Model: PHR 120R-E/24F2T-T7250
COSD: XXXX Prelim Ref (2K98)
Summary description: 120W Railway Quality Power Supply
230Vac to 24Vdc/5A
Customer Name: Thiele KG/Germany (KS)
Customer Part Number: Same as above

Product description:
This rugged, railway quality AC/DC and DC/DC converter uses field-proven topology to generate the required output power. It is a mature design with a track record in numerous applications. Cooling is via baseplate to a heatsinking surface and by natural convection. Ruggedizing and conformal coating provide added immunity to shock, vibration and humidity. Low component count, large design headrooms and the use of components with established reliability result in a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on railway rolling stock. It is manufactured at our plant under strict quality control

Special Features: Conformal coating. Ruggedizing

SPECIFICATIONS

Input Voltage
230Vac nominal, 47-63Hz
190-264Vac operating range
Input current: 0.7Arms 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.

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

Standards
Designed to meet EN60950-1 and EN 50155, EN45545

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)

EMI
EN50121-3-2

Switching Frequency
47kHz ±3kHz

Output Voltage/Current
24Vdc ± 0.2V /5A
Output is floating, either terminal can be grounded

Redundancy Diode
Not installed

Line/Load Regulation
±2% combined from 5% 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
Rectangular current limiting with hiccup-type short-circuit protection
Current Limit set to: 5.3A ±0.2A

Output Overvoltage Protection
Double regulator loop and Transzorb across the output

Efficiency
82% minimum at full load

Operating Temperature Range
-25ºC to +55°C cold plate temperature

Temperature Drift
0.03% per °C over operating temperature range

Cooling
Conduction via base plate and natural air convection. Unit must be installed on heatsinking surface such as chassis or cabinet wall

Environmental Protection
Ruggedizing
Conformal coating

Shock/Vibration
IEC61373 Cat 1 A&B

Humidity
5-95% non-condensing

MTBF
Min. 150,000 hours @ 45°C

Indicators
Green 'OUTPUT ON' LED visible through the cooling slots

Control Input
None

Alarm Output
None

Package / Dimensions (WxHxL)
F2: 113 x 58 x 256mm
(4.5" x 2.3" x 10")
Mounting holes are clear

Weight
0.8kg (1.8lbs)

Connections
9-pole, barrier-type terminal block with 3/8" spacing

RoHS Compliance
Compliant

Warranty
Two years subject to application within good engineering practice

Terminal Block Pin-out

DC OUTPUT						AC INPUT		
NOT USED	–	+	NOT USED	NOT USED	NOT USED	GND ⏚	PH ~	N ~
1	2	3	4	5	6	7	8	9

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