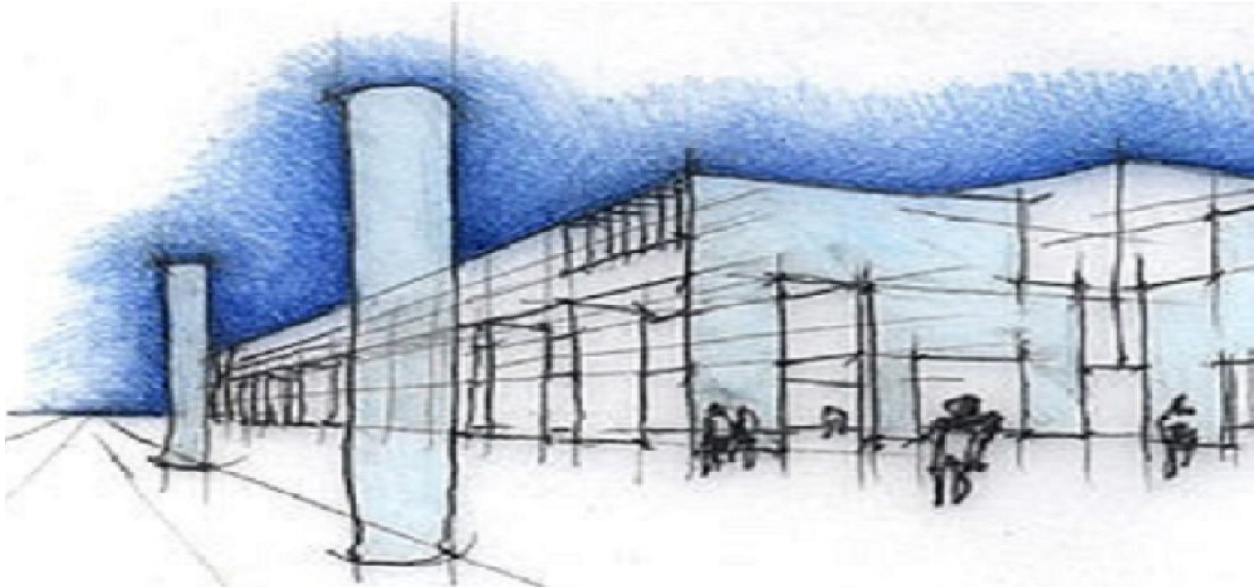


Conventional Gas Sensor SG-O₂ 100

V. 1



Always careful to the requirements of a highly technological market and exigent of modernity, the **BEINAT S.r.l.** has designed a gas probe detection destined to an installation both for residential environments that industrial environments. In fact, the new stand-alone probe **SG-O₂100** has the prerogative to control through sensors catalytic technology the presence of **OXYGEN**

The probe is managed by a microprocessor which not only supplies an alarm signal to the control unit connected to it, but also allows execution of a self-diagnosis and therefore an **automatic calibration**, in order to always have the maximum detection accuracy.

The self-calibration allows the probe to adapt in difficult environments and variable temperature avoiding false alarms due to anomalous events.

The probe integrates the transmission of the gas being monitored through:

Analog output signal 4 ÷ 20 mA.

Furthermore with this probe it is possible:

- 1) To **SELECT** the alarm threshold for: **oxygen excess or deficiency**.
- 1) To **SELECT** the positive safety of the relay.

Indispensable instrument for the annual check of the probes

Instrument of testing TS1008

To facilitate the reading of the functional parameters of the probe as well as the control of annual operating, the **BEINAT S.r.l.** has built a new portable tester **TS1008**.

The tester allows to read all the data in the memory of the probes eand by serial transmission, it prints the ticket that confirms the testing data.



Important: Assembly / maintenance of the appliance must be carried out by qualified personnel and in accordance with applicable laws and regulations. The manufacturer assumes no responsibility for the use of products that have to comply with particular environmental and / or installation standards.




