



VIBROSYSTEM^{MD/®}

XPSP-224 EXTERNAL POWER SUPPLY PANEL FOR MEASURING CHAINS

User's Manual

(P/N: 9418-0511A-102)



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VibroSystM Inc. 2727 Jacques-Cartier E. Blvd, Longueuil, QC, Canada J4N 1L7 | Phone: 450 646-2157 | U.S. Toll-free Line: 800 663-8379

Email: techsupp@vibrosystm.com | www.vibrosystm.com



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1. GENERAL SAFETY INFORMATION

1.1 Safety information

This manual contains information and warnings that must be observed to keep the instruments in a safe condition and ensure safe operation.



Warning - Danger messages identify conditions or practices that could cause bodily harm, and result in damage to this instrument and other equipment to which it is connected



Caution messages identify conditions or practices that could result in permanent loss of data.

Warning - Danger

- To use VibroSystM instruments correctly and safely, read and follow all the safety instructions or warnings given throughout this manual.
- To avoid electric shock, personal injury, or death, carefully read the information under “Safety Information” before attempting to install, use, or service this instrument.
- In addition, follow all generally accepted safety practices and procedures required when working with and around electricity.

Safety Precautions

Warning - Danger






To avoid possible electric shock, personal injury, or death, read the following before using this instrument and all associated instrumentation.

- Although most instruments and accessories are normally used at non-hazardous level voltages, hazardous conditions may be present in some situations.
- This product is intended for use by qualified operators and maintenance personnel who recognize shock hazards and are familiar with the safety precautions required to avoid possible injury. Read and follow all installation, operation, and maintenance information carefully before using the product.
- Install and use this instrument only as specified in this manual, or the protection provided by this instrument might be impaired.
- Do not use this instrument in wet environments.
- Whenever it is likely that safety protection has been impaired, make this instrument inoperative and secure it against any unintended operation.
- Have this instrument serviced only by qualified service personnel.



- To avoid shock hazard, connect the power supply to a properly grounded line power source. If a two-conductor power cord must be used, a protective grounding wire must be connected between the ground terminal and earth ground before connecting the power cord or operating the instrument.
- Never remove the cover of the power supply module without first turning off the main power source.
- Do not operate this instrument with the cover of the power supply removed.
- Use caution when working with voltages above 30 Vac rms, 42 Vac peak, or 42 Vdc, as these voltages pose a shock hazard.
- Use only the replacement fuse(s) specified by the manual.
- Do not operate this instrument around explosive gas, vapor, or dust.

Safety and electrical symbols that appear in this manual and on this instrument:

	Warning - Danger - identify conditions or practices that could cause bodily harm, and result in damage to the measuring chain and other equipment to which it is connected. Conditions include a risk of electric shock (voltage > 30 V _{DC} or V _{AC} peak might be present).
	Caution - identify conditions or practices that could result in permanent loss of data.
	Protective conductor terminal
	Electronics common - not linked to earth ground
	(Shield) cables shield-to-earth ground, frame or chassis terminal - linked to earth ground



2. GENERAL DESCRIPTION OF XPSP-224

2.1 Features and functionalities

The XPSP-224 External Power Supply Panel is designed to provide 24 V_{DC} for up to 16 measuring chains and one synchronization probe, and connection points for each returning signal. The maximum load of the combined measuring chains is 4 Amp.

The Panel mounts at the back of an instrumentation rack near its corresponding ZPU-5000 and/or PCU-5000 unit. Screw terminals provide easy connection of measuring chains to the instrumentation units and power supply of the panel. The main power input terminal blocks are fuse protected.

Features

- Provides +24 V_{DC} power for up to 16 measuring chains
- Independant screw terminals for each individual measuring chain
- Maximum load: 4 Amp total
- Universal power supply input: 100 - 240 V_{AC} (50 - 60 Hz), or 105 - 250 V_{DC}
- Input terminal blocks with fuse protection
- 3U high (13.3 cm / 5.25 in.) panel, standard width rack (483 mm / 19 in.)

