



FW102

SCATTERED LIGHT DUST MEASURING DEVICES

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
FW102	On request

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/FW102

Product description

The FW102 is designed for continuous measurement of low to medium dust concentrations - independent of the gas velocity, humidity, or charge of the particles. The probe design of FW102 enables mounting on one side of the gas duct and does not require any mechanical adjustment or calibration with a dust-free measurement path.

At a glance

- Automatic check of zero and reference point
- Evaluation unit for remote control and connection of up to three FW102 measuring devices as an option

Your benefits

- Installation from one side
- Simple mounting



Fields of application

- Clean gas monitoring downstream of filter systems
- Monitoring of bag filters for faulty bags
- Dust monitoring in milling or dosing facilities
- Protection of desulfurization plants against high dust loads
- Monitoring and control of fresh and exhaust air plants

Detailed technical data

FW102 system

Measured values	Scattered light intensity, dust concentration (after gravimetric comparison measurement)
Performance-tested measurands	Dust concentration
Measurement principles	Scattered light forward
Spectral range	640 nm ... 660 nm Laser, protection class 2, power < 1 mW
Measuring ranges	Dust concentration 0 ... 5 mg/m ³ / 0 ... 200 mg/m ³ Measuring ranges freely selectable Higher measuring ranges on request
Certified measuring ranges	Dust concentration 0 ... 20 mg/m ³
Response time (t₉₀)	0.1 s ... 600 s Freely adjustable
Accuracy	± 2 % Of measuring range full scale
Process temperature	-20 °C ... +220 °C
Process pressure	With connection unit with integrated purge air supply: -50 hPa ... 10 hPa With external purge air unit: -50 hPa ... 70 hPa With instrument air (provided by the customer): -50 hPa ... 100 hPa
Process gas humidity	Non-condensing
Duct diameter	≥ 0.15 m
Conformities	TA-Luft (Prevention of Air Pollution) 27.BImSchV EN 14181
Electrical safety	CE
Test functions	Automatic check cycle for zero and span point
Options	External purge air unit

FWSE102 sender and receiver unit

Description	Analyzer unit with measuring probe
Ambient temperature	-20 °C ... +50 °C
Enclosure rating	IP 65
Dimensions (W x H x D)	150 mm x 150 mm x 440 mm
Weight	2.7 kg
Power supply	Voltage 24 V

Power consumption	Supply via connection unit ≤ 4 W
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AK1-N connection unit

Description	Unit for connecting data cables and power supply to the system components
Ambient temperature	-20 °C ... +45 °C
Enclosure rating	IP 65
Analog outputs	1 output: 0/2/4 ... 20 mA, 750 Ω Electrically isolated; second output as option
Digital outputs	3 relay contacts: 48 V, 1 A Potential-free; for status signals "operation/ failure", "limit value", "maintenance"
Digital inputs	1 input: Potential-free; for maintenance switch
Interfaces and bus protocols	RS-232 Proprietary service interface
Indication	Double-spaced LC display Option
Dimensions (W x H x D)	200 mm x 220 mm x 130 mm (for details see dimensional drawings)
Weight	3.7 kg
Power supply	Voltage 100 ... 240 V Optional: 24 V DC ± 2 V Frequency 47 ... 63 Hz Power consumption ≤ 15 W

AK1-P connection unit

Description	Unit for connecting data cables and power supply to the system components; with integrated purge air supply
Ambient temperature	-20 °C ... +45 °C Intake temperatures for purge air
Enclosure rating	IP 65
Analog outputs	1 output: 0/2/4 ... 20 mA, 750 Ω Electrically isolated; second output as option
Digital outputs	3 relay contacts: 48 V, 1 A Potential-free; for status signals "operation/ failure", "limit value", "maintenance"
Digital inputs	1 input: Potential-free; for maintenance switch
Interfaces and bus protocols	RS-232 Proprietary service interface
Indication	Double-spaced LC display Option
Dimensions (W x H x D)	300 mm x 420 mm x 220 mm (for details see dimensional drawings)
Weight	13.5 kg
Power supply	Voltage 100 ... 240 V

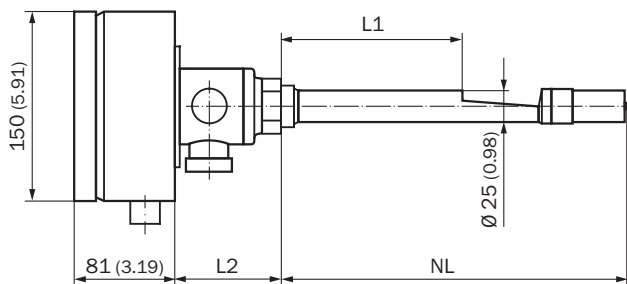
	Optional: 24 V DC ± 2 V
Frequency	47 ... 63 Hz
Power consumption	≤ 70 W

