

PS-2216-2412-HV

PS-2216-24-HV

High Efficiency ATC Cabinet Power Supply Operations Manual

THIS MANUAL CONTAINS TECHNICAL INFORMATION FOR
THE PS-2216-HV SERIES POWER SUPPLY.

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EBERLE DESIGN INC.

3510 East Atlanta Avenue
Phoenix, AZ 85040 USA
www.EDIttraffic.com

Tel (480) 968-6407
Fax (602) 437-1996



THE PS-2216 SERIES POWER SUPPLY IS DESIGNED AND MANUFACTURED IN THE
USA BY EBERLE DESIGN INC., PHOENIX, ARIZONA

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1.1 OVERVIEW

The PS-2216 Cabinet Power Supply series is a 1U high 19" rack mounted high efficiency switching power supply for the Advanced Transportation Controller Cabinet (ATCC). The PS-2216-2412-HV model provides a regulated 24VDC output, a 12VDC output, and a 48VDC output. The PS-2216-24-HV provides a regulated 24VDC output and a 48VDC output.

The PS-2216 series provides output regulation across changes in AC Line voltage and output load over the full operating temperature range of -34C to +74C. Power Factor Correction is also provided reducing peak AC Line input current and associated stress on wiring. The outputs are protected against voltage transients by a 1500 Watt suppressor.

1.2 INDICATORS

A green LED indicator is provided to display AC Line input status and fuse integrity. Separate green LED indicators are provided to display output status and fuse integrity for each DC output.

1.3 SPECIFICATIONS

1.3.1 AC POWER REQUIREMENTS

AC Operating Voltage	80 to 270 Vac
AC Operating Frequency	45 to 65 Hz
Power Factor (120 Vac at full load).....	0.98
Maximum Input Surge	20 Amps

1.3.2 DC OUTPUTS

Total DC Output Power	175 watts
48VDC Output Voltage	48 Vdc +/- 2 Vdc
48VDC Output Current Maximum	1 Amp
24VDC Output Voltage	24 Vdc +/- 2 Vdc
24VDC Output Current Maximum	5 Amps
12VDC Output Voltage	12 Vdc +/- 1 Vdc
12VDC Output Current Maximum	5 Amps
DC Output Ripple Maximum	250 mVpp

Note: Ripple is measured at 20MHz of bandwidth using a 12" twisted pair-wire terminated with a 0.1uf & 47uf capacitor.

Maximum Power-up time (110 Vac, -34°C)	1000 milliseconds
Minimum Holdup Time (5 Amp load).....	50 milliseconds

PS-2216-2412 DC Power Rating

The total DC output power must be limited to 175 watts total.
The DC output power is calculated as:

$$P = 48 * I_{48} + 24 * I_{24} + 12 * I_{12}$$

Where I_{xx} is the maximum output current supplied from each
DC output; 48V, 24V, and 12V

1.3.3 MECHANICAL

Rack Height	(1U) 1.7 inches
Rack Width.....	19.0 inches
Depth	7.40 inches

1.3.4 ENVIRONMENTAL

Operating Temperature Range -34 to +74 °C
Storage Temperature Range -45 to +85 °C
Humidity (non-condensing)..... 0 to 95% Relative

1.4 DC CONNECTOR

The output connector is a Phoenix Contact #1825161 and mates with a Phoenix Contact #1825352 or equivalent. Pin #1 is the right most pin when viewed from the rear of the supply.

Pin	Function
1	+48VDC
2	48VDC Ground**
3	+24VDC
4	+12VDC (PS-2216-2412 only)
5	24/12 VDC Ground
6	Chassis Ground

****NOTE**

The 48 VDC output is electrically isolated from the AC Line input and the 24VDC and 12 VDC outputs. The *48VDC Ground* (pin #2) must be connected within the cabinet to the same AC Neutral that the Cabinet Monitor Unit (CMU) is connected to.