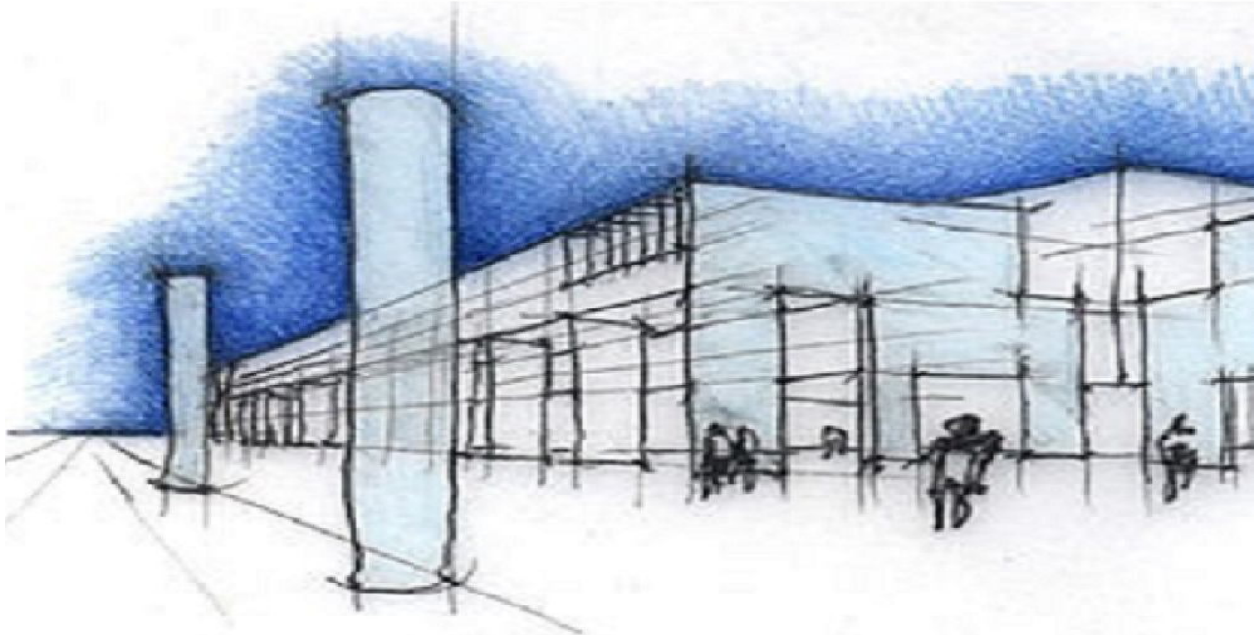


# Gas Detection Addressable Sensor SGF101

V. 1



Always attentive to the needs of a highly technological modern market and demanding of modern antiques, **BEINAT S.r.l.** has designed a gas detection probe intended for an installation for both residential and industrial environments..

In fact, the new stand-alone probe **SGF101** has the prerogative to control through sensors catalytic technology the presence of **Gas Methane**.

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 a serial **RS485**

Furthermore with this probe it is possible:

- 1) To select the working range to 20% of the LEL or 100% of the LEL
- 2) 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, **certifying your own work...**



**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.



### 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><b>Installation and user guide</b></p>	<p><b>CONFORMITY</b></p> <p>EN 50194  EN 50270  Compliant EN 60079-29-1  Installation EN 60079-29-2</p>
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## 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 **SGF101**, 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 box **must not** be pierced, entail loss of degree of protection.

#### Do not allow it to become wet.

The sensor can be seriously damaged if immersed in water. Remember that the probe has an **IP64** protection

#### 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.

**The installation of the detector does 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.

## Technical specifications

Power supply ..... **12÷24 VDC** ± 10%  
Power demand ..... 110 mA Max @ 13,8 VDC  
Relay switching alarm ..... 1 A 30VDC SELV  
Selection of positive safety..... Selectable by switch  
Sensor's faults detected by Fault Circuit ..... Interruption, short circuit, or decay

### Notifications

- 1) Green led. Regular operation; standing by the LED blinks
- 2) Red LED. Alarm state; the lighting frequency changes according to the percentage of gas monitored.
- 3) Yellow LED. The probe detects a fault condition, FAULT
- 4) Led signal data transmission **RX TX**

