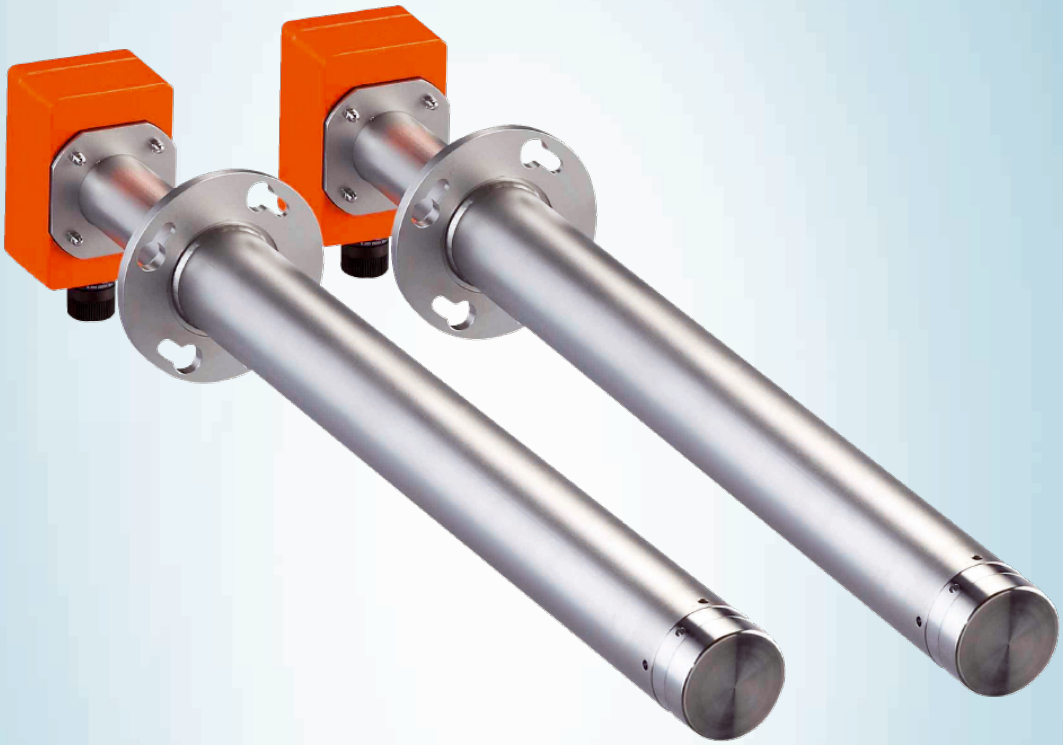
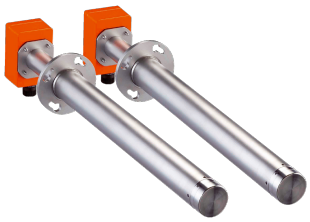
Product data sheet



FLOWSIC100

FLOW MEASUREMENT INSTRUMENTS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
FLOWSIC100	On request

In accordance with Article 2 (4), this product does not fall within the scope of RoHS directive 2011/65/EU and is also not designed for use in products which fall within the scope of this directive. You can find additional information in the product information.

The exact device specifications and performance data of the product may deviate from the information provided here, and depend on the application in which the product is being used and the relevant customer specifications.

Our regional sales organization will help you to select the optimum device configuration.

Other models and accessories ➜ www.sick.com/FLOWSIC100

Product description

The product family FLOWSIC100 was designed for emission monitoring tasks. The "H" versions are suitable for stacks with large diameters and applications with high dust content. The "M" versions are especially suited for stacks with medium diameter. The ultrasonic transducers of the "PR" probe type are mounted with fixed path length on one sender/receiver unit (measuring probe). The "AC" versions have an innovative internal cooling and are suitable for gas temperatures up to 450 °C. The purged "Px" versions are used for gases with high concentrations of sticky or wet dust.
Rugged titanium transducers are standard and suitable under difficult conditions. The measuring system consists of 2 sender/receiver units or a measuring probe and a 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.

