

# SRWY60 SERIES

DC/DC Converters 60W for railway and industrial converters



- Rugged, field-proven design
- Full encapsulation
- Wide temperature range
- Full electronic protection
- EN50155 input ranges

This fully encapsulated, railway quality power converter utilizes field-proven technology to generate the required output power. It is a mature design with a track record in numerous applications. The unit is entirely potted with a thermally conductive MIL-grade silicon rubber compound which provides protection from moisture and other contaminants, as well as immunity to shock and vibration. Cooling is by conduction via a base plate to a heatsinking surface. Full electronic protection, low component count, large design headroom and the exclusive use of components with established reliability contribute to a high MTBF. The unit meets the requirements of EN50155 for electronic equipment used on railway rolling stock. It is manufactured under strict quality control.

## SPECIFICATIONS

### Standard Input Voltages

24Vdc (14.4 – 34V)  
36Vdc (22 – 51V)  
48Vdc (29 – 67V)  
72Vdc (43 – 101V)  
96Vdc (58 – 135V)  
110Vdc (66 – 154V)  
Other inputs upon request

### Input Protection

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

### Isolation

1500Vdc input to chassis  
3000Vdc input to output  
1500Vdc output to chassis

### Standards

Designed to meet EN60950-1 and  
EN50155

### Immunity

Meets criteria of EN50155 and  
EN50121-3-2 according to the  
following standards:  
EN 61000-4-2 (ESD)  
EN61000-4-3 (RF Immunity)  
EN61000-4-4 (Fast Transients)  
EN50155 (Surge)  
EN61000-4-6 (Conducted Imm.)  
EN50155 (Voltage Variations)

### EMI

EN50121-3-2

### Switching Frequency

135kHz  $\pm$ 5kHz

### Output Voltage

12V or 24V are standard.  
Output is floating, either terminal  
can be grounded  
Other outputs upon request

### Redundancy Diode

None

### Line/Load Regulation

$\pm$ 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

Less than 1% peak-to-peak or  
0.2% RMS of the output voltage  
(20MHz BW)

### Output Overload Protection

Rectangular current limiting with  
short-circuit protection (hiccup  
type)  
Thermal shutdown with automatic  
recovery in case of insufficient  
cooling

### Output Overvoltage Protection

Transorb installed across the  
output

### Efficiency

80 to 90% depending on  
input/output configuration

### Operating Temperature Range

-40 to +70°C cold-plate  
temperature for full specification

### Temperature Drift

0.03% per °C over operating  
temperature range

### Cooling

Conduction cooling via base plate  
to customer heat-sink or chassis

### Environmental Protection

Full encapsulation with thermally  
conductive silicon potting  
compound with UL94V-0  
flammability rating  
Meets environmental criteria as  
requested in MIL-810 C, D

### Shock/Vibration

IEC 61373 Cat 1 A&B

### Humidity

5 – 95% non-condensing  
Contact factory for higher rating

### MTBF

150,000 hours @ 45 °C  
Demonstrated MTBF is  
significantly higher

### Indicators

None.  
Optional 'ON' LED adapter available

### Control Input

None

### Alarm Output

None

### Package/Dimensions (W x H x L)

P100: 58 x 54 x 181 mm  
(2.3" x 2.1" x 7.1")  
Includes terminal block and flanges  
The case has clear alodine finish  
according to MIL-C-5541E Class 3  
Mounting holes are clear

### Weight

0.6kg (1.4 lb)

### Connections

5-pole barrier-type terminal block  
with 3/8" spacing  
Cover can be provided upon request

### RoHS Compliance

Compliant

### Terminal Block Pin-Out

OUTPUT		GND	INPUT	
+	-	$\perp$	+	-
1	2	3	4	5