



GM32 In-situ gas analyzers

Efficient measurement of SO_2 , NO , NO_2 , NH_3
as well as TRS components in the Kraft pulp
process

SICK
Sensor Intelligence.

In-situ gas analyzer GM32: For emissions and process gases

The tried-and-tested in-situ GM32 analyzer from SICK – optimized for non-contact measurement in emissions plants as well as for process gases – is available in several versions: a standard version, an Atex version and with optimized analysis technology for TRS measurement in the Kraft pulp industry.

Direct in-situ measurement

With the GM32 in-situ gas analyzer, your control technology systems are able to work with actual values in "real time". This is because it measures reactive gases including pressure and temperature in-situ, in other words, directly in the gas duct. Moreover, this is achieved quickly and without the need for complicated gas sampling or transportation, therefore avoiding the risk of changing or falsifying the gas composition.

Thanks to automatic self-monitoring, you can rely on the measured values and you receive prior warning in the event of deviations.

Combinable for simultaneous or individual measurement

Depending on requirements, the GM32 can be configured simultaneously for measured components SO_2 , NO , NO_2 and NH_3 , individually or in respective combinations thereof. For applications in the Kraft pulp industry, as GM32 TRS-PE (PE = Pulp Emission) version with measuring probe, also for TRS measuring components H_2S , CH_3SH , $(\text{CH}_3)_2\text{S}$ and $(\text{CH}_3)_2\text{S}_2$. Temperature and pressure reference values are measured and calculated automatically.

Simple and cost-effective

SICK's in-situ measuring devices have been characterized by their minimal operating costs for many years. Thanks to

this technology, complex maintenance and problems related to gas transportation and gas conditioning have become a thing of the past. The measured values are taken directly in the measuring path in the gas duct. Adjustment with test gases is not necessary.

In addition, the automatic QAL3 monitoring without test gases results in lower operating costs.

Convenient through remote diagnostics

Easier and faster access for remote data acquisition, remote diagnostics and maintenance thanks to comprehensive networking capability e.g. via Ethernet or OPC server connection.

Optimized evaluation processes

SICK has perfected the DOAS evaluation process (DOAS = Differential Optical Absorption Spectroscopy) as well as chemometrics in the GM32. It offers an equal level of measurement accuracy in both the high and low measuring ranges.

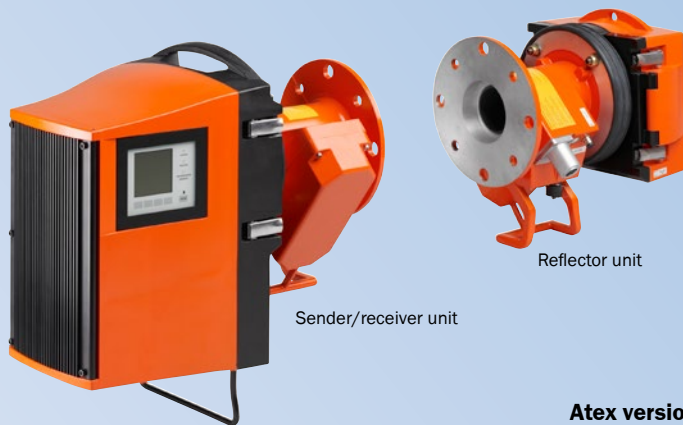
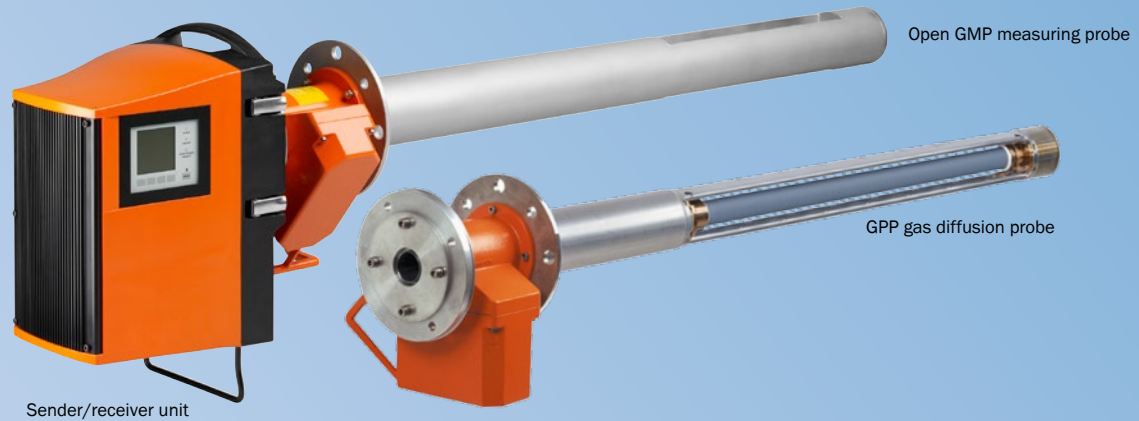
The signal evaluation is undertaken in the UV spectrum over an extremely broad range. GM32 evaluates the optimal spectral range for measuring range and measuring components in each case. This enables an extremely high level of accuracy to be achieved. Cross sensitivity

to foreign gases, dust and humidity is also ruled out. This means that flue gas purification systems can be efficiently controlled even under high dust loads. Thanks to automatic beam tracking, the GM32 measures just as efficiently even in the event of severe vibrations.

Measuring probe version

GM32 is available with two measuring probe types:

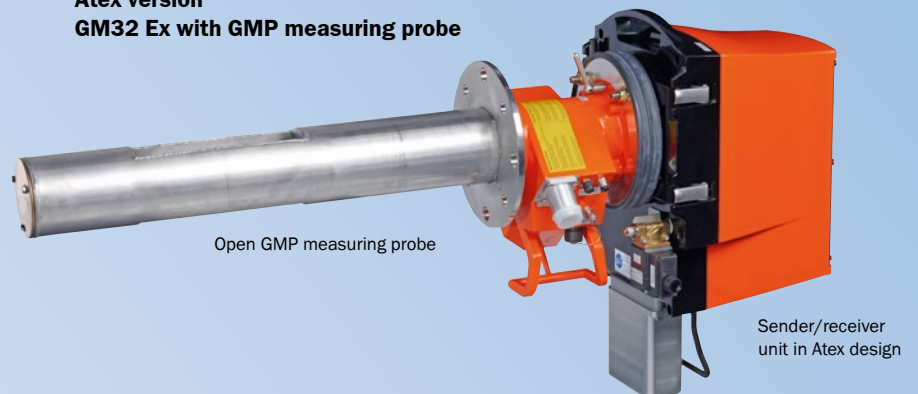
- GMP measuring probe with open measuring path
- GPP gas diffusion probe



Cross-duct version

The sender/receiver and reflector units in the GM32 are installed adjacently to each other at the measuring site.

