

# FLOWSIC100 Process

FLOW MEASUREMENT INSTRUMENTS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
FLWSIC100 Process	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/FLWSIC100\\_Process](http://www.sick.com/FLWSIC100_Process)

### Product description

With the FLWSIC100 Process gas flow measurement devices, measurements can be taken at pressures up to 16 bar – even in zone 2 explosive environments. The sender/receiver units are available as hermetically sealed designs made of stainless steel or titanium. The standard system contains an MCU control unit and 2 sender/receiver units or a single measuring probe. The MCU is used for signal input and output and to calculate reference values (standardization) or mass flow. It also serves as a user-friendly LCD interface.

### At a glance

- Corrosion-resistant transducer made of stainless steel or titanium
- Up to 16 bar process pressure
- Explosion-protected design for applications in zone 2 (ATEX) available
- Hermetically sealed ultrasonic transducer
- Measurements practically free of pressure loss and without influencing the process
- Automated operational check with zero and reference point test

### Your benefits

- Reliable and accurate measurement even at low gas velocities
- Low-maintenance, as no moving parts
- Measurement is independent of pressure, temperature, and gas composition
- Does not affect gas flow, as non-contact measurement
- Approved for use in zone 2 explosive environments(ATEX)
- User-friendly operation and device diagnosis via MCU control unit and SOPAS ET operating software



### Fields of application

- Natural gas industry
- Chemical and plastics-processing industry
- Glass Industry
- Pharmaceutical industry
- Petrochemical plants and refineries
- Cement production
- Steel and iron production
- Food industry

### Detailed technical data

#### FLWSIC100 Process system

<b>Measured values</b>	Gas velocity, Mass flow rate, volumetric flow a. c., volumetric flow s. c., sound velocity, gas temperature
<b>Measurement principle</b>	Ultrasonic transit time difference measurement
<b>Measuring ranges</b>	Gas velocity 0 ... ± 40 m/s
<b>Repeatability</b>	For $v > 2$ m/s: ± 1 % depending on application For $v < 2$ m/s: ± 0.02 m/s depending on application
<b>Diagnostics functions</b>	Automatic check cycle for zero and span point Extended device diagnosis via SOPAS ET software
<b>Gas temperature</b>	-40 °C ... +260 °C
<b>Dust load</b>	≤ 1 g/m <sup>3</sup>
<b>Ambient temperature</b>	-40 °C ... +60 °C
<b>Storage temperature</b>	-40 °C ... +70 °C
<b>Electrical safety</b>	CE
<b>Enclosure rating</b>	IP65

#### FLWSIC100 PN16/CL150

<b>Operating pressure</b>	-0.5 bar ... 16 bar
<b>Nominal pipe size</b>	0.15 m ... 1.7 m
<b>Weight</b>	3 kg Depending on version
<b>Mounting</b>	Installation angle 60°
<b>System components</b>	2 x FLSE100-PN16/CL150 sender/receiver unit 1 x MCU-N control unit 1 x connection unit 2 x Connection cable 2 x adapter

#### FLWSIC100 EX-Z2 and EX-Z2-RE

<b>Operating pressure</b>	-0.5 bar ... 16 bar
---------------------------	---------------------

<b>Nominal pipe size</b>		0.15 m ... 1.7 m
<b>Ex-approvals</b>	ATEX	Sender/receiver units: II 3 G Ex nA II T4 Gc
<b>Weight</b>		FLSE100-EXZ2: 3 kg Depending on version FLSE100-EXZ2RE: 6 kg Depending on version
<b>Mounting</b>		Installation angle 60°
<b>System components</b>		2 x FLSE100-EXZ2 sender/receiver unit 1 x MCU-N control unit 1 x connection unit 2 x Connection cable 2 x adapter 2 x ball valve (only version EX-Z2-RE)

### FLWSIC100 PR-EX-Z2

<b>Operating pressure</b>		-100 hPa ... 100 hPa
<b>Nominal pipe size</b>		≥ 0.4 m
<b>Ex-approvals</b>	ATEX	Sender/receiver units: II 3 G Ex nA II T4 Gc
<b>Weight</b>		5 kg Depending on version
<b>Mounting</b>		Installation angle 45°
<b>System components</b>		1 x FLSE100-PREXZ2 sender/receiver unit 1 x MCU-N control unit 1 x connection unit 1 x Connection cable 1 x adapter

