

**Sensigas**<sup>®</sup>

**ESN.I.S..**

**Narcotic gas detectors**

for homes, recreational vehicles and similar uses



**Narcotic 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 command and alarm device.**  
**Possibility of parallel connection of more than one detector, also for monitoring different gases.**

**Use** The ESN.I.S.. detectors can be used to provide a visual/audible alarm and to control other alarm transmitters or actuating devices, in the presence of ethyl ether and its derivatives, in concentrations that pose a hazard to humans because of the narcotic effect of the detected gas.

**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** The gas is detected using an algorithm called "VSC" that considers a first alarm threshold (pre-alarm); the red LED flashes and the buzzer beeps when this threshold is exceeded, then the process of controlling the velocity of rising concentration is measured. If the threshold limit time for concentration is exceeded, or if the threshold set-point is exceeded, the detector immediately goes into alarm status, setting off the buzzer and the relay output continuously. Once the alarm condition ceases to exist, the detector will be restored to normal operation, going through the phases described above in reverse order.

**Available models and ordering information**

Power supply	230Vac	12Vac/dc	12...24Vac/dc
<b>Detector</b>			
<b>Recessed</b>	ESN.I.S.x	ESN.I.S.x.D	ESN.I.S.x.E
<b>Wall-mounted</b>	ESN.I.S.x + ESN.KW	ESN.I.S.x.D + ESN.KW	ESN.I.S.x.E + ESN.KW
<b>Table-top</b>	ESN.I.S.x + ESN.KT	ESN.I.S.x.D + ESN.KT	ESN.I.S.x.E + ESN.KT
<b>Table-top (precabled)</b>	ESN.I.S.x + ESN.KC	ESN.I.S.x.D + ESN.KC	ESN.I.S.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			BUZZER	RELAY
	LED GREEN	LED YELLOW	LED RED		
Off	OFF	OFF	OFF	OFF	OFF
Initial test for LEDs and buzzer (1s.)	ON	ON	ON	C	OFF
Visualisation Firmware Version (5s.)	See Table 1			OFF	OFF
Sensor warm-up (60 seconds)	A	OFF	A	OFF	OFF
Normal Night (High Sensitivity)	ON	OFF	OFF	OFF	OFF
Normal Day (Low Sensitivity)	B	OFF	OFF	OFF	OFF
Sensor fail (after 30 seconds)	ON	ON	OFF	OFF	OFF
Temporarily Inhibited (10 minutes)	A	A	OFF	OFF	OFF
Pre-alarm	ON	OFF	B	C	OFF
Alarm	ON	OFF	ON	ON	ON
Alarm silenced (1 minute)	ON	A	A	OFF	OFF
Operational test (30 seconds)	ON	See description of operational status			
Adjusting Sensitivity	D	See description of operational status			

Key: **ON** = steady on / activated / switched **OFF** = off / deactivated / not switched  
**A** = the two LEDs flash alternately at 1Hz **B** = the LED flashes at 1Hz  
**C** = Short sound of Buzzer (Beep) **D** = the LED flashes at 2Hz (rapid)

## Operational status of the detector

<b>Initial test and Firmware version:</b> immediately after power-up there are transitory statuses to perform the visual and audible alarm test and to give information to technical service personnel.
<b>Sensor warm-up:</b> this is the necessary status for the sensor to reach full operational level.
<b>Normal night:</b> this is the normal operational status where the detector operates at the maximum sensitivity set-point; this condition is indicated by the green LED being steady on. Briefly press the button on the front to enter the Normal day status where the detector sensitivity becomes half the minimum sensitivity set for the normal night status; press the button on the front again to return to the Normal night status, at the sensitivity level set-point.
<b>Normal day:</b> from the normal night operational status, briefly press the button on the front to enter the Normal day status where the detector sensitivity becomes half the minimum sensitivity set for the normal night status; this condition is displayed by the slow flash (1Hz) of the green LED. Press the button on the front again to return to the Normal night status, at the sensitivity level set-point.
<b>Inhibited:</b> from the normal operational status (Night or Day), press and hold down the button on the front for more than 5 sec; this will take you into temporary inhibit status where the detector is inhibited from activating the buzzer and the relay for 10 minutes. This condition is displayed by the alternate flashing of the green LED and the yellow LED and can be used, for example, for cleaning with alcohol-based substances, which the detector is sensitive to. Press the button on the front again to return to the previous operational status.
<b>Alarm silenced:</b> from the Alarm status, briefly press the button on the front to silence the alarm temporarily (1 minute). This condition is displayed by the alternate flashing of the yellow LED and the red LED. After one minute's silence, if the gas concentration conditions remain, the alarm will set off again, otherwise it will return to the status previous to the alarm.
<b>Operational test:</b> press the button on the front twice within two seconds; for 25 seconds the yellow LEDs and the buzzer will be intermittent at the frequency of 1Hz, the green LED and relay are ON. In the last 5s. the Firmware version is displayed.
<b>Adjusting Sensitivity:</b> from normal operational status (Night or Day), press the button on the front and hold it down for more than 10 seconds to enter the status where it is possible to adjust the detector sensitivity; this condition is displayed by the rapid flashing of the green LED. Press the button on the front again to adjust the sensitivity to three levels: - <b>High</b> , indicated by three consecutive flashes of the red LED followed by a 3-second break. - <b>Medium</b> , indicated by two consecutive flashes of the red LED followed by a 3-second break. - <b>Low</b> , indicated by one flash of the red LED followed by a 3-second break. The sensitivity always changes from one level to another, by pressing the button on the front, in the following order: → High → Medium → Low → High → Medium → etc.

