



ZIRKOR series

OXYGEN ANALYZERS –
TOUGH PERFORMANCE, BUT EASY TO OPERATE

In-situ gas analyzers

SICK
Sensor Intelligence.

THE ZIRKOR SERIES:

RELIABLE MEASUREMENT RESULTS
UNDER TOUGH CONDITIONS





ZIRKOR100



ZIRKOR200

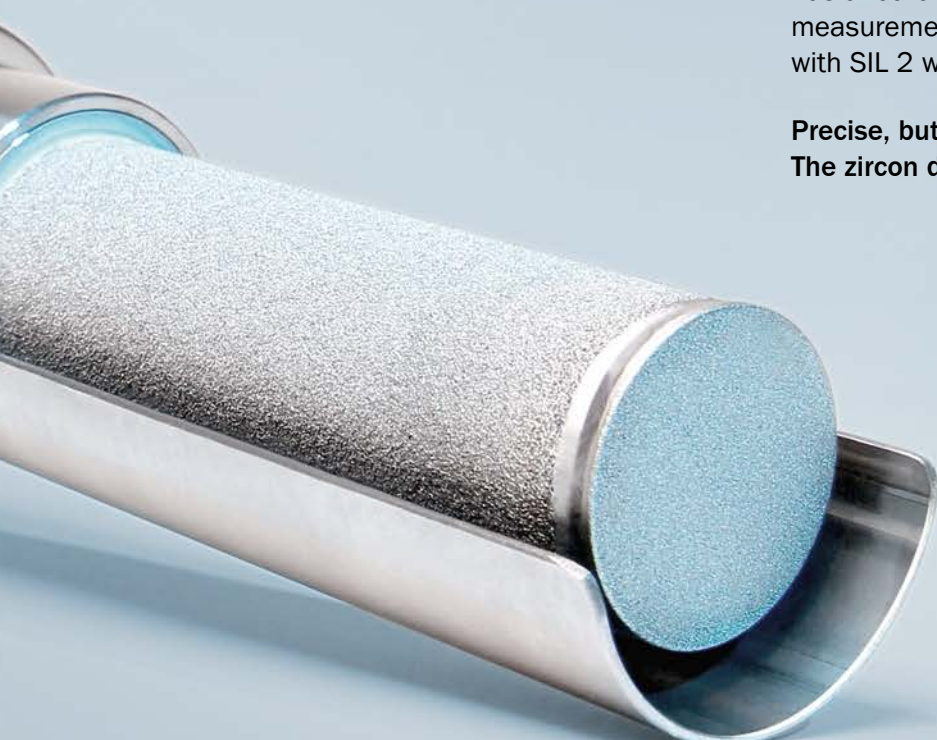


ZIRKOR302

TOUGH PERFORMANCE PRECISE ANALYSIS

Reliable oxygen measurement is just as important for controlling an optimized combustion process as it is for emissions monitoring. In one of the toughest applications of industrial process automation, the analyzer must be easy to integrate and extremely resistant. The extremely rugged ZIRKOR series from SICK, which consists of the ZIRKOR100, ZIRKOR200 and ZIRKOR302, unites very high quality and innovative performance. This makes it the first choice for incineration optimization – even in explosion-hazardous areas. And the ZIRKOR200 has another trick up its sleeve for safety-relevant measurements: It can be qualified in accordance with SIL 2 with 1oo1 (One out of One) as an option

**Precise, but not sensitive:
The zircon dioxide analyzers from SICK.**





MANY GOOD IDEAS FOR REACHING THE SAME GOAL: THE MOST RELIABLE MEASUREMENT RESULTS

Oxygen – the driver of all combustion processes

Optimal combustion, however, relies on perfect dosing. Too little oxygen will result in incomplete combustion, leading to increased CO emissions.

Too much oxygen, on the other hand, leads to very high heat loss via the exhaust gas. The reliable oxygen analyzers of the ZIRKOR series measure immediately after combustion to monitor the combustion process. So you can set the optimal oxygen value for your fuel.

Creating reference values for reliable measured values

Every combustion process creates different pollutants. That's why the ZIRKOR series provides an oxygen reference value for emission measurement in order to ensure reliable measurement results. The measured values are also standardized before and after the various flue gas cleaning processes. This means the values of the individual measurement stations remain comparable and enable exact process control. The type-approved ZIRKOR200 also complies with European regulations.

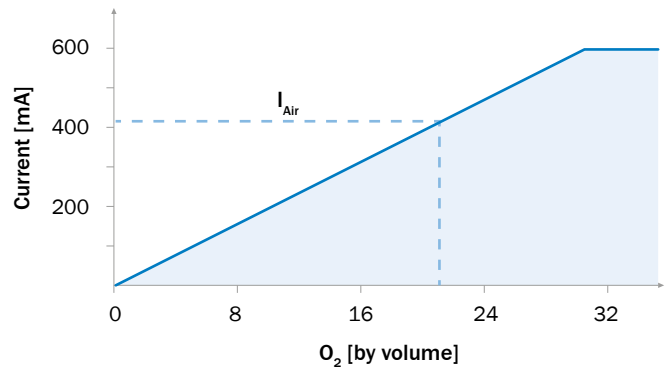
Oxygen monitoring to improve processes

Insert gas atmospheres are used in some production processes. In these environments, the zircon dioxide analyzers from SICK measure the oxygen values and monitor the inert gas atmospheres which result in high-quality products.

**The best results without test gases:
The flow sensor principle**

The innovative flow sensor principle of the ZIRKOR302 provides very accurate measurement results. The measurement gas is led into the zircon dioxide measuring chamber, where it is warmed up, and the oxygen is ionized. Thanks to the cathodic effect of the ZrO_2 , current flows when voltage is applied, which in turn delivers highly accurate and precise measured values throughout the entire measuring range. Calibration can be performed with ambient air; test gases are not required. Measuring oxygen could hardly be any more accurate.

Flow sensor principle



**Firmly soldered and accurate:
The chambers are the key**

The zircon dioxide analyzers from SICK measure very accurately and have an extremely long service life. Only durable materials are installed in the measuring chambers. They are also resistant to leaks: A special soldering process keeps the measuring chambers sealed for a very long time. This results in very high reliability and maximum measurement accuracy for many years.



**Always know where you stand:
Sensor diagnostics**

The analyzers use the measurement curve progression and the response time of the measuring probe to calculate the remaining service life of the chambers. This is how you prevent unforeseen failures or incorrect measurement results.



**Two levels of durability:
The LongLife technology**

For the sensors of the ZIRKOR series, there are applications in which rugged is not rugged enough. The innovative LongLife technology of the ZIRKOR series enables reliable oxygen measurement. Even under extremely harsh conditions, such as contact with corrosive gases, the measuring chamber features additional protective layers on the measurement surface. These reduce the negative influence of corrosive gases and enable accurate oxygen measurement at the same time. For long sensor life, even under aggressive conditions.

**Convenient and reliable:
ZIRKOR Remote**

ZIRKOR Remote makes it possible to completely control the ZIRKOR100 and ZIRKOR200 from a distance. This includes the output of test gases and inspection of the entire system. All process data and information on the analyzer can be saved in real time on mobile end devices and sent as an e-mail report. Thanks to the convenient app, settings can also be made for Ex devices without the Ex zone having to be released for maintenance work.



Use in reducing atmospheres is no problem for the measuring chambers. We developed the LongLife² for exactly these applications. In addition to the extra protective layer of the LongLife technology, a chamber protective circuit protects the ceramic of the measuring chambers, preventing the platinum coating from gradually peeling off the electrode. This prevents premature wear and decreased measurement performance.

ONE PRODUCT FAMILY FOR COUNTLESS REQUIREMENTS



ZIRKOR100

Oxygen measurement
made easy

For small systems

Reliable oxygen measurement is also essential in small combustion plants. The ZIRKOR100 is extremely rugged thanks to its innovative chamber technology, yet the price is very affordable. The integrated chamber diagnosis function keeps maintenance work to a minimum and all important information and functions can be accessed via ZIRKOR Remote. With the ZIRKOR100, you don't have to worry about oxygen measurement in your combustion processes.



ZIRKOR200

The innovation
is in the chambers

Up to the challenges

The ZIRKOR200 features additional properties and functions. Certified in accordance with EN 15267, it operates smoothly at process temperatures up to 1,600 °C, makes automated adjustments and can be equipped with the LongLife or LongLife² technology for a longer service life. Thanks to its variable probe lengths and a higher number of interfaces, it can be installed in all kinds of plants and applications.

On the safe side

The Ex types of the ZIRKOR200 are approved for IECEx and ATEX and are perfectly suited for applications in explosion-hazardous areas in Zone 1 and Zone 21. And qualified for SIL 2 with 1oo1 (One out of One), the ZIRKOR200 offers a high level of safety at minimal investment costs.



ZIRKOR302

A different kind of
oxygen measurement

Adjustment without test gas

The main difference between the ZIRKOR302 and the other two analyzers is its automated calibration using the ambient air. The tried-and-tested flow sensor principle does not require any test gases for this calibration and ensures exceptionally precise, continuous measurement even at high temperatures. The ZIRKOR302 is not an ignition source in the measurement gas due to its safety-related construction. The quick response time is also an effective process control.

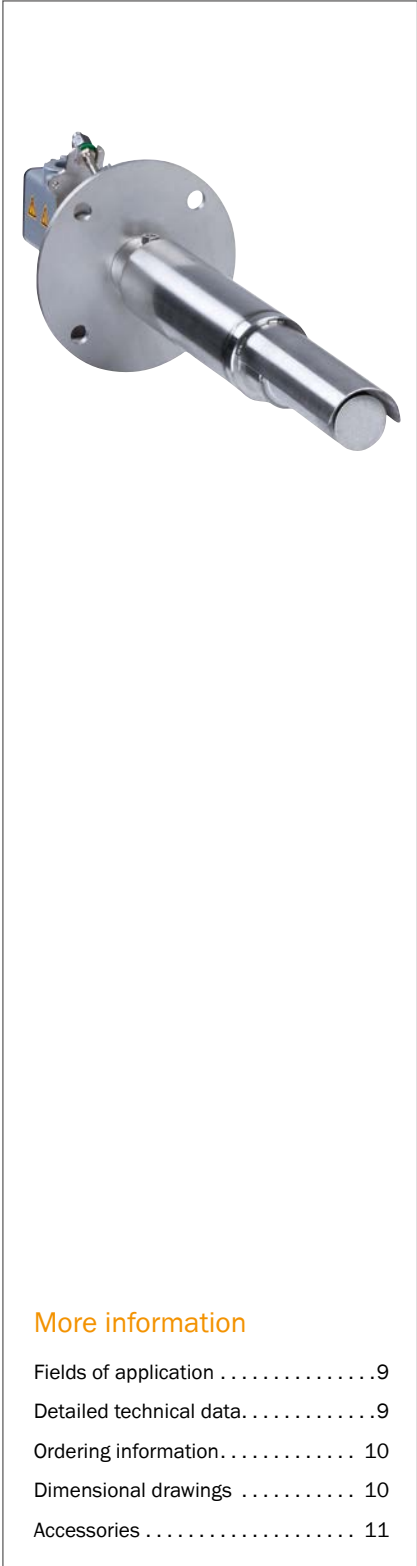
The ZIRKOR302 is available with either an integrated sample gas pump or an ejector powered by compressed air. The optional evaluation unit allows remote control of up to three analyzers at one time.



