



**Series 3000, 5000 & 8000
Engine Shutdown/Override System
Installation & Owners Manual
For Fireboy Automatic Extinguishing Systems**

Round Bezel Part Numbers:

ES-3000-01, ES-5000-01, ES-8000-01, ELS-3510-01, ELS-5510-01, ELS-8510-01

Square Bezel Part Numbers:

ES-3000-02, ES-5000-02, ES-8000-02, ELS-3510-02, ELS-5510-02, ELS-8510-02



Warning!

This engine shutdown/override system is intended for use with Fireboy Fire Extinguisher systems only and must be installed by a qualified marine technician familiar with ABYC. This unit is not to be installed in engine, bilge or fuel storage compartments. Read this manual thoroughly before installing system, and comply with all installation instructions (See Sec. 6)

The engine shutdown system shall be installed by a qualified marine electrician.

Note: the display unit in these systems replaces the lamp and escutcheon plate provided with each Fireboy system.

1.0 Operation

In the event of a fire on board a vessel while underway, which is equipped with an automatic fire extinguisher system, it is important that engine, generator, and blower systems be shut down immediately upon discharge of the system so that:

- A. The fire cannot be fueled by the continued operation of engine systems. For example: fuel and injection pumps and engine operated generators and alternators;
- B. The agent concentration is allowed to remain in compartment and is not exhausted or depleted by the engine air intakes or ventilation blowers.

1.1

The Fireboy engine shutdown system provides this function by means of a pressure switch at the extinguisher (Fireboy CG, MA and GA models only), a relay-terminal box installed at the helm station, and an instrument display unit. The display unit provides system status (charged/discharged both visual and audible) and an override switch to allow restarting of the engine after a discharge or to prevent engine shutdown in a crowded water-way.

The operator should be aware that even though the override/normal switch is in the “override” position, the discharge from the Fireboy extinguisher system may cause gasoline engines to stall because of the effect of agent on the combustion process.

A second instrument display unit (optional) can be installed at a fly-bridge helm or other remote location.

1.2

In the event of a fire, the Fireboy extinguisher system will discharge, activating the shutdown/override system to interrupt the primary ignition circuit (gasoline engines), or the fuel solenoids of diesel engines.

Immediately after the Fireboy system discharges in response to a fire, and the shutdown/override system stops the engines, all engine/generator electrical and mechanical controls shall be turned to their “off” positions until determination of the cause of the fire has been made and corrected.

1.3

Two points must be noted with regard to the use of the engine shutdown system with Fireboy extinguisher system.

- A. The engine shutdown system will in no way effect the discharge operation of Fireboy extinguisher systems.
- B. Disconnecting the instrument display from the relay terminal board does not affect the shutdown function of the system, even though the override and indication functions of the instrument display are lost.

NOTE that circuits 1, 2 and 3 have common, normally open, and normally closed circuits that are isolated from each other and the shutdown/override control system. This facilitates hookup to gasoline or diesel engines.

1.4

The voltage required to operate the control circuit of the engine shutdown system can be located on the appropriate wiring diagram included with this owner's manual. Each input contains a diode to prevent reverse feedback between ignition circuits.

1.5

The ground connection, (terminal 5) is made to the return buss, (battery, generator return). **DO NOT CONNECT TO ENGINE BLOCK!**

2.0 Mechanical Installation

The relay terminal box is intended to be installed at the helm station where convenient access to the ignition wiring is available. It should be installed with four #8 wood, sheet metal, or machine screws of appropriate length (not supplied) on a firm support within 24 inches of the instrument display unit. A 2-1/16 inch hole is required for the instrument display unit and it is mounted with the bracket and nuts supplied.

3.0 Wiring System

The wiring connection shall be made with #16 stranded copper wire conforming to ABYC Standards for Marine use, as a minimum. (SAE J378B & J1128). Use the schematics at the end of this manual for reference. The schematics shown are for our ELS models but wiring for the ES is identical.

