H HiTRON

UNIVERSAL INPUT HARMONIC CORRECTION AC-DC N+1 REDUNDANCY AND ACTIVE CURRENT SHARING ENCLOSURE BOX SINGLE & MULTI-OUTPUT 400 WATTS INTERNAL SWITCHING POWER SUPPLIES HVP400 SERIES



FEATURES:

- **ACCOMMODATE UNIVERSAL AC SOURCES**
- **MEET IEC 61000-3-2 HARMONIC CORRECTION**
- **THIRD-WIRE CURRENT SHARING**
- **OR-ING DIODES FOR N+1 REDUNDANCY**
- **HOT-SWAPPABLE**
- **MEET UNIVERSAL SAFETY STANDARDS**
- **EMI MEET EN 55022 CLASS B**
- **CE MARKING COMPLIANCE**

SPECIFICATION

INPUT SPECIFICATION

Input Voltage: Typ. 90-264Vac with PFC.
Input Connector: IEC320-3P & On/Off Switch.
Input Frequency: 47-63Hz.
Inrush Current: ≤ 30A @230Vac by active inrush current limiter circuit.
Input Current: 5.8A @ 115Vac, 2.6A @ 230Vac.
Dielectric Withstand: Meet IEC 60950-1.
EMI: Meet EN 55022 Class B.
Hold-up Time: Typ. 7.2-12mS @ 115Vac and Typ. 35-42mS @ 230Vac.
Power OK Signal: Available at VO1 & VO2.
Power Factor Correction: Meet IEC 61000-3-2 Harmonic Correction. PF typ. 0.92-0.98.
Over Temp. Protection: By thermostat.
Power Disable: Pin P3-2/open=shut-down. Pin P3-2/short=Operation.
Power On LED Indicator: Installed.
Earth Leakage: Less than 0.5mA @230Vac.

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.
Output Current: See Ratings Chart.
Output Connector: B-S/S-T/Molex MLX5045.
Output Wattage: Typ. 350-400 watts.
Line Regulation: Typ. 0.1%.
Load Regulation: Main VO1 typ. ±1.0%. Aux.VO2 typ. ±1-2% (Magnetic Amp.). Aux.VO3 typ. ±3.0% (Couple Common Choke).
Noise & Ripple: Typ. 1.0% peak to peak.
OVP: Built-in at main VO1.
Remote Sense: Available at VO1 & VO2 rail.
Redundancy: Available for N+1 redundancy operation for sharing the load.
Current Sharing: 3rd-wire current sharing for VO1 & VO2 rails.
OR-ing Diode: Installed in VO1,2,3.
Adjustability: Available at VO1 & VO2.
Output LED Indicator: Installed in VO1,2,3.
Overload Protection (OLP): Fully protected against output overload and short circuit. Consult the factory for OLP setting.

GENERAL SPECIFICATION

Efficiency: Typ. 65-70%.
Switching Frequency: Fixed frequency at 56K Hz.
Circuit Topology: PWM Fixed Frequency Forward Circuit.
Transient Response: Output voltage returns in less than 3mS following a 25% load change.
Safety Standard: UL 60950-1/EN 60950-1 Class I.
Hot Swappable: Available.
Power Density: 2.95 Watts / Cubic Inch.
Operating Temperature: 0 to +50°C under 35 cfm forced air cooling for full load.
Storage Temperature: -20 to +85 °C.
Temperature Coefficient: Typ. 0.04% /°C.
Cooling: At least required 35 cfm forced cooling air flow for full load operation.
MTBF: 180,000 hours at full load and 25°C by MIL-HDBK-217F spec.
Construction: Enclosure box.

Note: Due to requests in market and advances in technology, specifications subject to change without notification.

In application

OUTPUT VOLTAGE / CURRENT RATINGS CHART

SINGLE OUTPUT

MODEL NO.	MAIN VO1 @★#≡⊙	
	Typ.	Volt.
HVP400-S033850	85.0A	3.3V
HVP400-S050700	70.0A	5.0V
HVP400-S120300	30.0A	12.0V
HVP400-S150250	25.0A	15.0V
HVP400-S240160	16.0A	24.0V
HVP400-S280140	14.0A	28.0V
HVP400-S360110	11.0A	36.0V
HVP400-S480085	8.5A	48.0V