THE ZIRKOR SERIES AT A GLANCE

	ZIRKOR100	ZIRKOR200	ZIRKOR302
Sensor technology			
Measuring chamber protection (option)	-	Yes	-
Chamber diagnostics	Yes	Yes	-
Chamber exchange	-	Yes	Yes
Process gas temperature			
Measuring probe	Up to 400 °C	Up to 600 °C	Up to 950 °C
Measuring probe with protective pipe	Up to 1,400 °C	Up to 1,600 °C	Up to 1,400 °C
Measuring probe immersion depth			
	400 ... 500 mm	520 ... 3,682 mm	300 ... 1,800 mm
Wireless remote control			
	Yes	Yes	-
Interfaces			
Analog signal	Yes	Yes	Yes
WPAN	Yes	Yes	-
Modbus RTU RS-232	-	Yes	Yes
Modbus RTU RS-485	-	Yes	Yes
Hart	-	Yes	-
Fieldbus	-	Yes	-
Enclosure rating			
Analyzer unit	IP 20	IP 65	IP 65
Control unit	IP 66	IP 66	IP 65
Adjustment			
Test gas required	Yes	Yes	No
SIL type			
Safety integrity level	-	SIL 2 (1001)	-
Ex type			
ATEX/IECEX	-	ZIRKOR200 Ex-D, Ex-G Zone 1, Zone 21	-

OXYGEN MEASUREMENT MADE EASY



Product description

The ZIRKOR100 gas analyzer from SICK provides robust and reliable oxygen measurement for small combustion plants. It is characterized by a measuring chamber with a long service life and a diagnostic function. This significantly reduces maintenance effort. The

ZIRKOR Remote app allows quick and easy wire-free access to the analyzer.

As a result, the simple ZIRKOR100 oxygen measurement relieves plant operators and frees them up to concentrate on other important tasks.

At a glance

- Measuring chamber with long service life due to high-quality processing
- Self-monitoring measuring chamber
- Version for high temperatures available

- ZIRKOR Remote app for remote access to the analyzer
- Very short response time

Your benefits

- High availability thanks to measuring chamber with long service life
- Reduction of analyzer failures due to internal self-monitoring

- Quick measurement close to the combustion process for timely control
- Easy analyzer operation – even from a distance

More information

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→ www.sick.com/ZIRKOR100

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



Fields of application

- Incineration optimization in small to medium-sized combustion plants
- Oxygen monitoring for process control

Detailed technical data

The precise device specifications and product performance data may vary and are dependent on the respective application and customer specifications.

Analyzer unit ZIRKOR100

Measurands	O ₂
Measurement principles	Zirconium dioxide sensor
Measuring ranges	O ₂ 0 ... 25%
Adjustment time (t₉₀)	5 s, depending on the measurement gas flow
Accuracy	± 0.5% of the measured value or 0.02% by O ₂ volume, with the higher value being valid
Process temperature	Measuring probe: ≤ +400 °C Measuring probe with cooling protection pipe: ≤ +1,400 °C
Process pressure	-100 hPa ... 100 hPa Maximum pressure fluctuation: ± 50 hPa
Process gas speed	≤ 50 m/s
Ambient temperature	-40 °C ... +80 °C
Electrical safety	CE
Enclosure rating	IP20
Immersion depth	Measuring probe: ≤ 500 mm Measuring probe with cooling protection pipe: ≤ 1,000 mm
Material in contact with media	Stainless steel 1.4571
Material	Stainless steel 1.4571
Options	Cooling protection pipe

ZIRKOR100 control unit

Ambient temperature	-20 °C ... +55 °C
Storage temperature	-40 °C ... +80 °C
Electrical safety	CE
Enclosure rating	IP66
Analog outputs	1 output: 4 to 20 mA, 500 Ω
Digital outputs	2 outputs: Up to 4 outputs possible as an option
Display	Status LEDs: "Alarm", "Maintenance", and "Fault"
Operation	Via LC display and membrane keyboard Via Android end device with ZIRKOR remote app
Type	Sheet metal housing
Dimensions (W x H x D)	300 mm x 440 mm x 240 mm
Weight	17 kg ... 19 kg

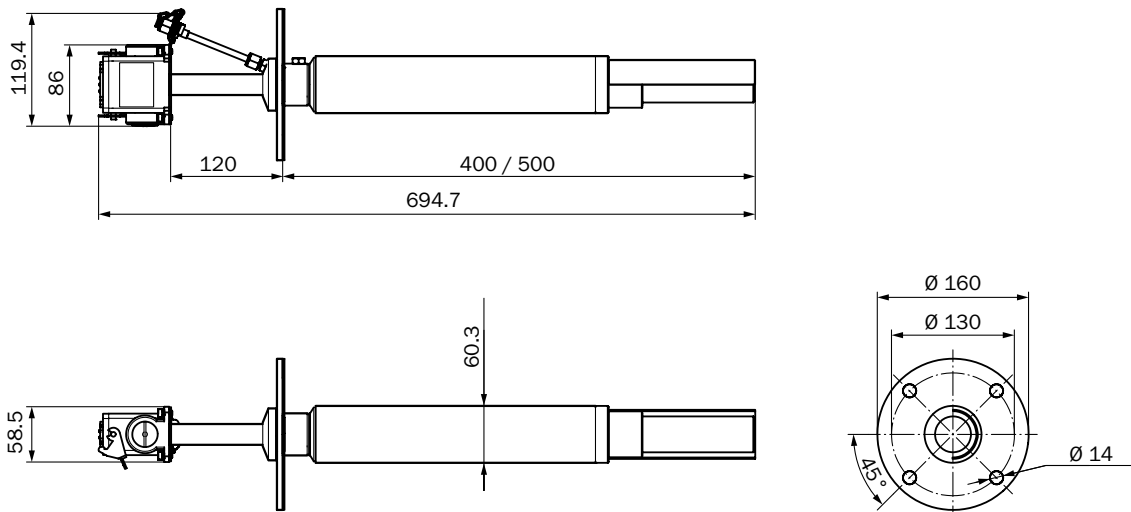
Power supply	Voltage	104 ... 126 V / 207 ... 253 V
	Frequency	50 Hz / 60 Hz
	Power consumption	≤ 350 W
Options	Two oxygen limit value alarms (min/max value)	

Ordering information

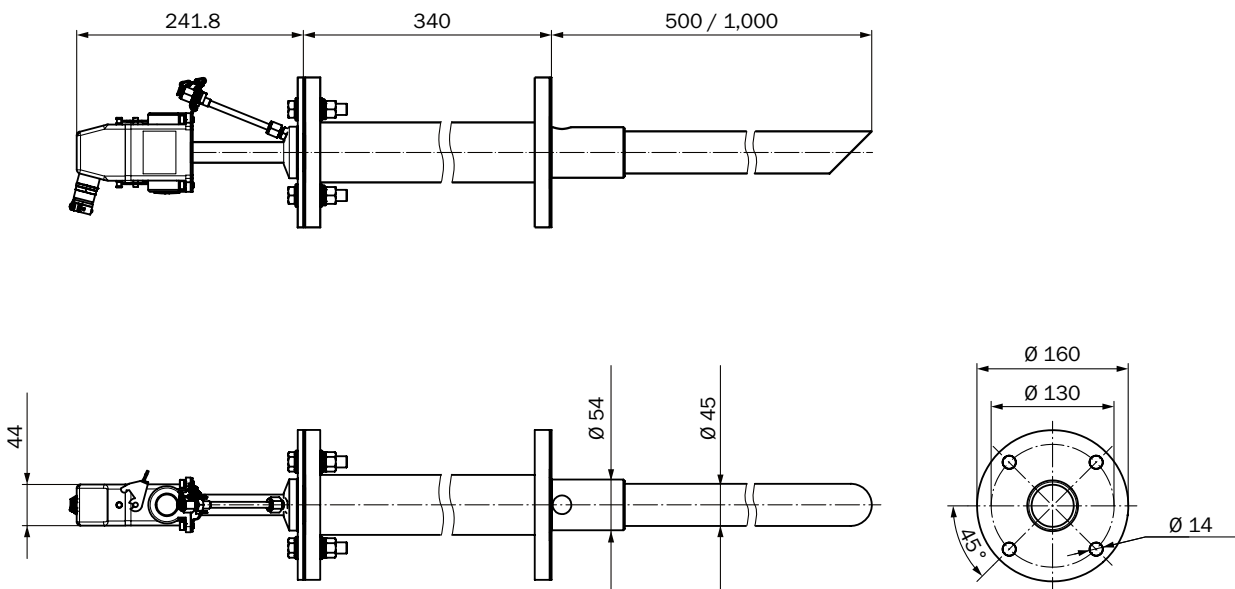
Our regional sales organization will be glad to advise you on which device configuration is best for you.

