



## Installation Instructions Owner's Manual

This manual is an integral part of the system and as such, the system must be installed and maintained accordingly.

Engine Shutdown Restart System (ESRS) - MARK V SR

## Features

- Fully automatic equipment shutdown system with manual override capabilities.
- Emits visual and audible indications during fire extinguishing system discharge.
- Compact design comprised of unit status lights, system override switch, and audible alarm device.
- Control Unit is supplied separately with a factory installed connector to allow for more mounting options.
- Optimal extender cables are available for mounting more than 30" (762 mm) away from Display Units.
- Can interact with up to two Display Units.

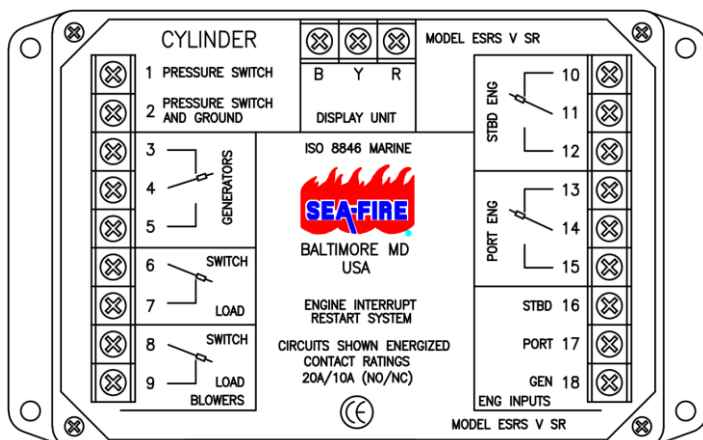


Figure 1: Engine Shutdown Restart Systems for use with Automatic Fire Extinguishers

### **WARNING:**

**This Sea-Fire ESRS has been designed and tested for use with Sea-Fire Automatic Fire Extinguishers only. Installation must be accomplished by, or under the supervision of, a qualified marine electrician who is familiar with American Boat and Yacht Council (ABYC) and other recognized and accepted marine standards and practices.**

### **CAUTION:**

**Do not install this device in Engine or Fuel storage compartments.**

Read this manual thoroughly and comply with all instruction, warnings, and cautions prior to installation.

**Note:** ESRS is designed to function with a minimum of one Display Unit.

## **Operation**

Should fire or extreme overheating cause the Sea-Fire automatic fire extinguishing system to discharge, it may become necessary to shut down the engine(s), blowers, and/or generator.

Equipment shutdown will ensure that the extinguishing agent, in its proper concentration, will remain in the enclosed compartment and not be ingested or fueled by the running equipment.

The ESRS, when properly installed, has provisions for simultaneous equipment shutdown upon extinguisher discharge. This is accomplished by use of an in-cylinder pressure switch, which is a standard component on all Sea-Fire automatic fire extinguishers.

Immediately upon system discharge, the pressure switch will deactivate the Control Unit. This shall open or close (depending on application) the control contacts thereby disrupting the primary circuit on a gasoline engine(s) or electrically controlled fuel solenoid valves and air dampers on diesel(s).

Table 1: Display Unit Indicator Light Status

Systems Status	Audible Sounder	Green LED	Red LED
Normal Power “ON”	Off	On	Off
Alarm (Discharge)	On	On	On
Override Mode	Off	On	On

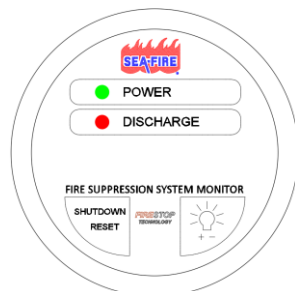


Figure 2: Display Unit Example

The Control Unit is designed to allow for a second (optional) Display Unit to be installed at a remote location such as a fly bridge.

