

TCPR-3U

CONFIGURABLE POWER SYSTEM

TECTROL CONFIGURABLE 3U RECTIFIER POWER SYSTEM



The TECTROL TCPR-3U is a configurable telecommunications power system that can be easily customized to meet a wide range of power output requirements.

The TCPR-3U supports the deployment of up to 4 TCR rectifier power modules to provide up to 5400 watts of highly reliable DC power in a 3U profile.

Its compact form factor and flexible feature set make the TCPR-3U an excellent choice for low profile racks and cabinets that require high power density and minimum power supply intrusion.

N+1 power module redundancy ensures maximum reliability for mission critical applications.

Hot swap capability of the rectifier modules is provided via an integral backplane assembly that interconnects the power modules to the high current DC bus bars. An optional "blind mate" version of the system is also available.

The TCPR-3U includes integral battery management as a standard feature with both a microcontroller and Low Voltage Battery disconnect breaker.

FEATURES

- Up to 5400 Watt output power
- Low 3U profile provides high power density
- Integral microcontroller and Low Voltage Battery Disconnect
- Alarm Management
- Parallel (non redundant) or N+1 operation
- Active current share between rack shelves (with optional cables)
- Optional slot blanking plates and mounting bracket positions available

AGENCY COMPLIANCE

- UL/cUL Approval
- TUV Approval
- CE Mark (to LVD requirements of EN 60950)
- Harmonic Compliance to EN 61000-3-2 (Class A & D limits)
- NEBS Compliant

EMISSIONS AND IMMUNITIES

- EN 55022 Class B Emissions
- EN 61000-3-2 Class D Harmonic Compliance
- EN 61000-4 Compliance

MAX OUTPUT POWER	OUTPUT (Volts)	OUTPUT (Amps)	INPUT (VAC)	MODEL NUMBER
5400 W	48	112.5	100 to 240	TCPR-3U + TCR-1350

TECHNICAL SPECIFICATION

INPUT SPECIFICATION

Full Range Input	100 V to 230 Vrms, 50/60 Hz
Line Inrush Current	30 Apk @ 115 V 60 Hz half cycle 60 A @ 230 V 50 Hz half cycle
Power Factor	> 0.95 (typically 0.97)
Harmonic Compliance	Complies with EN 61000-3-2 Class D Limits
Leakage Current	< 1.0 mArms per module
Voltage Dip/Interruptions	Complies with IEC/EN 61000-4-11
Transients & Surges	Complies with IEC/EN 61000-4-5
Efficiency	90% full load, nominal line (including ORing diodes)

OUTPUT SPECIFICATION

Factory Set Output Voltage	Nominal: -54.5 ± 0.2 VDC
Adjustment Range	-40 V to -58 V nominal (adjusted via use of Vpwm signal)
Static Voltage Regulation	$\pm 0.5\%$ (line, load regulation, temperature)
Ripple & Noise (PARD)	< 250 mV pp at -5° to 65° C < 900 mV pp at -40° to -5° C
Psophometric Noise	< 2 mVrms at -5° to 65° C < 5 mVrms at -40° to -5° C
Output Current Max	100 A @ -40 V output (4000 W)
Shelf Power	4000 W (3 + 1 modules) 5400 W (4 modules in parallel operation)
Transient Response	$\pm 5\%$ deviation for 90% load change. Recovery to 1% within 1 ms.

PROTECTION

Overload Protection	Constant current of 38 A per rectifier.
Over Voltage Protection	-57.7 to -59.9 V max guaranteed shutdown.
Over Temperature Protection	Shutdown in the event of operation in excessive ambient temperature or blocked/failed airflow (self recovery following temperature reduction).

ALARMS & INDICATORS

Alarm Contacts	Form "B" relay contacts; 30 V @ 1A
Alarm Groups	Power Major Alarm, Minor Alarm, AC Fail Alarm, Battery Discharge Alarm, Battery Fuse Alarm
Temperature Sensor I/P	Linear Sensor (LM35D or similar) 10 mV/ $^\circ$ C
Temperature Sensor Voltage	12 V supply voltage for temperature sensor
LED Indicators	Power Major Alarm (red), Power Minor Alarm (yellow), AC Fail Alarm (red), Battery Discharge Alarm (red), Rectifier Status (green)

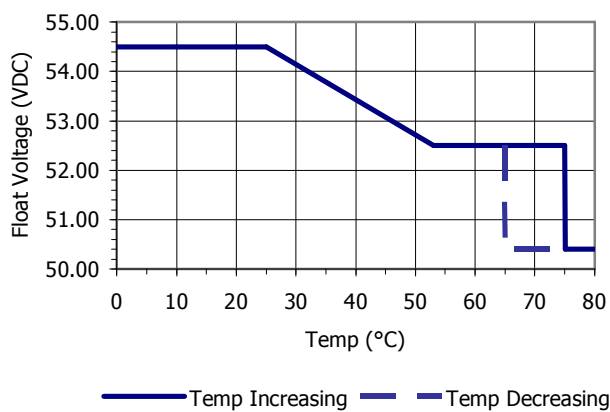
MECHANICAL FORMAT

AC Input Connector	Configurable Option
DC Output Connector	Bus Bars, Rectifier Bus; Battery; Return
Mechanical Outline	3.5" (H) x 17.6" (W) x 12.6" (L) – nominal 89 mm (H) x 447 mm (W) x 320 mm (L)

ENVIRONMENTAL

Temperature Range	Operational: -40° to 65° C
Cooling	60 mm fans integral to rectifier modules

BATTERY FLOAT CHARGING PROFILE



CONSTANT OUTPUT POWER CHARACTERISTIC