Dimensional drawings (dimensions in mm)

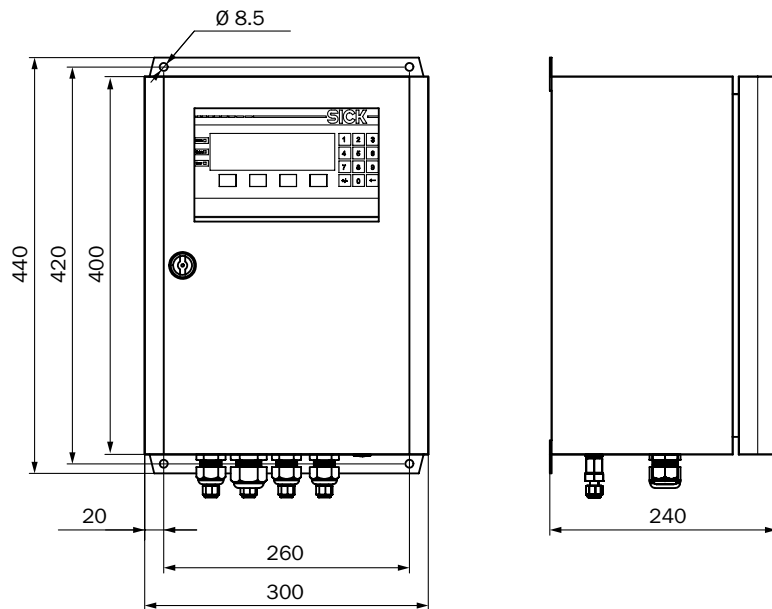
Analyzer unit ZIRKOR100



ZIRKOR100 analyzer unit with cooling protection pipe



ZIRKOR100 / ZIRKOR200 control unit



Accessories

Flanges

Weld-in flange

Brief description	Hole circle diameter	Threaded size	Part no.
Flange with pipe, internal diameter 72.1 mm, nominal length 100 mm, stainless steel 1.4571	130 mm	M12	5335407

Device protection (mechanical)

Protective housing and pipes

Brief description	Part no.
Insulation for cooling protection pipe 310 mm	5335411
Weather hood for analyzer unit, 1.4301, unpainted	5335409
Weather hood for control unit, 1.4301, unpainted	5335410

THE INNOVATION IS IN THE CHAMBERS



Product description

SICK's ZIRKOR200 gas analyzer provides very robust, reliable, and suitability-tested oxygen measurement for small and large combustion plants. The ZIRKOR200 is characterized by a measuring chamber with a particularly long service life. The LongLife technology employed for this purpose increases the resistance of the measuring chamber in corrosive and reducing conditions in particular. The integrated measuring

chamber monitoring system and fully automated adjustment significantly reduce the maintenance effort. The ZIRKOR Remote app allows quick and easy wire-free access to the analyzer. The ZIRKOR200 provides a low-maintenance, simple oxygen measurement system for incineration optimization. Thanks to its suitability test as per EN 15267, it is also suitable for emission monitoring.

At a glance

- Measuring chamber with extremely long service life due to innovative protection mechanisms
- Self-monitoring measuring chamber
- Fully automated adjustment mechanism integrated into the control unit
- Version for high temperatures available
- ZIRKOR Remote app for remote access to the analyzer
- Very short response time
- Suitability-tested according to EN 15267
- Ex types for ATEX and IECEx, Zone 1 or Zone 21

Your benefits

- Very high availability due to measuring chamber with extremely long service life
- High reliability due to innovative measuring chamber protection – even in corrosive or reducing conditions
- Reduction of analyzer failures due to internal self-monitoring
- No manual adjustment
- Quick measurement close to the combustion process for timely control
- Approved for emission monitoring
- Easy analyzer operation – even from a distance
- High safety levels due to outstanding Ex safety concept

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→ www.sick.com/ZIRKOR200

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



Fields of application

- Incineration optimization
- Oxygen monitoring for process control
- Oxygen reference value for emission measurement
- Monitoring of inert gas atmospheres

Detailed technical data

The precise device specifications and product performance data may vary and are dependent on the respective application and customer specifications.

ZIRKOR200 analyzer unit standard version

Measurands	O ₂
Suitability-tested measurands	O ₂
Measurement principles	Zirconium dioxide sensor
Measuring ranges	0 ... 25% by vol.
Certified measuring ranges	O ₂ 0 ... 25% by vol.
Adjustment time (t₉₀)	5 s depending on the measurement gas flow
Accuracy	± 0.5% of the measured value or 0.02% by O ₂ volume, with the higher value being valid
Process temperature	Measuring probe: ≤ +600 °C Measuring probe with cooling protection pipe: ≤ +1,600 °C
Process pressure	-100 hPa ... 100 hPa Maximum pressure fluctuation: ± 50 hPa
Process gas speed	≤ 50 m/s
Ambient temperature	-40 °C ... +80 °C
Conformities	EN 15267 2000/76 / EG (17th German Federal Immission Control Act (BImSchV)) 2001/80 / EC (13th German Federal Immission Control Act (BImSchV)) 27. German Federal Immission Control Act (BImSchV) 30th German Federal Immission Control Act (BImSchV) German Technical Instructions on Air Quality Control (TA-Luft)
SIL	Safety integrity level: SIL 2 (IEC 61508) Systematic suitability: SC 2 (IEC 61508) Device type: Type B Operating mode: Low demand rate System architecture: 1oo1 assessment Option
Electrical safety	CE
Enclosure rating	IP65
Dimensions (W x H x D)	See dimensional drawings
Immersion depth	Measuring probe: ≤ 3,682 mm Measuring probe with cooling protection pipe: ≤ 1,000 mm
Material in contact with media	Stainless steel 1.4571
Material	Stainless steel 1.4571
Options	Cooling protection pipe LongLife chamber LongLife ² chamber

ZIRKOR200 analyzer unit Ex types

Measurands	O ₂
Suitability-tested measurands	O ₂
Measurement principles	Zirconium dioxide sensor
Measuring ranges	0 ... 25% by vol.
Certified measuring ranges	O ₂ 0 ... 25% by vol.
Adjustment time (t₉₀)	5 s depending on the measurement gas flow
Accuracy	± 0.5% of the measured value or 0.02% by O ₂ volume, with the higher value being valid
Process temperature	
ZIRKOR200 Ex-G measuring probe:	≤ +500 °C
ZIRKOR200 Ex-G measuring probe with cooling protection pipe:	≤ +1,400 °C
ZIRKOR200 Ex-D measuring probe:	≤ +600 °C
Process pressure	-100 hPa ... 100 hPa Maximum pressure fluctuation: ±50 hPa
Process gas speed	≤ 50 m/s
Ambient temperature	
ZIRKOR200 Ex-G:	-20 °C ... +55 °C
ZIRKOR200 Ex-D:	-20 °C ... +70 °C
Conformities	EN 15267 2000/76 / EG (17th German Federal Immission Control Act (BImSchV)) 2001/80 / EC (13th German Federal Immission Control Act (BImSchV)) 27. German Federal Immission Control Act (BImSchV) 30th German Federal Immission Control Act (BImSchV) German Technical Instructions on Air Quality Control (TA-Luft)
SIL	
Safety integrity level	SIL 2 (IEC 61508)
Systematic suitability	SC 2 (IEC 61508)
Device type	Type B
Operating mode	Low demand rate
System architecture:	1oo1 assessment Option
Ex approvals	
IECEX	ZIRKOR200 Ex-G: Ex db IIC T3 Gb ZIRKOR200 Ex-D: Ex tb IIIC T133°C/T141°C Db
ATEX	ZIRKOR200 Ex-G: II 2G Ex db IIC T3 Gb ZIRKOR200 Ex-D: II 2D Ex tb IIIC T133°C/T141°C Db
Electrical safety	CE
Enclosure rating	
ZIRKOR200 Ex-G, ZIRKOR200 Ex-D	IP66
Dimensions (W x H x D)	Dimensions may vary, for details see dimensional drawing
Immersion depth	
ZIRKOR200 Ex-G measuring probe:	≤ 924 mm
ZIRKOR200 Ex-D measuring probe:	≤ 960 mm
Material in contact with media	Stainless steel 1.4571
Material	Stainless steel 1.4571
Options	Cooling protection pipe (not with ZIRKOR200 Ex-D) LongLife chamber (already included with ZIRKOR200 Ex-D) LongLife ² chamber

ZIRKOR200 control unit standard version

Ambient temperature	
Instrument air type:	-20 °C ... +55 °C
Pump type:	+20 °C ... +50 °C
GRP housing with heating:	-40 °C ... +55 °C
Storage temperature	-40 °C ... +80 °C
Conformities	EN 15267
SIL	
Safety integrity level	SIL 2 (IEC 61508)
Systematic suitability	SC 2 (IEC 61508)
Device type	Type B
Operating mode	Low demand rate
System architecture:	1oo1 assessment Option
Electrical safety	CE
Enclosure rating	
Sheet metal housing	IP66
Stainless-steel housing	IP66
GRP housing	IP66
19" rack housing	IP20
Analog outputs	1 output: 4 to 20 mA, 500 Galvanically isolated
Analog inputs	1 input: 4...20 mA, 120 Ω Galvanically isolated
Digital outputs	5 relay contacts
Digital inputs	2 relay contacts: + 24 V AC/DC, 1 A
Modbus	✓
Type of fieldbus integration	RTU RS-232 RTU RS-485
HART	✓
Foundation Fieldbus	✓
Display	Status LEDs: "Alarm", "Maintenance", and "Fault"
Operation	Via LC display and membrane keyboard Via Android end device with ZIRKOR remote app
Type	Sheet metal housing Stainless-steel housing GRP housing 19" rack
Dimensions (W x H x D)	
Sheet metal housing	300 mm x 440 mm x 240 mm
Stainless-steel housing	300 mm x 400 mm x 240 mm
GRP housing	510 mm x 600 mm x 310 mm
19" rack	483 mm x 177 mm x 400 mm

Weight	Sheet metal housing:	17 kg ... 19 kg
	Stainless-steel housing:	17 kg ... 19 kg
	GRP housing:	19 kg ... 27 kg
	19" rack:	10 kg ... 11 kg
Power supply	Voltage	104 ... 126 V / 207 ... 253 V
	Power consumption	≤ 400 W
Options	Semi-automated and automated adjustment (1-point or 2-point adjustment) LongLife chamber LongLife ² chamber Ejector and pump type	

