



FLOWSIC100 Flare-XT

Reliable gas flow measurement on flare stacks in petroleum refineries, chemical plants and natural gas processing with SICK ultrasonic gas flow meters.

GAS FLOW MEASURING INSTRUMENTS

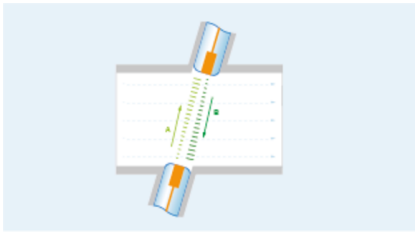
SICK
Sensor Intelligence.

Advantages



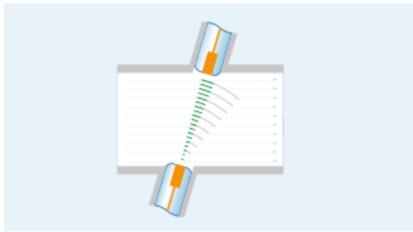
Ultrasonic flow meter for flare gas applications

The FLOWSIC100 Flare-XT is characterized by its unique flow-optimized sensor design which enables reliable gas flow measurement and monitoring at extremely high velocities and changing gas compositions. Its rugged design guarantees an uninterrupted availability of measurements even under the most adverse conditions. FLOWSIC100 Flare-XT observes several applicable standards worldwide, and is suitable for use in new and existing plants. The measurement and diagnostic data can be visualized with ease using the FLOWgate™ software. Thanks to the intelligent i-diagnostics™ function, the system is able to monitor itself and independently report the need for maintenance.



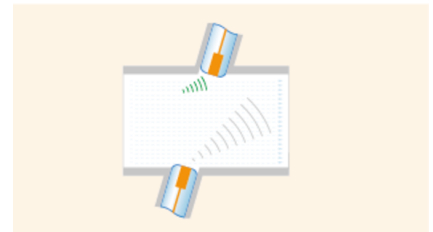
Flow Measurement with Ultrasonic transit time difference measurement:

Thanks to high-resolution sensors, the state-of-the-art electronics precisely detects even very small transit time differences.



Flow Measurement with Ultrasonic transit time difference measurement:

The innovative, flow optimized sensor contour allows optimal measurement results even at very high gas velocities.

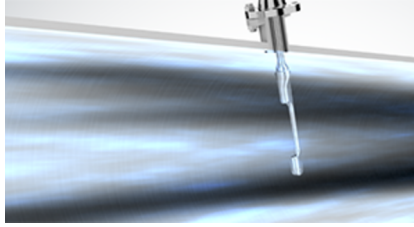


Flow Measurement with ASC-technology:

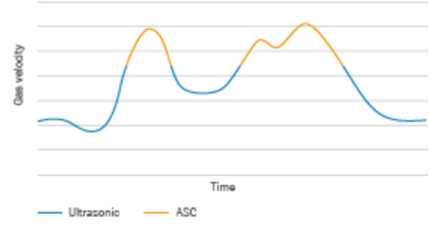
If the signal is blown away due to extreme gas velocity, the patented ASC-technology algorithm ensures uninterrupted measurement.



Accurate flare gas measurement in on-shore and offshore facilities in the oil and gas, chemicals, petrochemicals, and refinery industries



Highly accurate data under extreme conditions such as gas velocities of 0 to 120 m/s (340 ft/s), rapid changes in the gas velocity and complex gas compositions.



Thanks to its innovative ASC-technology, FLOWSIC100 Flare-XT is now extending previous maximum flow range by up to 30%.



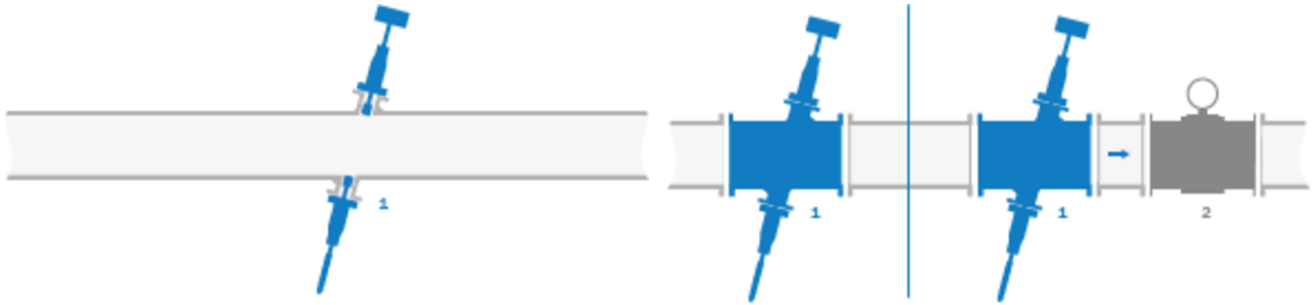
Precise flare gas measurement enables exact tracking of flare gas emissions



Powerful. Reliable. Robust.

