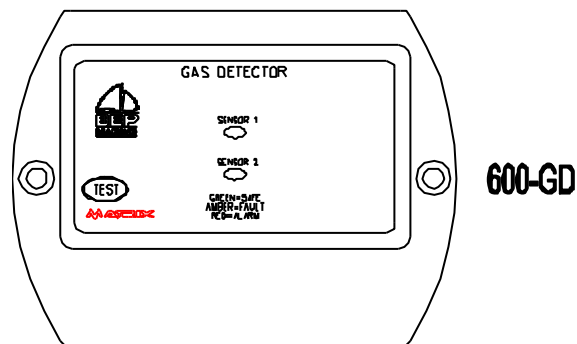
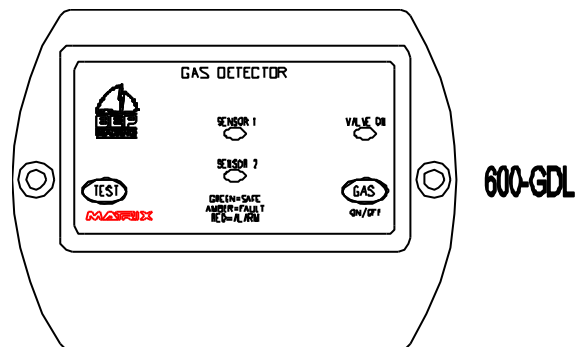


600-GD & 600-GDL

600 SERIES

GAS DETECTOR

INSTALLATION AND OPERATING INSTRUCTIONS



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1 Warranty

The warranty of this BEP MARINE LTD product is for Two Years from date of sale to original purchaser. BEP MARINE LTD does not assume the cost of removal or refitting of the product, or any other incidental cost that may arise, as the result of defect in materials or workmanship.

Warranty will only be undertaken on equipment returned to either BEP MARINE LTD or their agent. The equipment will be replaced or repaired at the discretion of either BEP MARINE LTD or its agents. As long as the equipment has neither been (1) Abused (2) Wrongly connected (3) Contaminated due to neglect (4) Improper installation, (5) Used in violation of instructions supplied with equipment manufactured by BEP MARINE LTD. On return of equipment for warranty it must be accompanied with proof of purchase and not been tampered with.

2 Important

It is the installer's sole responsibility to install and use this product in a manner that will not cause accidents, personal injury or property damage. Please follow the installation instructions supplied. If installation is not correct, the unit may not perform at its designed potential. If in doubt, consult your local BEP MARINE LTD dealer. BEP MARINE LTD disclaims all liability for any use of this product that may cause accidents, damage or be in violation of any laws.

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3 Cautions when using gas sensors

1. Exposure to silicone vapours
If silicone vapours adsorb onto the sensor's surface, the internal sensing element maybe be coated, irreversibly inhibiting sensitivity. Avoid exposure where silicone adhesives, hair grooming materials or silicone rubber/putty may be present.
2. Highly corrosive environment
Exposure to corrosive materials such as H₂S, SO_x, Cl₂, HCl, etc. for extended periods may cause irreversible damage to the sensor.
3. Water
Sensor performance maybe adversely affected due to soaking, splashing or water condensing on the sensor surface. Exposure to salt water spray will adversely affected sensor performance. Light condensation under conditions of indoor usage should not pose a problem for sensor performance.
4. Freezing
If freezing occurs on the sensor's surface irreversible damage may occur to the internal sensing element.
5. Usage in high density of gas
Sensor performance maybe adversely affected if exposed to a high density of gas for a long period of time.
6. Explosive Limits
Different combustible gasses have their own Lower Explosive Limits (LEL). Our gas sensors are calibrated against 20% LEL LPG in Air.
7. False positive alarms
False positive alarms can be caused by differing concentrations of various aerosols, perfumes, resins, epoxies, paints, solvents, alcohol, hydrogen, gases and fuels.

4 Features

The 600-GD and 600-GDL gas detectors offer the following features: -

- Self testing capability
- Microprocessor control
- Dual sensor capability
- Provision for an external alarm
- Provision for automatic bilge blower switching
- Automatic shut-off solenoid control with Pulse and Hold circuit technology for low power draw (600-GDL only)
- Manual override – Important: Disables gas detector (600-GDL only)

NOTE: The 600-GDL is designed for 12V DC systems only. For 24V installations a DCVR-4 voltage reducer must be used.

5 Specification

Voltage:	600GD 10V-30V DC / 600GDL 10-15V DC
Current:	Total 350mA Max
Alarm:	20% LEL (Lower Explosive Limit)
Current at outputs:	800mA Max (per output)

NOTE: If you are using a solenoid valve other than BEP's VR2. The solenoid current draw must be checked to make sure it is 800mA or less at 12.5 volts.

