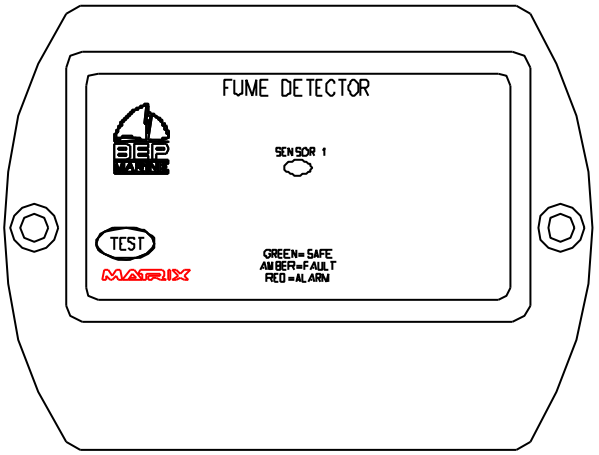
BEP FD-2

CONTOUR MATRIX

FUME 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.

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, SOx, 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 FD-2 gas detector offers the following features –

- Self testing capability
- Microprocessor control
- Single Sensor
- Audible and visual alarms

5 Specification

Voltage:	10V-30V DC
Current:	Total 350mA Max
Alarm:	20% LEL (Lower Explosive Limit)

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 FD-2 detector uses a single sensor with both visual and audible alarms. There is a test switch to check the operation of the sensor with indicators for fault detection.

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. It is intended that for maximum protection the unit should be on all the time while you are on your boat or in your vehicle.

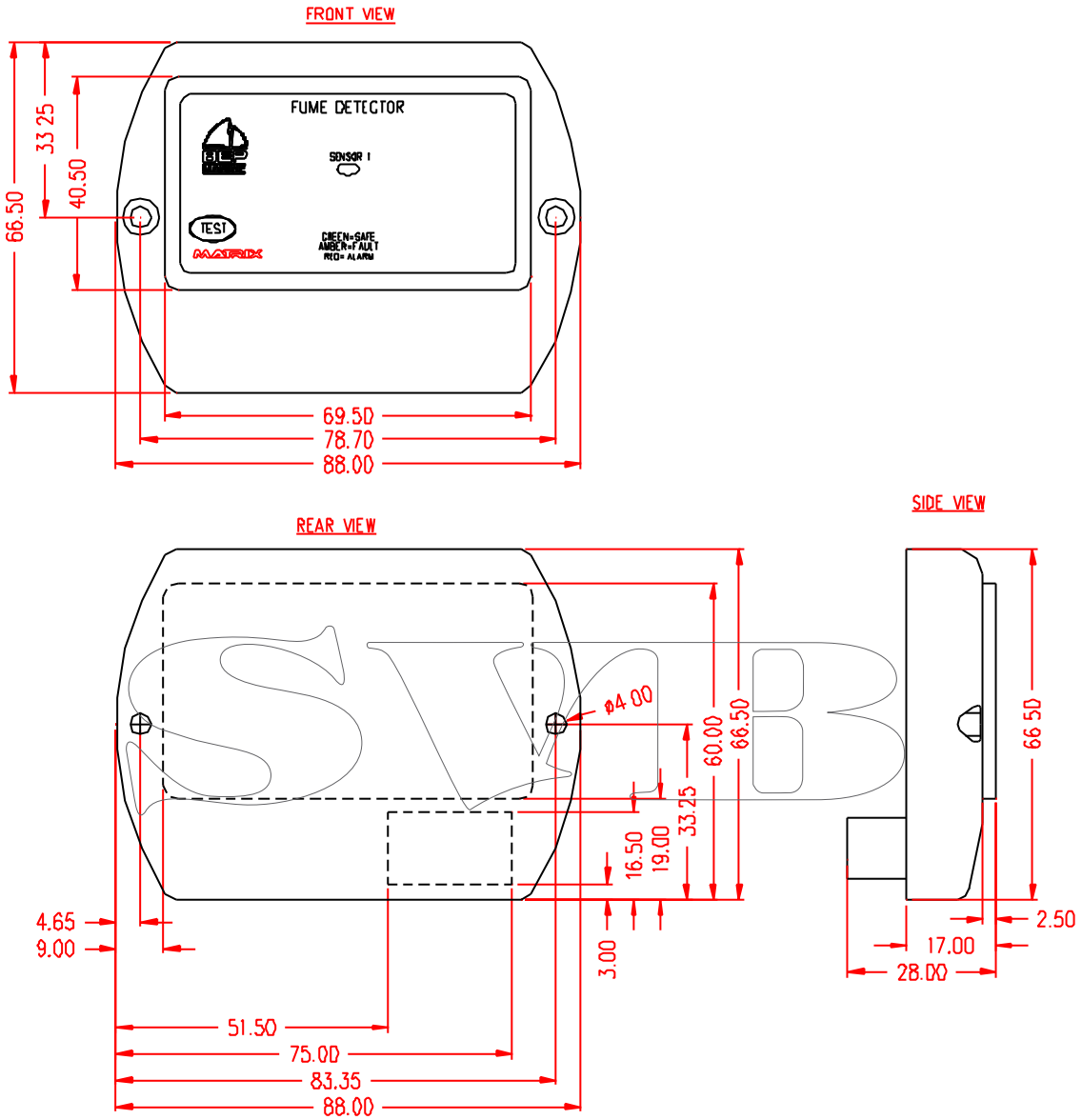
7 Fault Detection

The nominal alarm point of the FD-2 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.

