



*Electro Wizard™  
Battery Disconnect Switch  
Electro Wizard  
Battery Disconnect Switch*



# FR1051 Technical Specifications

*Positive Disconnection, 12V*

*Grounded Solenoid (Power Supply Coil Negative)*

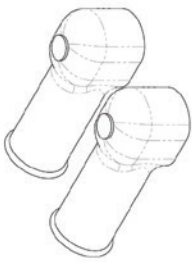
<b>CHARACTERISTICS</b>	<b>FR1051</b>
<b>Nominal tension</b>	<b>Max 12V</b>
<b>Max. continuous current on main contacts</b>	<b>250 A (23°C / 73.4°F)</b>
<b>Max. short time current on main contacts</b>	<b>2500 A x 3 sec.</b>
<b>Recommended wire section</b>	<b>&gt;75mm<sup>2</sup> / 0.116 sq in</b>
<b>Protection degree</b>	<b>IP 65</b>
<b>Tightening torque M10 nuts</b>	<b>20 Nm / 14.75ft lb</b>
<b>Tightening torque M5 nuts</b>	<b>1.6 Nm / 1.18 ft lb</b>
<b>Operating temperature range</b>	<b>-40°C/+85°C -40°F/+185°F</b>
<b>Contacts</b>	<b>Silver plated copper</b>
<b>Contact terminals</b>	<b>M10 tin-plated brass</b>
<b>Nuts for contacts</b>	<b>Brass</b>
<b>Peak current coil rated input</b>	<b>4.4 A</b>
<b>Max. retaining coil</b>	<b>3.2 A</b>
<b>Holding coil rated input</b>	<b>0.4 A</b>

<b>FITTING INSTRUCTIONS:</b>	<b>ELECTRICAL DIAGRAM</b>
<ul style="list-style-type: none"><li>· The battery isolator switch must be placed as close as possible to the batteries. To avoid corrosion to wires and terminals, mount in a protected location.</li><li>· It can be fixed to the frame according to the fitting diagram shown in the drawing, using M 8 TCEI (cylindrical head – encased hexagon) screws UNI 5931: 1984, and plain washers 8,4x1.7 UNI 6592:1969.</li><li>· The inversion of the power supply to the coil causes serious damage to the internal diode.</li></ul>	

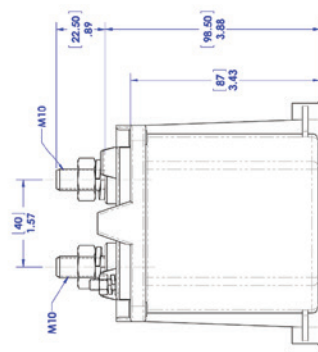
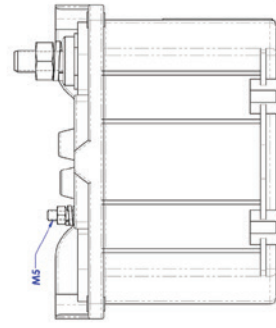
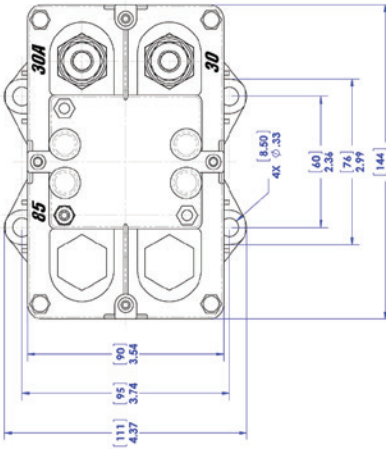
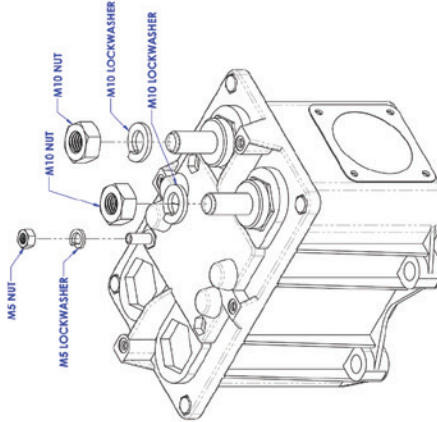
# FR1051 Mounting Diagram

