GENERAL MONITORS

MODEL PS002

Power Supply Module
for Zero Two A Applications

Instruction Manual **12-01**

Part No. **MANPS002**
Revision **B/12-01**

Warranty Statement

General Monitors warrants the Model PS002 to be free from defects in workmanship or material under normal use and service within two (2) years from the date of shipment. General Monitors will repair or replace without charge any equipment found to be defective during the warranty period. Full determination of the nature of, and responsibility for, defective or damaged equipment will be made by General Monitors' personnel. Defective or damaged equipment must be shipped prepaid to the General Monitors' plant or the representative from which shipment was made. In all cases, this warranty is limited to the cost of the equipment supplied by General Monitors. The customer will assume all liability for the misuse of this equipment by its employees or other personnel. All warranties are contingent upon proper use in the application for which the product was intended and do not cover products which have been modified or repaired without General Monitors' approval or which have been subjected to neglect, accident, improper installation or application, or on which the original identification marks have been removed or altered.

Except for the express warranty stated above, General Monitors disclaims all warranties with regard to the products sold, including all implied warranties of merchantability and fitness and the express warranties stated herein are in lieu of all obligations or liabilities on the part of General Monitors for damages including, but not limited to, consequential damages arising out of/or in connection with the use or performance of the product.

Warning

All Zero Two A Series Modules contain components, which can be damaged by static electricity. Special care must be taken when wiring the system to ensure that only the connection points are touched.

Installation and Maintenance must be carried out by suitably skilled and competent personnel only.

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1.0 Introduction

1.1 System Description

The Zero Two A Series of Trip Amplifiers and Control Modules have been developed for the purpose of creating combined fire and gas detection systems (see Figure 1). There is a module for flame detection and each type of gas detection that General Monitors offers.

Module	Type of field device
4802A	Combustible Gas Sensors
2602A	Hydrogen Sulfide (H_2S) Gas Sensors
TA102A	Combustible Gas Smart Sensors
TA202A	Hydrogen Sulfide (H_2S) Gas Smart Sensors
TA402A	FL3100 Family of Flame Detectors
TA502A	Generic Trip Amplifier

Figure 1 – Types of Zero Two A Series Gas and Flame Detection Modules

In addition to the Fire and Gas Detection Modules, there are Accessory Modules that perform system functions (e.g. alarm reset, alarm accept), and will enhance the performance of the system (e.g. extra relay capacity, zoning and voting). (See Figure 2)

Module	Description
PS002	Power Supply Module
FM002A	Facilities Module
MD002	Monitored Driver Module
IN042	4-Channel Input Card
CC02A	Communications Module
ZN002A	Zone Control Module

Figure 2 – Zero Two A Series Accessory Modules

The Zero Two A Series modules reside in a 4, 8, or 16 channel chassis that can be rack or panel mounted. The back of each chassis provides a buss for the common and system signals that are sent to and from the Facilities Module (FM002A) and the Power Supply Module (PS002).

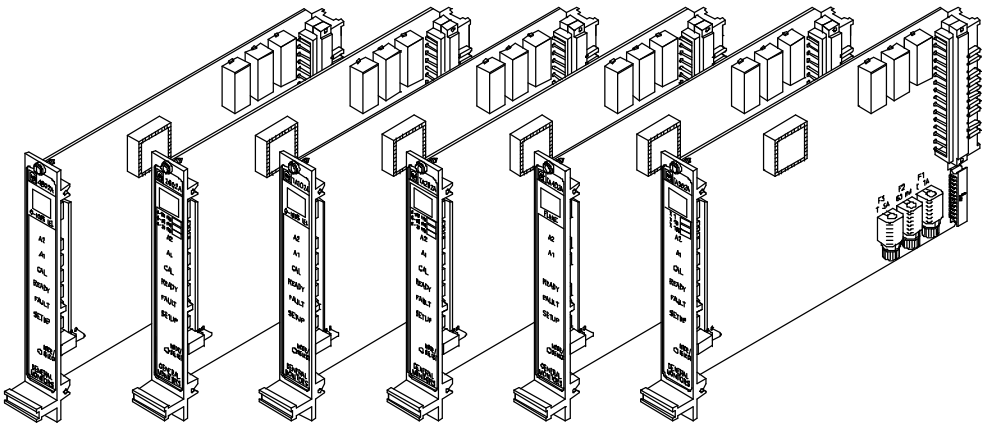

Figure 3 - Zero Two A Series Gas and Flame Detection Modules

The bussed signals are labeled as follows:

+24 VDC Positive Supply Voltage
Common System Ground

The power connections are labeled "+24 VDC" and "Common". Each module operates from a +24VDC (nominal) input. This regulated +24VDC source is fed to an on board power supply circuit. This power supply produces the necessary supply voltages and currents for operating all of the circuitry on the module and the detection device in the field. The Power Supply Module (PS002), or a customer supplied power supply, provides the buss with the "+24VDC" for the modules.

A1 Alarm Level 1
A2 Alarm Level 2

There are two separate alarm levels labeled "A1" and "A2". The "A2" alarm level is the most severe condition. These signals are sent to the Facilities Module.

Fault Malfunction

The "Fault" line signals the Facilities Module any time any of the modules in the system enters into a malfunction condition.

Accept Alarm Accept

Alarm levels are accepted and the UA is de-activated when the "ACCEPT" button on the front panel of the Facilities Module is depressed. This signal is sent to all of the modules on the buss by the Facilities Module.

UA Unaccept / Acknowledge

The "UA" is activated anytime a new alarm level is activated. When an activated alarm level is accepted, the "UA" is de-activated. The "UA" will re-activate if another alarm level is activated.

Reset Master Reset

Another button is provided on the front panel of the Facilities Module so that latched alarm levels can be "RESET". This signal is sent to all of the modules on the buss by the Facilities Module.

CAL CALIBRATE

Any time the a module in the system is placed into calibration Mode, a signal is sent on the buss to the Facilities Module.

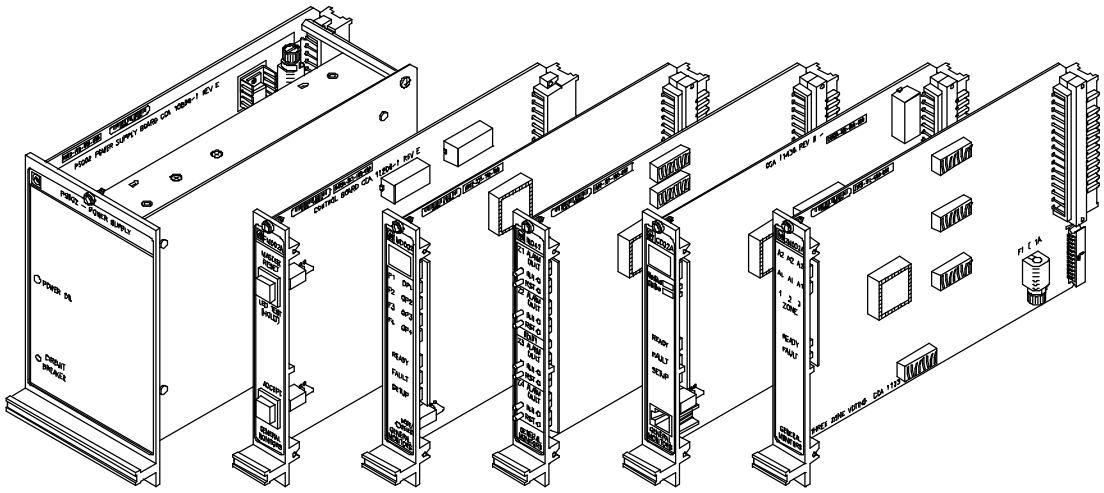

Figure 4 - Zero Two A Accessory Module

1.2 Power Supply Module - PS002

The Power supply Module (PS002) provides a system with sufficient power to operate twelve (12) channels of Zero Two A Series Modules and their field devices. This module is four (4) times as wide as other modules and requires four times the space.

