

BS-691 Autonomous natural gas-methane detector
BS-690 Autonomous LPG detector



Technical characteristics

	BS-690	BS-691
Operation voltage	110 - 240V AC / 50-60Hz	
Maximum consumption	32 VA	
Sensitivity	5-15 % L.E.L. Propane	5-15 % L.E.L. Methane
Indicators	Power LED , alarm LED , fault LED	
Outputs	Relay (230VAC 5A) and 12V DC	
Degrees of cover protection	IP40	
Produced in accordance with	EN 50194, EN 60335, EN 61000-3-2, EN 61000-3-3	
Operation temperature range	0 to 60 °C	
Humidity	Up to 95% relative humidity	
Dimensions	145 x 85 x 45 mm	
Fire detection zone	No more than 5 detectors 12V	
Sensor life time	5 years	
Weight	300gr.	
Guarantee	2 years	

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GENERAL

BS-691 and BS-690 detectors are used to give us a quick warning in case there is a natural gas or LPG gas leak.

The installation must be done by a qualified personnel. The instructions must be read first before the installation.

Emergency actions

It is recommended that the following advice should be given in the event of an alarm sounding or the smell of gas even without an alarm:

Keep calm, and carry out the following actions, not necessarily in the order given:

- extinguish all naked flames, including smoking material;
- turn off all gas appliances;
- do not switch on or off any electrical equipment, including the gas detection apparatus;
- turn off the gas supply at the gas main control and/or (with a LPG supply) the storage tank;
- open doors and windows to increase ventilation;
- do not use a telephone in the building where the presence of a gas is suspected.

If the alarm continues to operate, even after an alarm resetting action where appropriate, and the cause of the leak is not apparent and/or

cannot be corrected, vacate the premises and IMMEDIATELY NOTIFY the gas supplier in order that the installation may be tested and made safe, and any necessary repair carried out.

Placement

Depending on the monitored gas, the unit must be placed 30cm from the ceiling (for methane, natural gas) or 30cm from the floor (for propane, butane, LPG). The horizontal distance should not be more than 4 meters from the probable gas leak point and the detectors must not be placed in humid or drafty areas.

It is suggested that the detector is tested for good operation every 6 months or if it is changed position.

The unit must should not be sited:

- directly above cooking appliances;
- directly above sink;
- adjacent to extractor fans;
- in any outside location;
- where the environmental conditions are outside the manufacturers operational specification.

Installation

For the installation of the device first you must remove the red plastic with a screwdriver as shown in figure 1 and unscrew the screw in the

middle. Then with the help of figure 2 you can connect the external devices.

Terminals +Z, -Z are used for a fire detection zone. Up-to 5 conventional detectors can be installed. The connection cable must be at least 2x1mm diameter and no more than 100m in length. These detectors must operate with 12V. Such devices are BS-655 (smoke detector), BS-660 (heat rise detector) and BS-668 (heat detector). A terminal resistor (5,6K Ω) should be installed on the end of the line(see figure 2). On the EXT BUZ terminal we can connect an external buzzer BS-542. An external sensor (BS-692, BS-693) can be connected to the terminals+VS, GND, S. The external sensor uses a specific protocol to communicate with the unit.You can connect only one external sensor with cable at least diameter 3*0.75mm and length no more than 50m.

WARNING!! If an external sensor is installed then the positions 1-2 on JMP2 must be linked. Failing to link these two point will result in non-communication between the two devices. The link should be done when the unit is not operating.

Sensitivity

The BS-690 detectors are activated when the content of gas (propane or butane), in the monitored area, exceeds 5 - 15% of the lower explosive level (L.E.L).

The BS-691 detectors are activated when the content of gas (methane), in the monitored area, exceeds 5 - 15% of the lower explosive level (L.E.L). The same detectors can also be used as an alcohol vapor detector. They are connected and operate with the mains power supply voltage of 230VAC. When the detector is activated, an internal sounder(buzzer) is

sounded and the internal relay is activated. The relay can be used to control an electro-valve. The buzzer stops sounding when the gas content drops below 5-15% of the L.E.L. The electro-valve is reset manually.

Indications LEDs and operation

The green LED shows the presence of the mains power supply. When first installed, the green LED blinks for 20 seconds until the sensor compensates to its surroundings. When the red LED is lit then the unit is in alarm mode. Alarm mode can be triggered from:

- The sensor of the unit
- The external sensor (BS-692, BS-693)
- From a fire detection zone.

When the yellow LED is lit the unit has a fault which can be because by:

- The sensor of the unit(e.g. Dis-connected sensor).
- The external sensor (e.g. Communication problem)
- The fire detection zone (e.g. Open or short circuit condition).

