



Industrial Gas Flow Measurement

HYDROGEN (H_2)

Flow Metering Solutions

SICK
Sensor Intelligence.



In addition to the today's chemical process industry, hydrogen is becoming one of the most important energy carriers of the future. With the FLOWSIC family SICK offers ultrasonic meters for gas flow measurement of pure hydrogen (100 vol.-%).

Your benefits

- No pressure loss
- Large turn down
- Permanent health check (diagnostics)
- Gas quality monitoring (speed of sound)
- Pure H₂ measurement

Technical data

	Flowrate [m ³ /h]		Maximum Velocity [m/s]	Length (flange-to-flange) [mm]	Weight (ANSI CL600) [kg]
	min*	max			
DN150/6 inch	85	1710	30	450	150
DN200/8 inch	115	3000	30	600	220
DN250/10 inch	140	4600	30	750	330
DN300/12 inch	160	6200	30	900	500
DN400/16 inch	215	11000	30	762	650
DN500/20 inch	625	17200	30	902	990
DN600/24 inch	750	24700	30	991	1615
Material	Meter Body: LT-CS (A352 LCC), two layer RAL9003 coated or Stainless Steel (A182 Gr. F316/316L), uncoated Electronics: Aluminum or Stainless Steel Transducer: Stainless Steel				
Flange Type	ASME B16.5				
	* Referenced speed of sound at 1350 m/s equivalent e.g. p = 50 bar at T = 20 °C (100% H ₂)				

Measured values	Volumetric flow, a. c., volume a. c., gas velocity, speed of sound
Number of meas. paths	1+1 paths crossed (DN500 and DN600 2 paths in plane)
Measurement principle	Ultrasonic transit time difference measurement
Measurement medium	H ₂ (95 ... 100%)
Repeatability	± 0.5% of the measured value (typical)
Accuracy (0.1 Q _{max} ... Q _{max})	≤ ± 2.0% (un-calibrated), ≤ ± 4.0% below 0.1 Q _{max} (typical)
Min. piping requirements	Straight inlet section of ≥ 20D or ≥ 10D with flow conditioner
Operating pressure (typical)	5 ... 100 bar(a) (minimum pressure depending on line size and H ₂ content)
Gas temperature	-40 ... 100 °C
Ambient temperature	-40 ... 60 °C
Ambient humidity	≤ 95% relative humidity; non-condensing
Conformities	ISO17089-2
Ex-approvals (IECEX)	CSA, ATEX, IECEx, Zone 1 Classification according IIC T4, intrinsically safe transducers
Electrical safety	CE
Enclosure rating	IP66 / IP67
I/O configuration	1x RS485, 1x Pulse, 2x Status Outputs, 1x Analog Output (4-20mA / HART) 2x RS485, 2x Pulse, 1x Status Outputs