### CAUTION:

**In the event of an alarm indication, shut off all electrical power including engine(s), blowers, generators and additional accessory controls. Determine the cause of the alarm and correct the issue prior to re-energizing any equipment or placing the toggle switch in the override mode at the Display Unit.**

## Installation

Select an accessible location at the helm station instrument panel for installation of any Display Units. For each display, cut a 2-1/16" hole through the instrument panel. Insert the exposed components of the Display Unit through the hole until the outer edges are flush with the surface of the chosen location. Secure the each Display Unit with the bracket and hardware supplied with it.

Install the Control Unit in a convenient location, accessible to ignition wiring. Mount the Control Unit with the appropriate screws or bolts.

### NOTE:

**A mounting separation of over 30" (762 mm) between the Display Unit and the Control Unit will require an optional harness extender cable. These extender cables are available in 10ft (3m) and 30ft (9.1m) lengths.**

Prior to proceeding with the electrical connections, ensure that the fire extinguisher cylinder has been properly installed, in the compartment to be protected, in accordance with the installation instructions supplied with the extinguisher.

# Electrical Connections

At a minimum, use No. 16 AWG (SAE J3788 and J1128) copper wire conforming to ABYC standards for marine use on all wiring applications.

Connections to the Control Unit and the Sea-Fire extinguisher should be made with insulated crimp connectors. Refer to the wiring diagram in **Figure 3** when making connections to this unit.

1. Connect the Display Unit to the Control Unit by attaching the two factory-wired, insulated harness plugs.
2. Connect the extinguisher pressure switch to the Control Unit terminals as labeled. Use a two-wire hookup; **do not rely on a common ground return.**
3. Connect a wire from the ground bus (negative battery) to the Control Unit terminal marked for this purpose.

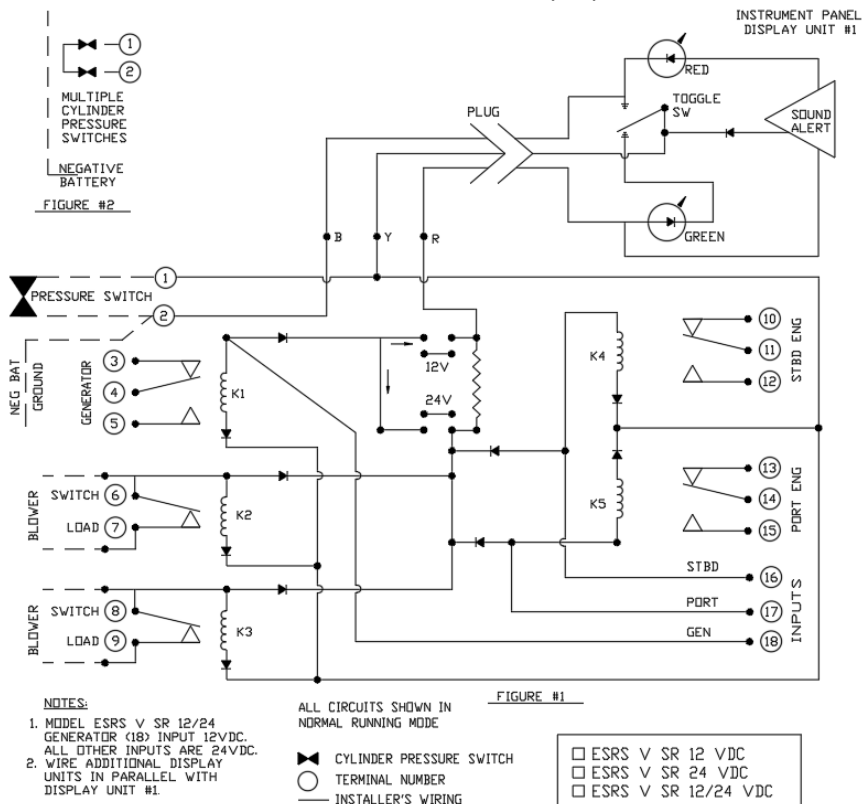


Figure 3: Wiring Schematic

## Gasoline Engine Shutdown

Gasoline engine(s) can be shut down by interrupting the path of primary ignition power from the key switch to the ignition coil. This can be accomplished by utilizing the common and normally open contacts shown on the unit in **Figure 1** and wiring diagram in **Figure 3**.

