

Model: PFC 319R-E100/24F4T-U5208
COSD: XXXX
Summary Description: 480W Railway Quality Power Supply
 230Vac to 24V/20A

Customer Name: Thiele KG/Germany
Customer Part Number: Same as above

Preliminary



Product Description:

This power converter is a rugged railway quality unit which uses field proven topology. It is a mature design with an excellent track record in numerous applications. The design headrooms are large. It is cooled by conduction by installing the unit on a heatsinking surface and by natural convection. This chassis-mount design is optimized for low component count and high efficiency. The use of components with established reliability results in a high demonstrated MTBF. The unit is manufactured at our plant under strict quality control.

Special Features: Conformal coating, 230Vac/100Hz input

SPECIFICATIONS

Input Voltage

230Vac, 100Hz
 195-264Vac operating range
 Input Current: 3A rms max.
 Power Factor meets EN61000-3-2

Input Protection

Inrush current limiting
 Varistor
 Internal safety fuse
 Lower voltage than the specified minimum input will not damage the unit

Input Isolation

2250Vdc input to chassis
 4300Vdc input to output
 8mm spacing
 1500Vdc output to chassis

Standards

Designed to meet EN62368-1 and EN50155

Immunity

Meets criteria of EN 50155 and EN 50121-3-2 including:
 EN 61000-4-2 (ESD)
 EN 61000-4-3 (RF Immunity)
 EN 61000-4-4 (Fast Transients)
 EN 50155 (Surge)
 EN 61000-4-6 (Conducted Imm.)
 EN 50155 (Voltage Variations)

Hold Up Time

Minimum 5ms at full load for 5% drop of output voltage at nominal input

EMI

EN50121-3-2

Switching Frequency

80kHz ±5kHz

Terminal Block Pin-Out

DC OUTPUT				AC INPUT							
NOT USED	+	+	-	NOT USED	NOT USED	NOT USED	NOT USED	GND	N	PH	
1	2	3	4	5	6	7	8	9	10	11	12

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Output Voltage / Current

24Vdc ± 0.3V/20A continuous
 Output is floating, either terminal can be grounded

Redundancy Diode

Not installed

Line/Load Regulation

+ 1% combined from zero load to full load

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple/Noise

Better than 80mVrms or 400mVpp (20MHz BW)

Output Overload Protection

Current limiting with short circuit protection
 Self-resetting thermostat for thermal protection
 Current Limit: 22A ± 1.5A

Output Overvoltage Protection

Double regulator loop
 OVP setting: 28V ± 3V

Efficiency

85% at full load

Operating Temperature Range

-25°C to +55°C cold plate temperature for full specification

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Conduction by installing unit on heat-sinking surface (chassis or cabinet wall) and convection via cooling slots

Environmental Protection

Ruggedizing
 Conformal coating

Shock/Vibration

IEC 61373 Cat 1 A & B

Humidity

5 – 95% non-condensing

MTBF

110,000 hours @45°C
 Demonstrated MTBF is significantly higher

Indicators

Green “Output ON” LED visible through the cooling slots

Control Input

None

Alarm Output

Not installed

Package / Dimensions (WxHxL)

F4: 129 x 63.5 x 355 mm
 (5.1” x 2.5”x 14”)

Mounting holes are clear

Weight

2.2kg (4.9 lbs)

Connections

12-pole barrier-type terminal block with 3/8” spacing

RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

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