At a glance

- Rugged titanium converters for long service life
- Corrosion-resistant material for use with aggressive gases (option)
- Integrated measurement via duct diameter for types H, M, and S
- Probe version PR for cost-saving, single-sided installation in duct
- Automated operational check with zero and reference point test

Your benefits

- Reliable flow measurement for ducts with small up to very large diameters
- High durability of the device
- No purge air required for applications with gas temperatures up to 260 °C
- Minimum operating and maintenance costs
- Accurate measuring results under difficult measuring conditions
- Measurement without pressure loss, therefore no influences on the process
- User-friendly operation via SOPAS ET software
- Reliable function monitoring due to enhanced diagnosis

Fields of application

- Continuous emission measurement during power generation
- Emission monitoring in waste incineration plants
- Emission measurement in the processing industry (cement, iron and steel, glass)
- Emission monitoring in the chemical and hydrocarbon processing (HPI) industry
- Emission monitoring in the paper and textiles industry
- Flow measurements and process control in e. g., heating and ventilation systems

Detailed technical data

FLOWSIC100 system

Measured values	Volumetric flow a. c., volumetric flow s. c., gas velocity, speed of sound, gas temperature
Performance-tested measurands	Gas velocity
Measurement principle	Ultrasonic transit time difference measurement
Measuring ranges	
Gas velocity	0 ... ± 40 m/s
Certified measuring ranges	
Gas velocity	0 ... 20 m/s / 0 ... 40 m/s
Repeatability	For v < 2 m/s: ± 0.02 m/s For v > 2 m/s: ± 1 %
Accuracy	± 0.1 m/s Depending on application
Diagnostics functions	Automatic check cycle for zero and span point Extended device diagnosis via SOPAS ET software
Ambient temperature	–40 °C ... +60 °C
Storage temperature	–40 °C ... +70 °C
Conformities	2001/80/EC (13. BImSchV) 2000/76/EC (17. BImSchV) 27. BImSchV 30. BImSchV TA-Luft (Prevention of Air Pollution) EN 15267 EN 14181 EN 16911-2 MCERTS GOST
Electrical safety	CE

FLOWSIC100 M

Gas temperature	–40 °C ... +260 °C
Operating pressure	–100 hPa ... 100 hPa
Nominal pipe size	0.15 m ... 3.4 m
Dust load	≤ 1 g/m³ Depending on measuring path and gas temperature
Enclosure rating	

	IP65 sender/receiver units (electronics housing) IP65 MCU
Mounting	Installation angle 45° ... 60°
Electrical connection	
Power consumption	≤ 40 W
System components	2 x FLSE100-M sender/receiver unit 1 x MCU-N control unit 1 x connection unit 2 x Connection cable 2 x flange with tube

FLOWSIC100 H

Gas temperature	–40 °C ... +260 °C
Operating pressure	–100 hPa ... 100 hPa
Nominal pipe size	1.4 m ... 13 m
Dust load	≤ 100 g/m³ Depending on measuring path and gas temperature; for dry, non-sticky dust
Enclosure rating	IP65 sender/receiver units (electronics housing) IP65 MCU
Mounting	Installation angle 45° ... 60°
Electrical connection	
Power consumption	≤ 40 W
System components	2 x FLSE100-H sender/receiver unit 1 x MCU-N control unit 1 x connection unit 2 x Connection cable 2 x flange with tube

FLOWSIC100 PR

Gas temperature	–40 °C ... +260 °C
Operating pressure	–100 hPa ... 100 hPa
Nominal pipe size	≥ 0.4 m
Dust load	≤ 1 g/m³ Depending on measuring path and gas temperature
Enclosure rating	IP65 sender/receiver units (electronics housing) IP65 MCU
Mounting	Installation angle 45°
Electrical connection	
Power consumption	≤ 40 W
System components	1 x FLSE100-PR sender/receiver unit