The Power Supply Module slides into four channel slots and supplies the buss with +24VDC. On the rear of this module, connections are provided for AC voltage in (line and neutral), for DC voltage in (battery back-up), and for DC voltage out (+24 VDC). On the front-panel, there is a green LED for a Power ON indication.

2.0 Installation

2.1 Upon receipt of your equipment

All equipment shipped by General Monitors is pre-packed in shock absorbing containers, which provide considerable protection against physical damage. The contents should be carefully removed and checked against the packing slip. If any damage has occurred or there is any discrepancy in the order, please notify General Monitors as soon as possible. All subsequent correspondence with General Monitors must specify the equipment part number and the serial number. Each item and piece of equipment is completely checked by the factory, however, a complete check-out is necessary upon initial installation and start-up to ensure system integrity.

2.2 Chassis Installation

The chassis should be mounted in a non-hazardous, protected environment and should be subjected to a minimum of shock and vibration. In installations where two or more module types have been mixed in one chassis, check that the individual channel coding strips match the channel application. The coding strips are pre-configured at the factory and the male portion is already mounted, on each module. The female portion, if unmounted, must be fastened in position on the mounting strip, so-as-to mate with its' counter part on the module. Connectors for system expansion should be fastened using the screws provided.

NOTE - Do not over-tighten the connector or coding strip fasteners, as this may damage the plastic molded parts. If more than one chassis is stacked vertically within an enclosure, forced air will be required for adequate cooling.

2.3 Terminal Connections

When wiring the terminal connections, it will be necessary to properly strip the wire leads to the proper length (see Figure 5).

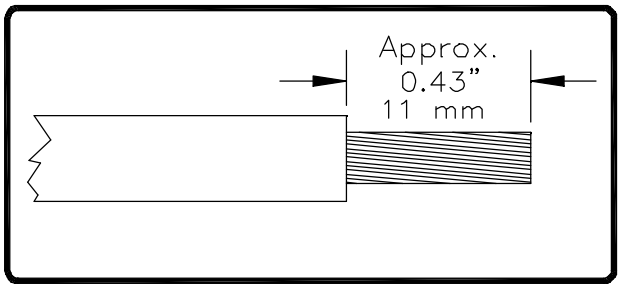

Figure 5 – Wire Strip Length

NOTE - For the Gas and Flame Detection Modules, refer to the specific manual for detailed information on terminal connections on those modules.

Refer to Figure 6 for the rear terminal connections on the Model PS002 Power Supply for use with Zero Two A Series Modules.

REAR CONNECTOR TERMINATIONS

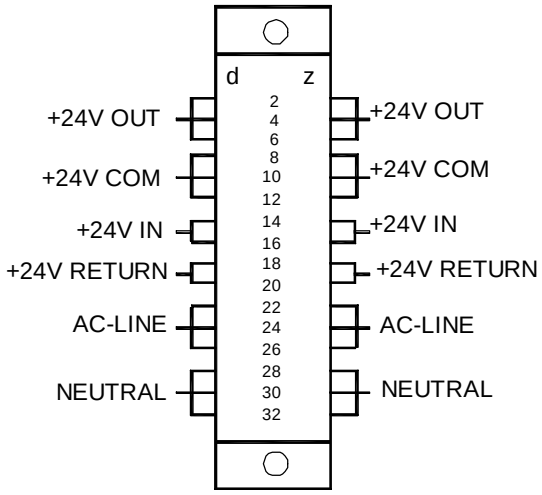

Figure 6 - Rear Connector Terminations

The terminations for the **Auxiliary +24VDC Output** are:

Label	Term	Contact
+24V Out	24 VDC Out	2d,z
+24V Out	24 VDC Out	4d,z
+24V Out	24 VDC Out	6d,z
+24V Com	24 VDC Common	8d,z
+24V Com	24 VDC Common	10d,z
+24V Com	24 VDC Common	12d,z

Figure 7 – Auxiliary +24VDC Output

The Auxiliary +24VDC Outputs will allow the user to provide power for Zero Two A Series Trip Amplifier and Control Modules, when a chassis is not used. Positions 32d and 32z, on the Trip Amplifier and Control Modules, are labeled +B and 0V, respectively. These are the alternate +24VDC Inputs for these modules. Connect +24V OUT on the PS002 to +B on the Trip Amplifier and/or Control Modules. Connect +24V COM on the PS002 to 0V on the Trip Amplifier and/or Control Modules.