## Positive Disconnection, 12V

### Grounded Solenoid (Power Supply Coil Negative)



SET OF TERMINAL COVERS INCLUDED



FR1051

NO SHARP EDGES OR BURRS ALLOWED

PROHIBITED FINISHES

PROHIBITED MATERIALS

PROHIBITED DIMENSIONS

PROHIBITED TOLERANCES

PROHIBITED SURFACE FINISHES

PROHIBITED COATINGS

PROHIBITED MARKINGS

PROHIBITED DIMENSIONS

PROHIBITED TOLERANCES

PROHIBITED SURFACE FINISHES

PROHIBITED COATINGS

PROHIBITED MARKINGS

FR1051

REV. 1.1

**FR1051-ASM**, SWITCH 12V GROUNDED SOLENOID  
 This drawing is for reference only and is  
 the property of Flaming River Industries

# **FR1051**

## ***Positive Disconnection, 12V Grounded Solenoid (Power Supply Coil Negative)***

**The Flaming River FR1051 Disconnect Switch is designed to disconnect a vehicle electrical system using a toggle switch (Not Included). The disconnect switch should be located as close as possible to the battery. The toggle switch can be located in any convenient location for ease of operator use.**

- 1. Positive battery cable is connected to terminal 30 (POS BATT.)**
- 2. Vehicle load is connected to terminal 30A (POS.TEL.)**
- 3. From terminal 85 (NEG.BOB.), connect a wire to one side of the toggle switch. (Any style of “maintained” switch is acceptable, 10 amp or greater).**
- 4. Connect the other side of the toggle switch to chassis ground.**

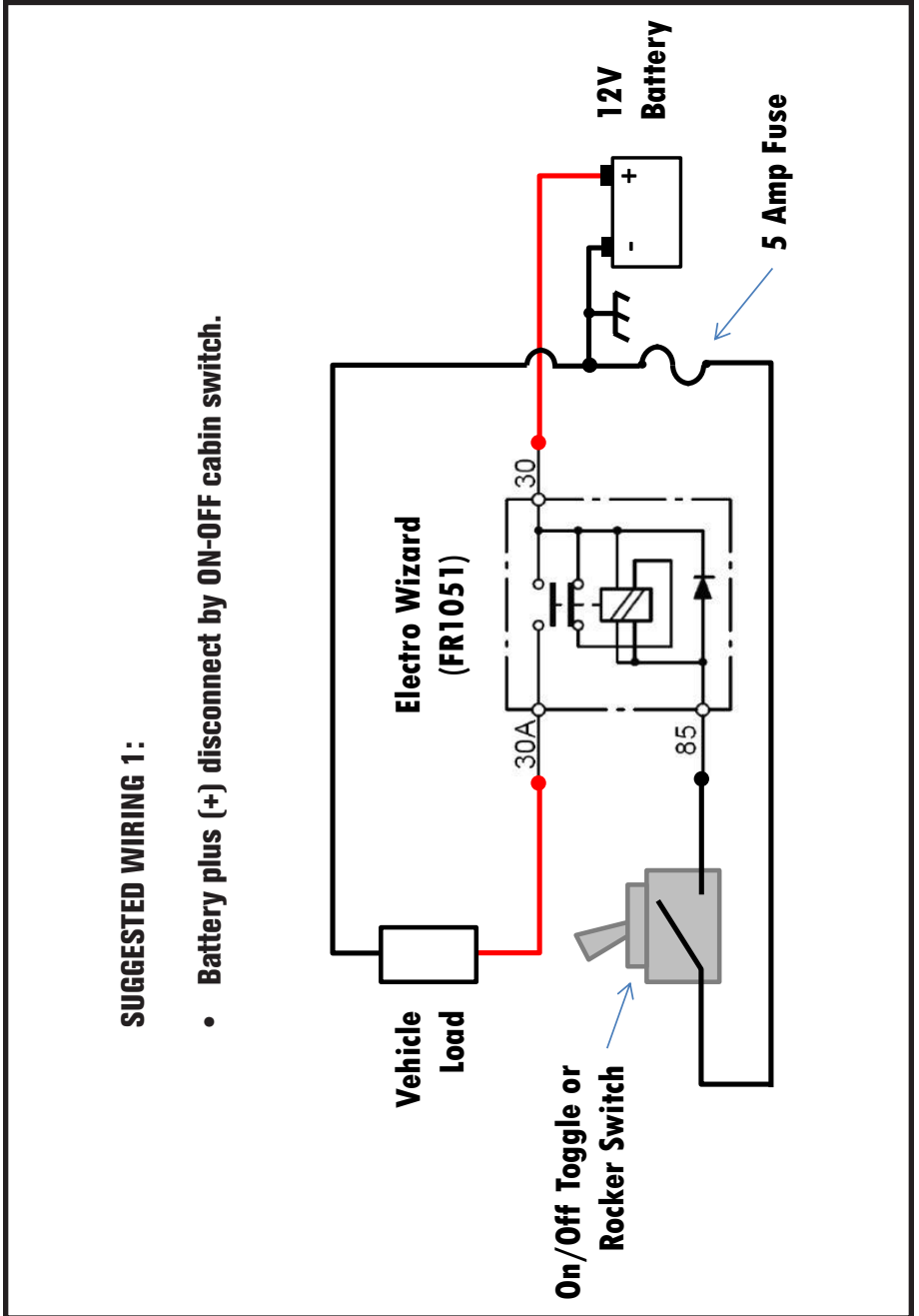
**When the operator closes the toggle switch, the solenoid in the disconnect switch is activated. The switch will remain closed (on) as long as terminal 85 is grounded.**

