



GM35

IN-SITU GAS ANALYZERS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
GM35	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/GM35

Product description

Simultaneously or as individual measurements, the GM35 gas analyzer measures CO₂, H₂O and CO or N₂O as well as temperature and pressure quickly, easily and economically. Due to its in-situ measurement technology, the GM35 detects the measuring values directly in the gas stream without gas sampling. Reliability, precision and short response time of the analyzer offer a key advantage for efficient control loops in all CO and CO₂ generating processes.

At a glance

- Dynamic humidity correction
- Fast in-situ measurement directly in the process
- Simultaneous determination of up to three gas components, temperature, and pressure
- No gas sampling and conditioning
- Gas testable version of measuring probe available
- Integrated self-test and control functions

Your benefits

- Dynamic humidity measurement directly in the process
- Provision of real humidity reference values
- Unbiased measuring values due to in-situ measurement
- Fast or short-term fluctuations in the process are being detected
- Representative measurement by selection of an appropriate probe or cross-duct type



Fields of application

- Emission monitoring according to EN 14181, e. g., in power or cement plants
- Control of the water injection upstream of the electrostatic precipitator
- Monitoring of the combustion efficiency in hazardous waste incineration
- Process monitoring in urea production
- Tube rupture detection in heat exchangers

Detailed technical data

GM35 system

Measured values	CO, CO ₂ , H ₂ O, N ₂ O
Performance-tested measurands	CO, CO ₂ , H ₂ O
Measurement principles	Gas filter correlation, Interference filter correlation
Measuring ranges	<p>CO 0 ... 180 ppm / 0 ... 20,000 ppm</p> <p>CO₂ 0 ... 22.5 Vol.-% / 0 ... 100 Vol.-%</p> <p>H₂O 0 ... 25 Vol.-% / 0 ... 100 Vol.-%</p> <p>N₂O 0 ... 60 ppm / 0 ... 2,500 ppm</p> <p>Measuring ranges refer to 1 m measuring path Measuring ranges depend on application and device version</p>
Certified measuring ranges	<p>CO 0 ... 75 mg/m³ / 0 ... 2,000 mg/m³</p> <p>CO₂ 0 ... 15 Vol.-%</p> <p>H₂O 0 ... 25 Vol.-%</p> <p>Cross-duct and GMP version are type approved</p>
Zero point drift	± 2 % relative to measuring range end value
Reference point drift	± 2 % within the maintenance interval, relative to measuring range full scale
Ambient temperature	-40 °C ... +55 °C Temperature change maximum ±10 °C/h
Storage temperature	-40 °C ... +55 °C
Ambient humidity	≤ 96 % Relative humidity; bedewing of optical surfaces not permitted
Conformities	Approved for plants requiring approval 2001/80/EC (13. BImSchV) 2000/76/EC (17. BImSchV) 27.BImSchV TA-Luft (Prevention of Air Pollution) EN 15267 EN 14181 MCERTS
Electrical safety	CE
Enclosure rating	IP 65 / NEMA 4x
Operation	Menu-driven operation via separate control unit
Model	Cross-duct version Measuring probe version
Test functions	Automatic check cycle for zero and span point

Sender/receiver unit

Description	Analyzer unit of the measuring system
Enclosure rating	IP 65 / NEMA 4x
Dimensions (W x H x D)	291 mm x 527 mm x 529 mm
Weight	29 kg
Power supply	
	Voltage 115 V AC / 230 V AC
	Frequency 48 ... 62 Hz
	Power consumption ≤ 350 W

Open measuring probe (GMP)

Description	Measuring probe in open design with integrated purge air control system
Process temperature	≤ +430 °C With N ₂ O measurement max. 180 °C
Process pressure	≤ 120 hPa Depending on purge air supply
Process gas velocity	≤ 40 m/s
Dust load	≤ 3 g/m ³
Dimensions (W x H x D)	See dimensional drawings
Weight	25 kg
Material in contact with media	Stainless steel 1.4571, stainless steel 1.4539
Auxiliary gas connections	Purge air
Integrated components	Pressure sensor PT1000 temperature sensor

Gas-testable measuring probe (GPP)