Atex version GM32 Ex with GMP measuring probe



Measuring probe version

This version proves its strengths:

- Due to installation on a single side
- Under extremely high gas or dust concentrations
- With overpressure
- In wet gases
- As GMP measuring probe with open measuring gap
- With various measuring paths
- With integrated zero point path
- As GPP gas diffusion probe:
 - For turbulent gas flows
 - Gas testing according to U.S EPA possible

Cross-duct version

The cross-duct version is suitable for the following applications:

- Ideal for aggressive or extremely hot gases – without duct installation
- With minimal measuring ranges over large-scale duct diameters
- Representative measurement result even with extremely large duct diameters up to 12 m
- Insensitive to orientation thanks to automatic self-alignment

Designed for ATEX zones

With comprehensive safety functions and sophisticated system technology such as:

- ATEX category conform:
3G (ATEX Zone 2), 2G (ATEX Zone 1)
- Overpressure encapsulated device components

In-situ measurement in ATEX zones: a new solution for familiar tasks

GM32 gas analyzers with in-situ measuring technology have a long track record both in emissions monitoring as well as in process control applications. Now the rugged GM32 is also available in an ATEX version as the GM32 Ex, with cross-duct and measuring probe versions for gas temperatures up to 650 °C, for example, for use in the chemicals industry or refineries, but also for measuring tasks in the natural gas or crude oil industry as well as emissions monitoring supporting sulfur recovery plants or FCC plants.

A wide scope of safety functions for Ex-ranges

The in-situ GM32 Ex gas analyzer corresponds to both ATEX category 3G (ATEX Zone 2) and ATEX category 2G (ATEX Zone 1) in the measuring probe as well as the cross duct version. The sender/receiver unit (SR unit) and the connection unit are overpressure encapsulated to ensure that no explosive gases can penetrate into the units. The required permanent overpressure in the housing is ensured by protective gases with a corresponding control system.

Sophisticated system technology

The overpressure encapsulated GM32 component's sender/receiver and connection unit are connected to each other via a pressurized hose which contains the electrical connection cable. The Ex-p controller is attached to the connection unit. All of the other device components are non-electronic and therefore intrinsically safe. The protective gas is fed to the sender/receiver unit via an Ex-p valve. In order to protect against contamination or aggressive gases, the sender/receiver unit and, depending on version, the reflector unit is flushed by an ATEX approved air purge unit.

The advantages remain

The tried-and-tested advantages of SICK's in-situ measuring technology remain in the GM32 Ex, such as direct, rapid measurement without the need for gas transport, without gas conditioning, and especially, its automatic self-testing system without test gases. Installation directly at site of measurement



GM32, ATEX versions

- Version with measuring probe (shown)
- Cross-duct version

Sender/receiver unit in overpressure encapsulated version



Simple, precise, cost-effective:
TRS emissions safely under control

The first and only direct TRS measurement in the Kraft pulp process:
GM32 TRS-PE (PE = Pulp Emission)
from SICK.



TRS measurement success in the Kraft pulp industry
Lime kilns and black liquor recovery boiler for the source for TRS components in Kraft pulp plants. The limit values for these emissions are strictly regulated by the authorities and are typically set between 5 ... 30 mg/m³ (3 ... 20 ppm). Depending on restriction, hydrogen sulfide (H₂S) must be monitored alone or as part of the sum TRS parameter.

UV spectroscopy – the optimal measuring technology
The GM32 TRS-PE with GPP measuring probe is the optimal solution for continuous measurement of primary TRS components such as hydrogen sulfide (H₂S) and methyl mercaptan (CH₃SH). In addition, primary TRS components dimethyl sulfide ((CH₃)₂S) and dimethyl disulfide (CH₃)₂S₂) can also be measured. This means extremely efficient process control can be achieved at minimum cost and without expensive auxiliary materials. Of course, TRS measurement with the GM32 TRS-PE also enables simultaneous measurement of SO₂, NO and NH₃ – all with a single analyzer.

**GM32 TRS-PE (PE = Pulp Emission):
version with GPP gas diffusion probe**



GPP gas diffusion probe

Sender/receiver unit with integrated,
TRS optimized, spectroscopic evaluation
procedure

Monitoring and control of flue gas in purification plants

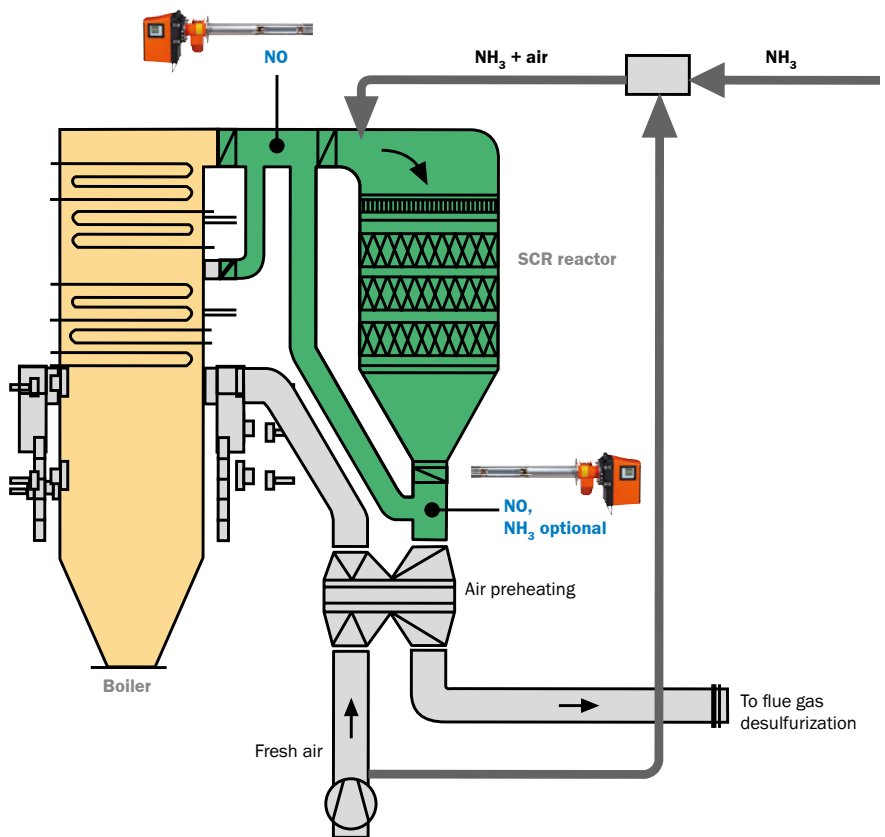
The in-situ GM32 analyzer with its optimized measuring technology is suitable for nitrogen oxide measurement for controlling catalytic processes in flue gas denitrification and desulfurization plants. The GM32 is the best choice, especially in situations where rapid measurement is required directly in the gas duct, even under high dust loads or where saturated sample gas is expected.

Flue gas denitrification plants – fast, unaltered measurement

Environment protection laws demand reduction of nitrogen oxide (NO_x) content in flue gases. The reduction of the NO_x content is typically achieved with flue gas denitrification plants (De NO_x) using selective catalytic reduction (SCR) or selective non-catalytic reduction (SCNR). The addition of ammonia (NH_3) to the flue gas – at temperatures of approx. 400 °C – causes the nitrogen oxide to be converted to water and nitrogen. In order to determine and monitor the required NH_3 volume, it is necessary to measure NO concentrations at the inlet to the denitrification plant. In order to determine the effectiveness of the catalytic denitrification process, at the output of the De NO_x plant NO and additionally the NH_3 concentration (slip) is again measured. This measurement serves to provide additional monitoring and maintenance of environmental standards.

GM32 delivers the best solution
The key factor for efficient monitoring and control in flue gas denitrification plants is the extremely short response time for measurement. They can significantly increase the effectiveness and service life of the plant and simultaneously prevent fouling of the catalytic converter as well as avoid ammonia

pollutants in the flue ash. The GM32 from SICK delivers reliable measurement results without delay for monitoring NO concentrations, both in raw gas as well as clean gas ducts, also for NH_3 slip measurement downstream of the catalytic converter.