- Always use proper wiring techniques.**
- Wire size should be determined using industry standards based upon load requirements and length of cable needed.**
- Activation solenoid has a max draw of 4.4 amps, 0.4 amps continuous.**
- Main terminals are rated for 250 amps continuous, 2500 amps peak.**
- We always recommend the use of Battery Terminal Covers FR1003TM.**

# FR1051 Wiring Diagram

Positive Disconnection, 12V

Grounded Solenoid (Power Supply Coil Negative)



# FR1052 Mounting Diagram

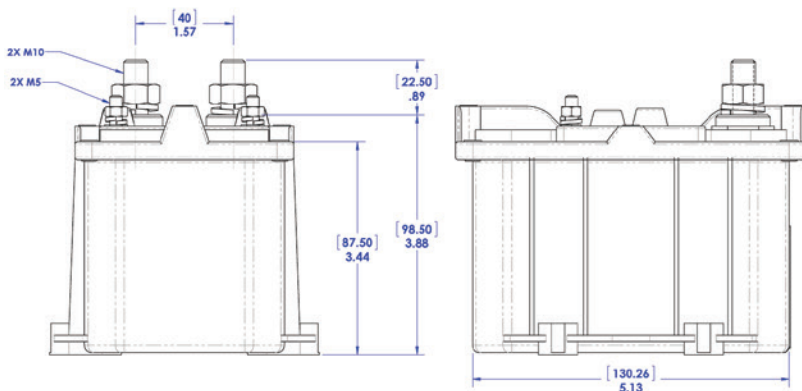
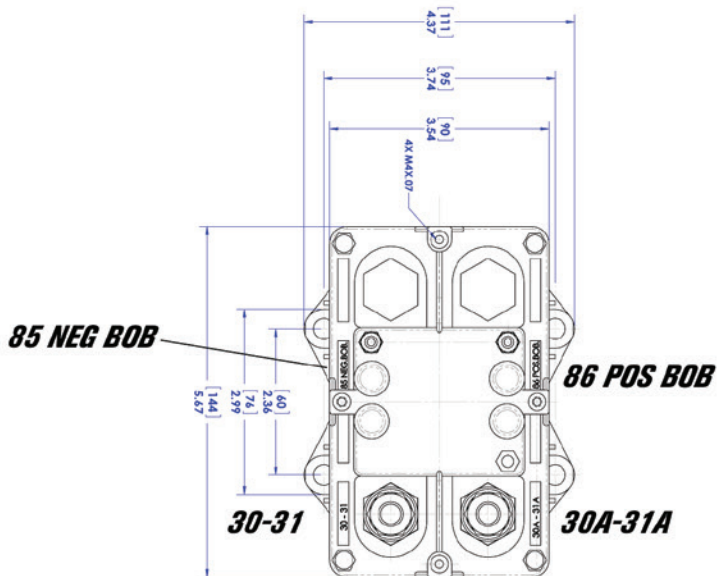
Positive Disconnection, 12V

