



FW101 Ex

SCATTERED LIGHT DUST MEASURING DEVICES

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
FW101 Ex	On request

Other models and accessories → www.sick.de/FW101_Ex



Fields of application

- Pure gas monitoring downstream of filter plants
- Monitoring of bag filter for defective 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
- Measurements in potentially explosive atmospheres

Detailed technical data

FW101 Ex system

Measured values	Scattered light intensity, dust concentration (after gravimetric comparison measurement)
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
Response time	0.1 s ... 600 s Freely adjustable
Accuracy	± 2 % Of measuring range full scale
Process temperature	Standard version: -40 °C ... +220 °C High temperature version: -40 °C ... +400 °C
Process pressure	With external purge air unit: -50 hPa ... 30 hPa With instrument air (provided by the customer): -50 hPa ... 100 hPa
Process gas humidity	Non-condensing
Duct diameter	≥ 0.25 m
Electrical safety	CE
Test functions	Automatic self-test (linearity, contamination, drift, aging) Contamination limits: at 30% warning, at 40% failure Manual linearity check with reference filter
Options	External purge air unit

FWSE101 Ex sender/receiver unit

Description	Analyzer unit of the measuring system	
Ambient temperature	-20 °C ... +40 °C	
Ex-approvals	ATEX	Version for Ex-zone 1 and 2: II 2G Ex d IIC T6 Version for Ex-zone 22: II 3D Ex t IIIB T80 °C Dc IP54
Enclosure rating	IP 66	
Dimensions (W x H x D)	180 mm x 200 mm x 700 mm (nominal length 435 mm, for details see dimensional drawings) 180 mm x 200 mm x 1,000 mm (nominal length 735 mm, for details see dimensional drawings)	
Weight	Nominal length 435 mm: 10.6 kg Nominal length 735 mm: 11.9 kg	
Power supply	Voltage	24 V
		Supply via connection unit
	Power consumption	≤ 4 W

AK1-Ex connection unit

Description	Unit for connecting data cables and power supply to the system components; for potentially explosive atmospheres	
Ambient temperature	-20 °C ... +40 °C	
Ex-approvals	ATEX	II 2G Ex de IIC T6
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	
Dimensions (W x H x D)	210 mm x 493 mm x 180 mm (for details see dimensional drawings)	
Weight	13.3 kg	
Power supply	Voltage	100 ... 240 V
	Frequency	47 ... 63 Hz
	Power consumption	≤ 15 W

AK1-Ex22 connection unit

Description	Unit for connecting data cables and power supply to the system components; for potentially dust explosive atmospheres	
Ambient temperature	-20 °C ... +40 °C	
Ex-approvals	ATEX	II 2D Ex tD A21 T80 °C IP6x

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
Dimensions (W x H x D)	200 mm x 300 mm x 155 mm (for details see dimensional drawings)
Weight	4.9 kg
Power supply	
Voltage	100 ... 240 V Optional: 24 V DC ± 2 V
Frequency	47 ... 63 Hz
Power consumption	≤ 15 W

SLV5-1 purge air unit, 2BH1300, ATEX 3/2G

Description	Unit to provide dust-free air for flushing of optical surfaces; for potentially explosive atmospheres
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: 230 V, 50 Hz, 2.4 A, 550 W 3-phase, Y: 400 V, 50 Hz, 1.4 A, 550 W
Auxiliary gas connections	Purge air: 40 mm
Test functions	Low pressure controller (switch point -35 hPa)
Integrated components	2-step air filter, type Europiclon, dust capacity 200 g

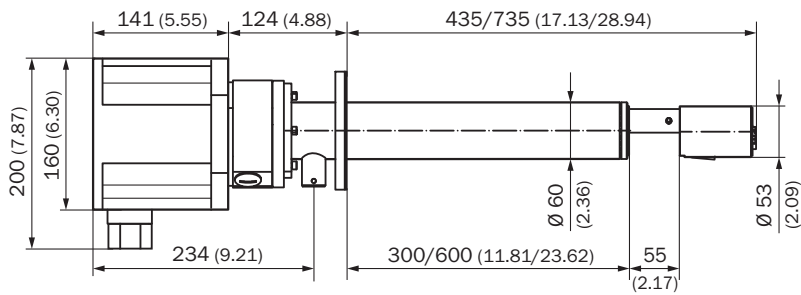
SLV5-2 purge air unit, 2BH1300, ATEX 3/2D

Description	Unit to provide dust-free air for flushing of optical surfaces; for potentially dust explosive atmospheres
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: 230 V, 50 Hz, 2.4 A, 550 W 3-phase, Y: 400 V, 50 Hz, 1.4 A, 550 W