Desulphurization plants and emissions measurement

Desulphurization plants (DeSO_x) use, among other things, wet scrubber systems in order to spray the flue gas with a calcareous solution after the dust has been removed. This process causes the sulfur oxides in the flue gas to react and be converted to calcium sulfite or sulfate. These products are then removed from the process by dehydration. Alternatively, compressed air can be added to the sulfite sludge causing the calcium sulfite to oxidize into gypsum.

The GM32 from SICK has also proven itself in such process control applications as well as in continuous emissions monitoring, regardless of whether the measured gases are saturated (wet) or dry.



Product Benefits

The fast GM32 with direct, delay-free in-situ measurement of SO₂, NO, NO₂ and NH₃ is the ideal analyzer for efficient monitoring and control of flue gas denitrification plants.

For denitrification:

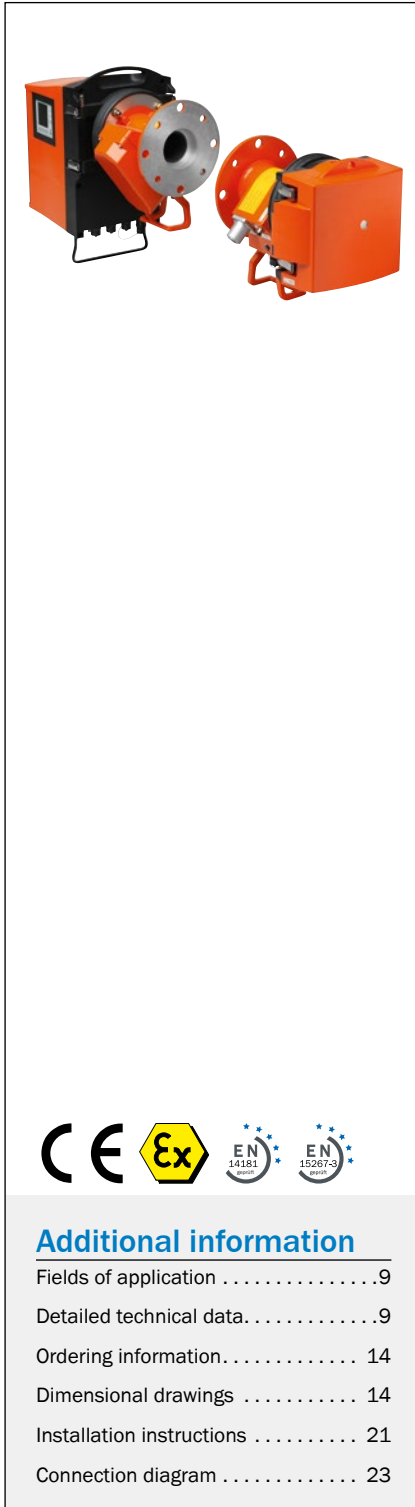
- Optimization of ammonia spraying in order to minimize NH₃ slip.
- Continuous monitoring of catalytic converter effectiveness.
- Reduction of bound ammonia in flue ash.
- Contamination of catalytic converter and other system components due to ammonium salts avoided.

- Increase of catalytic converter service life and minimization of system downtime

For flue gas desulfurization:

- SO₂ measurement for regulating lime spraying
- Monitoring of desulfurization effectiveness
- Continuous emissions monitoring

Measure aggressive gases directly and quickly – even in ATEX zones



Product description

The GM32 in-situ gas analyzer measures SO₂, NO, NO₂ and NH₃, as well as TRS components in Kraft pulp processes including pressure and temperature in the gas duct. Direct, fast and without gas sampling and transport. This means control systems are able to work with actual values in real time. Due to self-monitoring, the measured values are reliable. In case of deviations an early warning will be shown.

For emission measurement of SO₂ and NO, GM32 is tested for suitability according to European standard EN 15267-3.

An ATEX version with comprehensive safety functions and sophisticated system technology is also available, as well as the GM32 TRS-PE (PE = Pulp Emission) for TRS measurement in Kraft pulp processes.

At a glance

- Direct, fast in-situ measurement
- No gas sampling, no gas transport, no gas conditioning
- Up to eight measuring components at the same time, plus process temperature and pressure
- DOAS and CDE evaluation process
- Numerous independent measuring ranges with consistent accuracy
- Automatic self-test function (QAL3) without test gases
- Overpressure encapsulated version for ATEX Zones 1 and 2

Benefits

- Unaltered measured values in real time without altering the gas composition
- Short-term process deviations are detected
- Representative measurement by selection of cross-duct or measuring probe versions
- Fast on-site service due to modular design
- Long maintenance-free intervals
- Cost-effective in-situ gas analyzer – also in ATEX version
- Low cost of installation and operation, no test gases required
- Complete emissions measurement in Kraft pulp process by way of simultaneous measurement of TRS components plus SO₂, NO, NH₃



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→ www.mysick.com/en/GM32

For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Fields of application

- For monitoring and control in flue gas purification, such as denitrification plants, desulfurization plants and converters.
- Emissions monitoring according to EU directives or local regulations
- Monitoring of landfill gases
- Monitoring tasks, for example, in nitric acid and ammonia production processes
- TRS emissions monitoring in the Kraft pulp industry

Detailed technical data

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.

GM32 system; standard and Ex-version

Description	Type approved in-situ gas analyzer for emission monitoring and process control										
Measured values	NO, NO ₂ , NH ₃ , SO ₂										
Performance-tested measurands	NO, SO ₂										
Maximum number of measurands	4 (plus process temperature and pressure)										
Measurement principles	Differential optical absorption spectroscopy (DOAS)										
Measuring ranges	<table border="0"> <tr> <td>NH₃</td> <td>0 ... 30 ppm / 0 ... 2,600 ppm</td> </tr> <tr> <td>NO</td> <td>0 ... 40 ppm / 0 ... 1,900 ppm</td> </tr> <tr> <td>NO₂</td> <td>0 ... 50 ppm / 0 ... 1,000 ppm</td> </tr> <tr> <td>SO₂</td> <td>0 ... 15 ppm / 0 ... 7,000 ppm</td> </tr> <tr> <td>LowNO₂</td> <td>0 ... 15 ppm / 0 ... 1,000 ppm</td> </tr> </table> <p>Measuring ranges refer to 1 m measuring path Measuring ranges depend on application and device version</p>	NH ₃	0 ... 30 ppm / 0 ... 2,600 ppm	NO	0 ... 40 ppm / 0 ... 1,900 ppm	NO ₂	0 ... 50 ppm / 0 ... 1,000 ppm	SO ₂	0 ... 15 ppm / 0 ... 7,000 ppm	LowNO ₂	0 ... 15 ppm / 0 ... 1,000 ppm
NH ₃	0 ... 30 ppm / 0 ... 2,600 ppm										
NO	0 ... 40 ppm / 0 ... 1,900 ppm										
NO ₂	0 ... 50 ppm / 0 ... 1,000 ppm										
SO ₂	0 ... 15 ppm / 0 ... 7,000 ppm										
LowNO ₂	0 ... 15 ppm / 0 ... 1,000 ppm										
Certified measuring ranges	<table border="0"> <tr> <td>NO</td> <td>0 ... 70 mg/m³ / 0 ... 700 mg/m³</td> </tr> <tr> <td>SO₂</td> <td>0 ... 75 mg/m³ / 0 ... 1,000 mg/m³</td> </tr> </table> <p>With an active measuring path length of 1.86 m (cross-duct) or 1.25 m (open path measuring probe) The gas-testable measuring probe (GPP) is not TUV approved</p>	NO	0 ... 70 mg/m ³ / 0 ... 700 mg/m ³	SO ₂	0 ... 75 mg/m ³ / 0 ... 1,000 mg/m ³						
NO	0 ... 70 mg/m ³ / 0 ... 700 mg/m ³										
SO ₂	0 ... 75 mg/m ³ / 0 ... 1,000 mg/m ³										
Response time (t₉₀)	<p>Open measuring probe (GMP): ≥ 5 s Gas-testable measuring probe (GPP): ≥ 120 s Cross-duct version: ≥ 5 s Response time adjustable</p>										
Accuracy	<table border="0"> <tr> <td>NH₃:</td> <td>± 2 %</td> </tr> <tr> <td>NO:</td> <td>± 2 %</td> </tr> <tr> <td>NO₂:</td> <td>± 2 %</td> </tr> <tr> <td>SO₂:</td> <td>± 2 %</td> </tr> </table> <p>Relative to the smallest measuring range</p>	NH ₃ :	± 2 %	NO:	± 2 %	NO ₂ :	± 2 %	SO ₂ :	± 2 %		
NH ₃ :	± 2 %										
NO:	± 2 %										
NO ₂ :	± 2 %										
SO ₂ :	± 2 %										
Ambient temperature	-20 °C ... +55 °C Temperature change maximum ±10 °C/h										
Storage temperature	-20 °C ... +55 °C Temperature change maximum ±10 °C/h										
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 GOST
Ex-approvals	ATEX	II 2G Ex px [op is] IIC T3 Gb II 3G Ex pz [op is] IIC T3 Gc
Electrical safety		CE
Enclosure rating		Standard: IP 65, IP 69K Ex-version: IP 65
Operation		Via integrated operating unit or SOPAS ET software
Test functions		Internal zero point check Check cycle for zero and span point according to QAL3
Options		SCU control unit Multi range calibration (additional measuring ranges for one component) Extended gas temperature range up to 550 °C or 650 °C LowNO ₂

