

# TCP1U-1500

## 1500 Watt Front-End Power Supply

### TECTROL 1500 WATT 24/48 VOLT 1U FRONT-END POWER SUPPLY



The TCP1U-1500 provides up to 1500 Watts of highly reliable DC power in a low profile 1U module that is designed to deliver reliable bulk power to distributed power architecture applications that require high power density.

The TCP1U is available in industry standard 24 and 48 volt models and can be modified or configured to supply different power output levels as required.

A compact form factor allows integration of up to 3 parallel or redundant TCP1U modules in TECTROL's TCP1R configurable 1U Power System (or any standard 84 HP width 19" 1U rack).

Hot swap capability is implemented through the use of an industry standard connector that combines both AC power and DC output connections in a single "blind mate" configuration.

Optional digital interfaces such as I<sup>2</sup>C can be configured on the TCP1U to meet application-specific needs.

#### FEATURES

- 1500 Watt output power
- Wide range (universal) input
- Low 1U profile provides high power density
- Full hot swap capability
- Non-redundant parallel operation or N+1 configuration
- High efficiency
- Single wire active current share
- Integral Isolation (ORing) Diodes
- I<sup>2</sup>C EEPROM Bus Chip option
- Strenuously HALT tested to ensure maximum reliability and long life

#### AGENCY COMPLIANCE

- UL/cUL Approval, E136845
- TUV Approval, E2273008
- CE Mark (to the LVD requirements of EN 60950)
- Harmonic Compliance to EN 61000-3-2 (Class A & D Limits)

#### 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)	AC INPUT (Volts)	MODEL NUMBER
1500 W	48	32	180 to 264	TCP1U-1500-48
1200 W	48	25	90 to 264	TCP1U-1200-48
1200 W	24	45	90 to 264	TCP1U-1200-24



**TECTROL**

Total Power Solutions®

# TCP1U-1500 1500 Watt Front-End Power Supply

## TECHNICAL SPECIFICATION

### INPUT SPECIFICATION

Full Range Input	90 to 264 Vrms, 50/60 Hz
AC Line Input	16 A @ 90 V & 8 A @ 175 V input voltage
Line Inrush Current	15 Apk @ 115 VAC 60 Hz; 30 A @ 230 VAC 50 Hz; half cycle, cold start (25 °C)
Power Factor	> 0.95 (typically 0.97)
Harmonic Compliance	Complies with EN 61000-3-2 Class D Limits
Leakage Current	1.1 mArms per module
Voltage Dip/Interruptions	Complies with IEC/EN 61000-4-11
Transients & Surges	Complies with IEC/EN 61000-4-5
Efficiency	> 87% full load, nominal line (including ORing diodes)

### OUTPUT SPECIFICATION

Factory Set Output Voltage	46 to 59 V (floating/isolated wrt com/gnd)
Static Voltage Regulation	± 1% (line, load regulation, temperature)
Voltage Margining	± 5% from nominal set voltage
Ripple & Noise (PARD)	480 mV pp for 48 V; 240 mV pp for 24 V
Output Current	48 V nom @ 25 A; 24 V nom @ 50 A
Module Power	1500 W continuous operation @ 50 °C
Current Share	Single wire active current share
Parallel Operation	Parallel non-redundant or N+1
Hot Swap Capability	Fully hot swappable, blind mate connector
Remote Sense Compensation	For ORing diodes and connector drop
Transient Response	2% deviation from nominal set voltage, for 25% step load change. Recovery to within 1% within 500 µs.

### PROTECTION

Overload Protection	Inception point 120%. Unit protected against a permanent short circuit.
Over Voltage Protection	60 V max guaranteed shutdown. Reset by recycling of the incoming AC supply.
Over Temperature Protection	Shut down in the event of operation in excessive ambient temperature or blocked/failed airflow (self recovery following temperature reduction).
Signals	I/O Signals: AC Fail, DC Good; P/S Present; Remote On; EEPROM SCL/SDL & Address Lines; AC Fail; DC OK.
LED Indicators	Power Fail, DC OK.