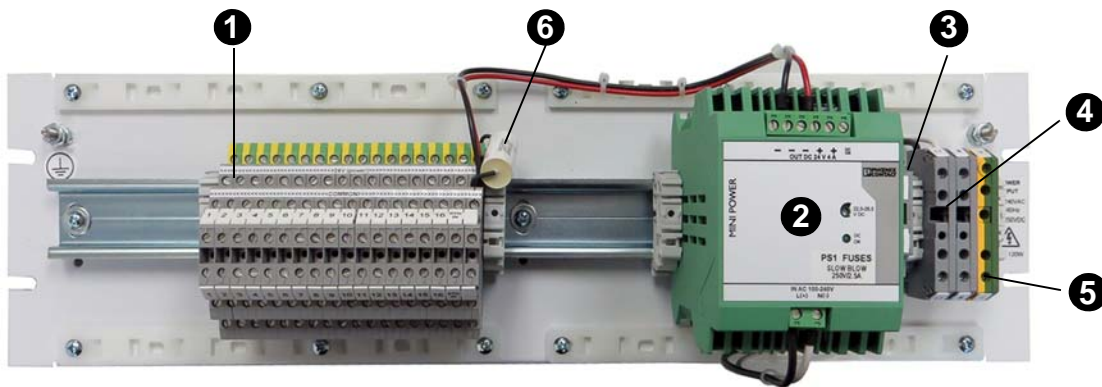
2.2 Overview of the main components

The unit is designed to be installed in a properly ventilated rack mount enclosure.

Overall dimensions (without mounting brackets) are:

483 W x 140 D x 133 H (mm)

19" W x 5.5" D x 5.25" H (inches)



1 Terminal blocks

A series of multi-level terminal blocks allow connection of up to sixteen measuring chains, plus one dedicated channel for synchronizaton probe connection.

2 Power module

The power module provides + 24VDC output, maximum nominal output current of 4A.

3 Fuse terminals

Two fuse terminals protect the miniature power module. Replace with 5x20mm, 250V, 2.5A, slow-blow fuse.

4 Power input terminals

The three Main Input terminal blocks allow connection of the source for the power module.

5 Protective conductor terminal

The protective conductor terminal must be connected to a grounding point in compliance with local regulations. Grounding through the protective conductor terminal is essential for safety purposes as well as to provide better efficiency against ESD and EMI perturbations.

6 Common to ground capacitor

The capacitor provides a low impedance AC path to the ground in order to maximize ESD protection.

3. XPSP-224 EXTERNAL POWER SUPPLY PANEL INSTALLATION

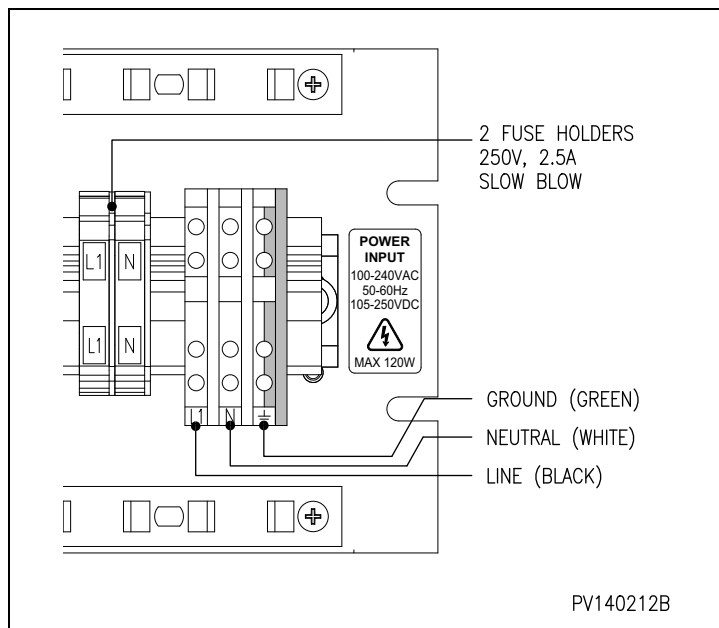
3.1 Preliminary considerations

The three rightmost terminal blocks serve for connection of main AC/DC input to the power supply. For safety purposes, a 15A circuit breaker should also be included in the mains input wiring. Several instruments may be connected to a circuit protected by a circuit breaker. Each instrument must however have its own disconnect device.

