

# NetSure® DCS 48375

## DC-DC Converter System

### Key Features

- Modular design — provides for system redundancy and easy expansion of operating capacity in small increments
- Compact shelf — 23" and 19" mount versions
- Expandable — combine up to 3 shelves for 375 amp ultimate capacity and up to 60 bullet positions
- Hot insertion capability — allows for system expansion without disruption
- Equipped for dedicated input feed per module and dual input feed per shelf — isolated input to output
- Safety compliance — NEBS Certified; UL recognized

### Standard Features

- Converter MINOR alarm
- Converter MAJOR alarm
- Fuse / CB alarm
- Current limiting
- Over-voltage protection
- Over-temperature protection
- Load sharing for parallel operation
- Easily accessible input and output connections for simplified installation
- Test points for output current and voltage measurement
- Emergency power off

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



*DC-DC Converter Shelf*

### Description

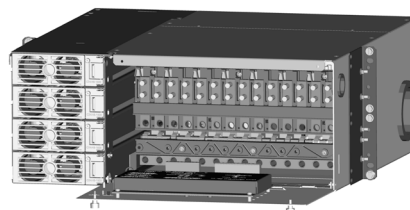
The NetSure® DCS 48375 modular DC to DC converter shelf provides up to 375 amps at -48 volts DC via high frequency switch mode converters rated at 1500 watts (31.25 amps) each. The modular design allows the converter's capacity to expand as your system expands. Each DCS 48375 converter shelf can accept four individual, plug-in converter modules per shelf that can be easily installed live without system interruption. Each shelf provides 6000 watts (125A max) at -48VDC to -52VDC with 20 bullet positions (23" mount) or 15 bullet positions (19" mount) in four rack units (7") of height.

### Application

The NetSure® DCS 48375 converter shelf is compact and easy to expand, making it ideal for +24 VDC wireless, cellular radio and microwave sites requiring -48 VDC output.

### Ordering Information

Part Number	Model Number	Description
584622300	DCS48375	Main shelf, 23"
584622400	DCS48375	Expansion shelf, 23"
584622100	DCS48375	Main shelf, 19"
584622200	DCS48375	Expansion shelf, 19"
1C24481500	C24/48-1500	NetSure® DC/DC converter module



## Specifications

Input	
Voltage	24.0 volts DC nominal, with range of 20.5 to 30.0 volts DC
Current	83.3 amps maximum (at full load for one module, 21VDC input)
Circuit Protection	Fuse is located in the positive input lead of each converter module
Filtering	Noise reflected back to the battery is less than 32dBmC and is within the parameters set forth in Telcordia technical reference TR-TSY-000009, using test measurements in PUB43802, pages 5 and 6
Efficiency	90.8% typical

Output	
Voltage	-48.0 VDC, -50.0 VDC, -52.0 VDC and -54.0 VDC selectable
Current	31.25 amps per DC-DC converter module, up to a total of 125 amps per shelf with four modules installed.
Regulation	Steady state output voltage remains within $\pm 1\%$ 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 within the range of 20% 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 32dBmC. Wide band noise does not exceed 250 mV peak to peak over the frequency range of 0 to 100 MHz. Wide band noise does not exceed 50 mV rms over the frequency range of 0 Hz to 100 MHz.

Protection	
Overvoltage	Each DC-DC converter module will automatically shut down and lock out should its output voltage exceed 115% to 125% of nominal voltage. Manual restart is necessary after the over-voltage condition is corrected.
Overcurrent	When the output current of a DC-DC converter module increases to a preset value between 102.5% to 115% of rated full load, the output voltage of the module will automatically decrease to limit current to this value. The output will recover to within specified limits when the overload condition is removed.
Over Temperature	Each DC-DC converter module will automatically shut down if the internal temperature of the module exceeds a predetermined value. Operation will automatically resume after the over-temperature condition is removed.

Status/Alarm Indicators	
Shelf	Minor alarm LED (yellow) and form-C contact for a single DC-DC converter module failure Major alarm LED (red) and form-C contact for two or more DC-DC converter module failures Input OK LED (green) if the input voltage source is within operating limits Fuse alarm (red) and form-C contact if any GMT load fuse opens E Stop RTN signal will shut down all converter modules Test points for output current and output voltage
Module	Output OK LED (green) if output voltage is between the low and high voltage alarm limits and fan is operating normally.

Environmental	
Operating Temperature	-40°C to +65°C (-40°F to +149°F), power derated to 80% at 65°C (149°F)
Storage Temperature	-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 (3°C per 1000 ft.) at elevation above 5000 ft.
Audible Noise	The audible noise at any point 2 ft. from any vertical surface of the shelf shall not exceed 60dB-A per ANSI S1.4.
EMI/RFI Suppression	This unit conforms to the requirements of FCC Part 15, Subpart B, Class B; EN55022, Class B for radiated and conducted noise; and GR-1089 CORE for conducted noise.

### 1500 Watt Converter Module



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