The terminations for the **DC Voltage Input** (Battery Backup) are:

Label	Term	Contact
+24V IN	14d,z	24 Volts DC In
+24V IN	16d,z	24 Volts DC In
+24V RET	18d,z	24 Volts DC Return
+24V RET	20d,z	24 Volts DC Return

Figure 8 – Terminations for DC Voltage Input

The DC Voltage Input connections are provided to allow the user to connect a battery back-up system. Battery back-up systems are usually installed to provide emergency power during AC Line failures.

The terminations for the **AC Input Power** are:

Label	Term	Contact
AC-LINE	22d,z	115 or 230 VAC Line
AC-LINE	24d,z	115 or 230 VAC Line
AC-LINE	26d,z	115 or 230 VAC Line
NEUTRAL	28d,z	115 or 230 VAC Neutral
NEUTRAL	30d,z	115 or 230 VAC Neutral
NEUTRAL	32d,z	115 or 230 VAC Neutral

Figure 9 – Terminations for AC Input Power

The AC Input Power connections are provided to accept AC Line Voltage. The PS002 operates on 115 VAC or 230 VAC, and is switch selectable. (See Figure 10).

3.0 Operation

3.1 Power Supply Operation

NOTE – Before applying power, ensure that voltage selection switch is in correct position for voltage being applied (115 VAC or 230 VAC).

The Power Supply Module (PS002) provides the 24 VDC supply voltage to the buss. The supply voltage on the buss provides every module in the chassis with sufficient power to operate all of the on board circuitry and the field device connected to those modules.

The Power Supply Module will supply voltage only to those modules that reside in the same chassis.

The Power Supply Module does not have an ON/OFF power switch. When it is plugged in, it is ON continuously. This is to prevent accidental shutdown of the system. There is an LED indicator on the front panel to indicate a power ON condition.

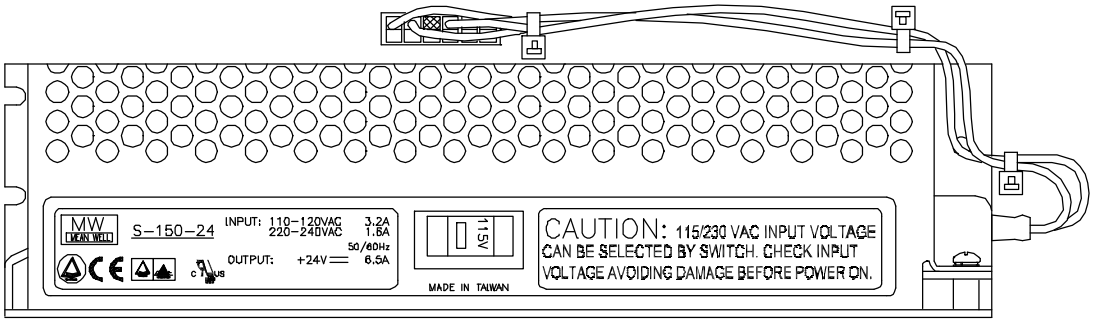

Figure 10 – PS002 Voltage Selection

4.0 Appendix

4.1 Specifications

4.1.1 System Specifications

NOTE - The PS002 requires four channels of chassis space per Module.

Available chassis:	4-channel rack or panel mounted 8-channel rack or panel mounted 16-channel rack or panel mounted
Warranty period:	Two Years

4.1.2 Mechanical Specifications

Length:	9.9 inches	251 mm
Height:	6.825 inches	173 mm
Width:	4.0 inches	101 mm
Weight:	2.74 lb.	1.24 kg

4.1.3 Electrical Specifications

Input Power Requirement:	115 VAC @ 50/60 hertz (230 VAC optional, switch selectable).
Output Power:	The PS002 can provide 24 VDC for up to 12 channels of Zero Two A Modules with field devices.
Electrical Classification:	General purpose for use in non-hazardous locations.

