



# Total Power International, Inc.

## UNIVERSAL AC INPUT HARMONIC CORRECTION AC-DC HOT-SWAP CompactPCI QUAD OUTPUT 175 WATTS CURRENT SHARING SWITCHING POWER SUPPLIES TPAC175P & TPAC175D SERIES



### FEATURES:

- 175W IN 3U X 8HP EUROCARD PACKAGE
- UNIVERSAL AC INPUT WITH PFC
- INTERNAL OR-ING DIODES FOR N+1 REDUNDANCY
- HOT-SWAPPABLE
- DROOP CURRENT SHARING
- EMI MEET EN 55022 / FCC CLASS A
- CE MARKING COMPLIANCE
- FULLY COMPLIANT WITH PICMG

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** Typ. 90-264Vac with PFC.  
**Power Factor Correction:** Meet Harmonic Correction IEC 61000-3-2. Power Factor typ. 0.98.  
**Input Connector:** PCIH47M400A1 for TPAC175P.  
 DIN41612 M24/8 for TPAC175D.  
**Input Frequency:** 47-63Hz.  
**Inrush Current:** < 30A at 230Vac by adding thermistor.  
**Input Current:**  
 2.2A at 115Vac/1.1A at 230Vac for TPAC175D.  
 2.4A at 115Vac/1.2A at 230Vac for TPAC175P.  
**Dielectric Withstand:** Meet IEC 60950-1 regulation.  
**EMI:** Meet EN 55022 / FCC Class A.  
**Hold-up Time:** 5mS at 115V & 230Vac after power fail signal.  
**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:** Installed NTC for thermal sensor at [DEG#] pin.  
**Earth Leakage Current:** Less than 0.5mA at 230Vac.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Wattage:** Typ. 175W continuous.  
**Output Connector:** PCIH47M400A1 for TPAC175P.  
 DIN41612 M24/8 for TPAC175D.  
**Line Regulation:** Typ. 0.5%.  
**Load Regulation:** VO1 & VO2 typ.  $\pm 1.0\%$ .  
 VO3 & VO4 typ.  $\pm 2.0\%$ .  
**Noise & Ripple:** Typ. 1% peak-peak or 50mV, whichever is greater.  
**OVP:** Built-in at VO1 & VO2.  
**Adjustability:** Available at VO1 & VO2. VO3 factory set.  
**Remote Sensing:** Available at VO1 & VO2.  
**Hot-Swap:** Available.  
**N+1 Redundancy:** Installed with OR-ing diodes for N+1 redundancy operation.  
**Current Sharing:** Droop current sharing at all output.  
**Power OK Signal:** Available for VO1 & VO2.  
**Over Current Protection (OCP):** Installed in all outputs.  
**Overload Protection (OLP):**  
 Fully protected against output overload and short circuit.  
 Consult factory for special OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** Typical 75%.  
**Switching Frequency:** 100 KHz.  
**Circuit Topology:** Half-bridge circuit.  
**Transient Response:** Typ. 1.0mS for a 25% load change.  
**Safety Standard:** IEC 60950-1/UL 60950-1 Class I.  
**Construction:** Eurocard 3U x 8HP x 160mm  
 CompactPCI format. Front Panel with either Ordinary handle or 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°C to +85°C.  
**Temperature Coefficient:** Typ.  $\pm 0.02\%/^{\circ}\text{C}$ .  
**Cooling:** At least 20CFM(600LFM) airflow is required to deliver full rating load.  
**Power Density:** 3.2 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.	Typ.	Volt.	Max.	Typ.	Volt.	Max.	Peak	Typ.	Volt.	Max.	Peak
TPAC175P-490(E)	2A	20A	+5V	35A	10A	+3.3V	20A	3.0A	+12V #	5.0A	6A	0.5A	-12V	1.0A	1.0A
TPAC175P-490(O)	2A	20A	+5V	35A	10A	+3.3V	20A	3.0A	+12V #	5.0A	6A	0.5A	-12V	1.0A	1.0A
TPAC175D-490(O)	2A	20A	+5V	35A	10A	+3.3V	20A	3.0A	+12V	5.0A	6A	0.5A	-12V	1.0A	1.0A

Symbol: "★" OVP built-in. "@" Adjustable. "(@)" Adjustable factory set.. "#" Remote sensing. "=" Droop Load Sharing. "⊙" Installed with Or-ing diode.

