

PS2248-HV

High Efficiency ATC Cabinet Power Supply Operations Manual

THIS MANUAL CONTAINS TECHNICAL INFORMATION FOR
THE PS2248-HV SERIES POWER SUPPLY.

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USA BY EBERLE DESIGN INC., PHOENIX, ARIZONA

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1.1 OVERVIEW

The PS2248-HV Cabinet Power Supply series is a 1U high 19" rack mounted high efficiency switching power supply for the Advanced Transportation Controller Cabinet (ATCC). The PS2248-HV model provides a main 48VDC output intended for field signal loads, and an isolated 24VDC output for internal cabinet peripherals. The PS2248-HV Cabinet Power Supply is intended to power ATC Cabinets operating with DC powered low voltage (48 VDC) Output Assemblies (LV).

The PS2248-HV series provides output regulation across changes in AC Line voltage and output load over the full NEMA 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	90 to 270 Vac
AC Operating Frequency	45 to 65 Hz
Maximum Input Current (85 Vac)	.6 Amps
Power Factor (120 Vac at full load)	0.98
Maximum Input Surge	50 Amps

1.3.2 DC OUTPUTS

Total DC Output Power (**see Table below)	450 watts
48VDC Output Voltage	48 Vdc +/- 2 Vdc
48VDC Output Current Maximum	8 Amp
24VDC Output Voltage	24 Vdc +/- 2 Vdc
24VDC Output Current Maximum	5 Amps
DC Output Ripple Maximum	500 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 (450 Watts DC Output Load)	50 milliseconds

****PS2248 DC Power Rating**

The total DC output power must be limited to 450 watts total.
The DC output power is calculated as:

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

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

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	Reserved
5	24VDC Ground
6	Chassis Ground

****NOTE**

The 48 VDC output is electrically isolated from the AC Line input and the 24VDC output. The *48VDC Ground* (pin #2) must be connected within the cabinet to the Cabinet Monitor Unit (CMUip-2212-LV) MAINS GROUND pin B32.