

**RFG 87 RANGE OF GAS LEAK DETECTORS WITH INTERNAL SENSOR AND SAFETY SHUT-OFF VALVE**

**RFG 87**

- **RFG 748 DETECTOR**
  - Power supply 220/240 Volt ac
  - Internal sensor with alarm level at 0.3% gas in air
  - Control of solenoid valve N.O. by very low-voltage signal, without relay
- **EVG 84 SOLENOID VALVE**
  - 1/2" or 3/4" female gas connections
  - N.O. with manual reset
  - Maximum working pressure 200 mbar

**APPLICATION**

Gas leak detectors RFG 870 - 871 are designed to ensure the safe use of gas appliances such as cookers, calorifiers and boilers in domestic and other non-industrial premises. They can monitor the concentration in the air of the commonest types of combustible gases such as: town gas, natural gas and LPG.

**RANGE**

Model	Detector	Solenoid valve	
		Code	Connection
<b>RFG 870</b>	RFG 748	EVG 840	Female 1/2"
<b>RFG 871</b>	RFG 748	EVG 841	Female 3/4"

**OPERATION**

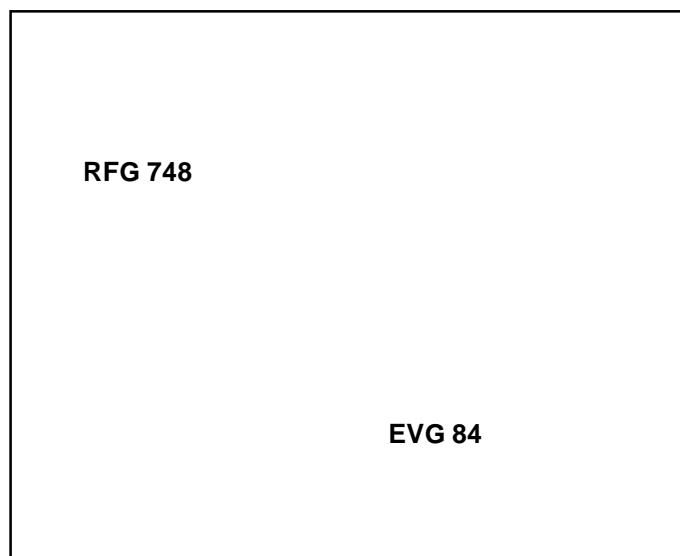
The LED indicator on the cover, when lit, indicates that the detector is receiving power (fig.2 .3). When it is switched on, the detector does not activate an alarm for 1.5 to 2 minutes since this time is required for the sensor to become stabilised. After this period it is ready to give the alarm.

The internal sensor monitors the level of the concentration of gas in the surrounding air. If the alarm level is exceeded the detector sets off an audible alarm and, after a delay of not more than 50 seconds, transmits a signal at very low voltage to close the gas safety shut-off valve. The detector remains in the alarm state, and therefore with the audible alarm sounding, until the concentration of gas returns below the danger level.

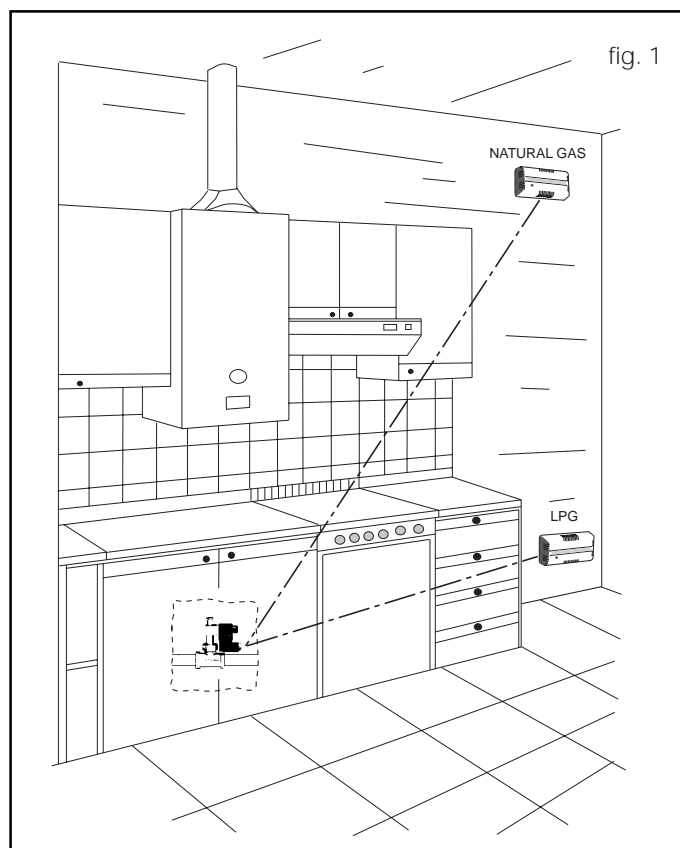
The solenoid valve, on the other hand, must be re-opened manually to allow the gas to flow again.