3.1

Connection to the terminal box and Fireboy bottle switch shall be made with insulated crimp terminals, hooked or closed eye type only. Open spade terminals are not recommended. Terminal stud size is #6.

3.2

Connections to the instrument display unit are made with the plug-together insulated connectors. Optional 10' and 30' harnesses are available for connecting remote instrument display unit.

3.3

Gasoline engines should be shutdown by interrupting the primary ignition wire from the key switch to the ignition coil (Ref. Sec. 1.3). This can be implemented by utilizing the common (C) and normally closed (NC) connections of circuits 1, 2 or 3.

3.4

Diesel Engines commonly have two methods for shutdown:

- A. Fuel solenoid valves that are energized to open on start-up, and de-energized to close on shutdown. (fuel starvation) The normally closed (NC) and common (C) connections would be used to implement this method.
- B. Fuel solenoid valves that are normally open when de-energized and closed when energized for shutdown, (fuel starvation). The normally open (NO) and common (C) connections would be used to implement this method.

3.5

Two other less common methods of shutdown are used in diesel installations. These are mechanical air and mechanical fuel starvation. Contact the engine, and/or the boat manufacturer for advice in converting these to an electrical shutdown system.

3.6

Two separate wires from the relay terminal box (terminals 4 & 5) are to be connected the extinguisher pressure switch or switches. (Ref. 3.8)

3.7

In applications requiring multiple extinguisher systems (i.e. separate engine and generator compartments) the bottle switch must be wired in series. This allows either extinguisher to operate the shutdown/override system in the event of a fire in either compartment.

4.0 System Test

With all connections as noted in Section 3, and the normal/override switch on the instrument display unit in the normal position and power applied to the relay terminal box the green “charged” lamp on the instrument display unit will glow. The engines will start and operate normally.

4.1

Disconnect one of the two wires at the switch on the Fireboy extinguisher. With the normal/override switch in the “normal” position, the red “discharged” lamp will glow and the audible alarm will sound. The engines will not operate at this time.

4.2

Move the normal/override switch to the “override” position. The green lamp will not glow but the engines will again operate normally.

4.3

In multiple extinguisher systems the section 4.2 test should be repeated for each extinguisher.

5.0 Load limitations

ES models are capable of handling 10 amps DC continuous load. (30 amp available upon request).

ES models operate at 12Vdc. (24V & 32V models available upon request)

ELS models are capable of handling 10 amps DC continuous load on each of its auxiliary contacts and 2 amps DC continuous load on each of its engine relays.

ELS models operate at 11-32 Vdc.

6.0 Time delay mode for ELS models (ELS-5510 & ELS-8510 only)

It is possible to configure the ELS for timed relays on the engine circuits.

To configure for timed mode move the jumper between terminals 6 & 7 to 7 & 8.

With this configuration the engine relays will no longer be energized when power is applied to the ELS so the descriptions on the box will be reversed. (Example: NO will now become NC and NC will now become NO for the engine relay contacts only)

6.1 ELS Operation Time Delay Mode Operation (ELS-5510 & ELS-8510 only)

In the event of a discharge (loss of pressure switch ground) the engine contacts will switch state for approximately 15 seconds and then return to their resting state. (Example: Ground is lost, The C will switch from NO to NC. After 15 seconds The C will switch back from NC to NO. Again this is for the engine relay contacts only.) See ES/ELS XX15 Wiring Schematic for instructions.

Time Delay Mode for ES

6.2 Time delay is available for the ES model as well but must be purchased as a separate p/n ES-XX15-12/24. See ES/ELS XX15 Wiring Schematic for instructions on installation

7.0 Applicable Specifications

ABYC (American Boat and Yacht Council)
190 Ketcham Avenue
Amityville, NY 11701

8.0 Application Assistance

Technical advice in the use, application, and installation of this device is available by contacting:

Fireboy-Xintex, Inc.
(616) 735-9380
www.fireboy-xintex.com

Mailing:
P.O. Box 152
Grand Rapids, MI 49501

Shipping
O-379 Lake Michigan Dr. NW,
Grand Rapids, MI 49534

Returning Fireboy-Xintex Equipment

No product may be returned for credit or repair without a written "Returned Material Authorization" (RMA) form. Purchaser must call or email Fireboy-Xintex 616-735-9380 or fireboy@fireboy-xintex.com for a 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.

