PILOT GAS MONITORING SYSTEM
MICROPROCESSOR CONTROLLED
COMPLETE WITH SOLENOID VALVE

Part Number: 2011319/12

This item is of the type recommended in the guidelines set out in Annex 3, Paragraph 6 of
“The Safety of Small Commercial Sailing Vessels – A Code of Practice” (Blue Code)
And
“The Safety of Small Commercial Motor Vessels – A Code of Practice” (Yellow Code)

MGN280(M)

Installation and Operating Instructions

READ THESE INSTRUCTIONS COMPLETELY BEFORE INSTALLING OR USING THE ALARM

GENERAL DESCRIPTION.
A PILOT GAS MONITORING SYSTEM ALARM is an important and cost effective
device wherever leaking gas or other dangerous vapours may be

However good a gas or engine installation may be there can be occasions when either due
to mechanical failure, or human error, a potentially lethal leak may occur. Many of the
vapours present on boats and in caravans such as butane, propane and petrol vapour are
heavier than air. Even a small leak can soon build up to dangerous proportions in the
bilge’s of a boat or in an inadequately ventilated caravan.

Pilot Gas Alarms are not fitted with an ON/OFF switch as they are designed to be
permanently on whenever the Master Switch is activated. It requires a 12 volt dc power
supply and consumes approximately 430 milliamps on standby (with the valve open) 185
milliamps on standby (with the valve closed) and 200 milliamps in the presence of gas.
An internal 2.5 amp fuse protects the circuit and sophisticated fault detection circuitry
warns of low supply voltage, detector failure, disconnection or short circuit.
The Pilot Gas Alarm operates on a 12volt supply but versions are available if operation from a 24 volt supply is required.

**INSTALLATION**

Disconnect the supply before proceeding further.

Carefully separate the two halves of the control unit by removing the two screws and gently pulling the two halves of the case apart. Four 5mm holes in the back half of the case are for routing the supply, detector and valve cables.

The control unit may be mounted in any suitable position, sheltered from the elements, where the warning lights and audible alarm may be easily noticed. Do not mount so that the ventilated slots are obstructed.

The detector heads should be mounted in the lowest possible positions where they will remain dry. Detector heads may be irreparably damaged by immersion in water. The most suitable location is near any gas appliance and at floor level or just under the floorboards. Detector heads are supplied with 3.5 meters of cable and it is recommended that this is not extended to more than a maximum of 6 meters.

Mount the back half of the case to any suitable vertical surface using the two screw holes provided. Ensure that air may freely circulate through the ventilation slots. Pass the two detector head cables and a suitable 2-core power supply cable through the holes. Draw sufficient cable through the holes to enable connections to the main part of the alarm to be made.

Above the terminal blocks on the gas alarm board you will see the numbers 1 on the left-hand side and 11 on the right-hand side. The two detector heads are connected in terminals 3-5 and 6-8 respectively. The detector heads are connected as follows:

**SENSOR 1:**
Red wire = terminal 3
Yellow wire = terminal 4
Blue & Black wires = terminal 5

**SENSOR 2:**
Red wire = terminal 6
Yellow wire = terminal 7
Blue & Black wires = terminal 8

Run a length of two core 1.5mm cable from Terminals 9 and 10 on the PCB to the solenoid valve. The Solenoid valve which is nondirectional should be connected in the
gas supply down stream of, and as close to, the regulator as possible. The electrical connections are made to terminals 1 and 2 of the coil. Polarity of the coil is immaterial. Terminal 3 of the coil is not used.

The Power Supply Cable should be connected like this:
- The POSITIVE wire to terminal 1
- The NEGATIVE wire to terminal 2

The power supply must be 12 volts dc and should come direct from the vessel’s Master Switch in order that the gas alarm is activated each time power is switched on.

Terminal 11 is I/O and is used when one or more PILOT Gas Alarms are chained together or if a relay is supplied for the operation of fans. Please contact the manufacturer for guidance should you require the use of this operation.

Check the wiring and fit the two halves of the case together, drawing any excess cable carefully out through the holes at the same time. Small plastic cable ties may be used on the inside of the case to prevent the cables being accidentally pulled from the terminal block.

Fix the two halves of the case together with the screws and switch on the power at the Master Switch.

**OPERATION**

When the unit is switched on the green power light will illuminate, the remaining four lights will flash and an intermittent audible alarm will sound for approximately thirty seconds whilst the unit stabilizes and auto calibration takes place – this process will be slightly longer if there is only one head. After the stabilization period the sounder will ‘beep’ once - indicating one sensor connected – or twice - indicating two sensors connected. The alarm lights that correspond to the sensors connected will flash very quickly indicating the environment is being monitored. If the number of heads connected does not correspond to the number of beeps heard, switch off the unit immediately and recheck the connections. If both sensors have been wired incorrectly there will be an audible alarm and diagonally opposite red and yellow LED’s will come on continuously. If the system is working satisfactorily press the Gas ON/OFF button to open the solenoid valve. Press again to close the valve. The green valve light will indicate if the valve is open or closed.

If the audible alarm continues to sound after the initial stabilization period (and the red light remains illuminated) immediate action must be taken as follows:

1. Ensure that nothing is used which could ignite the gas e.g. matches or sparks from batteries or engine ignition.
2. Ventilate the area by opening doors and hatches and creating a flow of fresh air.
3. Investigate and remove the source of dangerous vapour.

The PILOT GAS ALARM will give positive information that the vapour has been safely removed when the alarm ceases to sound and the red light stops being on continuously. To reconnect the gas supply, press the Gas ON/OFF button.

The alarm may be tested at any time by pressing the “test” button. This stimulates the presence of gas and should immediately sound the alarm.

**FAULT DETECTION**
If the red or yellow wires to a Sensor become disconnected a FAULT alarm (yellow light and intermittent alarm) will occur. Should the blue & black wires become disconnected an alarm light will come on and an audible alarm will be heard. The unit will automatically disconnect the gas supply. Once the fault is rectified the unit will allow the gas supply to be reconnected.

Should the unit alarm yet the cause is found no to be the presence of gas there are other substances that can cause the sensor to become contaminated. These include diesel fumes, hydrogen, salt, varnish, cleaning substances and dust. **Should the boat undergo any maintenance work it is recommended that the sensor(s) are remove from there Socket and placed into a clean sealable plastic wallet.**

**AUTO SENSING**
If a fault should occur on either channel it is possible to silence the intermittent audible alarm on that channel whilst leaving full facilities operational on the remaining channel. When power is reinstated the alarm will automatically sense that there is only one head connected and will operate this channel. The LED will not flash on the disconnected channel to show that it is not sensing.

**SPARES**
*Spare sensors are available for this product. The 2011 range of Pilot Gas Alarms now have a Socket arrangement for the sensor which is located inside the Black sensor housing.*

- Part Number: 201115    Sensor only
- Part Number: PDH/15   Sensor complete with cable 3.5mtrs
- Part Number: PDH/15c  Sensor complete with cable 150mm plus connector block