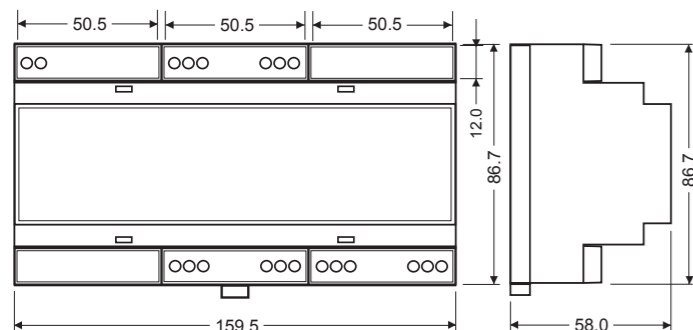
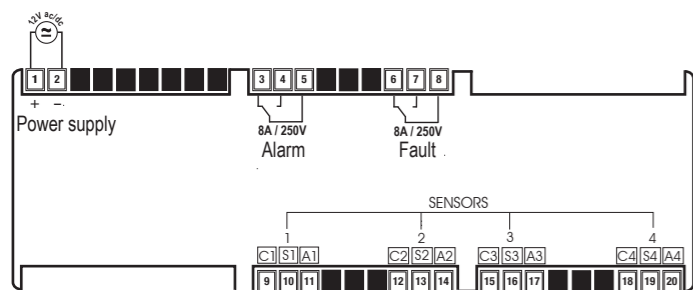




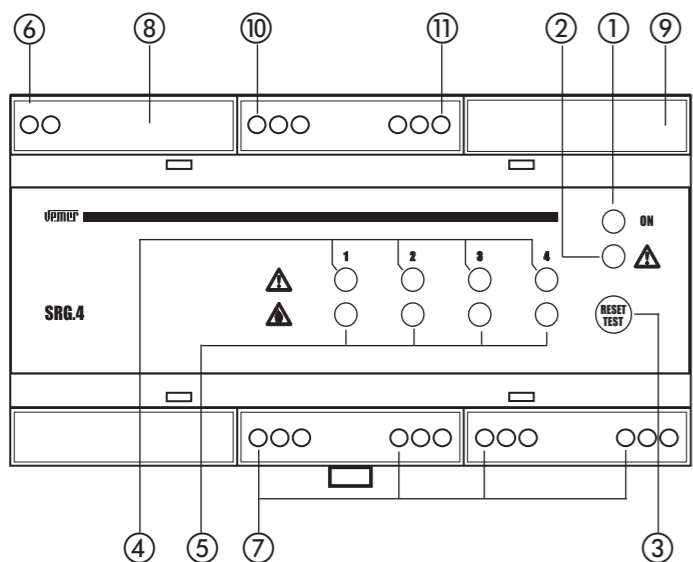
### Dimensions



### Connection diagram



### Description



## User manual

### SRG.4 - CONTROL UNIT FOR GAS DETECTOR

Read all the instructions carefully

- The **SRG.4** is a control unit for the creation of gas detection systems in areas such as boiler rooms, workshops, warehouses, laboratories, etc. It is designed to work with probes such as CO Sensor, CH<sub>4</sub> Sensor and LPG Sensor. It offers the possibility to control a solenoid valve or an auxiliary device (siren, flasher, etc.) using an alarm relay contained inside. The alarm or failure is displayed by LED.

### SAFETY WARNINGS

- To ensure correct installation, you must comply with the following indications:*
- The device must be installed by a competent person**
  - The device must be installed in a panel where, after installation, the terminals can no longer be accessed**
  - In the electrical system up the line from the energy meter there must be a device to protect against overloads**
  - Connect the instrument following the diagrams shown in this sheet and in the product marking**
  - Before accessing the terminals, make sure the leads to connect to the instrument are not electrically live**
  - Do not power and connect the instrument if any part of it is damaged or missing.**

Codice	Model	Description
VE203600	SRG.4	Gas detector with 4 connecting sensor
VE205100	CH <sub>4</sub> SENSOR	Methane detection sensor
VE206900	LPG SENSOR	LPG sensor
VE207700	CO SENSOR	Carbon monoxide sensor