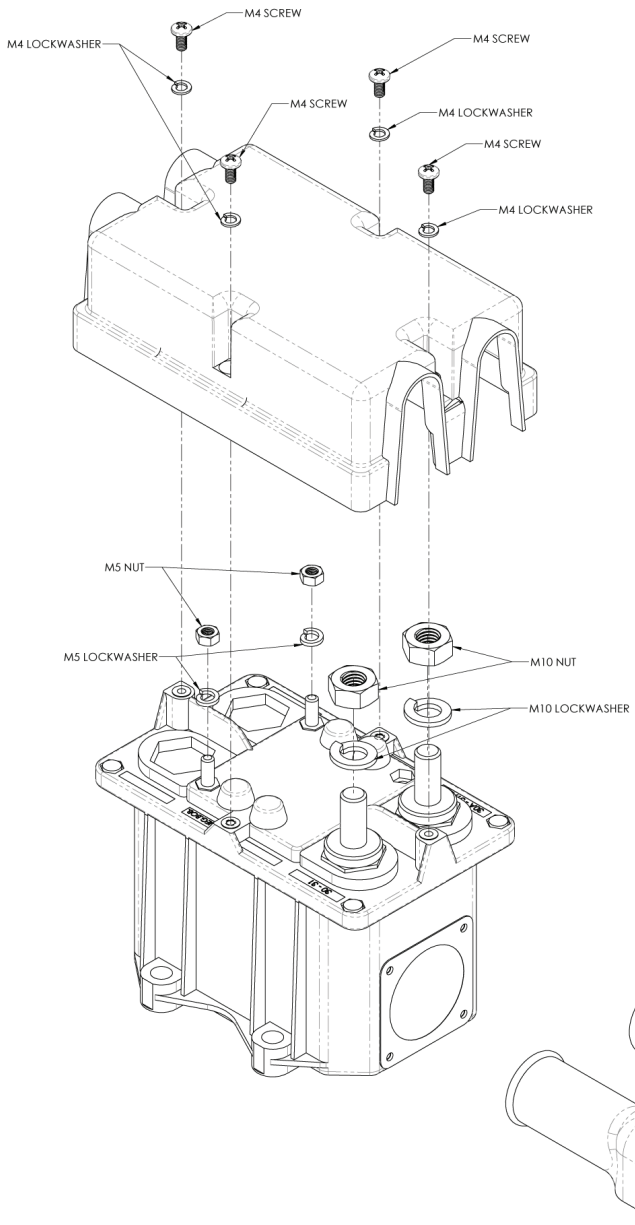
Insulated Solenoid (Power Supply Coil From Battery)

## FR1052-


ASM, SWITCH 12V INSULATED SOLENOID

This drawing is for reference only and is the property of Flaming River Industries





☐ = KEY CHARACTERISTIC IDENTIFIER

  
 ANSI/ASME Y14.5M-1994  
 UNLESS OTHERWISE SPECIFIED  
 ALL DIMENSIONS ARE IN INCHES

NO SHARP EDGES OR BURRS ALLOWED  
 TOLERANCES:  
 DECIMALS .XX±.1  
 .XXX±.01  
 FRACTIONS .XXX±.005  
 .1/64  
 ANGLES 15°  
 UNLESS OTHERWISE SPECIFIED

DESIGNOFFICE

DWG. NO.

