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# TWIN-CHANNEL GAS ALARM USER MANUAL

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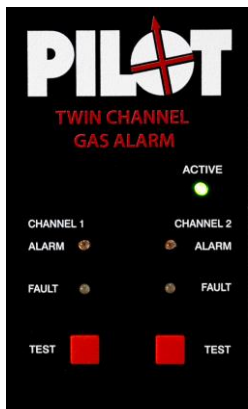
# 1. Introduction

Welcome to the user manual for your new Pilot Twin-Channel Gas Alarm! This document is designed to guide you through the installation, operation and initial testing of the device, as well provide information on any operational queries or troubleshooting issues you may have.

The Twin Channel Gas Alarm is ideal for small and medium sized vessels as it supports two LPG sensors.

This product range provides critical safety features against extremely dangerous or deadly gases. This responsibility requires maximum reliability which is why all our products endure an extensive testing procedure before leaving Envin Scientific.

## 2. Your Device



*Alarm Main Unit*

Your device is a Twin Channel Gas Alarm.

The device supports 2x Liquid Petroleum Gas (LPG) Sensors and will work with 12V or 24V systems.

In the box you will have:

- 1 Twin Channel Gas Alarm Main Unit
- 2 LPG sensors with 3.5m cable
- 1 User manual
- 1 Sensor awareness slip





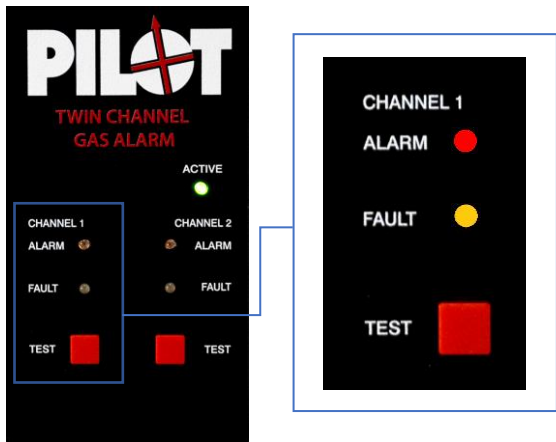
*LPG Sensor*

## 2.1 Front Panel & LED Indicators






The first LED on the front panel of your Twin Channel Gas Alarm is the Power Indicator. This LED illuminates green when the unit is powered on.

State	Power
	The unit is power on correctly.
 (off)	There is no power to the unit. Check wiring and that the device is switched on.



Next, you will see two LED's and a button for each channel. The first is the ALARM LED and will illuminate red when gas is detected. The second is the FAULT LED and will illuminate yellow when a fault is detected.

The test button can be used to see if the unit alarm is operating correctly. For more in-depth testing see section 4.

State	Channel LED's
	An OFF LED shows that the channel is operating correctly.
	SOLID yellow FAULT LED indicates a FAULT. Check all sensor wiring connections.
	SOLID red ALARM LED indicates the unit is ALARMING

## 2.2 Liquid Petroleum Gas Sensor

The LPG sensors detect butane/propane and alarms at 25% LEL (lower explosive limit). LPG gases are heavier than air, therefore the LPG sensor must be located near to the floor.





## 2.3 Technical Specification

Specification	Value	Description
Supply Voltage	12/24V	Supply from your system battery
Current Draw (Standby)	≈140mA	When alarm not sounding
Current Draw (Alarming)	≈140mA	When alarm is sounding
Number of sensors	2	Supports 2 LPG sensors
Dimensions	70 x 40 x115	(W) x (D) x (H)

## 3. Installation

You will need a small flat head screwdriver and some cable to install your alarm.

### **Power Supply**

- The power supplied must come from the vessel's Master Switch in order to activate the Gas Alarm whenever the power is on.
- The Twin Channel Gas Alarm will work on a 12V or 24V supply.

### **Suitable Installation Locations**

- The main unit should be in a location where the alarm is audible and the LEDs can be seen. It must be protected from the elements and the ventilation holes should **not** be covered up.
- The LPG sensors should be mounted as low as possible in a position where they will remain dry – near gas appliances at floor level or just underneath floorboards is ideal.
- There are cable routing and mounting holes on the rear and bottom of the unit casing.