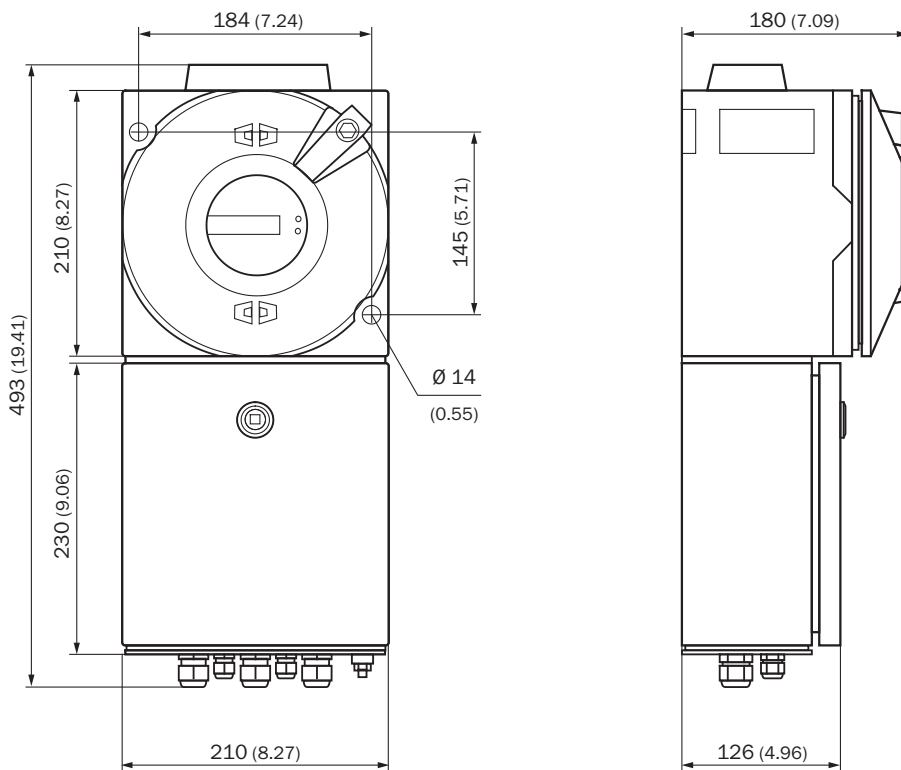
Auxiliary gas connections	Purge air: 40 mm
Test functions	Low pressure controller (switch point -35 hPa)
Integrated components	2-step air filter, type Europiclone, dust capacity 200 g

Dimensional drawings (Dimensions in mm (inch))

