

SAE Mark 2400/2400L Speaker Protection Control Module AS-910-02002-000/001

Installation Instructions

This kit contains one (1) speaker protection control module part number AS-910-02002-000 or AS-910-02002-001 and one (1) 12.0" inch two wire sensor cable. This kit is specific to the audio amplifier(s) listed above. This module is a direct replacement for the original manufacture Speaker Protection Module. Manufactured as a spare part to replace burnt/failed relay contacts, faded timing and integrator capacitors.

Added features improved the original design:

- Correction for shutdown speaker thump
- Faster relay drive circuit
- Gold plated connection pins
- Improved lower resistance copper traces
- Low-leakage non-polar capacitors in integrator circuit
- 1% 50ppm metal film resistors (No shifting tolerances)

This protection control module does not require any permanent modifications to the existing design and if desired can be removed, the old components reinstalled, and the amplifier returned back to its original condition without altering any historical value.

Only two (2) additional wires taps are added to the existing power transformer low-voltage secondary circuit for the meter lamps or LED power supply. This 6.3VAC voltage tap allows this module to sense a power off condition and disengages the speaker output relays to avoid the massive power surge to the speakers that was allowed with the original manufactures protection module.

This kit replaces SAE Protection Modules P/N 17-0239 and 17-0239A.

GETTING STARTED

Read all installation instructions before attempting actual installation. For the best results, a qualified electronic technician should perform this kit installation. This module will take approximately 30 minutes to install.

Basic Tools Required:

- Quality Grounded Soldering Iron 25-45 Watts
- Solder Removal Tool or Solder Wick Pre-Fluxed
- Tweezers or Small Needle Nose Pliers
- Wire Cutter/Stripper
- 63/37 Solder Recommended

Note To Technician(s): The PCA in the reference illustration is an early version of the Mark 2400 Protection PCB part number 17-0239 with in-house updates applied. This was done for repair and preserve of the design platform. Any modifications/updates to the original module are not required to take advantage of this protection control module kit.

At the time of the writing of this document, no changes in audio quality or performance have been noted with the installation of this module.

The after-market design of this module is such that it will not change the overall operation, audible operation character, or electrical functions of the amplifier section.

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Installation Instructions

(continued)



Step 1:

Remove the original manufacturer's speaker protection module/PCA. Remove the single thumb-screw in the top center of the module. Gently rock the module to loosen the connection pins and pull upwards.

Do not discard the component removed. Save the old module for future reinstallation if required.