Type of gas detected: **Methane**

Integrated sensor.....Catalytic  
Operating range of the sensing element ..... 0 - 100% of LEL  
Operating range selectable by switch ..... 0 ÷ 20% of LEL, or at the choice 0 ÷ 100% of LEL  
Data transmission signal ..... Serial RS485 protocol modbus **RTU**  
Address ..... Rotary Switches  
Detector accuracy ..... +/- 1% FS  
Long term shift in clean air ..... < 3% of L.E.L.  
Auto zero procedure ..... Included in the software algorithms  
Response Time ..... < 10"

Functioning humidity ..... 0-90% not condensed  
Functioning temperature ..... -10°C to +50°C  
Control units usable ..... BXI32, TAKITJ8

Cable diameter for connecting probe ..... 1 mm for 100 mt  
Section shielded cable transmission distance up to 500mt ..... 3x0,75  
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**

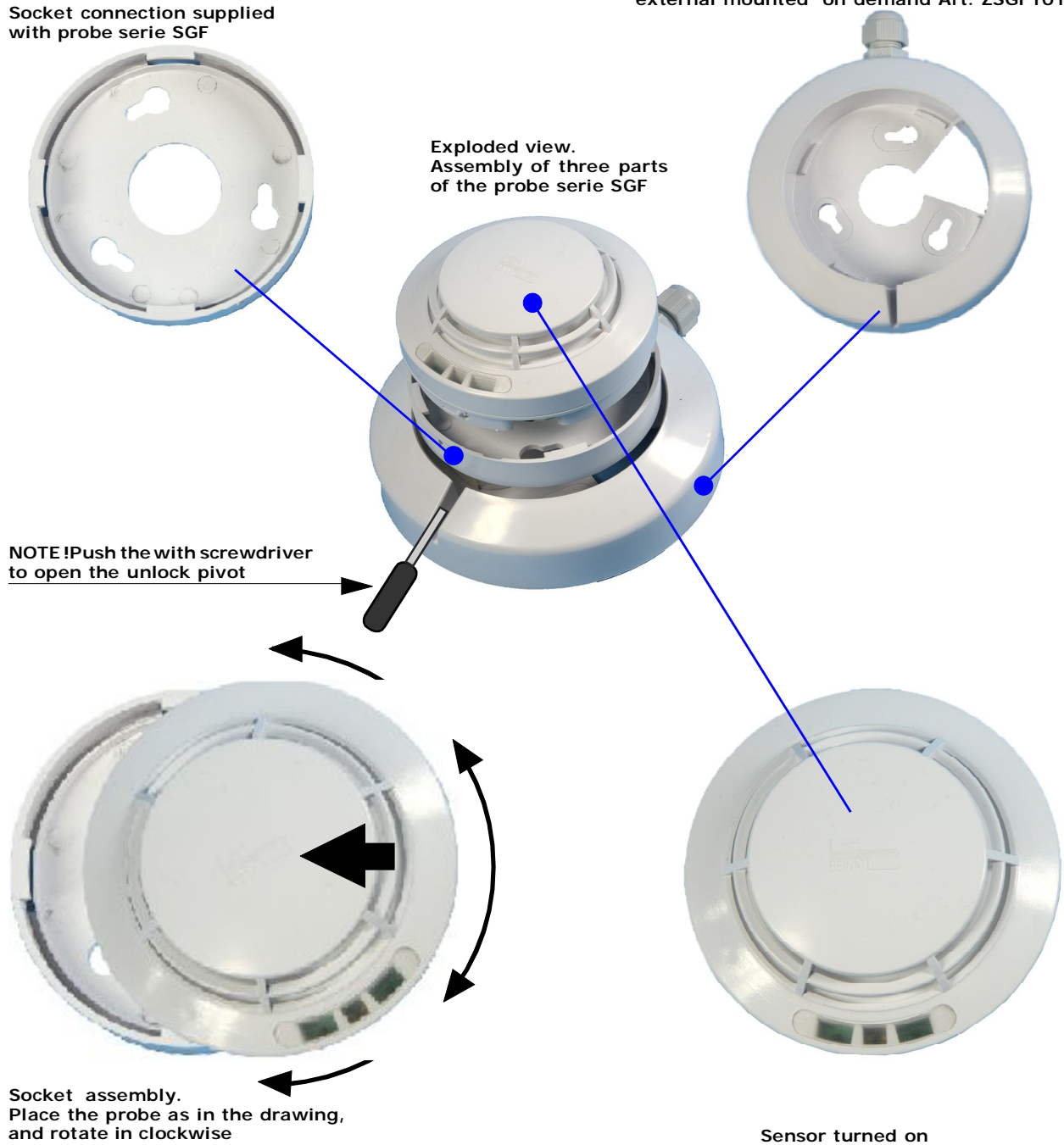
Installation ..... ceiling or wall mounted  
Anti-tamper protection ..... included  
Enclosure..... ABS self-extinguishing VDE0471

**External degree of protection**..... **IP64**  
Overall dimensions ..... diameter 90 mm

## Assembly

Socket connection supplied with probe serie SGF

Socket connection with cable gland for external mounted on demand Art. ZSGF101



### WARNING! Actions to be taken in case of alarm

- 1) Put out all free flames.
- 2) Close the main gas tap or the LPG cylinder tap.
- 3) Do not turn any lights on or off; do not turn on any electrical device or appliance.
- 4) Open windows and doors in order to increase ventilation.