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

Description	Unit to provide dust-free air for flushing of optical surfaces
Gas flow rate	38 m³/h ... 63 m³/h At 30 hPa counter pressure, depending on low pressure inside the filter
Ambient temperature	-20 °C ... +40 °C
Enclosure rating	IP 54
Dimensions (W x H x D)	550 mm x 550 mm x 258 mm (for details see dimensional drawings)
Weight	18 kg
Power supply	Three-phase current 3-phase, Δ: 200 ... 240 V, 50 Hz, 2.6 A, 350 W 3-phase, Δ: 220 ... 275 V, 60 Hz, 2.3 A, 450 W 3-phase, Y: 345 ... 415 V, 50 Hz, 1.5 A, 350 W 3-phase, Y: 380 ... 480 V, 60 Hz, 1.3 A, 450 W
Auxiliary gas connections	Purge air: 40 mm
Test functions	Pressure switch (switching point -35 hPa)
Integrated components	2-step air filter, type Europiclön, dust capacity 200 g

Dimensional drawings (Dimensions in mm (inch))

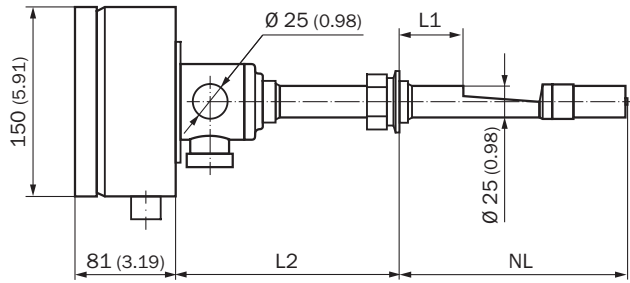
FW102 with 1"-thread



Nominal length	L1	L2
180	50	179
280	150	79

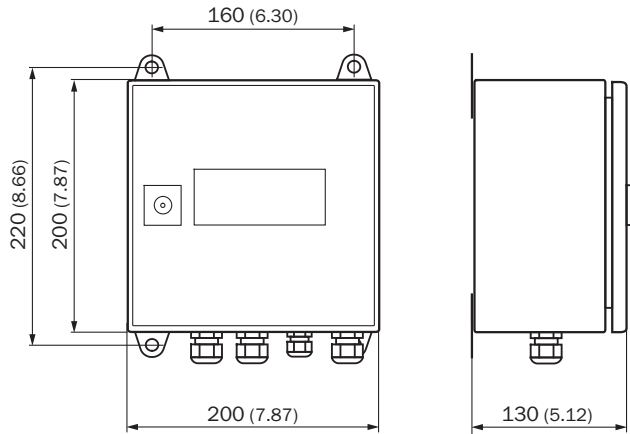
All dimensions in mm

FW102 with Tri-Clamp connection

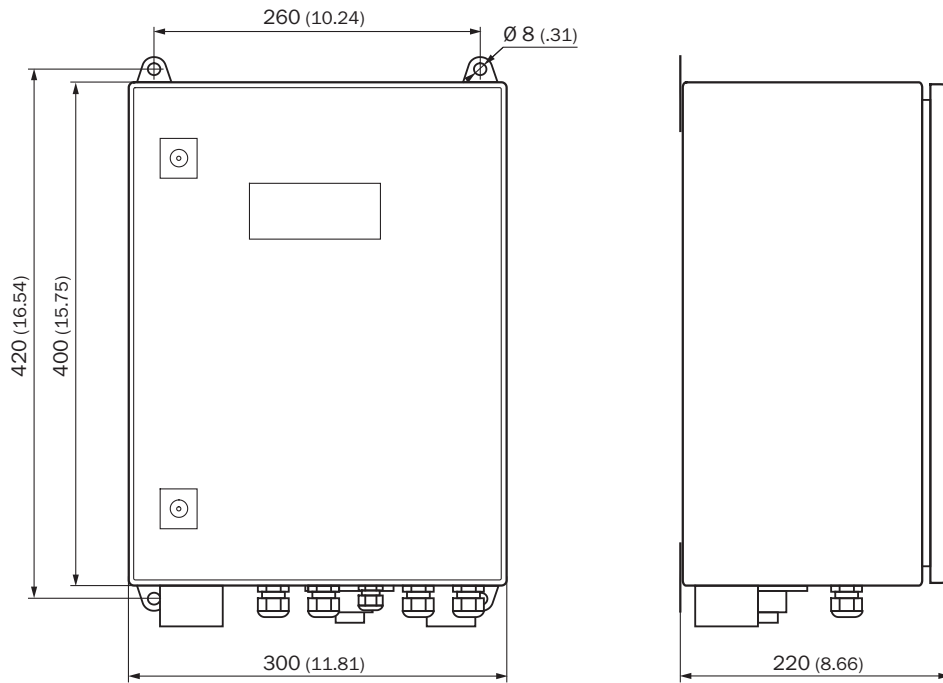


Nominal length	L1	L2
180	50	179
280	150	79
All dimensions in mm		

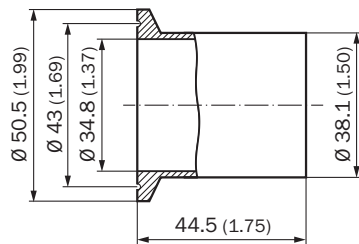
AK1-N connection unit



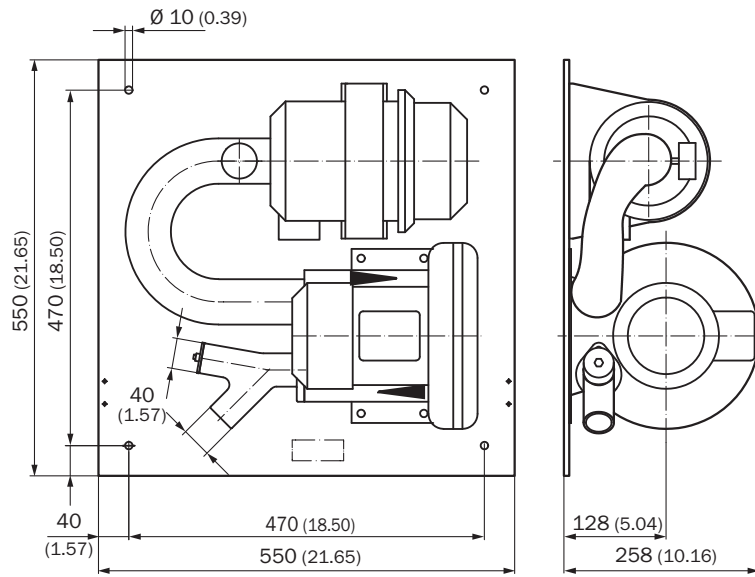
AK1-P connection unit



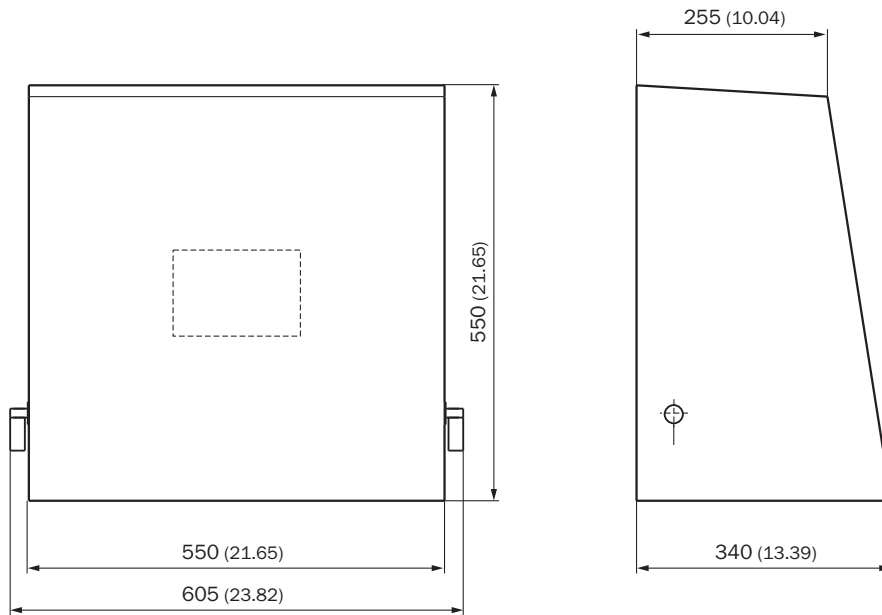
Mounting flange, TriClamp



SLV4-2 purge air unit, 2BH1300



Weather hood for SLV4/SLV5/SLV7 purge air unit



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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