ZIRKOR200 Ex-G type control unit

Ambient temperature	-20 °C ... +55 °C	
Storage temperature	-40 °C ... +80 °C	
Conformities	EN 15267	
SIL	Safety integrity level	SIL 2 (IEC 61508)
	Systematic suitability	SC 2 (IEC 61508)
	Device type	Type B
	Operating mode	Low demand rate
Ex approvals	IECEX	Ex db IIC T6 Gb
	ATEX	II 2G Ex db IIC T6 Gb
Electrical safety	CE	
Enclosure rating	IP66	
Analog outputs	1 output: 4 to 20 mA, 500 Ω Galvanically isolated	
Analog inputs	1 input: 4...20 mA, 120 Ω Galvanically isolated	
Digital outputs	5 relay contacts	
Digital inputs	2 relay contacts: + 24 V AC/DC, 1 A	
Modbus	✓	
	Type of fieldbus integration	RTU RS-232 RTU RS-485
HART	✓	
Foundation Fieldbus	✓	
Display	Status LEDs: "Alarm", "Maintenance", and "Fault"	
Operation	Via LC display and membrane keyboard	
	Via Android end device with ZIRKOR remote app	
Type	Pressure-resistant encapsulated housing	
Dimensions (W x H x D)	700 mm x 359.5 mm x 220 mm	
Weight	32 kg	
Power supply	Voltage	104 ... 126 V / 207 ... 253 V
	Power consumption	≤ 400 W

ZIRKOR200 Ex-G pneumatic unit

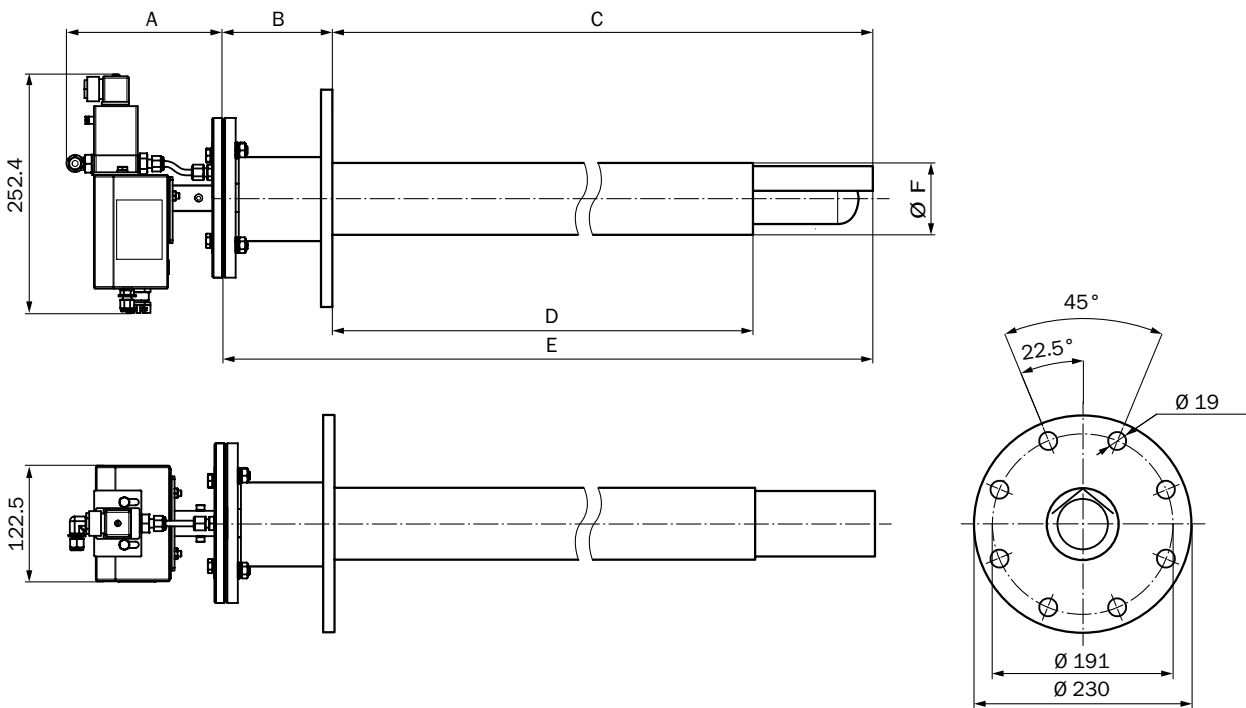
Ambient temperature	-20 °C ... +55 °C
Electrical safety	CE
Enclosure rating	IP65
Dimensions (W x H x D)	Dimensions may vary, for details see dimensional drawing
Auxiliaries	Test gas: 150 l/h ... 180 l/h Instrument air: 30 l/h ... 40 l/h 2...10 bar; particle size max. 1 µm; particle content max. 1 mg/m³; oil content max. 0.1 mg/m³; pressure condensation point max. -40 °C

Ordering information

Our regional sales organization will be glad to advise you on which device configuration is best for you.

Dimensional drawings (dimensions in mm)

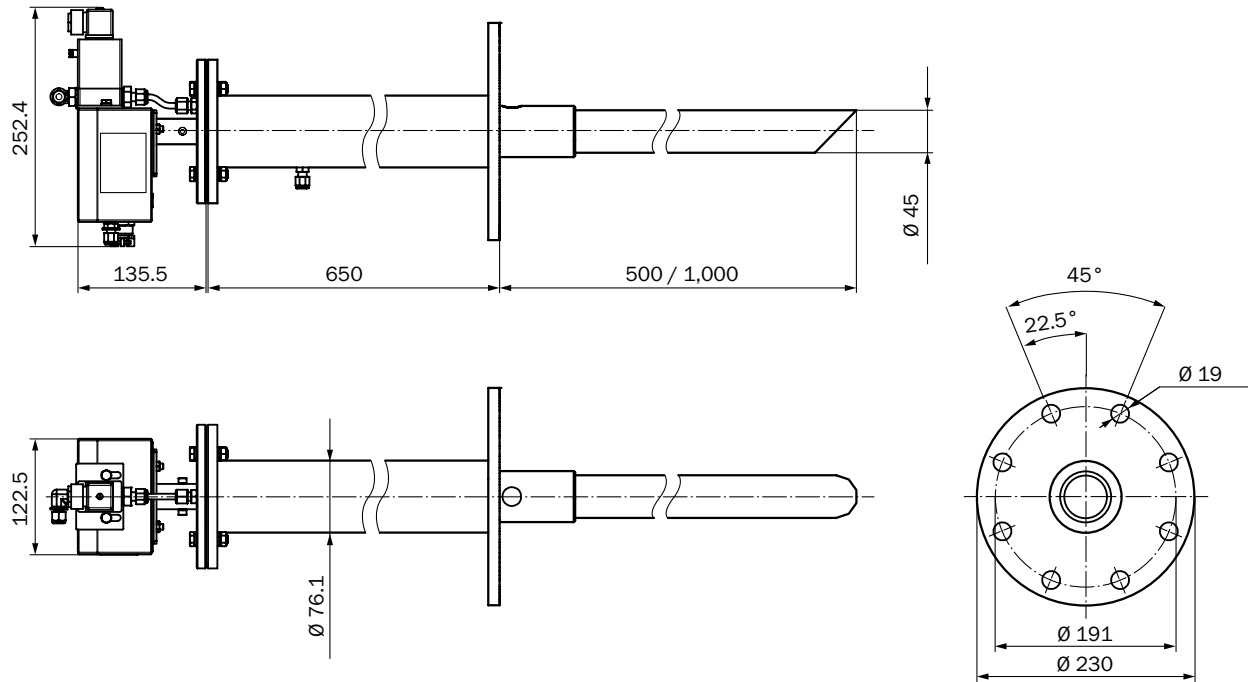
Analyzer unit ZIRKOR200



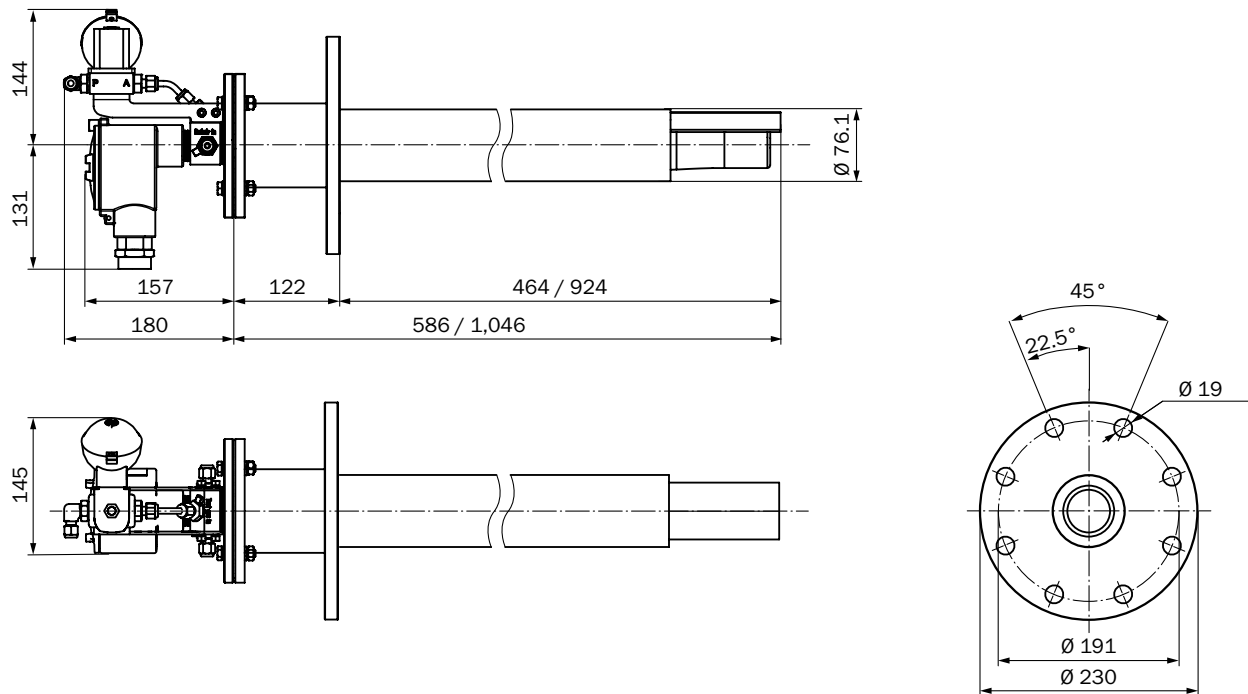
Type	A	B	Immersion depth C	D	E	F	Weight
Z200-X1...	135	97	520	380	615	57.0	11.0
Z200-Z2...	150	97	950	800	1,045	57.0	13.0
Z200-Z3...	150	120	1,835	1,720	1,955	76.1	17.5
Z200-Z4...	150	120	2,768	2,648	2,888	76.1	21.1
Z200-Z5...	150	120	3,682	3,562	3,802	76.1	25.0