GM32 TRS-PE system

Description		In-situ gas analyzer for TRS monitoring in the Kraft pulping process
Measured values		NO, NH ₃ , SO ₂ , CH ₃ SH, (CH ₃) ₂ S, (CH ₃) ₂ S ₂ , H ₂ S, TRS
Maximum number of measurands		8 (plus process temperature and pressure)
Measurement principles		Chemometrical data evaluation (CDE)
Measuring ranges		
	NH ₃	0 ... 35 ppm / 0 ... 50 ppm
	NO	0 ... 40 ppm / 0 ... 150 ppm
	SO ₂	0 ... 15 ppm / 0 ... 35 ppm
	H ₂ S	0 ... 35 ppm
	CH ₃ SH	0 ... 25 ppm
	(CH ₃) ₂ S	0 ... 20 ppm
	(CH ₃) ₂ S ₂	0 ... 15 ppm
	TRS	0 ... 70 ppm
		Measuring ranges refer to 1 m measuring path Measuring ranges depend on application and device version TRS = H ₂ S + CH ₃ SH (as H ₂ S equivalent) For device variant 7: TRS = H ₂ S + CH ₃ SH + (CH ₃) ₂ S + 2x (CH ₃) ₂ S ₂ Other measuring ranges on request
Response time (t₉₀)		Gas-testable measuring probe (GPP): ≥ 120 s Response time adjustable
Accuracy		
	NH ₃ :	± 2 %
	NO:	± 2 %
	SO ₂ :	± 2 %
	H ₂ S:	± 2 %
	CH ₃ SH:	± 2 %
	(CH ₃) ₂ S:	± 2 %
	(CH ₃) ₂ S ₂ :	± 2 %

	TRS: $\pm 2\%$ Relative to the smallest measuring range
Ambient temperature	-20 °C ... +55 °C Temperature change maximum ± 10 °C/h For device variant 7: +20 °C ... +30 °C
Storage temperature	-20 °C ... +55 °C Temperature change maximum ± 10 °C/h
Ambient humidity	$\leq 96\%$ Relative humidity; bedewing of optical surfaces not permitted
Electrical safety	CE
Enclosure rating	IP 65, IP 69K
Operation	Via integrated operating unit or SOPAS ET software
Test functions	Internal zero and reference point check
Options	SCU control unit

Sender/receiver unit; standard version

Description	Analyzer unit of the measuring system
Operation	Via integrated operating unit
Dimensions (W x H x D)	315 mm x 580 mm x 359 mm
Weight	20 kg

Sender/receiver unit; Ex-version

Description	Analyzer unit of the measuring system
Operation	Via integrated operating unit
Dimensions (W x H x D)	315 mm x 910 mm x 410 mm
Weight	20 kg

Open measuring probe (GMP)

Description	Measuring probe in open design with integrated purge air control system
Process temperature	$\leq +550$ °C
Process pressure	-60 hPa ... 60 hPa Relative
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 (Not for Ex-version) PT1000 temperature sensor (not for Ex-version) Flow monitor (monitoring of purge air feed; not for Ex version)

Gas-testable measuring probe (GPP)

Description	Measuring probe with gas permeable filter element for adjustment with test gas
Process temperature	With ceramic filter: $\leq +430$ °C With Teflon filter: $\leq +200$ °C
Process pressure	-60 hPa ... 200 hPa Relative
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 / 230 V
	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 glass triple reflector
Process temperature	≤ +650 °C
Process pressure	-60 hPa ... 200 hPa
Dimensions (W x H x D)	291 mm x 280 mm x 161 mm
Weight	9 kg

Purge air fixture; sender/receiver unit

Description	Fixture to flanges with connections for purge air and external cabling (only cross duct design)
Dimensions (W x H x D)	320.9 mm x 360 mm x 220 mm (for details see dimensional drawings)
Weight	7 kg
Auxiliary gas connections	Purge air
Integrated components	PT1000 temperature sensor (not for Ex-version) Flow monitor (monitoring of purge air feed; not for Ex version)

Purge air fixture; reflector unit

Description	Fixture to flanges with connections for purge air and external cabling (only cross duct design)
Dimensions (W x H x D)	320.9 mm x 360 mm x 220 mm (for details see dimensional drawings)
Weight	7 kg
Auxiliary gas connections	Purge air
Integrated components	Flow monitor (monitoring of purge air feed; not for Ex version)

Connection unit; standard version

Description	Serves for connection of power supply, data and signal cabling provided by the customer	
Analog outputs	2 outputs: 0/4 ... 22 mA, 500 Ω Per module, extendable up to eight outputs	
Analog inputs	2 inputs: 0/4 ... 22 mA, 100 Ω	
Digital outputs	4 outputs: + 48 V AC/DC, 0.5 A, 25 W	
Digital inputs	4 inputs: + 3.9 V, 4.5 mA, 0.55 W Per module, extendable up to eight inputs	
Interfaces and bus protocols	Ethernet	Modbus TCP
	Ethernet	OPC
	Ethernet	SOPAS ET
	RS-485	Modbus RTU (via optional interface module)
Dimensions (W x H x D)	450 mm x 424 mm x 158 mm	
Weight	16 kg	

Power supply	Voltage	100 ... 250 V
	Frequency	50 Hz / 60 Hz
	Power consumption	≤ 260 W

