

# Sensigas®

## LPG and Methane gas detectors

for homes, recreational vehicles and similar uses

Conformity standard CEI 216-8

**ESN.I.P..**  
for LPG

**ESN.I.G..**  
for Methane gas



LPG and Methane gas detectors for homes, recreational vehicles and similar sites.

230Vac, 12Vac/dc or 12...24Vac/dc power supply, depending on the model.

Relay command output with double insulation voltage free contact, so suitable for any kind of solenoid valve or other command and alarm device.

Possibility of parallel connection of more than one detector, also for monitoring different gases.

**Use** The ESN.I.P./G detectors can be used to provide a visual/audible alarm and to control a gas shut-off valve (and to control other alarm transmitters or actuating devices), where there are abnormal concentrations well below the LPG or Methane gas hazard threshold.

**Operation** The detector will enter a warm-up phase after power-up; this will take about 60" and during this time the detector is inoperative. At the end of the warm-up phase, the detector enters normal operation mode, and will continue in this state until it detects gas.

**Gas detection** In this case, so when the gas concentration exceeds the threshold set-points, the detector senses its presence and goes into the alarm condition indicated by the red LED coming on and by the sound of the integrated buzzer. After about 20s, the internal relay is switched to transmit a command to shut off the solenoid valve and any other shut-off or alarm devices. Once the alarm condition is normalised, the detector is restored to its normal operating status. Depending on the type of system constructed, it may be necessary to manually reset the solenoid valve to restore gas flow at the dedicated reset device.

### Available models and ordering information

Power supply	230Vac	12Vac/dc	12...24Vac/dc
<b>Detector</b>			
<b>Recessed</b>	ESN.I.P./G.x	ESN.I.P./G.x.D	ESN.I.P./G.x.E
<b>Wall-mounted</b>	ESN.I.P./G.x + ESN.KW	ESN.I.P./G.x.D + ESN.KW	ESN.I.P./G.x.E + ESN.KW
<b>Table-top</b>	ESN.I.P./G.x + ESN.KT	ESN.I.P./G.x.D + ESN.KT	ESN.I.P./G.x.E + ESN.KT
<b>Table-top (precabled)</b>	ESN.I.P./G.x + ESN.KC	ESN.I.P./G.x.D + ESN.KC	ESN.I.P./G.x.E + ESN.KC

The letter A or B inserted in field x of the product order number indicates the type of detector, i.e.:

**A** = with relay command output

**B** = without relay command output (visual/audible alarm)

## Operational table

Detector status	Outputs				
	LED GREEN	LED YELLOW	LED RED	BUZZER	RELAY
Off	OFF	OFF	OFF	OFF	OFF
Sensor warm-up (60 seconds)	ON	ON	OFF	OFF	OFF
Normal operation	ON	OFF	OFF	OFF	OFF
Sensor fail	ON	ON	OFF	OFF	OFF
Alarm	ON	OFF	ON	ON	ON
Operational test	like in alarm, for the time the button is pressed down				

Key: **ON** = steady on / activated / switched

**OFF** = off / deactivated / not switched

## Installation and Commissioning

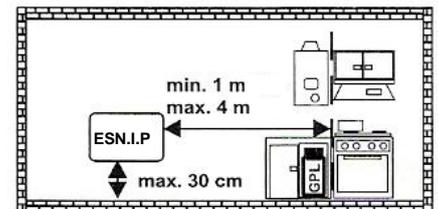
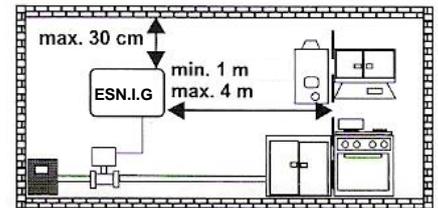
Ensure compliance with standards in force for electrical wiring. The devices must be connected to the mains and remain permanently powered. Omnipolar disconnection must be included in the mains. Carefully read the instructions and electrical wiring diagrams in this document and follow them to the letter. Keep this document in a safe place for future consultation.

The device must be installed by qualified technicians.

The detector **must** be installed:

**Methane Gas:** since this gas is lighter than air, it will be concentrated close to the ceiling. Install it about two metres from the gas device and about 30 cm from the ceiling.

**For LPG (liquid gas in cylinders):** since this gas is heavier than air, it will be concentrated close to the floor. Install it about two metres from the gas device and about 30 cm from the floor.



The detector **must not** be installed:

- outdoors
- near stoves and cooking appliances
- near sinks and taps
- near exhaust hoods, windows, fans etc.
- in areas where dirt and/or dust can clog the front grille of the detector
- where the temperature or humidity exceeds the detector's operating limits
- in closed spaces (behind curtains, inside cupboards etc.).

