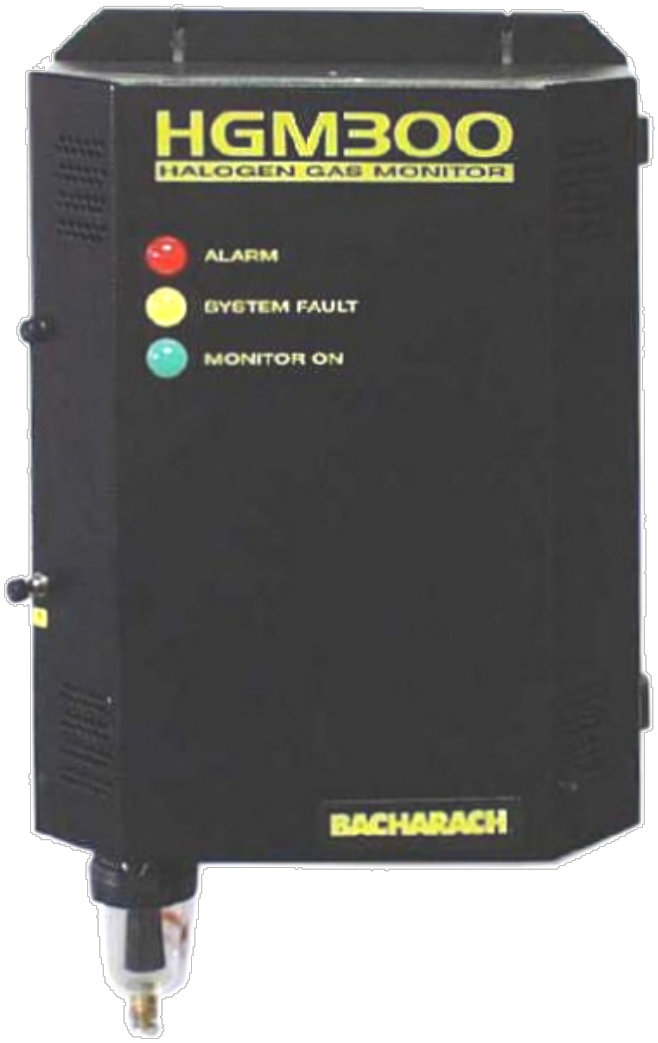
HGM300

Halogen Gas Monitor

Power Supply Replacement

Instruction 3015-5686
Rev. 0 – June 2012



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SECTION 1: SCOPE

This document explains how to replace the 120 VAC power supply circuit board of an HGM300 with a new power supply circuit board (P/N 3015-5675).

SECTION 2: PREREQUISITES

Before replacing the power supply circuit board, it is important to:

- review all safety precautions
- understand specification changes (for example, new fuse specifications)
- familiarize yourself with the internal hardware components of the HGM300 and their locations within the HGM300 enclosure
- gather tools required to perform the replacement.

2.1. SAFETY PRECAUTIONS

Be sure to review all of the safety precautions listed below before performing ANY maintenance on the HGM300 – including replacing the power supply circuit board.

AC POWER SUPPLY WARNING: Ensure the source voltage matches the voltage of the product before energizing the equipment. It is highly suggested that the HGM300 be placed on a separate circuit with UPS or surge protection. A switch or circuit-breaker shall be included in the building installation. It shall be in close proximity to the equipment and within easy reach of the operator. It shall be marked as the disconnecting device for the equipment.

PROTECTIVE GROUNDING WARNING: Under no circumstances should this equipment be operated without connection to a protective ground. Failure to observe this warning poses a potential shock hazard and is also a violation of electrical safety standards applicable to this type of equipment.

WORKING INSIDE THE INSTRUMENT: Extreme care should be exercised when accessing the interior of this instrument. Only qualified electrical maintenance personnel should perform connections and adjustments. Always de-energize the power supply before working inside the instrument.

EXPLOSIVE ATMOSPHERE WARNING: Do not operate this equipment in the presence of flammable liquids, vapors or aerosols. Operation of any electrical instrument in such an environment constitutes a safety hazard.

EXHAUST VENTING WARNING: It is imperative that the exhaust port on this instrument be properly vented as described in this manual. Failure to do so constitutes a safety hazard.