Connection unit; Ex-version

Description	Serves for connection of power supply, data and signal cabling provided by the customer	
Analog outputs	2 outputs: 0/4 ... 22 mA, 500 Ω Per module, extendable up to eight outputs	
Analog inputs	2 inputs: 0/4 ... 22 mA, 100 Ω	
Digital outputs	4 outputs: + 48 V AC/DC, 0.5 A, 25 W	
Digital inputs	4 inputs: + 3.9 V, 4.5 mA, 0.55 W Per module, extendable up to eight inputs	
Interfaces and bus protocols	Ethernet	Modbus TCP
	Ethernet	OPC
	Ethernet	SOPAS ET
	RS-485	Modbus RTU (via optional interface module)
Dimensions (W x H x D)	679 mm x 630 mm x 158 mm	
Weight	16 kg	
Power supply	Voltage	100 V / 230 V
	Frequency	50 Hz / 60 Hz
	Power consumption	≤ 260 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 m ³ /h ... 63 m ³ /h At 30 hPa counter pressure, depending on low pressure inside the filter	
Ambient temperature	-40 °C ... +55 °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	Δ: 200 ... 240 V, 50 Hz, 2,6 A, 400 W Y: 345 ... 415 V, 50 Hz, 1,5 A, 400 W Δ: 200 ... 275 V, 60 Hz, 2,6 A, 500 W Y: 380 ... 480 V, 60 Hz, 1,5 A, 500 W Δ: 270 ... 330 V, 50 Hz, 2,0 A, 400 W Y: 465 ... 570 V, 50 Hz, 1,16 A, 400 W Δ: 290 ... 360 V, 60 Hz, 2,1 A, 500 W Y: 500 ... 600 V, 60 Hz, 1,26 A, 500 W Δ: 230 V, 50 Hz, 2,7 A, 370 W Δ: 115 V, 60 Hz, 3,0 A, 450 W Δ: 220 ... 270 V, 50 Hz, 2,5 A, 400 W Y: 380 ... 465 V, 50 Hz, 1,45 A, 400 W Δ: 240 ... 290 V, 60 Hz, 2,6 A, 500 W Y: 415 ... 500 V, 60 Hz, 1,55 A, 500 W
		Auxiliary gas connections

Test functions	Pressure switch (switching point -35 hPa)
Integrated components	2-step air filter, type Europiclone, dust capacity 200 g

SLV6-1 purge air unit, 2SH1300, ATEX 3G

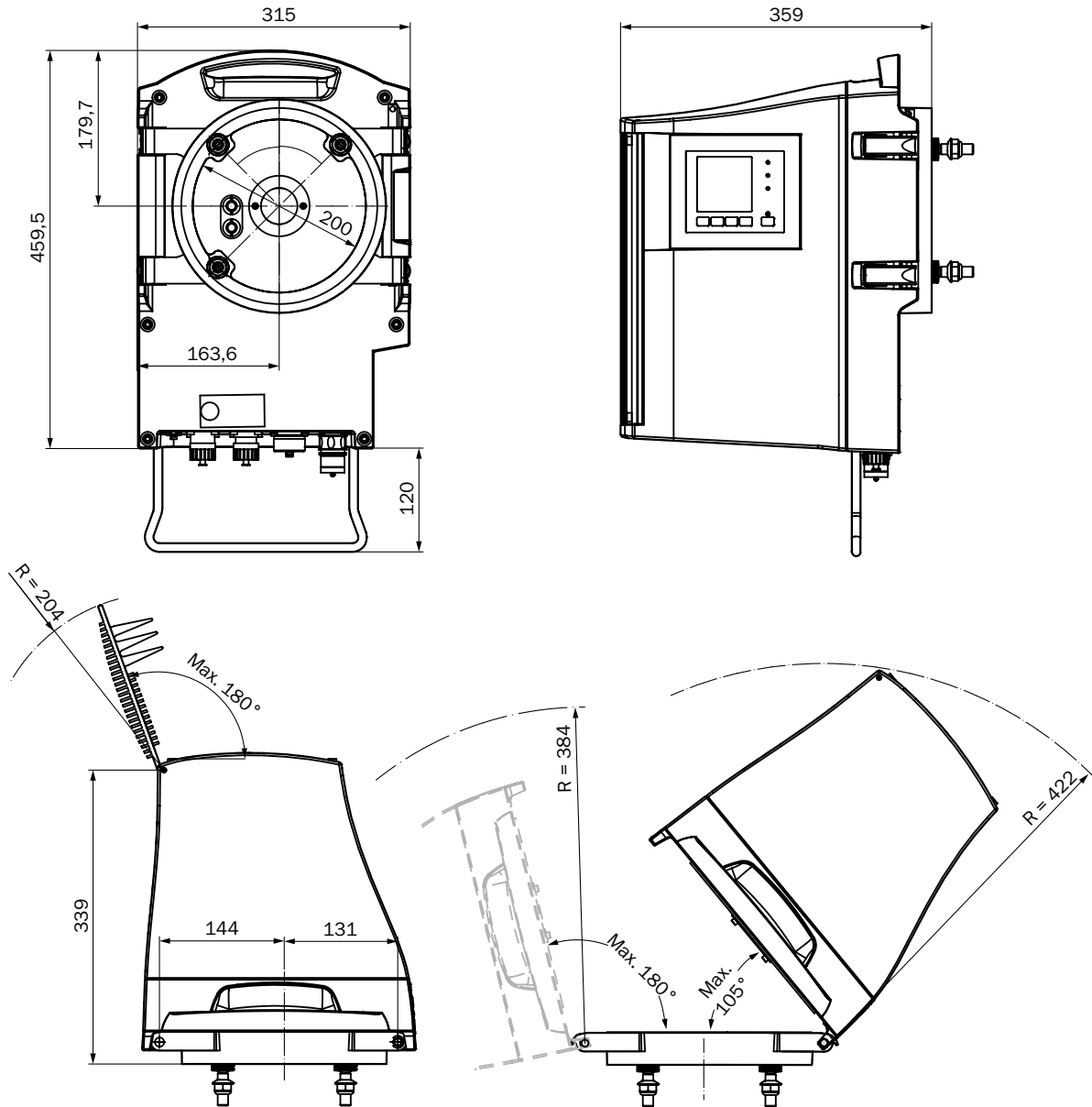
Description	Unit to provide dust-free air for flushing of optical surfaces; for potentially explosive atmospheres
Gas flow rate	38 m ³ /h ... 63 m ³ /h At 30 hPa counter pressure, depending on low pressure inside the filter
Ambient temperature	-20 °C ... +40 °C
Ex-approvals	
	ATEX Ex II 3G c T3
Enclosure rating	IP 54
Dimensions (W x H x D)	550 mm x 681 mm x 287 mm (for details see dimensional drawings)
Weight	28 kg
Power supply	
	Three-phase current
	3-phase: 230 V/400 V, 50 Hz 3-phase: 460 V, 60 Hz
Auxiliary gas connections	Purge air: 40 mm
Test functions	Pressure switch (switching point -35 hPa)
Integrated components	2-step air filter, type Europiclone, dust capacity 200 g

