TS1

INSTALLATION AND OPERATING INSTRUCTIONS

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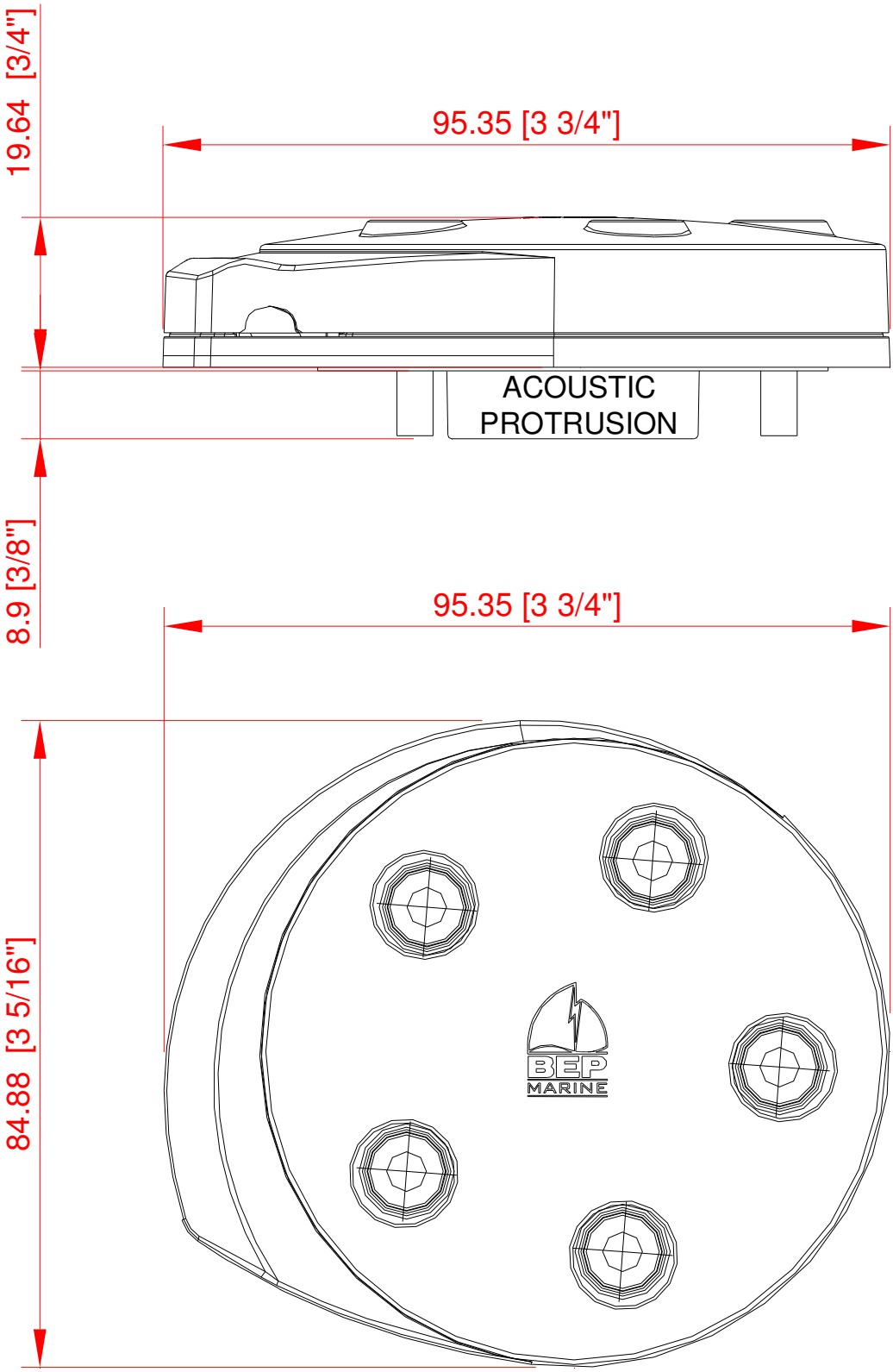
1 Features

- $10V_{MIN}$ to $32V_{MAX}$ DC.
- Operating distance of 0mm to 2000mm.
- Linear and non linear tank calibration at 5 levels.
- Supports metal and plastic tanks.
- Industry standard SAE-5 stud mounting pattern with gasket seal and washers.
- Supports 10-180, 10- 300, 240-33 and 0-5 volt gauge outputs.
- Resistant to Petrol, Diesel, Water, and Chemical Toilet.
- Operating temperature range of 4 to 65 degrees C.

