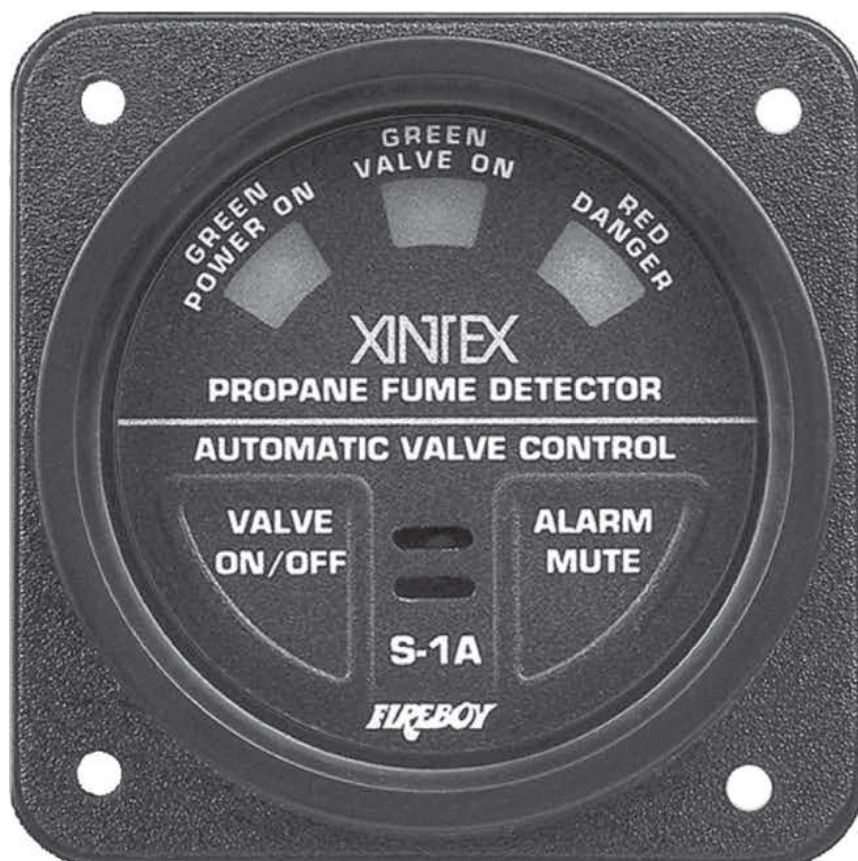


Fireboy-Xintex

S-1A PROPANE FUME DETECTOR WITH VALVE CONTROL



OWNERS MANUAL &

INSTALLATION INSTRUCTIONS

READ AND COMPLY WITH ALL INSTRUCTIONS, WARNINGS AND LIMITATIONS BEFORE INSTALLING,
SERVICING OR REMOVING THIS DEVICE.

READ **WARNING** ON PAGE 2

RETAIN THIS MANUAL FOR REFERENCE.

MADE IN U.S.A.

Specifications subject to change without notice.

WARNING!

There are no user or field serviceable parts in this product. The S-1A must be returned to the manufacturer for any repair or performance checks. Installation shall be done by qualified personnel authorized to do so by the authorities having jurisdiction for the particular application in which the product is being used. Electrical wiring shall be in accordance with applicable codes. Improper wiring may render the unit inoperable, damage components, or cause a fire, and will void all warranties. The S-1A is a propane/LPG fume detector. To function as intended, the S-1A must be connected to a correct power source, and for maximum effectiveness, be powered at all times. Do not install outdoors. Before installing in applications which may appear different than those outlined in this manual, consult the engineering department of Fireboy-Xintex. Not for use in aircraft. This propane fume detection device is meant to service as a supplemental warning system. IT IS NOT meant to replace standard safety practices which should be carried out around explosive gases (i.e., inspect compartment, check for loose fuel fittings, smell for propane fumes, etc.)

INTRODUCTION

Your S-1A propane fume detector is a state of the art fume monitoring and alarm system, which also allows you to control your propane with a touch of a button. It is a simple yet highly effective detector of propane fumes.

INSTALLATION

S-1A is packaged with one (1) 2" diameter display module, one (1) sensor cable 20', one (1) propane sensor (MS-2), and may or may not include a solenoid valve. Check the label markings on the carton that indicate if this unit was sold and packaged with or without the solenoid valve.

DISPLAY MODULE

The S-1A display module should be mounted in an area so that visual and audible indicators may be easily observed. Next, drill a 2-1/16 "diameter hole into the panel. Slip the instrument through the hole and secure, making sure that you have access to the wires for solenoid valve connections, positive and negative wire connections and sensor connection.

Plug in your sensor to the connector and make positive and negative connections for the module display and solenoid valve. Finish the module installation by fastening to panel with four screws (provided).

SENSOR INSTALLATION

The sensor supplied with the S-1A includes a standard 20 foot (18.29m) cable. If a longer cable is desired contact your dealer or Fireboy/Xintex. Coil excessive cable in convenient location. Remove the paper covering the adhesive backing on the sensor mounting surface and press the sensor into position on a previously cleaned surface. Install with two (2) screws provided.