A blinking red LED means that there was an alarm condition but it has now passed. The same applies for a blinking yellow LED and the fault condition. When the test button is pressed, the system is tested and restarted. During the test the internal circuits are checked, the relay is activated and the internal buzzer sounds. Also, during the test all alarm and fault indications are reset. Finally the fire detection zone is reset. After the test and if an electro-valve was connected to the unit, a manual reset of the electro-valve must be done.

Installation of an electrovalve

The gas supply is automatically turn OFF in the

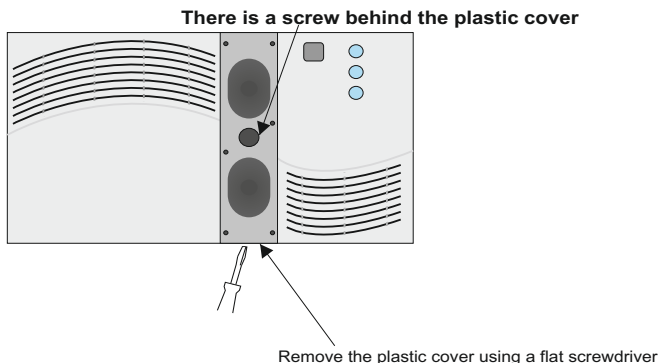


Figure 1. Remove the plastic cover

event of an alarm or fault condition. The electro-valve can only be reset manually by the user, by pressing on point "A" as show in figure 1. Depending on the type of electro-valve used, the corresponding connection diagram is shown in figure 4. Care must be taken to position the link of JMP1 in the correct position. It is suggested that this unit is used in cooperation with Olympia Electronics Electro-valves type BS-684 (12V N.O.) Or BS-682 (230VAC N.O.). The connection cable, when you use BS-684, must be at least 2x2.5mm diameter and no more than 4m length. Figure 3a and 3b shows the connection of multiple detectors in a network connection , for covering a larger area and using one 12VDC NO electro-valve or one 12VDC NC electro-valve

Attention!! The position link of JMP1 set the relay status. If a link is set on A (figure 3B) the

relay is energized (NO) in normal condition and on alarm or fault condition the relay is not energized. The oppisite occurs if a link is set on B (figure 3A).

ATTENTION: If you use electrovalves 230VAC you can use a fire-siren 230VAC BS-546 and BS-542 . The connection of BS-546 show in figure 5. If you use electrovalves 12VDC you can only use BS-542 .

ATTENTION!! The devices must not be tested using gas filled lighters because the sensor will be destroyed.

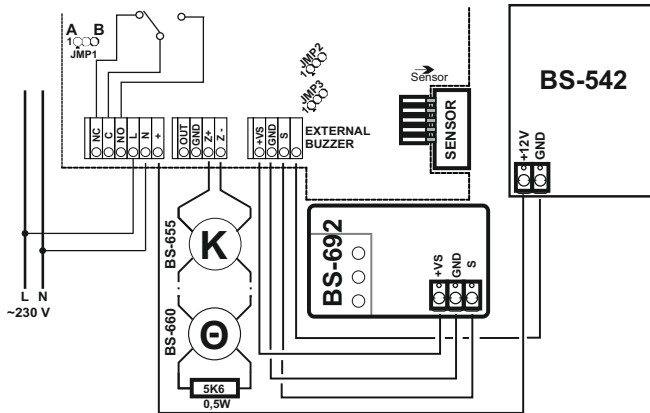


Figure 2. Connection diagram of a detector

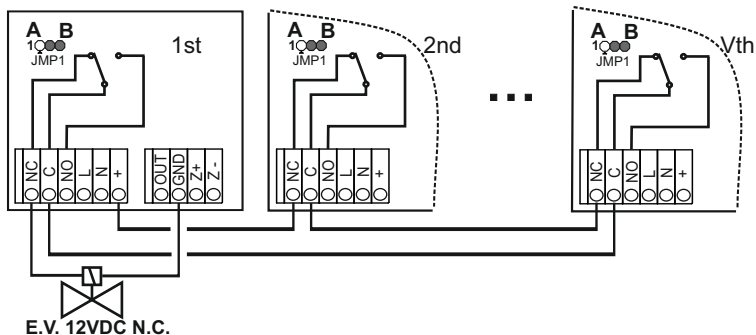


Figure 3. Connecting multiple detectors in a network and using one electro-valve 12VDC N.C.