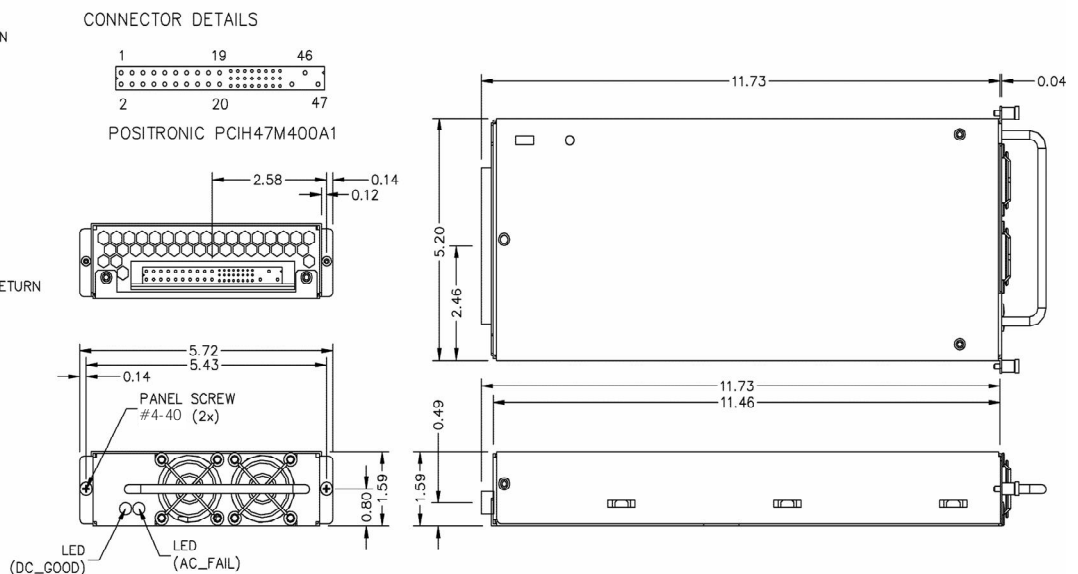
### MECHANICAL FORMAT

Input/Output Connector	Positronic PCIH47M400A1 connector; AC input and DC Output in to a single connector for true hot swap capability (mating connector type PCIH47F300A1).
Mechanical Outline	1.59" (H) x 5.20" (W) x 11.73" (L) 40.39 mm x 132.1 mm x 297.94 mm

### ENVIRONMENTAL

Temperature Range	Operational: 0 ° to 50 °C, FL no derating
Cooling / Air Flow	Integral dual high performance 40 mm fans. Airflow direction; inlet at fan face; exhaust at connector face.

PIN ASSIGNMENT	FUNCTION
1 - 10	48V RETURN
11 - 20	48V 21A
21	REMOTE_ON RETURN
22	48V +SENSE
23	VOLTAGE MARGIN
24	48V -SENSE
25	CURRENT MONITOR
26	I-SHARE
27	AC_FAIL
28	EEPROM A0
29	N/C
30	DC_OK
31	EEPROM A1
32	N/C
33	AC_FAIL, DC_OK RETURN
34	EEPROM A2
35	N/C
36	REMOTE_ON
37	EEPROM CLOCK
38	P/S PRESENT
39	EEPROM DATA
40	N/C
41	N/C
42	N/C
43	N/C
44	N/C
45	GND-EARTH
46	NEUTRAL
47	LINE



Tectrol Inc.  
39 Kodiak Crescent, Toronto, Canada M3J 3E5  
Tel: + 1 (416) 630 8108 Fax: + 1 (416) 638 0553  
sales@tectrol.com www.tectrol.com

European Office  
Tel: + 44 (208) 399 6824  
Fax: + 44 (208) 390 7355  
eurosales@tectrol.com