Caution: Do not attempt to use any other manufacturer's sensor or previously installed sensors.

SENSOR LOCATION

Caution: Propane is heavier than air and will settle. Therefore, it is important that a location be selected that is as low as practical and as near the appliance as possible. Keep sensor dry.

CNG (Compressed Natural Gas) is lighter than air and will rise. Therefore, it is important that location be selected that is within nine (9") inches (22.86cm) of the ceiling height. Do not located sensor directly over cooking or heating appliances. Keep sensor dry.

Solenoid Installation

Propane (LPG) — Mount the solenoid in-line on the tank side of the LPG regulator if possible if not, solenoid can be mounted on low pressure side of regulator. The tank itself should be mounted outside the cabin or crew quarters to avoid the possibility of gas accumulation due to a leak between the tank and the solenoid valve.

CNG — Because of the high tank pressure of CNG, the solenoid valve **MUST** be installed after the CNG regulator and as close to the regulator as practical. The tank and regulator should be mounted outside the cabin or crew quarters to avoid the possibility of gas accumulation due to a leak between the tank and the solenoid valve,

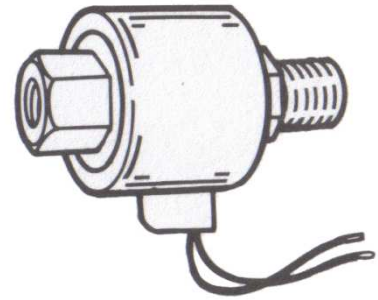


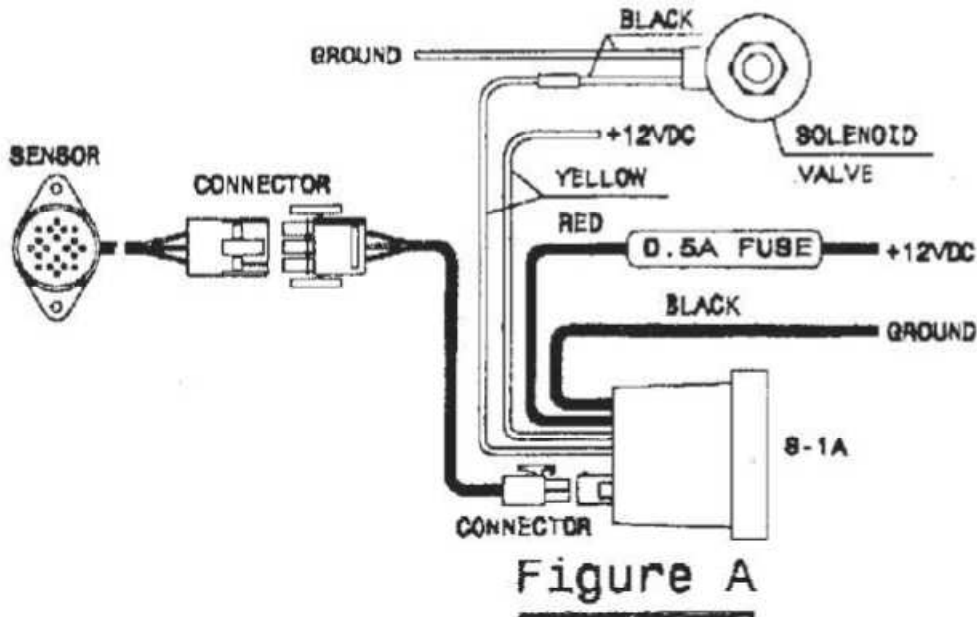
Figure 3

CAUTION: Turn solenoid on when gas is being used and off during standby conditions. The valve will get **HOT** when gas is not flowing through it.

ELECTRICAL CONNECTIONS

All wiring connections shall be made using #16 Gauge stranded copper wire conforming to ABYC standards for marine use. The black wire (see figure) on the display module shall be connected to a suitable ground connection on the instrument buss. The red wire (see figure) on the display module must be connected to +12 VDC through a suitable fuse or circuit breaker.

If you are supplying your own solenoid valve: Determine the positive (+) side of your valve. Cut that wire in half and connect one side to yellow wire of the S-1A. Connect the second half of cut (+) positive wire to the other yellow wire of the S-1A.



NOTE: For operation from +24 to +32 VDC, a converter is available from Fireboy-Xintex. Part #CNV-12. For operation from other voltages, contact the engineering department of Fireboy-Xintex.