Description	Measuring probe with gas permeable filter element for adjustment with test gas
Process temperature	≤ +430 °C With N ₂ O measurement max. 180 °C
Process pressure	≤ 250 hPa Depending on purge air supply
Process gas velocity	≤ 40 m/s
Dust load	≤ 30 g/m ³
Dimensions (W x H x D)	See dimensional drawings
Weight	45 kg
Material in contact with media	Stainless steel 1.4571, stainless steel 1.4539, ceramics, PTFE
Power supply	
	Voltage 115 V AC / 230 V AC
	Frequency 50 Hz / 60 Hz
	Power consumption ≤ 150 W
Auxiliary gas connections	Test gas Purge air
Integrated components	Pressure sensor PT1000 temperature sensor

Reflector unit

Description	Reflector unit with hollow triple reflector
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Process temperature	≤ +500 °C With N ₂ O measurement max. 180 °C
Process pressure	Depending on purge air supply
Dimensions (W x H x D)	291 mm x 280 mm x 161 mm
Weight	1.5 kg

GM35 evaluation unit; steel sheet enclosure

Description	The evaluation unit serves as the user interface and is responsible for data processing and output as well as control and monitoring functions.
Enclosure rating	IP 65 / NEMA 4x
Analog outputs	3 outputs: 0/4 ... 20 mA, 500 Ω Electrically isolated
Analog inputs	1 input: 0 ... 20 mA, 100 Ω
Digital outputs	3 relay contacts: 48 V AC, 1 A, 60 W / 48 V DC, 1 A, 30 W Preset for failure, maintenance and functional control
Digital inputs	3 inputs: 24 V
Interfaces and bus protocols	RS-232 SOPAS ET RS-232 Proprietary service interface
Indication	LC display Status LEDs: "Power", "Maintenance" and "Failure"
Input	Arrow keys Functional keys
Operation	Menu-driven operation via LC-display and membrane keyboard
Model	Steel sheet enclosure
Dimensions (W x H x D)	200 mm x 346 mm x 97.5 mm
Weight	3 kg
Power supply	Voltage 115 V / 230 V Frequency 50 Hz / 60 Hz Power consumption ≤ 50 W

GM35 AWE evaluation unit; cast metal enclosure

Description	The evaluation unit serves as the user interface and is responsible for data processing and output as well as control and monitoring functions.
Enclosure rating	IP 67
Analog outputs	3 outputs: 0/4 ... 20 mA, 500 Ω Electrically isolated
Analog inputs	1 input: 0 ... 20 mA, 100 Ω
Digital outputs	3 relay contacts: 48 V AC, 1 A, 60 W / 48 V DC, 1 A, 30 W Preset for failure, maintenance and functional control
Digital inputs	3 inputs: 24 V

Interfaces and bus protocols	RS-232	SOPAS ET
	RS-232	Proprietary service interface
Indication	LC display Status LEDs: "Power", "Maintenance" and "Failure"	
Input	Arrow keys Functional keys	
Operation	Menu-driven operation via LC-display and membrane keyboard	
Model	Cast metal enclosure	
Dimensions (W x H x D)	289 mm x 370 mm x 138 mm	
Weight	3 kg	
Power supply	Voltage	115 V / 230 V
	Frequency	50 Hz / 60 Hz
	Power consumption	≤ 50 W

Connection unit

Description	To lengthen the internal CAN-Bus connection with cable provided by the customer
Dimensions (W x H x D)	125 mm x 103 mm x 57 mm
Weight	3 kg