6 Introduction

The Contour model LPG, Petrol and CNG detector is the product of continuing research and development, which BEP Marine Ltd devotes to their product range. The 600 series detectors use the latest in solid state technology available, with a microprocessor control head connected to the latest in sensor technology. The 600 series detectors have the capability to control two sensors with both visual and audible alarms. There is a test switch to check the operation of the sensors with indicators for fault detection.

The 600-GDL has provision for the connection of an external alarm, bilge blower, gas on/off valve and manual override to disable faulty sensor.

Read these installation and operation instructions carefully before installing, as any damage caused by faulty installation will result in the warranty being null and void.

There is no power on/off switch provided in either unit. It is intended that for maximum protection the unit should be on all the time while you are on your boat or vehicle.

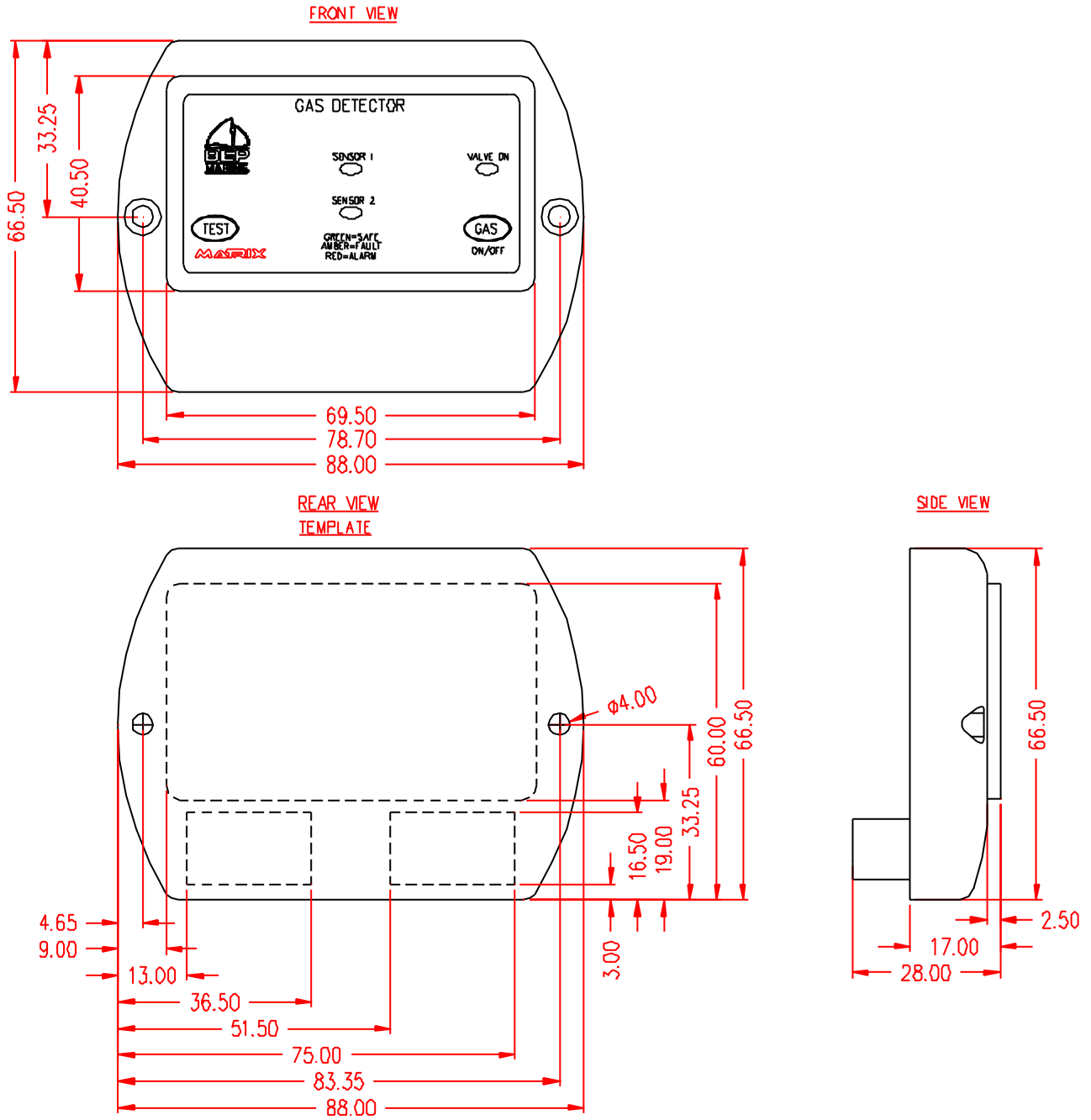
7 Fault Detection

The nominal alarm point of the 600 series is 20% of the LEL (Lower Explosive Limit) of LPG/CNG in Air. In the event of a gas leak and the alarm activating, close the manual valve on your gas bottles and open hatches to ventilate the area. All fans and blowers used to ventilate must be ignition-protected types.

