

DC/DC Converters for Railway and Extremely Heavy Duty Applications SWY 30 ... 150 SERIES



- 30, 60, 90, 100, 120 or 150W output power
- Wide input range
- Single output
- Transient protection
- Complete encapsulation
- Conduction cooling
- Compact case sizes

The SWY series is an advanced design using single FET forward topology, designed specifically for professional applications in extremely adverse environments such as transportation, mining, oil rigs or the military. This design meets all requirements of the EN50155 Railway Standard.

The construction of the power supply is very sturdy. The unit is entirely potted with a thermally conductive MIL-spec. silicon rubber compound to increase resistance against humidity, moisture, dust, insects, shock and vibration. The unit was designed for operation within a wide temperature range without de-rating. By using components with many years of established reliability, and generous headroom, the demonstrated MTBF of the unit exceeds 1,000,000 hours at typical operating temperatures.

SPECIFICATIONS

Input Voltage

72 V nom (45-90VDC range)
110V nom (67-138VDC range)
Input is floating versus chassis

Input Protection

Reverse polarity protection
Internal thermal fuse
Inrush current limiting
Transient suppression
Lower voltage than the specified minimum input will not damage the unit

Isolation/Safety

Input to output: 3.0KV dc
Input to case: 1.5KV dc
Output to case: 1.5KV dc
Designed to meet IEC950, CSA22.2-950, UL1950 and EN 50155.

EMI

Meets EN55022 Class B

Output Voltage

24VDC
Consult factory for other voltages
Dual output versions available

Line/Load Regulation

+/-1% combined from no load to full load.

Output Ripple/Noise

Better than 200mV peak to peak or 40mV RMS (20MHZ BW)

Overload Protection

Current limiting with short circuit protection (hiccup mode)

Output Over-voltage Protection

30V transzorb

Efficiency

Min 88% at full load

Operating Temperature

For specification at
-40° ... +70°C cold-plate temperature.

Temperature Drift

0.03% per °C over operating temperature range

MTBF

Demonstrated MTBF exceeds 1,000,000 hours at typical operating temperatures.

Connections

Screw-type terminal block for input and output.

Packaging

Fully encapsulated and potted box.

Dimensions

2.3" x 6" x 1.5" (W x L x H) enclosure
2.3" x 7.1" 2.2" including terminal block and flanges

Weight

0.614kg (1.35lb)

DC/DC Converters for Extremely Heavy-duty Applications SWY 150 SERIES

- 150W output power
- Wide input range
- Single output
- Transient protection
- Complete encapsulation
- Conduction cooling
- Compact case sizes



The SWY150 series is an advanced design using the latest FET technology. It is intended for professional applications in extremely adverse environments such as transportation, mining, oil rigs and the military. This design meets the requirements of the EN50155 Railway Standard.

This high-density unit is entirely potted with a thermally conductive MIL-spec. silicon rubber compound for resistance against shock, vibration, humidity, moisture, dust and insects. The SWY150 is conduction cooled and designed for operation within a wide temperature range without de-rating. The use of components with many years of established reliability and generous headroom contribute to a the demonstrated MTBF exceeding 1,000,000 hours at typical operating temperatures.

SPECIFICATIONS

Input Voltage

72 V nom (45-90VDC range)
110V nom (67-138VDC range)
Input is floating versus chassis

Input Protection

Reverse polarity protection
Internal thermal fuse
Inrush current limiting
Transient suppression
Lower voltage than the specified minimum input will not damage the unit

Isolation/Safety

Input to output: 3.0KV dc
Input to case: 1.5KV dc
Output to case: 1.5KV dc
Designed to meet IEC950, CSA22.2-950, UL1950 and EN 50155.

EMI

EN55022 Class B

Output Voltage

24VDC/6.25A
Consult factory for other voltages

Line/Load Regulation

+/-1% combined from no load to full load.

Output Ripple/Noise

Better than 200mV peak to peak or 40mV RMS (20MHZ BW)

Overload Protection

Current limiting with short circuit protection

Output Over-voltage Protection

30V transzorb

Efficiency

Min 87% at full load

Operating Temperature

For specification at -40° +70°C cold-plate temperature. Consult factory for wider temperature range.

Temperature Drift

0.03% per °C over operating temperature range

MTBF

Demonstrated MTBF exceeds 1,000,000 hours at typical operating temperatures.

Connections

Screw-type terminal block for input and output.

Packaging

Fully encapsulated aluminum case.

Dimensions

2.3" x 6" x 1.5" (W x L x H) enclosure
2.3" x 7.1" 2.2" including terminal block and flanges

Weight

0.8kg (1.8lb)