This equipment is designed to protect people from the acute effects of exposure to Oxygen. This equipment does not fully protect people with specific medical conditions. In case of doubt consult a Doctor



Important note

Before connecting the equipment, it is recommended that you read the instruction manual carefully and keep it for future reference. It is also recommended to perform the electrical connections correctly as per enclosed drawings, observing the instructions and the Standards.

N.B. Refer to the documentation in all cases where the symbol is on the side

 <p>Installation and user guide</p>	<p>CONFORMITY</p> <p>EN 50104 EN 50270 Compliant EN 60079-29-1 Installation EN 60079-29-2 Reports issued by TUV Italia</p>
---	--



Precautions

CHECK the integrity of the probe after having removed it from the box.
Check that the data written on the box correspond to the type of gas used.
When doing the electrical connections, follow the drawing carefully.
Every different use from that for which the probe has been projected is improper, for which **BEINAT S.r.l.** disclaims every responsibility for possible damages caused to people, animals or objects.



TERMS and EXPECTATIONS: The installation of the **SG-O₂100**, its ordinary and extraordinary maintenance, and its out of service removal at the end of the functional life guaranteed by the manufacturer, must be carried out by **authorized and/or specialized personnel.**

INSTALLATION

During installation, remember that the container **must not** be pierced by anywhere, entail loss of degree of protection.
Do not allow it to become wet.

The probe can be seriously damaged when immersed in water. Remember that the probe has an **IP55** protection degree.

Do not drop it.

Heavy knocks or falls during transportation or installation can damage the appliance.

Avoid abrupt temperature fluctuations.

Sudden temperature variations can cause condensation and the probe could work poorly.

Cleaning

Never clean the device with chemical products. If necessary, wash with a moist cloth.

Absolutely avoid using any cloth dipped in thinners, alcohol and chemical detergents.

MAINTENANCE

The user periodically (every 6 months) must perform a check of the operation of the control unit by spraying a suitable test gas at the base of the probes connected until the alarm condition is reached.

- At least once a year make a more accurate check by a specialist technician.
- Disabling the detector must be carried out by qualified personnel.



Technical specifications

Power supply **12÷24 VDC** ± 10%
Power demand 45 mA Max @ 13,8V - In alarm 90 mA Max @ 13,8 VDC
Relay switching alarm 5 A 30VDC SELV
Selection of positive safety..... Selectable by switch
Operating Leds **Green:** Operating, **Red:** Flashing: detecting gas, Steady Alarm, **Yellow:** Fault

Type of gas detected..... **OXYGEN**
Integrated sensor according to the type of gas **Optical Fluorescence**
Operating range of the sensing element 0 - 25 % of O₂
Operating range selectable by switch 18.5 ÷ 23.5% or 19.5 ÷ 22.5% of Oxygen

Detector accuracy +/- 1% FS
Long term shift in clean air < ± 3% LEL
Auto zero procedure Included in the software algorithms
Response Time < 10"

Functioning humidity 0-90% not condensed
Functioning temperature -30°C to +60°C
Control units usable GS300-Mc, BX444-Mc, BX308xp, BX308xp/Box, BX316xp, BX316xp/Box