### TECHNICAL CHARACTERISTICS

#### Control unit SRG.4

- Power supply:
  - Voltage: 12V ac/dc  $\pm 10\%$
  - Power consumption with 1 probe: ~ 160mA
  - Power consumption with 4 probes: ~ 280mA
  - Connection: terminals of 2.5 mm<sup>2</sup>
  - Protection: fuse 1A 5x20mm
- Inputs:
  - 4 inputs for CH<sub>4</sub> Sensor (methane), LPG Sensor (LPG), CO Sensor (CO).
  - Connection of probes: terminals of 2.5 mm<sup>2</sup> per probe
  - Max. connection length: 50m for each probe
  - Cross-section of the leads: 1.5 mm<sup>2</sup>
- Output:
  - Alarm: relay with exchange contact 8A/250V AC
  - Failure: relay with exchange contact 8A/250V AC
  - Connection: terminals of 2.5 mm<sup>2</sup> for relay C-NC-NO
- Luminous signals:
  - 1 green LED: power supplied
  - 1 yellow LED: general failure
  - 4 yellow LED's: failure for each probe line
  - 4 red LED's: gas alarm for each probe line
- Reset/test button for alarm reset and probe test functions
- Degree of protection: IP20; IP40 when correctly installed in an electrical panel
- Ambient temperature: 0  $\div$  +50°C
- Humidity:  $\leq 90\%$  R.H. without condensation
- Product for assembly on 9-module DIN rails

#### Sensors for SRG.4 control units

- Power supply: from the control unit SRG.4
  - Current input (at 6.5V): 40mA
  - Connections: terminals of 2.5 mm<sup>2</sup> for probe C (common), S (signal), A (power 6.5V dc)
- Models and calibration:
  - Methane gas: CH<sub>4</sub> Sensor, (default) 10% LIE of methane
  - LPG: LPG Sensor, (default) 12% LIE of isobutene
  - Carbon monoxide: CO Sensor, (default) 200ppm of CO
- Container: in self-extinguishing plastic material
- Pasted to wall using screws and plastic plugs
- Protection: IP30
- Ambient temperature: 0  $\div$  +50°C
- Humidity:  $\leq 90\%$  R.H. without condensation

### INSTRUMENT DESCRIPTION

- Led power supply
- Led signaling general failure
- Reset/Test button
- Led signaling failure probes
- Led signaling gas alarm
- Power supply terminals
- Connection probes terminals
- Protection fuse 1A
- Set-up jumper
- Terminals for alarm output relay
- Terminals for failure output relay

### INSTALLATION

Do not use the device in excess of the limits set forth in the technical data. The installer is responsible for correct, safe installation of the product. Use care during shipping, storage and handling.

- Protection of the device.  
To ensure the proper degree of protection of the unit, it is necessary to install the control unit in an electrical panel constructed in accordance with current standards for the workplace, and inside of which the power supply system can also be housed. The control unit can be installed at the bottom of the panel or in DIN modular panels.

The LPG, CO and CH<sub>4</sub> Sensors are designed to be wall-mounted (vertically), using screws and plastic plugs. To proceed with installation, open the container by unscrewing the screw located on the side. Make sure not to damage the sensor and not to touch the calibration devices.

- Installation of the product.  
The correct installation of the probe is essential to proper operation of the system. Therefore, it must be installed:
  - In areas with circulation of natural air;
  - In areas that are not subject to dust or dirt that may render the sensor inoperative;
  - Near jets of water, intake grilles, openings, etc.
  - At an adequate distance from users of gas so as to prevent the system from intervening improperly due to functional leakage.
 Also, positioning depends on the type of gas to be detected, specifically:
  - CH<sub>4</sub>: Methane gas - at top, about 20-30 cm from the ceiling
  - LPG: LPG - at bottom, about 20-30 cm from the floor
  - CO: carbon monoxide - about 1.5 m from the floor

For new systems, the probe must be installed as late as possible, so that typical construction site activities do not damage the detector.

