

# Mains and DC powered Domestic Gas Alarms

## ZETA 100 GAS SERIES USER'S MANUAL

PLEASE READ THIS USER'S MANUAL BEFORE INSTALLING OPERATING THE GAS ALARM

### SAFETY

The Alarm should only be installed by a competent person using the following installation instructions.

There are two types of alarm available in this series. These are as follows:

- Zeta 100N Natural Gas Detector
- Zeta 100L Propane Gas(LPG) Detector

**Ensure you have the correct model for your application by checking the label on the product**

Isolate the electricity supply before starting the installation. All electrical wiring should be installed according to you local electrical safety regulations.

Once the unit has been installed, do not tamper with the inside of this alarm - you may stop the Alarm working, or receive an electric shock. No maintenance or adjustment is required.

### WHERE NOT TO INSTALL THE ALARM

- Outside the house/caravan.
- In an unenclosed space, e.g. Inside a cupboard or behind a curtain.
- Directly above a sink.
- Directly above a cooker.
- Next to a door or window.
- Next to an extractor fan.
- In an area where the temperature can drop below -10°C or rise above +40°C.
- Where dirt and dust can block the sensor and stop it working.
- Damp or humid areas.
- Where it is likely to be knocked or damaged.

### WHERE TO INSTALL THE ALARM

For maximum protection the alarm should be installed on a flat wall in the room where the gas appliance is situated. In most installations this will be the cooker in the kitchen.

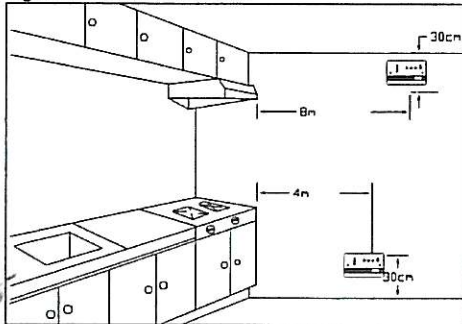
### NATURAL GAS MODELS

Natural gas is lighter than air so the alarm should be installed higher than the top of the highest outside window or door within a room. This will usually be no more than 30 centimetres from the ceiling. It should also be between 1 metre and 5 metres from the gas appliance.

### LPG MODELS:

LPG is heavier than air so the alarm should be installed not more than 30 centimetres from the floor and not more than 4 metres from the appliance.

Figure 1: Place to Installation



### FITTING YOU DETECTOR TO THE WALL

The product can be installed flush mounted set into a wall/partition or surface mounted on top of a wall. You will need the following tools to install the unit:

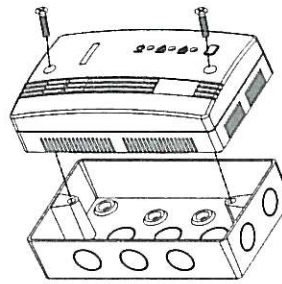
- Drill with a 6mm bit
- Phillips screwdrivers

The product is designed with the cables emerging from the bottom of the unit.

### Flush mounting

In order to flush mount the unit a suitable hole will need to be cut in the wall. This will need to be 140mm wide by 96mm high and a minimum of 20mm deep. The power supply cabling and connections for the Remote LED and relay (if used) will need to come from behind or inside the wall. This will normally be via conduit in solid wall or from inside the outer skin of a partition wall. Once mounted in the hole in the wall, the

Figure 2 – Flush Mounting

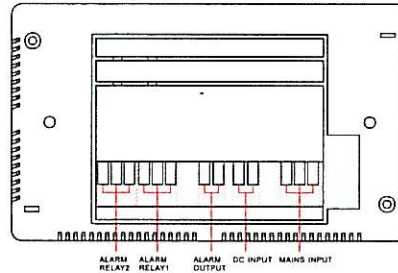


### HOW TO CONNECT POWER TO THE ALARM

Before connecting power ensure you have selected the correct connection for either mains or DC installation, checking the label on the product.

