



GAS LEAK DETECTORS FOR NATURAL GAS AND LPG



P21-P22

Sicurgas P21 and P22 is a device that through a sensitive sensor, detects natural gas concentration (P21) and LPG concentration (P22) in domestic environments. Sicurgas P21 and P22 triggers a PRE-ALARM when the gas concentration in the air is much lower than the lower explosive limit (LEL), immediately switching on a red warning light and activating a warning device (e.g. modem). If the pre-alarm condition persists with consequent increase in gas concentration with respect to the LEL, Sicurgas goes into ALARM status, adding an acoustic warning to the light signal.

Sicurgas simultaneously triggers a relay to command a gas shut-off valve.

IT IS POSSIBLE TO SMELL GAS BEFORE THE APPLIANCE TRIGGERS THE ALARM.

The Sicurgas P21 and P22 gas detectors have FAIL-SAFE operation if connected to a normally closed (NC) manually reset valve. This means that the gas shut-off valve closes interrupting the outflow even in case of a power failure.

For enhanced safety, several Sicurgas detectors can be used, connected to the same gas shut-off valve. For example P21 (P22) can be installed in the room with the boiler and another in the kitchen to control the stoves.

1 WALL FIXING







Sicurgas is supplied with a base suitable for installation on recessed boxes with 3 modules or on a round box. Unscrew the base-lid fixing screw and turn the lid upwards.

Fix the base to the wall (see paragraph 3) or on the recessed box and insert the connection cables through the rear slot.

ATTENTION!
DO NOT TAMPER WITH THE APPLIANCE AS THIS COULD CAUSE ELECTRICAL SHOCKS OR MALFUNCTIONING

⚠ ATTENTION

Installation of the gas detector does not exempt from complying with all the rules regarding the features, installation and use of gas appliances, ventilation of rooms and exhaust of combustion products described in EN implementation standards of art. 3 of law 1083/71 and of national legislation in force. Before installing the appliance, carefully read this instruction booklet.

-   GREEN LED
appliance powered
-   YELLOW LED
detector faulty
-   RED LED
ALARM gas concentration
beyond alarm threshold



After fixing and connecting the appliance (see paragraph 4), refit the lid on the base, making sure that the two teeth on the lid perfectly fit in the two upper guides. Retighten the fixing screw and apply the sticker in the seat indicating the date of replacement.

2 WHERE TO POSITION SICURGAS

Sicurgas P21 must be fixed to the wall, approximately 30 cm from the ceiling and between 1 and 4 metres from the gas appliance, at a position which allows air to circulate naturally.

Sicurgas P22 must be installed approximately 2 metres (minimum 1m, maximum 4m) from the gas appliance and 30 cm from the ground.

3 ELECTRICAL CONNECTIONS

Sicurgas P21 already has two internal alarms: one luminous and one acoustic.

Simply connect the 230Vac 50Hz power line to terminals 4 and 5 to be able to warn the presence of gas in the environment.

It is recommended to use a manually reset valve to shut off the gas supply when an alarm is triggered. The internal relay can command all types of manually reset valves powered by the mains voltage:

- normally closed (NC), always powered, which require a stable switching relay
- normally open (NO), current starting, which require a pulse relay.

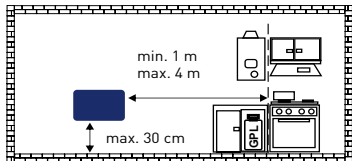
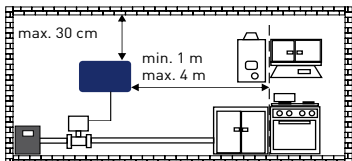
The operating mode of the relay can be selected upon installation, by moving a jumper (JP6) on the printed circuit, normally supplied for operation with stable relay for NC valves (jumper down).

4 CONNECTION EXAMPLES

Example of connection with stable relay, always powered to control a normally closed NC manually reset valve (jumper down).

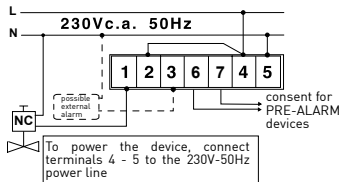
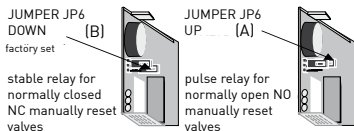
The connection provides the maximum safety, shutting off the gas supply in case of:

- the intended gas concentration threshold being exceeded;
- general power failure or only for the valve or detector;
- interrupted connection between detector and valve.



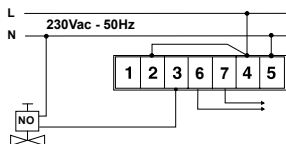
ATTENTION!

DO NOT install it behind or below cabinets or shelves which obstruct the natural air circulation in the environment.
DO NOT install it near aerators (minimum distance 2 m).
DO NOT install it right above the hob, sources of steam in places which could be reached by water sprays, near washbasins, etc.
DO NOT install it in environmental conditions other than those indicated.



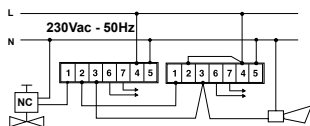
PULSE RELAY, WITH CURRENT STARTING TO COMMAND A NORMALLY OPEN NO MANUALLY RESET VALVE (JUMPER UP)

The connection guarantees shutting off the gas flow when the intended gas concentration threshold is exceeded

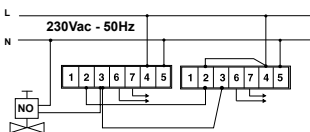


USE OF SEVERAL SICURGAS APPLIANCES TO CONTROL SEVERAL ROOMS WITH ONE GAS VALVE

Example of connection of several Sicurgas appliances with STABLE RELAY controlling the same normally closed NC valve and an additional external siren. The contacts must be connected in SERIES



Example of connection of several Sicurgas appliances with PULSE RELAY controlling the same normally open NO valve. The contacts must be connected in PARALLEL.