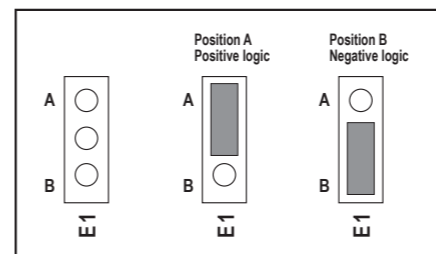
**Attention: make sure you check operation at least once a year, and in any case whenever there is an extended period of disuse or in the event of replacement. Any tampering may compromise correct operation of the system.**

- Connections and use of the product.  
Normal electrical cables can be used for connections. In any case, when installation is in places that are strongly exposed to electromagnetic disturbances, it is advisable to use shielded cables. The detection system must always be in operation. Therefore, the electrical power supply of the detector must not include switches or other devices that may accidentally shut it off. The power supply of the control unit must comply with the required values and the current in put of any device connect to the terminals of the relay must be less than or equal to the maximum capacity of the contacts. The average lifespan of the probes is 5 years from the date of installation. Therefore, at the end of that time they will need to be replaced.

**Attention: in the case in which in every single terminal block of the control unit missed the probes, there must be a resistance of 18KOhm 1/4 W 5% between C and S furnished in the box.**

### OPERATION

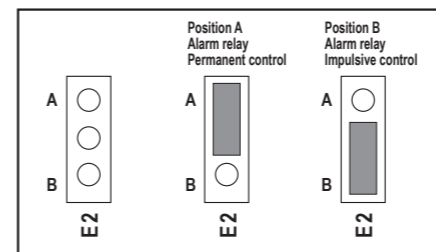
Once the device has been installed, you will need to select the operating logic using jumper E1. It can be either positive or negative. The control unit signals its operating status by means of LED's.



Depending on the logic selected using jumper E1, in a normal situation (no alarms), the LED's and the relay will be:

- positive logic: LED on, relay energized
- negative logic: LED off, relay de-energized

If negative operating logic is selected, the alarm relay may be controlled in permanent or impulsive mode, depending on the position of jumper E2:



Once powered on, the control unit performs the following phases in sequence:

- Buzzer test (duration about 5 seconds) which causes sequential lighting of the LED's and a brief ringing of the buzzer.
- Pre-heating of the probe (which lasts about 1 minute), during which the detection system is not operational because this allows the probes to reach the correct operating temperature.
- Operational test (which lasts about 3 minutes) during which the power supply LED flashes with a frequency of 2Hz and all time settings are reset to zero to make it easier to check the probes. Press the Reset/Test for about one second to interrupt the operational test phase and check the probes.
- Gas alarm test, which occurs by placing the test spray can near the probe and releasing a small amount of gas. Do not direct the spray directly onto the sensor of the probe, as it may damage it irreparably. The control unit will signal the alarm in the following manner:

Interface	Positive logic	Negative logic
Led (red) for alarm of concerned probe	Off	On
Alarm buzzer	Continuous sound	Continuous sound
Alarm relay	De-energized	Energized (permanently or in impulsive mode)

Press the Reset/Test key for one second to silence the alarm (if the gas is no longer present) and end the test phase. To restart the test phase, press the corresponding button for about 6 seconds.

- Probe anomaly test, which is to be simulated simply by disconnecting the concerned probe cable and checking the following signals:

Interface	Positive logic	Negative logic
Led (yellow) for failure of concerned probe	Off	On
Alarm buzzer	Intermittent sound	Intermittent sound
Failure relay	De-energized	Energized

Once the test has been made, re-connect the probe and press the Reset/Test button to restore the control unit to normal operation.

### Normal operation

During normal operation of the control unit, both the monitoring for gas alarm and the self-diagnosis for plant anomalies (probes) and systems anomalies (control unit) are active. In this phase and with no alarms or failures, the control unit status is as follows:

Interface	Positive logic	Negative logic
Led (green) for power supply	On	On
Led (yellow) for general failure	On	Off
Led (yellow) for probe failure (4)	On	Off
Led (red) for general alarm and line failure (4)	On	Off
Alarm buzzer	No sound	No sound
Alarm relay	Energized	De-energized
Failure relay	Energized	De-energized

In presence of gas alarm or probe failure, the central unit goes into the same conditions described in the relatives test phase.

### REFERENCE STANDARDS

Conformity to the EU directives  
2006/95/EC (Low Voltage)  
89/336/EC modified by 92/31/ECC and 93/68/EEC (E.M.C.)  
is declared with reference to the following harmonised standard:

**EN 61779-1, EN 50270**