### NOTE:

**Although the normal/override switch is in the override position, gasoline engines will sometimes stall due to agent ingestion.**

## Diesel Engine Shutdown

There are two methods that are used shutdown a diesel engine:

1. The fuel solenoid valves are energized to open on start-up, and de-energized to close on shutdown, starving the engine of fuel. This can be done utilizing the common and normally closed contacts shown on the unit in **Figure 1** and wiring diagram in **Figure 3**.
2. The fuel solenoid valves are de-energized to open on start-up, and energized to close on shutdown, starving the engine of fuel. This can be done utilizing the common and normally open contacts shown on the unit in **Figure 1** and wiring diagram in **Figure 3**.

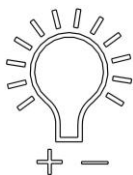
When using Method 2, it is recommended by manufacturers, to limit the time that the fuel solenoid is energized during shutdown. Generally, the solenoid shall be energized for no more than 20 seconds however, consult the solenoid manufacturer to confirm the energizing time limit.

In the event that your engine(s) have been designed to shut down by mechanical air or fuel starvation, we recommend converting them to an electrical shutdown system at the discretion or advisement of the engine or boat manufacturer.

## Installation Check

Complete all electrical connections described in the Electrical Connections Section. Confirm that all connections are correctly wired per the wiring diagram in **Figure 3** and properly secured.

1. Power on the system. The “POWER” indicator light on the Display Unit shall illuminate green.
2. Power on all engine(s) and equipment connected to the Control Unit and ensure that they are operating normally.
3. Disconnect the wire harness at the extinguisher pressure switch. The green “POWER” indicator light shall immediately turn off, the “DISCHARGE” indicator light shall illuminate red, and an alarm shall emit from the Display Unit.
4. All engines and associated equipment connected through the Control Unit will shut down and cease to operate.
5. Press the “SHUTDOWN RESET” button on the Display Unit to override the system and silence the alarm.
6. Restart all engine(s) and equipment connected to the Control Unit and ensure that they are operating normally.
7. Reconnect the wire harness at the extinguisher pressure switch.
8. Simultaneously press the “SHUTDOWN RESET” and Light (**Figure 4**) buttons on the display unit to override the system and silence the alarm. This concludes the installation check.



*Figure 4: Display Unit Light Button*

### NOTE:

**When connecting more than one extinguishing cylinder to a Control Unit, all pressure switches must be wired in series and grounded at the last pressure switch only. Each individual pressure switch must undergo an Installation Check. Refer to Figure 3 of the wiring diagram.**

The discharge alarm is an enhancement to the Sea-Fire fire suppression system. It will provide visual and audible warning of system discharge. It is not intended as a replacement for the regular required maintenance as listed in the suppression system owner’s manual.

# Specifications

*Table 2: Control Unit Specifications*

Circuits	Contact Rating	Dimensions (L x W x H)
3 Form C	Normally Open: 20A	7.25" x 4.5" x 3"
2 Form A	Normally Closed: 10A	(185 mm x 115 mm 77 mm)

Wire Harness and Connector: 18" (458 mm)

*Table 3: Display Unit Specifications*

Unit Type	Face Dimensions	Body Dimensions (Rear Components)
Round	Ø2.4" (61 mm)	Ø 2.062" (53 mm)
Rectangle	2.8" X 3.6" (72 mm) X (92 mm)	1.0" X 1.4" (26 mm) X (36 mm)

Wire Harness and Connector: 18" (458 mm)

**NOTE:** All measurements are nominal.

## One Year Limited Warranty

The Sea-Fire ESRS carries a one year warranty, following retail purchase, against defective material and faulty workmanship. Any ESRS found to be defective during the warranty period will be replaced or repaired, free of charge, upon the prepaid return of the defective system.

This warranty provides specific legal rights to the ESRS itself however; additional rights may vary from state to state.



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