Feed the cables for the power (and, if used, the relay and Remote LED) up from the underside of the base. The cables are then secured using the cable clamps provide. The cable clamp can be reversed to accommodate larger cables as shown.

Figure 6 Cable Clamps

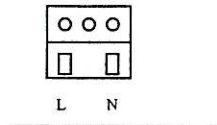


### Mains Powered Connect

#### CAUTION: ISOLATE THE MAINS BEFORE STARTING WORK

The detector should be wired to the mains supply via an unswitched fused outlet to BS5733. The fuse should be rated at 3 Amps. The brown or red wire should be connected to the live terminal shown L below and the blue or black wire should be connected to the neutral terminal shown N. The earth terminal is not required.

Figure 7 AC Supply Wiring

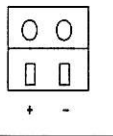


### DC Powered Connect

The detector should be wired to the 12V or 24V supply with a fuse rated at 3 Amps. The red wire should be connected to the terminal shown below with a + (plus) sign and the black wire to the negative terminal shown with a - (minus). Reversing the connections may damage the product.

In caravans and motorhomes the detector should be connected to the battery supply via the main switch. This will ensure operation when the caravan is occupied. Permanent connection for prolonged periods may cause a flat battery if the battery remains uncharged

Figure 8 DC Supply Wiring

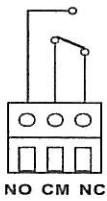


### HOW TO USE THE RELAY FACILITY

The relay provides a means of signalling an alarm condition to an external warning device such as control panel or remote audible buzzer. It can also be used to shut off a gas valve in the event of a detected leak. The relay is a single pole changeover type that allows contacts to be either open or closed when gas is detected. Relay contacts can be wired in parallel to provide an alarm signal when any of the units connected detect gas.

For the mains powered versions the relay contact is specified up to 240V @ 6A ac and for DC powered versions its is specified at 24V @ 6A

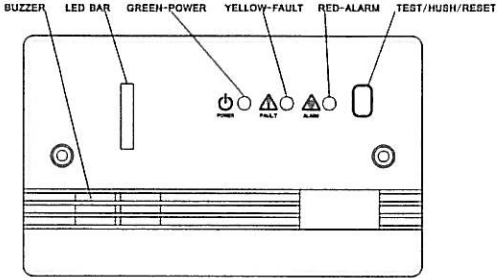
Figure 10 Relay Wiring



**OPERATING MANUAL**

**OPERATION**

The alarm has three LED lights and one button on the front panel.  
Fig 1 Control Unit



Green Power – Indicate the unit is receiving sufficient power

Red Alarm – Gas detected

Yellow Fault – The Alarm has an internal fault

**ALARMS**

It is important that the alarm is situated in the best position to detect gas. It is designed to operate inside a house, caravan, mobile home or motorhome in a location with free access to air in the room. It is not designed for outdoor use. Refer to the installation manual for full details of how and where to install the product.

This alarm has both a high and low level alarm. When gas concentrations reach the low level threshold the alarm will warn you by flashing the red LED. If a more dangerous high level threshold is reached the red LED will stay on permanently and the audible alarm will sound.

If gas is detected you should take the following action

Condition	Alarm LED	Buzzer	Action
No gas present	Off	Off	None
Low level gas leak	Flashing	Sounding	Check for possible sources of the leak.
High level gas leak	On	Sounding	Turn off the gas at the supply. Open doors and windows Put out all naked flames. Don't smoke. Don't turn electrical switches on or off. Locate the gas leak
Alarm continues and the leak cannot be found	On	Sounding	Vacate the premises Inform the gas supplier or the gas emergency service immediately

**NOTE:** The gas companies add a strong smelling but harmless chemical to the gas before it is used by their customers. This enables you to smell the gas at levels well below those required to cause an explosion. It is therefore likely that you will smell the gas before the detector goes into alarm. This is because the alarm is factory set in accordance with British and European standards to detect gas levels before they are considered to be explosively dangerous. However, if you smell gas you should still take the steps recommended by your gas supply company.

