

## ELECTRONIC GAS DETECTOR FOR INDUSTRIAL ENVIRONMENTS FOR FITTING ON DIN BAR (9 MODULES)

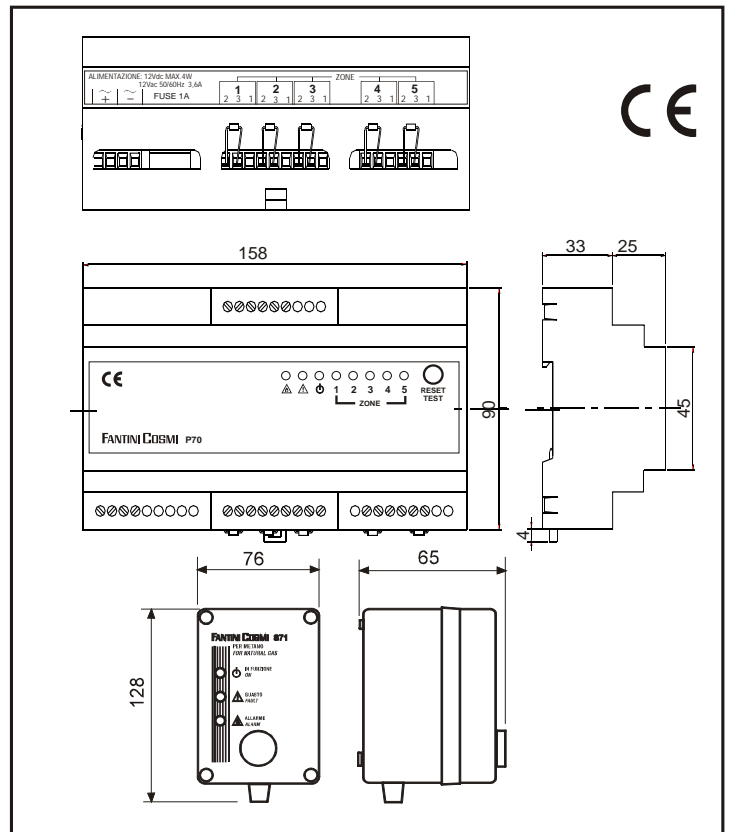
### GENERAL FEATURES

The P70 gas leak detection unit for industrial environments, complete with specific sensors (S71 for natural gas, S72 for L.P.G.) is designed to detect hazardous concentrations of natural gas or L.P.G. (gas in cylinders) in the air.

When gas concentrations in the environment exceed a set level, the detection unit triggers a solenoid valve to interrupt the gas supply, at the same time triggering an acoustic and visual alarm. The unit, besides the internal alarm, is also able to control an outside alarm. Naturally, the unit triggering level is much lower than a hazardous gas concentration so that remedial action can be taken in good time, before the production of any air-gas mix that might be explosive or toxic for human beings.

To this same detection unit, up to 5 sensors can be connected, including of different types for controlling several areas or more gas types. In case of gas leaks, a light appears on the unit to indicate the area involved.

The unit is designed to be fitted in the control panel.



### TECHNICAL SPECIFICATIONS

#### CONTROL UNIT

Casing in UL 94-V0 self-extinguishing plastic  
 Dimensions 158x90x58 mm 9 modules according to DIN 43880 standard

Fastening on Omega bar DIN EN 50022

IP40 protection when correctly installed in a control panel  
 Power voltage 13.8 V DC (12V battery and battery charger) or 12 V AC (transformer)

4 x 2.5 mm<sup>2</sup> terminal connections

Protection: Power input protected by 1A 5x20 mm fuse

Input with 1 x 13.8 V DC probe about 140mA

Input with 5 x 13.8 V DC probes about 280mA

Input with 1 x 12 V AC probe about 160mA

Input with 5 x 12 V AC probes about 310mA

Inputs: 5 probes type S71 (Natural gas and/or S72 (LPG))

3 x 2.5 mm<sup>2</sup> terminal connections for probe 2  
 (Earth) 3 (Signal) 1 (Positive +9V DC)

Maximum acceptable length of probe connection lines: for each probe 50 m

Section of 3 leads - 1.5 mm<sup>2</sup>

Alarm outputs: 1 relay with 1 contact in shunt free of power voltage 5A 250 V AC

Fault output: 1 relay with 1 contact in shunt free from potential 5A 250 V AC

Connections: 3 x 2.5 mm<sup>2</sup> terminals for relays C NC NO  
 Button with double function - alarm reset and probe test

Light indicators:

- 1 green LED P70 operating

- 1 yellow microprocessor fault LED
  - 1 red general alarm gas presence LED
  - 5 red LEDs for alarm and fault of each area
- Weight 250 g

### STANDARDS AND TYPE-APPROVALS

Compliance with CEI 70028 standards

### DETECTION SENSORS S71-S72

The operating threshold of the sensors is factory set at a value able to indicate the presence of gas at concentrations much below hazard limits.

For special requirements, the sensitivity of the sensors can be changed by means of a regulator which, for safety reasons, is not externally accessible.

They feature an operation indicator light and the connections to the control unit are positive safety (their interruption causes detector operation).

- Casing in shockproof insulating material, protection degree IP54.

- Green power indicator LED diode

- Red operation indicator LED diode

- Yellow faulty sensor indicator LED diode

- Connections to positive safety detector

## FITTING THE UNIT

To ensure a correct degree of appliance protection IP40, the P70 unit must be fitted in a control panel where the power transformer or battery charger, with relevant 12V battery, can be housed and fastened on an Omega DIN EN 50022 support guide using accessories for standard type control panels.

