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DATA SHEET

FTMG-ISN50SXX

FTMg
Flow sensors

SICK Sensor Intelligence



Illustration may differ

FLOW SENSORS

FTMG-ISN50SXX

ORDERING INFORMATION

Type	part no.
FTMG-ISN50SXX	1122525

Further device versions and accessories at www.sick.com/FTMg

DETAILED TECHNICAL DATA

FEATURES

Measurement principle	Calorimetric (flow, temperature), piezoresistive (pressure)
Medium	Compressed air (air quality ISO 8573-1:2010 [3:4:4]), Argon, nitrogen, carbon dioxide
Measured values	Mass, volume, Mass flow rate, Volumetric flow rate, Energy, Flow velocity, pressure, Temperature
Nominal width measuring tube	DN 50
Measuring range	
Standard	58.9 l/min ... 11,780.9 l/min [1] 0.5 m/s ... 100 m/s [1]
Enhanced	11,780.9 l/min ... 17,671.5 l/min [1] 100 m/s ... 150 m/s [1]
Process temperature	–20 °C ... +60 °C
Process pressure	0 bar ... 16 bar [2]
Communication interface	IO-Link, IO-Link V1.1
Temperature measurement	✓
Pressure measurement	✓
Display	✓ 128 x 128 pixels, adjustable rotary OLED display (90° steps) and 4 pushbuttons

[1] Reference conditions according to DIN 1343 (atmospheric pressure 1,013 mbar, compressed air temperature 0 °C).

[2] Evaluation according to DIN EN 61298-2 best fit straight line.

PERFORMANCE

Maximum flow	≤ 17,672 l/min
Measurement accuracy	
Standard	± 6 % of the measured value + 0.6% of the measuring range limit value (extended measuring range) [1]
Enhanced	± 8 % of the measured value + 1% of the measuring range limit value (extended measuring range) [1]
Repeatability	± 1.5 % From measured value [1]
Response time	< 0.3 s
Temperature measurement	
Measurement accuracy (temperature)	± 2 °C [2]
Repeatability (temperature)	± 0.5 °C [2]
Pressure measurement	
Measurement accuracy (pressure)	± 1.5 % of measuring range end value
Non-linearity (pressure)	± 0.5 % from measuring range
Repeatability (pressure)	± 0.2 % from measuring range

[1] Reference conditions during measurement: media conditions: air according to ISO 8573-1:2010 [3:4:4] or better; static pressure = 7 ± 0.2 bar (abs.); medium temperature 22 ± 3 °C; straight inlet zone > 250xDN; average filter can be parameterized by customer: 10 seconds / ambient conditions: ambient temperature 15 °C ... 25 °C; ambient pressure: 1013 mbar / measured value via digital interface.

[2] When flow rate ≥ 10% of the measuring range limit value (standard measuring range).

ELECTRONICS

Supply voltage	17 V DC ... 30 V DC [1]
Power consumption	< 4.5 W at 24 V DC without output load
Switch-on time	≤ 10 s
Protection class	✓
Connection type	M12 x 1 round connector, 5-pin, A-coded
Output signal	1x analog output 4 mA ... 20 mA + 1x digital/analog output (PNP, NPN, push-pull, 4 mA ... 20 mA / switch-able), frequency pulse output + 1x digital output (PNP, NPN, push-pull, switchable), IO-Link V1.1 (COM3 / 230K4 baud)
Output load	4 mA ... 20 mA, max. 500 ohm
Lower signal level	3.5 mA ... 3.8 mA
Upper signal level	20.5 mA ... 21.5 mA
Inaccuracy	QA Pin2: < 0.5% full-range (20 mA) Q2 Pin5: < 0.5% full-range (20 mA)
Digital output	≤ 100 mA
Inductive load	≤ 1 H
Capacitive load	≤ 100 nF (2.5 nF, IO-Link mode)
Enclosure rating	IP65 (IEC 60529) [2] IP67 (IEC 60529) [2]
MTTF	> 100 years

[1] All connections are reverse polarity and overload protected. Q1 and Q2 are short-circuit protected. Use an energy-limited circuit for the voltage supply as per UL61010-1 3. Outp.

[2] Not UL-tested.