 **Warning**

- **The protective earth terminal is essential for safety purposes as well as to provide better efficiency against ESD and EMI perturbations.**
 - **To ensure protection, the chassis grounding wire must be of a heavier gauge than the grounding wire associated with the main input.**
-
- The XPSP-224 is designed for a 19" rack installation. A rack space of 3U (5.25") is required. Adequate ventilation must be provided.
 - Provides + 24VDC, with interconnection terminals for up to 16 measuring chains.
 - A basic 19" rack installation kit is included. Depending on the type of rack used, additional hardware may be required.

3.1.1 Connecting the power source to the XPSP-224 unit



1. Turn the power off at the main entry by opening the circuit breaker to prevent electrical shock.
2. Open the two fuse holders.
3. Connect the power source wires to the terminal according to Figure 1 : "Connecting the power source to the XPSP-224 unit".

Figure 1 : Connecting the power source to the XPSP-224 unit

3.1.2 Connecting the measuring chains

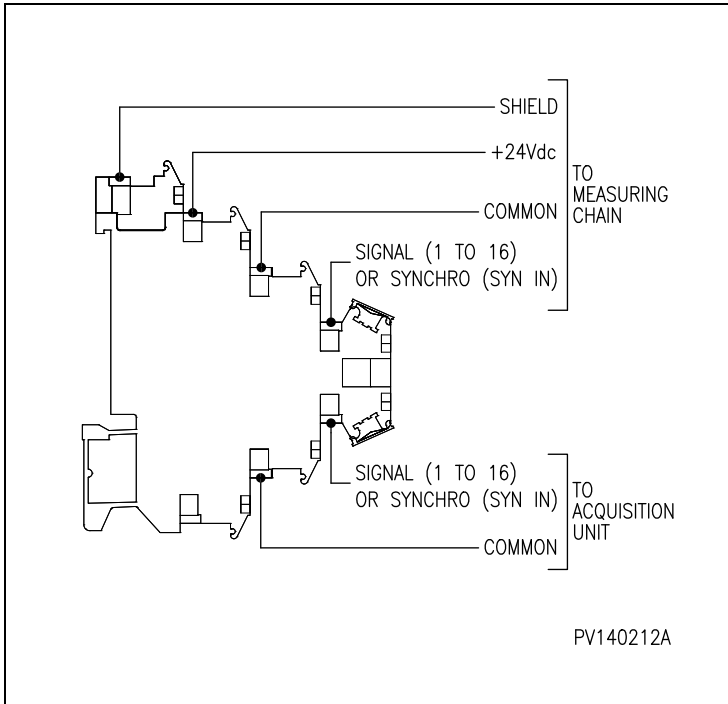



Figure 2 : Wiring the XPSP-224 terminal

- All Shield terminals are internally connected together
- All 24V Supply terminals are internally connected together (bottom bridge)
- All Common terminals are internally connected together (bottom bridge)

On an XPSP-224 unit:

Level 1 is Shield 

Level 2 is + 24VDC

Level 3 and 4 are COMMON 

Level 4 is signal connection from sensor or synchronization probe

3.1.3 Turning the power back on

1. Turn the power back on by closing the circuit breaker.
2. Close the two fuse holders. The green LED located on the power supply unit should be on; if not, verify the power source wiring at the main input terminals, and test the fuses.

3.1.4 Maintenance

Do not use liquid to clean the panel. Remove dust with dry rag only.



3.2 XPSP-224 - General Specifications

Operating

- Matching devices Any industrial device requiring power
- Number Up to 16 measuring chains, plus one synchronization probe

Power Supply

- Input 100-240 V_{AC}, [50-60 Hz], or 105-250 V_{DC}
- Output 24 V_{DC}
- Nominal output current: 4A
- Protection 2 (two) fuses, 250V, 2.5A, slow-blow
- Common to Ground Capacitor 0.1 μF 1200 V

Connection

- Measuring chains screw terminals
 - req. wire size 0.5 - 0.34 mm² [20-22 AWG]
- Power Input fuse protected terminal blocks
 - req. wire size 1.5 mm² [16 AWG]
- Protective earth #10 grounding stud
 - req. wire size at least 1.5 mm², up to 2.5 mm² [14-16 AWG]

Environmental

- Temperature range:
 - Operation 0° to 50°C [32° to 122°F]
 - Storage -40° to 80°C [-40° to 176°F]

Physical characteristics

- Width 483 mm [19 in.]
- Height 133 mm [5.25 in.] 3U
- Depth 140 mm [5.5 in.]

