



# Total Power International, Inc.

## 36-72VDC INPUT RANGE DC-DC CONVERTER HOT-SWAP CompactPCI QUAD OUTPUT 400 WATTS ACTIVE CURRENT SHARING SWITCHING POWER SUPPLIES TPDC400P-48B-490 SERIES



### FEATURES:

- 400W 6U X 8HP EUROCARD PACKAGE
- INTERNAL OR-ING DIODES FOR N+1 REDUNDANCY
- HOT-SWAPPABLE
- THIRD-WIRE CURRENT SHARING
- EMI MEET EN 55022 CLASS A
- CE MARKING COMPLIANCE
- FULLY COMPLIANT WITH PICMG

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Typ. 36-72Vdc, nominal input 48Vdc.  
OVP shutdown at 75Vdc & UVP shutdown at 36Vdc.

**Input Connector:** Positronic 47-pin PCIH47M400A1.

**Soft Start:** Installed.

**Inrush Current:** Typ. 7.2A at 72Vdc.

**Input Current:** 11.8A at nominal input 48Vdc.

**Dielectric Withstand:** Meet IEC 60950-1 regulation.

**Transient Protection:** MOV withstands transient as specified by EN 61000-4-4 level 3.

**EMI:** Meet CISPR EN 55022 Class A.

**Remote ON/OFF:** Available at [INH#] & [EN#] pins.

**Power Fail Signal:** Available at [FAL#] pin.

**Status LED:** <Green> means valid input voltage.  
<Amber> means a critical fault.

**Thermal Protection (OTP):** Installed NTC for thermal sensor at [DEG#] pin. Thermostat will shutdown the PSU if >100°C.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.

**Output Current:** See Ratings Chart.

**Output Power:** Typ. 400-450W continuous.

**Output Connector:** Positronic 47-Pin PCIH47M400A1.

**Line Regulation:** Typ. 0.1%.

**Load Regulation:** VO1 typ. ±1.0% , VO2 typ. ±1.5%.  
VO3 & VO4 typ. ±3.0-4.0%.

**Noise & Ripple:** Typ. 1% peak-peak or 50mV, whichever is greater.

**OVP:** Built-in at all outputs.(Latch).

**Adjustability:** Available at VO1,VO2 & VO3.

**Output Trim:** Electrical trim available at VO1/VO2.[ADJ #].

**Remote Sensing:** Available at VO1,VO2 & VO3.

**Hot-Swap:** Available.

**N+1 Redundancy:** Available with OR-ing diodes at all outputs for N+1 redundancy.

**Current Sharing:** Third-wire current sharing at VO1,2&3.

**Power OK Signal:** Available for all outputs.

**Over Current Protection (OCP):** Installed at each rail.

**Overload Protection (OLP):** Fully protected against output overload or short circuit. Typ. set at 120-150% max. load. Consult the factory for special OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 80-82 %.

**Switching Frequency:** 120K Hz.

**Circuit Topology:** Forward circuit.

**Transient Response:** Peak transient less than 250mV and recovers within 1.0mS after 25% load-change.

**Safety Standard:** IEC 60950-1 Class I.

**Construction:** Eurocard 6U X 8HP X 160mm CompactPCI format. Front Panel with Extractor handle.

**Operating Temperature:** 0 to +50 °C at full load with specified air flow. Derates linearly to 50% at +70 °C.

**Storage Temperature:** -40 to +85 °C.

**Temperature Coefficient:** Typ. ±0.02% / °C.

**Cooling:** At least 600LFM/20CFM moving air is required to achieve full rating power 400W in a confined area.

**Power Density:** 4.01 Watts/ Cubic Inch.

NOTE: (1)All measurement are at nominal input, full load and +25°C unless otherwise specifications.  
(2)Due to requests in market and advances in technology, specifications subject to change without notification.



For the details of safety approval, please consult the factory.



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## OUTPUT VOLTAGE / CURRENT RATINGS CHART

### QUAD OUTPUT

| MODEL NO.        | MAIN +VO1 @★#≡⊙ |      |       |      | AUX. +VO2 ▲@★#≡⊙ |      |       |      | AUX. +VO3 ▲≡#⊙★@ |      |       |      |     | AUX. -VO4 ▲⊙★ |      |       |      |     |
|------------------|-----------------|------|-------|------|------------------|------|-------|------|------------------|------|-------|------|-----|---------------|------|-------|------|-----|
|                  | Min.            | Typ. | Volt. | Max. | Min.             | Typ. | Volt. | Max. | Min.             | Typ. | Volt. | Max. | Pk. | Min.          | Typ. | Volt. | Max. | Pk. |
| TPDC400P-48B-490 | 4A              | 40A  | +5V   | 55A  | 0A               | 20A  | +3.3V | 55A  | 0A               | 9A   | +12V  | 14A  | 15A | 0A            | 2A   | -12V  | 4A   | 5A  |

Symbol: "★" OVP built-in. "@ " Adjustable. "#" Remote sensing. "≡" 3rd-wire Load Sharing.