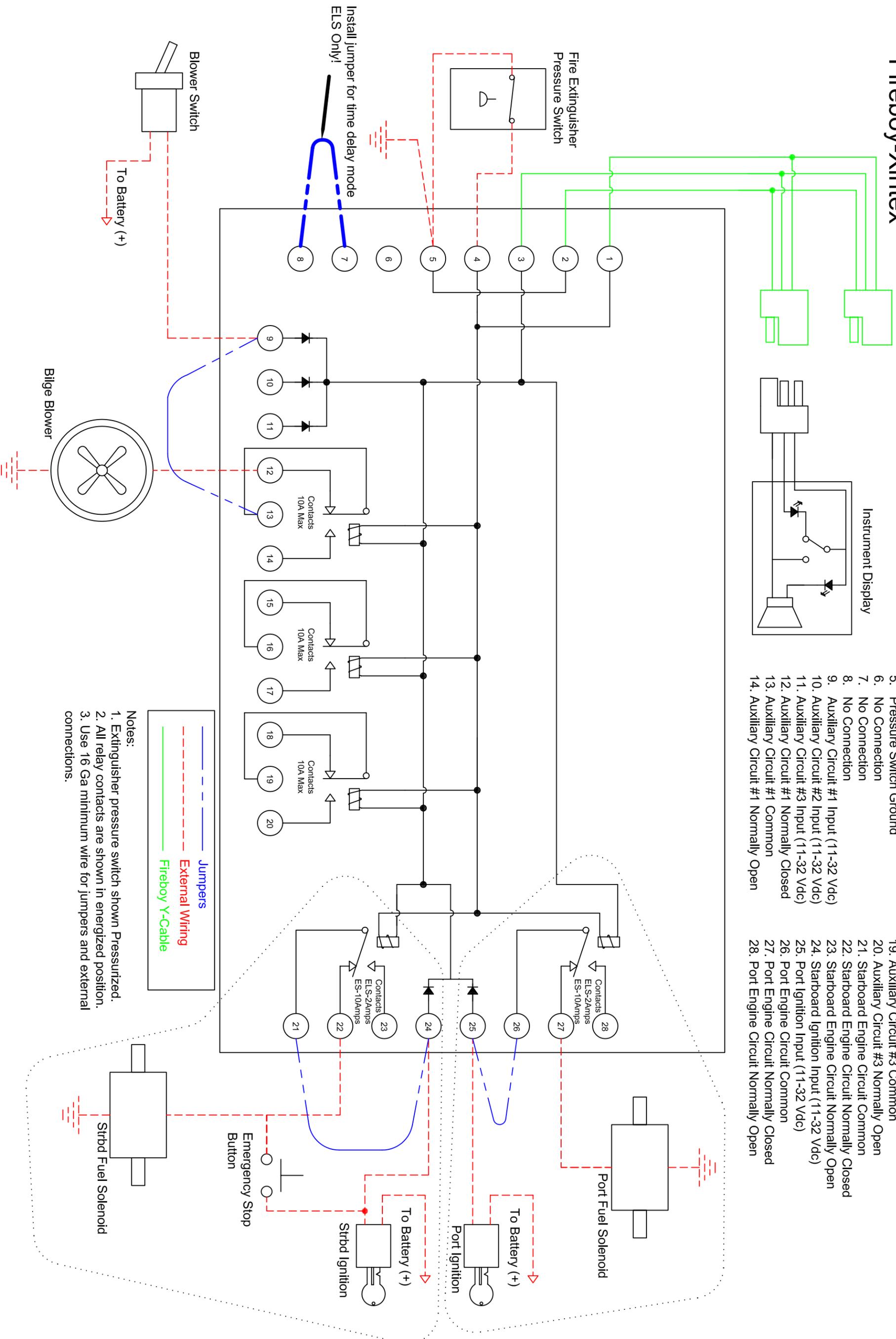
1 Year Limited Warranty

The Fireboy engine shutdown system is warranted, to the original purchaser, for a period of one (1) year against defects in materials and/or workmanship. Any system found to be defective within the warranty period will be replaced or repaired free of charge upon the prepaid return of the defective system. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