All dimensions in mm, all weights in kg

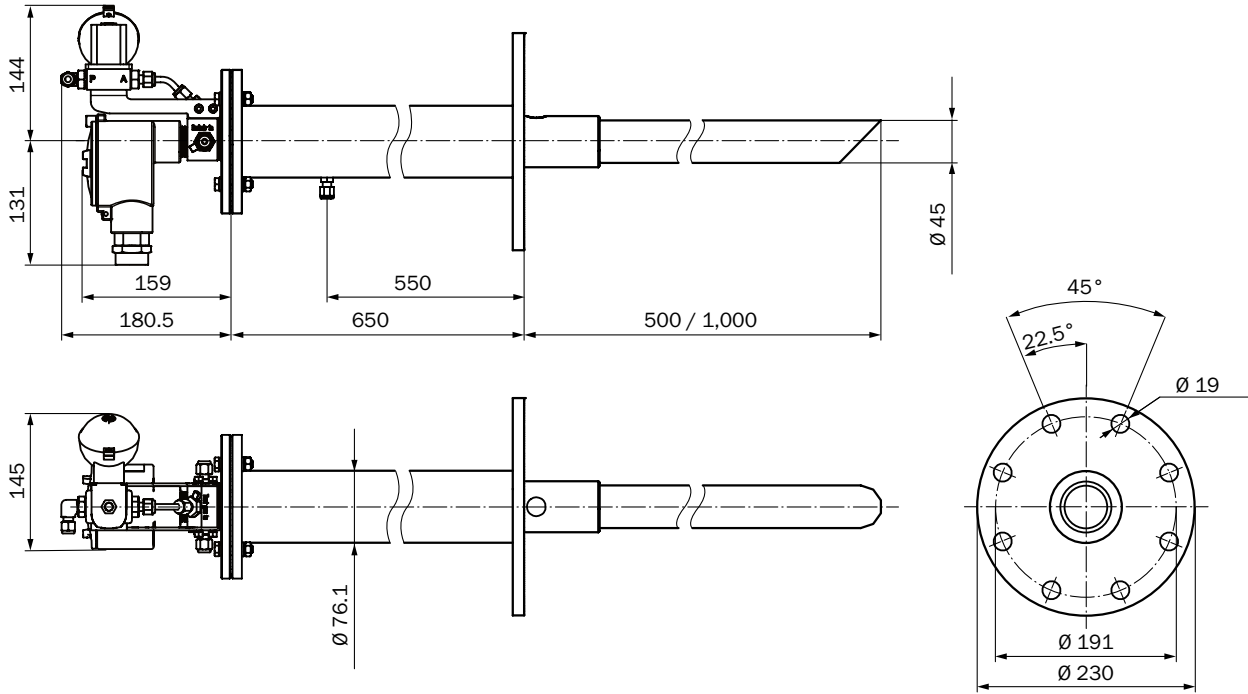
ZIRKOR200 analyzer unit with cooling protection pipe



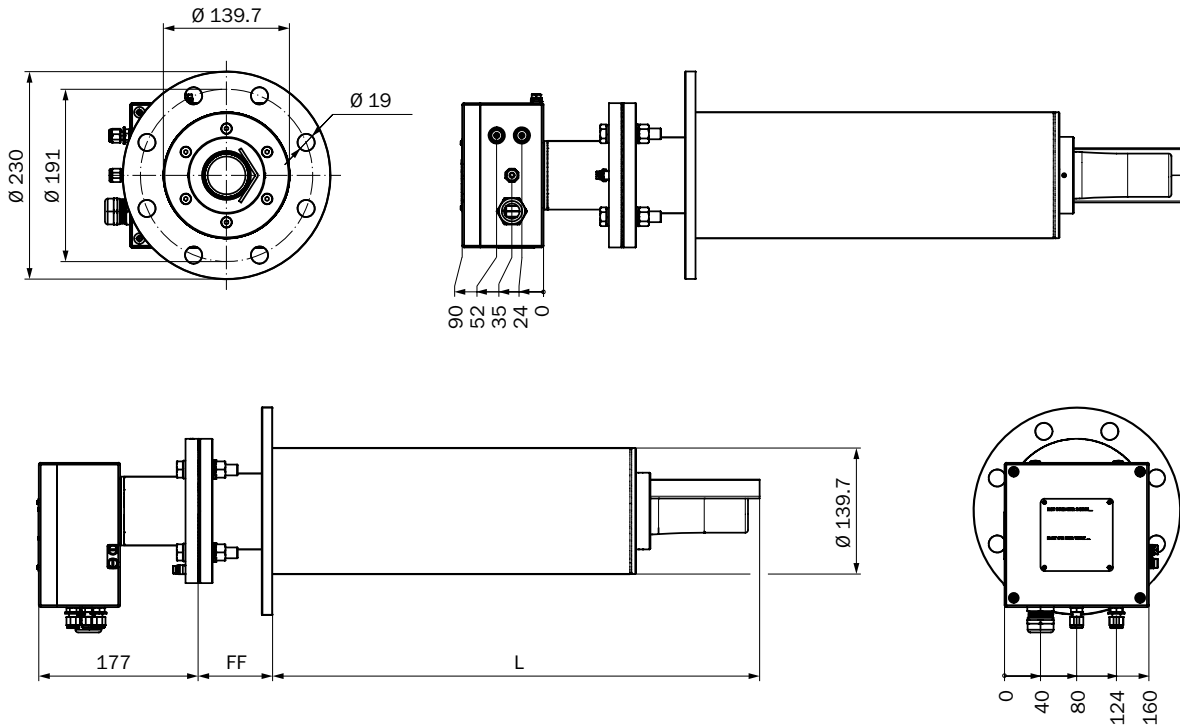
ZIRKOR200 Ex-G analyzer unit



ZIRKOR200 Ex-G analyzer unit with cooling protection pipe



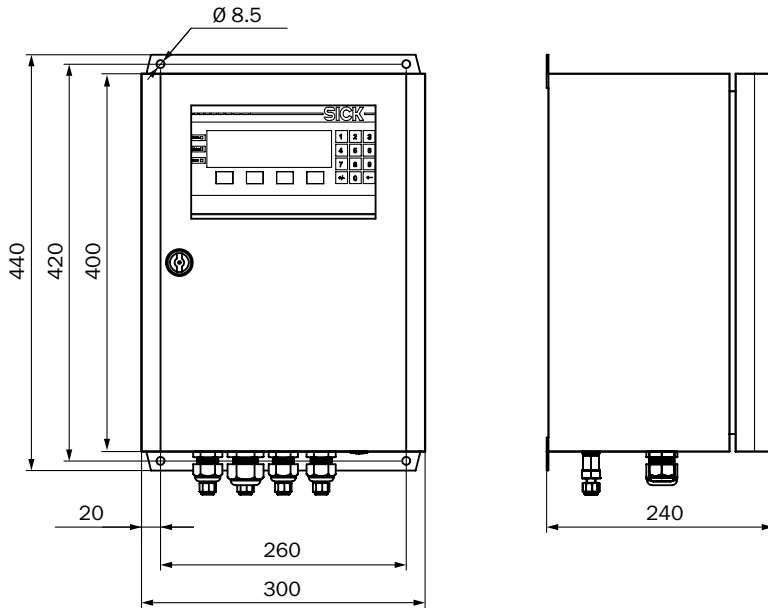
ZIRKOR200 Ex-D analyzer unit



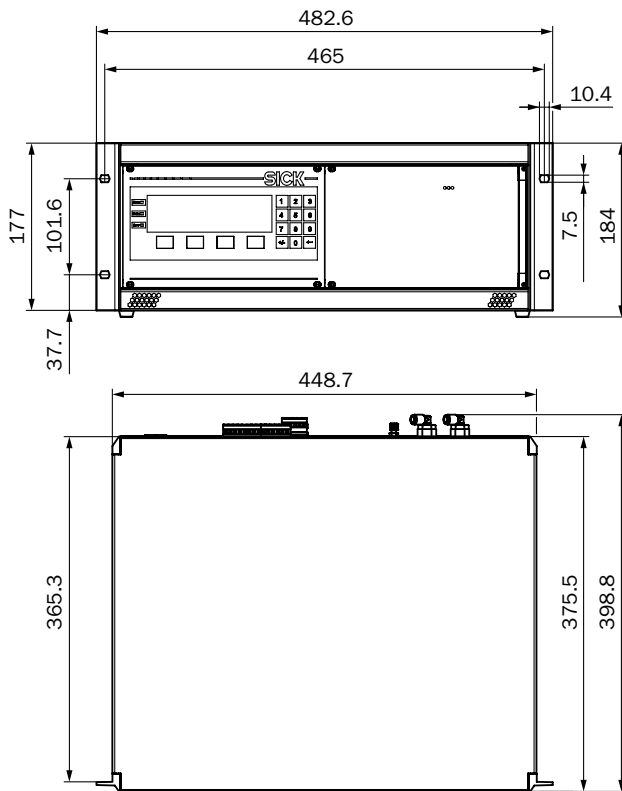
Type	Probe length L	Flange to flange distance FF	Weight
Z200EXD-xxY...	960	112.5	32.8
Z200EXD-xxZ...	540	82.5	24.4

