



# Total Power International, Inc.

## 18-36VDC INPUT RANGE DC-DC CONVERTER HOT-SWAP CompactPCI 406 WATTS QUAD OUTPUT ACTIVE CURRENT SHARING SWITCHING POWER SUPPLIES TPDC350P-24B-490 SERIES



### FEATURES:

- 406W 6U X 8HP EUROCARD PACKAGE
- WIDE OPERATING TEMPERATURE RANGE OF -40°C TO +70 °C
- INTERNAL OR-ING DIODES FOR N+1 REDUNDANCY
- HOT-SWAPPABLE
- ACTIVE CURRENT SHARING
- EMI MEET EN 55022 CLASS A
- FULLY COMPLIANT WITH PICMG

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Typ. 18-36Vdc, nominal input 24Vdc.  
**Under Voltage Shutdown:** Installed.  
**Input Connector:** Positronic 47-pin PCIH47M400A1.  
**Soft Start:** Installed.  
**Inrush Current:** 56.5A (peak) at 36Vdc.  
**Input Current:** 19.7A at nominal input 24Vdc (Full load).  
**Dielectric Withstand:** Meet IEC 60950-1 regulation.  
**EMI:** Meet CISPR EN 55022 Class A.  
**Remote ON/OFF:** Available at [INH#] & [EN#] pins.  
**Power Fail Signal:** Available at [FAL#] pins.  
**Status LED:** <Green> means valid input voltage.  
                   <Amber> means a critical fault.  
**Thermal Protection (OTP):** Installed NTC for thermal sensor at [DEG#] pin.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Power:** Max. 406 Watt.  
**Output Connector:** Positronic 47-Pin PCIH47M400A1.  
**Line Regulation:** Typ. 0.5%.  
**Load Regulation:** Typ. VO1/2 ±1.5%; VO3 ±3%; VO4 ±5%.  
**Total Regulation:** Typ. VO1/2 2% , VO3 4%, VO4 5%.  
**Noise & Ripple:** 1% peak-peak or 50mV, whichever is greater.  
**OVP:** Built-in at all outputs.(Latch).  
**Adjustability:** Available for all outputs.  
**Output Trim:** Electrical trim available at VO1/VO2.[ADJ #].  
**Remote Sensing:** Available for VO1, VO2 & VO3.  
**Hot-Swap:** Available.  
**N+1 Redundancy:** Available with OR-ing diodes at all outputs for N+1 redundancy.  
**Current Sharing:** Active current sharing at VO1,2&3.  
**Constant Current Limit:** Available for each outputs & shutdown in 3-8 sec.  
**Power OK Signal:** Available for all outputs.  
**DC OK Signal:** Available for all outputs.  
**Over Current Protection (OCP):** Installed at each rail.  
**Overload Protection (OLP):** Fully protected.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 81.8%.  
**Switching Frequency:** 120K Hz.  
**Circuit Topology:** Forward circuit.  
**Transient Response:** Peak transient less than 250mV and recovers within 3mS 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:** -40 °C to +70 °C with 600LFM air flow derate linearly from 100% power at +50 °C to 50% power at +70 °C. (Refer to derating curve)  
**Storage Temperature:** -40 °C to +85 °C.  
**Cooling:** At least 600LFM moving air is required to achieve full max. rating power 406W in a confined area.  
**Power Density:** 3.66 Watts/ Cubic Inch (max.)

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.  
 (3)A warm-up time 3 minutes is required to maintain VO3 +12V within specific spec. after cold start at temperature from -40 °C to +0°C.  
 (4)Tantalum capacitors connected to system is suggested for bettering Ripple & Noise against operating temperature from -40°C to +0°C.



For more 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	Pk.	Min.	Typ.	Volt.	Max	Pk.	Min.	Typ.	Volt.	Max	Pk.	Min.	Typ.	Volt.	Max	Pk.
TPDC350P-24B-490	0A	33A	+5V	50A	50A	0A	33A	+3.3V	50A	50A	0A	7A	+12V	10A	10A	0A	2A	-12V	4A	5A

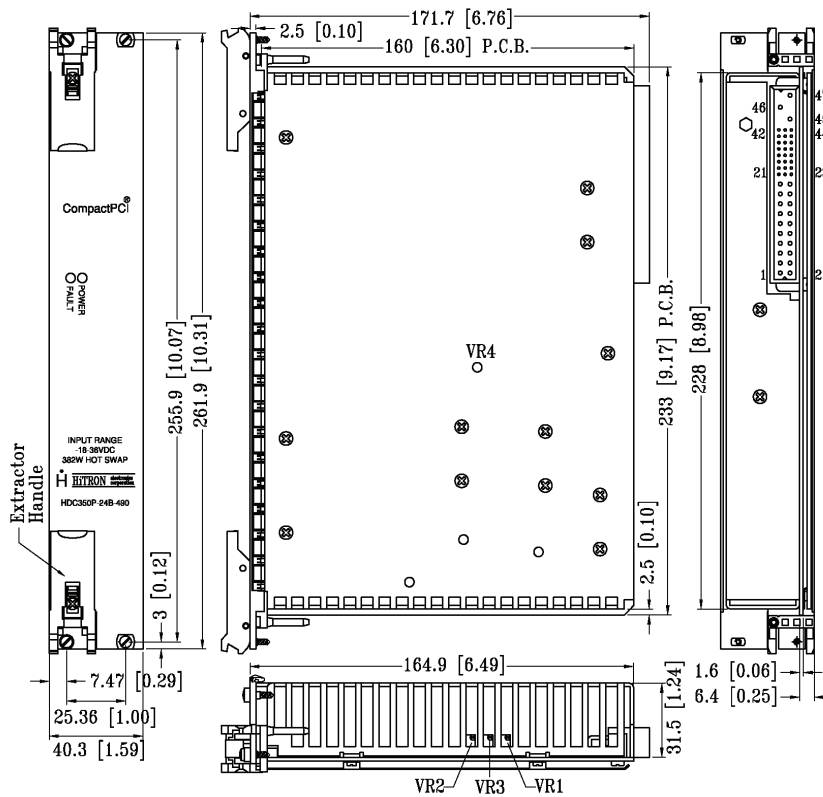
Symbol: "★" OVP built-in. "@" Adjustable. "#" Remote sensing. "≡" Active Load Sharing.  
 "○" Installed with Or-ing diode. "▲" Magnetic Amplifier.

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.  
 Total Max. Power of VO1 and VO2 must be less than 350Watt.

### MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 1.67kg (3.68 lb.)



### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

ASSIGNMENT	DC INPUT			STATUS/CONTROL			
	+Vin	-Vin	G	EN#	DEG#	INH#	FAL#
CNTR & PIN #	46	47	45	27	38	39	42
QUAD OUTPUT							
ASSIGNMENT	VO1	VO1S+	VO1S-	VO1Adj.	VO1C.S.	VO2	VO2S+
CNTR & PIN #	1,2,3,4	30	34	29	35	13,14,15,16,17,18	33
ASSIGNMENT	VO2Adj.	VO2C.S.	VO3	VO3S+	VO3C.S.	VO4	DC COM
CNTR & PIN #	32	41	20	36	44	21	5,6,7,8,9,10,11,12,19,24

### DERATING CURVE