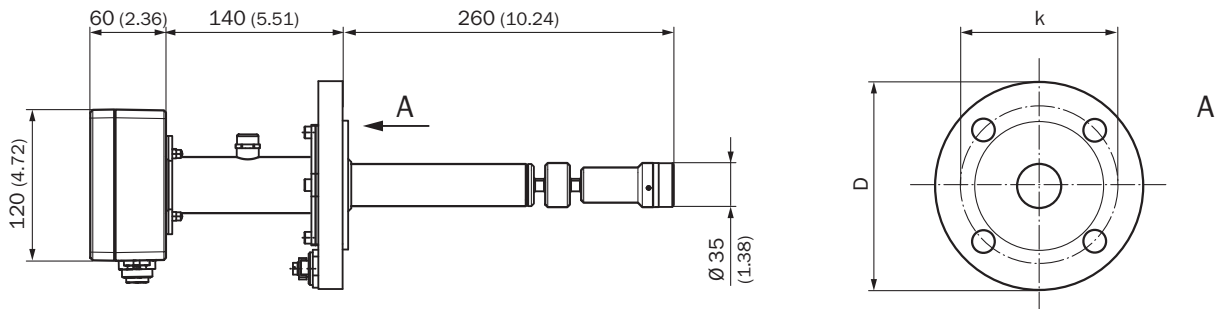
### MCU-N control unit

<b>Description</b>		Compulsory unit for controlling the sender/receiver units, calculation, evaluation and output of measured values
<b>Ambient temperature</b>		-40 °C ... +60 °C
<b>Enclosure rating</b>		IP65
<b>Analog outputs</b>		1 output: 0/2/4 ... 20 mA, + 750 Ω Electrically isolated, up to five outputs when add-on modules are used (option)
<b>Analog inputs</b>		2 inputs: 0 ... 20 mA Up to four outputs when using additional modules (option)
<b>Digital outputs</b>		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"
<b>Digital inputs</b>		4 potential-free contacts
<b>USB</b>		✓
	Function	Connection to SOPAS ET software

<b>Serial</b>		✓, ✓
	Type of fieldbus integration	RS-232
	Function	Connection to SOPAS ET software
<b>Ethernet</b>		✓
	Type of fieldbus integration	Via optional interface module
<b>Modbus</b>		✓, ✓, ✓
<b>Modbus</b>		
<b>Modbus</b>		
	Type of fieldbus integration	ASCII RS-485 (via optional interface module)
<b>HART</b>		✓
	Type of fieldbus integration	Via optional interface module
<b>PROFIBUS DP</b>		✓
	Type of fieldbus integration	Via optional interface module
<b>Foundation Fieldbus</b>		✓
	Type of fieldbus integration	Via optional interface module
<b>Indication</b>		LC display (option) Status LEDs: "Power," "Failure," and "Maintenance request"
<b>Operation</b>		Via LC-display (option) or software SOPAS ET
<b>Dimensions (W x H x D)</b>		210 mm x 340 mm x 120 mm
<b>Weight</b>		≤ 3.7 kg
<b>Electrical connection</b>		
	Voltage	90 ... 250 V Version with 24 V DC available as an option
	Frequency	47 ... 63 Hz
	Power consumption	≤ 15 W
<b>Options</b>		Interface module(s) I/O module(s) LC display 19"-type

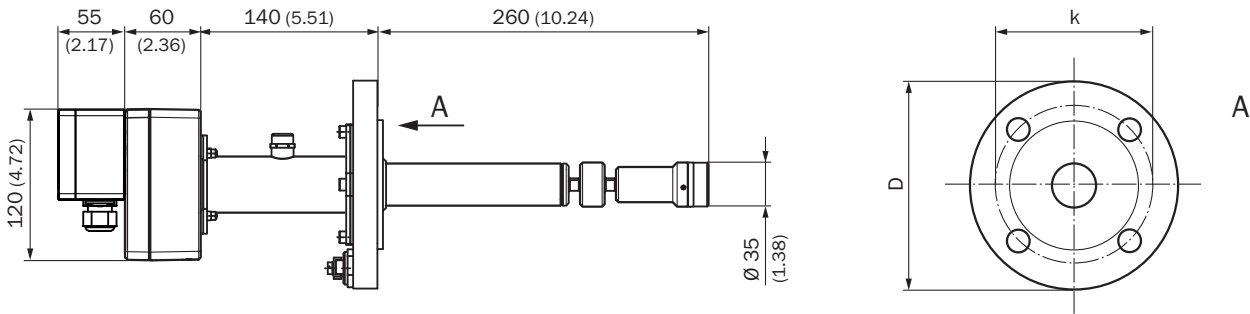
**Dimensional drawings** (Dimensions in mm (inch))