	1 x MCU-N control unit 1 x Connection cable 1 x flange with tube

FLOWSIC100 S

Gas temperature	–40 °C ... +150 °C (-40 °C ... +150 °C on request)
Operating pressure	–100 hPa ... 100 hPa
Nominal pipe size	0.15 m ... 1.7 m
Dust load	≤ 1 g/m³ Depending on measuring path and gas temperature
Enclosure rating	IP65 sender/receiver units (electronics housing) IP65 MCU
Mounting	Installation angle 45° ... 60°
Electrical connection	
Power consumption	≤ 40 W
System components	2 x FLSE100-S sender/receiver unit 1 x MCU-N control unit 2 x Connection cable 2 x flange with tube

FLOWSIC100 M-AC

Gas temperature	–40 °C ... +450 °C
Operating pressure	–100 hPa ... 100 hPa
Nominal pipe size	0.15 m ... 3.4 m
Dust load	≤ 1 g/m³ Depending on measuring path and gas temperature
Enclosure rating	IP65 sender/receiver units (electronics housing) IP65 MCU without fan IP54 MCU with fan
Mounting	Installation angle 45° ... 60°
Electrical connection	
Power consumption	≤ 75 W
System components	2 x FLSE100-MAC sender/receiver unit 1 x MCU-P control unit 1 x connection unit 2 x Connection cable 2 x purge air hose 2 x flange with tube

FLOWSIC100 H-AC

Gas temperature	

	–40 °C ... +450 °C
Operating pressure	–100 hPa ... 100 hPa
Nominal pipe size	1.4 m ... 11.3 m
Dust load	≤ 100 g/m³ Depending on measuring path and gas temperature; for dry, non-sticky dust
Enclosure rating	IP65 sender/receiver units (electronics housing) IP65 MCU without fan IP54 MCU with fan
Mounting	Installation angle 45° ... 60°
Electrical connection	
Power consumption	≤ 75 W
System components	2 x FLSE100-HAC sender/receiver unit 1 x MCU-P control unit 1 x connection unit 2 x Connection cable 2 x purge air hose 2 x flange with tube

FLOWSIC100 PM

Gas temperature	–40 °C ... +450 °C
Operating pressure	–100 hPa ... 100 hPa
Nominal pipe size	0.35 m ... 2.5 m
Dust load	≤ 1 g/m³ Depending on measuring path and gas temperature
Enclosure rating	IP65 sender/receiver units (electronics housing) IP65 MCU
Mounting	Installation angle 45° ... 60°
Electrical connection	
Power consumption	≤ 40 W
System components	2 x FLSE100-PM sender/receiver unit 1 x MCU-N control unit 1 x connection unit 2 x Connection cable 2 x flange with tube 2 x purge air hose 1 x purge air unit

FLOWSIC100 PH

Gas temperature	–40 °C ... +450 °C
Operating pressure	–100 hPa ... 100 hPa

Nominal pipe size	0.7 m ... 8.7 m
Dust load	≤ 100 g/m³ Depending on measuring path and gas temperature
Enclosure rating	IP65 sender/receiver units (electronics housing) IP65 MCU
Mounting	Installation angle 45° ... 60°
Electrical connection	
Power consumption	≤ 40 W
System components	2 x FLSE100-PH sender/receiver unit 1 x MCU-N control unit 1 x connection unit 2 x Connection cable 2 x flange with tube 2 x purge air hose 1 x purge air unit

FLOWSIC100 PH-S

Gas temperature	–40 °C ... +450 °C
Operating pressure	–100 hPa ... 100 hPa
Nominal pipe size	1.4 m ... 11.3 m
Dust load	≤ 100 g/m³ Depending on measuring path and gas temperature
Enclosure rating	IP65 sender/receiver units (electronics housing) IP65 MCU
Mounting	Installation angle 45° ... 60°
Electrical connection	
Power consumption	≤ 40 W
System components	2 x FLSE100-PHS sender/receiver unit 1 x MCU-N control unit 1 x connection unit 2 x Connection cable 2 x flange with tube 2 x purge air hose 1 x purge air unit

MCU-N control unit

Description	Compulsory control and evaluation unit for volume flow measuring devices without internal cooling
Ambient temperature	–40 °C ... +60 °C
Enclosure rating	IP65
Analog outputs	1 output: 0/2/4 ... 20 mA, + 750 Ω