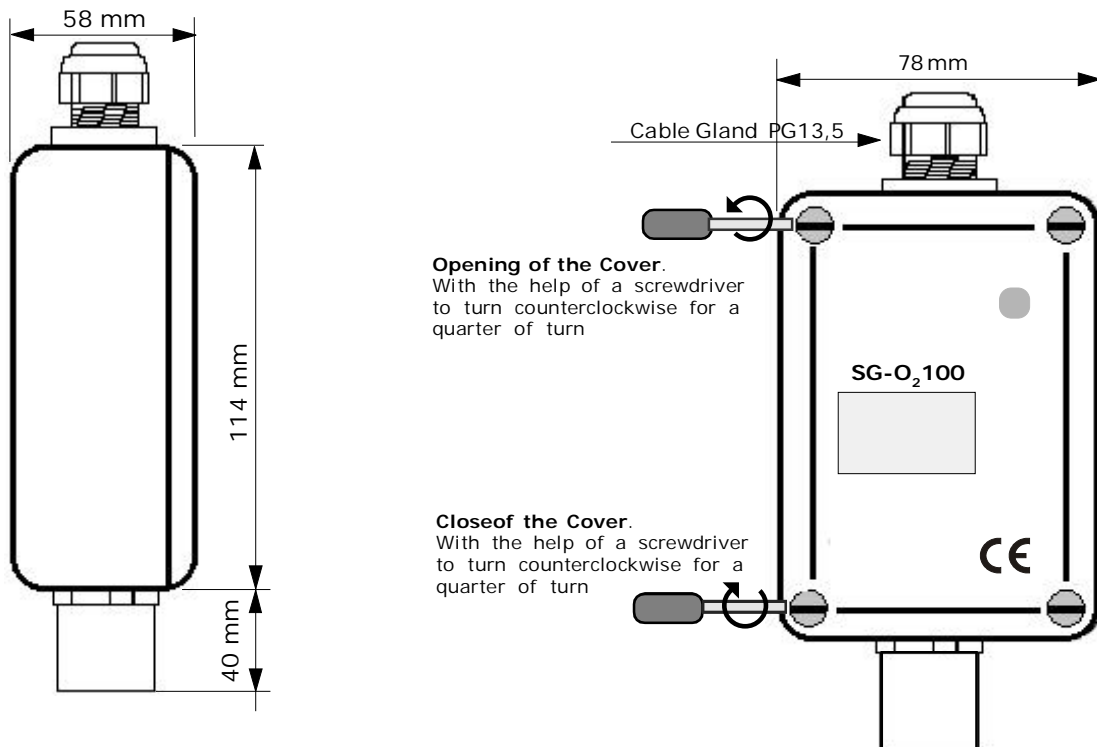
Cable diameter for connecting probe 1 mm for 100 mt
Section shielded cable transmission distance up to 500 meters 500mt 3 x 1
Connection: **The cable of connection of the probe must not be installed together with the power cables. Otherwise, make sure to use a shielded cable**

Installation wall mounted
Enclosure..... ABS self-extinguishing VDE0471
External degree of protection..... IP55
Overall dimensions 78x114x58 mm

Compatible control units

CONTROL UNITS	MOUNTING	PROBES Max.	DEGREE protec.	PRE alarms	ALARMS	POSITIVE SAFETY	OPERATING RANGE
GS300-MC unit	1 zone	Wall/cabinet	3	IP44	2	1	YES NO
BX444-MC unit	1 zone	Wall/cabinet	4	IP44	2	1	YES NO
BX308 unit	1 zone	Omega bar DIN	8	IP20	1	1	YES YES
BX308/Box unit	1 zone	Wall	8	IP65	1	1	YES YES
BX316 unit	2 zones	Barra Omega	16	IP20	1	2	YES YES
BX316/Box unit	2 zones	Wall	16	IP65	1	2	YES YES

Dimensions



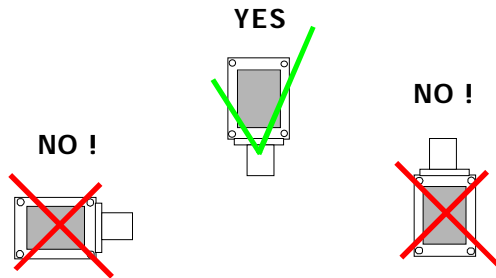
The installation of the detector is not exempt from The compliance with all regulations concerning the characteristics, installation and use of gas appliances. The ventilation of the spaces and the elimination of combustion products are described in the UNI norms according to ART. 3 LAW 1083 / 71 and relevant legal provisions.

