

# Volt/Amp Functional Module (FM-VA) Installation Instructions and Wiring Diagram

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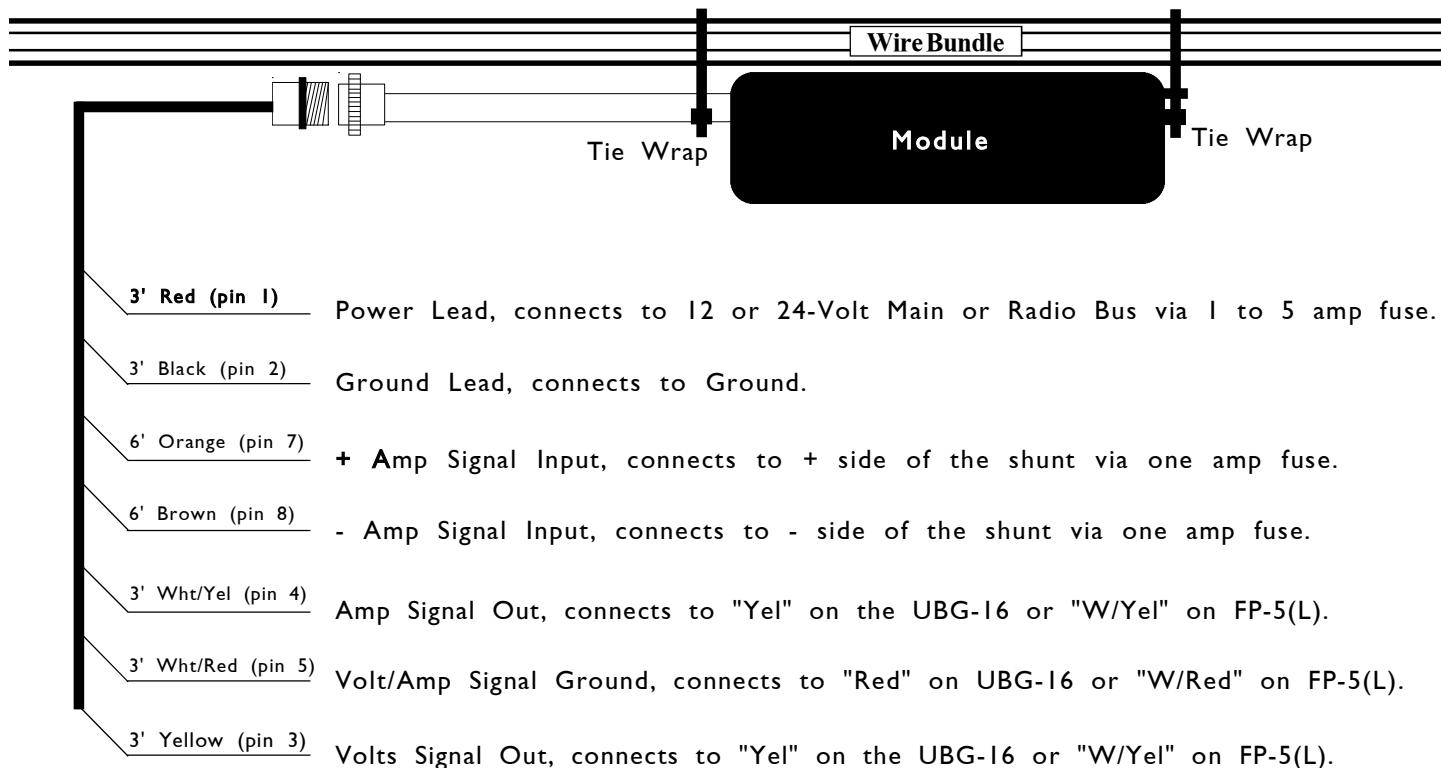
II 1119981 Supplement (UBG-16)

II 0506931 Supplement (FP-5(L))

Rev. A

10/12/16

**Note: This Module requires two channels on the UBG. One for Volts and one for Amps. You do not have to connect both. The FP-5(L) has one channel and can except only one function (Volts or Amps).**



## **1. Install the External Shunt in the Alternator Lead:**

The external shunt should be installed in an appropriate location that minimizes the routing of main cables (refer to figure #1 wiring diagram on page 2). It should also be mounted in a location where inadvertent damage cannot occur. If the shunt can be accessed easily, it should be covered. When mounting the shunt, use self-locking or wired nuts.

## **2. Mount the Module and Connect the 9-Pin Wire Harness:**

Tie wrap the FM-VA Module to a wire bundle under the aircraft instrument panel. Connect the 9-Pin Wire Harness to the Module.