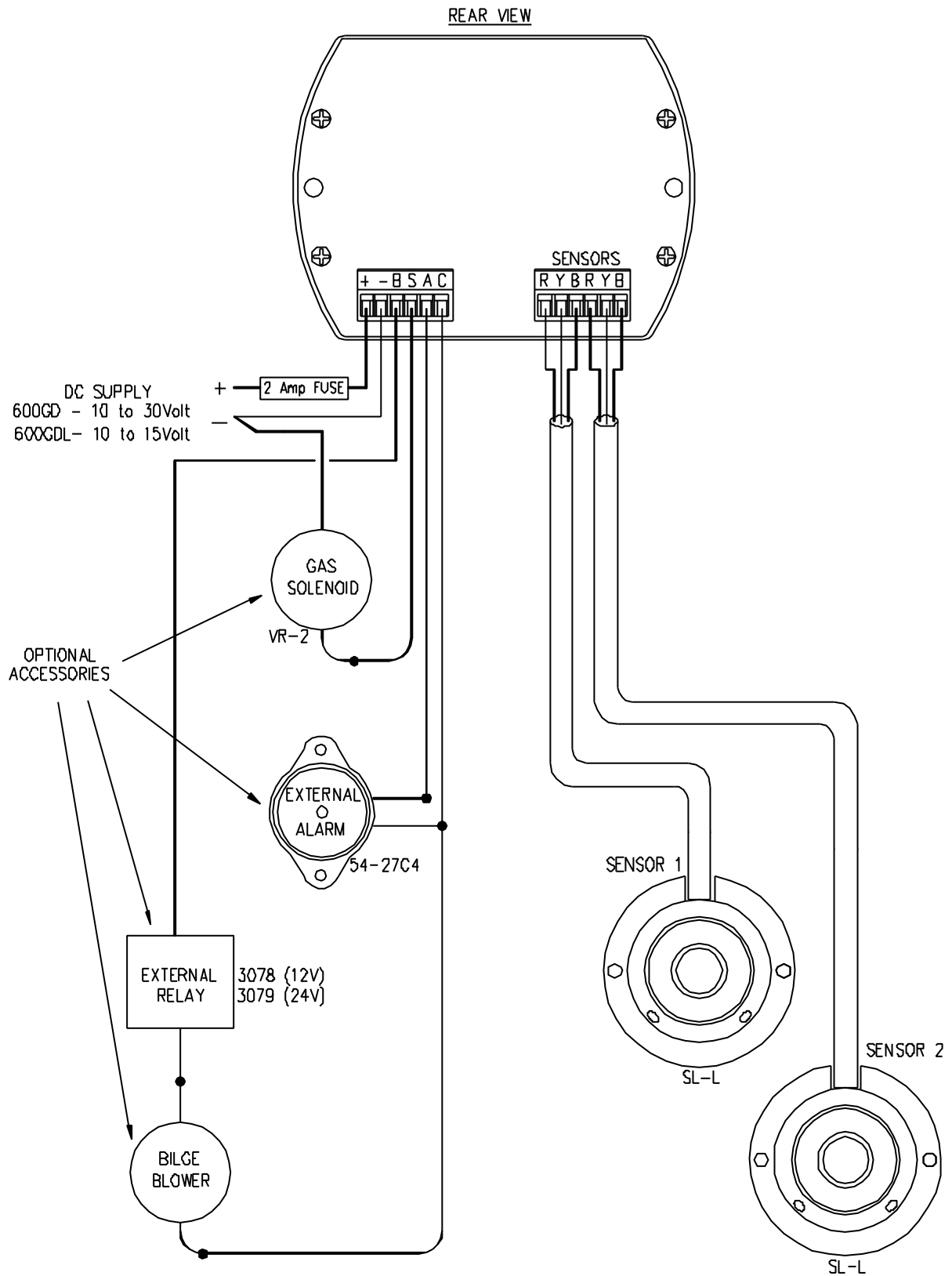
In the event of a sensor being contaminated, damaged, cable shorting or a faulty connection, the amber light will come on for the particular sensor. If the sensor fault persists then the sensor could be damaged and will need to be replaced.

In detecting LPG the sensor can also detect hydrocarbons in other products such as cleaners and strong adhesives, this can cause nuisance alarms. See section 3 - 'Cautions when using gas sensors' for more details.

8 Dimensions



9 Wiring Diagram



10 Control Head Installation

For ease of operation, the control head should be mounted in a convenient position close to your gas appliances and in a position where the control head can be seen and heard easily. The unit can be either surface mounted or recessed into a 2.5mm panel.