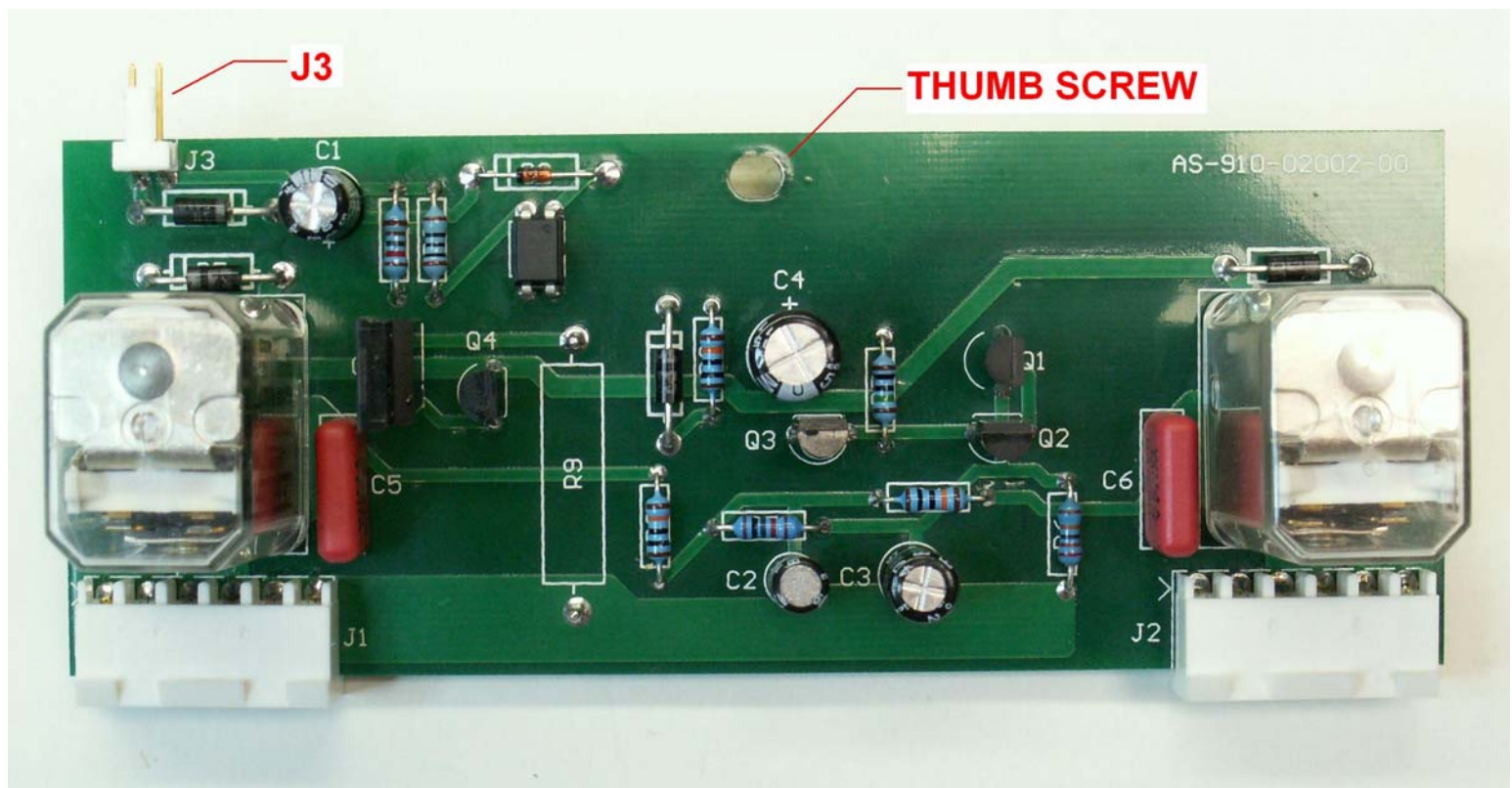


Figure Protection Module AS-910-02002-000

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Installation Instructions

(continued)