	Electrically isolated, up to five outputs when add-on modules are used (option)
Analog inputs	2 inputs: 0 ... 20 mA Up to four outputs when using additional modules (option)
Digital outputs	5 relay outputs (change-over contacts), potential-free: + 48 V, 1 A Safety extra-low voltage; for status signals "operation/malfunction", "limit value", "warning", "maintenance" and "check cycle"
Digital inputs	4 potential-free contacts
USB	✓
Function	Connection to SOPAS ET software
Serial **Serial**	✓, ✓
Type of fieldbus integration	RS-232
Function	Connection to SOPAS ET software
Ethernet	✓
Type of fieldbus integration	Via optional interface module
Modbus **Modbus** **Modbus**	✓, ✓, ✓
Type of fieldbus integration	ASCII RS-485, via optional interface module
PROFIBUS DP	✓
Type of fieldbus integration	Via optional interface module
Indication	LC display (option) Status LEDs: “Power,” “Failure,” and “Maintenance request”
Operation	Via LC-display (option) or software SOPAS ET
Dimensions (W x H x D)	210 mm x 340 mm x 120 mm
Weight	≤ 3.7 kg
Electrical connection	
Voltage	90 ... 250 V
	Version with 24 V DC available as an option
Frequency	47 ... 63 Hz
Power consumption	≤ 15 W
Options	Interface module(s) I/O module(s) LC display 19″-type

MCU-P control unit

Description	Compulsory control and evaluation unit with integrated cooling air unit, for volume flow measuring devices with internal cooling
Ambient temperature	–40 °C ... +45 °C Intake temperatures for purge air
Enclosure rating	IP54
Analog outputs	1 output: 0/2/4 ... 20 mA, + 750 Ω Electrically isolated, up to five outputs when add-on modules are used (option)
Analog inputs	2 inputs:

	0 ... 20 mA Not electrically isolated; additional inputs if using I/O modules (option)
Digital outputs	5 relay outputs (change-over contacts), potential-free: + 48 V, 1 A Safety extra-low voltage; for status signals "operation/malfunction", "limit value", "warning", "maintenance" and "check cycle"
Digital inputs	4 potential-free contacts
USB	✓
Function	Connection to SOPAS ET software
Serial **Serial**	✓, ✓
Type of fieldbus integration	RS-232
Function	Connection to SOPAS ET software
Ethernet	✓
Type of fieldbus integration	Via optional interface module
Modbus **Modbus** **Modbus**	✓, ✓, ✓
Type of fieldbus integration	ASCII RS-485, via optional interface module
PROFIBUS DP	✓
Type of fieldbus integration	Via optional interface module
Indication	LC display (option) Status LEDs: “Power,” “Failure,” and “Maintenance request”
Operation	Via LC-display (option) or software SOPAS ET
Dimensions (W x H x D)	300 mm x 455 mm x 220 mm
Weight	≤ 13.5 kg
Electrical connection	
Voltage	90 ... 250 V
	Version with 24 V DC available as an option
Frequency	47 ... 63 Hz
Power consumption	≤ 70 W
Auxiliary connections	Purge air
Options	Interface module(s) I/O module(s) LC display 19″-type

