

Gasoline Fume Monitoring Unit

EIU1-1

Owner's Manual
&
Installation Instructions

Read and comply with all instructions, warnings and limitations before installing, servicing or removing this device.

Additional copies of this manual are available at no charge by contacting the manufacturer, distributor or dealer. Physa Marine reserves the right to change features without notice.

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General Information

WARNING

GASOLINE FUME DETECTORS ARE MEANT TO SERVE AS A SUPPLEMENTAL WARNING SYSTEM. IT IS NOT MEANT TO REPLACE STANDARD SAFETY PRACTICES WHICH SHOULD BE CARRIED OUT AROUND EXPLOSIVE FUMES.

The Gasoline Fume Monitoring Unit is an effective means to monitor gasoline fumes in an engine compartment or bilge and inhibit the engine's starter in the event gasoline fumes reach the lower explosive limits (LEL). The system uses a sensor, located in a place of interest and a central display unit that notifies the operator and inhibits the engine starter, minimizing the possibility of igniting the gasoline fumes.

Specification

System Specifications

Operating Voltage: 9-18 VDC

Nominal Current Draw: 113mA @ 9 VDC

Maximum Current Draw: 133mA @ 9 VDC

Operating Temperature: -40°F (-40°C) to 158°F (70°C)

Alarm Horn: ≈ 68dB

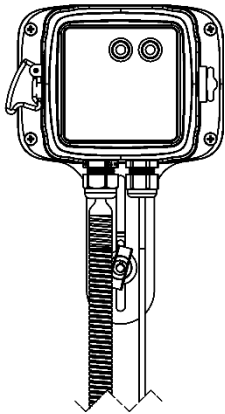
Output: 5A Max

There are 5 LEDs located on the Unit indicating the status of the system. The Green “Enabled” LED indicates that the ignition circuit to the engine starter is CLOSED. The Red “Disabled” LED indicates that the ignition circuit to the engine starter is OPEN.

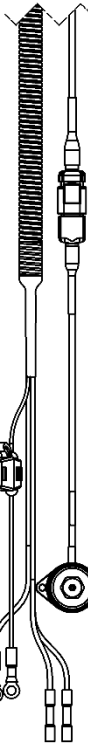
The Green “Monitoring” LED indicates the system is operational. The Amber “Sensor Trouble” LED indicates that there is trouble with the sensor. This is to notify the user to check the connections and wire runs of the sensors. There may be a break in the wiring or a disconnected sensor. The Red “Fumes Detected” LED indicates a fume buildup of at least 20% of the LEL (Lower Explosive Limit) which is considered an alarm. The alarm horn will sound, and the engine starter will be inhibited when this LED is illuminated.



The alarm status will continue as long as fume levels remains at an elevated level. The alarm horn may be silenced by pressing the “Silence” button. The problem should never be considered corrected as long as the Red LED is illuminated.



EIU1-1



20.0 Amp Fuse

FS-T01

RED – Power (+)
BLACK – Power (-)

YELLOW – Engine Start
YELLOW – Engine Start

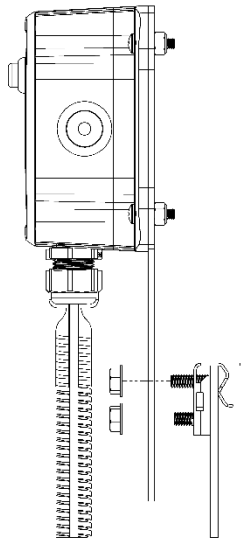
Installing the EIU1-1 Unit

Use the appropriate #10 mounting hardware to mount the EIU1-1 in the desired location using the four (4) provided mounting holes.

Installing the EIU1-1 Unit with Optional Mounting Bracket

Use the provided mounting hardware to mount the EIU1-1 to the Mounting Bracket using the four (4) provided mounting holes.

The Unit should be located near the engine that it will be inhibiting. Remove the Flange Clip from the Mounting Bracket and install it on a stationary plate or bracket on the engine with a thickness of 1/8" (3mm) to 1/4" (6mm) with the threads facing out. Tighten the Set Screw in the Flange Clip until it is tight to the plate/bracket. Install the Unit so that the Flange Clip threads and Set Screw are centered in the slot of the Mounting Bracket. Secure the Unit to the Flange Clip by threading Flange Nuts on both the Set Screw and Flange Clip threads. Tighten the Flange Nuts in place.



Installing Gasoline Fume Sensor(s) (FS-T01-S)

The Gasoline Fume Sensor should be located in the Bilge, just above the “Slosh Line”. A good rule of thumb is to install no lower than the height of the starter solenoid. Avoid locating sensors near manifold or exhaust systems, as high heat may damage the sensor.

Use the appropriate #8 mounting hardware to mount the Gasoline Fume Sensor in the desired location. The rubber gasket should be installed between the sensor and the mounting surface.

Connect to the Sensor Lead using the attached quick-disconnect connectors.

Routing Sensor Lead(s)

A 9' (3M) Sensor Lead is provided for each Gasoline Fume Sensor. The Sensor Cables should be routed starting at the Unit, then to the pre-determined location of the Gasoline Fume Sensor. Take care not to pinch, break, or cut the Sensor Cable or put too much stress on the connectors while routing the cable. Secure the Sensor Cable with the appropriate hardware for the application.