ES/ELS XX15 Wiring Schematic

Rev. A 5/9/07

Fireboy-Xintex



- Display Brown Wire
- Display White Wire
- Display Black Wire
- Pressure Switch
- No Connection
- No Connection
- No Connection
- Auxiliary Circuit #1 Input (11-32 Vdc)
- Auxiliary Circuit #2 Input (11-32 Vdc)
- Auxiliary Circuit #3 Input (11-32 Vdc)
- Auxiliary Circuit #1 Normally Closed
- Auxiliary Circuit #1 Common
- Auxiliary Circuit #1 Normally Open
- Auxiliary Circuit #2 Normally Closed
- Auxiliary Circuit #2 Common
- Auxiliary Circuit #2 Normally Open
- Auxiliary Circuit #3 Normally Closed
- Auxiliary Circuit #3 Common
- Auxiliary Circuit #3 Normally Open
- Starboard Engine Circuit Common
- Starboard Engine Circuit Normally Closed
- Starboard Engine Circuit Normally Open
- Starboard Ignition Input (11-32 Vdc)
- Port Engine Circuit Common
- Port Engine Circuit Normally Closed
- Port Engine Circuit Normally Open

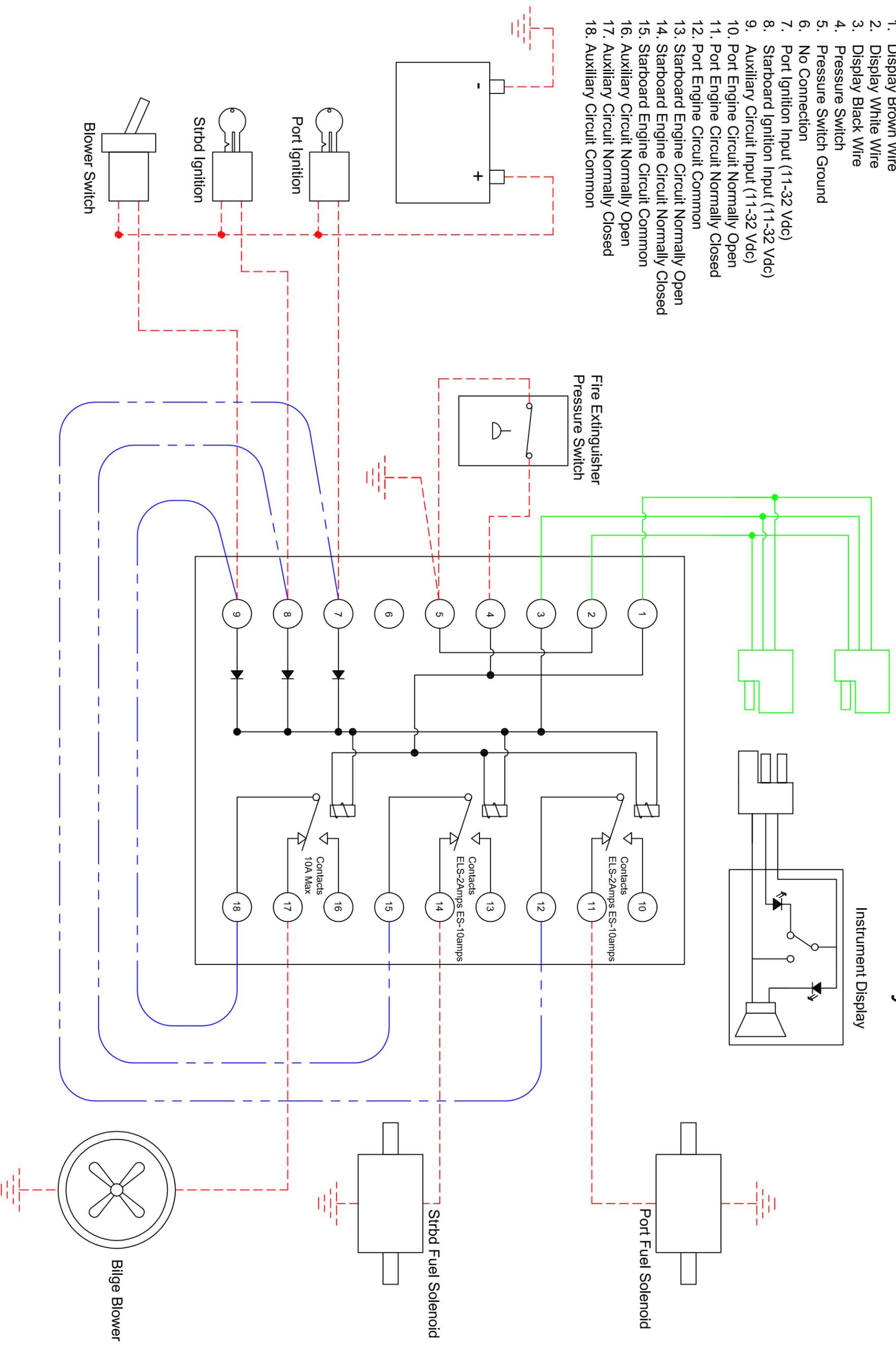
ELS-3510 & ES-3000 Wiring Schematic

Rev D 4/24/07

Fireboy-Xintex

- Notes:
1. Extinguisher pressure switch shown Pressurized.