If the alarm stops, its cause must be found and the relevant consequent measures taken.

If the alarm continues and the cause of gas presence cannot be found or removed, abandon the building and call the emergency services when outside (fire department, distributors, etc.)

**IMPORTANT:** The operation test should not be carried out with the gas tap as this does not guarantee a sufficient concentration to activate the general alarm.

#### Warning !!

If you have the following symptoms: vomiting, sleepiness, or else, go to the closest first aid station and inform the operators that you could have been poisoned by **Gas Methane**

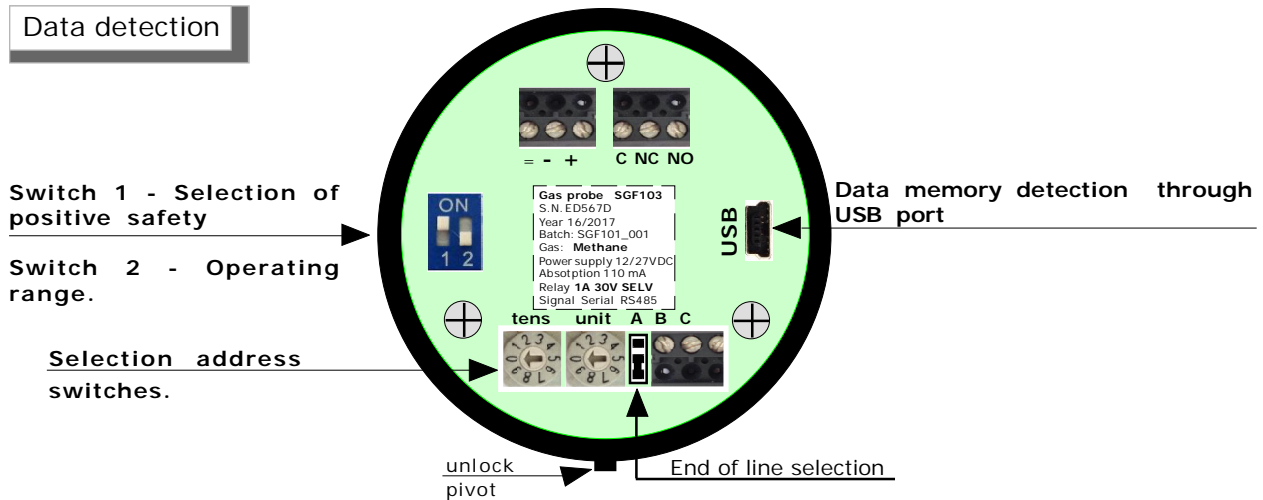




**Operating LEDs**

- 1) Green Led. Regular operation; waiting for the led blinks
- 2) Red Led . Alarm state; The lighting frequency changes according to the percentage of gas monitored.
- 3) Yellow Led. The probe detects anomaly, FAULT

**Data detection**



**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.

**Legend of display**

**ADC 80 16 (25 145)**  
**probe sgF101**  
**sn 24ad12**  
**date 15 2017**  
**DaY 2190**  
**cy 5**  
**al 15**  
**drift 12**  
**range 20**  
**lel 20% (fault)**  
**print**  
**tar**  
**new save**  
**low bat**

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



## 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 must be located at different heights, according to the type of gas. These heights are:

- **On ceiling or within 30 cm** from the highest point of the ceiling to detect **Light gases: Methane,**

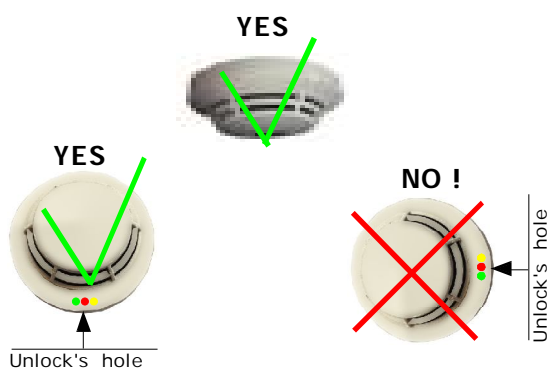
- The probe **should not be placed** near the appliances to be controlled (boilers, burners, industrial kitchens, etc.) but on the opposite wall.

