



UNIVERSAL AC INPUT HARMONIC CORRECTION AC-DC HOT-SWAP CompactPCI QUAD OUTPUT 175 WATTS CURRENT SHARING SWITCHING POWER SUPPLIES HAC175P & HAC175D 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 HAC175P.
 DIN41612 M24/8 for HAC175D.
Input Frequency: 47-63Hz.
Inrush Current: < 30A @ 230Vac by adding thermistor.
Input Current:
 2.2A @115Vac/1.1A @230Vac for HAC175D.
 2.4A @115Vac/1.2A @230Vac for HAC175P.
Dielectric Withstand: Meet IEC 60950-1 regulation.
EMI: Meet EN 55022 / FCC Class A.
Hold-up Time: 5mS @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: Less than 0.5mA @230Vac.

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.
Output Current: See Ratings Chart.
Output Wattage: Typ. 175W continuous.
Output Connector: PCIH47M400A1 for HAC175P.
 DIN41612 M24/8 for HAC175D.
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: Typ. 75-78%.
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. $\pm 0.02\%$ /°C.
Cooling: At least 20cfm (600lfm) airflow is required to deliver full rating load.
Power Density: 3.2 Watts /Cubic Inch.

Note: 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.

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
HAC175P-490(E)	0.0A	20A	+5V	35A	10A	+3.3V	20A	3.0A	+12V #	5.0A	6A	0.5A	-12V	1.0A	1.0A
HAC175P-490(O)	0.0A	20A	+5V	35A	10A	+3.3V	20A	3.0A	+12V #	5.0A	6A	0.5A	-12V	1.0A	1.0A
HAC175D-490(O)	0.0A	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.

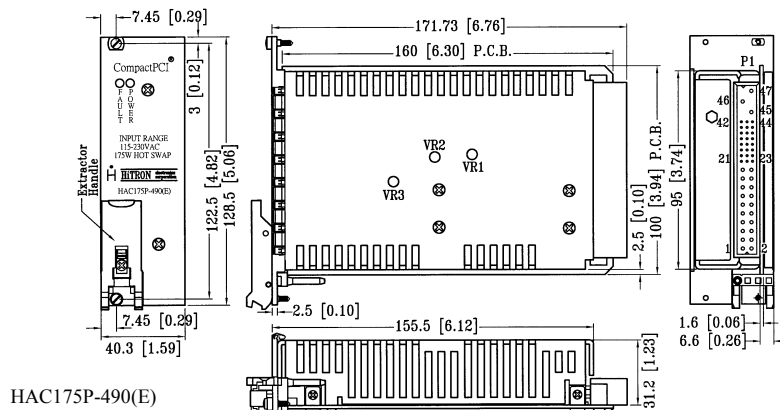
"▲" Magnetic Amplifier. "●" Installed with Post Regulator.

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

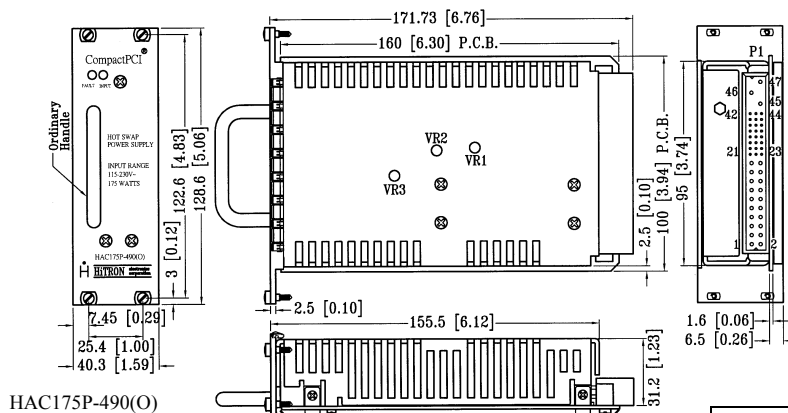
Max. load is the continuous operating load of each rail. But the max. load of each rail can't be drawn from all outputs at the same time.

MECHANICAL DIMENSIONS: MM [INCHES]

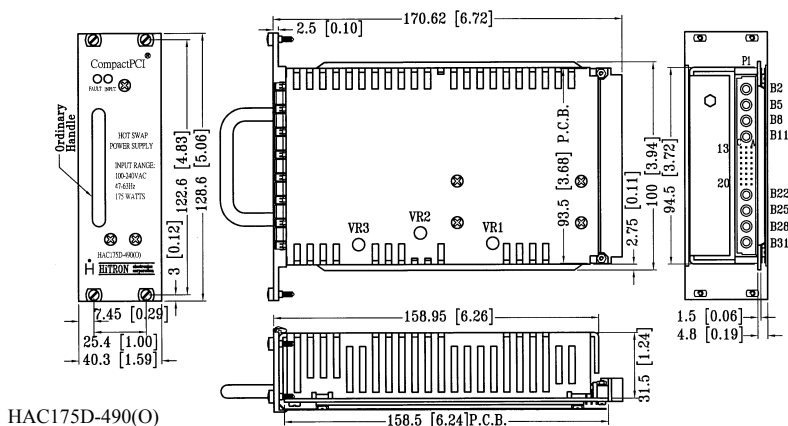
WEIGHT: 666.0g (23.5 Oz.)



HAC175P-490(E)



HAC175P-490(O)



HAC175D-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

HAC175P

HAC175D