Purge air fixture; sender/receiver unit

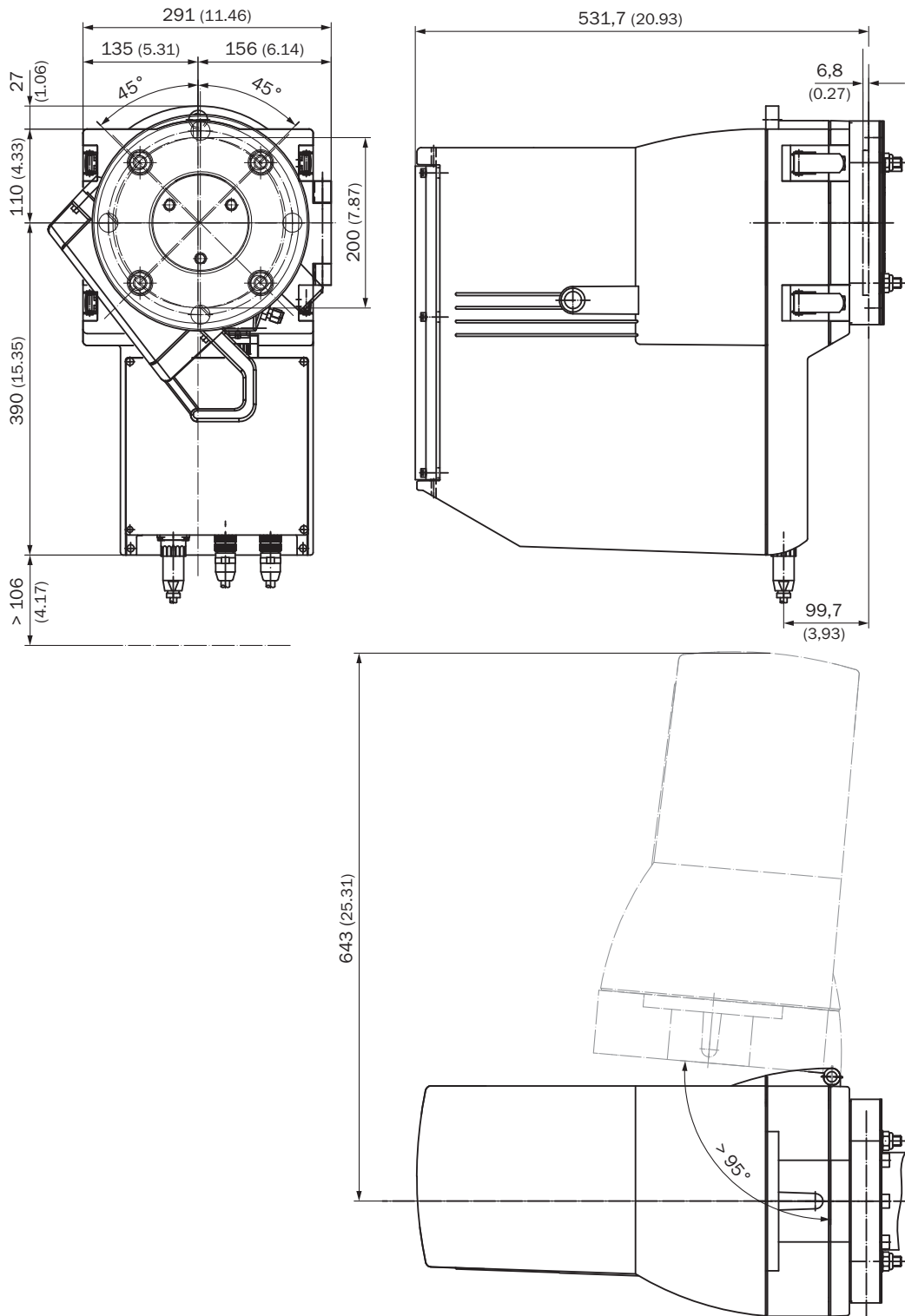
Description	Fixture to flanges with connections for purge air and external cabling
Dimensions (W x H x D)	320.9 mm x 360 mm x 220 mm
Weight	7 kg
Auxiliary gas connections	Purge air
Integrated components	PT1000 temperature sensor Pressure sensor