The alarm level is equivalent to a concentration of 0.3% of gas in the air, that is, about 1/20 of the concentration necessary to render the gas-air mixture explosive. This allows, in the event of an alarm, action to be taken under conditions of maximum safety. The closure of the solenoid valve is controlled electronically at very low voltage. There are, therefore, no movements of electro-mechanical contacts which could generate sparks which could cause an explosion of the gas-air mixture.

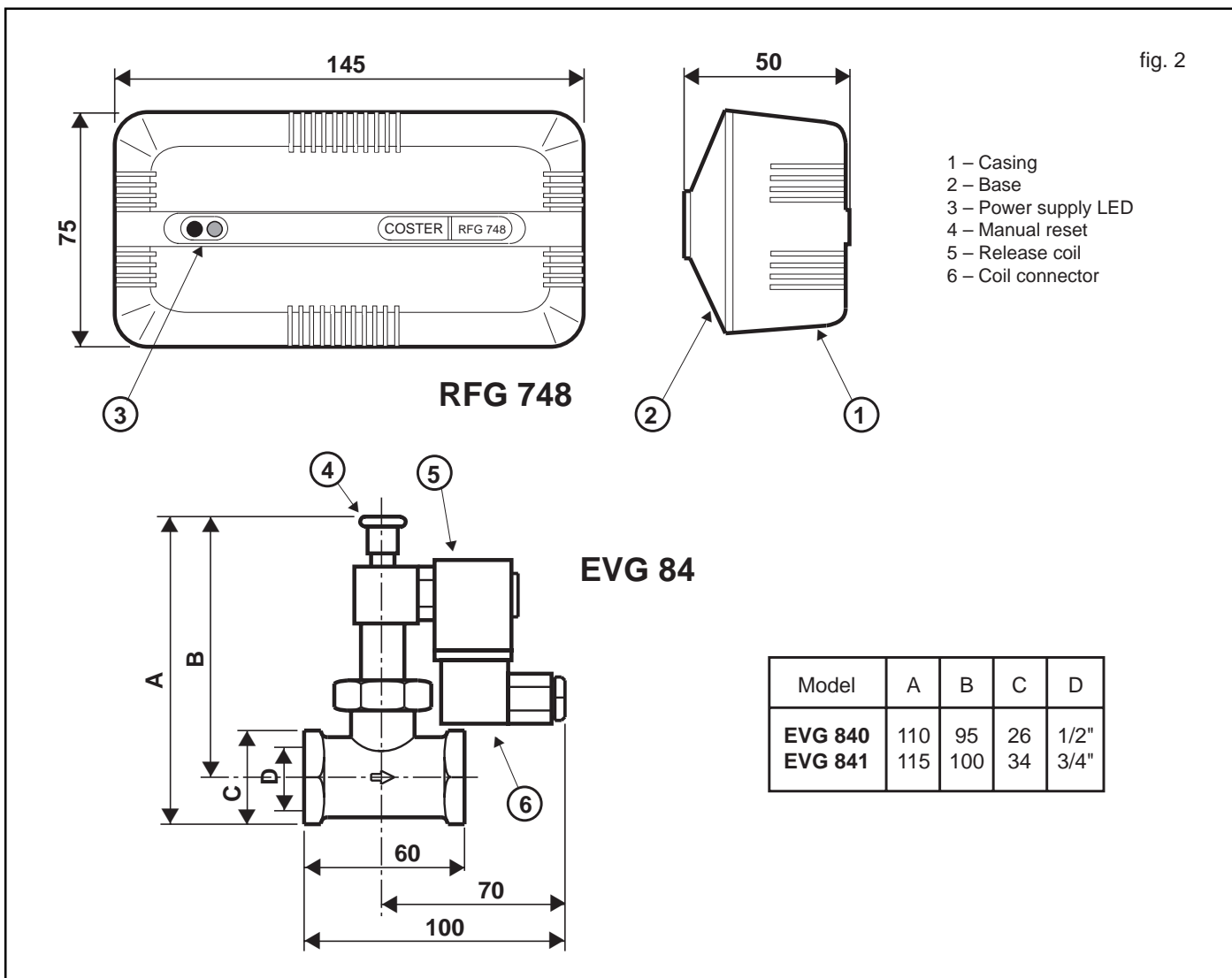
**RFG 748 can operate only in association with solenoid valve EVG 840 or 841.**