NOTE

DO NOT CUT EXTENSION CABLE FOR ANY PURPOSE. DOING SO VOIDS THE PRODUCT'S WARRANTY. EXTENSION CABLES ARE AVAILABLE FROM 20' (6.1M) TO 100' (30.5M).

Electrical Connections

The Unit operates on 9-18 VDC. A Red and a Black 14 GA wire with ring terminals are provided for connecting to the power source. Connect the Red wire to Power (+). Connect the Black wire to Ground (-).

Cut the ignition wire at the solenoid leaving approximately 8" (200mm) at the connection lug. Connect one of the ignition wires to one of the yellow wires with the preinstalled butt splice using an insulated Crimp tool. Repeat process for the other ignition wire.

NOTE

IMPROPER CONNECTIONS WILL DAMAGE THE UNIT AND WILL VOID WARRANTY.

Testing the System Operation

The Unit can be tested by pressing the “Test” button on the face of the Unit. The Unit will cycle through the LEDs .

Unplug the Gasoline Fume Sensor. The Amber “Sensor Trouble” LED will illuminate. If the Amber LED does not illuminate, remove Unit and return direct to manufacturer following the instructions at the back of this manual.

Testing the Gasoline Fume Sensors

WARNING

DO NOT USE A GASOLINE SOAKED RAG OR A PARTIALLY FULL CONTAINER OF GASOLINE TO TEST A SENSOR. THE RAW GASOLINE COULD IGNITE, RESULTING IN SERIOUS INJURY.

Test the Sensors by holding an unlit Butane lighter to the sensor. Within a few seconds, the Red “Fumes Detected” LED will illuminate, the alarm horn will sound, and the engine starter output will turn OFF. Remove the lighter from the Sensor and press the “Silence” button to mute the alarm horn. Test that the engine is not able to start. Lift the safety cover and activate the “Bypass Switch”. Test that the engine is able to start. After approximately one minute, the Red LED will turn off and the Unit will return to its normal state of operation.

Maintenance

The system should be tested periodically in the fashion described in the previous sections. Due to the harsh environmental conditions in marine applications, it is recommended to replace the Gasoline Fume Sensors every 3-4 years.

In the Event of an Alarm

Immediately have all passengers and crew exit the passenger compartment and vessel if possible.

Ventilate the space being monitored.

Carefully check all fuel lines and other potential sources of gasoline fume leaks. If leaks are identified, shut off fuel supply and make any necessary repairs.

WARNING

DO NOT BYPASS THE ENGINE START INHIBITOR UNLESS THE REQUIRED REPAIRS HAVE BEEN MADE. THE GASOLINE FUMES COULD IGNITE, RESULTING IN SERIOUS INJURY.

Repairing Physa Marine EIU1-1 Components

Physa Marine EIU1-1 Components are not field serviceable. Components must be returned to the factory for any repairs.

Returning Physa Marine EIU1-1 Components

No product may be returned for credit or repair without a written “Returned Material Authorization” (RMA) form. Purchaser must email Physa Marine at PhysaMarine.com for an RMA. If due to extenuating circumstances a product is to be returned after approval, it must be received in 100% new/resalable condition. Products stored by the buyer for more than 26 weeks may not be returned for any reason. Maintaining fresh and current inventory is the responsibility of the buyer.

1 Year Limited Warranty

This Warranty is in lieu of all other expressed or implied Warranties

Seller warrants title, materials and workmanship on equipment, except components manufactured by others for which the Seller assigns, as permitted, the original manufacturer's warranty. Seller's warranty shall be for a period of (1) one year from the date of sale to the ORIGINAL CONSUMER PURCHASER, during which non-conforming equipment returned to the Seller at Buyer's expense and risk may be repaired or replaced at the Seller's option. Physa Marine will repair or replace products found to be defective in materials or workmanship within the period set forth above, provided that: (a) the product has not been subjected to abuse, contamination, neglect, accident, incorrect wiring not our own, improper installation or servicing, or used in violation of instructions furnished by Physa Marine and (b) as to any prior defects in materials or workmanship covered by this warranty, the product has not been repaired or altered by anyone except Physa Marine and (c) the serial number has not been removed, defaced or otherwise changed, and (d) examination discloses, in the judgment of Physa Marine, does not assume the costs of removal and/or installation of the product or any other incidental costs of removal and/or installation of the product or any other incidental costs which may arise as a result of any defect in material or workmanship, and (e) upon discovery of defect, Buyer shall immediately cease use of and notify Physa Marine.

Any warranty implied by law, including warranties of merchantability or fitness, is in effect only for the duration of the expressed warranties set forth above, no person is authorized to give any other warranty, or to assume for Physa Marine any other liability in connection with the sale of its products; Physa Marine shall not be liable for the loss of use, revenue, or profit or for any injury, or for any other consequential or incidental damages, buyer is not relying on seller's judgment regarding his or her particular requirements and has had an opportunity to inspect the product to his or her satisfaction.

This warranty gives you specific legal rights and you may also have other rights, which vary, from state to state.

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