Purge air fixture; reflector unit

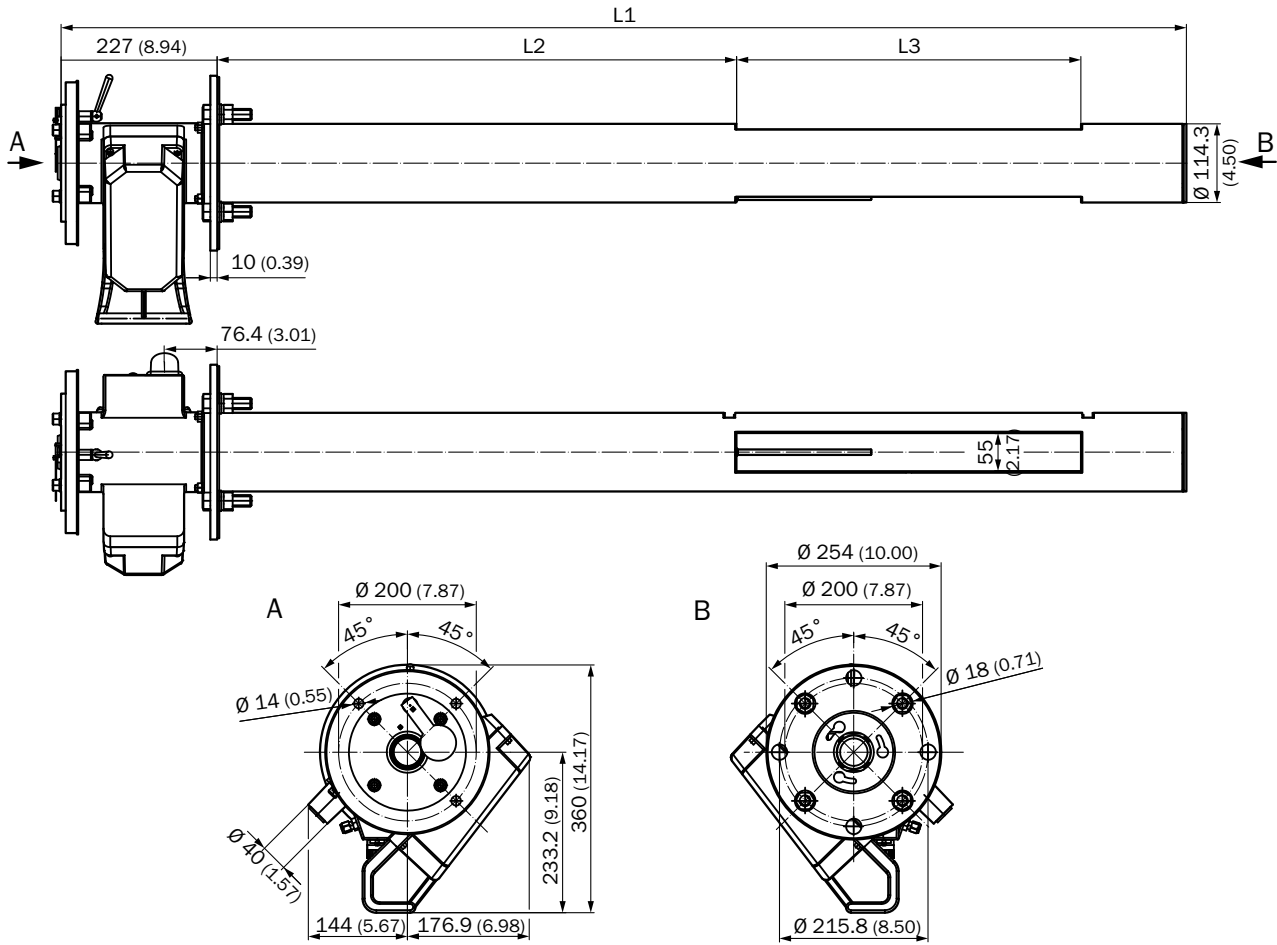
Description	Fixture to flanges with connections for purge air and external cabling
Dimensions (W x H x D)	320.9 mm x 360 mm x 220 mm
Weight	7 kg
Auxiliary gas connections	Purge air

Dimensional drawings (Dimensions in mm (inch))