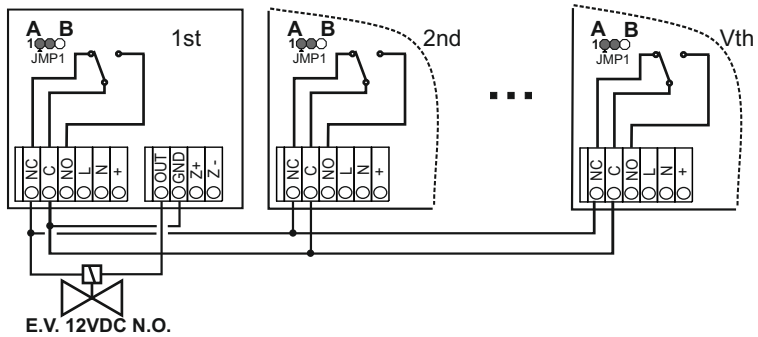


Figure 3B. Connecting multiple detectors in a network and using one electro-valve 12VDC N.O.

Electro-valve ~230V

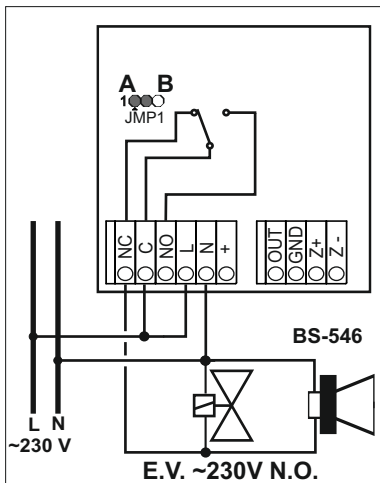


Diagram with manual reset and normally open electro-valve

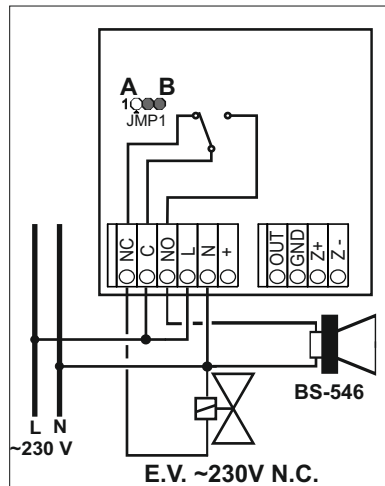


Diagram with manual reset and normally closed electro-valve

ATTENTION! Electrovalve 230VAC N.O. is not recommended for installation with no guarantee power supply, because in a power failure situation the gas flow will not close.

Electro-valve 12VDC

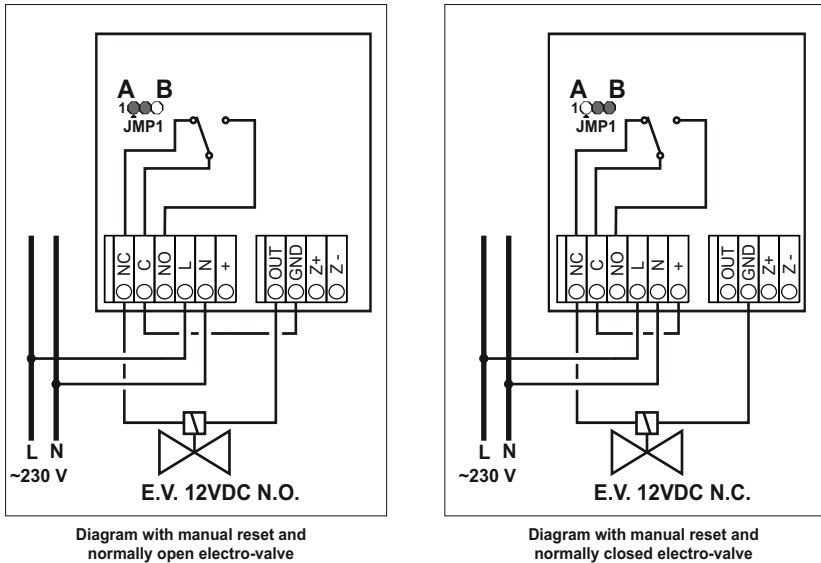


Figure 4. Diagrams for connecting various types of electro-valves

WARRANTY

Olympia Electronics guarantees the quality, condition and operation of the goods. The period of warranty is specified in the official catalogue of Olympia Electronics and also in the technical leaflet, which accompanies each product. This warranty ceases to exist if the buyer does not follow the technical instructions included in official documents given by Olympia Electronics or if the buyer modifies the goods provided or has any repairs or re-setting done by a third party, unless Olympia Electronics has fully agreed to them in writing. Products that have been damaged can be returned to the premises of our company for repair or replacement, as long as the warranty period is valid.

Olympia Electronics reserves the right to repair or to replace the returned goods and to or not charge the buyer depending on the reason of deflection. Olympia Electronics reserves the right to charge or not the buyer the transportation cost.

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