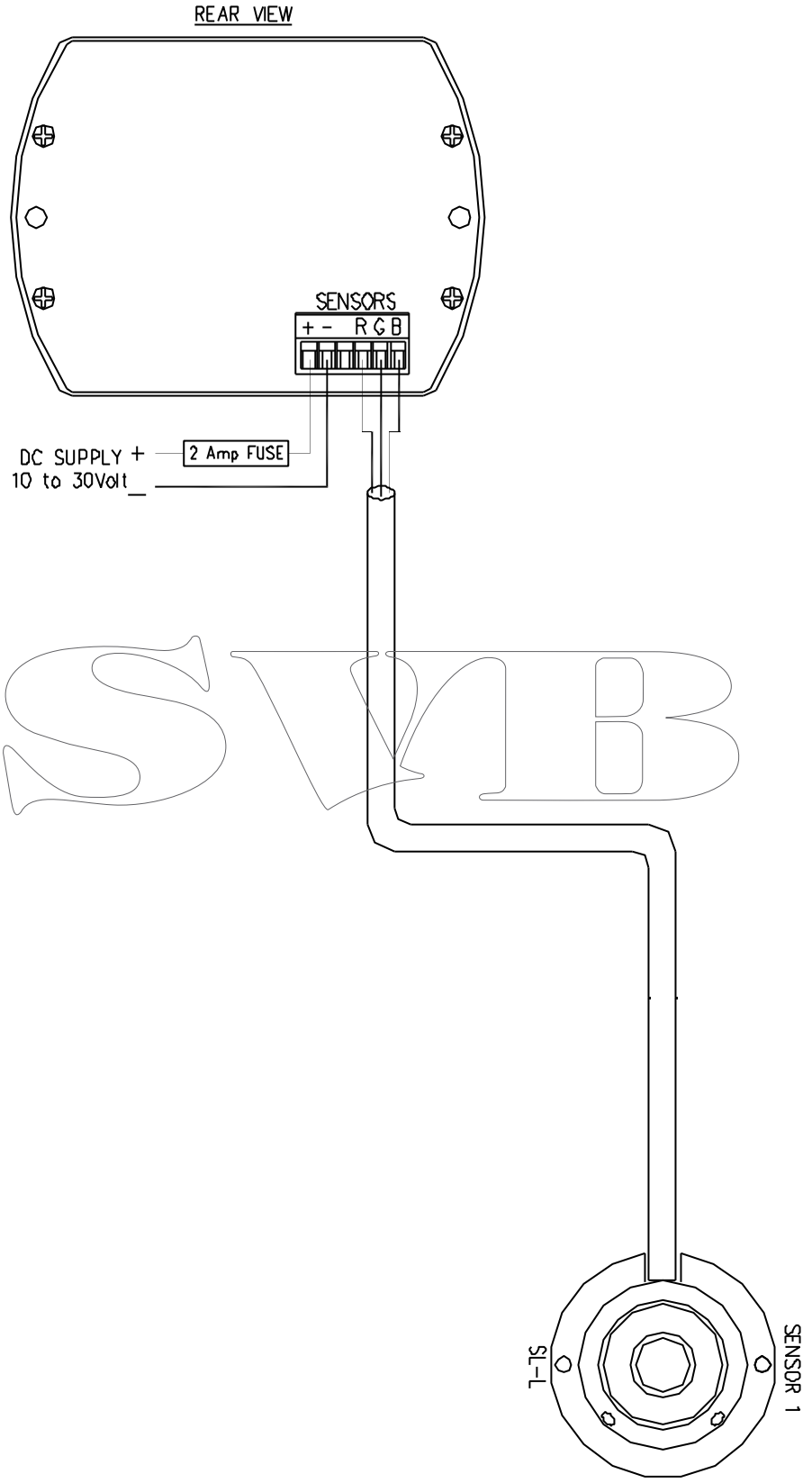
In the event of a sensor being contaminated, damaged, cable shorting or a faulty connection, the amber light will come on for the sensor. If the sensor fault persists then the sensor could be damaged and will need to be replaced.

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.

13 Test Button

When operated in normal operation it will -

- Sounds the keyboard beeper
- Turn light red

Pressing the switch again cancels the above.

14 Indicator Display

SENSOR

Green:	Sensor on safe, no fumes, no beeping
Amber:	Sensor fault, slow beeping
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

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