- 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

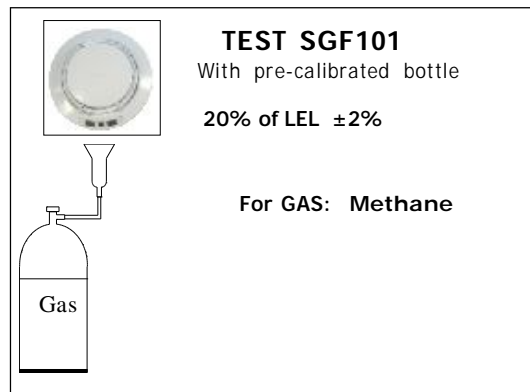
### Note !

When the probe is mounted on the ceiling, the position is not obligatory.

When is mounted on the **wall**, the **position is obligatory**, See pictures below.



## Gas Input Test



The installation of the **SGF101** 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 Characteristics of the Detecting Capsules

### WARNING!

The CATALITIC sensor has a life span of 5 to 6 years in clean air.

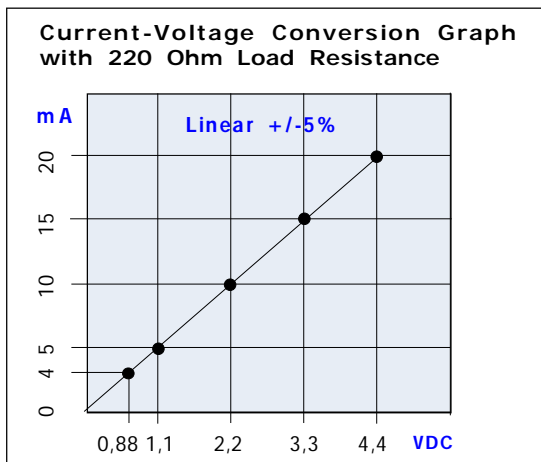
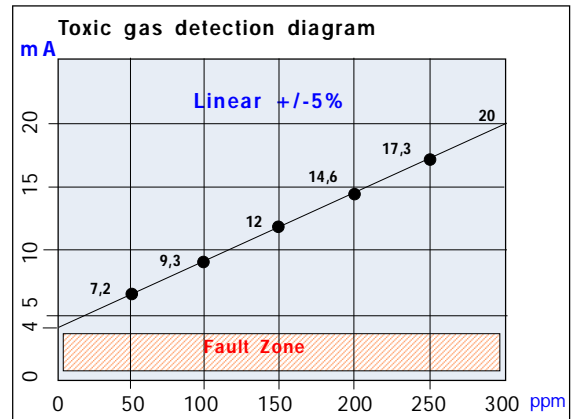
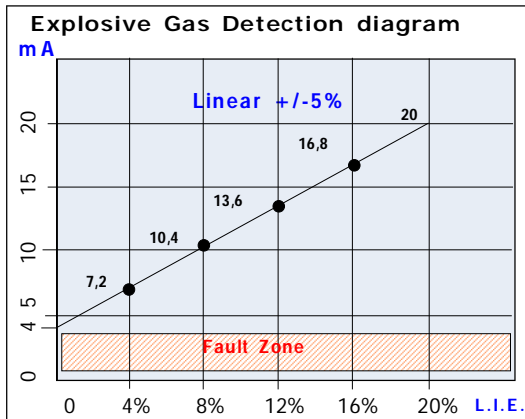
The working temperature of the probe recommended is from  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .

Every puffy snapshot of gas over 100% of L.I.E. Takes months off the sensor.

Each immediate puff of gas that exceeds 100% of L.E.L. takes away months of life from the sensor.

The detector must be tested by simulating the presence of gas by issuing it from a pre-calibrated testing aerosol.

## Data detection diagrams



## 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.

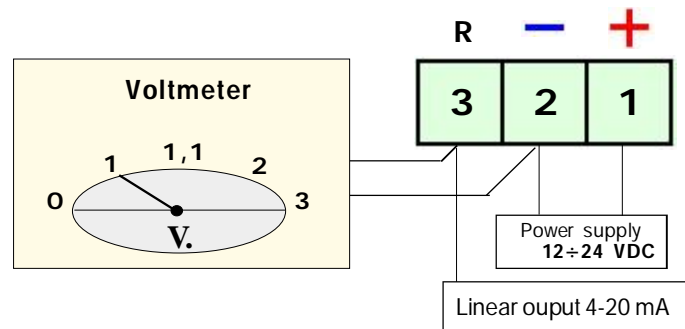
Check the voltage at the terminals 1-2. It must be higher than 10,80 Vdc and lesser than 26,4 Vdc.