INSTRUMENT MODIFICATIONS: Under no circumstances should this instrument be modified without written consent from Bacharach, Inc. Changes or modifications to this instrument, not expressly approved, will void the warranty.

IN CASE OF MALFUNCTION: Do not continue to use this equipment if there are any symptoms of malfunction or failure. In the case of such occurrence, de-energize the power supply and contact a qualified repair technician or the nearest Bacharach Service Center.

WIRE ROUTING WARNING: Only provided knockout(s) are to be used for electrical and communications wiring. Drilling into the box will void the warranty.

2.2. SPECIFICATION CHANGES

Table 1 summarizes the fuse requirements for old and new power supply boards. For fuse locations, refer to Figure 1, Figure 2, and Figure 3.

Table 1. HGM300 Fuse Specifications

	Power Supply	Fuse	Description	Dimensions	P/N
Old Power Supply PCBs	120 VAC Input (3015-3167)	F1	0.5 A, 250V Fast Acting	5mm x 20mm	0604-2538
		F2	250 mA, 250V Fast Acting		0604-2537
		F3	5 A, 250V Fast Acting		0604-2539
		F4	63 mA, 250V Fast Acting		0604-2535
	230 VAC (3015-3161)	F1	250 mA, 250V Fast Acting	5mm x 20mm	0604-2537
		F2	125 mA, 250V Fast Acting		0604-2536
		F3	5 A, 250V Fast Acting		0604-2539
		F4	32 mA, 250V Fast Acting		0604-2534
New	100-240 VAC (3015-5675)	F1	2.5 A, 250V Fast Acting	5mm x 20mm	0604-2612
		F2	5 A, 250V Fast Acting		0604-2613

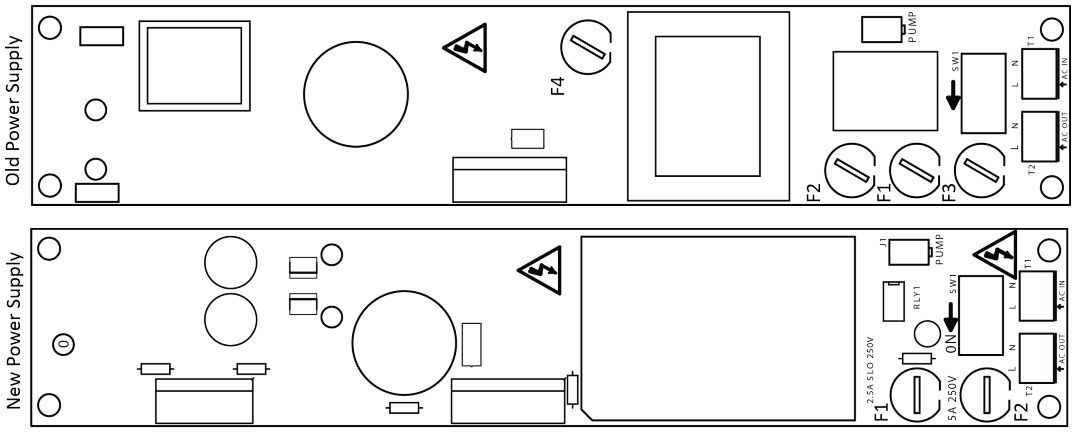

Figure 1. Fuse Locations on Old and New HGM300 Power Supply Boards

2.3. HARDWARE OVERVIEW

Refer to the following illustrations to locate the Power Supply printed circuit board.