Ordering information

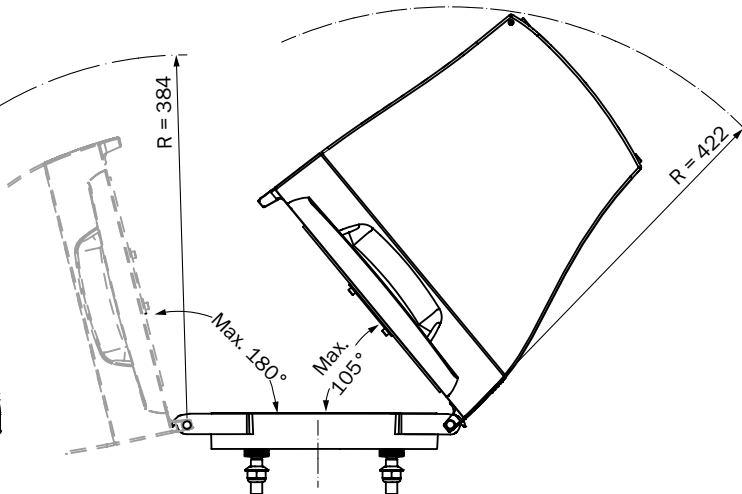
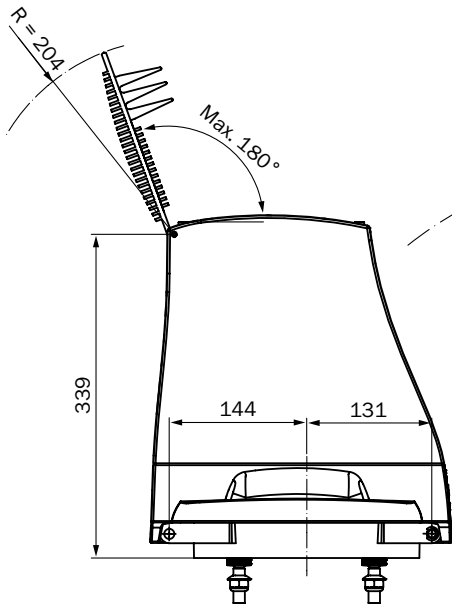
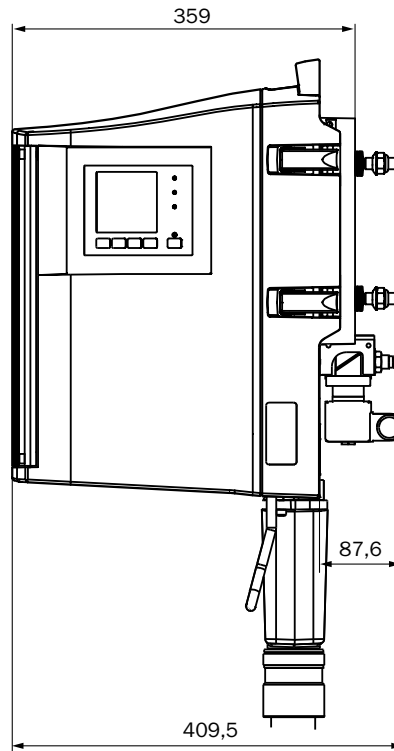
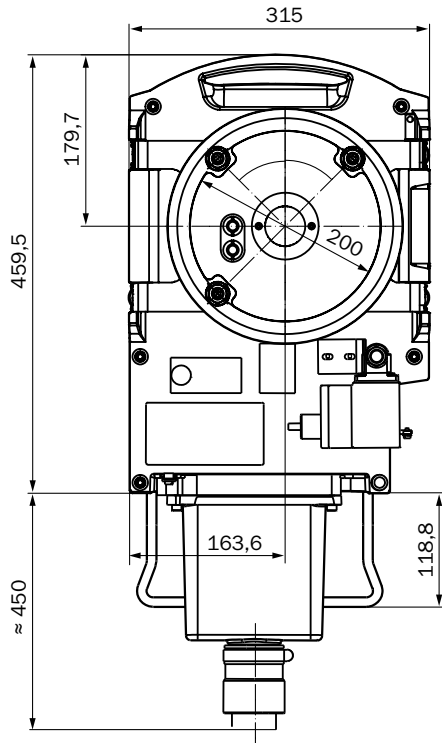
Our regional sales organization will help you to select the optimum device configuration.

Dimensional drawings (Dimensions in mm (inch))