 2. All relay contacts are shown in energized position.
 3. Use 16 Ga wire minimum for jumpers and external connections

Terminal Description	Wiring Type
1. Display Brown Wire	Jumpers
2. Display White Wire	External Wiring
3. Display Black Wire	External Wiring
4. Pressure Switch	Fireboy Y-Cable
5. Pressure Switch Ground	Fireboy Y-Cable
6. No Connection	Fireboy Y-Cable
7. Port Ignition Input (11-32 Vdc)	Fireboy Y-Cable
8. Starboard Ignition Input (11-32 Vdc)	Fireboy Y-Cable
9. Auxiliary Circuit Input (11-32 Vdc)	Fireboy Y-Cable
10. Port Engine Circuit Normally Open	Fireboy Y-Cable
11. Port Engine Circuit Normally Closed	Fireboy Y-Cable
12. Port Engine Circuit Common	Fireboy Y-Cable
13. Starboard Engine Circuit Normally Open	Fireboy Y-Cable
14. Starboard Engine Circuit Normally Closed	Fireboy Y-Cable
15. Starboard Engine Circuit Common	Fireboy Y-Cable
16. Auxiliary Circuit Normally Open	Fireboy Y-Cable
17. Auxiliary Circuit Normally Closed	Fireboy Y-Cable
18. Auxiliary Circuit Common	Fireboy Y-Cable