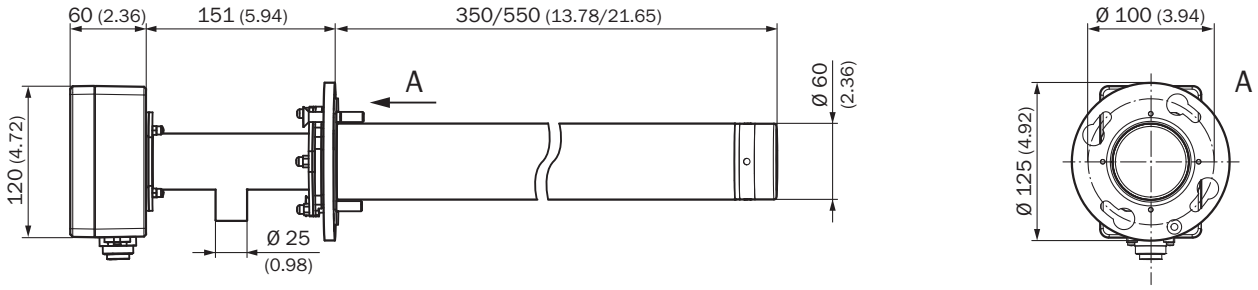
SLV4-2 purge air unit, 2BH1300, 3-ph

Description	Obligatory purge air unit for purged volume flow measuring devices
Purge air quantity	≥ 48 m³/h
Diagnostics functions	Low pressure controller
Ambient temperature	
	–20 °C ... +40 °C
Enclosure rating	
	IP54
Dimensions (W x H x D)	550 mm x 550 mm x 258 mm (for details see dimensional drawings)
Weight	18 kg

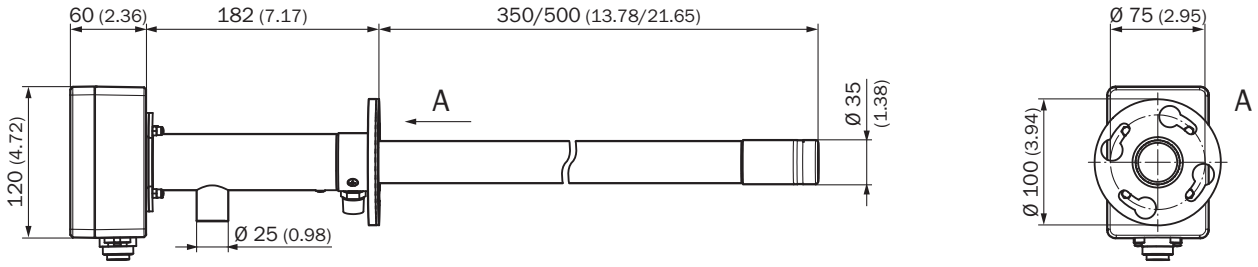
Auxiliary connections	Purge air: 40 mm
Integrated components	2-step air filter, type Europiclon, dust capacity 200 g

Dimensional drawings (Dimensions in mm (inch))

