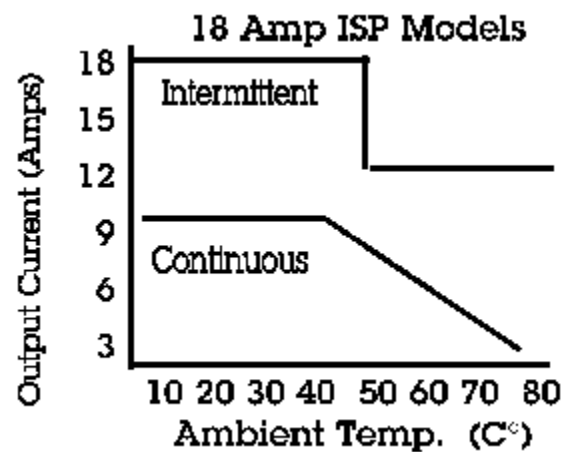
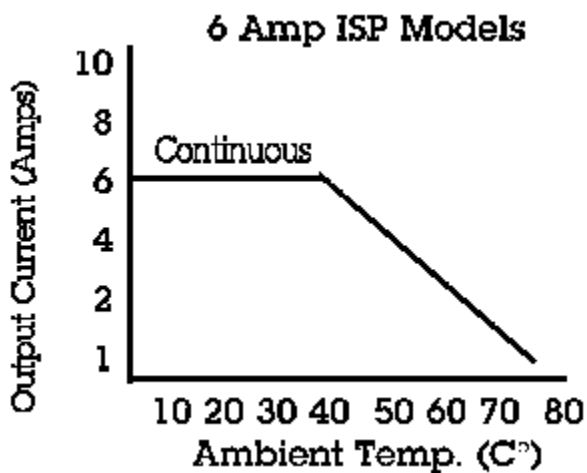


DC-DC Converters: Isolated & ISP Series

Isolated Series Provides voltage conversion and negative/positive ground reference compatibility. This permits connection of negative ground gear to positive or floating ground battery systems, or vice-versa. Input range: 10-56 VDC; positive, negative or floating ground. Output: 12 or 24 VDC, 3 to 35 amps.

ISP Series offer the benefits of an isolated converter plus protection against line transients and voltage spikes typically encountered on locomotives, electric rail cars, and electric fork lifts. A special circuit clamps input spikes to a safe level, protecting both the converter and the powered equipment.

This product series is further enhanced with extra rugged construction of case and internal components for severe vibration applications. Input range: 18 - 140 VDC; positive, negative or floating ground. Output: 12 or 24 VDC, 3-18 amps. (35 amps special order).



Product Features

- Reverse polarity protection
- Input fuse
- Output fuse
- Current limiting
- Short circuit proof output
- Automatic resetting thermal shutdown
- Input transient protection (ISP Series only)
- High/low input voltage shutdown
- Polyurethane conformal coating on PC board
- Power "ON" light
- On/off switch

Product Specifications

Performance Specifications

Output	13.6 VDC (internally adjustable 12.6-14.5) or 24.5 VDC (or specify)
Ripple	150 mV P-P
Regulation	± 2% Line/Load
Duty Cycle Ratings*	Intermittent: 20 minutes, 20% duty / Continuous: 24 hours, 100% duty *Current limit set @ approx. 105% of intermittent rating. *Exceeds EIA Standards
Idle Current	(including power "on" indicator light) approx. 50mA

Operating Temp

Isolated Series	0-50° C; derate linearly from 100% @ 40° C to 50% @ 50° C
ISP Series	see temperature Derating curves (below)
Switching Frequency	70 Khz
Efficiency	85% - typical
DC Isolation	Input/Output, Input/Chassis, Output/Chassis
I Series	250 VDC
ISP Series	1,400 VDC
Options	Operation as a battery charger or parallel/redundant operation (contact factory). High vibration mounting kit. (Other "Special" output voltages available)