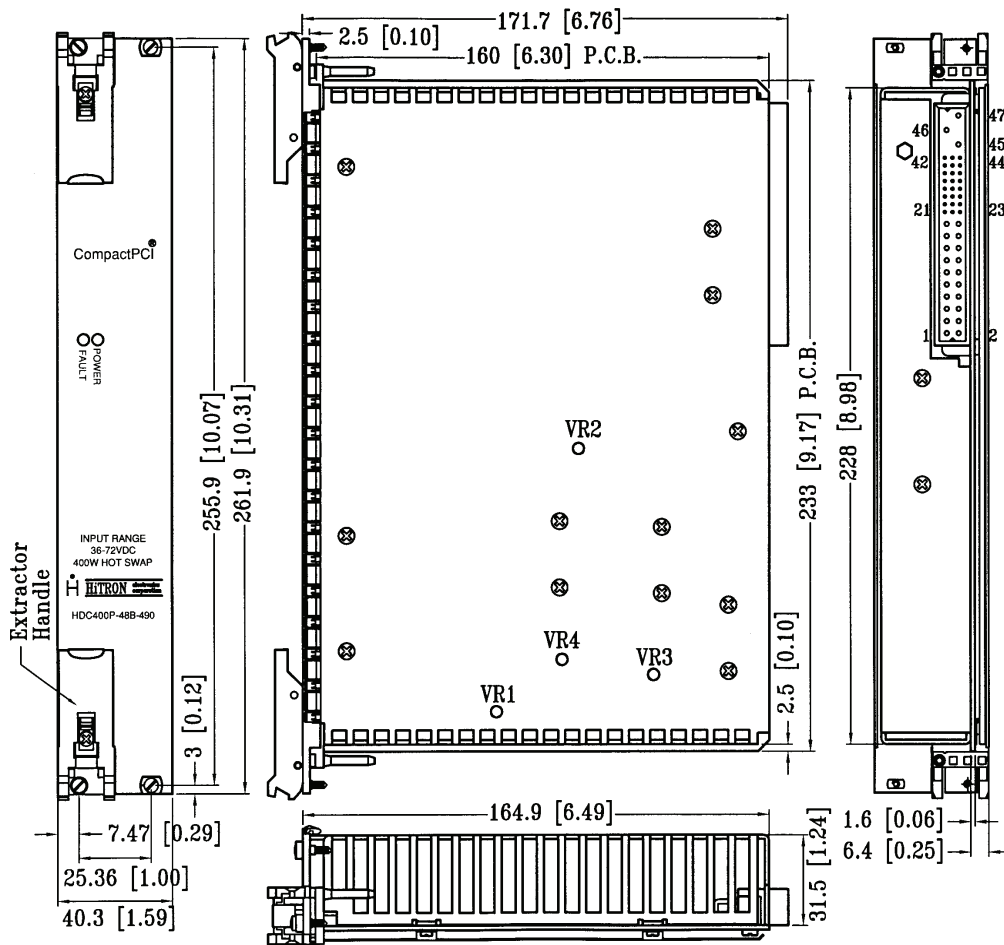
"⊙" Installed with Or-ing diode. "▲" Magnetic Amplifier. "●" Installed with Post-regulator. "■" Common Choke.

Remark: Peak load less than 60sec. with duty cycle <10%.

Max. load is the continuous operating load of each rail. But the max. load of each rail can't be drawn from all outputs at the same time.

### MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 1.42kg (3.13 lb.)



### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

| ASSIGNMENT   | DC INPUT |      |    | QUAD OUTPUT |    |    |      |      |                   |    |      |      |     |    |      | STATUS/CONTROL |                          |     |      |      |      |
|--------------|----------|------|----|-------------|----|----|------|------|-------------------|----|------|------|-----|----|------|----------------|--------------------------|-----|------|------|------|
|              | +Vin     | -Vin | G  | VO1         | S+ | S- | Adj. | C.S. | VO2               | S+ | Adj. | C.S. | VO3 | S+ | C.S. | VO4            | DC COM                   | EN# | DEG# | INH# | FAL# |
| CNTR & PIN # | 46       | 47   | 45 | 1,2,3,4     | 30 | 34 | 29   | 35   | 13,14,15,16,17,18 | 33 | 32   | 41   | 20  | 36 | 44   | 21             | 5,6,7,8,9,10,11,12,19,24 | 27  | 38   | 39   | 42   |

Mating connector: PCIH47F400A1.