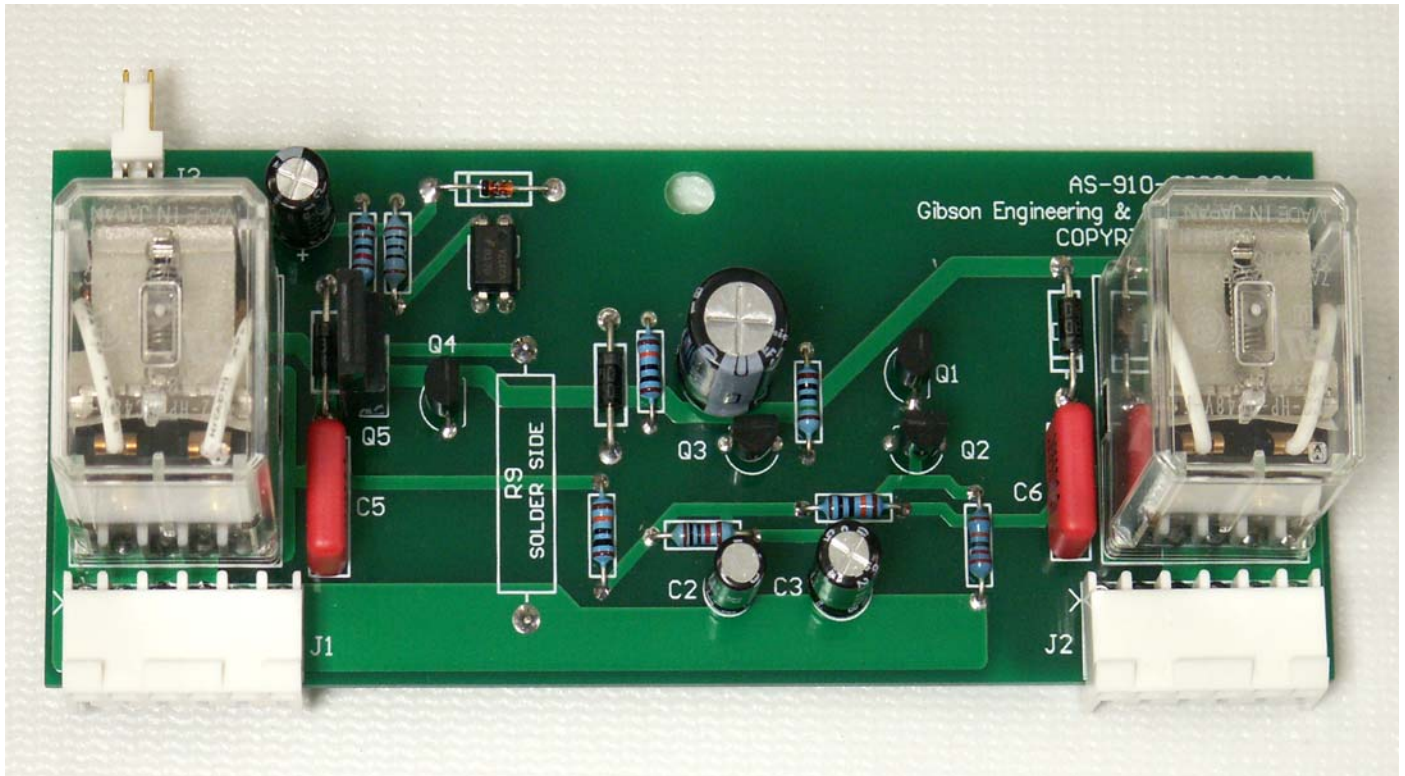


Figure Protection Module AS-910-02002-001

Step 2:

Install the new replacement speaker protection module. Make sure to line up both connectors so all the pins make proper connection. **Failure to make the proper connections could result in damage to the amplifier and/or the speaker protection module.**

Put the thumb-screw back in the top center of the module and secure it tightly.

Note: If the thumb-screw won't align or go back in, check the connector alignment and insure the connectors are properly seated.

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Installation Instructions

(continued)