Firmware version	1	2	3	4	5	6	7
GREEN LED	ON	OFF	OFF	OFF	ON	OFF	ON
YELLOW LED	OFF	ON	ON	OFF	OFF	ON	ON
RED LED	OFF	OFF	ON	ON	ON	ON	ON

## 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.

The detectors must be replaced five years after installation date.

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.

### Installation

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. placing the device on a side table / shelf in the table-top version, using adapter ESN.KT/KC.

Irrespective of the type of installation, the device must be positioned at height of 30 to 50 cm from the floor, since most narcotic gases are heavier than air.

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 2) and, if necessary, two side adapters need to be inserted to cover the side gap created when using some plates.

Table 2		
<u>Manufacturer:</u>	Side adapters	Tabs to remove
<u>AVE</u> SISTEMA 45 and BANQUISE	YES	None
<u>BTICINO</u> Living international and Light	NO	A
<u>GEWISS</u> PLAYBUS and PLAYBUS Young	YES	A
<u>SIEMENS</u> DELTA FUTURA GRAPHIT	YES	A
<u>VIMAR</u> IDEA and RONDO'	YES	B

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.).

After mounting is completed, fix the detector to box box 503 or to adapter ESN.KW or ESN.KT/KC and press firmly on the front plate.

Make sure you fill in the detector replacement date on the self-adhesive label provided and stick it in a visible position on the detector after installation.

### Commissioning

Power up the detector and make sure the phases as indicated in "description of the detector operational statuses", are executed in the following sequence: initial test, warm-up, Normal Night operation.

Press the button on the front twice in two seconds (no more) to carry out an operational test by checking the correct engagement of the command and/or alarm device connected to the relay.

The detector requires no maintenance; 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.

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.

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

## 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.

## 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
NIGHT / DAY pre-alarm threshold	600 / 1200ppm <sup>(1)</sup> of Ethyl Ether
Max. alarm threshold set-point	2400ppm of Ethyl Ether
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	EMC 2014/30/EU – EN50270
Low voltage (LVD)	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 • 142 x 100 x 72mm with ESN.KW wall-mounting adapter • 142 x 120 x 100mm with ESN.KT table-top adapter
Enclosure	ABS/PC UL94-V0 flame retardant

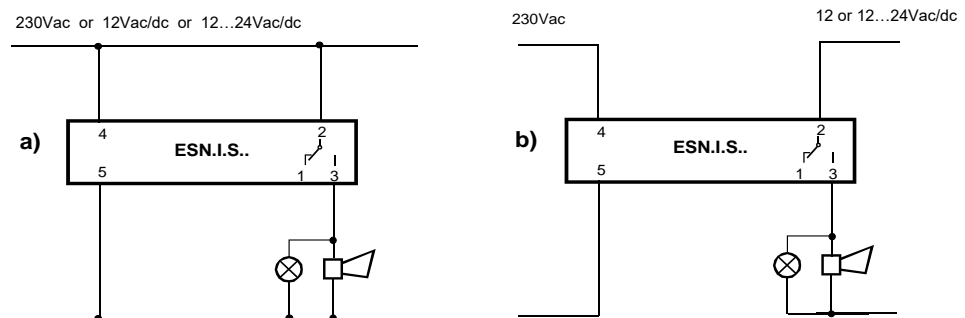
<sup>(1)</sup> ppm = parts per million of concentration of gas in the air.

## Connection diagrams

### Wiring diagrams:

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

*Example b):* - 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 and 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.*