All dimensions in mm, all weights in kg

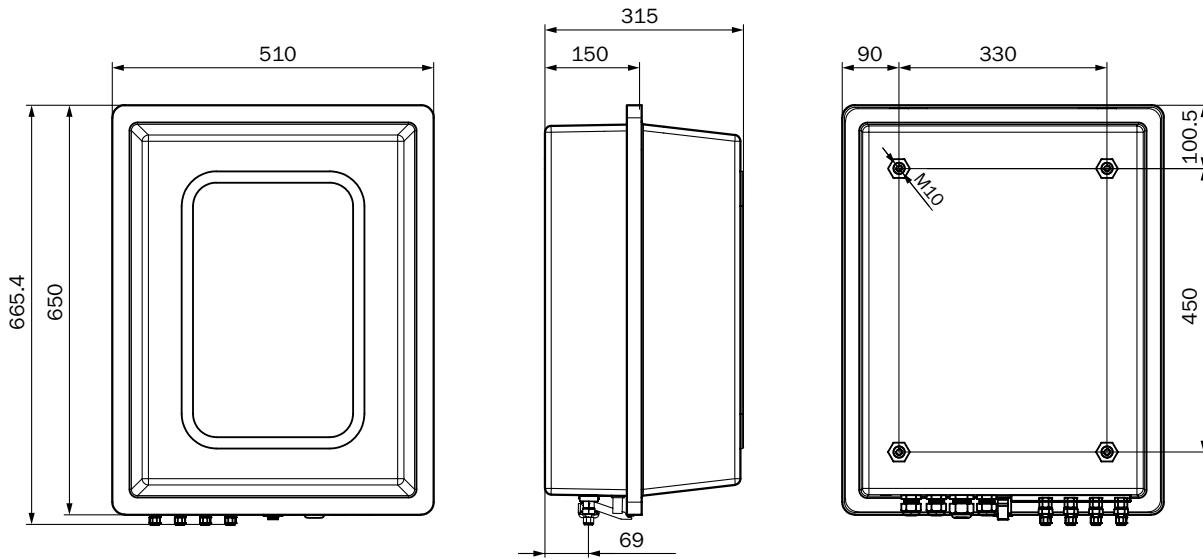
ZIRKOR100 / ZIRKOR200 / ZIRKOR200 Ex-D control unit



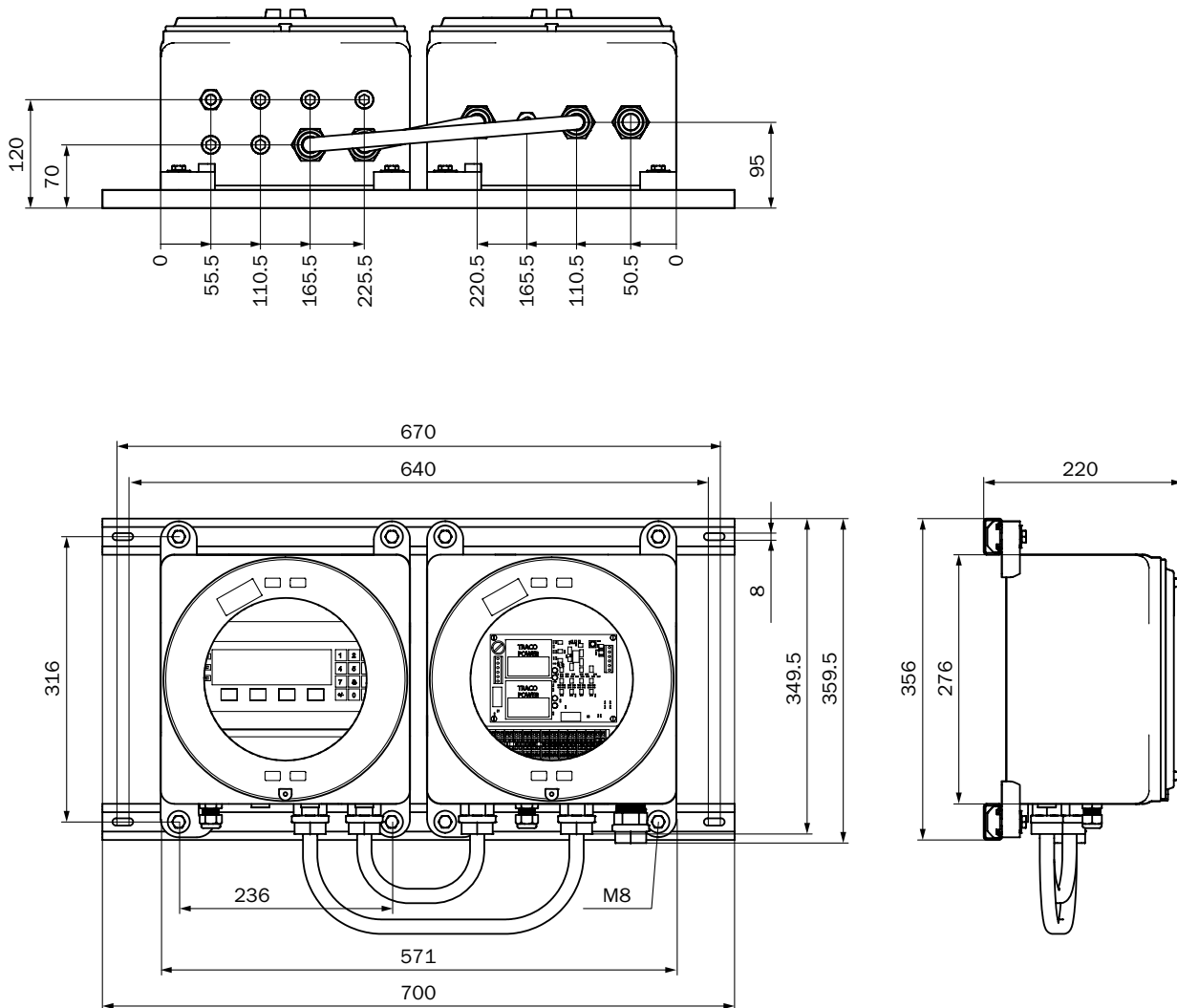
ZIRKOR200 / ZIRKOR200 Ex-D control unit; 19" rack housing



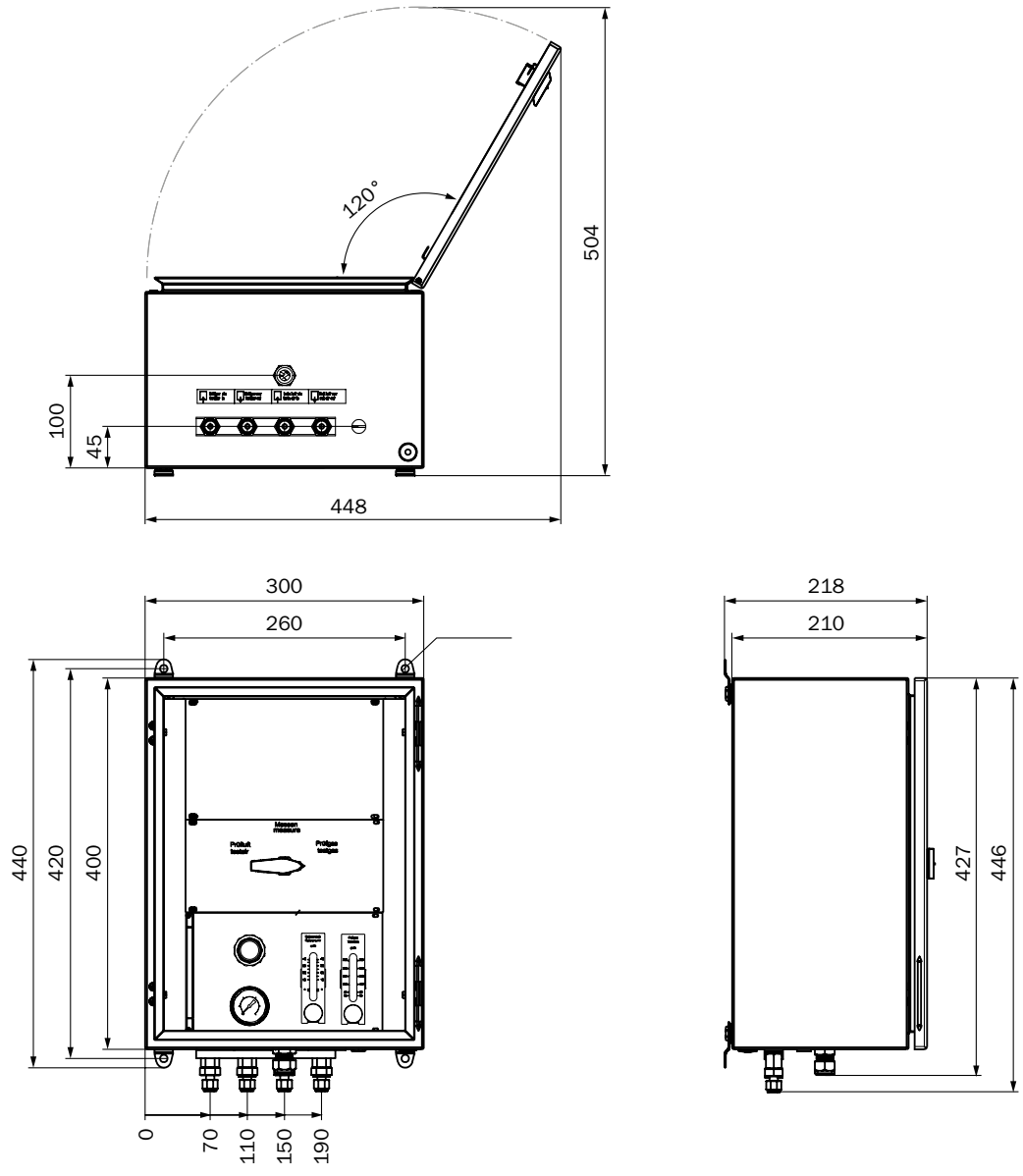
GRP housing for ZIRKOR200 / ZIRKOR200 Ex-D control unit



ZIRKOR200 Ex-G control unit



ZIRKOR200 Ex-G pneumatic unit



Accessories

Hardware

Brief description	Part no.
Compressed air preparation including dryer/housing	6063322
Compressed air preparation including dryer	6063324

Flanges

Weld-in flange

Brief description	Hole circle diameter	Threaded size	Part no.
Blind flange, ANSI 4", stainless steel 1.4571	190.5 mm	M16	4094575
Flange plate, ANSI4	191 mm	M16	5335405
Flange with pipe, ANSI 4", ST37 Nominal length: 500 mm	190.5 mm	M16	2093590
Flange with pipe, ANSI 4", ST37 Nominal length: 250 mm	190.5 mm	M16	2093551
Flange with pipe, ANSI 4", stainless steel 1.4571 nominal length: 500 mm	190.5 mm	M16	2093591
Flange with pipe, ANSI 4", stainless steel 1.4571 nominal length: 250 mm	190.5 mm	M16	2093592

Device protection (mechanical)