FLSE100-PN16CL150 sender/receiver unit



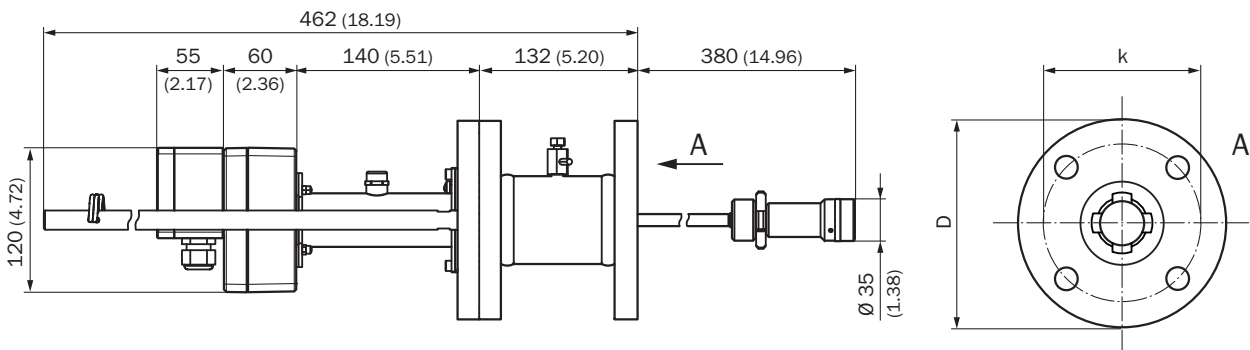
Flange design	D	K
B50 ND40 DIN 2527 1.4571	165	125
ANSI B16.5 CLASS 150 2"	152.4	120.7
All dimensions in mm		

FLSE100-EXZ2 sender/receiver unit



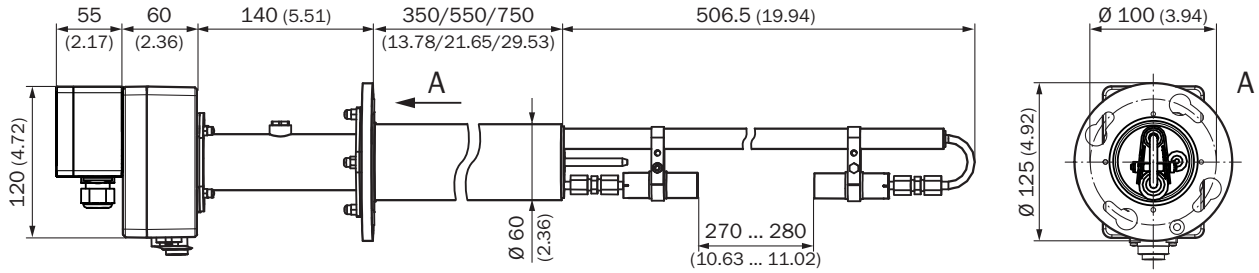
Flange design	D	K
B50 ND40 DIN 2527 1.4571	165	125
ANSI B16.5 CLASS 150 2"	152.4	120.7
All dimensions in mm		

FLSE100-EXZ2RE sender/receiver unit

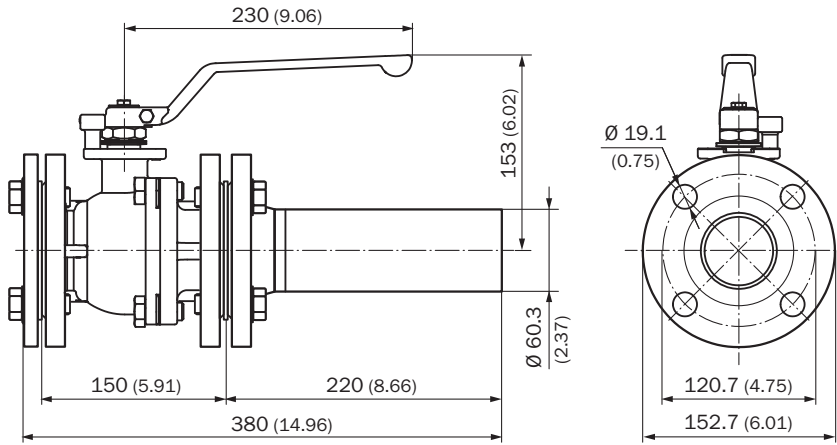


Flange design	D	K
B50 ND40 DIN 2527 1.4571	165	125
ANSI B16.5 CLASS 150 2"	152.4	120.7
All dimensions in mm		