## **3. Route the Power and Ground Wires:**

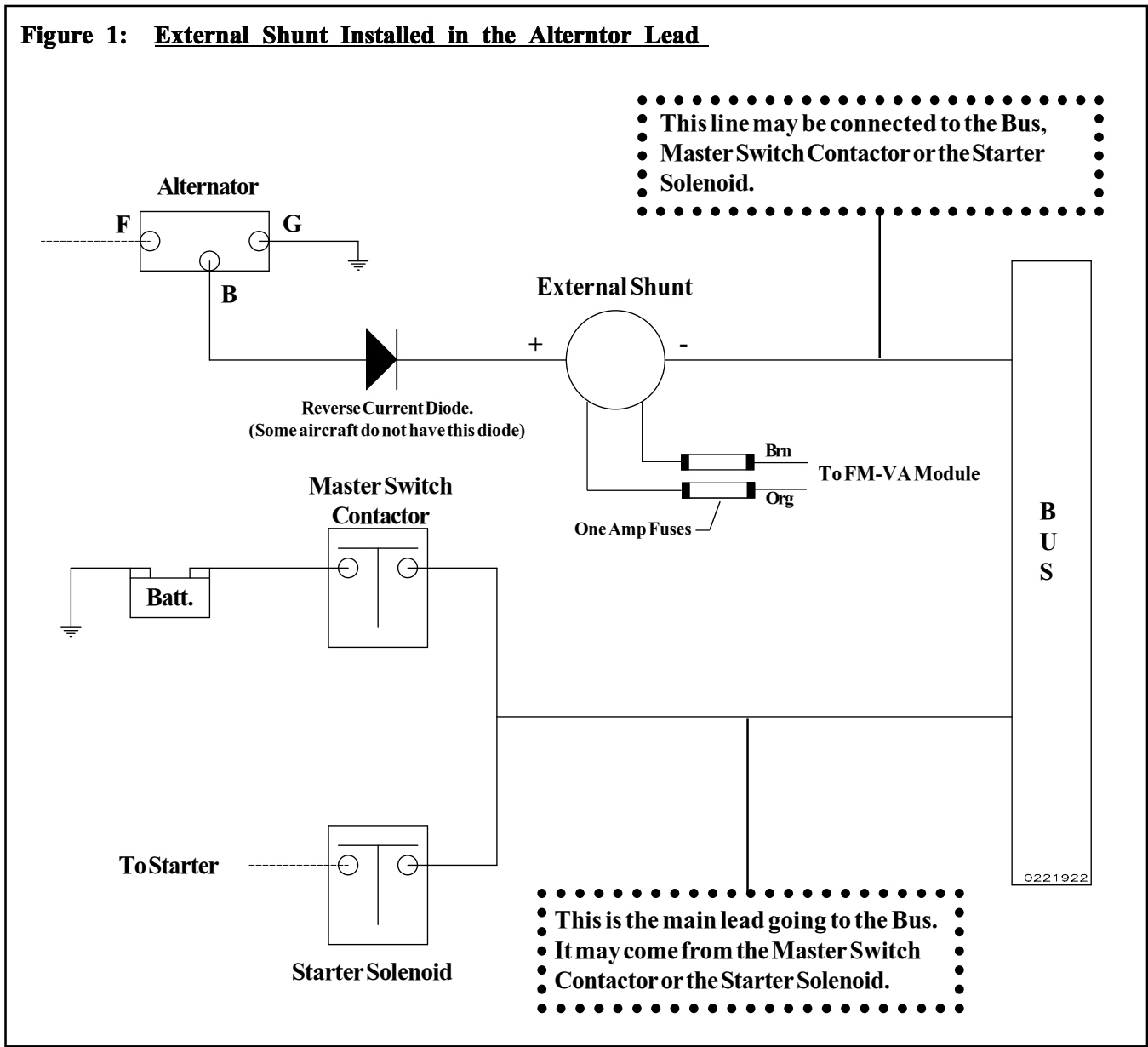
Route the red wire in the wire harness to the aircraft's 12 or 24-volt radio or main bus as applicable via a 1 to 5 amps fuse.

Route the black wire in the wire harness to a good ground. **Tie wrap these wires so they do not obstruct the freedom of travel of any controls.**

## **4. Route the Shunt Wires to the External Shunt:**

Route the orange wire to the "+" side of the shunt via a one amp fuse. Connect the brown wire to the "-" side of the shunt via a one amp fuse. The fuses should be located close to the Shunt. You **CANNOT** use the existing lines to the Ammeter.

