## Features and Benefits

■ **Inputs:** 120/240 VAC or 125 VDC power feeds allowing mixed AC and DC operation.

■ **Outputs:** Provides Harmony system power of 5, ± 15, and 24 VDC and field power of 24, 48 and 125 VDC.

■ **Availability:** Built-in power distribution schemes support single and dual (main and auxiliary, AC and DC) power feeds for 2N power configurations.

■ **Reliability:** Automatic load sharing of dual supplies reduces the burden on an individual supply, increasing the overall reliability and high MTBF.

■ **Serviceability:** Local status indicators, disconnects, and plug-in cable assemblies facilitate online fault isolation and replacement.

■ **Monitoring:** Provides system DC power outputs, field power outputs, fan status, and cabinet temperature monitoring.

■ **Industrial Quality:** Designed for operating temperatures as high as 70° C (inside cabinet) as well as MIL-STD ratings for vibrations, IEC standards for EMI and RFI, and UL ratings for flammability.

■ **Price/Performance:** Power factor correction, electronic output protection and lower costs are inherent features.

■ **Upward Compatibility:** Compact design allows for use in the new standard ABB cabinets and as replacement for older power systems supplied with Symphony™ and INFI 90® OPEN systems.
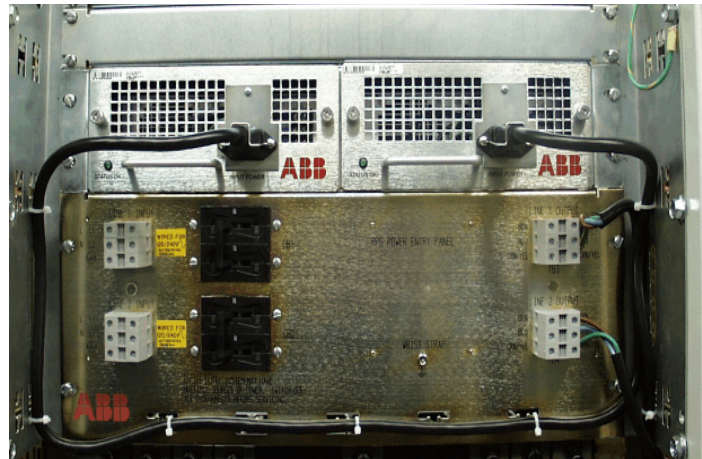


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The Modular Power System III (MPS III) is specifically designed for powering Harmony rack modules and associated field mounted devices. The MPS III can provide 5, ±15, and 24 VDC system power as well as 24, 48, and 125 VDC for field powered devices. Special features of the MPS III include: power factor correction, on-line power supply replacement, power and cooling status monitoring, and adaptability to various power input sources. The MPS III assembly includes all the hardware necessary for AC input power distribution to the individual power supplies, DC output distribution, power and fan monitoring, interconnecting cables, and cabinet mounting hardware.

A family of preconfigured power supplies has been engineered to provided various combinations of voltage options and associated power ratings. The MPS III is designed to support 2N power redundancy. Multiple preconfigured power supply configurations are available to facilitate matching the most cost-effective solution with project power requirements. Detailed specifications relating to these supplies are listed in the MPS III data sheet.