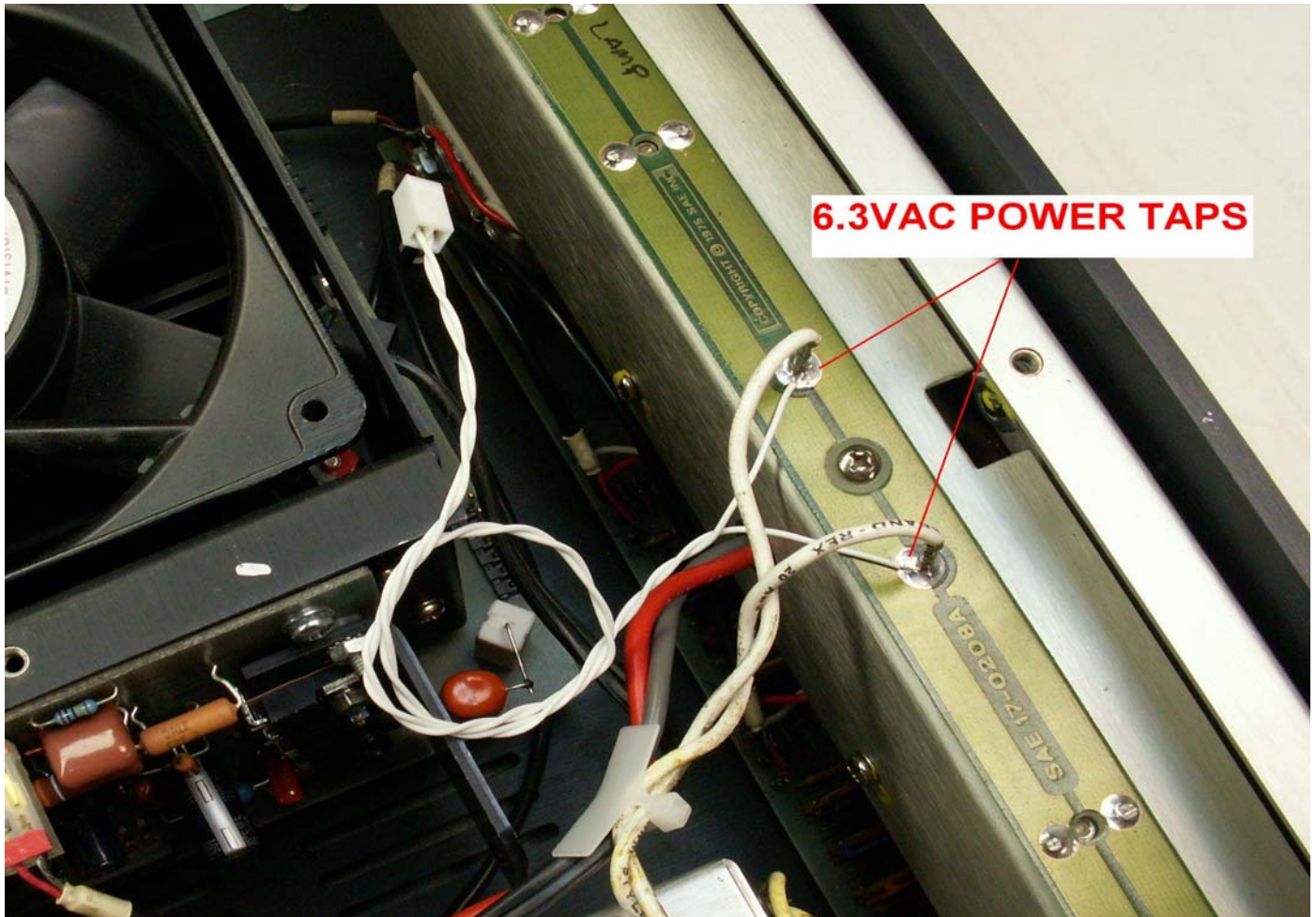


Figure MK2400

Step 3:

You will notice that there is a two(2) pin connector, J3, on the top left side of the module. This is where the module will connect to the main power transformer low-voltage secondary circuit. The provided sensor cable with the mating J3 plug will connect (solder) to either the 6.3VAC meter lamp PCA as shown or the AC side of the LED meter power supply (Gain Switch PCA 22-0122 White wire P14 and Green wire P15 pads).

*** SAE 2400L Models Only***

It is required that the front panel be removed on SAE models 2400L to gain access to the bottom section of the front panel PCA that provides the power supply to the LED display module.

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Installation Instructions

(continued)