"▲" Magnetic Amplifier. "●" Installed with Post Regulator.

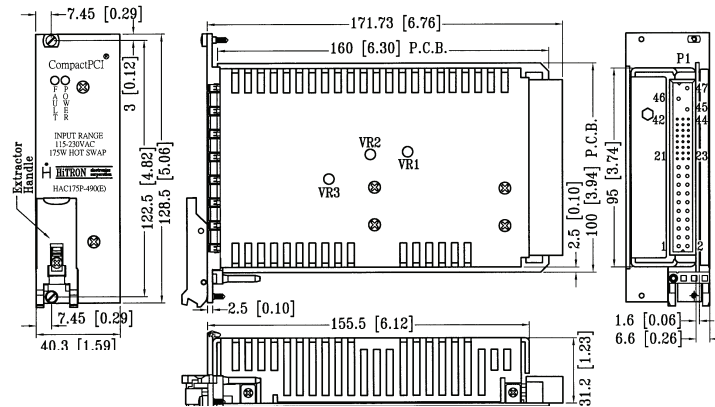
Remark: Peak load less than 60sec. with duty cycle <10%.

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.

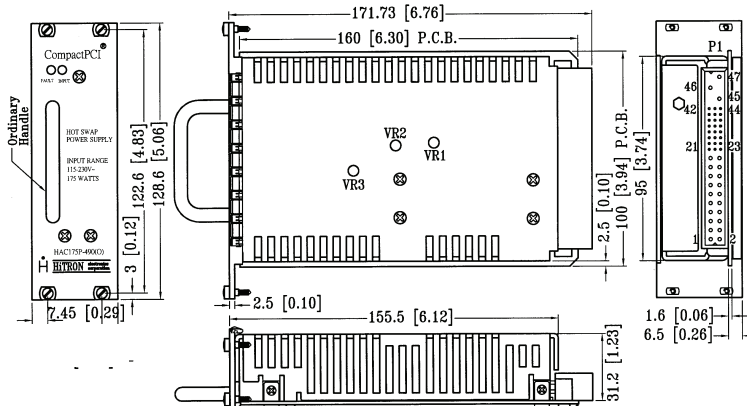
### MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 666.0g (23.5 Oz.)

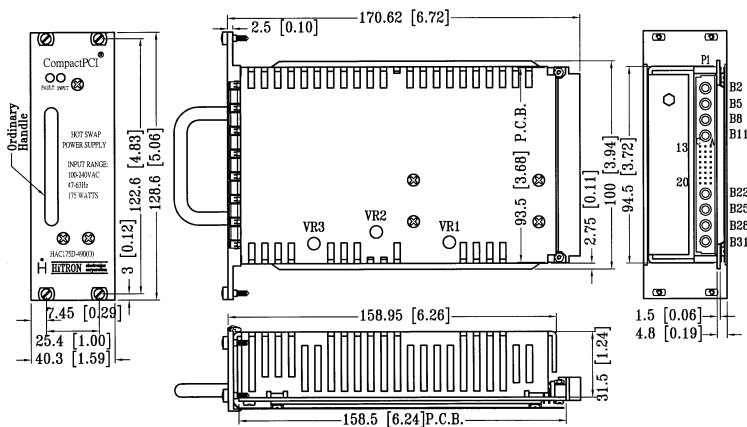
#### TPAC175P-490(E)



#### TPAC175P-490(O)



#### TPAC175D-490(O)



### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

ASSIGNMENT	PIN NO.
AC-L	47
AC-N	46
AC-GND	45
VO1	1,2,3,4
VO1 S +	30
VO1 S -	34
VO2	13, 14, 15, 16, 17, 18.
VO2 S+	33
VO3	20
VO3 S+	36
VO4	21
DC COM	5, 6, 7, 8, 9, 10, 11, 12, 19, 24.
EN#	27
DEG #	38
INH #	39
FAL #	42

Mating connector: PCIH47F400A1

### INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

ASSIGNMENT	PIN NO.
AC-L	B2
AC-N	B5
AC-GND	B11
VO1	B22
VO1 S +	A17
VO1 S -	A16
VO2	B13,14,15,16, 17,18.
VO2 S+	A18
VO3	B19
VO4	B20
DC COM	B25
EN#	C13
DEG #	C14
INH #	A14
FAL #	C15

Mating connector: DIN 41612 M24/8-F