

DC/DC converter for railway applications

Description

The 50W SQ Series converter has a very low profile, open-frame construction and is intended for installation within the host equipment. The topology employed offers very high efficiency with outputs as low as 3.3V and is therefore ideal for driving LEDs in applications such as low voltage lighting and Passenger Information Systems.



Special features include:

- Very low profile
- Low voltage output options - 3.3V dc
- Ideal for LED applications

Input specifications

The following input voltage versions are available as standard:

110V (66.0 - 137.5V) dc (Suffix A)	36V (21.0 - 50.4V) dc (Suffix F)
72V (43.2 - 90.0V) dc (Suffix D)	24V (16.8 - 33.6V) dc (Suffix B)
52V (31.2 - 65.0V) dc (Suffix C)	

Parameter	Detail
Input Ripple	To RIA and EN 50155
Input Protection	Reverse polarity protection (series diode) Surges and transients to RIA 12, EN 50155
Inrush Current	Limited to typically 5 x nominal current (after 0.1ms)
Efficiency	85% typical
Hold-up time	10ms to EN 50155 S2
Input fuse	Board-mounted. Factory replacement

Output specifications

Parameter	Detail
Maximum Output Power	50W
Output Versions	Single output only
Output Voltage	Can be specified from 3.3V to 24V
Setting Tolerance	±0.6% at 50% load, 15°C to 25°C
Minimum Load	Zero
Line Regulation	±0.2%
Load Regulation	±0.5%
Temperature Coefficient	<0.02% / °C
Output Ripple	<1% Pk-Pk of Output Voltage

Output specifications (Continued)

Parameter	Detail
Output Noise	<1% Pk-Pk superimposed (up to 20MHz)
Response Time	0.5ms to within 2% (for a 20% - 90% load change)
Output Protection	Protected against indirect transients to RIA 12 & EN 50155
Current limit	Operates at a minimum of 105% of nominal or peak load. Auto recovery
Thermal Protection	Shuts down PSU if safe internal temperature is exceeded. Auto recovery
Isolation (tested at dc equivalent voltage)	Input to Output 2.0kV ac Input to Chassis 1.0kV ac Output to Chassis 1.0kV ac

Environmental details

Parameter	Detail
Operating Temperature	-25°C to +71°C at full load -25°C to +85°C at 80% load
Storage Temperature	-40°C to +80°C
Cooling	Convection / conduction via base plate
Relative Humidity	95% max
Shock & Vibration	EN 50155 (EN 61373)
Environmental Protection	Conformal coating on PCB

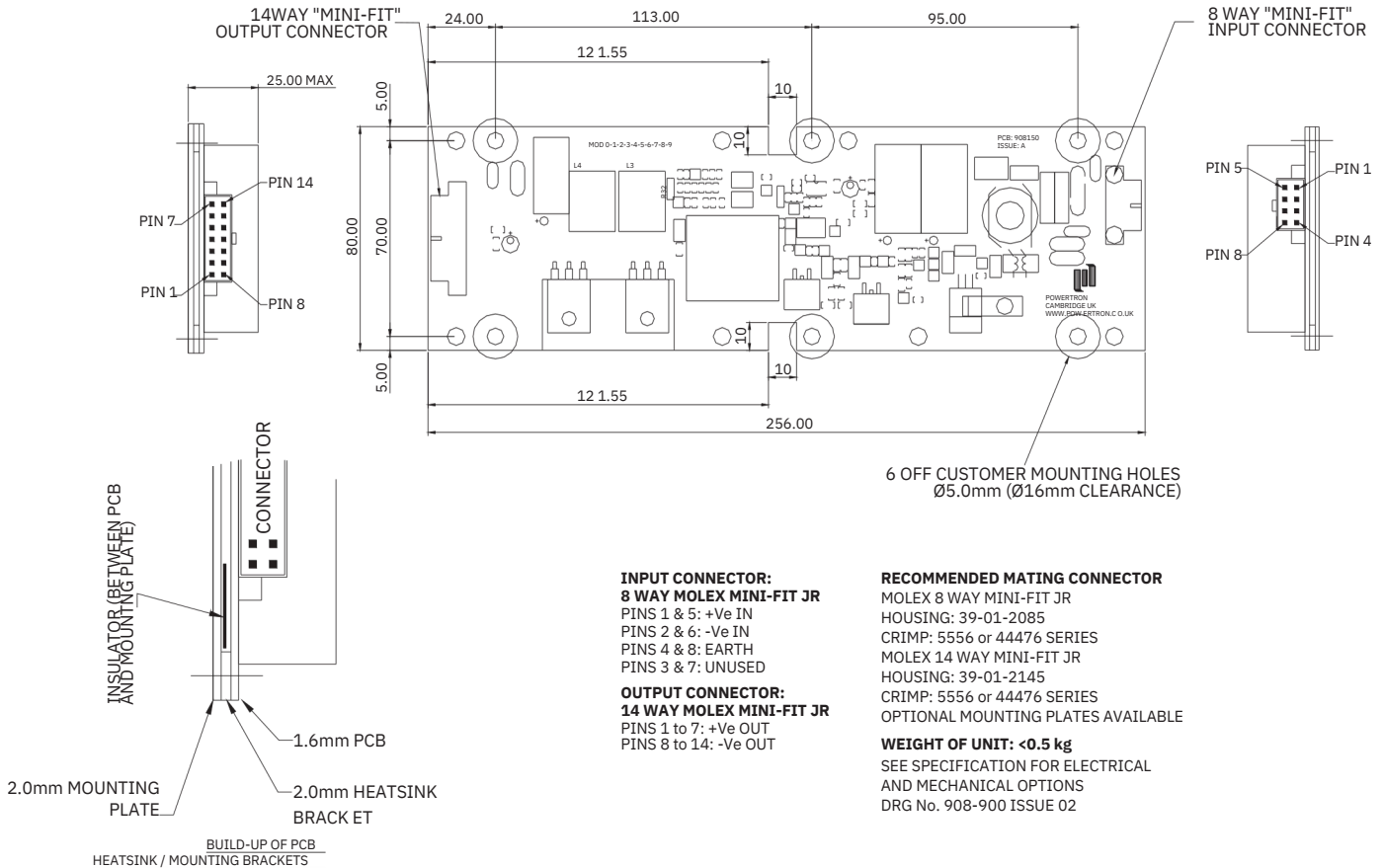
Applicable norms

Parameter	Detail
EMC	RIA 12, EN 50155 (2007), EN 50121-3-2 (2006)
Other	EN 50155 (2007), LUL G6621-A2 amendments to EN 50155

Mechanical characteristics

Parameter	Detail
Construction	Open frame PCB with mounting plate for cold wall fixing
Dimensions	Length = 256 mm Width = 80 mm Height = 25 mm
Weight	0.5kg
Connections	Input via 8 way mini-fit connector or 3 way Output via 14 way mini fit connector
Fixings	Six ø 5mm holes

Technical drawing



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