GM35 sender/receiver unit



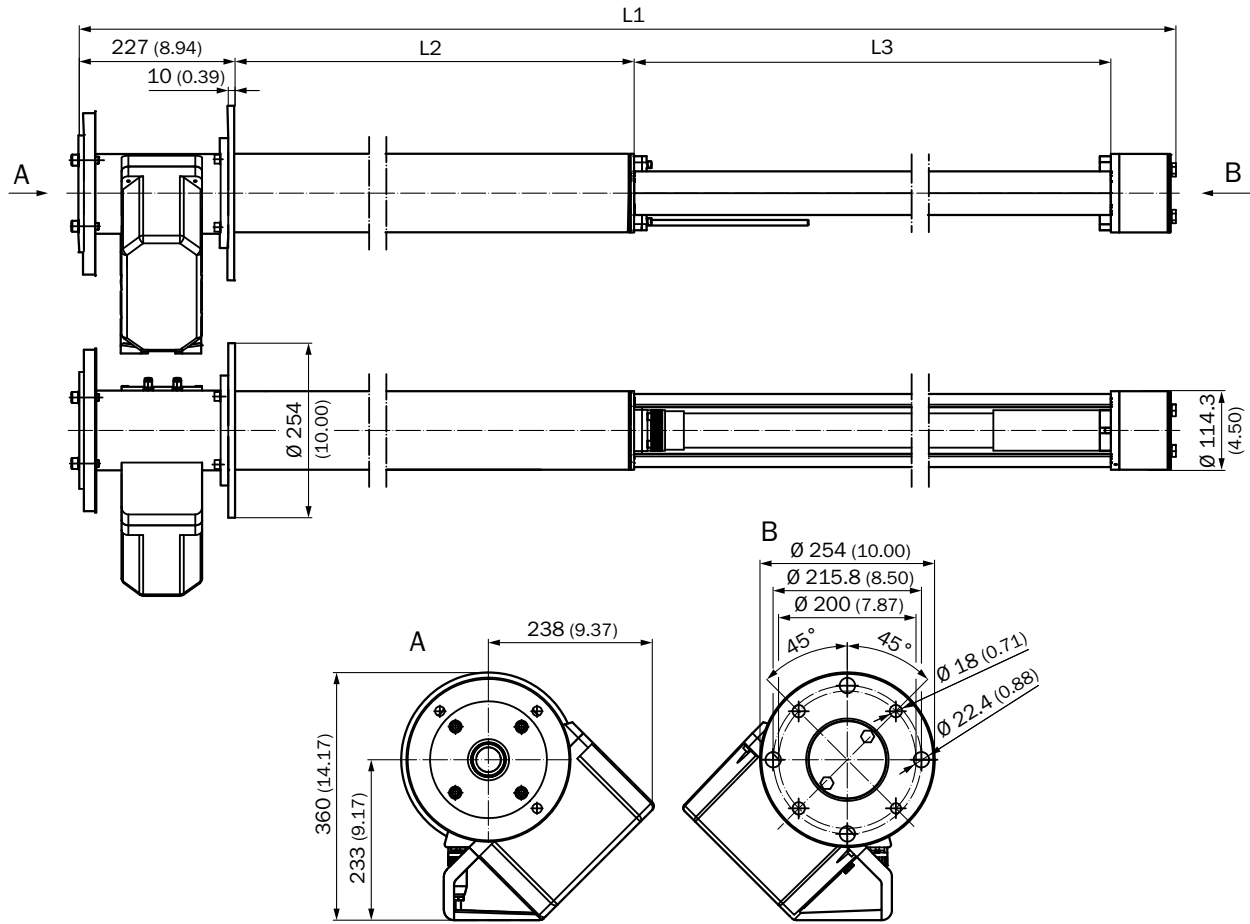
Open measuring probe (GMP)



GMP measuring probes		Measuring gap L3 (active measuring path)						
Probe length, nominal	L1	250	500	750	1,000	1,250	1,500	1,750
		L2						
900	935	296	46	—	—	—	—	—
1,500	1,644	1,004.5	754.5	504.5	254.5	—	—	—
2,000	2,128	1,489	1,239	989	739	489	239	—
2,500	2,628	1,988	1,738	1,488	1,238	988	738	488