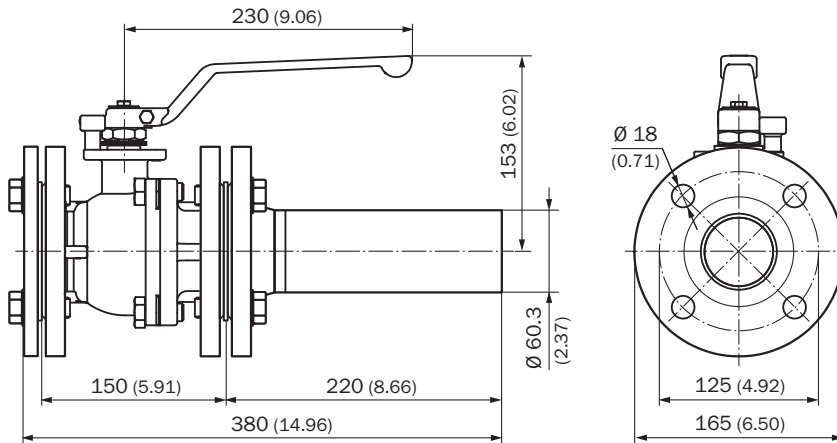
FLSE100-PREXZ2 sender/receiver unit



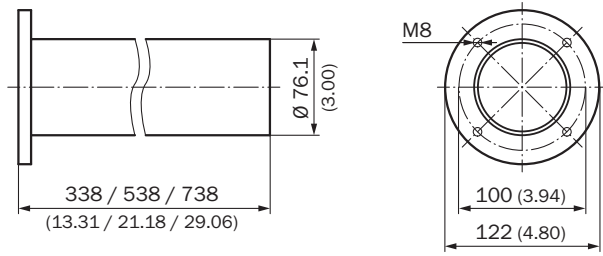
Mounting kit CL150 with ball valve for FLSE100-EXZ2RE



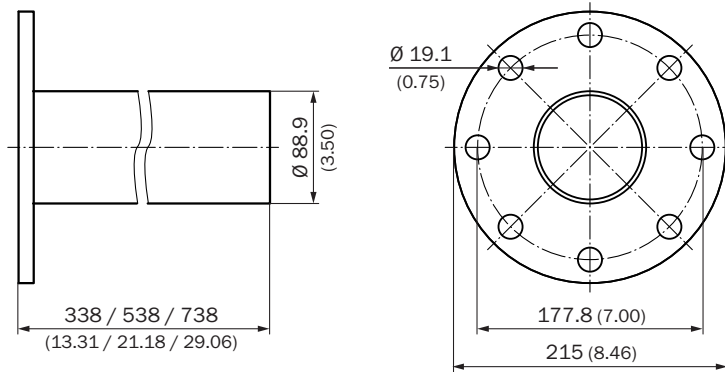
Mounting kit PN16 with ball valve for FLSE100-EXZ2RE



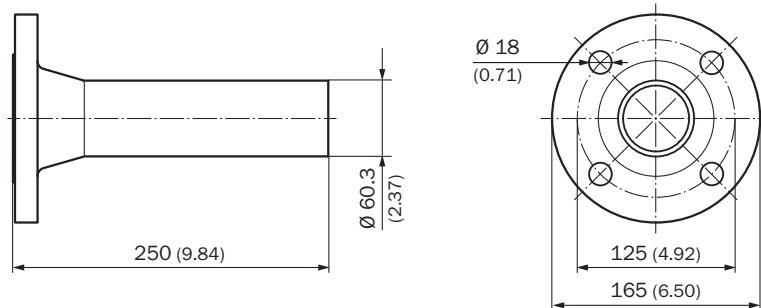
Flange with tube, D70



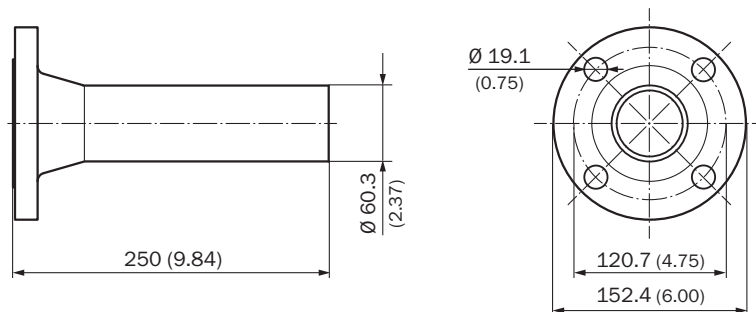
Flange with tube, US version



Adapter PN16 DN50

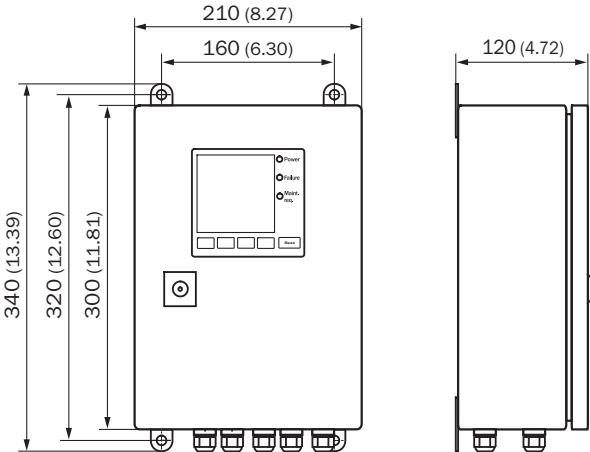


Adapter 2" Cl.150





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



## 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](http://www.sick.com)