Protective housing and pipes

Brief description	Part no.
Heating for control unit 115 V / 500 W, GFRP housing required for electronics	6063321
Heating for control unit 230 V / 500 W, GFRP housing required for electronics	6063320
GRP housing for analyzer unit, with heating 230 V / 500 W	6063325
GRP housing for analyzer unit, with heating 115 V / 500 W	6063326
Flange insulation for 75 mm measuring probe, suitable for measuring probes < 1 m	5335847
Flange insulation for 95 mm measuring probe, suitable for measuring probes > 1 m	5335421
Insulation for cooling protection pipe 625 mm	5335830
Weather hood for analyzer unit, 1.4301, unpainted For DN65 PN6 protective pipe flange	5341512
Weather hood for control unit, 1.4301, unpainted	5335404
Weather hood for analyzer unit, 1.4301, unpainted For protective pipe ANSI4°, DN80 PN10 (16)	5335406

Plug connectors and cables

Cables (ready to assemble)

Brief description	Part no.
Connection cable for connecting analyzer and control unit	6065208
Connection cable [ATEX / IECEx] for connecting analyzer and control unit	6070572
Connection cable [ATEX / IECEx] for measuring probe magnet valve, 3-wire	6070579
Reinforced connection cable [ATEX / IECEx] for connecting analyzer and control unit	6070573

Other plug connectors and cables

Brief description	Part no.
NPT screw connection 1/2" for other cables	6070582
NPT screw connection 3/4" [ATEX / IEXEx], reinforced, for connecting analyzer unit and control unit	6070581
NPT screw connection 3/4" [ATEX / IEXEx] for connecting analyzer unit and control unit	6070580

A DIFFERENT KIND OF OXYGEN MEASUREMENT



Product description

The ZIRKOR302 in-situ gas analyzer from SICK can be relied upon to measure oxygen quickly even at increased temperatures. Thanks to the flow sensor measurement principle, it does not require expensive test gases – ambient

air is sufficient. The analyzer is not an ignition source in the measurement gas due to its safety-related construction. The optional evaluation unit allows you to operate up to three analyzers.

At a glance

- Innovative flow sensor measurement principle
- Fixed physical zero point and linear measurement signal
- All parts in contact with gas are heated
- Version for high temperatures available
- Short response time
- Operation of up to 3 analyzers via one evaluation unit

Your benefits

- Automated testing and adjustment with ambient air
- No expensive test gases required
- Reignition into the measurement gas not possible because the sensor is located outside the measurement gas
- Process monitoring even at high temperatures
- Quick measurement directly in the process for timely control



More information

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→ www.sick.com/ZIRKOR302

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



Fields of application

- Reference value formation during emission monitoring
- Monitoring of oxygen surpluses
- Monitoring of inert gas atmospheres

Detailed technical data

The precise device specifications and product performance data may vary and are dependent on the respective application and customer specifications.

ZIRKOR302 E analyzer unit

Description	Analyzer with ejector powered by compressed air
Measurands	O ₂
Suitability-tested measurands	O ₂
Measurement principles	Zirconium dioxide flow sensor
Gas flow	0.5 l/h
Measuring ranges	O ₂ 0 ... 10 by vol. / 0 ... 25% by vol
Certified measuring ranges	O ₂ 0 ... 21% by vol.
Adjustment time (t₉₀)	≤ 20 s With standard measurement gas withdrawal equipment, length = 1 m
Zero point drift	≤ 0.2% by vol. in maintenance interval
Reference point drift	≤ 0.2% by vol. in maintenance interval
Process temperature	Stainless steel measuring probe: 0 °C ... +700 °C Inconel measuring probe: 0 °C ... +950 °C Ceramic measuring probe: 0 °C ... +1,400 °C
Process pressure	700 hPa ... 1,100 hPa
Process gas moisture	Non-condensing
Ambient temperature	-20 °C ... +55 °C
Storage temperature	-40 °C ... +85 °C
Conformities	Approved for system requiring permission 2001/80 / EC (13th German Federal Immission Control Act (BImSchV)) 2000/76 / EG (17th German Federal Immission Control Act (BImSchV)) 27.German Federal Immission Control Act (BImSchV) EN 14181
Electrical safety	CE
Enclosure rating	IP65 / NEMA 4x
Analog outputs	1 output: 0/4 ... 20 mA, 800 Ω 0 ... 10 V Volt-free; can be extended with additional I/O module
Digital outputs	4 relay contacts: + 48 V AC, 1 A, 30 W / 48 V DC, 1 A, 60 W option
Digital inputs	4 inputs: + 24 V option
Display	LC display
Input	Function buttons Arrow keys
Operation	Menu-guided operator via LC display and membrane keyboard
Dimensions (W x H x D)	Details, see dimensional drawings

Weight	27 kg With standard measurement gas withdrawal equipment, length = 1 m
With heating for additional measurement gas withdrawal equipment:	4 kg ... 6 kg
Material in contact with media	Stainless steel 1.4571
Power supply	
Voltage	115 V / 230 V
Frequency	48 ... 62 Hz
Power consumption	≤ 250 W
Auxiliaries	
Compressed air:	4 ... 6 bar; particle size max. 1 µm; oil content max. 0.1 mg/m ³ ; pressure condensation point max. -30 °C
Corrective functions	Automated testing and adjustment with ambient air
Integrated components	Sample gas pump

ZIRKOR302 P analyzer unit

Description	Analyzer with integrated sample gas pump
Measurands	O ₂
Suitability-tested measurands	O ₂
Measurement principles	Zirconium dioxide flow sensor
Gas flow	0.5 l/h
Measuring ranges	
O ₂	0 ... 10 by vol. / 0 ... 25% by vol
Certified measuring ranges	
O ₂	0 ... 21% by vol.
Adjustment time (t₉₀)	≤ 20 s With standard measurement gas withdrawal equipment, length = 1 m
Zero point drift	≤ 0.2% by vol. in maintenance interval
Reference point drift	≤ 0.2% by vol. in maintenance interval
Process temperature	
Stainless steel measuring probe:	0 °C ... +700 °C
Inconel measuring probe:	0 °C ... +950 °C
Ceramic measuring probe:	0 °C ... +1,400 °C
Process pressure	700 hPa ... 1,100 hPa
Process gas moisture	Non-condensing
Ambient temperature	-20 °C ... +55 °C
Storage temperature	-40 °C ... +85 °C
Conformities	Approved for system requiring permission 2001/80 / EC (13th German Federal Immission Control Act (BImSchV)) 2000/76 / EG (17th German Federal Immission Control Act (BImSchV)) 27.German Federal Immission Control Act (BImSchV) EN 14181
Electrical safety	CE
Enclosure rating	IP65 / NEMA 4x
Analog outputs	1 output: 0/4 ... 20 mA, 800 Ω 0 ... 10 V Volt-free; can be extended with additional I/O module
Digital outputs	4 relay contacts: + 48 V AC, 1 A, 30 W / 48 V DC, 1 A, 60 W option
Digital inputs	4 inputs: + 24 V option
Display	LC display

Input	Function buttons Arrow keys
Operation	Menu-guided operator via LC display and membrane keyboard
Dimensions (W x H x D)	Details, see dimensional drawings
Weight	27 kg With standard measurement gas withdrawal equipment, length = 1 m
With heating for additional measurement gas withdrawal equipment:	4 kg ... 6 kg
Material in contact with media	Stainless steel 1.4571
Power supply	
Voltage	115 V / 230 V
Frequency	48 ... 62 Hz
Power consumption	≤ 250 W
Corrective functions	Automated testing and adjustment with ambient air
Integrated components	Sample gas pump

ZIRKOR302 control unit; sheet steel housing

Description	The control unit serves as the HMI and is responsible for data processing, data output, and control and monitoring functions
Enclosure rating	IP65 / NEMA 4x
Analog outputs	3 outputs: 0/4 ... 20 mA, 500 Ω Galvanically isolated – one output of measured values per connected analyzer
Digital outputs	3 relay contacts: + 48 V AC, 1 A, 60 W / 48 V DC, 1 A, 30 W
Digital inputs	3 inputs: + 24 V Preallocated for faults, maintenance and operational checks
Serial	✓
Type of fieldbus integration	RS-232
Function	Connection to SOPAS ET software
CAN bus	✓
Function	Internal system bus
Display	LC display Status LEDs: "Power", "Maintenance", and "Fault"
Input	Arrow keys Function buttons
Operation	Menu-guided operator via LC display and membrane keyboard
Type	Sheet metal housing
Dimensions (W x H x D)	200 mm x 346 mm x 97.5 mm
Weight	4 kg
Power supply	
Voltage	115 V / 230 V
Frequency	50 Hz / 60 Hz
Power consumption	≤ 50 W

ZIRKOR302 control unit; cast metal housing

Description	The control unit serves as the HMI and is responsible for data processing, data output, and control and monitoring functions
Enclosure rating	IP67 / NEMA 4x
Analog outputs	3 outputs: 0/4 ... 20 mA, 500 Ω Galvanically isolated – one output of measured values per connected analyzer

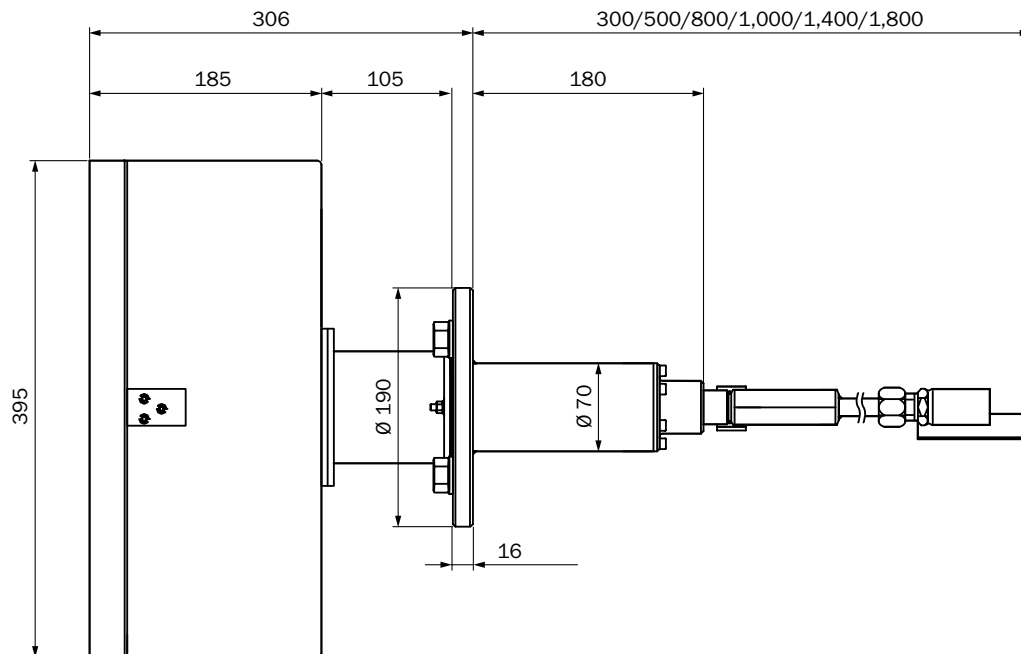
Digital outputs	3 relay contacts: + 48 V AC, 1 A, 60 W / 48 V DC, 1 A, 30 W Preallocated for faults, maintenance and operational checks
Digital inputs	3 inputs: + 24 V
Serial	✓
Type of fieldbus integration	RS-232
Function	Connection to SOPAS ET software
CAN bus	✓
Function	Internal system bus
Display	LC display Status LEDs: "Power", "Maintenance", and "Fault"
Input	Arrow keys Function buttons
Operation	Menu-guided operator via LC display and membrane keyboard
Type	Cast metal housing
Dimensions (W x H x D)	289 mm x 370 mm x 138 mm
Weight	4 kg
Power supply	
Voltage	115 V / 230 V
Frequency	50 Hz / 60 Hz
Power consumption	≤ 50 W

