



50W SQ SERIES

DC/DC CONVERTER

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.

Compliance with the traditional UK RIA standards, as well as current national and international railway norms, makes the SQ series equally suited to both new build and refurbishment applications.



Input Specifications

Product reference	All references
Input Voltage	110Vdc (other ranges available on request)
Input Range	66V – 137Vdc
Input Ripple	To RIA 13 and EN50155
Input Protection	Reverse polarity protection (series diode) surges and transients to BRB RIA 12, EN50155
Supply Interruptions	EN50155 class S2 (10ms hold-up from nominal input voltage)
Efficiency	85% typical
Input Fuse	Board mounted.

Output Specifications

Product reference	All references
Output Power	50W
Output Voltage	Fixed output can be specified between 3.3V and 24V
Output current	According to rated power and output voltage
Minimum Load	Zero
Setting Accuracy	±0.6% at 50% load, 15°C to 25°C
Line Regulation	±0.2%
Load Regulation	±0.5%
Temperature Coeff.	<0.02% / °C
Output Ripple	<1% Pk-Pk of output voltage
Output Noise	<1% Pk-Pk super-imposed (up to 20 MHz)
Response Time	0.5ms to within 2% (for a 20% - 90% load change)
Indicators	N/A
Protection	Output protected against indirect transients to RIA 12 and EN50155
Current Limit	Operates at a minimum of 105% of nominal or peak load. Auto recovery.
Over-voltage	Output limited to 105 – 120% of nominal.
Thermal Protection	Shuts down PSU if safe internal temperature is exceeded. Auto recovery.
Isolation	Input to Output 3.0 kV dc. Input to Case 1.5 kV dc. Output to Case 1.5 kV dc.

Environmental Details

Product reference	All references
Operating Temperature	-25°C to +71°C at full load -25°C to +85°C at 80% load
Storage Temperature	-40°C to +85°C
Cooling	Convection / conduction through base plate
Relative Humidity	95% max.
Environmental Protection	Conformal coating on PCB
Shock and Vibration	EN50155 para. 10.2.11, BRB RIA 20, LUL G6621





Applicable Norms

Item	Reference
EMC	BRB RIA 12, 18; EN50155, EN50121-3-2
Other	BRB RIA 13, 20; EN50155, LUL G6621-A2 amendments to EN50155

Mechanical Characteristics

Product reference	All references
Construction	Open frame PCB with mounting plate for cold wall mounting
Dimensions	Depth = 256 mm Width = 80 mm Height = 25 mm
Weight	0.5kg
Mounting	six Ø 5mm holes
Connections	Input via 8 way Mini-fit connector or 3 way Output via 14 way Mini-fit connector

Technical Drawing