**Figure 1: External Shunt Installed in the Alternator Lead**



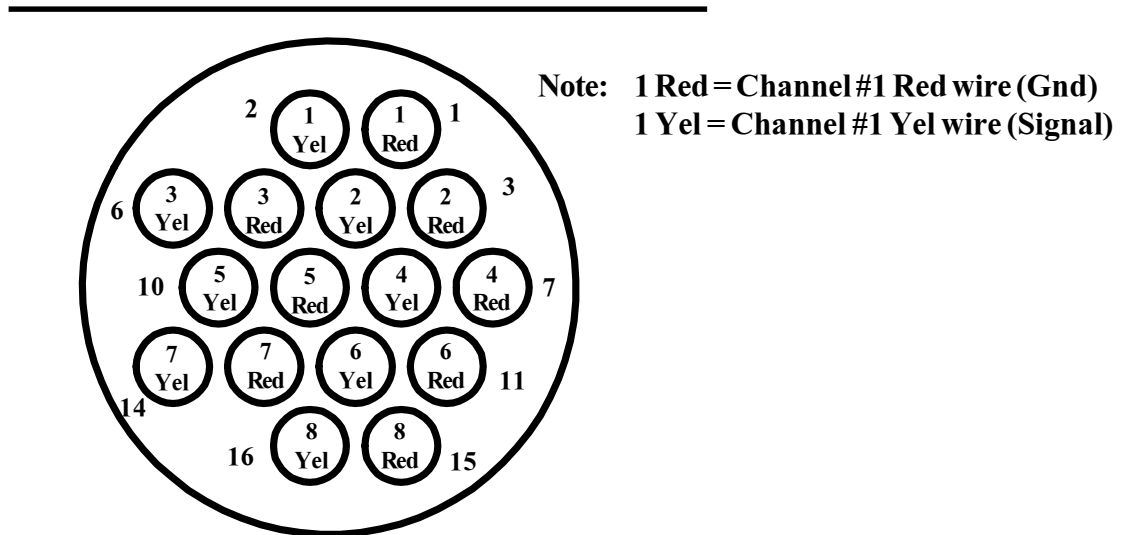
**5. Route the Amp Signal Out and Ground Wires to the UBG-16:**

Route the White/Yellow wire to the appropriate channel marked "Yel" on the UBG-16. Route and connect the White/Red wire to the appropriate channel marked "Red" on the UBG-16. UBG Extension Cable Harness

**6. Route the Volts Signal Out Wire to the UBG-16:**

Route the Yellow wire to the appropriate channel marked "Yel" on the UBG-16. **Tie wrap all wires so they do not obstruct the freedom of travel of any controls.**

**UBG Extension Cable Harness (Left or Right)  
Back View (wire side)**



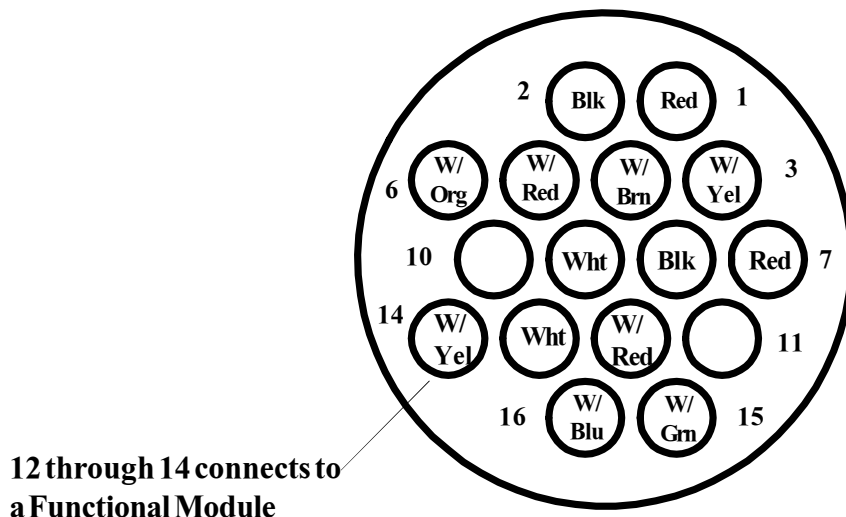
**7. If the AUX Channel on the FP-5(L) is to be used to monitor Amps, route the Amp Signal Out and Ground Wires to the FP-5(L):**

Route and connect the White/Yellow wire to pin 14 on the FP-5(L). Route and connect the White/Red wire to pin 12 on the FP-5(L). **Tie wrap all wires so they do not obstruct the freedom of travel of any controls.**

**8. If the AUX Channel on the FP-5(L) is to be used to monitor Volts, route the Volts Signal Out and Ground Wires to the FP-5(L):**

Route and connect the Yellow wire to pin 14 on the FP-5(L). Route and connect the White/Red wire to pin 12 on the FP-5(L). **Tie wrap all wires so they do not obstruct the freedom of travel of any controls.**

**FP-5(L) Extension Cable Harness, Back View (wire side)**



## **Specifications and Operating Features**

**Model:**

FM-VA (Volt / Amp Functional Module)

**Case Dimensions:**

3" x 2" x 1"

**Weight:**

Module Only: 2.8 Oz.

S-50 Shunt: 3.0 Oz.

S-300 Shunt: 11.4 Oz.

**Power Requirements:**

7.5 to 35 Volts, 1/10 Amp.

**Accuracy:**

2% or better.

**Resolution:**

1 Amp and .1 Volts

**Max Range for S-50 Shunt:**

100 Amps

**Max Range for S-300 Shunt:**

300 Amps