DUAL OUTPUT

MODEL NO.	MAIN VO1 @★#≡⊙		AUX. VO2 @▲◇#≡⊙	
	Typ.	Volt.	Typ.	Volt.
HVP400-D033E	70.0A	+3.3V	20.0A	5.0V
HVP400-D033I	70.0A	+3.3V	10.0A	12.0V
HVP400-D033K	70.0A	+3.3V	8.0A	15.0V
HVP400-D033M	70.0A	+3.3V	5.0A	24.0V
HVP400-D050I	55.0A	+5.0V	10.0A	12.0V
HVP400-D050K	55.0A	+5.0V	8.0A	15.0V
HVP400-D050M	55.0A	+5.0V	5.0A	24.0V

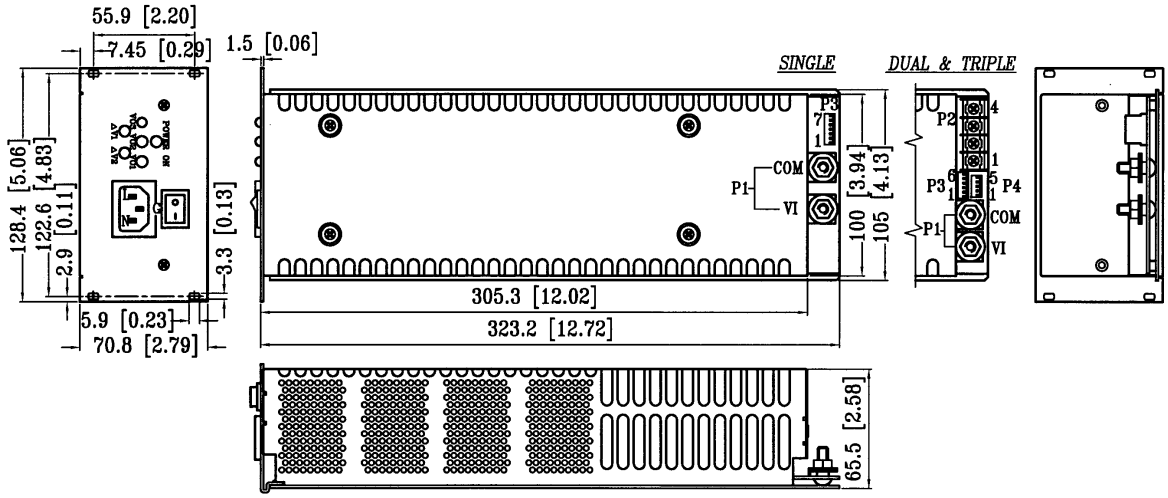
TRIPLE OUTPUT

MODEL NO.	MAIN VO1 @★#≡⊙		AUX. VO2 @▲◇#≡⊙		AUX. VO3 ■◇⊙	
	Typ.	Volt.	Typ.	Volt.	Typ.	Volt.
HVP400-T033EI	70.0A	+3.3V	25.0A	5.0V	3.0A	12.0V
HVP400-T033II	70.0A	+3.3V	10.0A	12.0V	3.0A	12.0V
HVP400-T050DI	50.0A	+5.0V	25.0A	3.3V	3.0A	12.0V
HVP400-T050II	50.0A	+5.0V	10.0A	12.0V	3.0A	12.0V
HVP400-T050IE	50.0A	+5.0V	10.0A	12.0V	3.0A	5.0V
HVP400-T050MI	50.0A	+5.0V	5.0A	24.0V	3.0A	12.0V
HVP400-T050KK	50.0A	+5.0V	8.0A	15.0V	3.0A	15.0V

Symbol: "★" OVP built-in. "@" Adjustable. "◇" Floating(or isolated) output. "#" Remote sensing.
"≡" Active current sharing. "▲" Installed with magnetic amplifier. "⊙" Installed with OR-ing diode.
"■" Couple common choke.

MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 2,400.0g (85.0 Oz.)



INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

	AC INPUT			SINGLE O/P		DUAL & TRIPLE O/P						ASSORTED SIGNALS										
ASSIGNMENT	AC-L	AC-N	AC-G	VO1	DC-COM	VO1	DC-COM	+VO2	-VO2	+VO3	-VO3	+VO1#	-VO1#	+VO1≡	-VO1≡	+VO2#	-VO2#	+VO2≡	-VO2≡	Power Good	Power Disable	DC COM
CNTR & PIN#	L	N	G	P1-V1	P1-COM	P1-V1	P1-COM	P2-4	P2-3	P2-2	P2-1	P3-4	P3-6	P3-3	P3-5	P4-4	P4-3	P4-2	P4-5	P4-1	P3-2	P3-1

Mating connector: P1 &P2 No-needed. P3 & P4 Molex MLX5051.