FR1052

SCALE 1:1

SHEET 1 OF 1

D

# FR1052 Technical Specifications

*Positive Disconnection, 12V*

*Insulated Solenoid (Power Supply Coil From Battery)*

<b>CHARACTERISTICS</b>	<b>FR1052</b>
<b>Nominal tension</b>	<b>Max 12V</b>
<b>Max. continuous current on main contacts</b>	<b>250 A (23°C / 73.4°F)</b>
<b>Max. short time current on main contacts</b>	<b>2500 A x 3 sec.</b>
<b>Recommended wire section</b>	<b>&gt;75mm<sup>2</sup> / 0.116 sq in</b>
<b>Protection degree</b>	<b>IP 65</b>
<b>Tightening torque M10 nuts</b>	<b>20 Nm / 14.75ft lb</b>
<b>Tightening torque M5 nuts</b>	<b>1.6 Nm / 1.18 ft lb</b>
<b>Operating temperature range</b>	<b>-40°C/+85°C -40°F/+185°F</b>
<b>Contacts</b>	<b>Silver plated copper</b>
<b>Contact terminals</b>	<b>M10 tin-plated brass</b>
<b>Nuts for contacts</b>	<b>Brass</b>
<b>Peak current coil rated input</b>	<b>4.4 A</b>
<b>Max. retaining coil</b>	<b>3.2 A</b>
<b>Holding coil rated input</b>	<b>0.4 A</b>

<b>FITTING INSTRUCTIONS:</b>	<b>ELECTRICAL DIAGRAM</b>
<ul style="list-style-type: none"><li>· The battery isolator switch must be placed as close as possible to the batteries. To avoid corrosion to wires and terminals, mount in a protected location.</li><li>· It can be fixed to the frame according to the fitting diagram shown in the drawing, using M 8 TCEI (cylindrical head – encased hexagon) screws UNI 5931: 1984, and plain washers 8,4x1.7 UNI 6592:1969.</li><li>· The inversion of the power supply to the coil causes serious damage to the internal diode.</li></ul>	



# **FR1052**

***Positive Disconnection, 12V***

***Insulated Solenoid (Power Supply Coil From Battery)***

The versatility of Flaming River's FR1052 Disconnect Switch allows for multiple installation options based upon user need and vehicle application.

## **Options:**

- A. Include positive or negative electrical disconnection**
- B. Positive or negative switching.**
- C. Continuous operator controlled remote "on", and Passive disconnect via vehicle ignition off.**
- D. The addition of the FR1053 Time Delay Relay makes the switch suitable for vehicles requiring a Selective Catalytic Reduction cleaning cycle or other custom features.**

The disconnect switch should be located as close as possible to the battery.

## **Common Installations:**

### **Operator controlled ON-OFF (+/- disconnect and switching)**

- 1. Positive or negative battery cable is connected to terminal 30-31.**
- 2. Vehicle load (+/-) is connected to terminal 30A-31A**
- 3. User determines +/- switching. Term. 85 switched for negative, Term. 86 switched for positive. Un-switched side: 85 chassis ground, 86 positive. (Any style of "maintained" switch is acceptable, 10 amp or greater)**

# **FR1052**

## ***Positive Disconnection, 12V***

### ***Insulated Solenoid (Power Supply Coil From Battery)***

**Passive Disconnect (Ignition OFF Battery Disconnection)** This installation uses a momentary switch (Not Included) to energize the vehicles electrical system, then uses the ignition system to maintain the disconnect switch in the closed (on) position. When the ignition is turned off, the disconnect switch automatically opens (off) and the electrical system is disconnected.

- 1. Positive battery cable is connected to terminal 30-31**
  - 2. Vehicle load is connected to terminal 30A-31A**
  - 3. Terminal 85 (NEG.BOB.) is connected to chassis ground.**
  - 4. Terminal 86 (POS.BOB.) is connected to one side of momentary switch and is connected to an “ignition on” circuit (i.e. Switch “IGN/ RUN” terminal)**
  - 5. Other side of momentary switch is connected to constant positive. (Any style of momentary switch is acceptable, 10 amp or greater).**
- Always use proper wiring techniques.**
  - Wire size should be determined using industry standards based upon load requirements and length of cable needed.**
  - Activation solenoid has a max draw of 4.4 amps, 0.4 amps continuous.**
  - Main terminals are rated for 250 amps continuous, 2500 amps peak.**
  - We always recommend the use of Battery Terminal Covers FR1003TM.**