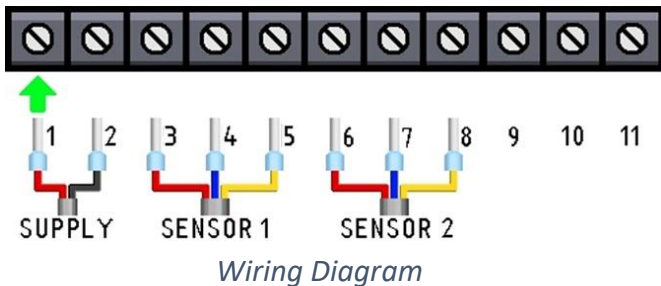
## 3.1 Wiring

### **WARNING**

Disconnect the power supply before proceeding

- Using the wiring diagram on page 11, start from pin 1 and work your way along the terminal block inserting the wires into the block.
- Wires are secured using a flat head screwdriver.
- To avoid confusion, use wire colours that match the colours in the wiring diagram.
- Be sure to wire the cables through the cable routing holes on the bottom of the case before attaching them to the terminal block.

## 3.2 Pin Definitions



1. Positive power supply
2. Negative power supply (Common Ground)
3. Sensor 1 Positive
4. Sensor 1 Negative
5. Sensor 1 Signal
6. Sensor 2 Positive
7. Sensor 2 Negative
8. Sensor 2 Signal
9. Not Used
10. Not Used
11. External System Activation Output (12v)

## 4. Initialisation & Testing

This section will explain how the unit functions, what the initialization procedure is and how to test your device.

### 4.1 Initialisation

The initialisation process will occur every time your Twin Channel Gas Alarm is powered on. The green LED will illuminate, and the red LED will flash every second alongside a beeping sound. During this time the unit will check for attached sensors and start the initialisation process. **The initialisation process can take up to 8 minutes,** however the beeping will be silenced after 30 seconds.

When a channel (sensor) has stabilised, there will be one long beep and the red LED will stop flashing. There will be one long beep for each channel when that channel's sensor has stabilised.

## 4.2 Testing

The alarm may be tested at any time in two ways:

1. By pressing the “Test” button on the front of your unit. This simulates the presence of harmful gases and should immediately sound the alarm and illuminate the red LED.
2. By allowing a small amount of lighter fluid vapour to pass by the LPG sensors. This will test the sensor itself.

All Twin Channel Gas Alarms and sensors are fully tested and calibrated before leaving Envin Scientific. It would good practice to regularly test your gas detection system using test method 2 for maximum safety.

## 5. Alarm

- Constant, high pitch alarm noise.
- “ALARM” LED will illuminate RED.

### **ACTION**

In the event of an alarm ensure that nothing is used which could ignite gas (matches, engine ignition etc.).

Ventilate the area by opening doors and hatches.

Vacate any interior cabins and remain outside until the alarm stops.

If the alarm continues to sound consult the troubleshooting section.

## 6. Troubleshooting

Symptom	Possible Cause	Action
Intermittent Alarm	Sensor may have become disconnected	Switch off supply, check connections, restart. Otherwise replace the sensor
Frequent false alarms	Contaminated Sensor or other gases present. Sensor over 2 years old	Replace the sensor
Regular beeping (while not initialising) or Fault light is lit	Low supply voltage	Check boat power supply
Alarm after initialisation or failure to initialise	Sensor has become disconnected or has reached end of life	Check connections or replace sensor



If your issue is not listed here, please use the contact details on the back of this manual to contact the manufacturer/supplier.

## 7. Sensor Replacement

We recommend that you replace your sensors every 2 years as their sensitivity can change over time.

### **To replace the LPG sensors:**

1. Switch off the power supply
2. Remove the top cap from the sensor housing
3. Remove the sensor from the housing
4. Gently insert the new sensor into the housing and replace the sensor cap.
5. Switch the power on

Replacement sensors are available on the Envin Scientific website – [www.envin-sci.co.uk/envin-shop/](http://www.envin-sci.co.uk/envin-shop/) ,Or through a Pilot supplier.

## 8. Warnings

### **DO NOT:**

- ✗ Expose sensors to silicone vapours, alkaline metals or a highly corrosive environment
- ✗ Use cleaning products around the sensors
- ✗ Allow the sensors to become damp or wet
- ✗ Expose the sensors to extreme temperatures (below 0°C or above 60°C)
- ✗ Handle sensors or unit internals while powered up
- ✗ Connect more than the max. number of sensors to the unit

### **DO:**

- ✓ Replace the sensors after the recommended 2 year period
- ✓ Test the alarm regularly
- ✓ Place the sensors into a clean sealable bag if the boat is to be out of use for long periods of time or if it is to undergo any maintenance work

## 9. Contact Details

<b>Website</b>	<a href="http://www.envinsci.co.uk">www.envinsci.co.uk</a>
<b>Online Shop</b>	<a href="http://www.envinsci.co.uk/envin-shop">www.envinsci.co.uk/envin-shop</a>
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The logo for Envin Scientific Limited features the word "Envin" in a bold, blue, sans-serif font. The letters are thick and blocky, with a slight shadow effect underneath. The "i" has a dot, and the "n" has a vertical bar. The entire logo is set against a light blue, oval-shaped shadow.

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