**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.

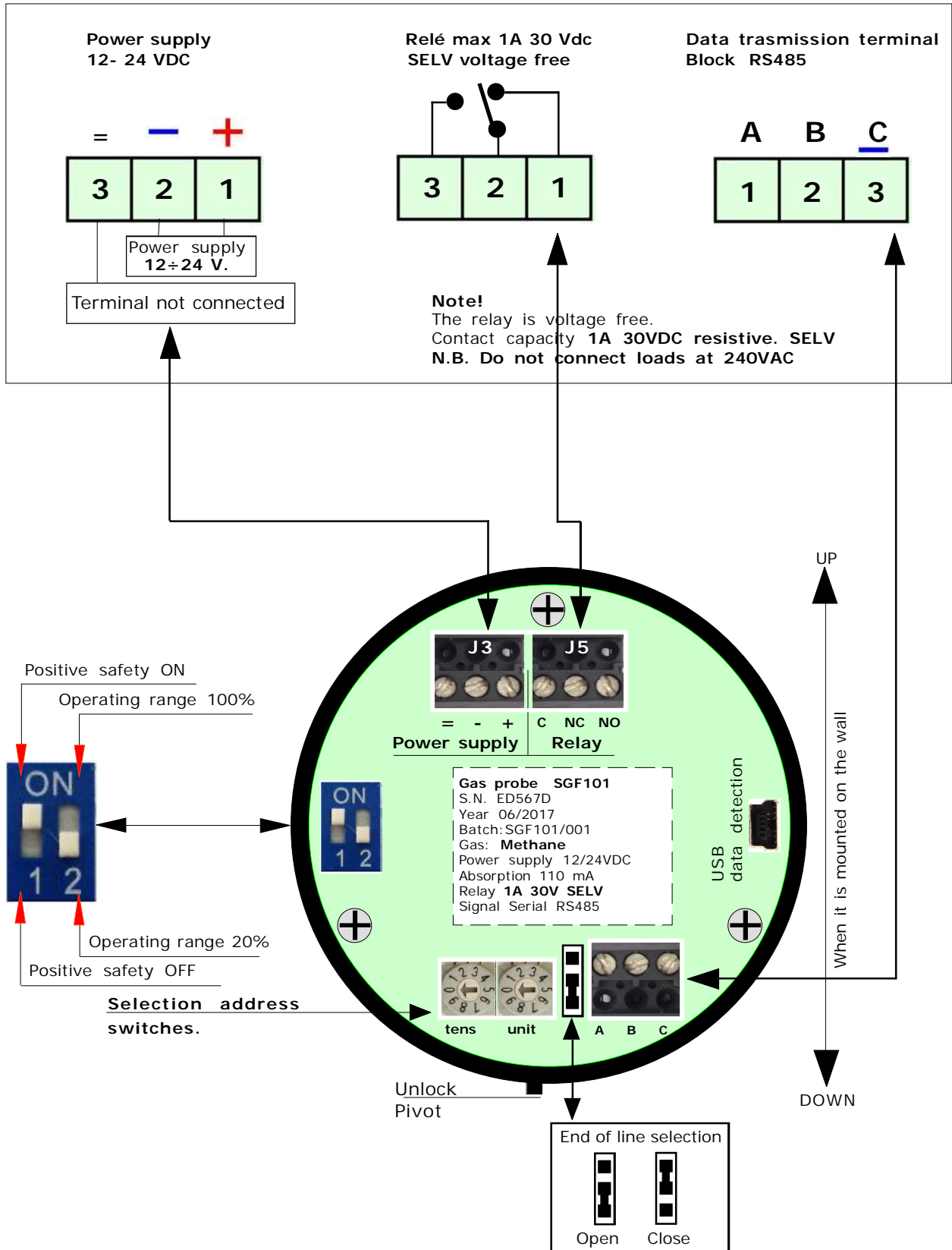


If other problems arise, a specialised and/or authorised technician and/or the Distributor of BEINAT S.r.l. should be contacted directly.

## Electrical connections

### WARNING

Before connecting to the 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.



**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.



Made in Italy

Sensor **SGGF101**

*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.**

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