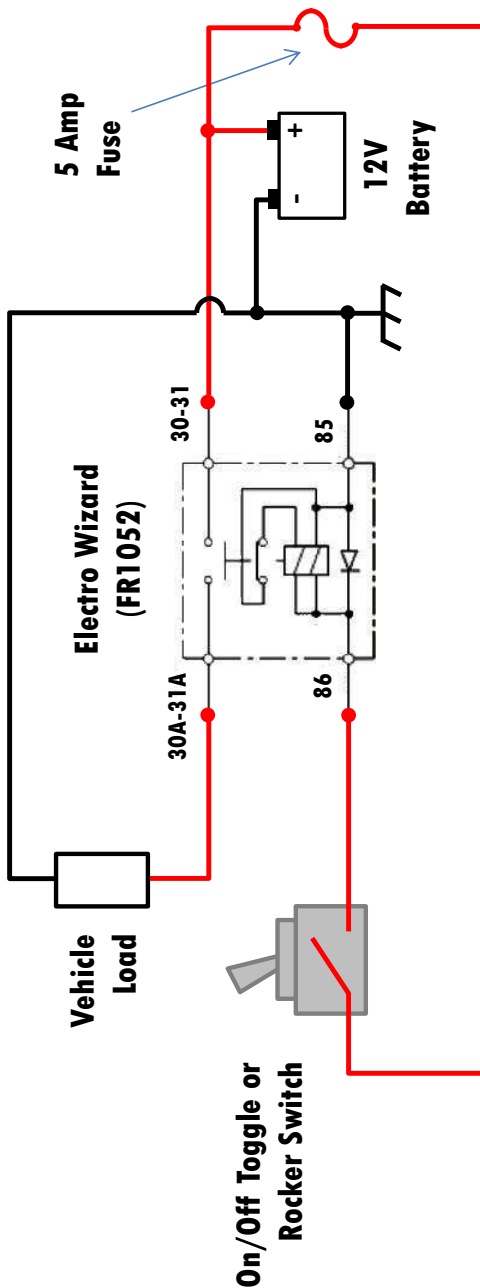
# FR1052 Wiring Diagram

Positive Disconnection, 12V

Insulated Solenoid (Power Supply Coil From Battery)

## SUGGESTED WIRING 1:

- Battery plus (+) disconnect by ON-OFF cabin switch.