Positioning of the Probe

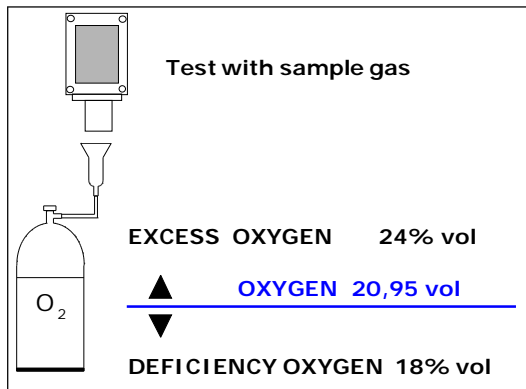
The positioning of the probe is an important factor for the correct functioning of the gas detection control unit. In order to obtain the maximum results from an appliance and minimize the probabilities of false alarms, we recommend to follow this diagram and to keep in mind the following general rules. The probe should be placed at a height of about 1.60 cm from the ground, if the height of the room should be higher is recommended to install it at an average height between ceiling and floor.

- **Average height environment** to detect: *volatile gases Oxygen*.

- The probe **should not be affected** by smoke, vapour, etc. as they could distort their measurement. It must be placed away from sources of heat, suction fans, ventilation fans



Gas Input Test



The installation of the **SGO₂100** probe, its ordinary and extraordinary maintenance, and its out of service removal at the end of the functional life guaranteed by the manufacturer, must be carried out by authorized or specialized personnel.

The general test should be performed by issuing gas from a pre-calibrated bottle within the percentages illustrated on the side.

Important: This test must be carried out at least once a year.

WARNINGS and technical features of the detecting sensor

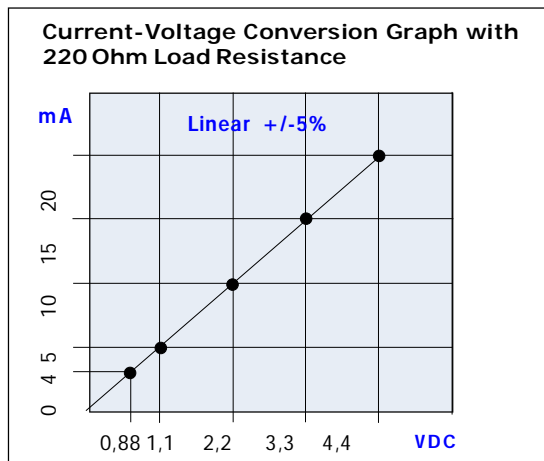
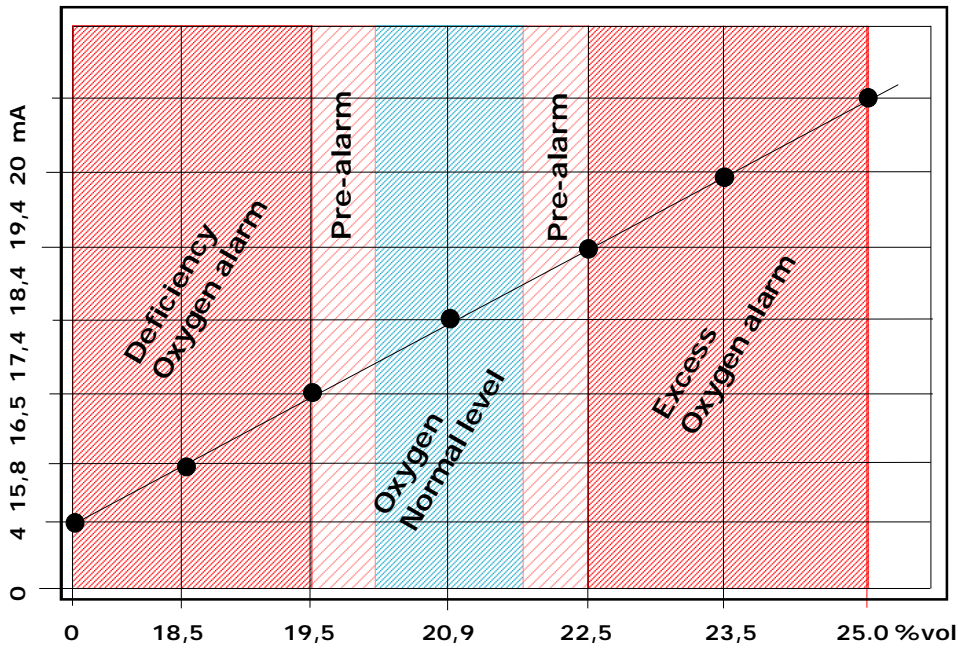
WARNING !!