OPERATION

5 INSERT THE SUPPLY VOLTAGE (230Vac 50Hz).

Sicurgas enters a preheating phase and stabilises the sensor for a maximum of 3 minutes the first time the detector is switched on and after every power failure. During this phase, the red and green LEDs flash alternately indicating that the device is not ready for gas detection. After this phase, only the green light will remain on.

6 CHECKING THE SYSTEM AND ALARM SILENCING

Sicurgas is equipped with a TEST/SILENCING key in order to check the system or to inhibit the alarm. This key is activated by a cord for P21 natural gas (installed 30 cm from the ceiling) or by a button on the body of the appliance for P22 LPG (installed 30cm from the floor).

To test the system, press the TEST/SILENCING key for 10 seconds. This activates the control procedure lasting 30 seconds during which all the system components are checked.

Inhibiting the alarm avoids the unintentional triggering of the detector. In fact like all sensors on the market, the Sicurgas sensor, though being very selective, can also be triggered by other types of substances, such as vapours of alcohol, wine, etc.

For example when using wine for cooking, the detector could trigger an alarm. To avoid this problem, press the TEST/SILENCING key for at least 3 seconds.

After pressing the silencing key, the alarm will not go off for 10 minutes: the buzzer does not ring, the relay



test/silencing key (cord for P21)

goes back to the non-alarm position and the red and yellow LEDs flash alternately indicating the silencing period. If you press the switch again during these 10 minutes, the detector immediately resumes normal operation.

When the 10 minutes elapse, the detector automatically resumes normal operation.

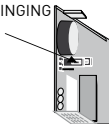
Therefore when you know that you must use substances which could trigger a false alarm, you may silence the detector beforehand to avoid alarms and switching off of the gas stove (due to triggering of the gas shut-off valve).

SOME OF THE MOST COMMON SUBSTANCES WHICH CAN TRIGGER A FALSE ALARM:

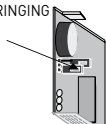
wine, liquor, alcohol, deodorants, stain removers, paint thinners, hair spray, excessive water steam.

Sicurgas also allows you to set the type of acoustic alarm, see figure to the side

INTERMITTENT RINGING
jumper JP3
up (A)



CONTINUOUS RINGING
jumper JP3
down (B)



7 MAINTENANCE AND CLEANING

Pay attention to extreme temperature or humidity values.

The detector must always be on to provide the maximum safety.

Have authorised technicians perform routine, extraordinary maintenance and decommission the appliance.

Regularly check its correct operation by means of the specific button or a test gas.

OTHER TEST METHODS COULD DAMAGE THE APPLIANCE.

If the catalyst sensor is exposed to gas concentrations higher than the LEL for a few minutes, it could lose sensitivity.

Clean the appliance using a soft cloth without detergents or solvents.

ATTENTION! in case of alarm:

1. put out all naked flames;
2. close the valve of the gas contactor or of the LPG cylinder;
3. do not switch lights on or off; do not switch on electrically powered appliances or devices;
4. open doors and windows to enhance ventilation of the environment;
5. do not use telephones in the room where gas has been detected.

When the alarm ceases, find the cause which triggered the alarm and act accordingly.

If the alarm continues and the cause of the gas leak cannot be identified or eliminated, abandon the premises and notify emergency services from outside.

TECHNICAL FEATURES

Type A appliance.

Case in shock-proof insulating material.

Degree of protection IP42.

Operating environment temperature/humidity:

from -10 to 40°C, max. 90 RH%.

Power supply 230Vac 50Hz.

Consumption 4 VA.

Range of pre-alarm relay contacts 1(1)A 250Vac

Range of alarm relay contacts 6(2)A 250Vac

Maximum power of solenoid valve controlled by alarm

relay: 450VA at 230Vac 50Hz

Relays sealed to avoid sparks when switching.

Jumper to select operating mode of relay, stable or by pulses.

Catalyst sensor for gas detection.

Internal luminous and acoustic alarms.

Volumetric value of triggering threshold:

(% LEL) 6-9% for natural gas.

(% LEL) 7-10% for LPG.

Compliant with standard EN 50194.



DISPOSAL OF PRODUCTS

The crossed out wheeled dust bin symbol indicates that products must be collected and disposed of separately from household waste. Integrated batteries and accumulators can be disposed of with the product. They will be separated at the recycling centres. The black bar indicates that the product was placed on the market after August 13, 2005. By participating in separate collection of products and batteries, you will help to assure the proper disposal of products and batteries and thus help to prevent potential negative consequences for the environment and human health. For more detailed information about the collection and recycling programmes available in your country, please contact your local city office or the shop where you purchased the product.

TO BE FILLED OUT BY THE INSTALLER

Date of installation _____

Room installed _____

Manufacture date identification CODE _____
(code written inside the lid)Date of replacement of the sensor _____
(date of replacement written on the sticker applied on the front of the appliance)

N.B. DURATION OF SENSOR 5 YEARS (IN CLEAN AIR) FROM INSTALLATION

STAMP AND SIGNATURE OF INSTALLER



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