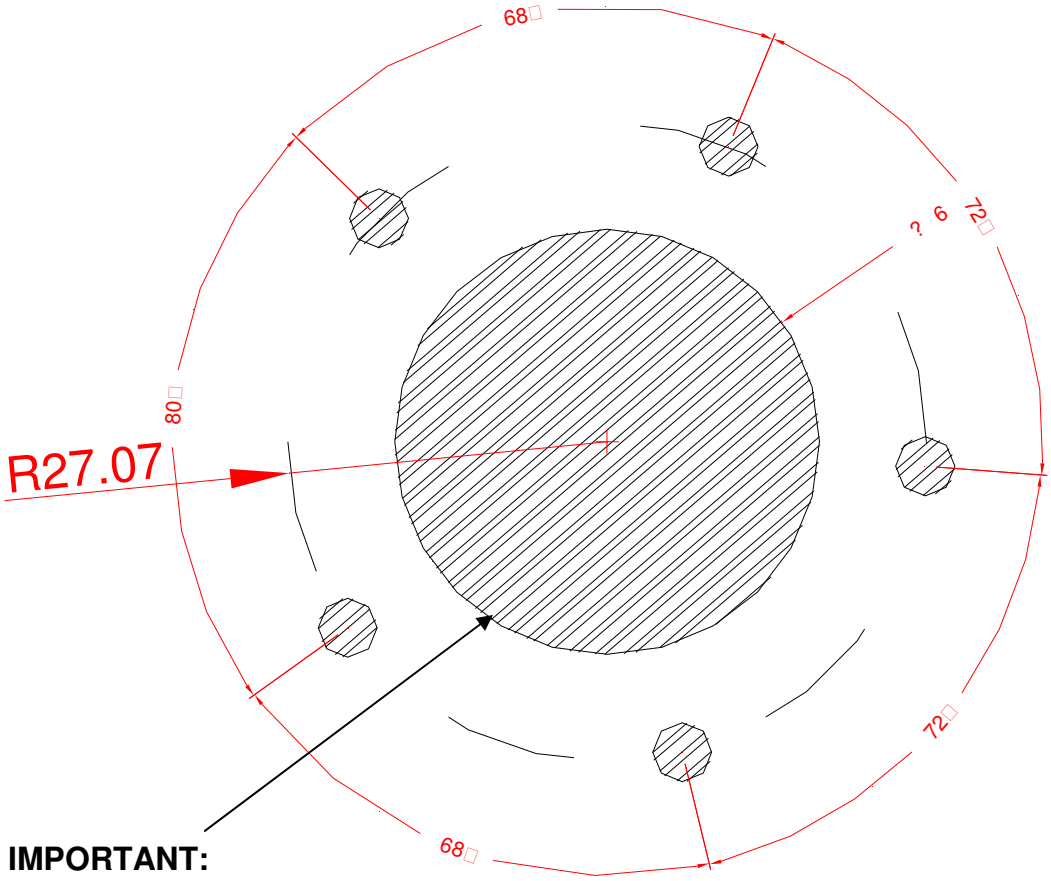
2 Plug Information and Specifications

- RED - Battery Positive.
- BLACK - Battery Negative.
- GREEN - Output to gauge.

