non-Corrosive gases		
Electrical connection	cable gland M16x1.5 (optional connector M12x1 8pol.)		
Electromagnetic compatibility	EN61326-1	EN61326-2-3	
	Industrial Environment		
Material	housing	metal (AlSi3Cu)	
	probe	stainless steel	
	sensor head	plastic (PBT)	
	non-return protection	brass	
Housing protection class	IP65 / Nema 4		

1) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation). The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).

2) The flow meter is calibrated at 9 bar (abs) 130.5 psi. If the working pressure is different from 9 bar (130.5 psi) you can compensate the error by setting the actual pressure with the configuration software.

Flow measuring range in dependence on pipe diameter

pipe	inner Ø	measuring range ¹⁾	
		mm (inch)	
		0.2...100 Nm/s (40...19685 SFPM)	0.2...200 Nm/s (40...39370 SFPM)
DN50 / 2"	56.3 (2.22")	1.8...895 Nm ³ /h 1.1...526.9 SCFM	1.8...1791 Nm ³ /h 1.1...1053.9 SCFM
DN65 / 2 1/2"	72.1 (2.84")	2.9...1469 Nm ³ /h 1.7...864.2 SCFM	2.9...2938 Nm ³ /h 1.7...1728.4 SCFM
DN80 / 3"	84.9 (3.34")	4.1...2037 Nm ³ /h 2.4...1198.3 SCFM	4.1...4074 Nm ³ /h 2.4...2396.6 SCFM
DN100 / 4"	110.3 (4.34")	6.9...3438 Nm ³ /h 4.0...2022.5 SCFM	6.9...6876 Nm ³ /h 4.0...4045.1 SCFM
DN125 / 5"	135.7 (5.34")	10.4...5203 Nm ³ /h 6.1...3061.3 SCFM	10.4...10407 Nm ³ /h 6.1...6122.6 SCFM
DN150 / 6"	164.3 (6.47")	15.3...7628 Nm ³ /h 9.0...4487.6 SCFM	15.3...15257 Nm ³ /h 9.0...8975.3 SCFM
DN200 / 8"	215.1 (8.47")	26.2...13075 Nm ³ /h 15.4...7691.7 SCFM	26.2...26150 Nm ³ /h 15.4...15383.5 SCFM
DN250 / 10"	269.0 (10.59")	40.9...20449 Nm ³ /h 24.1...12029.5 SCFM	40.9...40898 Nm ³ /h 24.1...24059.0 SCFM
DN300 / 12"	319.9 (12.59")	57.8...28920 Nm ³ /h 34.0...17012.7 SCFM	57.8...57840 Nm ³ /h 34.0...34025.3 SCFM

1) e.g. rust-proof steel pipe acc. EN ISO 1127, wall thickness 2.0 mm (0.0787")

Formula for calculating the standardized volumetric flow:

$$\dot{V}_0 = v_0 * id^2 * \pi/4 * 3600$$

\dot{V}_0 ... standardized volumetric flow [m³/h]

v_0 ... standardized flow [m/s]

id ... inner pipe diameter [m]

π ... 3.1415