OPERATION

The display module on the S-1A contains three (3) windows. The left window is a green power on indicator. The right window is red danger indicator. The center window is a valve on/off indicator. When the center green light is on the valve is open and propane will flow. When center green light is off, the valve is closed and propane will not flow. Upon power up, the green power on indicator (far left) will come on and the red danger indicator sensor takes longer than 25 seconds to warm, the alarm will sound. After sound, the alarm will stop when the red danger indicator shuts off. Should a fume build up reach 10 to 20 percent of LEL (Lower explosive Limit), the red danger indicator will come on. If this condition lasts longer than 20 to 25 seconds, the alarm horn will sound. The red danger indicator will remain on until the fume problem has been corrected. When the red danger indicator shuts off, the alarm will stop. If the green valve on indicator is lit and the red danger indicator comes on, the solenoid valve will close and the green valve on indicator will extinguish.

NOTE: THE PROBLEM SHOULD NOT BE CONSIDERED CORRECTED UNTIL THE RED DANGER INDICATOR GOES OUT.

TESTING THE SYSTEM

The S-1A can be tested for electrical continuity by unplugging the sensor either at the display head or at the sensor. The red danger indicator will come on and within 20 to 25 seconds the alarm horn will sound. Reconnect the sensor, and the red danger indicator will go out, and the alarm horn will silence itself.

To test the sensor, use a butane lighter with the striker wheel removed. Hold the lighter to the sensor and press down on the lever to release the butane. In three to four seconds, the red danger indicator will come on and in 20 to 25 seconds the alarm horn will sound. Remove lighter from the sensor and the red danger indicator will go out and the alarm horn will silence itself.

IN THE EVENT OF AN ALARM

Immediately have all passengers and crew exit the passenger compartment. If an explosion or fire should occur, the probability of injury will be reduced if no one is in a confined area of the vessel.

Turn off the fuel supply and ventilate the area. Do NOT turn the fuel source on until all fittings, gas lines and appliances have been checked by a qualified personnel.

TROUBLESHOOTING

The most likely problem that will be encountered is a nuisance alarm. If this should occur and you are positive that there are no propane fumes present, check for recent use of solvent, paint, paint thinner, polish, etc. If none of these fumes are present, thoroughly check the sensor for loose connections, broken wires, or other damage.

OPTIONS

- MS-2 Replacement Propane/LPG sensor
- Sensor Extension Cable from 25' through 100'
- CNV-12 Voltage Reducer

SPECIFICATIONS

- Voltage: +12VDC nominal (7VDC to 15VDC)
- Alarm Point: 10% to 20% LEL at 70° F
- Sensor Stability: 0° F to 130° F (-10° C to +40° C)
- Current draw monitoring mode with valve closed: 55 mA max
- Current draw alarm mode with valve closed: 62 mA max.
- Current draw monitoring mode with valve open: 75 mA max.
- Alarm horn: 85 dB
- Sensor fail alarm

MORE SAFETY PRODUCT FROM FIREBOY-XINTEX:

- Portable Fire Extinguishers
- Automatic Fire Extinguishers, FE241 and HFC-227ea Extinguishants
- Manual/Automatic Fire Extinguishers
- M-1/M-2A Gasoline Fume Detectors
- MB-1/MB-2 Gasoline fume Detectors with Blower Control
- S-1 Propane/LPG Detector
- S-2A Two channel Propane/LPG Detector with Solenoid Control

ONE (1) YEAR LIMITED WARRANTY

This Warranty is in Lieu of all other express or implied Warranties.

Seller warrants title, materials, and workmanship on Fireboy equipment, and assigns the original manufacturer's warranty on those components manufactured by others, as permitted. Seller's warranty shall be for a period on one (1) year from the date of sale to the ORIGINAL CONSUMER. Fireboy-Xintex, Inc. does not assume the costs of removal and/or installation of product or any other incidental costs which may arise as a result of any defect in materials or workmanship. Any non-conforming equipment returned to the Seller at Buyer's expense and risk shall be repaired or replaced at Seller's option, 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 the instructions furnished by Fireboy-Xintex, Inc. : (b) the product has not been repaired or altered by anyone other than Fireboy-Xintex, Inc.: (c) the serial number has not been removed, defaced, or otherwise changed: (d) the product is determined to contain defective materials or workmanship: and (e) use of the product is discontinued upon discovery of defective materials or workmanship and Fireboy-Xintex, Inc. is notified immediately.

ANY WARRANTY IMPLIED BY LAW, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS, IS IN EFFECT ONLY FOR THE DURATION OF THE EXPRESS WARRANTIES SET FORTH ABOVE, NO PERSON IS AUTHORIZED TO GIVE ANY OTHER WARRANTY, OR TO ASSUME FOR FIREBOY-XINTEX, INC. ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF ITS PRODUCTS. FIREBOY-XINTEX, INC. SHALL NOT BE LIABLE FOR LOSS OF USE, REVENUE, PROFIT, INJURY, OR ANY OTHER CONSEQUENTIAL OR INCIDENTAL DAMAGES, BUYER IS NOT RELYING ON SELLER'S JUDGEMENT REGARDING BUYER'S PARTICULAR REQUIREMENTS, AND HAS HAD AN OPPORTUNITY TO INSPECT THE PRODUCT TO BUYER'S SATISFACTION.

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