FLAWSIC100 Flare-XT flare gas meter is available in three different versions. All versions are available as a 1- or 2-path measurement system. Cross-duct installation and single nozzle probe systems are available in either path configuration. The probe version is suitable for compact, one-sided fitting, which minimizes the installation work required. Both variants are available as a single or dual path measurement system. The 2-path version achieves high measurement accuracies even under difficult flow conditions. A device-retraction-mechanism also allows sensors to be replaced simply and quickly during plant operation. The powerful interface unit easily connects to a wide variety of systems and networks thanks to its numerous interfaces.

The Interface Unit processes incoming signals and calculates parameters, such as molecular weight, sound velocities, mass flow and gas volume, as well as standardized reference values.



Flare Instrument

Customer Application Framework:

- Tapped pipe or unspecified spool piece geometry
- Unknown or known application conditions

Advantages:

- Easy retrofit of existing pipelines

Standard delivery scope:

- Sensors + Interface Unit
- Product and material certification

Optional delivery scope:

- Performance capability evaluation
- Customized documentation
- Customer service training
- I-diagnostics™

Applicable Installation equipment:

- Weld-on nozzles
- Nozzle installation tool
- Ball valves
- Optional: Weather and sun protection

¹ Blue parts: SICK Scope of delivery

Flare Meter

- With optional dry calibration or

- With flow calibration

Customer Application Framework:

- Flanged spool piece by SICK
- Known application conditions

Advantages:

- Easy installation without welding

Standard delivery scope:

- Flare meter fully assembled
- Product and material certification
- Performance capability evaluation

Optional delivery scope:

- Customized documentation
- Customer service training
- I-diagnostics™

Applicable Installation equipment:

- Ball valves
- Optional: Weather and sun protection

¹ Blue parts: SICK Scope of delivery

² Grey parts: Reference Meter

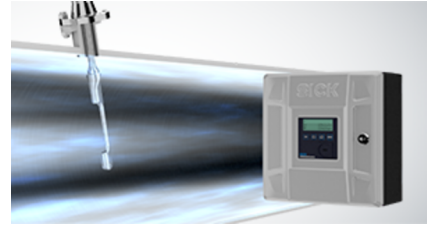
Ready for any situation thanks to leading ultrasonic technology



Sensors made of titanium and optimized for flare flow: The flow-optimized sensor design minimized turbulences and signal dispersion.



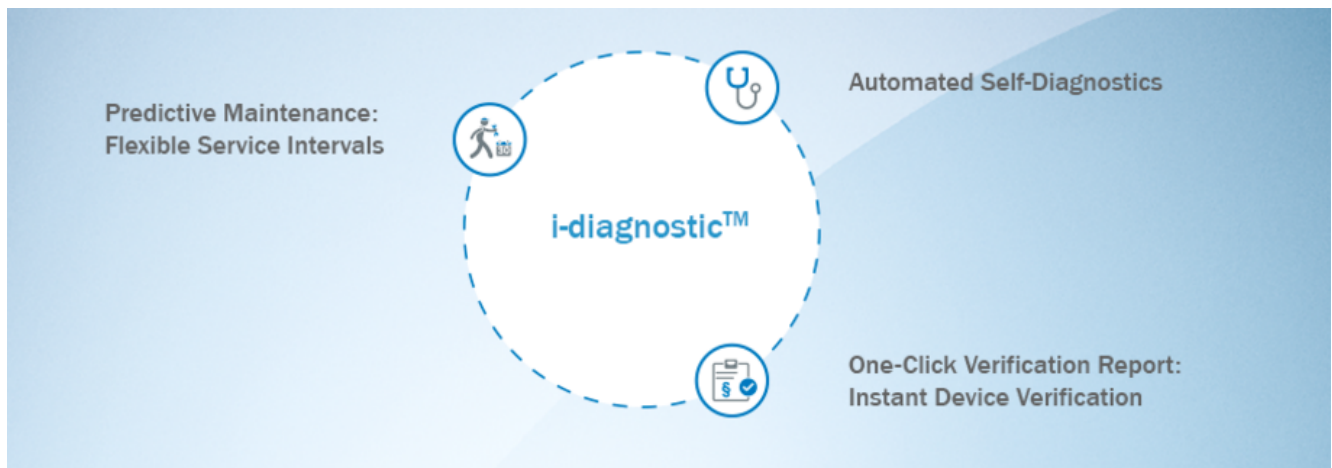
Thanks to interference-free, digital communication, the interface unit can be installed up to 1,000 m away from the measuring point. There is therefore no longer any need for a local, pressure encapsulated and potentially expensive control unit.