4.1.4 Environmental Specifications

Operating temperature range:	0°F to 140°F	-18°C to 60°C
Storage temperature range:	-40°F to 150°F	-40°C to 66°C
Operating humidity range:	5 to 100% relative humidity (non-condensing)	

4.2 Engineering Documentation

4.2.1 Outline & Dimensional Drawing - PS002

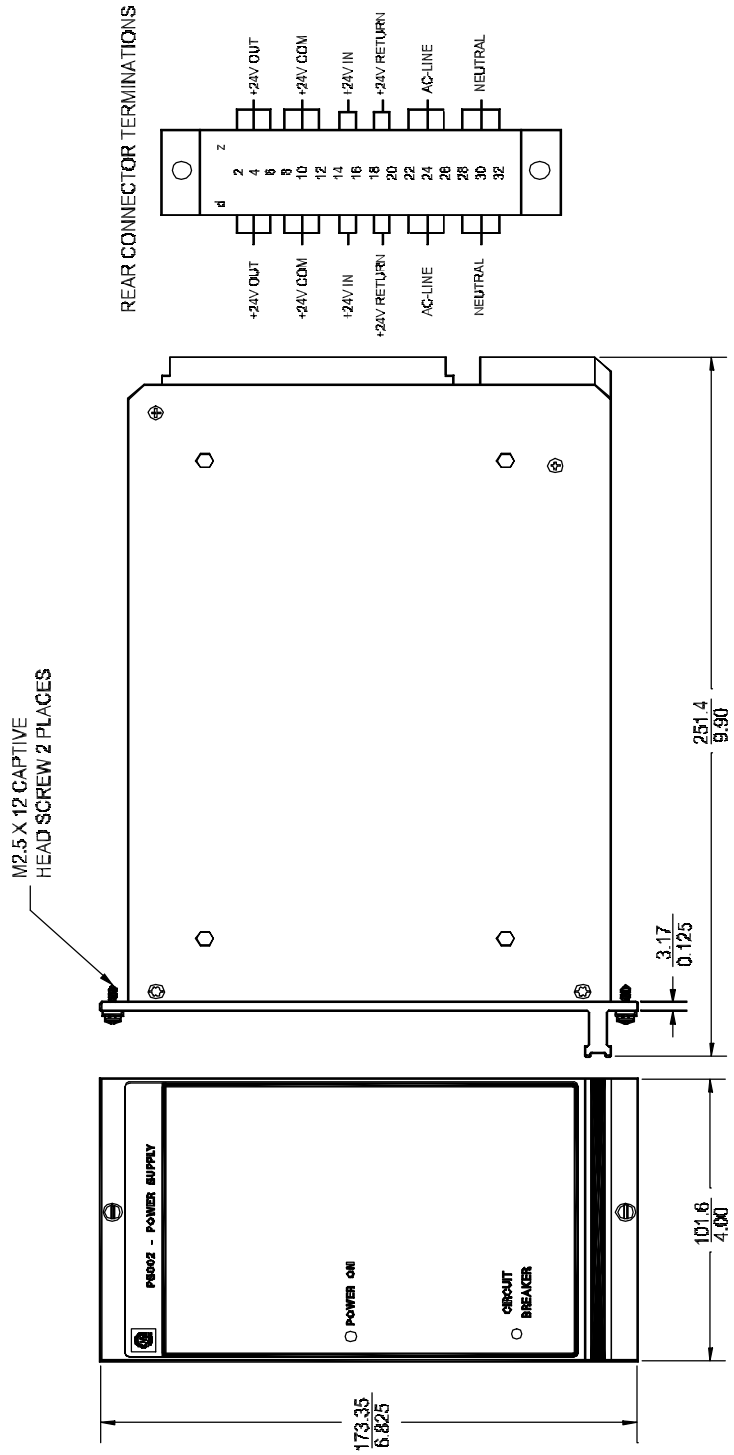

Figure 11 - Outline & Dimensional Drawing - PS002