**TYPICAL INSTALLATION**

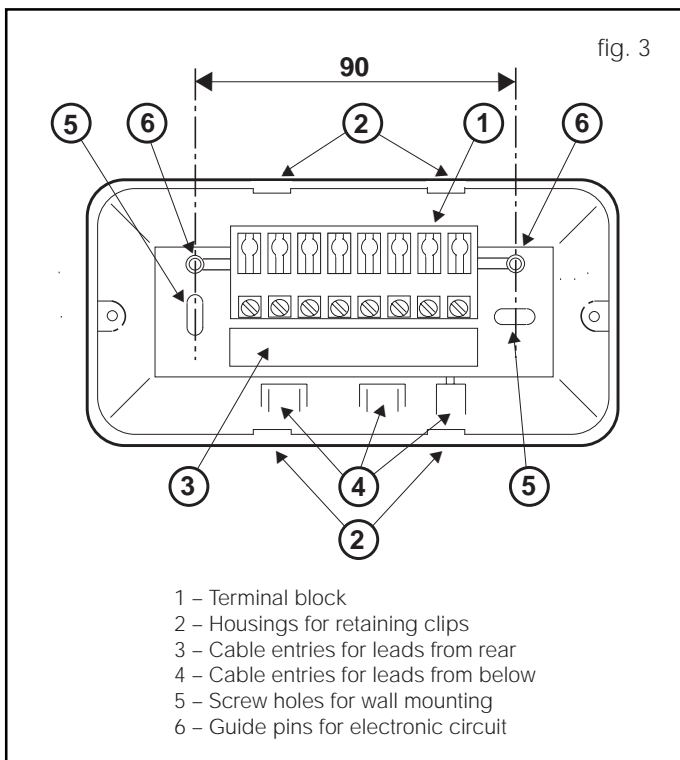


## OVERALL DIMENSIONS



- 1 – Casing
- 2 – Base
- 3 – Power supply LED
- 4 – Manual reset
- 5 – Release coil
- 6 – Coil connector

## BASE



## CONSTRUCTION

### RFG 748 DETECTOR

This is constructed in two parts:

- Base (fig.2 .2) suitable for wall mounting, in self-extinguishing plastic, comprising:
  - Terminal block for electrical connections (fig.3 .1) protected against accidental contacts.
  - Cable entry for leads from rear (fig.3 .3)
  - Cable entries for leads from below (fig.3 .4)
  - Screw holes for attachment to wall (fig.3 .5)
- Detector (fig.2 .1) enclosed in a casing made of self-extinguishing plastic which comprises the electronic circuit, constructed according to Italian Electrotechnical Committee (CEI) standards, and the sensor.

On the facia is located the power supply LED (fig.2 .3).

The detector is fixed to the base by means of four retaining clips and the electrical contacts between the electronic circuit and the terminal block are by means of pins which are pressed directly into the terminal sockets.

### EVG 84 SOLENOID VALVE

This of the N.O. type with manual reset.

The body is in OT 58 nickel-plated brass with 1/2" or 3/4" gas female connections.

The closure mechanism is secured to the valve body by means of a union with a compressed vulcanised asbestos rubber gasket; it consists of a brass plug with pressure spring and rubber gasket. The release block is mounted perpendicularly to the plug and is operated by very low dc voltage coil.

## INSTALLATION

### RFG 748 DETECTOR

The correct location of the detector is essential for its correct operation and depends on the type of gas to be monitored and its density in respect of air.

Type of gas	Position
Natural gas (light)	20 to 60 cm. from ceiling
LPG (heavy)	20 to 60 cm. from floor

It is advisable to locate the detector at a certain distance from the gas appliances so as to avoid false alarms due to small leakages whilst lighting the gas or to fumes emitted during the cooking of foods:

- Boilers and calorifiers: 1 to 2 metres
- Cookers : 2 to 3 metres

- Remove the base from the casing by pressing with the hands on the two longer sides of the latter so as to release the four retaining clips.
- Attach the base to the wall using the screw holes provided (fig.3 .5), taking care to pass the electric leads through the appropriate cable entries (fig.3 .3 or fig.3 .4).
- Make the electrical connections according to the wiring diagrams (fig. 4) and **observing the safety regulations in force at the time of making the installation.**
- Re-insert the casing on the base using light pressure on the fascia until the retaining clips fit into their housings (fig.3 .2)

### EVG 84 SOLENOID VALVE

This must be installed on the gas supply pipe, preferably on the outside of the room to be monitored, in a place which is easily accessible and protected from the weather.

In LPG installations with outside tank, it must be installed downstream of the pressure reducing valve (30 to 40 mbar).

In LPG installations with cylinders, it must be installed downstream of the pressure reduction valve and, if possible, connected directly on to this by means of a screwed union.