ABB

# Overview

The MPS III supplies 5 VDC, +15 VDC, -15 VDC, 24 VDC, 48 VDC, and 125 VDC power to Harmony rack components of the Symphony Enterprise Management and Control System. Figure 1 shows MPS III power system architecture.
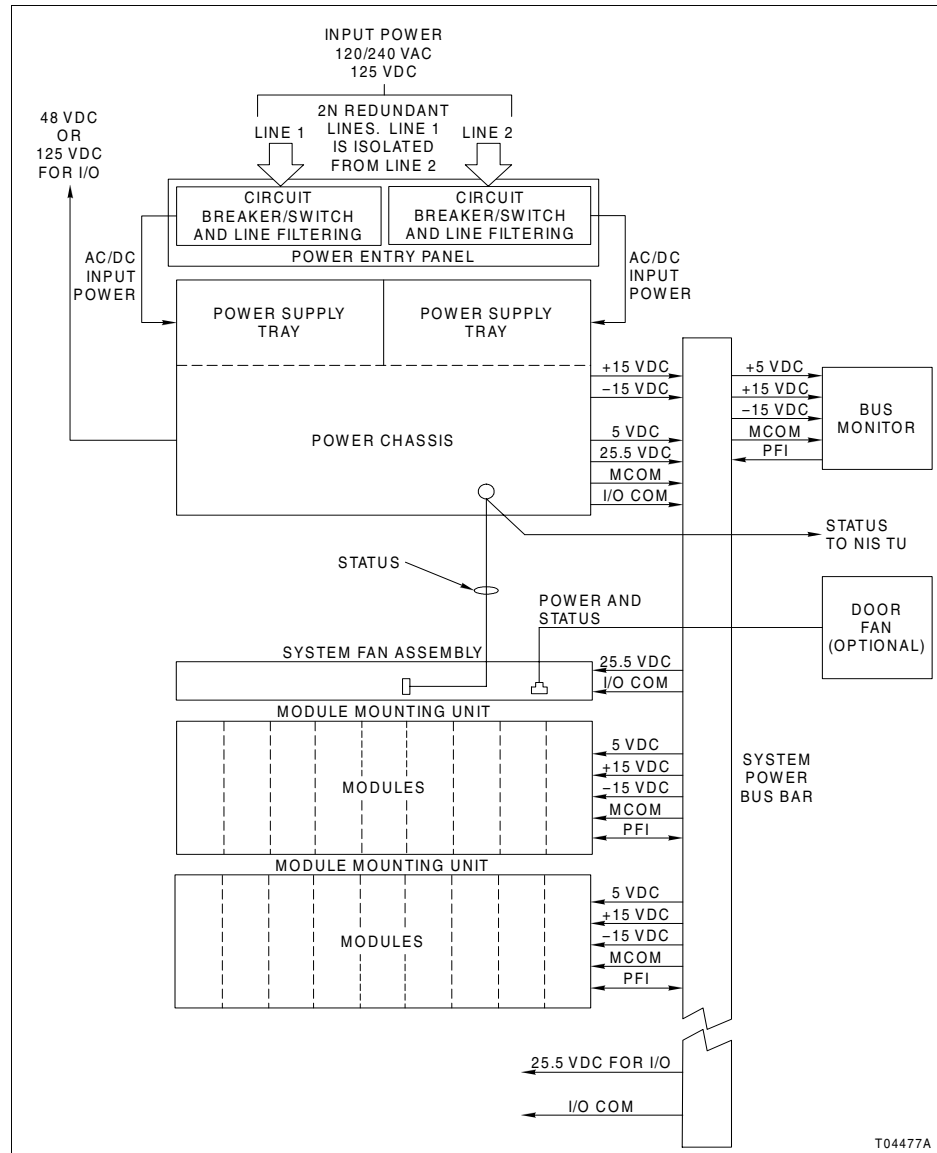


**Figure 1.** MPS III Architecture Diagram

In Figure 1, the 5, +15 and -15 VDC lines shown entering the system power bus bar are the operating voltages for rack I/O devices. The 24VDC (25.5 VDC actual voltage) line shown entering the system power bus bar is I/O power for field devices. Additionally, the power system can provide various combinations of 24, 48, and 125 VDC field power.

The major MPS III components consist of a power entry panel, power chassis, power trays, system fan, and bus monitor.

# Modular Power System III Architecture

## Power Entry Panel

The power entry panel provides termination for one or two power input feeds (main and auxiliary) and connection to the power trays. The panel also includes the appropriate circuit breakers and optional transient suppressors (Category III only). Included with the panel are MPSIII mounting brackets, cables, and any necessary cabinet filler panels.

## Power Chassis

The power supply chassis is designed for standard 19-inch rack mounting and is the basic structure for mounting one or two power supply trays. It has two slots for the power supply trays and provides a mounting structure for the power terminations, DC bus monitor, and status output connections.

## Power Trays

Plug-in power supplies, referred to as *trays* in the MPS III system, are preconfigured subassemblies that provide a variety of output voltages and power ratings. All the available power trays can accept 120/240 VAC and 125 VDC inputs. Individual tray configurations can provide system power only, field power only, or combinations of system and field power. A minimum of one tray is required while the second *identical* tray can function as the load sharing and back-up supply. Figure 1 shows two power trays mounted in a typical MPS III Power Chassis. The power trays monitor System and Field power voltages and alarm on failure.

## System Fan

The fan provides cooling for the rack modules mounted in the cabinet. The assembly includes three individual fans mounted with the cabinet temperature monitoring circuits, status LEDS, and the source of 24 VDC power for the cabinet door fan. The door fan may be required based on cabinet heat load. Cabinet temperature, system fan, and door fan status are monitored and alarmed if necessary.

## Bus Monitor

The bus monitor checks status and generates a Power Failure Interrupt (PFI) signal in the event of a 5, +15, or -15 VDC bus failure. The bus monitor is located on the back of the power chassis.

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