Ordering information

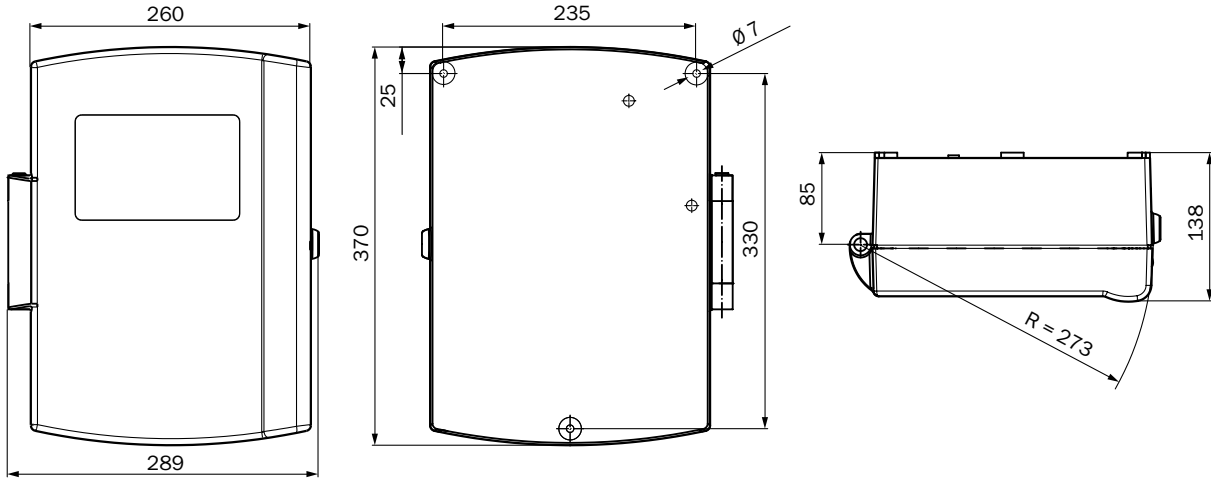
Our regional sales organization will be glad to advise you on which device configuration is best for you.

Dimensional drawings (dimensions in mm)

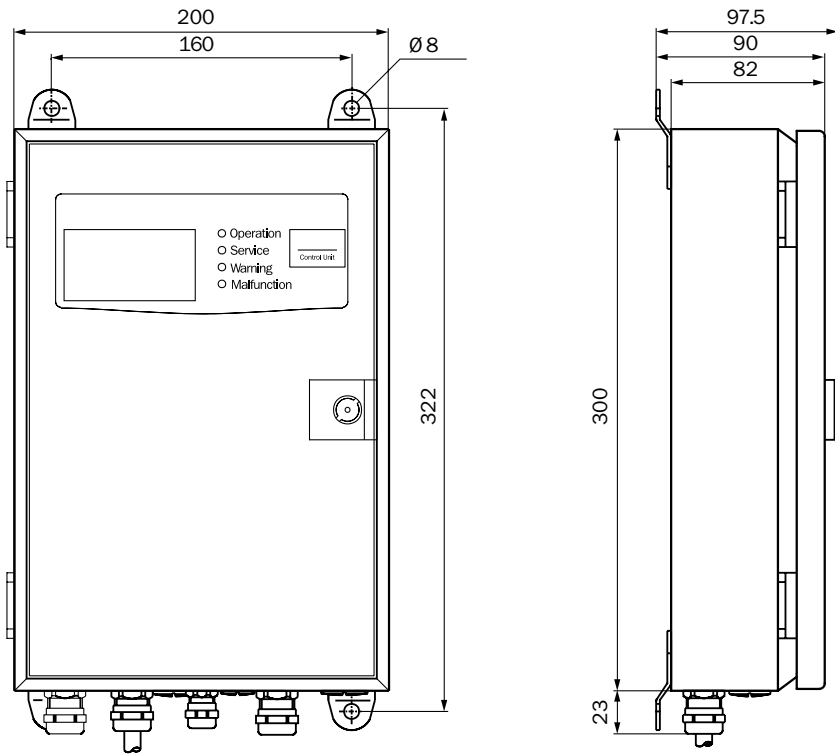
Analyzer unit ZIRKOR302



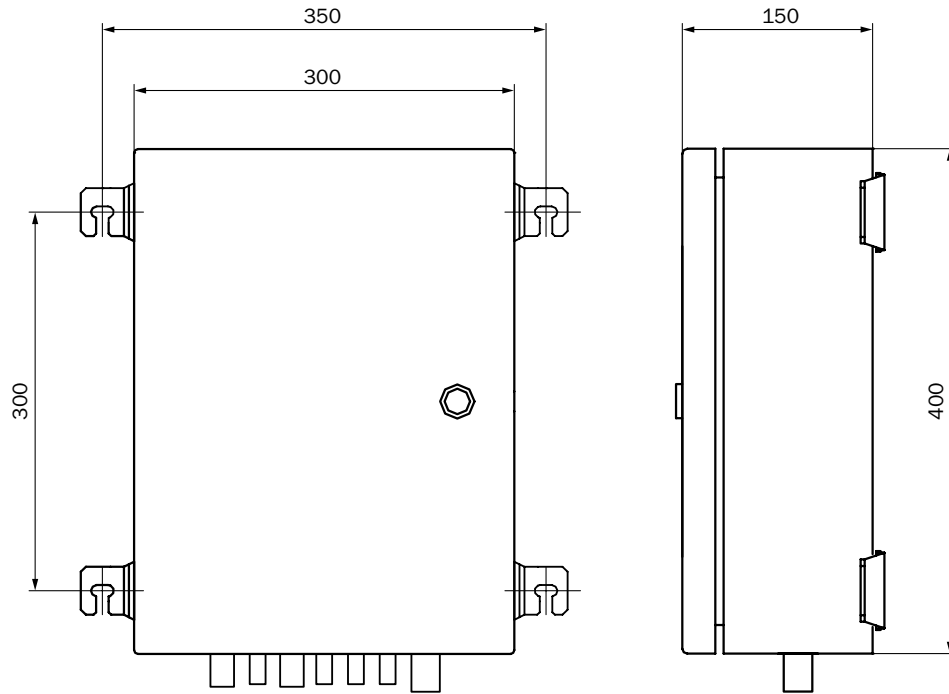
Control unit; cast metal housing



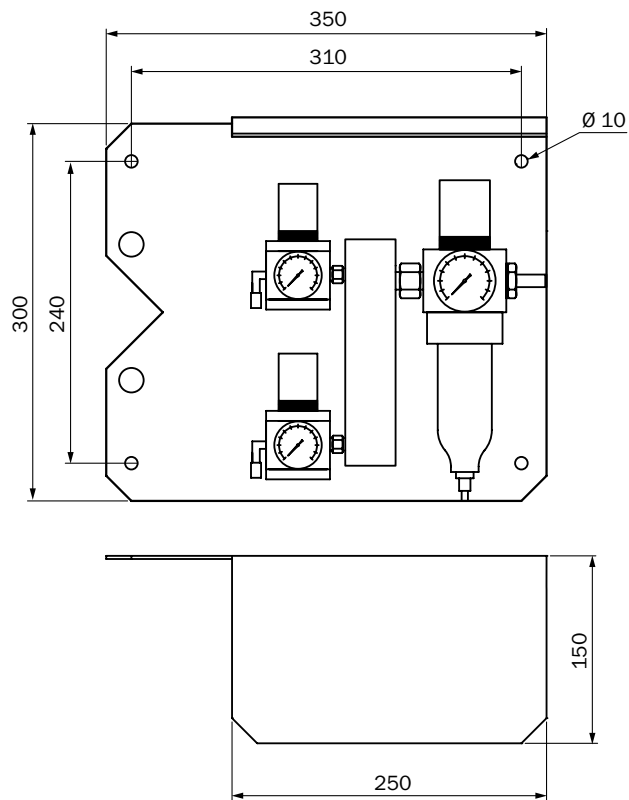
Control unit; sheet steel housing



Compressed air unit; housing type



Compressed air unit; mounting plate



Accessories

Flanges

Weld-in flange

Brief description	Inner diameter	Threaded size	Part no.
Adapter flange with seal for heavy dust applications, structural steel 1.0037	82 mm	M16	5311412
Adapter flange with seal for heavy dust applications, stainless steel 1.4571	82 mm	M16	5311413
Flange with pipe, internal diameter 125 mm, structural steel 1.0254	125 mm	M16	5311342
Flange with pipe, internal diameter 125 mm, stainless steel 1.4539	125 mm	M16	5314311
Flange with pipe, internal diameter 125 mm, stainless steel 1.4571	125 mm	M16	5311343

Plug connectors and cables

Other plug connectors and cables

Brief description	Part no.
CAN extension cable, 6-wire, 15 m	2020439
Serial connection cable, 10 m	6026308
Extension cable, 10 m	6026309

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,000 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. 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.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the 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 SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

That is “Sensor Intelligence.”

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → www.sick.com