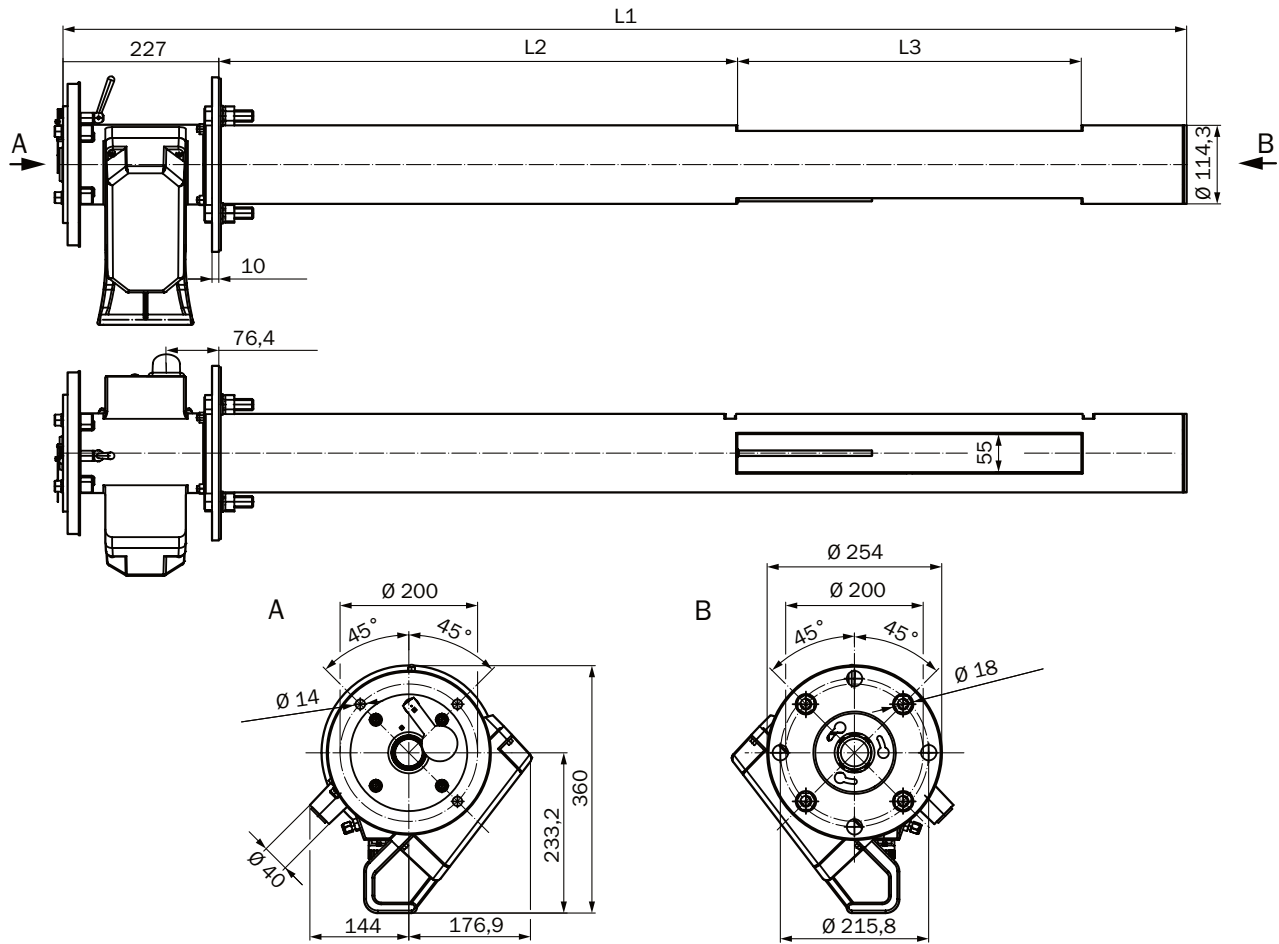
Sender/receiver unit; standard version



Sender/receiver unit; Ex-version

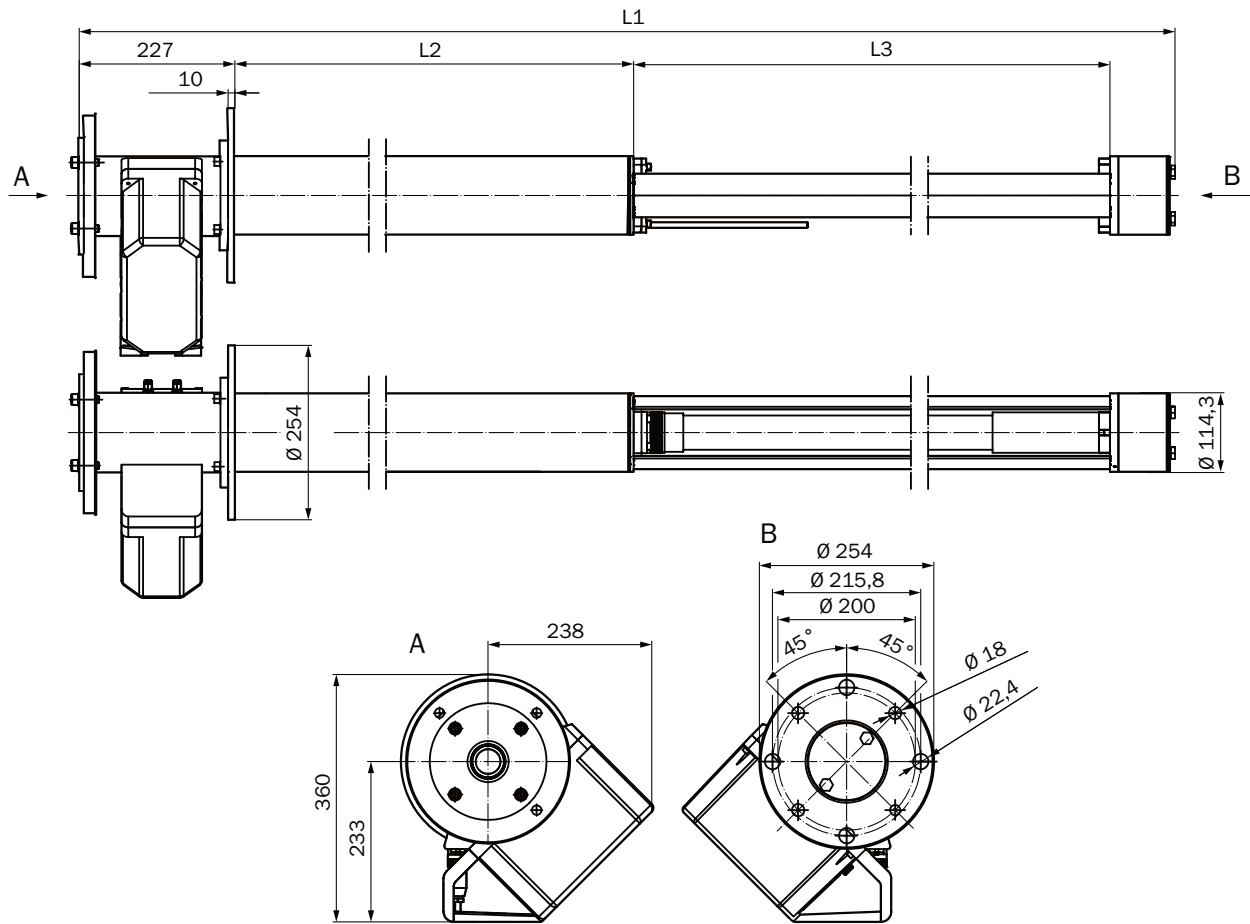


Open measuring probe (GMP)



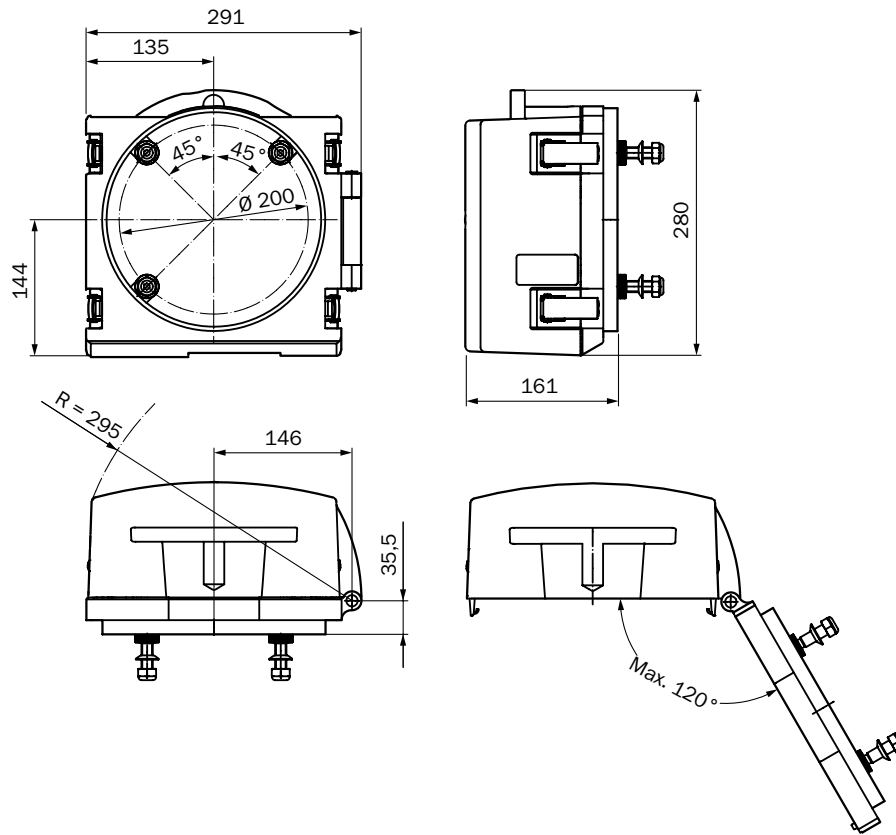
GMP measuring probes		Measuring gap L3 (active measuring path)						
		250	500	750	1,000	1,250	1,500	1,750
Probe length, nominal	L1	L2						
	900	935	296	46	---	---	---	---
1,500	1,644	1,004.5	754.5	504.5	254.5	---	---	
2,000	2,128	1,489	1,239	989	739	489	239	
2,500	2,628	1,988	1,738	1,488	1,238	988	738	
All dimensions in mm Application-specific lengths available on request								

Gas-testable measuring probe (GPP)

