PRODUCT INFORMATION

FLOWSIC100
Volume Flow Measuring Device

Gas Flow Measurement for Continuous Emission Monitoring

SICK | MAIHAK
Analyzers and Process Instrumentation

FLOWSIC100 –
The reliable and precise flow measurement with highest demands on durability

AREAS OF APPLICATION

- Power generation (e. g. power plants)
- Processing industries (cement manufacturing, steel and iron production)
- Waste disposal industry (e. g. waste incineration plants)
- Chemical industry
- Petrochemical plants and refineries
- Pulp, paper and textile industry
- Ventilation and heating plants

FLOWSIC100 H

- High power version for large stacks up to 13 m diameters
- Certified according to 2001/80/EC, 2000/76/EC, 27th BImSchV[1)], TA air
- Suitable for high dust application

FLOWSIC100 M

- Medium power version – best suitable for stack diameters up to 3.4 m
- Certified according to 2001/80/EC, 2000/76/EC, 27th BImSchV[1)], TA air

FLOWSIC100 S

- Special small size transducers optimized for small stack diameters of 0.15 up to 1.7 m

FLOWSIC100 PR

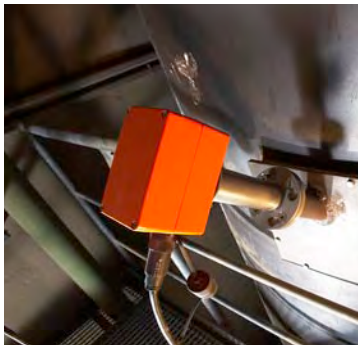
- For stack diameters greater than 0.4 m
- Certified according to 2001/80/EC, 2000/76/EC, 27th BImSchV[1)], TA air
- Probe type with two transducers for the installation from one side only

[1)] Federal Immission Control Ordinance

KEY FEATURES

- Rugged titanium transducers (standard) for higher device durability
- Corrosion resistant probe materials for the use in aggressive gases
- As standard used for gas temperatures up to 260 °C; with the innovative internal cooling up to 450 °C[2)] max.
- Various (graded) probe lengths to meet broad application conditions
- Integral measurement over the entire stack diameter[3)] for representative measuring results
- No moving parts means low maintenance
- Fully automatic zero and span check
- No purge air required

[2)] Temperature specifications for the specific types see tech. data, page 4
[3)] Except for the probe type



SYSTEM COMPONENTS

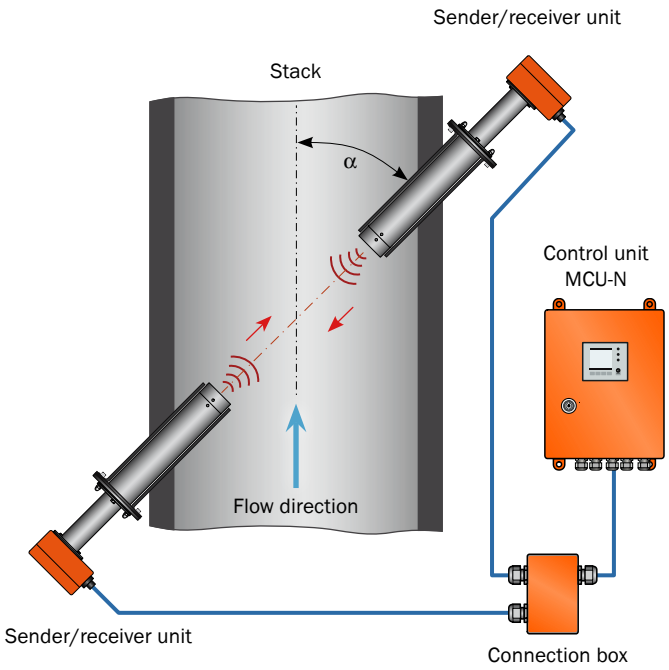
The FLOWSIC100 standard version contains two FLSE100 sender/receiver units, a MCU control unit and a connection box. The MCU is used for input and output of signals, for calculation of volume flow to reference conditions (standardization) as well as comfortable handling via LC-display.

Installation of the sender/receiver units

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

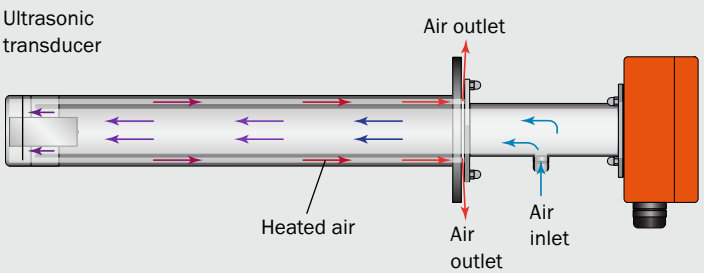
Optional components

- MCU-P control unit (for internal cooled types only)
- Interconnection of additinal volume flow or dust measurements in one control unit possible



INNOVATIVE INTERNAL COOLING (AC-TYPES)

The internal cooled types FLOWSIC100 M-AC and H-AC operate at gas temperatures up to 450 °C. The probe type FLOWSIC100 PR-AC can be used for gas temperatures up to 350 °C. The necessary cooling of the transducers is realized by using an integrated air cooling supply. The cooling is made internally in the ultrasonic transducer. Input of cooling air in the measured medium is excluded.



Technical data	FLOWSIC100 for continuous emission monitoring						
Device model	**H**	**M**	**S**	**PR**	**H-AC**	**M-AC**	**PR-AC**
Measuring parameters							
Measuring principle	Ultrasonic transit time measurement						
Measuring values	Gas velocity, volume flow (operating condition), volume flow (standard condition), gas temperature, speed of sound						
Measuring range	0 ... ±40 m/s						
Accuracy	± 0.1 m/s						
Inner stack diameter	1.4 ... 13 m	0.15 ... 3.4 m	0.15 ... 1.7 m	>0.4 m	1.4 ... 10 m	0.15 ... 3.4 m	>0.4 m
Measurement conditions							
Meas. gas temperature	–40 ... +260 °C		–40 ... +150 °C	–40 ... +260 °C	–40 ... +450 °C		–40 ... +350 °C
Max. inner duct pressure	±100 hPa						
Ambient conditions							
Ambient temperature	–40 ... +60 °C –40 ... +45 °C for MCU-P control unit (with running blower)						
Approval							
Conformities	2001/80/EC, 2000/76/EC, 27th BImSchV, TA air, MCERT, GOST pending		–	2001/80/EC, 2000/76/EC, 27th BImSchV (Federal Immission Control Ordinance), TA air, MCERT, GOST pending			
Protection class	IP65						
Electrical safety	CE						
Inputs, outputs, controls via MCU control unit							
Analog outputs	1 output: 0/2/4 ... 22 mA, max. load 750 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, 120 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: further 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 via RS485 (optional interface module)						
General							
System components	• Sender/receiver unit(s) FLSE100 • MCU control unit • Connection box • Connection cables • Flanges with tube						
Operation	Via display on the MCU control unit or SOPAS ET software						
Check function	Internal check cycle for zero and span check						
Mounting (typ. angle)	45° ... 60°			45° (PR type)	45° ... 60°		45° (PR-AC type)

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