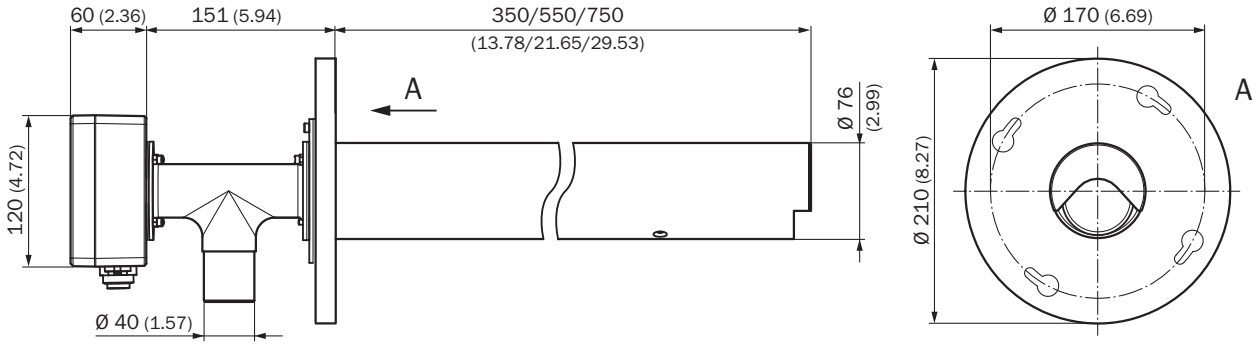
FLSE100-HAC sender/receiver unit



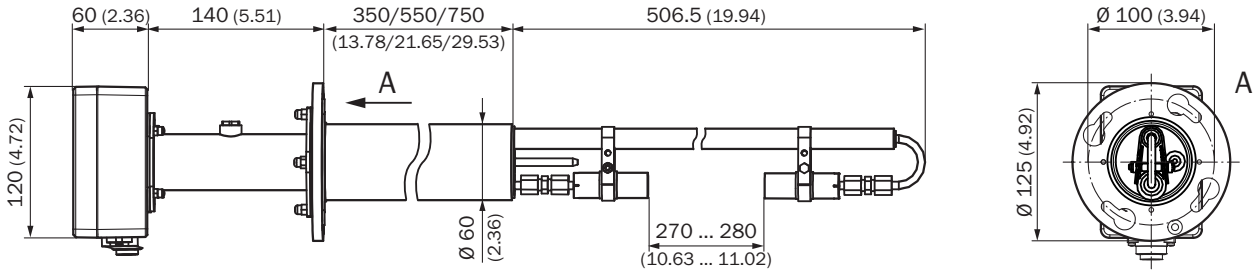
FLSE100-MAC sender/receiver unit



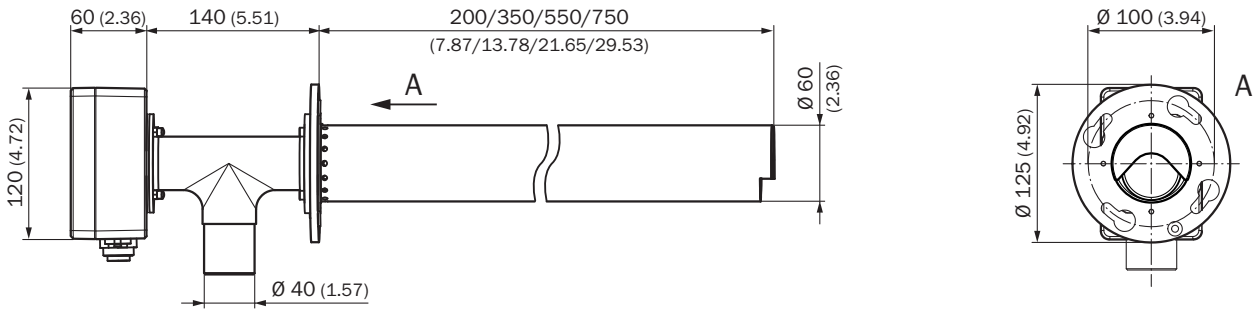
FLSE100-PHS sender/receiver unit



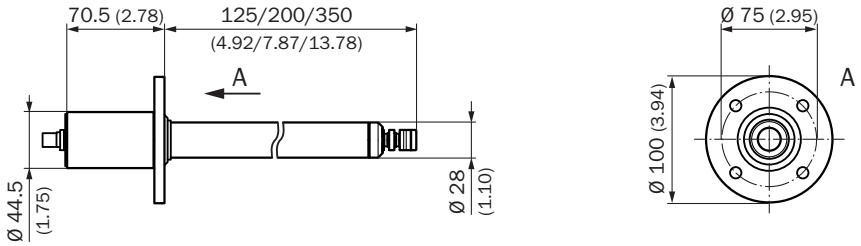
FLSE100-PR sender/receiver unit



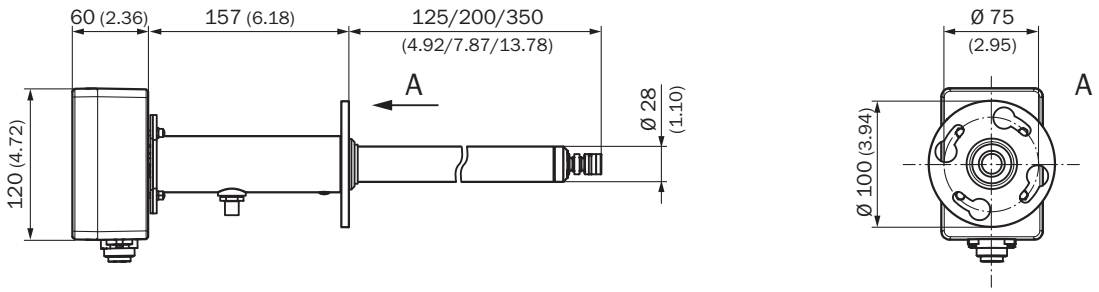
FLSE100-PM and FLSE100-PH sender/receiver unit



