

Power

CAR1848TN 1800W Switched Mode Rectifier



CAR1848TN rectifier

- › Wide AC input range for worldwide installation requirements
- › Wide temperature operation for installation in harsh outdoor environments
- › Active load sharing on rectifier level for improved reliability
- › Compatible with 1.6 and 3U high to meet any space or power requirements

A true constant power with 91% typical efficiency (including redundancy diode) for this 1800W rectifier demonstrates the combination of the long experience of Alpha Technologies for distributed power architecture with the latest developments in technology to offer 5400W in a 2U high power shelf or 10800W in 3U space. It also supplies more current at low voltages, a real need when batteries are discharged.

With 627W/L (10.23W/in³) up to 55°C (131°F), this rectifier demonstrates superior power density at both 230VAC and 110VAC mains. This excellent power density yields more space for the revenue generating equipment.

The units are perfect solutions for both indoor and outdoor applications and offer a wide range of features to improve control of the system. Beyond the traditional voltage programming, AC and DC fault control, the unit is equipped with a smart derating of the power in regard to internal temperature. Signals include thermal shutdown, AC mains range detection (low or high) over-voltage, module missing - and offer great flexibility of system configuration.

The rectifiers are designed to work in parallel. Active single wire sharing secures a very good load share among units. Redundancy diode on the output allows for hot-swap fault tolerant insertion. Each unit is protected against input under- and overvoltage, output overvoltage, smart output power limitation and over temperature.

CAR1848TN 1800W 48V Switched Mode Rectifier

Part Number:

CAR1848TN-1A: 1800W switched mode rectifier with wide input range (low mains and high mains)

CAR1848TN-2A: 1800W switched mode rectifier with extended high input range

Electrical

Input Voltage:

CAR1848TN-1A 90 to 264Vac
 CAR1848TN-2A 150 to 280Vac

Input Frequency: 47 to 63Hz

Power factor: 0.99%

Input Current: 13.5A typical @ high mains
 6.8A typical @ low mains

Efficiency: 91% typical @ high mains

Output voltage: 40 to 57Vdc

Output power: 1800W @ high mains
 1000W @ low mains

Output current: 33A nominal @ high mains
 19A nominal @ low mains

Load and line regulation: <0.5% (any combination of load and line)

Wide band noise: 5mV_{rms}

Psophometric noise: 1mV_{rms}

Performance / Features

Indicators: AC mains OK — green LED
 DC output OK — green LED
 Thermal Shutdown — red LED
 Output overvoltage — red LED

Protections: Mains out of range (input fuse)
 Output overvoltage
 Output overload
 Short circuit current
 Smart power derating
 Thermal shutdown
 Hot swap

Mechanical

Dimensions:

mm: 128H (3U) x 69W x 325D
 inches: 5H x 2.7W x 12.8D

Weight: 3.2kg (7.05lb)

Environmental

Temperature:

Standard: -25 to 55°C (-4 to 158°F)
 Extended*: -40 to 70°C (-40 to 158°F)
 * de-rated output power
 Storage: -40 to 85°C (-40 to 185°F)

Humidity:

Operating 30 to 90% RH non-condensing
 Storage: 10 to 95% RH non-condensing

Elevation: Up to 2250m (7382ft)

Cooling: Fan cooled (front to rear)

Related Components

Shelves:

ACE153ST.L48N 3 x 1500/1800W basic power shelf
 ACE186RT.L48N 6 x 1500/1800W basic power shelf

Standards

Safety: CE marked
 EN60950

Environment: RoHS compliant
 IEC 60068-2-27

EMC*: ETSI EN 300386

* See specifications sheet for more details