

QGO20.000D17



QGO20.000D27

## Oxygen Sensor

## QGO20.000...

The QGO20... is an oxygen sensor designed for acquiring the residual oxygen content of flue gases in heat generation plant burning natural gas or light fuel oil. Together with the control unit, the QGO20... monitors and controls the combustion process.

The QGO20... and this Data Sheet are intended for use by OEMs which integrate the oxygen sensor in their products.

### Use

When used in connection with burner controls type LMV52... for residual oxygen control, the efficiency of combustion will be improved and oxygen emissions minimized.

The QGO20... is suited for use on all types of heat generation plant burning natural gas or light fuel oil with flue gas temperatures up to 300 °C at the point of measurement.

### Supplementary documentation

Basic Documentation QGO20.....P7842

### Notes



**Caution!**  
All safety, warning and technical notes given in the Basic Documentation of the QGO... (P842) also apply to this document!

## Standards and certificates

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ISO 9001: 2010  
Cert. 00739



ISO 14001: 2010  
Cert. 38233



Only QGO20.000D17

Only in connection with  
LMV52... with PLL52...



Conformity to EEC directives  
- Electromagnetic compatibility EMC (immunity)  
- Directive for gas-fired appliances

2004/108EC  
2009/142/EG

## Mechanical design

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The **QGO20...** consists of

- sensor tube with mounting flange made of stainless steel, and
- connecting head made of die-cast aluminium

The **sensor tube** contains and protects

- the measuring cell
- the cell heating element, and
- is resistant to aggressive substances contained in the flue gases of combustion plant burning natural gas or light fuel oil

The sensor's **connecting head** houses a printed circuit board with the connection terminals. The cable enters through replaceable Pg11 cable glands. The cable glands can be left with the cable, thus facilitating installation and service work.

The AGO20... **flue gas collector** is one of the accessory items used with the QGO20...

- which is welded into the stack where the measurement shall be made, also serving as a
- mounting flange and
- flue gas guidance

## Ordering

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**Oxygen sensor** (including flange gasket)

- AC 230 V
- AC 120 V

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**Control unit** for measurement and control the rest of oxygen

- Refer to Basic Documentation P7550

**LMV52... with PLL52...**



**Flue gas collectors**

- For stack diameters up to 400 mm
- For stack diameters above 400 mm

**AGO20.001A**  
**AGO20.002A**

**Flange gasket** for service

**5 769 2021 0**

## Technical data

<b>QGO20...</b>	Mains voltage for heating the measuring cell	
	- QGO20.000D27	AC 230 V ±15%
	- QGO20.000D17	AC 120 V ±15% (only with LMV52... and PLL52...)
	Mains frequency	50...60 Hz ±6%
	Power consumption	Max. 90 W, typically 35 W (controlled)
	Perm. mounting position	Refer to Mounting Instructions M7842 (4 319 2366 0)
	Degree of protection	IP40 (to be ensured through mounting)
	Weight	Approx. 0.9 kg
	Signal lines	
	- Shielded 6-core cable	Twisted pairs
	- Shielding connected to terminal GND of the PLL52...	
	- Proposal for cable	LifYCY3x2x0,2 or LYCY3x2x0,2
	Measuring principle	Zirconium dioxide measuring cell as an oxygen ion conductor
	Perm. flow rate of flue gas (only with the AGO20...)	1...10 m/s
	Perm. types of fuel	Light fuel oil (EL), natural gas (H)
	Measuring range	0.2...20.9% O <sub>2</sub>
	Perm. cable length	Max. 100 m
Recommended cable length	<10 m	
Power supply lines (mains cable)		
- Wire dia.	Min. 1 mm <sup>2</sup> (e.g. NYM 3x1.5)	
Required operating temperature of measuring cell	700 °C ±50 °C	