All dimensions in mm
Application-specific lengths available on request

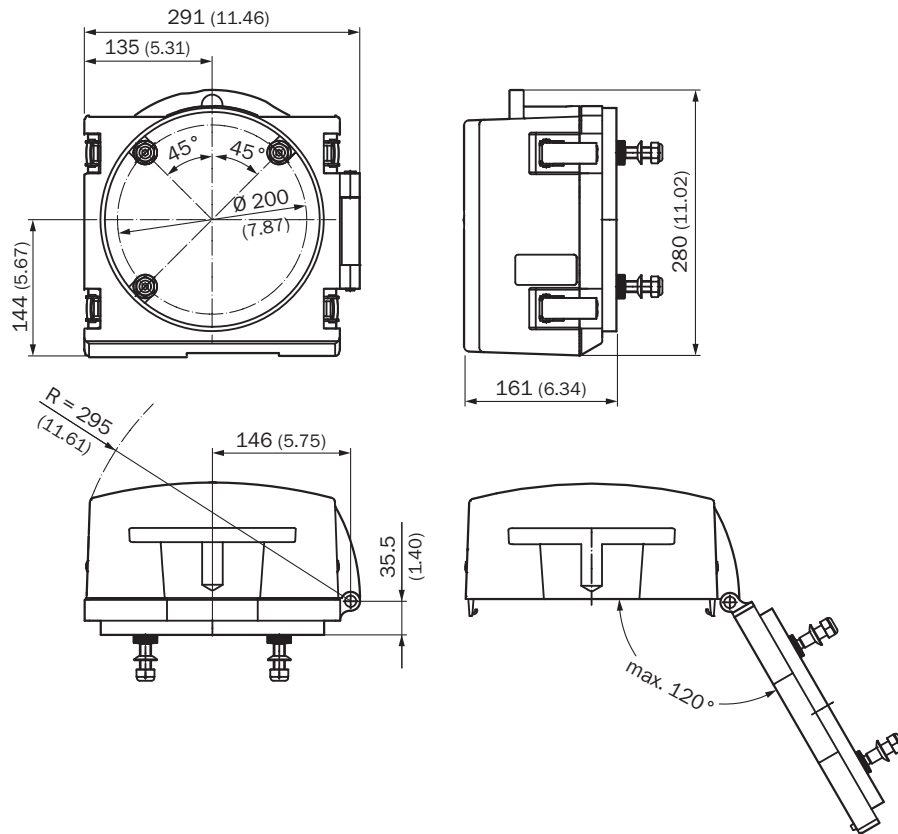
Gas-testable measuring probe (GPP)



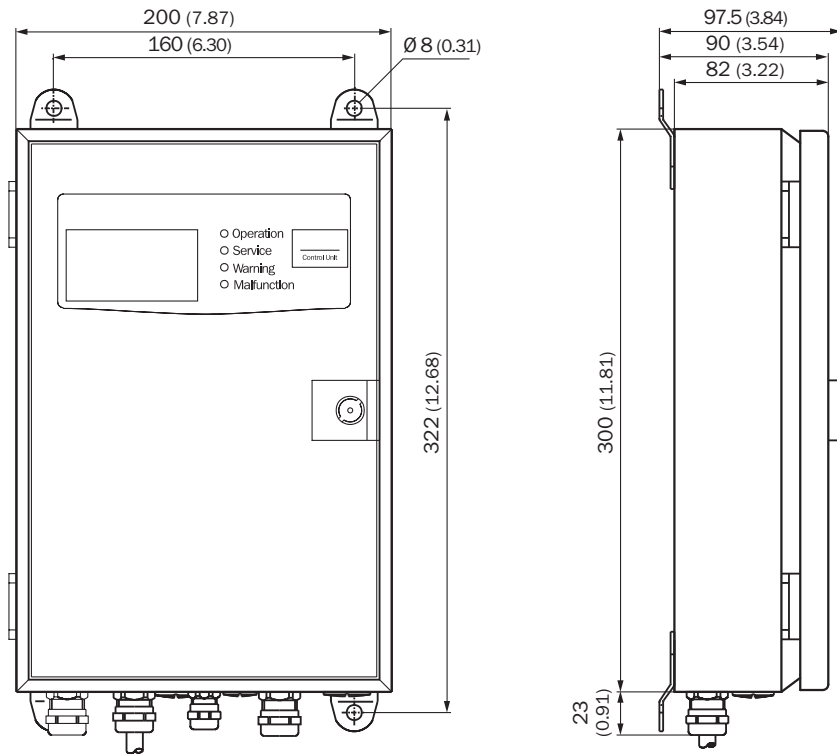
GPP measuring probes		Measuring gap L3 (active measuring path)			
Probe length, nominal	L1	227	477	727	977
		L2			
1,000	904	353	103	—	—
1,500	1,614	1,063	813	563	313
2,000	2,098	1,547	1,297	1,047	797
2,500	2,598	2,047	1,797	1,547	1,297