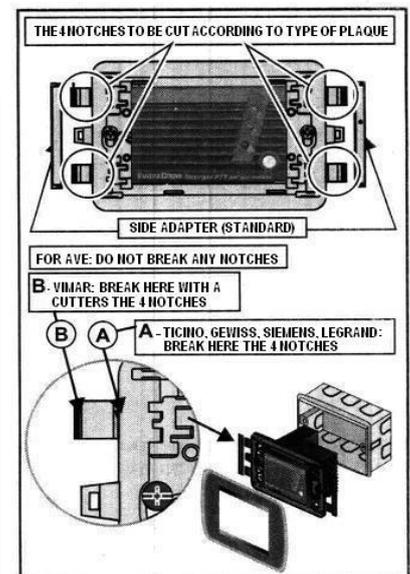
depending on the model purchased, the detector can be mounted:

1. directly in type 503 recessed mounting box
2. screwed onto the wall with adapter ESN.KW
3. on a shelf in the table-top version, using adapter ESN.KT/KC.

Before fixing the detector to box 503 or to adapter ESN.KW or ESN.KT/KC, the bracket needs to be adjusted to the backing plate selected from major manufacturers of recessing equipment (see Table 1) and, if necessary, two side adapters need to be inserted to cover the side gap created when using some plates.

**Table 1**

<u>Manufacturer:</u>	Side adapters	Tabs to remove
<b>AVE</b> SISTEMA 45 and BANQUISE	YES	None
<b>BTICINO</b> Living international and Light	NO	A
<b>GEWISS</b> PLAYBUS and PLAYBUS Young	YES	A
<b>SIEMENS</b> DELTA FUTURA GRAPHIT	YES	A
<b>VIMAR</b> IDEA and RONDO'	YES	B



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## Commissioning

Power up the detector and check that all the warm-up and normal operation phases are executed.

Carry out an operational response test by pressing the button on the front (or use a dedicated LPG calibration canister with dosing valve and release a small amount of gas near the front grille) to check the correct engagement of the solenoid valve and other command and/or alarm device connected to the relay; it is advisable to repeat the operational test at least once a year, or after a prolonged period of stoppage.

If other test methods are used instead of the one described the detector may generate different, unexpected responses. In particular, the use of inappropriate substances or vapours (alcohol or silicon-based solvents etc.) or in any case, high concentrations of test gases could cause permanent damage to the sensing element and may cause the detector to operate incorrectly.

The detector needs no periodic maintenance, with the exception of the periodic operational test and its replacement 5 years after the installation date.

Do not tamper with or open the device: danger of electric shock and/or malfunction.

Use a wet cloth and mild detergent to periodically clean the device.

Do not use aggressive detergents like alcohol, ammonia, solvents etc.

Before cleaning the detector, switch off the system power supply to avoid the risk of electric shock.

## Warning

The detector and its sensing element have been designed for ongoing use in areas where there is permanent occupation by people, so normally pollution-free.

The presence of gases or vapours from some substances such as alcohol, silicones or solvents found in some detergents or polishes, or from the fumes generated by cooking may cause inappropriate action of the detector and in the long term could affect the reliability of the device.

The particular Methane and LPG odorization made by the distributor, together with the high sensitivity of the human olfactory apparatus, make it possible to smell the presence of these gases already at extremely low concentrations, so a lot earlier than the detector. For operational and regulatory reasons, the detector is calibrated to take action at a higher threshold which is still very far below the hazard threshold.

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## In the event of alarm

If an alarm goes off, stay calm, put out flames, switch off the gas or LPG cylinder at the meter, do not switch on or off lights or any electrical appliances or equipment, open doors and windows to increase the flow of fresh air.

If the alarm stops, it is necessary to find out what set it off and take consequent action.

If the alarm continues and the reason for the presence of gas cannot be determined or eliminated, leave the building and contact emergency services.

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## Technical specifications

Power supply (see available models)	230Vac $\pm$ 10% or 12Vac/dc $\pm$ 10% or 12...24Vac/dc
Frequency	50/60Hz
Consumption	2 VA
Command outputs	SPDT relay - capacity of the contact 250Vac 5(3)A
Alarm threshold	9% of L.E.L <sup>(1)</sup> of the Methane or LPG, depending on the model
Operational lifetime of a detector	5 years from installation
Max detectable area	approx. 40 m <sup>2</sup>
Visual warnings	Green LED (power is on) Yellow LED (warm-up / sensor fail) Red LED (gas alarm)
Audible alarms:	Piezoelectric buzzer 85dB at 1m
Protection Rating	IP42 when correctly installed
Product conformity standard	CEI216-8
 EMC Electromagnetic Compatibility Low voltage (LVD)	EMC 2014/30/EU – EN50270 LV 2014/35/EU – EN60669-1
Operational room temperature	-10...+40 °C
Ambient humidity allowed:	30...90% RH (non condensing)
Dimensions	For installation in 503 type recessed mounting box <ul style="list-style-type: none"><li>• 142 x 100 x 72mm with ESN.KW wall-mounting adapter</li><li>• 142 x 120 x 100mm with ESN.KT/KC table-top adapter</li></ul>
Enclosure	ABS/PC UL94-V0 flame retardant