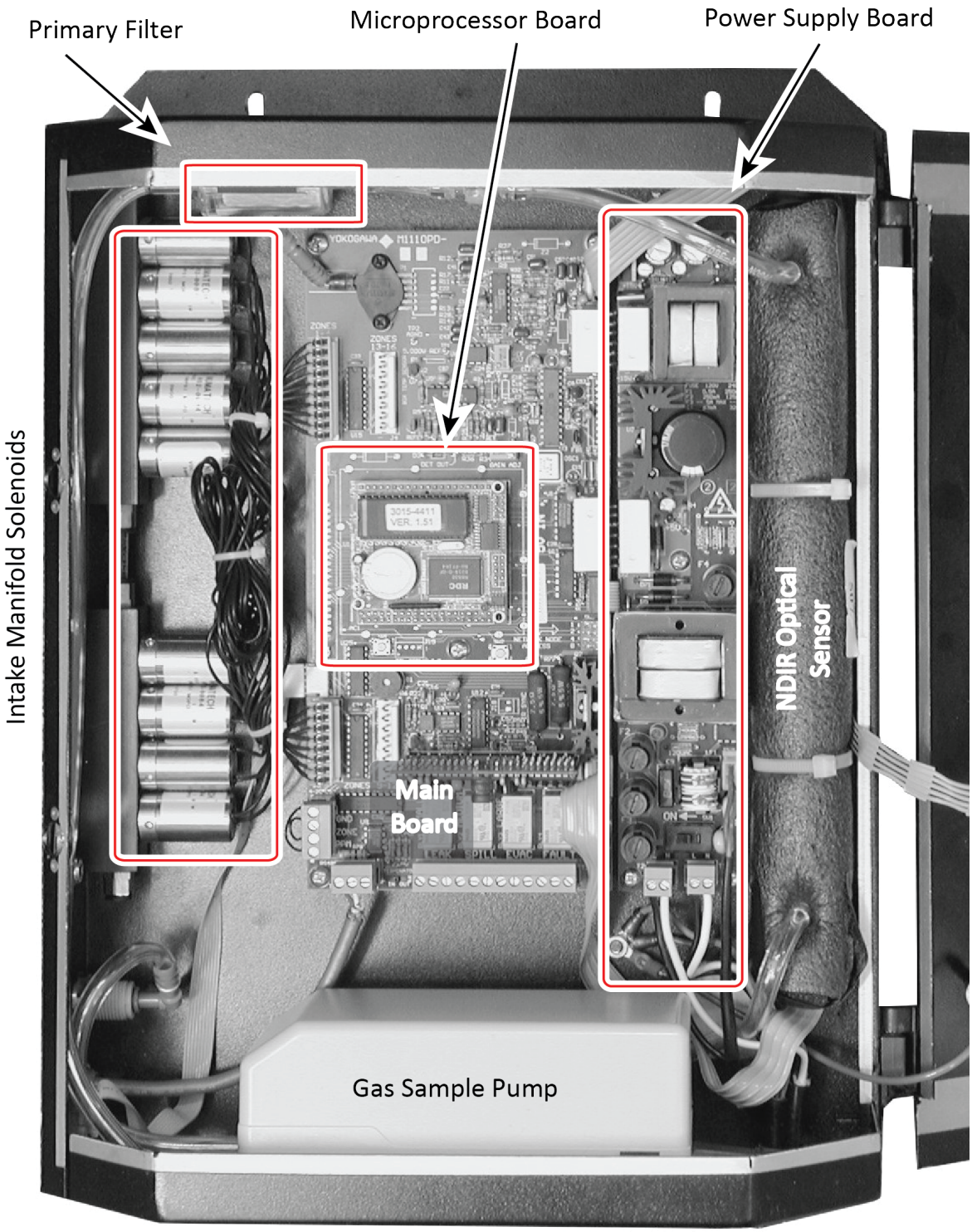

Figure 2. HGM300 Interior Components (Showing Old Power Supply PCB)