Instrument Display

Port Fuel Solenoid

Starboard Fuel Solenoid

Bilge Blower

Blower Switch

Fire Extinguisher Pressure Switch

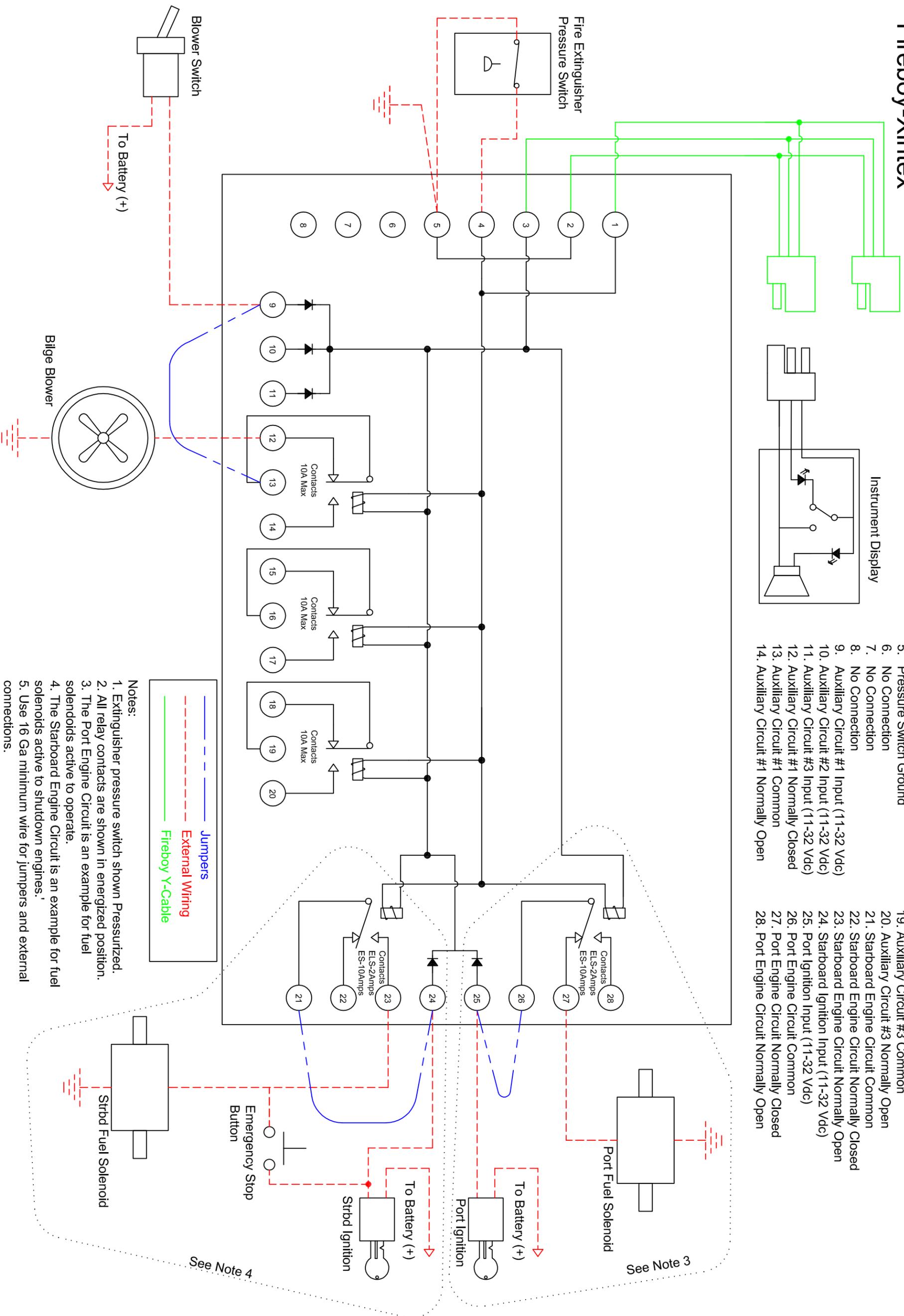
Port Ignition

Starboard Ignition

ELS-5510 & ES-5000 Wiring Schematic

Rev. D 4/24/07

Fireboy-Xintex



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|--|--|
| <ol style="list-style-type: none"> 1. Display Brown Wire 2. Display White Wire 3. Display Black Wire 4. Pressure Switch 5. Pressure Switch Ground 6. No Connection 7. No Connection 8. No Connection 9. Auxiliary Circuit #1 Input (11-32 Vdc) 10. Auxiliary Circuit #2 Input (11-32 Vdc) 11. Auxiliary Circuit #3 Input (11-32 Vdc) 12. Auxiliary Circuit #1 Normally Closed 13. Auxiliary Circuit #1 Common 14. Auxiliary Circuit #1 Normally Open | <ol style="list-style-type: none"> 15. Auxiliary Circuit #2 Normally Closed 16. Auxiliary Circuit #2 Common 17. Auxiliary Circuit #2 Normally Open 18. Auxiliary Circuit #3 Normally Closed 19. Auxiliary Circuit #3 Common 20. Auxiliary Circuit #3 Normally Open 21. Starboard Engine Circuit Common 22. Starboard Engine Circuit Normally Closed 23. Starboard Engine Circuit Normally Open 24. Starboard Ignition Input (11-32 Vdc) 25. Port Ignition Input (11-32 Vdc) 26. Port Engine Circuit Common 27. Port Engine Circuit Normally Closed 28. Port Engine Circuit Normally Open |
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Notes:

- 1. Extinguisher pressure switch shown Pressurized.
- 2. All relay contacts are shown in energized position.
- 3. The Port Engine Circuit is an example for fuel solenoids active to operate.
- 4. The Starboard Engine Circuit is an example for fuel solenoids active to shutdown engines.
- 5. Use 16 Ga minimum wire for jumpers and external connections.

Legend:

- — — — Jumpers
- - - - - External Wiring
- — — — Fireboy Y-Cable

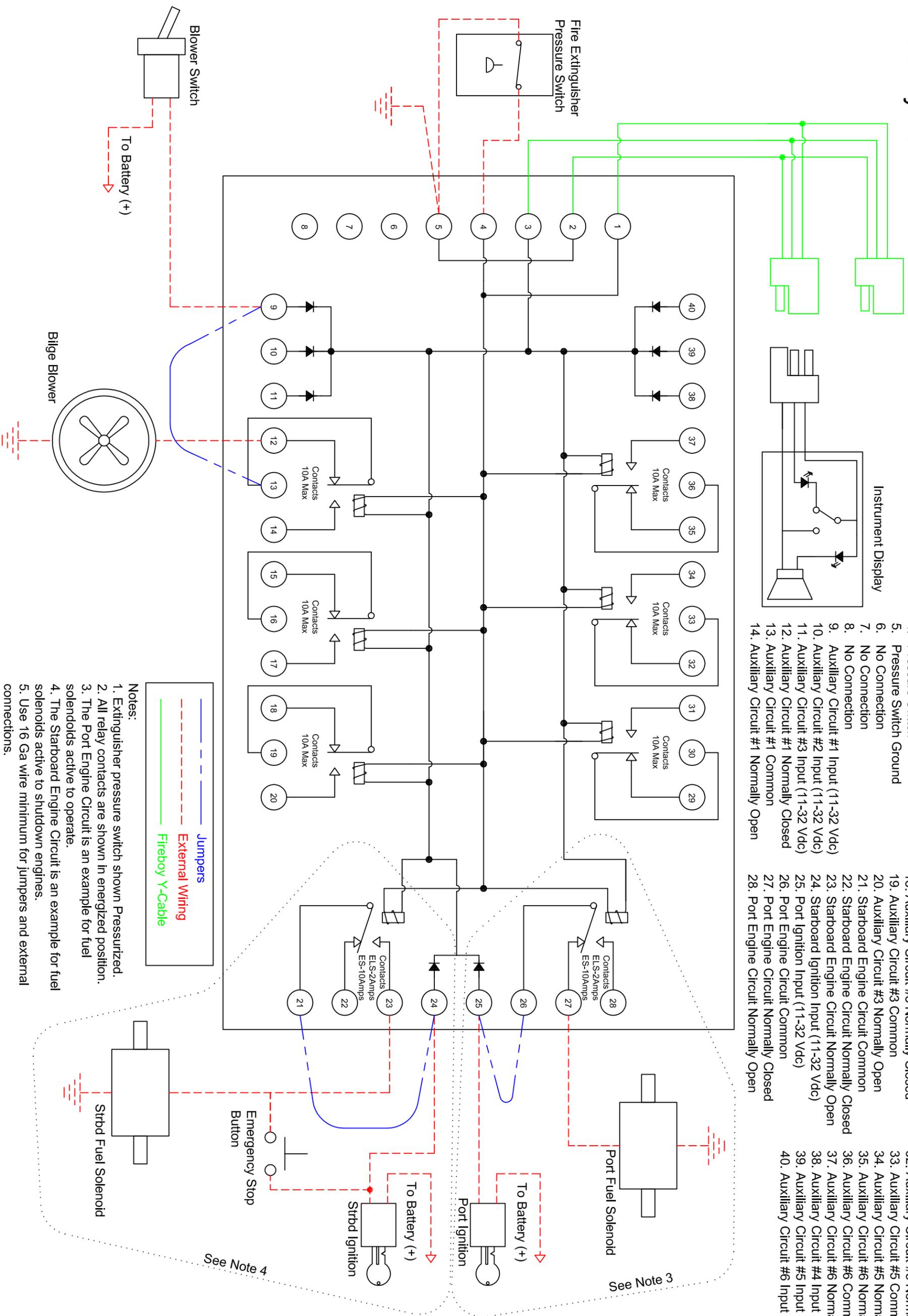
See Note 3

See Note 4

ELS-8510 & ES-8000 Wiring Schematic

Rev. D 4/24/07

Fireboy-Xintex



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|--|--|--|
| 1. Display Brown Wire | 15. Auxiliary Circuit #2 Normally Closed | 29. Auxiliary Circuit #4 Normally Closed |
| 2. Display White Wire | 16. Auxiliary Circuit #2 Common | 30. Auxiliary Circuit #4 Common |
| 3. Display Black Wire | 17. Auxiliary Circuit #2 Normally Open | 31. Auxiliary Circuit #4 Normally Open |
| 4. Pressure Switch | 18. Auxiliary Circuit #3 Normally Closed | 32. Auxiliary Circuit #5 Normally Closed |
| 5. Pressure Switch Ground | 19. Auxiliary Circuit #3 Common | 33. Auxiliary Circuit #5 Common |
| 6. No Connection | 20. Auxiliary Circuit #3 Normally Open | 34. Auxiliary Circuit #5 Normally Open |
| 7. No Connection | 21. Starboard Engine Circuit Common | 35. Auxiliary Circuit #6 Normally Closed |
| 8. No Connection | 22. Starboard Engine Circuit Normally Closed | 36. Auxiliary Circuit #6 Common |