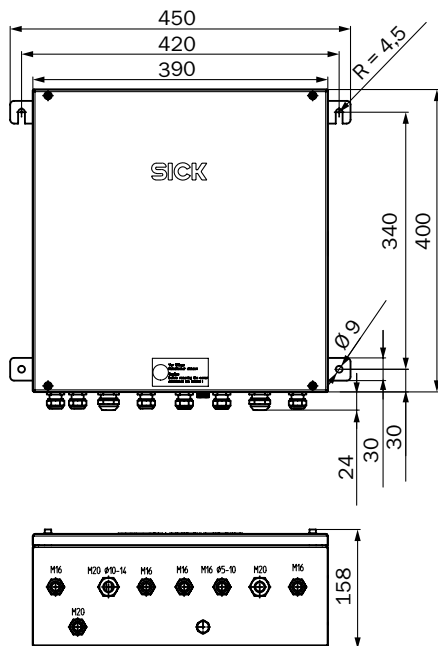


GPP measuring probes		Measuring gap L3 (active measuring path)			
		227	477	727	977
Probe length, nominal	L1	L2			
1,000	904	353	103	---	---
1,500	1,614	1,063	813	563	313
2,000	2,098	1,547	1,297	1,047	797
2,500	2,598	2,047	1,797	1,547	1,297
All dimensions in mm					
Application-specific lengths available on request					

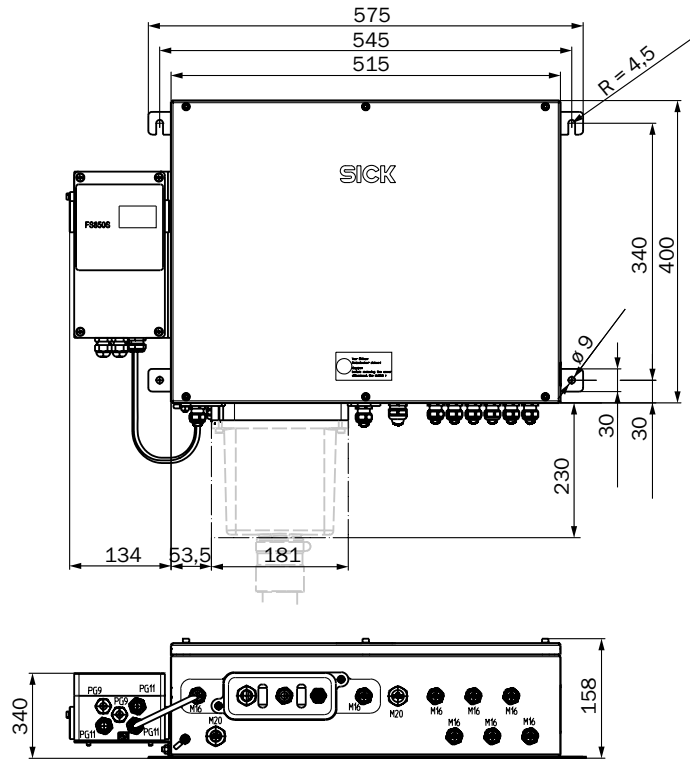
GM32 reflector unit



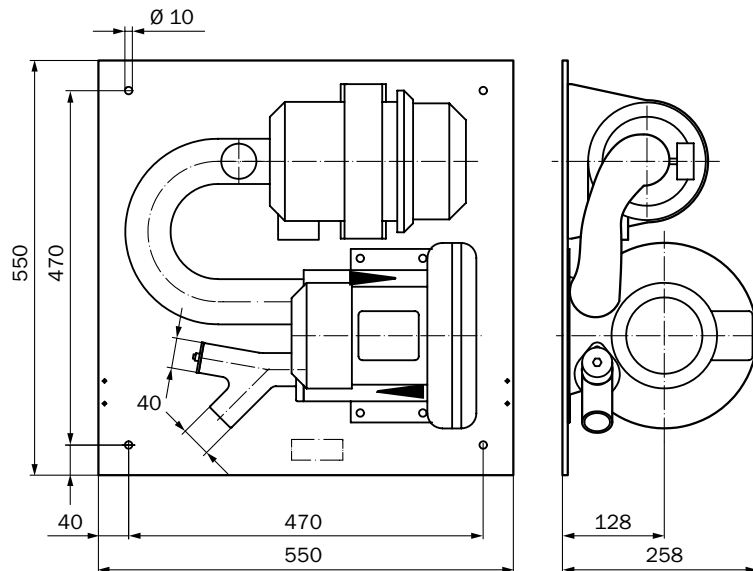
Connection unit; standard version



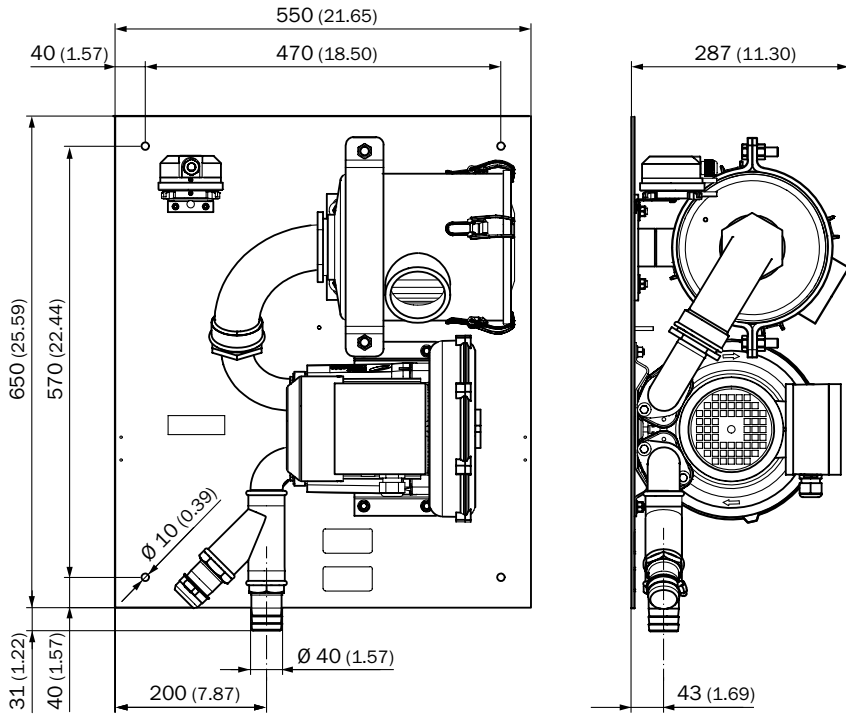
Connection unit; Ex-version



SLV4-2 purge air unit, 2BH1300

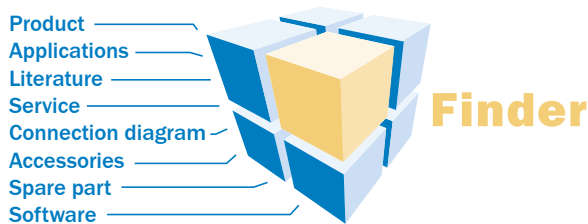


SLV6-1 purge air unit, 2SH1300, ATEX 3G



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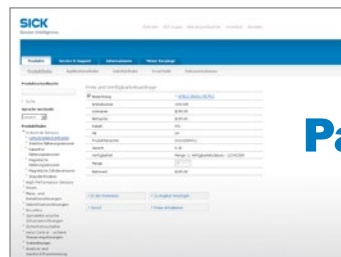


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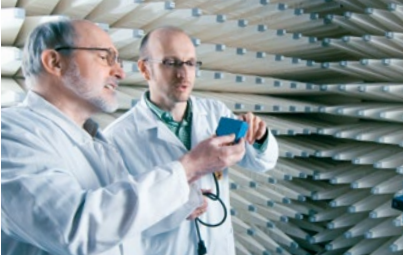
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