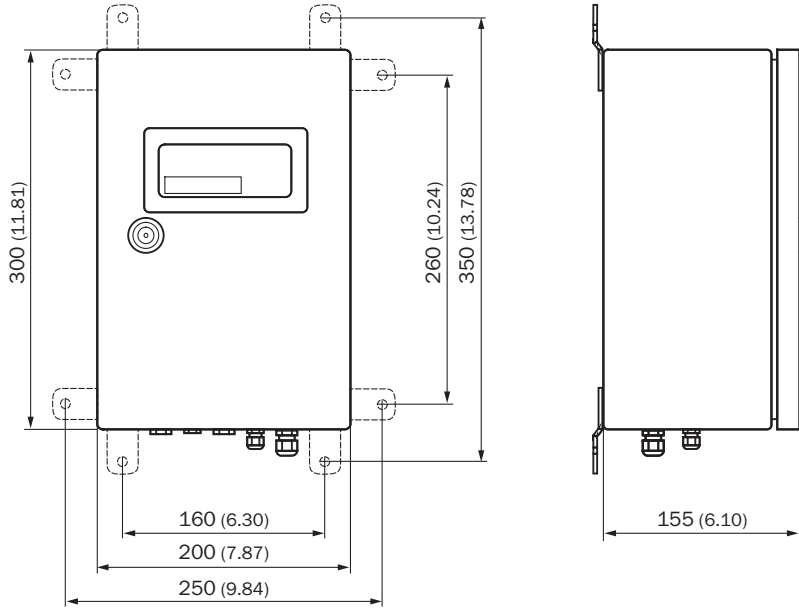
FWSE101 Ex sender/receiver unit



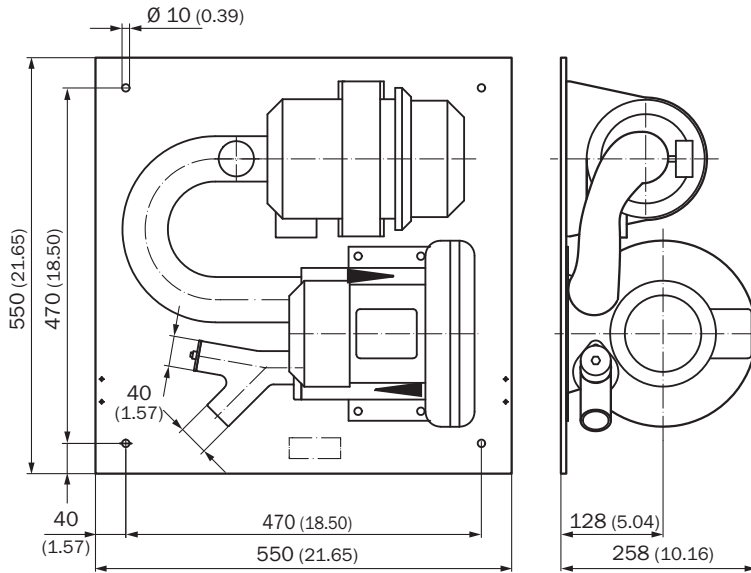
AK1-Ex connection unit



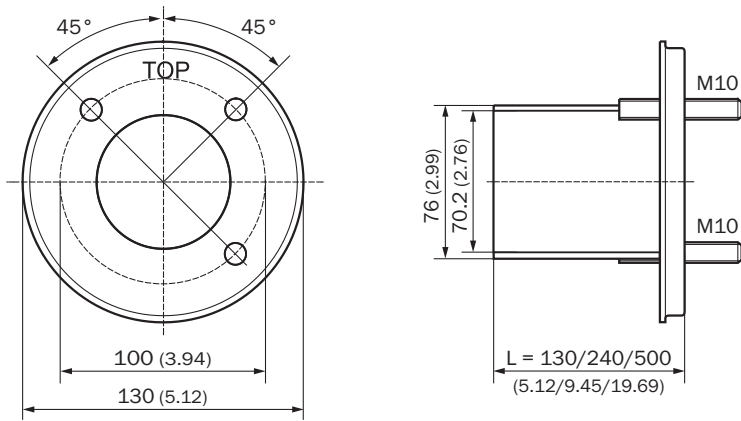
AK1-Ex22 connection unit



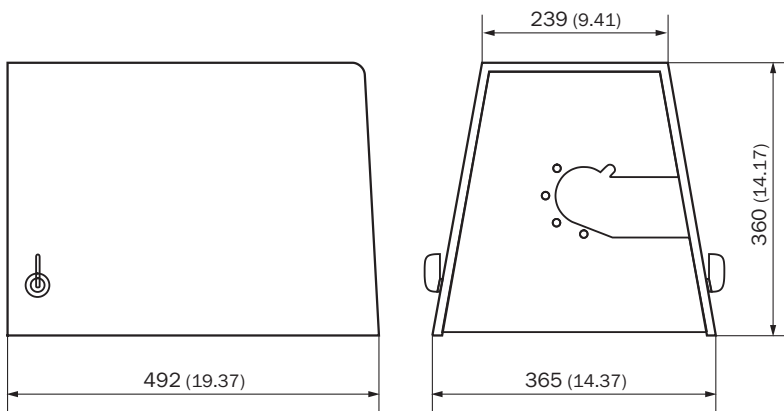
SLV5 purge air unit, 2BH1300, Ex



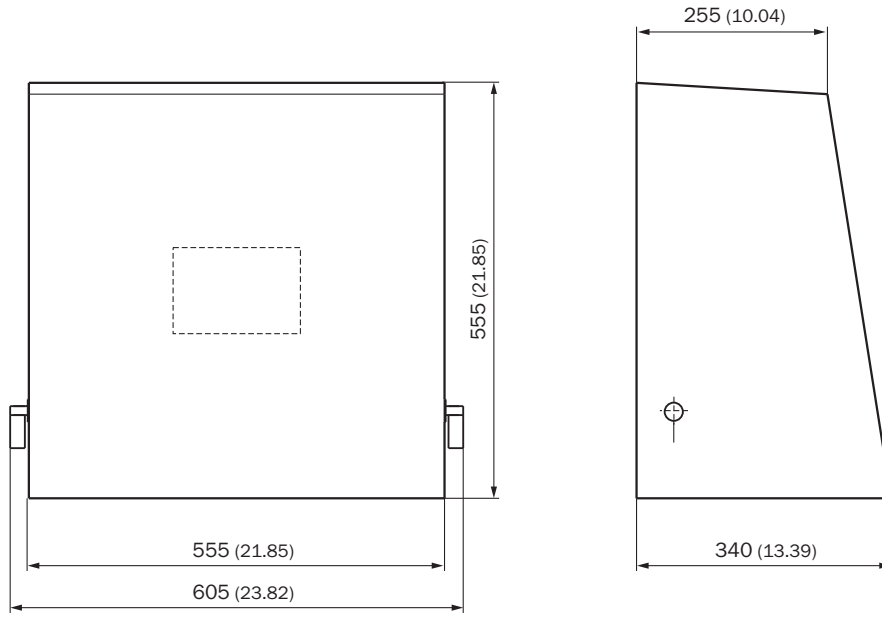
Mounting flange, $D_f=70.2$ mm



Weather hood for sender/receiver unit



Weather hood for SLV4/SLV5/SLV7 purge air unit



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