## Environmental conditions

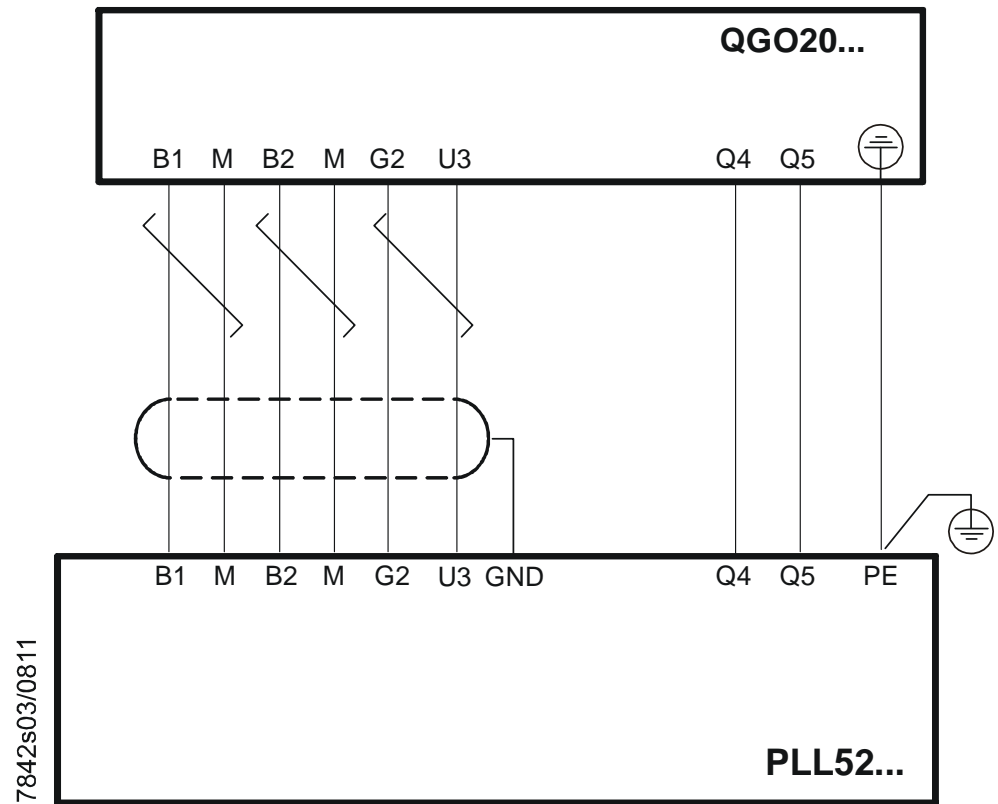
	<b>Storage</b>	DIN EN 60721-3-1
	Climatic conditions	Class 1K3
	Mechanical conditions	Class 1M2
	Temperature range	-20...+60 °C
	Humidity	<95% r.h.
	<b>Transport</b>	DIN EN 60721-3-2
	Climatic conditions	Class 2K2
	Mechanical conditions	Class 2M2
	Temperature range	-25...+70 °C
	Humidity	<95% r.h.
	<b>Operation</b>	DIN EN 60721-3-3
	Climatic conditions	Class 3K5
	Mechanical conditions	Class 3M2
	Temperature range	
	- Flange	Max. 250 °C
	- Connecting head	Max. 70 °C
	- Flue gas	≤300 °C
	Humidity	<95% r.h.




**Attention!**  
**Condensation, formation of ice and ingress of water are not permitted!**

<b>AGO20...</b>	Tube	DN50, steel X5 CrNi 18 9
	Tube length	
	- For the AGO20.001A	180 mm
	- For the AGO20.002A	260 mm
Flange	DN50, steel X5 CrNi 18 9	

