

TCP1U-800

800 Watt Front-End Power Supply

TECTROL 800 WATT 12 VOLT 1U FRONT-END POWER SUPPLY



The TCP1U-800 provides 800 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 using point of load converters.

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 I²C can be configured on the TCP1U to meet application-specific needs.

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

FEATURES

- 800 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
- I²C EEPROM Bus Chip option
- Strenuously HALT tested to ensure maximum reliability and long life

AGENCY COMPLIANCE

- UL/cUL Approval, E136845
- TUV Approval, E2273008
- CB Certificate & Report via TUV
- 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 |
|------------------|----------------|---------------|------------------|--------------|
| 840 W | 12V | 70A | 90 to 264V | TCP1U-800-12 |



TECTROL[®]

Total Power Solutions[®]

TCP1U-800 800 Watt Front-End Power Supply

TECHNICAL SPECIFICATION

INPUT SPECIFICATION

| | |
|---------------------------|-------------------------------------------------------------------------------------------------------------|
| Full Range Input | 90 to 264V _{RMS} , 50/60 Hz |
| AC Line Input | 9A @ 115V & 4.5A @ 230V _{AC} input voltage |
| Line Inrush Current | 15A _{PK} @ 115V _{AC} 60 Hz; 30A @ 230V _{AC} 50Hz; half cycle, cold start (25 °C) |
| Power Factor | > 0.95 (typically 0.98 full load) |
| Harmonic Compliance | Complies with EN 61000-3-2 Class D Limits |
| Leakage Current | 1.1mA _{RMS} (typical per module) |
| Voltage Dip/Interruptions | Complies with IEC/EN 61000-4-11 |
| Transients & Surges | Complies with IEC/EN 61000-4-5 |
| Efficiency | > 82% full load, nominal high line (including ORing diodes) |

OUTPUT SPECIFICATION

| | |
|----------------------------|------------------------------------------------------------------------------------------------------|
| Factory Set Output Voltage | 10.8 to 13.4V (floating/isolated wrt com/gnd) |
| Static Voltage Regulation | ± 0.5% (line, load regulation, temperature) |
| Voltage Margining | ± 5% from nominal set voltage |
| Ripple & Noise (PARD) | 120mV _{PP} |
| Output Current | 12V _{NOM} @ 70A |
| Module Power | 840W 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 500µs. |

PROTECTION

| | |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Overload Protection | Inception point 120%. Unit protected against a permanent short circuit. |
| Over Voltage Protection | 14V 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 | AC_FAIL, DC_OK. |

MECHANICAL FORMAT

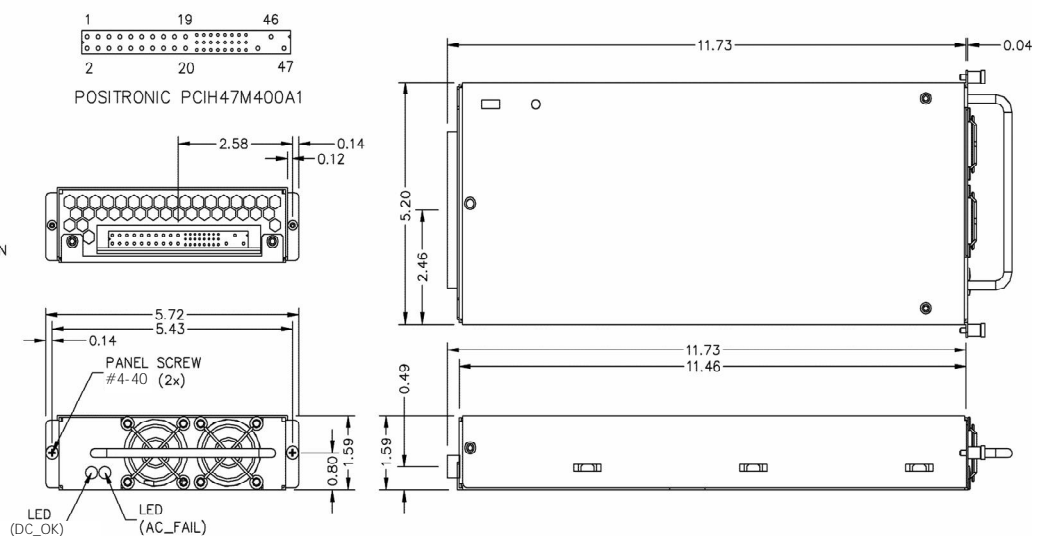
| | |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input/Output Connector | Positronic PCIH47M400A1 connector; AC input and DC Output in to a single connector for true 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 | 12V (-VE) |
| 11 – 20 | 12V (+VE) |
| 21 | REMOTE ON RETURN |
| 22 | 12V +VE SENSE |
| 23 | VOLTAGE MARGIN |
| 24 | 12V -VE SENSE |
| 25 | CURRENT MONITOR |
| 26 | I-SHARE |
| 27 | REMOTE_ON |
| 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 | AC_FAIL |
| 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 |

CONNECTOR DETAILS



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