## TECHNICAL DATA

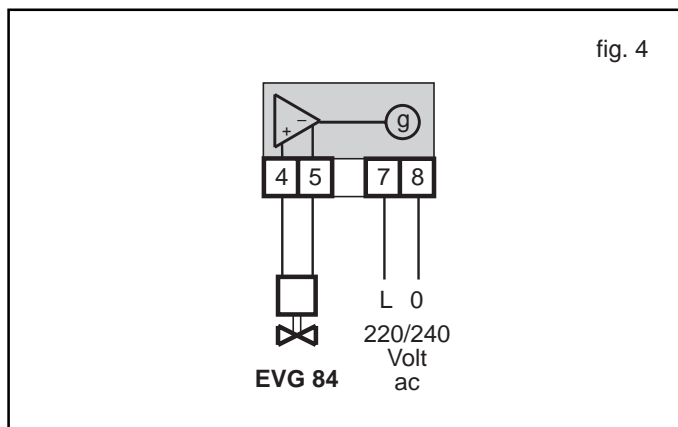
### RFG 748 DETECTOR

Power supply	220/240 Volts ac
Frequency	50 to 60 Hz
Consumption	2 VA
Sensing element:	
- type	Figaro TGS 813
- heating time	180 s
- threshold level	0.3% gas in air
Ambient temperature:	
- operating	0 to 45 °C
- storage	- 20 to + 60 °C
Protection	IP 30
Weight	0.30 kg
Dimensions	145 x 75 x 50 mm.

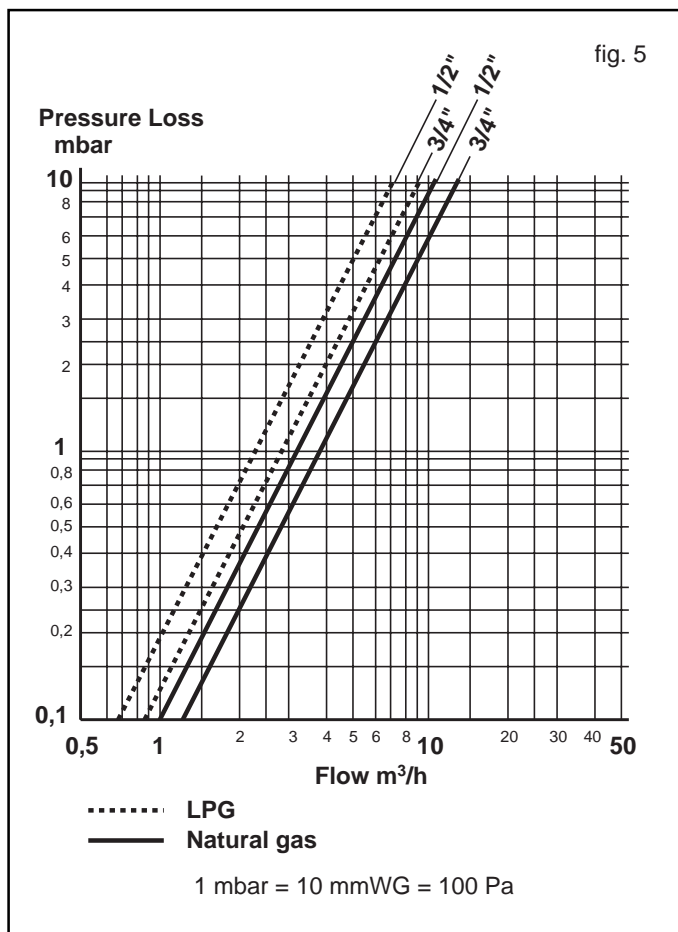
### EVG 84 SOLENOID VALVE

Test pressure	240 mbar
Maximum working pressure	200 mbar
Body	OT58 nickel-plated
Plug	OT58 nickel-plated
Seal	Rubber
Plug seal	rubber O-ring
Protection	IP 54
Weight	0.55 kg

## WIRING DIAGRAM



## EVG 84 SOLENOID VALVE: PRESSURE LOSS



## TESTING

The simplest way of testing if RFG 87 is working correctly is by simulating the presence of gas by releasing gas from an ordinary cigarette lighter near to the detector. The detector should sound the audible alarm to signal the alarm state and after not more than 50 seconds should close the gas safety shut-off valve. **To ascertain that the detector continues to function correctly this test must be carried out at least once every three or four months.**



20132 Milano  
via San G.B. De La Salle 4/a

Head Office & Sales  
Tel. 02/2593641 - 2 - 3 - 4  
Telefax. 02/2593645

25048 Edolo (Brescia)  
via Gen. Treboldi 190/192

Factory  
Tel. 0364/71480 - 71988  
Telefax. 0364/72615

LOCAL DISTRIBUTOR

D 33014 c.s.