(1) LEL = Lower Explosive Limit

## Connection diagrams

### Wiring diagrams:

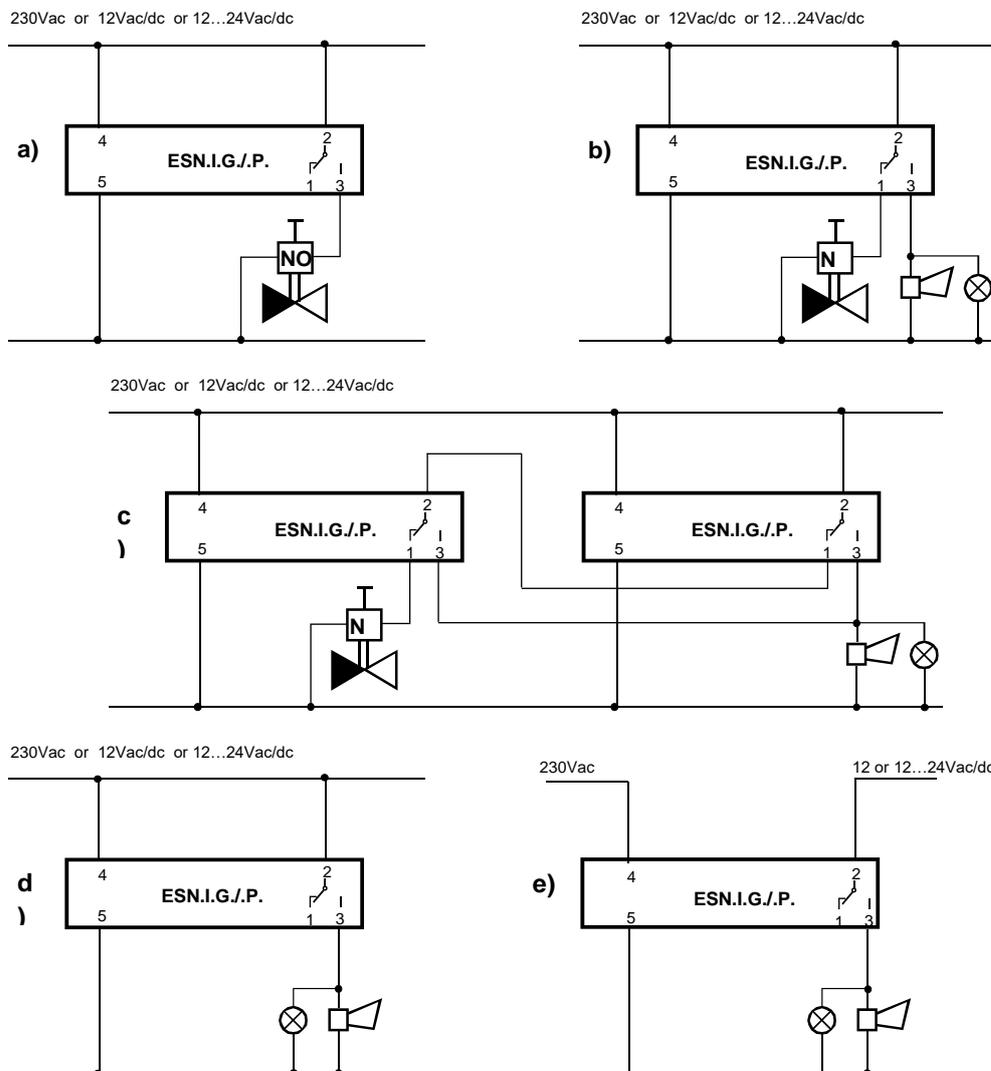
*Example a):* - Command of a solenoid valve (Normally Open); in this mode, when the alarm threshold is exceeded the solenoid valve will close and therefore the gas supply will be cut-off.

*Example b):* - Command of a solenoid valve (Normally Closed); in this mode, the solenoid valve will close and therefore the gas supply will be cut-off: when the alarm threshold is exceeded, if there is a power failure and if the actual solenoid valve is disconnected.

*Example c):* - Command of a solenoid valve (Normally Closed) and of visual and audible alarms from several locations. The contacts must be connected in series.

*Example d):* - Command of visual and audible alarms at the same voltage as the power supply.

*Example e):* - Command of visual and audible alarms at a different voltage from the power supply.



## Environmental Compatibility and Disposal



This product has been developed and built using materials and processes that take into account the environmental issue. Refer to the following notes for disposal of the product at the end of its life, or in case of its replacement:

- for the purpose of disposal, this product is classified as an electrical and electronic device: do not dispose of it as household waste, in particular as regards the printed circuit
- comply with all local laws in force
- facilitate the reuse of basic materials as much as possible in order to minimize the environmental impact
- use local depots and waste recycling companies, or refer to the supplier or manufacturer, to return used products or to obtain further information on environmental compatibility and waste disposal
- The product packaging is reusable. Keep it for possible future use or in case of returning the product to the supplier.

Due to our policy of continuous product improvement, specifications are subject to change without notice.