The service life of the sensor technology "Optical fluorescence" in clean air is on average 5 years. At the end of this period indicated by the yellow led on, it is necessary to replace the sensor.

Periodic checks: it is strongly recommended to perform at least every 6 - 12 months the operating test of the detector as described in the section above "Gas Input Test"

Note:

The probe is not able to detect the concentrations of O₂ that occurring outside the room where it is installed
Operating temperatures from -30 ° C to + 60 ° C.



Troubleshooting before calling a technician

If the device does not start up.

Check that the 12÷24 VDC power is present, and that positive and negative polarity has not been inverted.

If the Fault LED lights up.

If the fault signal reaches the control unit connected to the probe.

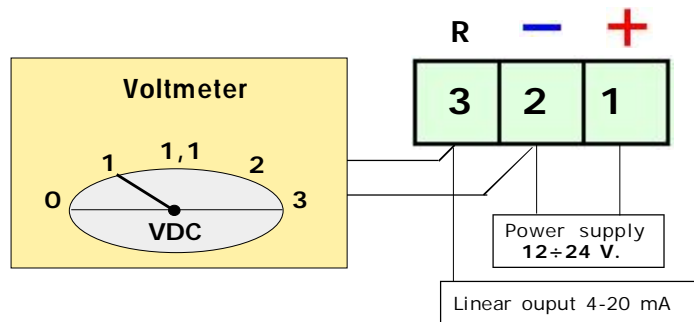
Check that the cables are connected according to the drawing, and that the wire isolation sheath has not been pinched.

Check the voltage at the terminals 1-2. It must be higher than 11 VDC and lesser than 25 VDC.

Check the voltage at the terminals 2-3. It must be from a minimum of 0.8 VDC to a maximum of 1.1 VDC.

WARNING

These measurement should be performed in clean air. Moreover, this test must be performed only with the probe connected to a control unit, or with a 220 Ohm resistance installed between terminal 2 and terminal 3.

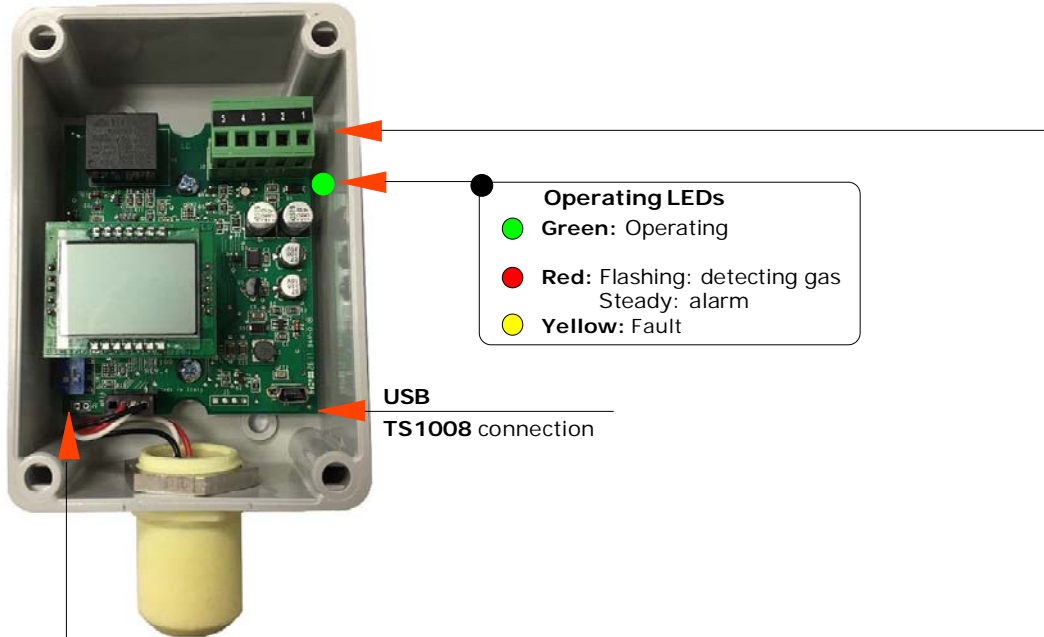


If other problems arise, a specialised and/or authorised technician and/or the Distributor of BEINAT S.r.l. should be contacted directly.