All dimensions in mm
Application-specific lengths available on request

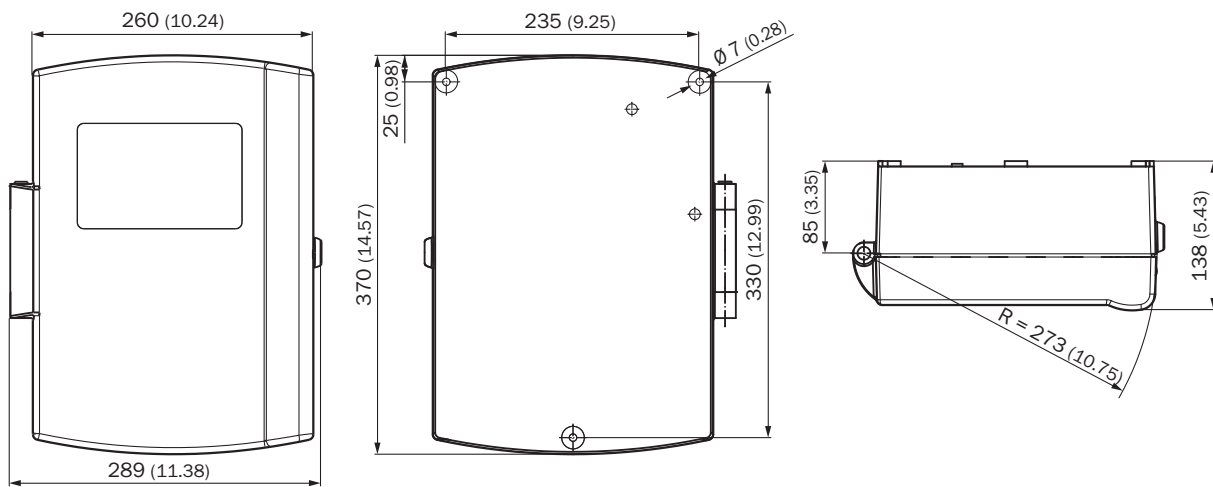
GM35 reflector unit



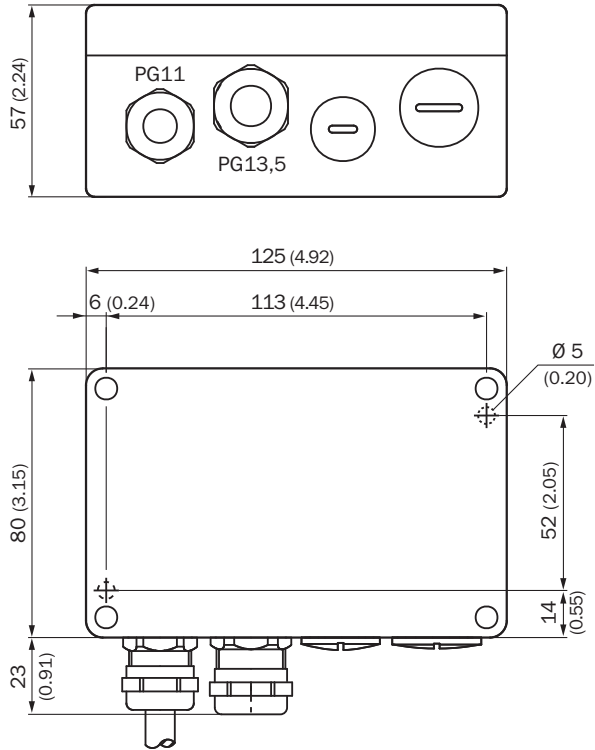
Evaluation unit; steel sheet enclosure



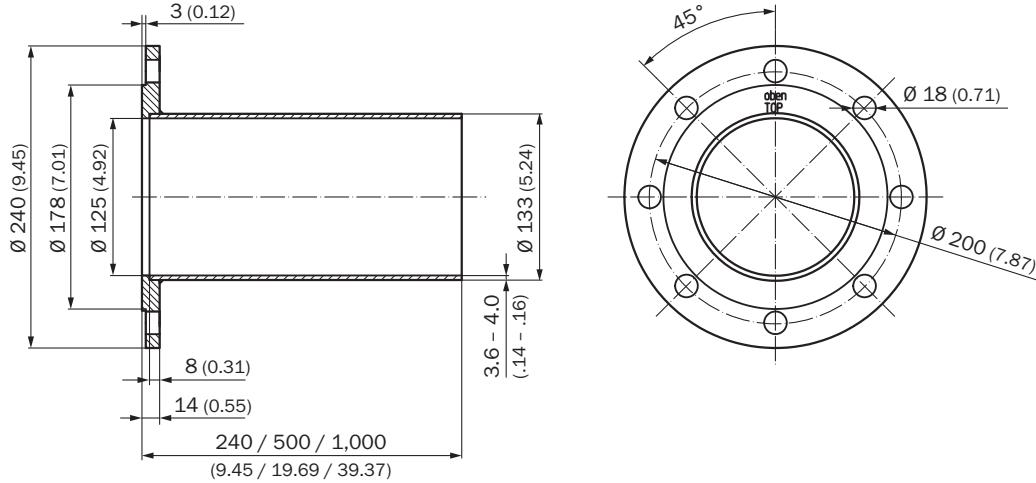
Evaluation unit; cast metal enclosure



