FLOWSIC100 Flare

Reliable gas flow measurement in flare gas applications

GAS FLOW MEASURING INSTRUMENTS

SICK
Sensor Intelligence.

FLOWSIC100 Flare

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Technical data overview

Measured values	Gas velocity, gas temperature, gas volume and mass, Mass flow rate, molecular weight, volumetric flow a. c., volumetric flow s. c., sound velocity
Measurement principle	Ultrasonic transit time difference measurement
Hazardous area	1G 2G 3G Class I Division 1 Class I Division 2 Ga Gb Gc
Measuring ranges	Measuring ranges depend on nominal pipe size and gas composition
Gas temperature	Standard: –70 °C ... +180 °C High-temperature Zone 1: –70 °C ... +280 °C High-temperature Zone 2: –70 °C ... +260 °C Low temperature: –196 °C ... +100 °C Not for FLOWSIC100 EX/EX-RE Zone 1 and Class I, Division 1
Operating pressure	–0.5 bar (g) ... 16 bar (g) FLOWSIC100 EX-S 90°: –0.5 bar (g) ... 19 bar (g)
Nominal pipe size	4 ″ ... 72 ″ Depending on gas composition and device version
Enclosure rating	FLSE100 sender/receiver unit (ATEX zone 1): IP65, IP67 FLSE100 sender/receiver unit (ATEX zone 2): IP65 FLSE100 sender/receiver unit (CSA class I): depending on device version MCUP control unit: IP66 MCUP control unit (19-inch version): IP20 MCUP control unit (Ex zone 1): IP66 MCUP control unit (Ex zone 2/Division 2): housing type 4, IP66
USB	✓
Function	Connection to SOPAS ET software
Serial **Serial**	✓, ✓
Type of fieldbus integration	RS-232 RS-485
Function	Connection to SOPAS ET software Internal system bus
Ethernet	✓
Type of fieldbus integration	Via optional interface module
Modbus **Modbus** **Modbus**	✓, ✓, ✓
Type of fieldbus integration	ASCII RS-485 (via optional interface module) RTU RS-485 (via optional interface module) TCP (via optional interface module)
HART	✓
Type of fieldbus integration	Via optional interface module
PROFIBUS DP	✓
Type of fieldbus integration	Via optional interface module

Foundation Fieldbus	✓
Type of fieldbus integration	Via optional interface module

Product description

The FLOWSIC100 Flare product family is designed for flare gas and steam flow measurements. The product family is characterized by a unique flow-optimized sensor design. This innovative design minimizes flow-generated noise and signal drift when gas velocities are particularly high. Modern signal processing and high-efficiency transducers enable high time resolution for signals and thus deliver accurate measurements, even at extremely low gas flow rates.

The standard system configuration includes two sender/receiver units or one measuring probe and the MCUP control unit. The MCUP unit is used to input and output signals; to calculate reference values (normalization), molecular weight and mass flow; to record gas volumes; and to provide user-friendly control via the LCD display.

At a glance

- High-resolution measurement and short response time
- Innovative sensor design for very high gas velocities and gas temperatures up to 280 °C
- Optimal signal transmission even under atmospheric pressure
- Detached installation of the control unit up to 1,000 m away
- Single and multi-path configuration, opt. Probe version
- Zero point test in the field according to factory standard
- Control cycle for automatic self-diagnosis / signal optimization

Your benefits

- Reliable process control due to exact measurement near the zero point
- High measurement availability even in the case of emergency shutdowns with gas velocities of up to 120 m/s
- A solution for the measurement of flare gas and steam injection
- Cost savings due to detached installation of the control unit possible in the safe area
- System solution for the control of three different measuring points with a common control unit
- Cost savings due to one-sided installation when using FLOWSIC100 EX-PR probe version
- Optimal device performance due to continual function monitoring and extended diagnostic functions in the field

Fields of application

- Emissions control for accounting of CO_2 emissions
- Detection of flare gas leaks
- Measurement of steam flow
- Monitoring of steam injection when burning flare gas
- Monitoring of gas losses
- Exact mass balance and process optimization

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Ordering information

Other models and accessories ➜ www.sick.com/FLOWSIC100_Flare

- **Product segment:** Flow measurement technology
- **Product group:** Gas flow measuring instruments
- **Product family:** FLOWSIC100 Flare
- **Measurement principle:** Ultrasonic transit time difference measurement
- **Measured values:** gas velocity, gas temperature, gas volume and mass, Mass flow rate, molecular weight, volumetric flow a. c., volumetric flow s. c., sound velocity
- **Nominal pipe size min.:** ≥ 4 ″
- **Nominal pipe size max.:** ≤ 72 ″
- **Ex area category:** 1G, 2G, 3G, Ga, Gb, Gc, Class I Division 1, Class I Division 2
- **Communication interface:** USB, Serial, Serial, Ethernet, Modbus, Modbus, Modbus, HART, PROFIBUS DP, Foundation Fieldbus
- **Communication Interface detail:** RS-232, RS-485, ASCII RS-485, RTU RS-485, TCP
- **Process temperature min.:** ≥ –70 °C, ≥ –70 °C, ≥ –70 °C, ≥ –196 °C

Process tem-perature max.	Operating pressure min.	Operating pressure max.	Enclosure rating	Type	Part no.
≤ +180 °C ≤ +280 °C ≤ +260 °C ≤ +100 °C	≥ –0.5 bar (g) ≥ –0.5 bar (g)	≤ 16 bar (g) ≤ 19 bar (g)	IP65, IP67, IP65, IP66, IP20, IP66, housing type 4, IP66	FLOWSIC100 Flare	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**

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