



# FTMG-ESN40SXX

FTMg

FLOW SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
FTMG-ESN40SXX	1122524

Other models and accessories → [www.sick.com/FTMg](http://www.sick.com/FTMg)

### Detailed technical data

#### Features

<b>Measurement principle</b>	Calorimetric (flow, temperature), piezoresistive (pressure)				
<b>Medium</b>	Compressed air (air quality ISO 8573-1:2010 [3:4:4]), Argon, nitrogen, carbon dioxide				
<b>Measured values</b>	Mass, volume, Mass flow rate, Volumetric flow rate, Energy, Flow velocity, pressure, Temperature				
<b>Nominal width measuring tube</b>	DN 40				
<b>Measuring range</b>	<table border="0"> <tr> <td style="text-align: right;">Standard</td> <td>37.7 l/min ... 7,539.8 l/min<sup>1)</sup> 0.5 m/s ... 100 m/s<sup>1)</sup></td> </tr> <tr> <td style="text-align: right;">Enhanced</td> <td>7,539.8 l/min ... 11,309.7 l/min<sup>1)</sup> 100 m/s ... 150 m/s<sup>1)</sup></td> </tr> </table>	Standard	37.7 l/min ... 7,539.8 l/min <sup>1)</sup> 0.5 m/s ... 100 m/s <sup>1)</sup>	Enhanced	7,539.8 l/min ... 11,309.7 l/min <sup>1)</sup> 100 m/s ... 150 m/s <sup>1)</sup>
Standard	37.7 l/min ... 7,539.8 l/min <sup>1)</sup> 0.5 m/s ... 100 m/s <sup>1)</sup>				
Enhanced	7,539.8 l/min ... 11,309.7 l/min <sup>1)</sup> 100 m/s ... 150 m/s <sup>1)</sup>				
<b>Process temperature</b>	-20 °C ... +60 °C				
<b>Process pressure</b>	0 bar ... 16 bar				
<b>Communication interface</b>	MQTT OPC UA				
<b>Temperature measurement</b>	✓				
<b>Pressure measurement</b>	✓				
<b>Indication</b>	✓ 128 x 128 pixels, adjustable rotary OLED display (90° steps) and 4 pushbuttons				

<sup>1)</sup> Reference conditions according to DIN 1343 (atmospheric pressure 1,013 mbar, compressed air temperature 0 °C).

#### Performance

<b>Measurement accuracy</b>	<table border="0"> <tr> <td style="text-align: right;">Standard</td> <td>± 6 % of the measured value + 0.6% of the measuring range limit value (extended measuring range)<sup>1)</sup></td> </tr> </table>	Standard	± 6 % of the measured value + 0.6% of the measuring range limit value (extended measuring range) <sup>1)</sup>
Standard	± 6 % of the measured value + 0.6% of the measuring range limit value (extended measuring range) <sup>1)</sup>		

<sup>1)</sup> 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.

<sup>2)</sup> When flow rate ≥ 10% of the measuring range limit value (standard measuring range).

<sup>3)</sup> Evaluation according to DIN EN 61298-2 best fit straight line.

	Enhanced	$\pm 8\%$ of the measured value + 0.8% of the measuring range limit value (extended measuring range) <sup>1)</sup>
<b>Repeatability</b>		$\pm 1.5\%$ From measured value <sup>1)</sup>
<b>Response time</b>		< 0.3 s
<b>Temperature measurement</b>		
Measurement accuracy (temperature)		$\pm 2\text{ °C}$ <sup>2)</sup>
Repeatability (temperature)		$\pm 0.5\text{ °C}$ <sup>2)</sup>
<b>Pressure measurement</b>		
Measurement accuracy (pressure)		$\pm 1.5\%$ of measuring range end value <sup>3)</sup>
Non-linearity (pressure)		$\pm 0.5\%$ from measuring range <sup>3)</sup>
Repeatability (pressure)		$\pm 0.2\%$ from measuring range <sup>3)</sup>

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

<sup>2)</sup> When flow rate  $\geq 10\%$  of the measuring range limit value (standard measuring range).

<sup>3)</sup> Evaluation according to DIN EN 61298-2 best fit straight line.

## Electronics

<b>Power consumption</b>	< 5 W
<b>Initialization time</b>	$\leq 10$ s
<b>Protection class</b>	III
<b>Connection type</b>	1 x M12 round connector, 8-pin, X-coded
<b>Output signal</b>	OPC UA, MQTT, integrated web server
<b>MTTF</b>	> 100 years
<b>Standard communication</b>	IEEE802.3 Clause 25 (100BaseTx); 100 Mbit/sec
<b>Standard supply</b>	Power over Ethernet according to IEEE802.3af
<b>Performance class</b>	Class 0; acc. IEEE802.3af Powered Device < 13 W
<b>Power supply mode</b>	Mode A and Mode B

## Mechanics

<b>Process connection</b>	1 1/2" NPT male thread
<b>Wetted parts</b>	Probe: stainless steel 1.4305, PA6; seal: FKM (Viton®); measurement channel: stainless steel 1.4301
<b>Housing material</b>	PC+ABS, PA66+PA6I GF50, PC, TPE, stainless steel 1.4301
<b>Enclosure rating</b>	IP65/IP67 (according to IEC 60529) <sup>1)</sup>
<b>Weight</b>	Approx. 2.3 kg

<sup>1)</sup> Not UL-tested.

## Ambient data

<b>Ambient operating temperature</b>	$-20\text{ °C}$ ... $+60\text{ °C}$ <sup>1)</sup>
<b>Ambient temperature, storage</b>	$-40\text{ °C}$ ... $+85\text{ °C}$

<sup>1)</sup> According to the UL approval: degree of contamination 3 (UL61010-1: 2012-05); air humidity: 80% at temperatures up to  $31\text{ °C}$ ; installation altitude: max. 3,000 m above sea level.

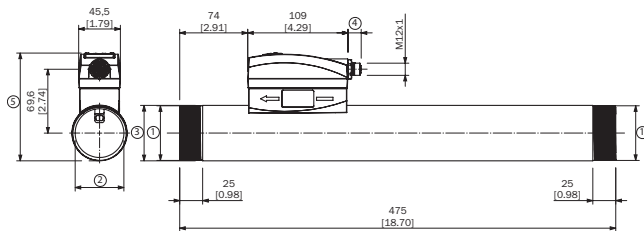
## Classifications

<b>ECLASS 5.0</b>	27200403
-------------------	----------

<b>ECLASS 5.1.4</b>	27200403
<b>ECLASS 6.0</b>	27200403
<b>ECLASS 6.2</b>	27200403
<b>ECLASS 7.0</b>	27200403
<b>ECLASS 8.0</b>	27200403
<b>ECLASS 8.1</b>	27200403
<b>ECLASS 9.0</b>	27200403
<b>ECLASS 10.0</b>	27200403
<b>ECLASS 11.0</b>	27200403
<b>ECLASS 12.0</b>	27200403
<b>ETIM 5.0</b>	EC002580
<b>ETIM 6.0</b>	EC002580
<b>ETIM 7.0</b>	EC002580
<b>ETIM 8.0</b>	EC002580
<b>UNSPSC 16.0901</b>	41112501

**Dimensional drawing** (Dimensions in mm (inch))

DN40, DN50, unit: mm (inch), decimal separator: period



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

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)