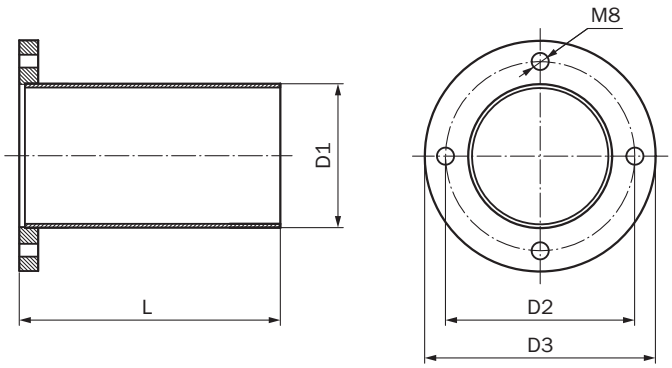
FLSE100-SA sender/receiver unit



FLSE100-SD sender/receiver unit

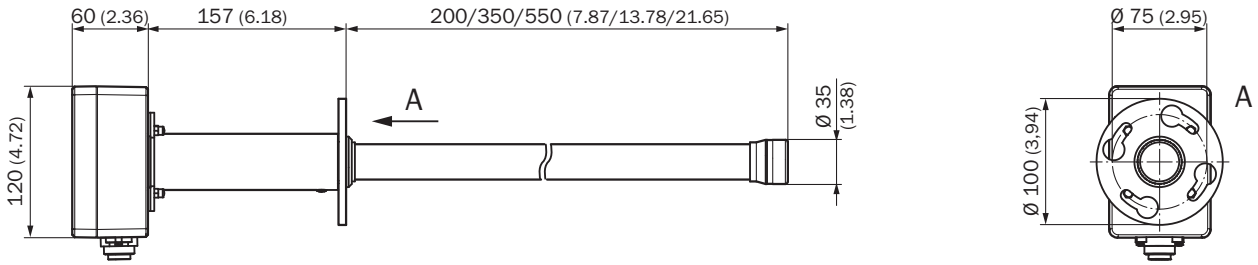


Mounting flange with tube

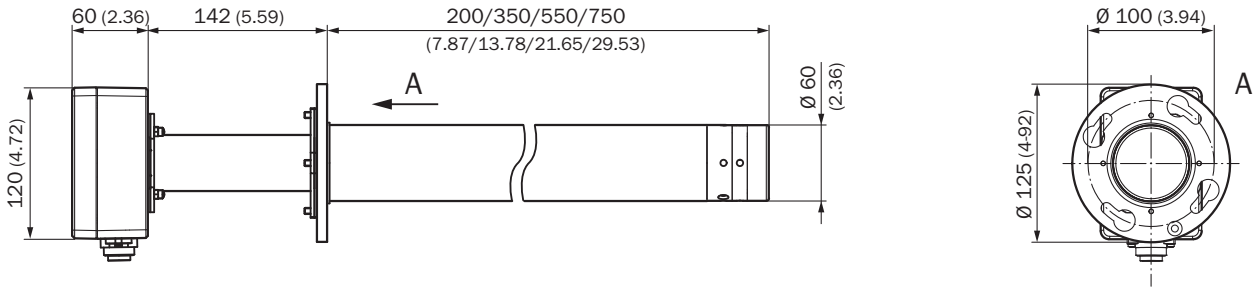


D1	D2	D3	L	Type FLSE100
48.3	75	100	113	SA, SD
			188, 338	SA, SD, M
			338, 538	M, MAC
76.1	100	122	188	H, PM, PH
			338	H, HAC, PR, PM, PH
			538	H, HAC, PR, PM, PH
			738	H, PR, PM, PH
114.3	170	210	338, 538, 738	PHS
All dimensions in mm				