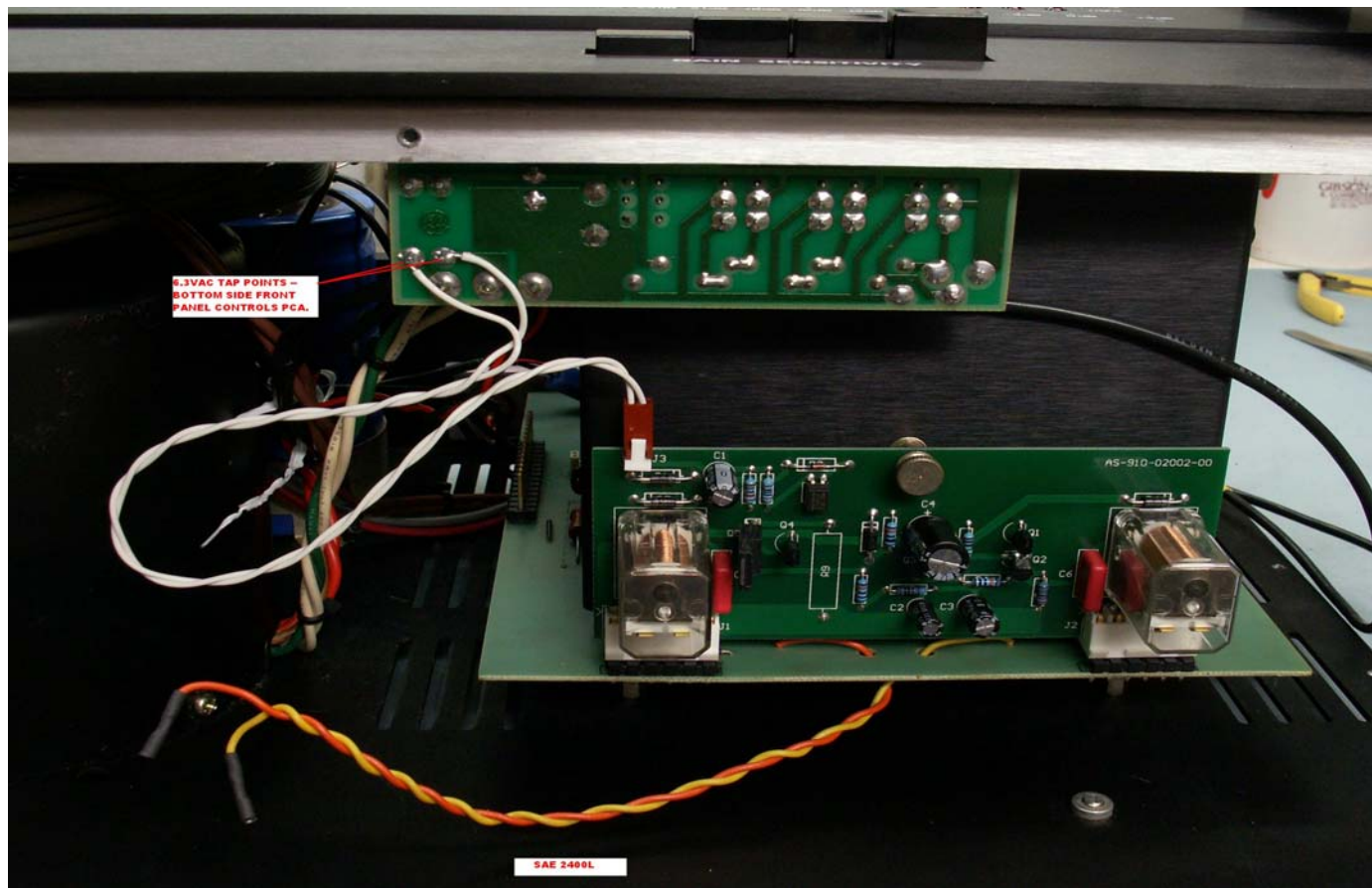


Figure 2400L

Connect/solder each of the White wire leads as shown in the step 3 illustration. This is the best point to place these wire for both access and performance. There is no polarity. So, either wire can connect to either solder pad.

