PRODUCT INFORMATION

FLOWSIC100 Process
Gas Flow Measuring Device

Volume Flow Measurement
for Process Applications

SICK
Sensor Intelligence.

FLOWSIC100 PROCESS
Easy installation, wide measuring range, reliable and precise measurement

AREAS OF APPLICATION

- Natural gas industry
- Chemical and plastics manufacturing industries
- Petrochemical industry and refineries
- Processing industries (cement manufacturing, steel and iron production)
- Pharmaceutical industry
- Glass industry
- Food industry

FLOWSIC100 CL150/PN16

- Process pressure up to 16 barg
- Material: hermetically sealed stainless steel or titanium

FLOWSIC100 EX-Z2/EX-Z2-RE

- Process pressure up to 16 barg
- Ex-protected version for use in hazardous area zone 2 according to ATEX guidel. 94/9/EC[1)]
- Material: hermetically sealed stainless steel or titanium
- Optional: flange with retraction mechanism for sender/receiver units

[1)] Version for zone 1 on request

FLOWSIC100 PR-EX-Z2

- Process pressure up to 0.1 barg
- Ex-protected probe version for use in hazardous area zone 2 according to ATEX guidel. 94/9/EC
- Material: hermetically sealed stainless steel or titanium
- Installation from one side only

KEY FEATURES

- Rugged transducers in stainless steel or titanium for higher durability
- Corrosion resistant probe materials available for use with aggressive gases
- Integral measurement over the entire duct diameter[2)] for representative measuring results also at difficult flow conditions
- Contact-free measurement
- No moving parts results in low maintenance
- Independent of pressure, temperature and gas composition
- High measuring accuracy even at gas velocity near zero
- Fully automatic zero and span check

[2)] Except for probe version

FLOWSIC100 PR-EX-Z2

FLOWSIC100 EX-Z2-RE
(retractable version)

8010165/2012-07
Subject to change without notice

SYSTEM COMPONENTS

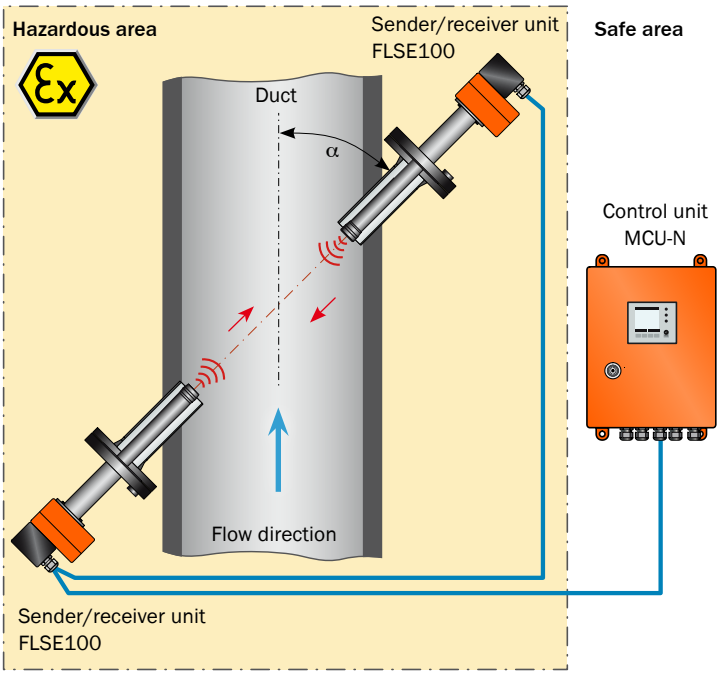
The FLOWSIC100 standard version contains two FLSE100 sender/receiver units, an MCU control unit. The MCU is used for input and output of signals, for calculation of volume flow to reference conditions (standardization) as well as user friendly LCD interface.

Installation of the sender/receiver units

- Cross-duct installation:
  2 sender/receiver units are mounted on both sides of a duct at a specific angle α to the gas flow direction.
- One-side installation:
  Only a single sender/receiver unit (probe version) is mounted at a specific angle α to the gas flow. Both ultrasonic transducers are installed on the probe with a fixed measuring path.