## Connection diagram



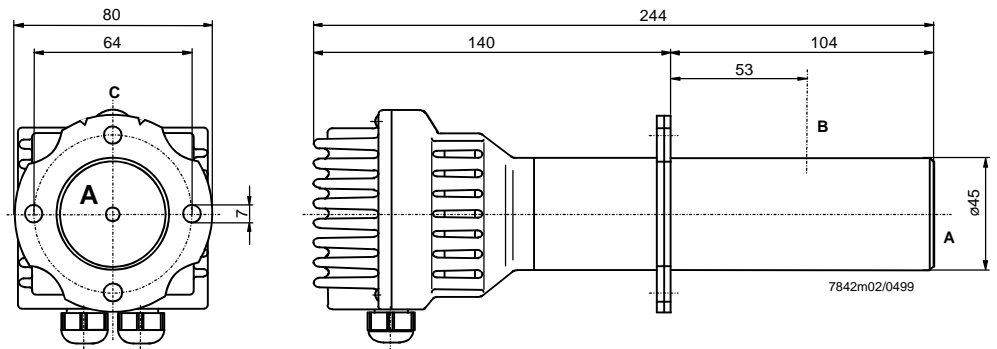
### Legend

B1	(+)	Signal of oxygen measuring cell
B2	(+)	Thermocouple voltage
G2	(-)	Power supply temperature compensation element
GND		Electrical ground for shielding
M	(-)	Electrical ground for signals <i>B1</i> and <i>B2</i>
M	(-)	
Q4		Sensor heating with mains connection
Q5		Sensor heating with mains connection
U3	(+)	Signal of temperature compensation element
		Protective earth (PE)

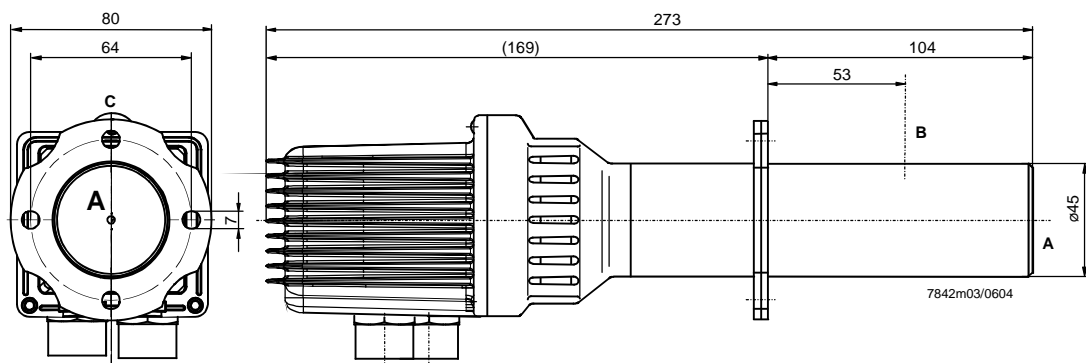
## Dimensions

Dimensions in mm

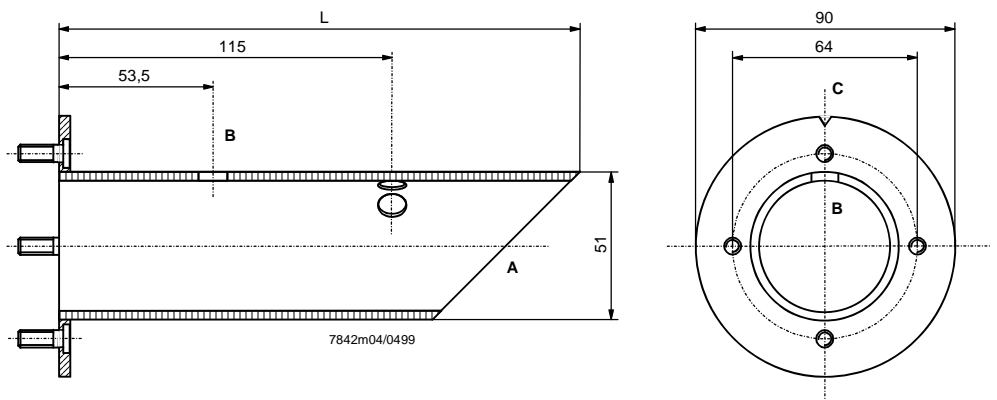
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AGO20...



## Legend

- A Flue gas inlet
- B Flue gas outlet
- C Notch on the flange marking the flue gas outlet side
- L 180 mm for the AGO20.001A  
260 mm for the AGO20.002A