11 Sensor Installation

- The sensor is supplied with a 5-meter cable.
- For LPG and Petrol fumes, which are heavier than air, mount the sensor in a low dry position where the gas is likely to collect. The sensor must be mounted clear of bilge water.

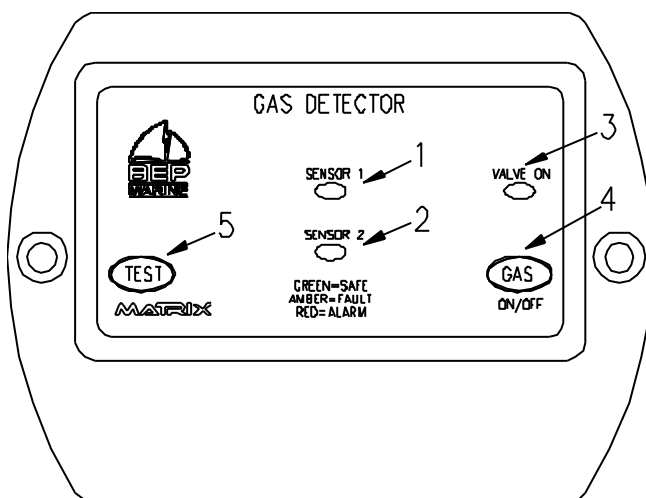
NOTE: If the sensor gets wet then the sensor becomes inoperable and must be replaced.

- For CNG, which is lighter than air, mount the sensor just below ceiling height but not above cooking or heating appliances.
- Fasten the sensor with the supplied screws.
- Route the sensor cable through to the control head and connect as per the wiring diagram.

12 Operation

On applying power to the unit, the control head goes through a test cycle. This will take approximately 45 seconds. During this period the sensor heads are being cleaned and tested, at this time there will be a slow beep from the audible alarm and all the lights will flash amber. Towards the end of this period the pulse of the beeper and lights will increase, if the unit senses that the environment is clear then the control head will go into safe mode. The beeper will turn off and the sensor lights will change to green.

With the control head in safe mode the gas valve can be turned on and off. When on, the valve light will show red (600-GDL only). Should the control head go into alarm mode the gas valve will be automatically turned off (600-GDL only). A red light will indicate which sensor has detected gas and the alarm will beep quickly.



1. Sensor #1 indicator
2. Sensor #2 indicator
3. Solenoid valve on/off indicator*
4. Solenoid valve on/off switch*
5. Test/alarm mute switch

* Refers to 600-GDL features only

13 Test / Alarm Mute Button

When the 'TEST' button is pressed in normal operation mode it will -

- Turn on the external alarm
- Turn on the blower
- Turn off the solenoid
- Sounds the keyboard beeper
- Turn light red

Pressing the 'TEST' button again cancels the above.

When the unit is in alarm mode, pressing the 'TEST' button will turn off the external alarm but the keyboard alarm will continue to sound. The detector will stay in alarm mode until the gas disperses.

14 Bypass Mode

This is a 600-GDL feature only. Bypass mode disables the sensors. It is important to note that the bilge blower and external alarm features of the 600-GDL are also disabled.

To achieve bypass mode press and hold the 'TEST' button for approximately 15 seconds until the sensor LEDs start to flash (green or amber). The sensor LEDs will then continue to flash (1 sec on, 1 sec off) to indicate that the sensor(s) are in bypass mode.

Once the fault has been rectified, press and hold the 'TEST' button until the 'VALVE ON' LED comes on. Bypass mode is turned off when the button is released. The 600-GDL will then automatically reset itself and test the sensor(s).

15 Indicator Display

VALVE ON INDICATOR

Red: Solenoid valve on
Off: Solenoid valve off

SENSORS #1 AND #2

Green: Sensor on safe, no fumes, no beeping
Green flashing: Bypass mode with sensor disabled - Sensor on safe, no fumes, no beeping
Amber: Sensor fault detected, slow beeping
Amber flashing: Bypass mode with sensor disabled - Sensor fault detected.
Red: Alarm. Gas present, fast beeping

AUDIBLE ALARM SOUNDS

Warming up: Medium slow, all lights flash amber
Alarm: Fast, sensor lights red
Fault: Slow, sensor lights amber

16 Accessories

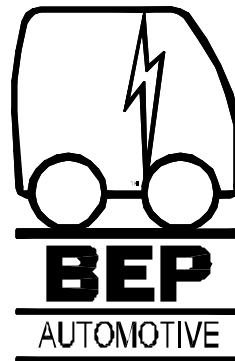
VR2: Solenoid control valve
53-2764: Remote Alarm
SL-L: Sensor and Lead
DCVR-4: Voltage reducer

NOTE: The 600-GDL is designed for 12V DC systems only. For 24V installations a DCVR-4 voltage reducer must be used.

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