Optional components

- MCU control unit for use in Ex-zone 2, ex-certification according to ATEX guideline 94/9/EC
- Spool-piece version



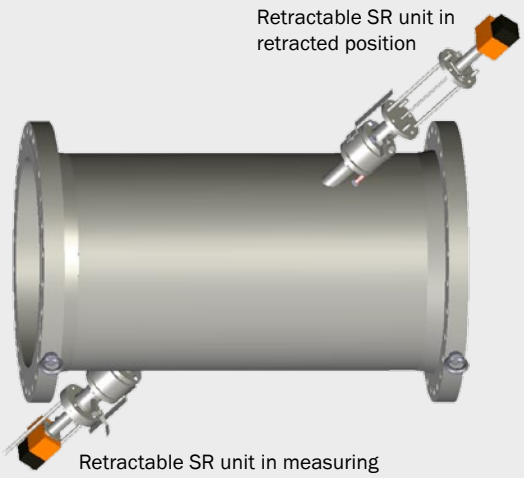
Example: Installation of FLOWSIC100 EX-Z2

COMPREHENSIVE SOLUTION WITH SPOOL-PIECE

The FLOWSIC100 can be mounted on a measuring tube and delivered as a system solution. Optimized factory setting of the sender/receiver unit reduces geometrical tolerances to a minimum, thereby achieving maximum measuring accuracy.

Retraction mechanism

With the EX-Z2-RE device it is possible to remove the probe for maintenance purposes during plant operation and pressure of up to 16 barg.



Technical Data	FLOWSIC100 PROCESS		
Version	**CL150/PN16**	**EX-Z2/EX-Z2-RE**	**PR-EX-Z2**
Measuring parameter			
Measuring principle	Ultrasonic transit time measurement method		
Measuring values	Gas velocity, volume flow (actual condition), volume flow (standard condition), gas temperature, speed of sound, mass flow (on request)		
Measuring range	0 ... ±40 m/s, higher velocity on request		
Reproducibility[1)]	± 1 % for v >2 m/s ± 0.02 m/s for v <2 m/s		
Inner duct diameter	0.15 ... 1.7 m		≥ 0.35 m
Measurement conditions			
Gas temperature	–40 ... +260 °C	–40 ... +260 °C	–40 ... +260 °C
Pressure range	–0.5 ... 16 barg		±0.1 barg
Ambient conditions			
Temperature range	–40 ... +60 °C		
Approval			
Ex-certification	–	ATEX II 3G Ex nA II T4 (ATEX zone 1 on request)	ATEX II 3G Ex nA II T4
	MCU: optional as Ex-protected version for application in Ex zone 2 Ex classification ATEX II 3G Ex nA II T4		
Protection class	• EX-Z2/EX-Z2-RE: IP65 • PR-EX-Z2: IP65 • MCU: IP65		
Inputs, outputs, controls via MCU control unit			
Analog output	1 output: 0/2/4 ... 22 mA, max. load 500 Ω Optional: additional analog outputs when using I/O modules		
Analog inputs	2 inputs: 0 ... 5/10 V or 0 ... 20 mA, Optional: additional analog inputs when using I/O modules		
Digital outputs	5 outputs: 30 V DC/2 A, 48 V AC/1 A; floating; Status signals: operation/malfunction, maintenance, check cycle, limit value, maintenance request. Optional: additional digital outputs when using I/O modules		
Digital inputs	4 inputs for connection of floating contacts Optional: additional digital inputs when using I/O modules (option)		
Interfaces	• USB • RS232 (service) • RS485 via optional interface module • Ethernet via optional interface module		
Bus protocol	• TCP/IP via ethernet (optional interface module) • PROFIBUS DP via RS485 (optional interface module) • MODBUS via RS485 (optional interface module)		
General			
System components	• Sender/receiver unit(s) FLSE100 • MCU control unit, optional 24 V DC version • Connecton box (for FL100 CL150/PN16 only) • Connection cables • Nozzles		
Operation	Via MCU control unit or SOPAS ET software		
Check function	Internal check cycle for zero-point and span check		
Mounting (typ. angle)	60°		45° (type PR-EX-Z2)

[1)] Accuracy of flow measurement 1.5 ... 5.0 % for fully developed flow profile (1-path configurations)

SICK
Sensor Intelligence.