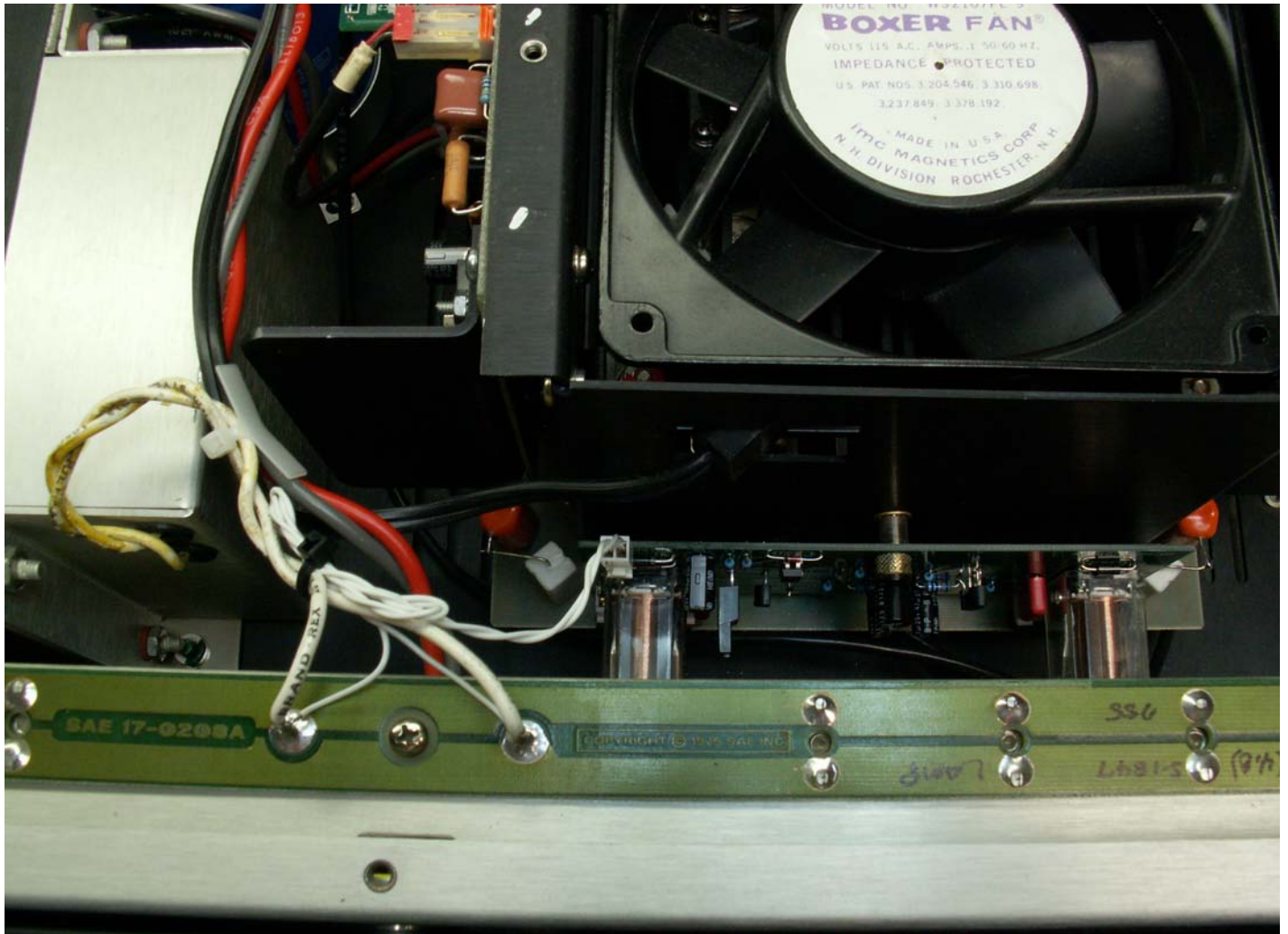
Notes:

- The wires can be trimmed to a proper length or looped/tied to make a clean installation.
- **WARNING -- It is best to disconnect the secondary low-voltage feed wires before attaching the two sensor wires. This may require gently heating the metal connector with the tip of the soldering iron to break the torque paint bond (PCB traces have been damaged due the strength of the torque paint.)**

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Installation Instructions

(continued)



- Step 4:
Insert the plug into the J3 connector. Double check that there is no wire remnants, loose hardware, or other foreign objects in the amplifier.

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Installation Instructions

(continued)

*** SAE 2400L Models Only***

Replace the front panel assembly of the 2400l models and tie any extra wire to the local power harness.