The power connections must be made with power supply interrupted.

Comply with applicable regulations.

Make the connections in accordance with the wiring diagrams or, if these are not available, according to those attached to these instructions.

Connect the lead and carefully tighten the terminal screws.

## FITTING THE S71/S72 PROBES

Open the casing by loosening the screws on the cover.

Fasten to the wall by means of screws and plastic anchors.

Connect the 3 leads and then carefully tighten the screw terminals.

Close the cover with the screws.

## COMMISSIONING

Make sure that:

The power supply of the unit is 13.8 V DC (keep to terminals + and -) or 12 V AC.

The probes are consistent with the gas to be detected and that they are correctly connected to the unit.

**NOTE: The unit is equipped with 47 Ohm 1/4 W 5% resistances between terminals 2 and 3 of each of the 5 detection areas simulating the probes.**

To connect the probes, remove the resistance between terminals 2 and 3 and replace it with the probe. If one of the areas is not used, make sure that between terminals 2 and 3 there is a 47 Ohm 1/4 W 5% resistance.

Make sure any manual reset solenoid valve is correctly connected to the C NO terminals of the alarm relay (the contact is closed in normal operation) if you wish it to remain open with supply (NA type) and to close the gas supply in the event of a leak detected by one of the probes.

## OPERATION

The unit indicates its operating condition by means of the LEDs.

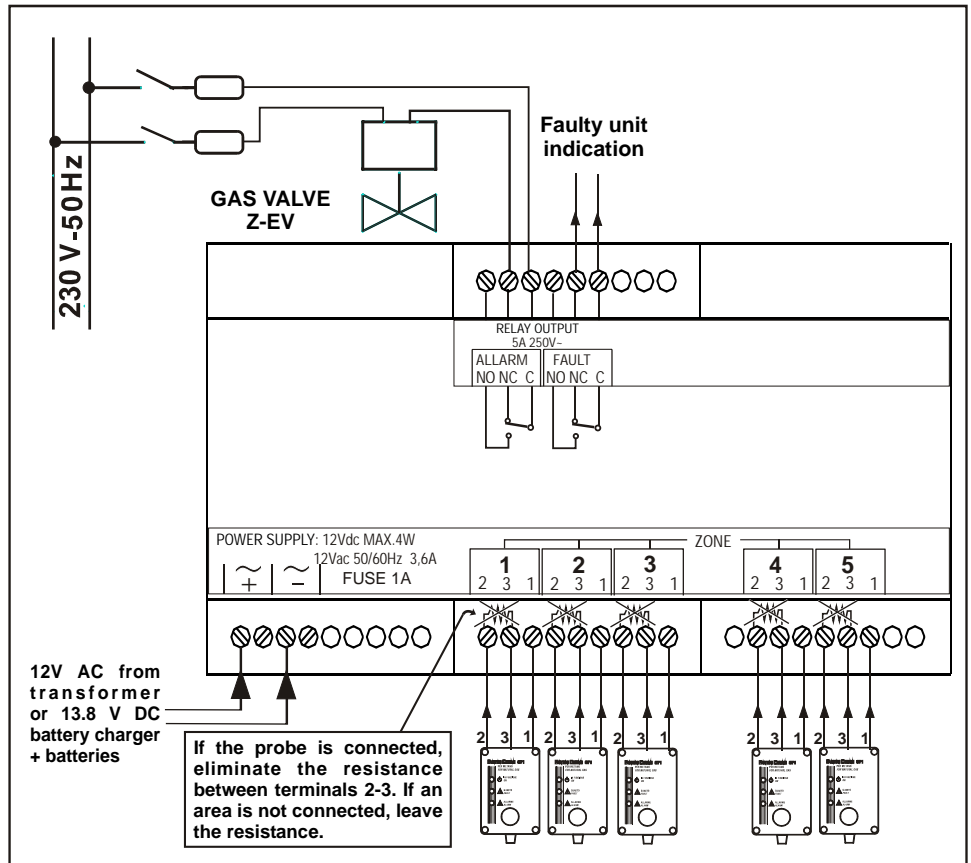
Remember that operation is negative logic. When the LEDs are off, this means the situation is normal, as do the excited relays.

An alarm is indicated by the flashing of the line LEDs, of the general alarm red LED and by the de-energising of the alarm relay.

## LED AND BUZZER TEST PHASE

This last a few seconds.

The LEDs come on in sequence and the buzzer produces a short sound.



## PREHEATING PHASE

This lasts about 1 minute.

It allows the probes to reach operating temperature. If the connections are correct, the unit appears as follows: the green power LED flashes at the frequency of 1 Hz.

The yellow fault LED is off.

The red general alarm LED is off

The red alarm and line fault LEDs are off

The buzzer is silent

The alarm and fault relays are excited.

## TEST PHASE

This lasts about 3 minutes.

It allows testing the probes with all the timers reset

The green power LED flashes faster at a frequency of 2 Hz

The yellow fault LED is off

The red general alarm LED is off

The red alarm and line fault LEDs are off

The buzzer is silent

The alarm and fault relays are excited.

By pressing the test button for 1 sec. the test phase is terminated

## PROBE ALARM TEST

Move the test cylinder close to the probe grid and free a small quantity of gas.

Important: directing the test gas directly on the sensor could seriously damage this.

The P70 unit will signal the alarm as follows:

The inner buzzer sounds-continuous

The general alarm LED flashes

The red line LED relating to the sensor involved flashes

The alarm relay is de-energised (permanently)

To start the Test phase again simply keep the Test button pressed for about 6 seconds.

Test all the probes by repeating the above operations.