The FLOWSIC100 Flare-XT can be integrated effortlessly into existing plants. The system is compatible with existing FLOWSIC100 Flare installations. The interfaces are compatible with infrastructures already in place as well as future ones.



The powerful ultrasonic technology delivers reliable measurement also under extreme conditions during flaring.



Intelligent device monitoring and predictive maintenance

i-diagnostics™ intelligently links software and firmware: The self-monitoring system delivers valuable data regarding the device status and highlights all changes. Application faults are immediately detected and documented, thereby time-consuming troubleshooting can be omitted. On request, the system verifies itself and records its current status. In this way, users have a very straightforward means of creating documents that prove that all emission regulations are fulfilled.

Simple maintenance. One-click verification. Self-diagnostics.



Predictive maintenance

Flexible service intervals The system continuously monitors performance parameters and generates reliable forecasts and maintenance recommendations based on this data.



1-click verification report

A report can be generated with one click for complete functional verification. This makes it easy to ensure and document compliance with legal requirements.



Self-diagnosis

The intuitive FLOWgate™ software makes measurement, diagnostic and device data easier to handle, thereby permitting quick and uncomplicated system analysis.



The automatic verification of the measurement system and failure diagnostic reduces the number of service intervals and by that reduces maintenance costs.



Technical data overview

Measured values	Mass flow rate, volumetric flow s. c., volumetric flow a. c., molecular weight, gas volume and mass, gas velocity, gas temperature, sound velocity
Ethernet	
Type of fieldbus integration	Modbus TCP/IP
Function	Customer interface, service interface
Optical interface	
Remark	IR, according to IEC 62056-21
Function	Service interface

Product description

Precise and robust gas flow meter for flare gas or flare stack applications: Our ultrasonic gas flow measuring instrument FLOWgate™ is designed for flare gas measurement or flare metering. The high-resolution measurement and innovative sensor design is being developed for most efficient uses in petroleum refineries, natural gas processing or offshore and onshore oil and gas plants. Emission control or monitoring, detection of flare gas leaks, steam flow measurement, monitoring of gas losses, monitoring of steam injection in flare gas burning, as well as process optimization and condition monitoring are fields of use for this gas flow meter. The gas flow meter is measuring values such as gas velocity, gas temperature, gas volume and mass, mass flow rate, molecular weight, volumetric flow a. c., volumetric flow s. c. and sound velocity. The flare gas flow meter provides an intelligent device monitoring process and supports predictive maintenance - designed for current and future challenges.

At a glance

- Measurement availability under all operating conditions, at high gas velocities and with changing gas compositions
- Intuitive FLOWgate™ operating software
- I-diagnostics™ for self-monitoring, easy verification and condition-based maintenance of the system
- Retrofit solutions for existing measurement systems

Your benefits

- Several standards and guidelines for flare gas measurement are observed
- Maximum plant availability
- Ultrasonic sensors, Interface Unit, Spool Piece from a single source as well as globally available services
- Compatible with current and future communication architectures
- Independent maintenance through verification on demand and support by SICK when required
- Easy replacement of existing measurement systems, with suitable retrofit or upgrade solutions available

Fields of application

- Flare gas measurement for the production and processing of natural gas and associated petroleum gases (APG) in oil production.
- Flare gas measurement in chemical and petrochemical plants as well as refineries
- Measurement of LNG boil-off gas down to -196 °C
- Plants onshore and offshore
- Flare gas containing H_2S , CO_2 and H_2

Ordering information

Other models and accessories → www.sick.com/FLWSIC100_Flare-XT

Product segment	Product group	Product family	Measured values	Communication interface	Type	Part no.
Flow measurement technology	Gas flow measuring instruments	FLWSIC100 Flare-XT	Mass flow rate, volumetric flow s. c., volumetric flow a. c., molecular weight, gas volume and mass, gas velocity, gas temperature, sound velocity	Ethernet Optical interface	FLWSIC100 Flare-XT	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