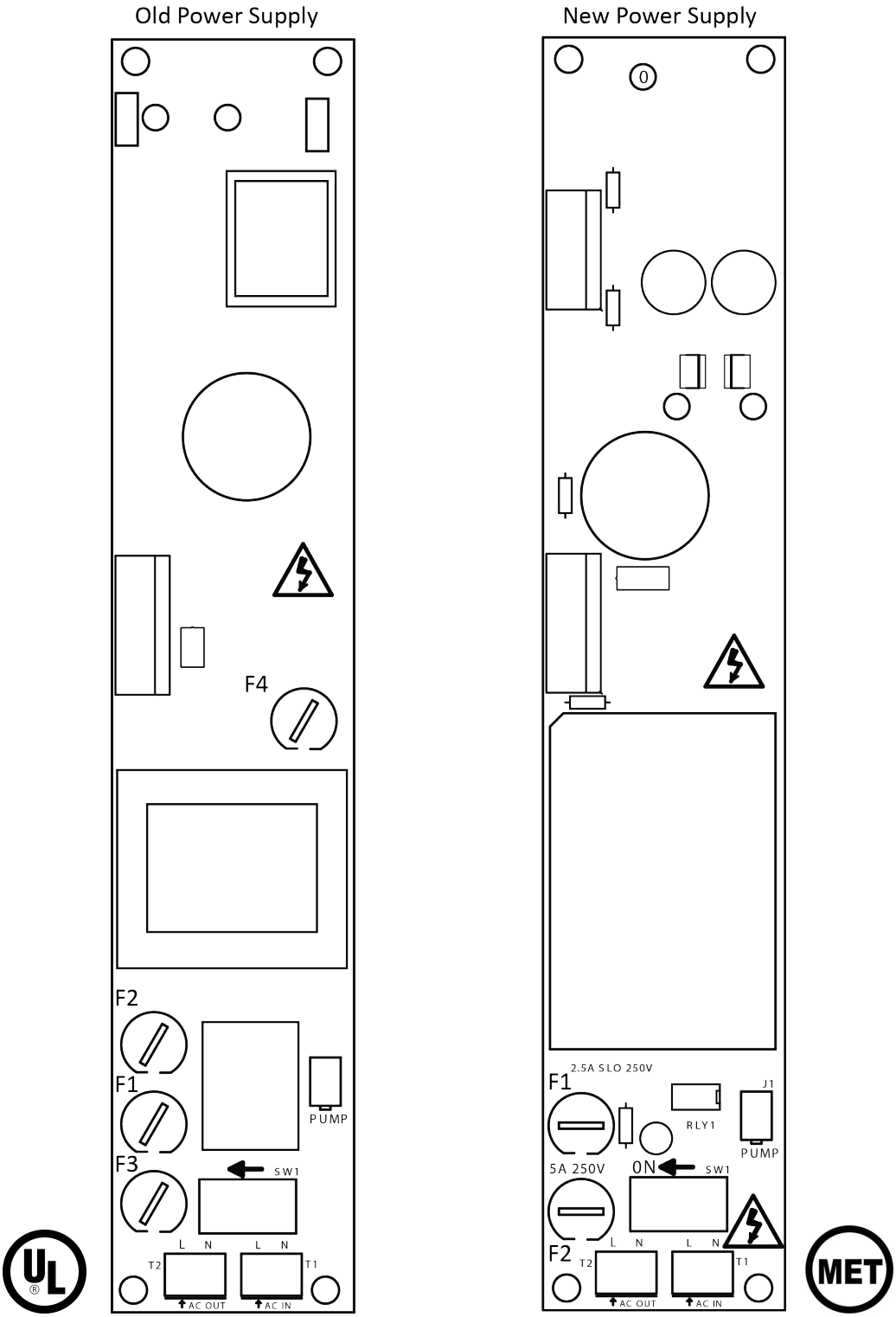

Figure 3. Comparison of Old Style and New Style Power Supply Boards

NOTE: Agency approval for the new power supply has changed from UL to MET Laboratories.