MECHANICS

Process connection	2” NPT male thread
Wetted parts	Probe: stainless steel 1.4305, PA6; seal: FKM (Viton®), Measurement channel: stainless steel 1.4301
Housing material	PC+ABS, PA66+PA6I GF50, PC, TPE, stainless steel 1.4301
Weight	Approx. 2.8 kg

AMBIENT DATA

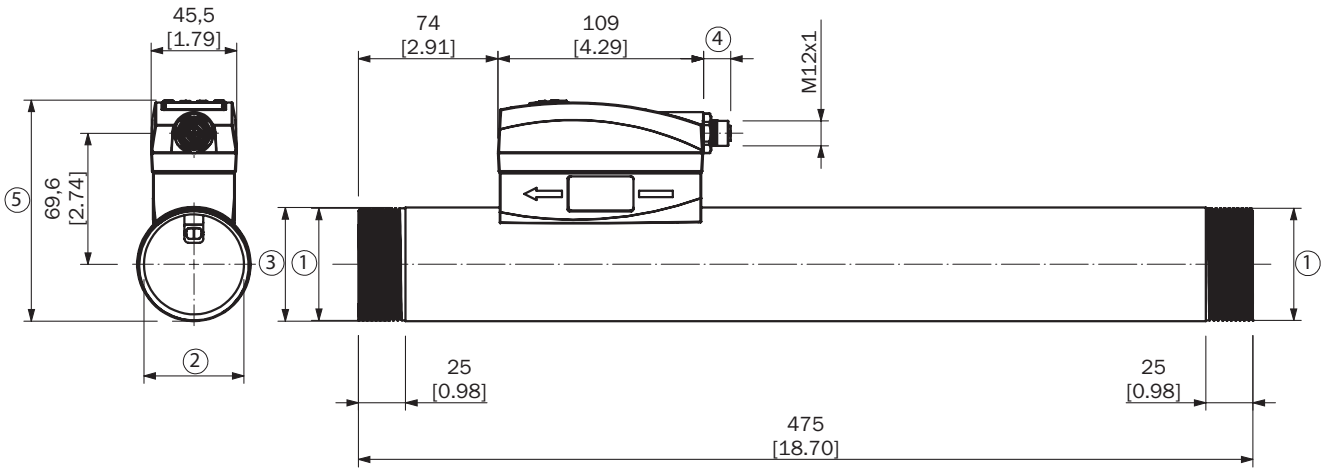
Ambient operating temperature	–20 °C ... +60 °C [1]
Ambient temperature, storage	–40 °C ... +80 °C

[1] According to the UL approval: degree of contamination 3 (UL61010-1: 2012-05); air humidity: 80% at temperatures up to 31 °C; installation altitude: max. 3,000 m above sea level.

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
IO-Link certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

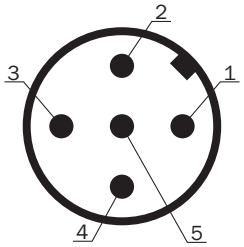
DN40, DN50, UNIT: MM (INCH), DECIMAL SEPARATOR: PERIOD



Dimensions in mm (inch)

Type	DN	1	2	3	4	5
FTMG-ISR40SXX	40	R 1 1/2	Ø 41.1	Ø 48.3	18.5	105.1
FTMG-ESR40SXX	40	R 1 1/2	Ø 41.1	Ø 48.3	13.4	105.1
FTMG-ISN40SXX	40	1 1/2" NPT	Ø 41.1	Ø 48.3	18.5	105.1
FTMG-ESN40SXX	40	1 1/2" NPT	Ø 41.1	Ø 48.3	13.4	105.1
FTMG-ISR50SXX	50	R 2	Ø 54.1	Ø 60.3	18.5	117.1
FTMG-ESR50SXX	50	R 2	Ø 54.1	Ø 60.3	13.5	117.1
FTMG-ISN50SXX	50	2" NPT	Ø 54.1	Ø 60.3	18.5	117.1
FTMG-ESN50SXX	50	2" NPT	Ø 54.1	Ø 60.3	13.5	117.1

CONNECTION TYPE



① L^+: Supply voltage, brown
② QA: analog current output 4 mA ... 20 mA (scalable), white
③ M: ground, reference potential for current output, blue
④ C/Q1: IO-Link communication or digital switching output 1 (NO/NC programmable), black
⑤ Q2: Digital switching output 2 (NO/NC programmable or current output B 4 mA ... 20 mA, frequency or pulse output) gray

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1122525

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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