3 Dimensions



4 Mounting



VERY IMPORTANT:

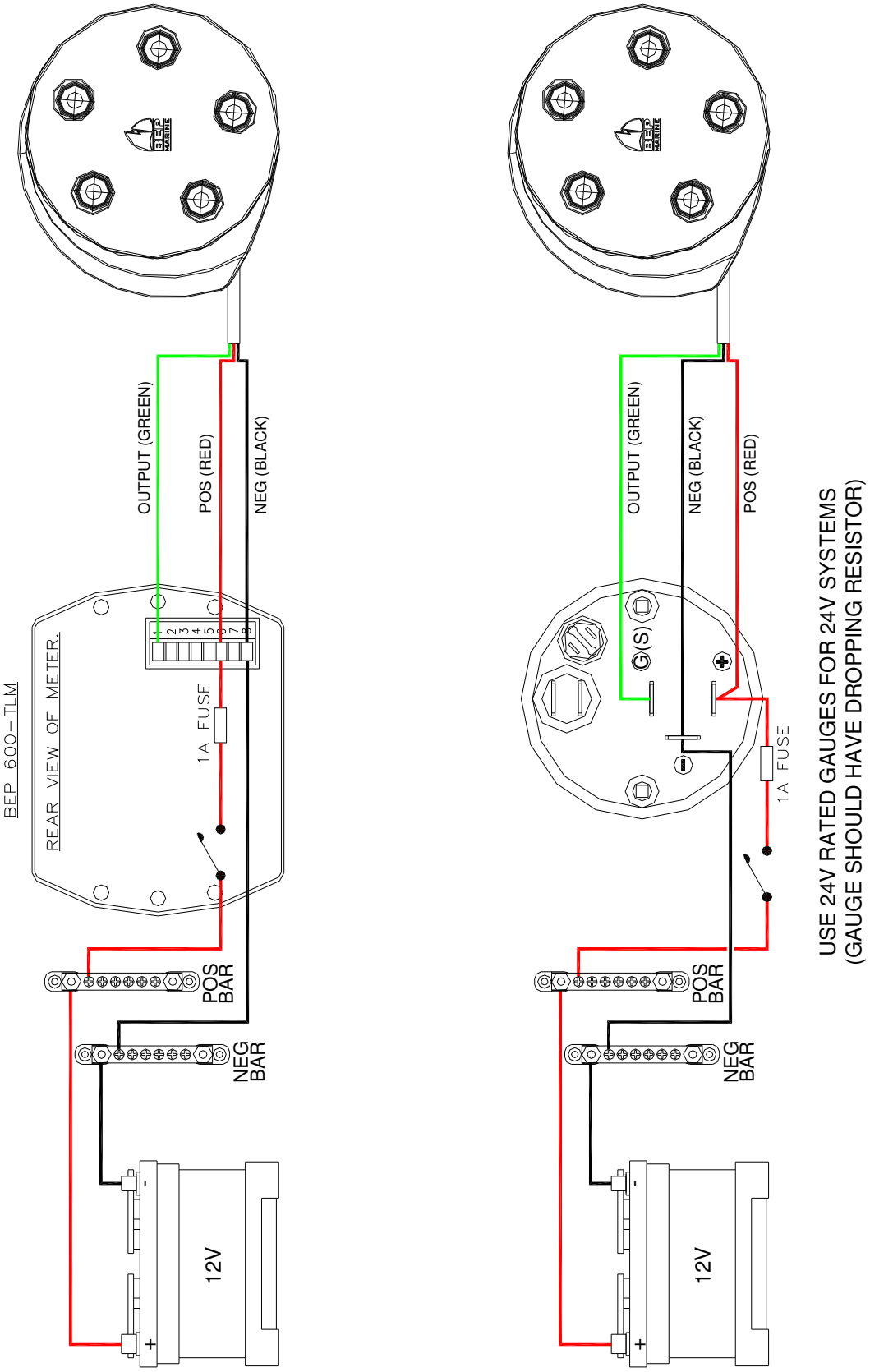
DIAMETER MUST NOT BE LESS THAN 38mm!

Drawing is not to scale. Please use the tank gasket as a template.

IMPORTANT:

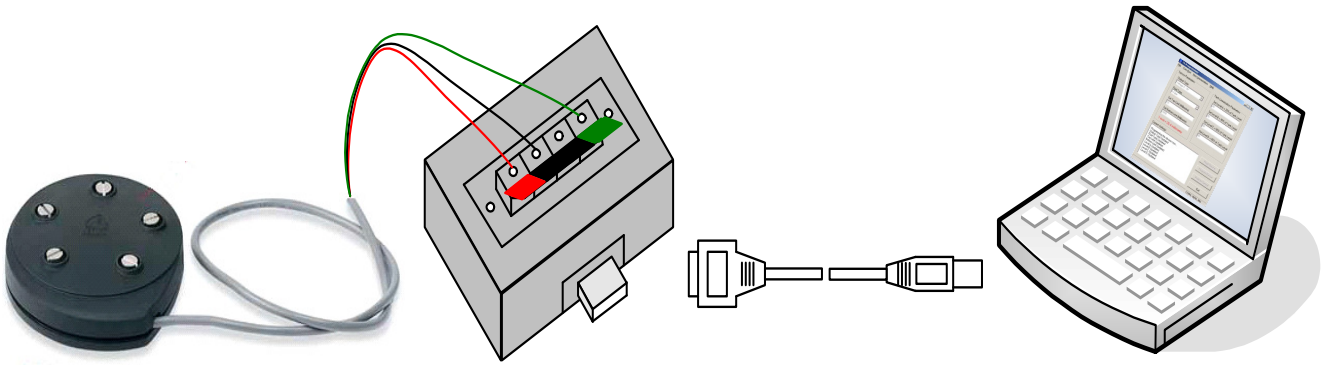
- The TS1 is not recommended for use on tanks under 200mm in depth.
- Mounting with baffles: The tank sender TS1 can be mounted 60mm from a vertical tank baffle.
- The TS1 must be mounted at the deepest tank point. Otherwise, the TS1 will not operate correctly.
- The TS1 “acoustic protrusion” (see dimensions drawing) must not touch the wall of the tank. Otherwise, the TS1 will not function!
- Please use the gasket provided. Otherwise, the TS1 will not function! (Cork/viton)
- Use 5 washers provided, washers must be placed under screw heads to prevent rubber lid damage.
- Maximum torque for the mounting screws is 0.5 Newton meter.
- **10 – 180ohm, 240 – 33ohm and 10 – 300ohm settings are suitable for analogue gauges only.**

5 Wiring Diagram



Power must be removed before TS1 is connected to the system. **Ensure wiring is correct or else damage may occur rendering the device inoperable.**

6 Programming Setup



TS1 Tank Sender (BEP P/N TS1)

Interface Box + USB-to-Serial Converter Cable (BEP P/N TS1-PK)

Computer with USB Port

Please visit the BEP website for the programming software.

7 Problem Solving

Error message: The output will decrease towards empty and increase towards full, repetitively when no tank depth can be found after approx ten minutes.

Water Tanks: After long periods of no use, condensation will build up on the roof of the water tank and the sender face. If the water droplets are large, the sender will not be able to read the contents of the tank accurately. This will clear with normal boat or RV use.

Waste Tanks: Large amounts of foam bubble on the surface of the liquid caused by detergents or washing powders will result in the sender not receiving reflected sound pulses back from the liquid surface, instead these will be absorbed by the bubbles until they disperse. Then normal operation will resume.

Frequently asked questions:

Q: What is the signal up date period?
A: Signal is updated every 10 seconds.

Q: Is the TS1 ignition protected?
A: The TS1 is ignition protected. It is fully potted.

Q: On power up, the analogue gauge goes full scale then back to empty. After 5 seconds it shows the correct level.
A: This is normal for a 10 – 180ohm analogue gauge.

Q: On power up, the analogue gauge goes full scale and then back to the correct level.
A: This is normal for a 240 – 33ohm analogue gauge.

Q: When the tank is filling, the gauges reading reacts quicker than it does when emptying.
A: The software is designed, so that when the tank is being filled you can see the level rising and avoid overfilling. More dampening is in place when the level is dropping, so that when the boat is underway and there is a lot of fluid moment, you won't be getting a lot of meter fluctuation.

Q: The gauge is reading full all the time.
A: 1. The most common problem is that the acoustic protrusion is touching the tanks
2. The incorrect gasket has been used specified gasket is a Cork/viton mix.
3. The sender is to close to the side of the tank.
4. There is a obstruction in the tank.

Q: Is the sender sensitive to electrical interference. Should we use shielded cable?
A: There is no need to use shielded cable, unless you are running a long distance and near appliance cables that radiate noise.

Q: What is the maximum distance between sender and meter?
A: 50 metres.

Q: What support is there for the product?
A: Updates will be placed on BEP website.

NOTE:

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