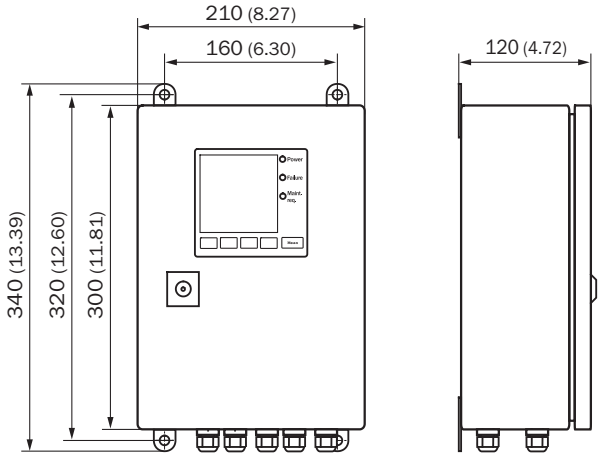
FLSE100-M sender/receiver unit



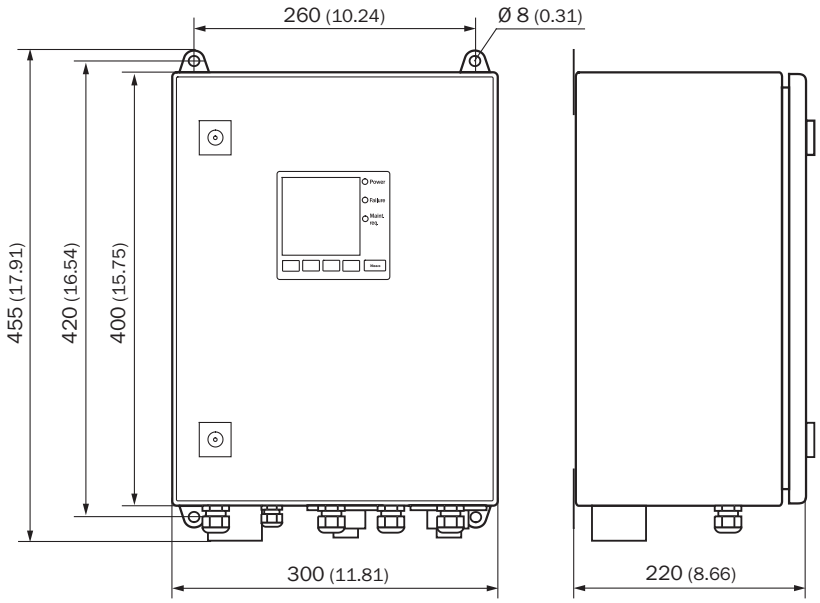
FLSE100-H sender/receiver unit



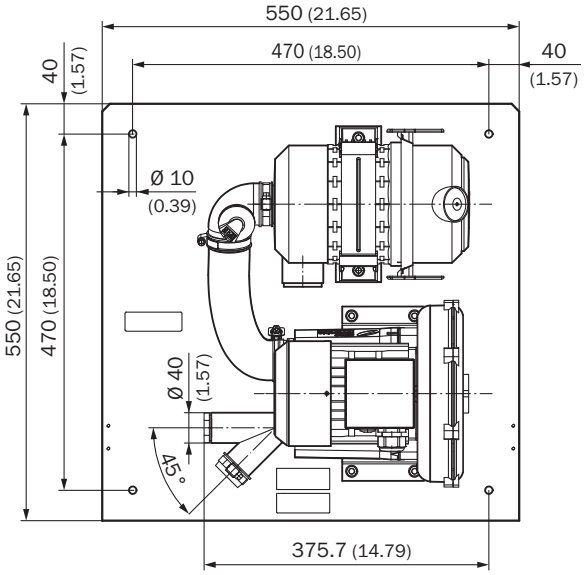
MCU-N control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)

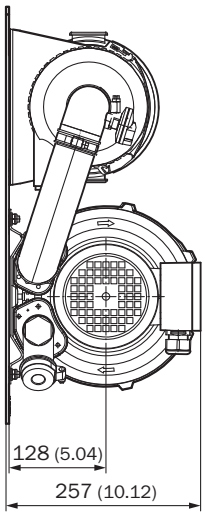


MCU-P control unit; wall-mounting enclosure, compact version (for non-hazardous areas only)



SLV4-2 purge air unit, 2BH1300





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.”

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