WARNING.

Before connecting to the mains power, ensure the voltage is correct. Carefully follow the instructions and the connections according to Regulations in force, keeping in mind that **the signal cables should be laid separate from the power cables.**

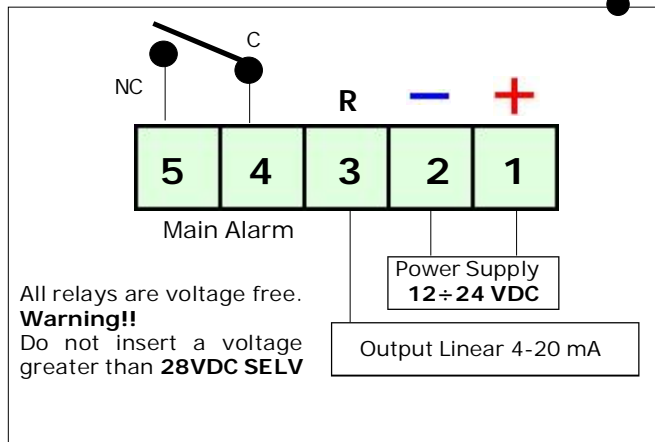




SWITCH 1 Positive safety
Position ON: Positive security enabled
Position OFF: Positive security disable

SWITCH 2 - Operating range.
Position ON:
 Alarm range 18.5 ÷ 23.5%

Position Off:
 Alarm range 19.5 ÷ 22.5%



Functioning of the Tester TS008

Connecting the tester **TS1008** it is possible to proceed to the control of the probe and print the test report.

ADC 80 16 (125 145)
 probe sg-0₂100
 sn 24ad12
 date 15 2014
 DaY 2190
 cy 5
 al 15
 drift 12
 range 20
 lcl 20% (fault)
 print
 tar
 new save
 low bat

Legend of display

Display "ADC" shows the decimal value of the capsule and the type of "GAS"
 Displays the type of probe,
 Displays the serial number,
 Displays the manufacture date,
 Displays the remaining days at the end of the operating cycle.
 Displays how many times the probe has been turned on.
 Displays how many times is gone into alarm
 Displays how many corrections have been done
 Displays the operating range if at 20 or at 100% of LEL
 Displays the percentage of dispersed gas
 Displays if the probe is in fault
 Indicates if you want to print the ticket
 Indicates if you want to reset the probe to the data factory.
 Asks to save the modified data
 Indicates when the battery is low



WARNING! Actions to be taken in case of alarm

The oxygen " O_2 " is an odorless gas, colorless, slightly heavier than air (has density relative to the air of 1.1).

It is not a flammable gas but being a strong oxidant, it reacts with combustible and reducing materials causing risks of fire and explosion because it enhances the combustion.



The oxygen is the 20,95% of the air we breathe.

DEFICIENCY

If the concentration of the O_2 in the air drops below **19.5%**, it is considered deficient for health of people, then if the concentration drops below **16%**, it causes breathing problems until to cause the asfisia and below **6%**, it causes the immediate death.

To keep in mind that the oxygen deficiency can be caused by phenomena of combustion, from the increase in the air of other gas (toxic and / or flammable), but also from the leaks of inert gases (nitrogen, helium, argon, etc.).

EXCESS

At high concentrations, **over 24%**, the O_2 is irritating to the respiratory tract and can cause effects on the central nervous system, the eyes and the lungs, which can be damaged by the inhalation of high concentrations.

In any case, open doors and windows to increase the ventilation. If the alarm continues and the cause can not be identified leave the bulding and, from the outside, to call emergency services.

Warning!!