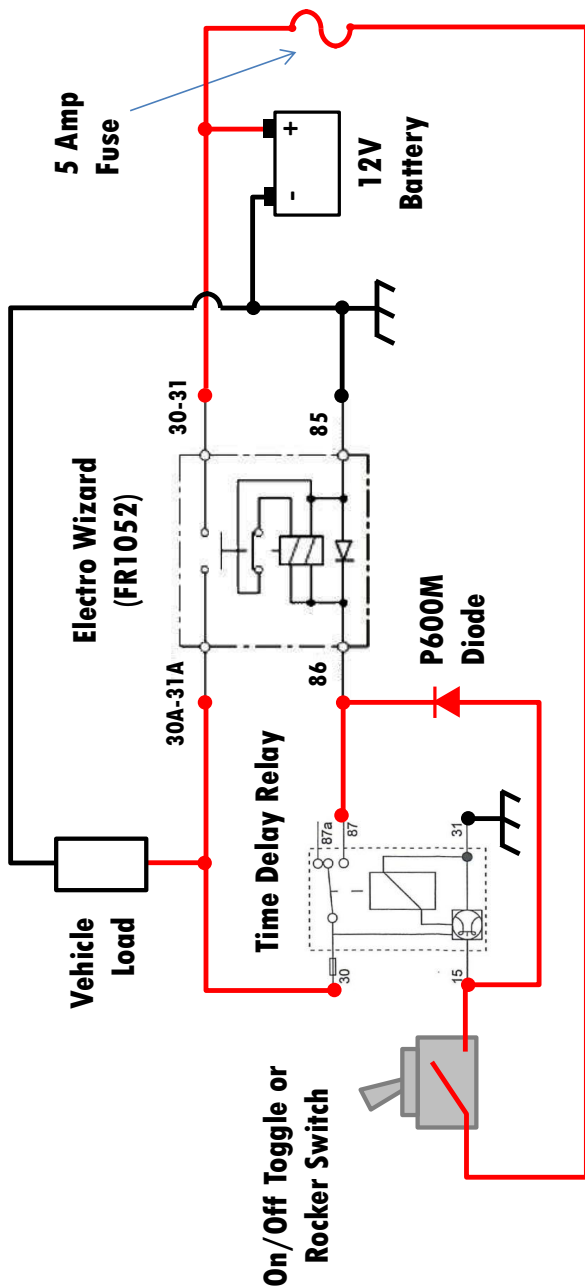
# FR1052 Wiring Diagram

Positive Disconnection, 12V

Insulated Solenoid (Power Supply Coil From Battery)

## SUGGESTED WIRING 2:

- \* Battery plus(+) disconnect by ON-OFF cabin switch. Delay-off timer relay (vehicles with SCR: Selective Catalytic Reduction) for DEF system needs a cleaning cycle.



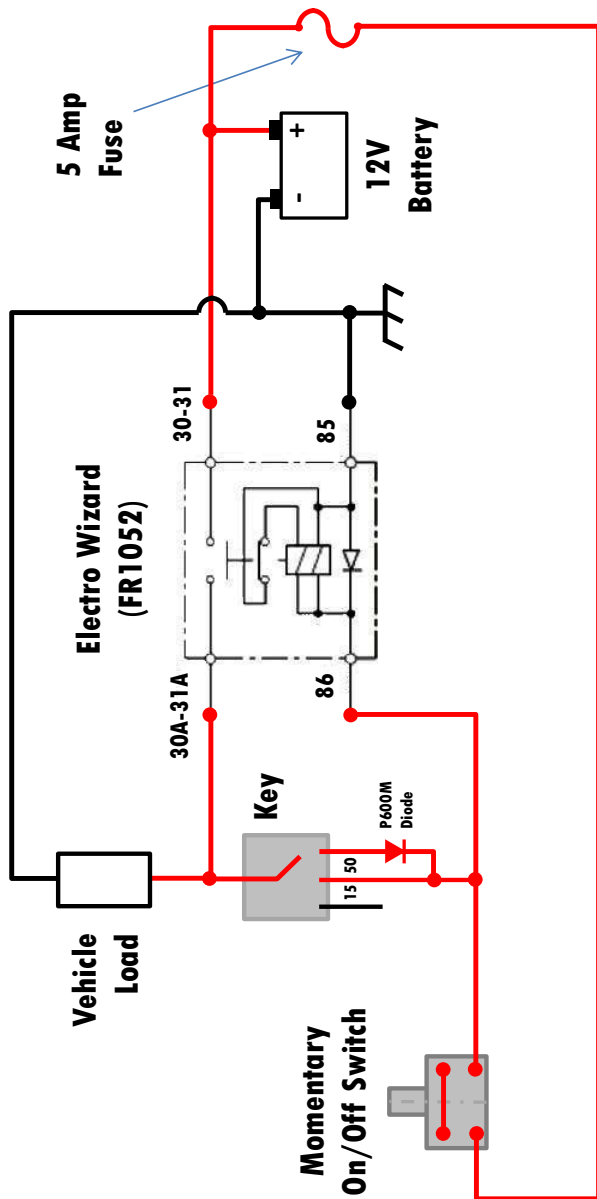
# FR1052 Wiring Diagram

Positive Disconnection, 12V

Insulated Solenoid (Power Supply Coil From Battery)

## SUGGESTED WIRING 3:

- Battery plus(+) disconnect by ignition key and OFF-ON cabin momentary switch.
- To close circuit: turn key ON, push momentary switch to connect battery
- To open circuit : turn key OFF.



# FR1052 Wiring Diagram

Positive Disconnection, 12V

Insulated Solenoid (Power Supply Coil From Battery)

## SUGGESTED WIRING 4:

- \* Battery plus(+) disconnect by ignition key and ON-OFF cabin momentary switch.
- To close circuit: Turn key ON, push momentary switch to contact battery.
- To open circuit: Turn key OFF, circuit opens after 3 minutes.