| 9. Auxiliary Circuit #1 Input (11-32 Vdc) | 23. Starboard Engine Circuit Normally Open | 37. Auxiliary Circuit #6 Normally Open |
| 10. Auxiliary Circuit #2 Input (11-32 Vdc) | 24. Starboard Ignition Input (11-32 Vdc) | 38. Auxiliary Circuit #4 Input (11-32 Vdc) |
| 11. Auxiliary Circuit #3 Input (11-32 Vdc) | 25. Port Ignition Input (11-32 Vdc) | 39. Auxiliary Circuit #5 Input (11-32 Vdc) |
| 12. Auxiliary Circuit #1 Normally Closed | 26. Port Engine Circuit Common | 40. Auxiliary Circuit #6 Input (11-32 Vdc) |
| 13. Auxiliary Circuit #1 Common | 27. Port Engine Circuit Normally Closed | |
| 14. Auxiliary Circuit #1 Normally Open | 28. Port Engine Circuit Normally Open | |

- Notes:**
1. Extinguisher pressure switch shown Pressurized.
 2. All relay contacts are shown in energized position.
 3. The Port Engine Circuit is an example for fuel solenoids active to operate.
 4. The Starboard Engine Circuit is an example for fuel solenoids active to shutdown engines.
 5. Use 16 Ga wire minimum for jumpers and external connections.

- Legend:**
- Blue dashed line: Jumpers
 - Red dashed line: External Wiring
 - Green dashed line: Fireboy Y-Cable