80 Amp LORAIN® DC-DC Converter Shelf

with 10 Amp Converter Modules

Key Features

- Modular design provides for system redundancy and easy incremental expansion of operating capacity
- Hot insertion capability allows for system expansion without disruption
- Compact shelf provides 80 amps at -48 VDC in only 3 rack units (5.25") of space (standard 19" relay rack). Mounting rails are adjustable for 23" mounting width
- Isolated input to output
- UL recognized to ensure safe and reliable performance

Standard Features

- Converter MINOR alarm
- Converter MAJOR alarm
- Current limiting
- Over-voltage protection
- Over-temperature protection
- Load sharing for parallel operation
- Easily accessible input and output connections for simplified installation

Compact, cost effective, modular design, ideal for +24 VDC applications requiring -48 VDC output.

Description

The LORAIN® modular DC to DC converter shelf provides up to 80 amps at -48 volts DC via high frequency switch mode converters rated at 10 amps each.

Modular design allows the converter's capacity to expand as your system expands. The MHSA80CAB converter shelf can accept eight individual, 10 amp plug-in converter modules. Two or more shelves can be combined into one system for load requirements in excess of 80 amps. The modules can be easily installed live without system interruption.

+24 VDC input and expandable -48 VDC output makes this system ideal for both cellular radio and microwave sites with -48 VDC requirements.

Application

The LORAIN® DC to DC converter system's compact size and expandability makes it ideal for +24 VDC wireless sites requiring -48 VDC output.

Additional Information

For additional specification, engineering or installation information, specify model MHSA80CAB spec. number 588249301 (dual input feed) and model MHSA10B spec. number 486800127 (module).

80 amp Converter Shelf

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Technical Specifications

Input	
Voltage	24.0 volts DC nominal, with range of 21 volts to 28 volts DC
Current	210 amps maximum (at full load with eight 10 amp modules, 21 VDC input)
Circuit Protection	35 amp fuse located in the positive input lead of each converter module
Filtering	Noise reflected back to the battery is less than 32 dBrnC and is within the parameters set forth in Telcordia technical reference TR-TSY-000009, using test measurements in PUB43802, pages 5 and 6.
Efficiency	87% typical

Output	
Voltage	-48.0 VDC
Current	10 amps per DC-DC converter module, up to a total of 80 amps per shelf with eight modules installed
Regulation	Steady state output voltage remains within ±1 volt of the pre-adjusted voltage for any load current from no load to full load and over the specified input voltage range.
Dynamic Response	For a step load change of 50% within the range of 10% to 100% of full rated current, the maximum voltage transient will not exceed 5% of the initial steady state voltage.
Filtering	Voice band noise is less than 32dBrnC. Wide band noise does not exceed 250 mV peak to peak over the frequency range of 0 to 20 MHz. Wide band noise does not exceed 30 mV rms over the frequency range of 0 Hz to 20 MHz.

Status/Alarm Indicators	
Frame	Minor Alarm LED (yellow) and alarm contact: Single DC-DC Converter Module failure
	Major Alarm LED (red) and alarm contact: Two or more DC-DC converter module failures
	Input OK LED (green): Input voltage source is within operating limits
Module	Output OK LED (green) and alarm contact: Output voltage is between the low and high voltage alarm limits and fan is operating normally

Environmental	
Temperature, Operating	-40° C to +65° C (-40° F to +149° F)
Temperature, Storage	-40° C to +85° C (-40° F to +185° F)
Humidity	0% to 95% relative humidity, non-condensing
Altitude	Maximum operating ambient temperature should be derated linearly (1 °C per 1000 ft.) at elevation above 3000 ft.
Audible Noise	Audible noise at any point 5 feet from any vertical surface of the shelf shall not exceed 60 dB-A per ANSI S1.4
EMI/RFI Suppression	Conforms to requirements of FCC Part 15, Subpart B, Class B; EN55022, Class B for radiated and conducted noise; and GR-1089 CORE for conducted noise

10 Amp Converter Module

EmersonNetworkPower.com/EnergySystems (North America)