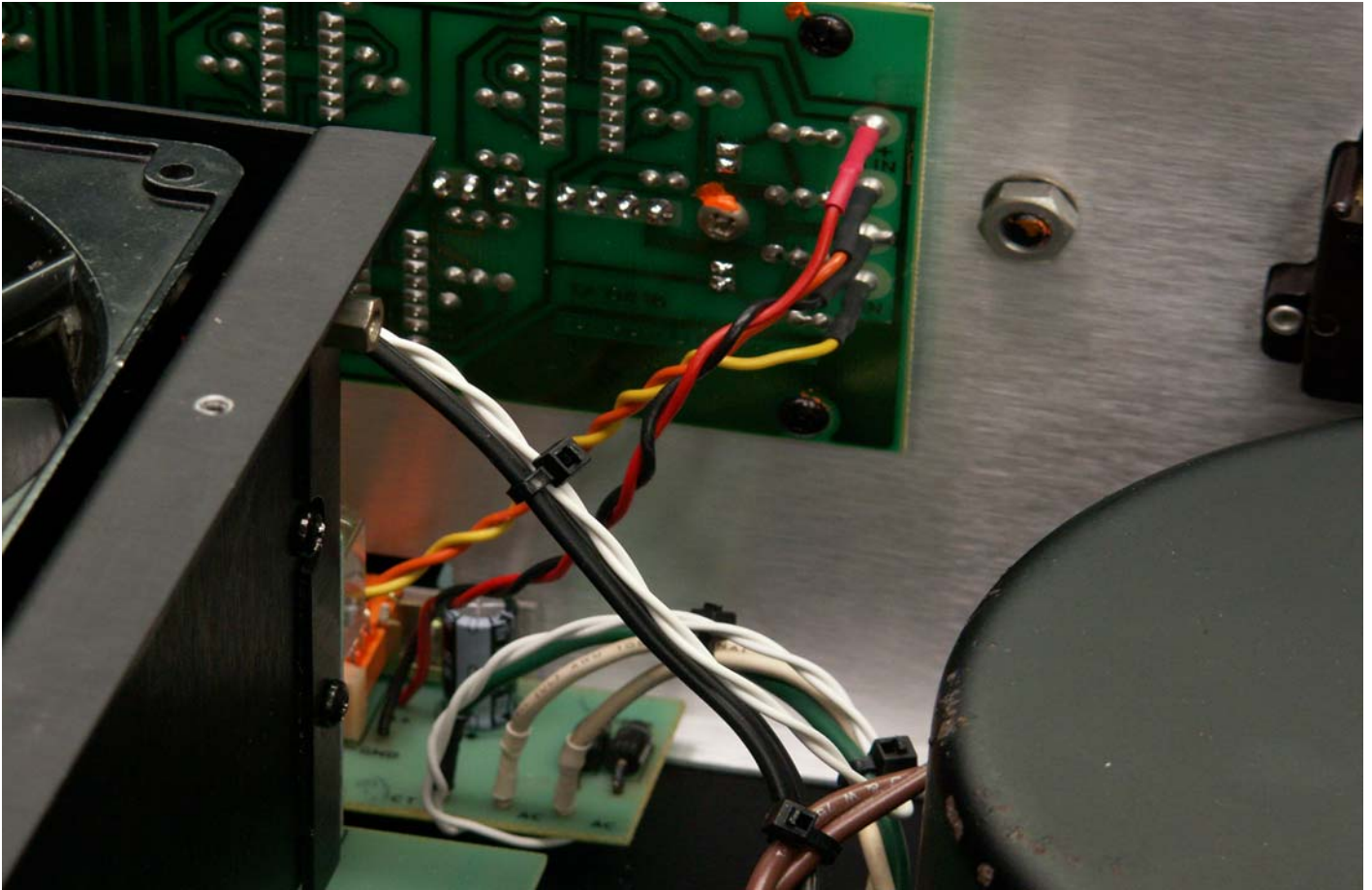


Figure 2400L Wire Harness

SAE Mark 2400/2400L Speaker Protection Control Module AS-910-02002-000/001

Installation Instructions

(continued)

Step 5:
Power up the amplifier and verify the proper operation of the speaker protection control module.
Note: At this point the amplifier cover(s) are still off and no speakers are connected.

Once proper installation and operation have been verified, the amplifier cover(s) should be replaced. The amplifier can now be returned to service.

Enjoy your improved speaker protection module.

Thank you for purchasing a Gibson Engineering product. Watch for other future adaptation kits.

Disclaimers and Warranty: At the time of the writing of this document, no changes in audio quality or performance have been noted with the installation of this speaker protection module adaptation. This product is a semiconductor component/device intended for professional installation/use and is warranted as such to be free from defects at the time of manufacture for the intended purpose of use. No other warranties are granted or implied.

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