ISP Surge Protection

Transient Energy Capability	36 VDC Input 140 joules (Watt-Seconds) Peak Current, 2,000 Amps 72 & 110 VDC Input 100 Joules (Watt-Seconds) Peak Current, 12,000 Amps
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Temperature Specifications - ISP Series

Operating Temperature	-40° C to +80° C Thermal shutdown @ 85° C Case Temperature
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Model Selection Guide

Model	Input Voltage	Output Voltage	Output Amps Intermittent	Output Amps Continuous	Dimensions	Weight
12-12-12I	10-16**	13.6	12	8	4.25"H x 5.9"W x 14.0"D (10.8 x 15.0 x 35.6 cm)	6 lbs (2.7 kg)
12-24-6I		24.5	6	4		
12-12-35I	10-16**	13.6	35	20	6.0"H x 6.8"W x 16.5"D (15.2 x 17.3 x 41.9 cm)	12 lbs (5.5 kg)
12-24-18I		24.5	18	10		
48-12-6I	20-56	13.6	6	6	4.25"H x 5.9"W x 7.7"D (10.8 x 15.0 x 19.6 cm)	7 lbs (2.7 kg)
48-24-3I		24.5	3	3		
48-12-12I	20-56	13.6	12	8	4.25"H x 5.9"W x 14.0"D (10.8 x 15.0 x 35.6 cm)	6 lbs (2.7 kg)
48-24-6I		24.5	6	4		
48-12-18I	20-56	13.6	18	10	4.25"H x 5.9"W x 14.0"D (10.8 x 15.0 x 35.6 cm)	8 lbs (3.6 kg)
48-24-9I		24.5	9	5		
48-12-35I	20-56	13.6	35	20	6.0"H x 6.8"W x 16.5"D (15.2 x 17.3 x 41.9 cm)	12 lbs (5.5 kg)
48-24-18I		24.5	18	10		

**11.5 VDC minimum start-up voltage, then operates @ 10-16 VDC from 1 amp minimum to full load

Model	Input Voltage	Output Voltage	Output Amps Intermittent	Output Amps Continuous	Dimensions	Weight
36-12-6 ISP^Y	18-65	13.6	6	6	4.25"H x 5.9"W x 7.7"D (10.8 x 15.0 x 19.6 cm)	5 lbs (2.3 kg)
36-24-3 ISP		24.5	3	3		
36-12-18 ISP	20-65	13.6	18	10	6.0"H x 6.8"W x 16.5"D (15.2 x 17.3 x 41.9 cm)	12 lbs (5.5 kg)
36-24-9 ISP		24.5	9	5		
36-12-35 ISP*	20-56	13.6	35	20	4.25"H x 5.9"W x 7.7"D (10.8 x 15.0 x 19.6 cm)	7 lbs (2.7 kg)
72-12-6 ISP	42-90	13.6	6	6	4.25"H x 5.9"W x 7.7"D (10.8 x 15.0 x 19.6 cm)	5 lbs (5.5 kg)
72-24-3 ISP		24.5	3	3		
72-12-18 ISP	42-90	13.6	18	10	6.0"H x 4.6"W x 13.7"D (15.2 x 11.7 x 34.8 cm)	8 lbs (3.6 kg)
72-24-9 ISP		24.5	9	5		
110-12-6 ISP	80-140	13.6	6	6	4.25"H x 5.9"W x 7.7"D (10.8 x 15.0 x 19.6 cm)	5 lbs (2.3 kg)
110-24-3 ISP		24.5	3	3		
110-12-18 ISP	80-140	13.6	18	10	6.0"H x 4.6"W x 13.7"D (15.2 x 11.7 x 34.8 cm)	8 lbs (3.6 kg)
110-24-9 ISP		24.5	9	5		

^Y This model EMC and safety certified for sales within the European Union. *Build to order only 10 unit minimum