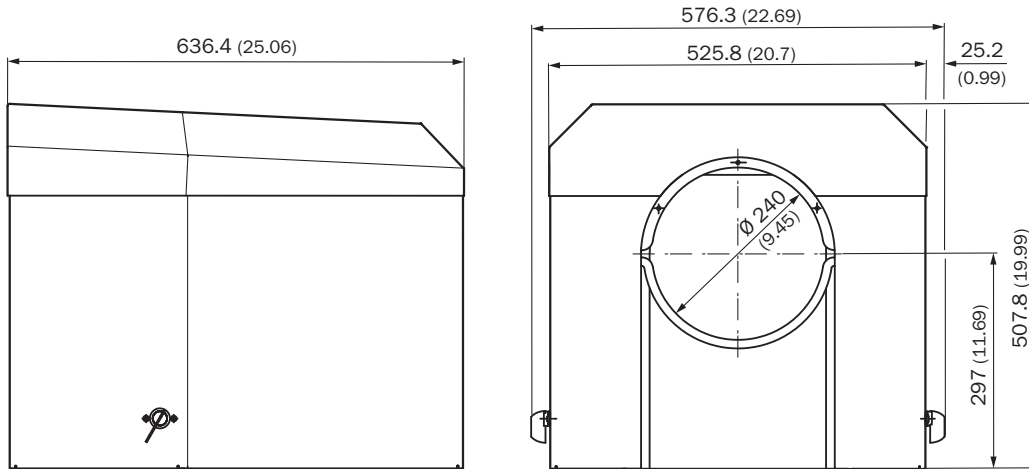
GM35 connection unit



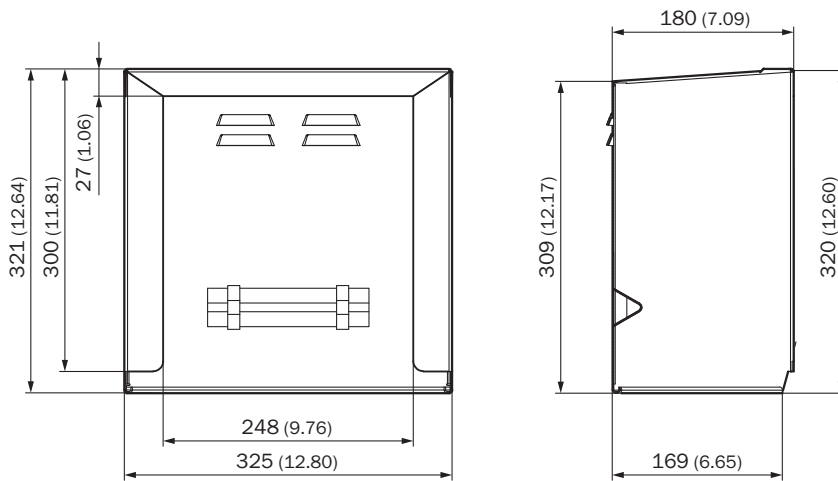
Mounting flange, $D_i=125$ mm



Weather protection cover for sender/receiver unit



Weather hood for reflector 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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com