# FTS-I100F14A

T-Easic® FTS

**FLOW SENSORS**

**SICK**
Sensor Intelligence.

## Ordering information

| Type | Part no. |
|------|----------|
| FTS-I100F14A | 1091144 |

Other models and accessories ➜ www.sick.com/T-Easic_FTS

## Detailed technical data

### Features

| | |
|---|---|
| **Measurement principle** | Calorimetric measurement process |
| **Medium** | Water and oil-based liquids |
| **Pipe diameters** | ≥ 25 mm [1] |
| **Operating range** | 3 cm/s ... 150 cm/s, Water<br>3 cm/s ... 300 cm/s, Oil |
| **Process temperature** | –40 °C ... +150 °C [2] |
| **Process pressure** | ≤ 100 bar<br>≤ 16 bar, with clamp adapter P/N 2093548 |
| **Communication interface** | IO-Link V1.1 COM3 (230.4 kbit/s) |
| **Temperature measurement** | ✓ |
| **Indication** | ✓<br>OLED + 3 status LEDs |

[1] Place probe tip in the center of the pipe to ensure the highest measurement accuracy.

[2] For medium temperatures above 100 °C, the distance between the lower side of the housing and the upper side of the mounting adapter must be at least 25 mm. The version with the special length of 60 mm cannot be used at a process temperature of over 100 °C.

### Performance

| | |
|---|---|
| **Minimum flow velocity** | ≥ 3 cm/s, For water and oil |
| **Maximum flow velocity** | ≤ 150 cm/s, For water |
| **Inlet zone** | 5 x DN |
| **Output zone** | 3 x DN |
| **Accuracy of sensor element** | ± 10 % relative to measuring range end value [1] |

[1] Under reference conditions with water, diameter of inner pipe 25 mm, vertical installation in pipe, probe tip in tube center, fully-filled pipe without air bubbles, speed from 10 cm/s to 100 cm/s, inlet zone > 30 cm, outlet zone > 30 cm, 26 °C ± 1 °C, 2 bar ± 1 bar.

[2] Filter off.

| Reproducibility | < 1 cm/s [1] |
|---|---|
| Resolution | 0.01 m/s, Speed; 0.1 L/min volume; 0.1% relative (via IO-Link) |
| Response time | < 2.5 s [2] |
| Temperature measurement | |
| Resolution (Temperature) | < +0.1 °C |
| Response time (temperature) | < 6 s |
| Operating mode | Relative speed (%), Absolute speed, Absolute volume, Relative teach (%) |

[1] Under reference conditions with water, diameter of inner pipe 25 mm, vertical installation in pipe, probe tip in tube center, fully-filled pipe without air bubbles, speed from 10 cm/s to 100 cm/s, inlet zone > 30 cm, outlet zone > 30 cm, 26 °C ± 1 °C, 2 bar ± 1 bar.
[2] Filter off.

## Electronics

| Supply voltage | 9 V DC ... 30 V DC [1] |
|---|---|
| Power consumption | < 2 W at 24 V DC (without load on the outputs) |
| Initialization time | ≤ 5 s<br>≤ 10 s (IO-Link) |
| Protection class | III |
| Connection type | M12 round connector x 1, 4-pin |
| Output signal | 2 x push-pull digital outputs for flow and temperature (Q2 can be selected as digital input) |
| Output current | < 100 mA [2] |
| Signal voltage HIGH | > Uv - 2 V |
| Signal voltage LOW | ≤ 2 V |
| Inductive load | 1 H |
| Capacitive load | 100 nF (2.5 nF, IO-Link mode) |
| EMC | EN 61326-1, EN 61326-2-3 |
| Digital input limit | HIGH voltage dependent on Uv<br>LOW voltage < 4.0 V |
| MTTF | > 200 years |

[1] All connections are reverse polarity and overload protected. Q1 and Q2 are short-circuit protected.
[2] Per output.

## Mechanics

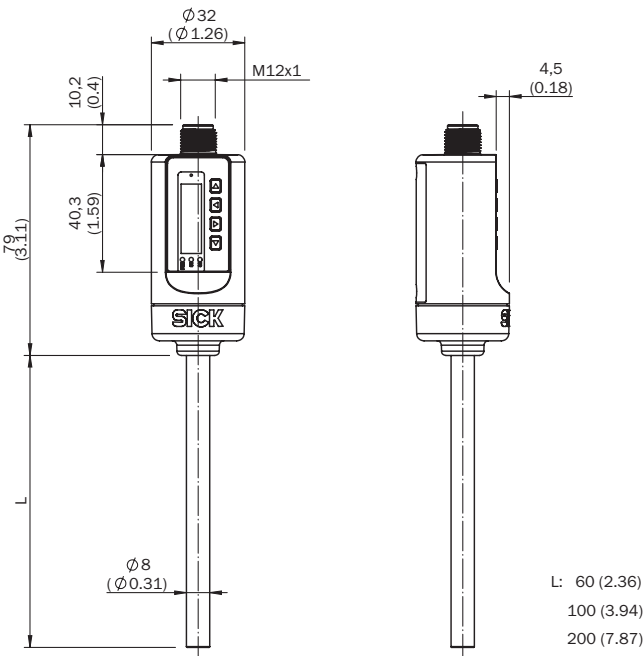| Process connection | Without process connection (adapter needed for installation) |
|---|---|
| Wetted parts | Stainless steel 1.4404 / 316L |
| Housing material | VISTAL® / polyester |
| Enclosure rating | IP67 |
| Weight | 77 g |
| Sealing material (only clamp adapter P/N 2093548) | FKM |
| Probe diameter | 8 mm |
| Probe length | 100 mm |
| Minimum immersion length | 12 mm |
| Distance to pipe wall | 10 mm |

### Ambient data

| | |
|---|---|
| **Ambient operating temperature** | –40 °C ... +70 °C |
| **Ambient storage temperature** | –40 °C ... +80 °C |

### Classifications

| | |
|---|---|
| **ECl@ss 5.0** | 27371815 |
| **ECl@ss 5.1.4** | 27371815 |
| **ECl@ss 6.0** | 27371815 |
| **ECl@ss 6.2** | 27371815 |
| **ECl@ss 7.0** | 27371815 |
| **ECl@ss 8.0** | 27371815 |
| **ECl@ss 8.1** | 27371815 |
| **ECl@ss 9.0** | 27371815 |
| **ECl@ss 10.0** | 27371815 |
| **ECl@ss 11.0** | 27371815 |
| **ETIM 5.0** | EC002580 |
| **ETIM 6.0** | EC002580 |
| **ETIM 7.0** | EC002580 |
| **UNSPSC 16.0901** | 41112501 |

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

FTS Industrial



L:   60 (2.36)
100 (3.94)
200 (7.87)

## Recommended services

Additional services ➜ www.sick.com/T-Easic_FTS

| | Type | Part no. |
|---|---|---|
| Function Block Factory | | |
| • **Brief description:** The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&R. More information on the FBF can be found <a href=https://fbf.cloud.sick.com target="_blank"> here</a>. | Function Block Factory | On request |

# 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**

SICK AG  |  Waldkirch  |  Germany  |  www.sick.com

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