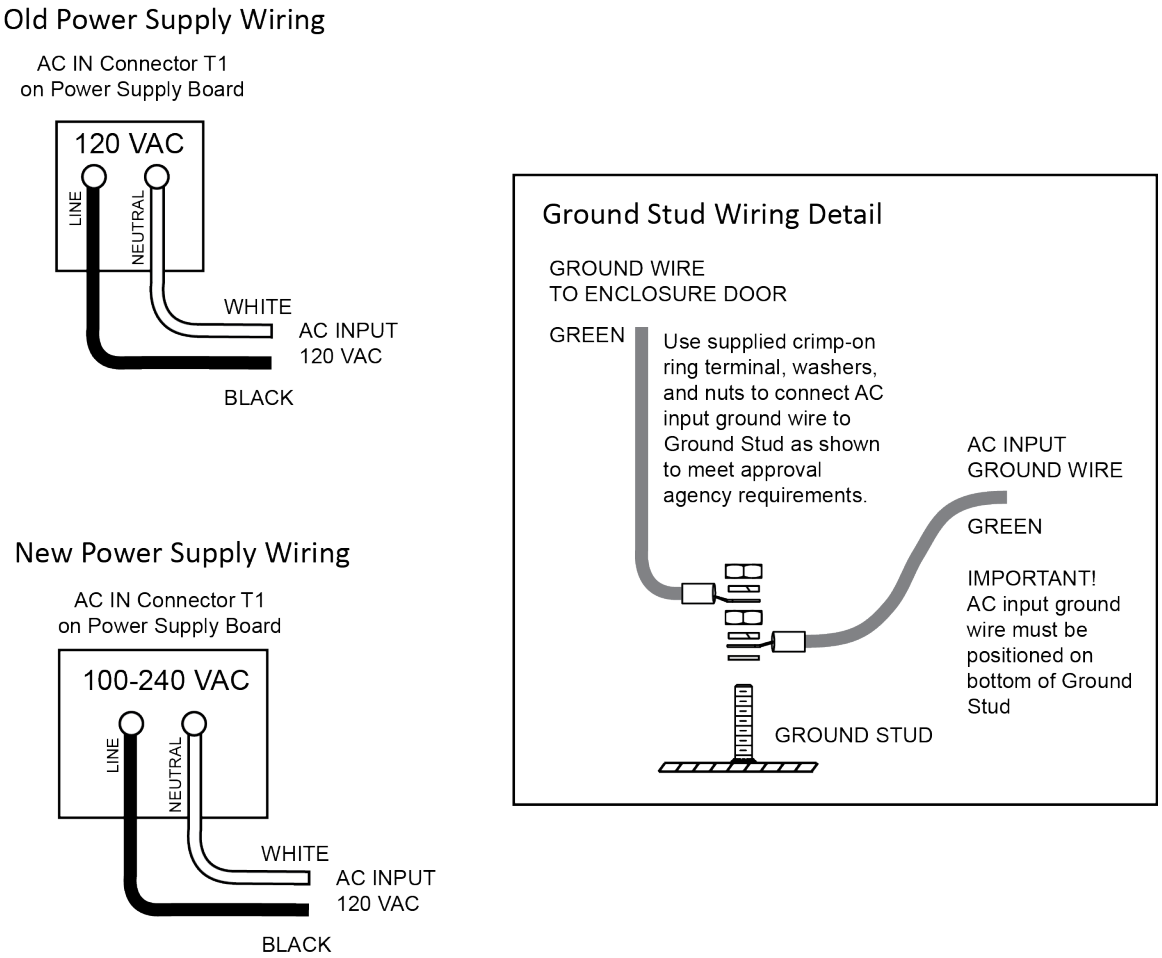

Figure 4. Comparison of Old Style and New Style Power Wiring and Grounding

2.4. REQUIRED TOOLS

- New Power Supply printed circuit board (P/N 3015-5675)
- HGM300 Operations Manual (P/N 3015-4148)
- Phillips head screwdriver

SECTION 3: PROCEDURE

Step	Description
1	Refer to the HGM300 Operations Manual (P/N 3015-4148) originally supplied with your HGM300. It contains warnings, wiring, and operation information that is supplemental to this replacement procedure.
2	Remove power that supplies the HGM300. Perform appropriate lock-out/tag-out procedures to ensure power remains off during the power supply board replacement process.
3	Open the HGM300 enclosure and locate the Power Supply board to be replaced. See Figure 2.
4	Remove all connectors from the Power Supply board, noting their orientation. This includes the two input power connectors, the power supply connector to the pump, and the two power supply connectors to the main board.

Step	Description
5	Carefully remove the five (5) screws holding the Power Supply board to the back of the enclosure. Two screws are located at the top of the board, two are at the bottom, and one is in the middle of the board. Set these screws aside for later installation of the new board.
6	Carefully remove the old Power Supply Board. Dispose of it according to local laws and practices.
7	Carefully install the new Power Supply board by aligning the five holes on the board to the five stand-offs on the back of the enclosure. Use the five screws you removed in the previous step to secure the new board to the enclosure. Do not over-tighten the screws.
8	Replace all cables and connectors to their original locations. This includes the two input power connectors, the power supply connector to the pump, and the two power supply connectors to the main board. When installing these connectors, do not use excessive force as this could bend the connector pins and/or damage the connectors.
9	Restore power to the HGM300.
10	Confirm normal operation to ensure that the power supply has been replaced correctly.

WARNING: Drilling holes in the HGM300 enclosure will void the warranty. Please use knockouts provided for electrical connections. Drilling into the box will void the warranty.

WARNING: Electrical installation should be performed by a certified electrician and should comply with all applicable local, state, and federal electrical safety codes.

WARNING: Under no circumstances should this instrument be operated without connection to a protective ground. Doing so poses a potential shock hazard and is also a violation of electrical safety standards applicable to this type of equipment.

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