**ACCIDENTALLY SETTING OFF THE ALARM**

The detector is a highly sensitive unit that is capable of sensing many flammable gasses and vapours found in the home. To avoid false alarms do not use the following near the gas alarm because they may cause a false alarm.

- Aerosol sprays.
- Alcohol used in cooking.
- Cigarette, cigar or pipe smoke.
- Strong household cleaning agents, polishes and solvents.
- The gas from a cigarette lighter
- Paint fumes and adhesive vapours

**WHEN TO PRESS TEST/HUSH THE BUTTON**

The button on the front of the alarm has several different functions depending upon the level of gas present.

Condition	Function	Result
In normal operation with no gas present or a very low level of gas present	Self test mode	The Buzzer will sound and the alarm LED <input type="checkbox"/> Fault LED will flash to verify correct operation

		minutes after which it will be reactivated.
Low/High gas levels have been detected, but have now dispersed	Reset the alarm latch	To avoid the possibility of a gas leak being missed, the alarm will continue to sound even when the gas has fallen to a safe level. Pressing the button will reset this condition

**FAULT CONDITIONS AND SIGNALS**

In the unlikely event that your alarm develops an internal fault, it will signal this by giving short chirps on the audible alarm. Two chirp every 5 seconds indicates a sensor fault.

**MAINTENANCE**

To clean the unit, wipe it clean with a damp cloth. Do NOT use cleaning agents, bleach or polish. The alarm's calibration is factory set and requires no user adjustments.

The only way to perform an accurate gas check is to use pre-calibrated gas and flow it past the sensor inlet. However, a simple confidence check can be conducted by using a small disposable cigarette lighter and pressing the lever normally used to maintain the flame without lighting it. If this is then held close to the gas inlet at the bottom right hand corner of the alarm the red light will come on and the audible alarm will sound within 10 seconds. This test verifies that the product does respond to flammable gas but does not verify the exact level at which the detector may alarm.

**INTERCONNECT FUNCTION**

If your alarm is interconnected with other units, a high level alarm on any of the connected units will cause the audible alarms on all the units to sound. Pressing the button on an alarm that was not exposed to gas will hush the sounder or reset the alarm on that unit only. However, pressing the button on the unit that caused the alarm will hush or reset all the alarms.

**RELAY**

If the internal relay output has been connected, it will operate only when a high level alarm is signalled. Once activated, the relay can only be reset by pressing the test / hush button after the gas has fallen below the high level alarm. Relays on interconnected alarms will only operate on the units that detect the gas leak.

**SPECIFICATION**

**Note:** The Lower Explosive Limit (LEL) is the minimum concentration of flammable gas in air that can cause an explosion, i.e. 100%LEL is when the gas becomes explosively dangerous.

**MAINS POWERED**

**Input Supply Voltage:** 230V 50/60Hz.  
**Fuse Rating:** 0.2Amps in unswitched fused outlet.  
**Power Consumption:** less than 7 Watts.

**DC POWERED**

**Input Supply Voltage:** 9 to 28 Volts DC  
**Fuse Rating:** 0.5Amps.  
**Power Consumption:** less than 4 Watts.

**ALL ALARMS**

**Sensing method:** Hot-Wire Type Gas Sensor  
**Time to alarm:** Less than 25 seconds.  
**Temperature range:** -10° to +40°C.  
**Gasses detected:** Natural Gas (methane).

Natural Gas (methane).  
LPG (Propane or Butane).

Natural gas models:

LP gas models:

Range of low level alarm: 7 to 13% LEL.  
Range of high level alarm: 22 to 28% LEL.  
Audible Alarm Output: 85dB at 3m

All alarms are calibrated, tested and design to meet the stringent performance requirements of the latest European standard for domestic gas alarms - BS EN50194:2000

The Alarm is calibrated at the factory and does not need recalibration. Do not tamper with the inside of the case or electric shock or malfunction may occur.

No user maintenance or adjustment is required.