If you have symptoms of vomiting, sleepiness or other, go to the nearest **emergency** medical service warning the doctor that the cause may be due to the **deficiency or excess of oxygen**



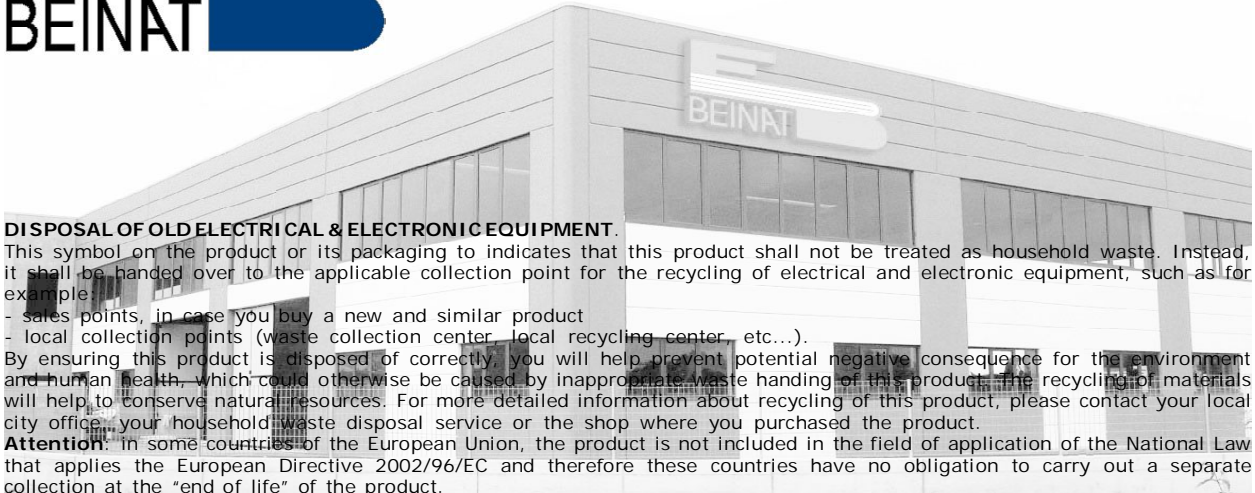
INSURANCE. This device is insured by the SOCIETÀ REALE MUTUA for the PRODUCT'S GENERAL LIABILITY up to a maximum of 1,500,000.00 EURO against damages caused by the device in case of failures in functioning.

WARRANTY. The warranty term is 3 years from manufacturing date, in agreement with the following conditions. The components acknowledged as faulty will be replaced free of charge, excluding the replacement of plastic or aluminium cases, bags, packing, batteries and technical reports.

The device must arrive free of shipment charges to **BEINAT S.r.l.**

Defects caused by unauthorized personnel tampering, incorrect installation and negligence resulting from phenomena outside normal functioning shall be excluded from the warranty.

BEINAT S.r.l. is not liable for possible damage, direct or indirect, to people, animals, or things; from product faults and from its enforced suspension of use.



DISPOSAL OF OLD ELECTRICAL & ELECTRONIC EQUIPMENT.

This symbol on the product or its packaging indicates that this product shall not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment, such as for example:

- sales points, in case you buy a new and similar product
- local collection points (waste collection center, local recycling center, etc...).

By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Attention: In some countries of the European Union, the product is not included in the field of application of the National Law that applies the European Directive 2002/96/EC and therefore these countries have no obligation to carry out a separate collection at the "end of life" of the product.



Sensor **SG-O₂100** *Lo styling è della b & b design*


Stamp and signature of the dealer

Purchase date:

Serial Number :

The Beinat S.r.l. following the targhet to improve its products, reserves the right to modify the technical features, aesthetic and functional any time without prior notice.

BEINAT S.r.l. Via Fatebenefratelli 122/C
10077, S. Maurizio C/se (TO) - ITALY
Tel. 011.921.04.84 - Fax 011.921.14.77
[http:// www.beinat.com](http://www.beinat.com)

 **Business** - info@beinat.com
Help Desk - laboratorio@beinat.com