Multi-Output HP6 AC-DC Front End Data Sheet

Features

- Compact 1U design
- N+1 redundancy with hot plug capability
- Up to four individually regulated outputs
- I^2C interface with interrupt capability
- Hot-swap with low insertion/extraction force connector
- Power factor corrected
- No minimum load required
- 5 V @ 1 A standby output
- Single-wire current sharing
- Self-contained ORing diodes
- Current limit and overvoltage protection
- Full power up to 50 ºC
- TUV, cTUVus & CB report
- 600 watts per module

Description

The HP6 provides up to 600 watts of output power with one to four main outputs ranging from 0.8 to 12 Volts, plus a 5V standby output. These hot-swap products incorporate internal ORing diodes and support paralleling and current sharing for up to three main outputs, excluding the -12V output. This multiple-output, hot-swap capability accelerates time to market in networking applications requiring several high-current rail voltages and/or instances where sufficient board space is not available to implement distributed power and intermediate bus architectures.
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HP6 Front End Models	V1		V2		V3		V4	
	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps
HP6-X8X8D2D-O	X	80	X	80	12	20	-12	3
HP6-X4X8D4D-O	X	40	X	80	12	40	-12	3
HP6-X8X4D4D-O	X	80	X	40	12	40	-12	3
HP6-X8X4D2D-O	X	80	X	40	12	20	-12	3
HP6-X4X8D2D-O	X	40	X	80	12	20	-12	3
HP6-X4X4D4D-O	X	40	X	40	12	40	-12	3

Output Voltage X = A (2.0V); B (3.3V); C (5V); T (2.5V); V (1.8V); W (1.5V); X (1.2V); Y (1V); Z (0.8V)
Options O = B (I^2C); M (Output power good – TTL high); N (Power fail – TTL high); R (Reverse airflow)
Please contact Power-One for additional model combinations.

Input Specifications

Input voltage range: 85 to 264 VAC, 47 to 63 Hz
Power Factor: 0.99 at full load and nominal line
Inrush Current: 40 A peak hot and cold start
Input Protection: Internal 15 A line fuse

Output Specifications

Output Power: 600 W maximum
Overshoot/Undershoot: Less than 1% at turn-on or turn-off. Less than 3% for 50% to 100% load step.
Start-Up Time: Less than 2 seconds
Efficiency: 78% typical measured at full load, nominal input
Hold-up Time: 20 ms minimum at full load and low line
Single Wire Current Share (V1, V2, and +12V): 10% full load rating.
Load Regulation: 0.5% with remote sense, 2% without
Line Regulation: 0.1% over entire operating range
Cross Regulation: Less than 0.5%
Minimum Load: No minimum load required
Overcurrent Protection: All outputs set to 115-135% of full rated load with automatic recovery
Overtemperature Protection: Automatic shutdown with auto recovery.
Remote Sense: Compensates for voltage drop of up to 0.5 V to the load (V1, V2, and +12V). Shorted sense lead protection.
Overvoltage Protection: All outputs set at 115% to 135% of nominal. Reset by cycling input power.
Output Noise and Ripple: PARD: 1% or 50 mV p-p, whichever is greater, measured at 20 MHz bandwidth.

Mechanical Specifications

Size: 1.6" H x 5" W x 11.5" D
Input Connector: Front panel IEC
Output Connector: FCI power blade
MTBF: 250,000 hours calculated at 25 °C, Bellcore Standard
Warranty: Two years from date of shipment; standard product only.

Signals and Controls

LED Output Good Indicator: Front panel green LED indicates power supply is good; amber indicates fault.
LED AC Good Indicator: Front panel green LED indicates Ac input voltage is present and above minimum level.
Output Good Signal*: TTL compatible signal, normally high. Goes low when power supply is out of specified range.
Power Fail Signal*: TTL compatible signal, normally high (indicating Vin is present and above minimum level).
Enable*: Normally TTL High, drive low to enable.
*All interface signals are TTL compatible

I^2C Interface

Event Driven Messages:
- Notification of fan speed abnormality
- Output voltage under specified 'good' range
- Output voltage over specified 'good' range (software OVP)
- Temperature abnormalities

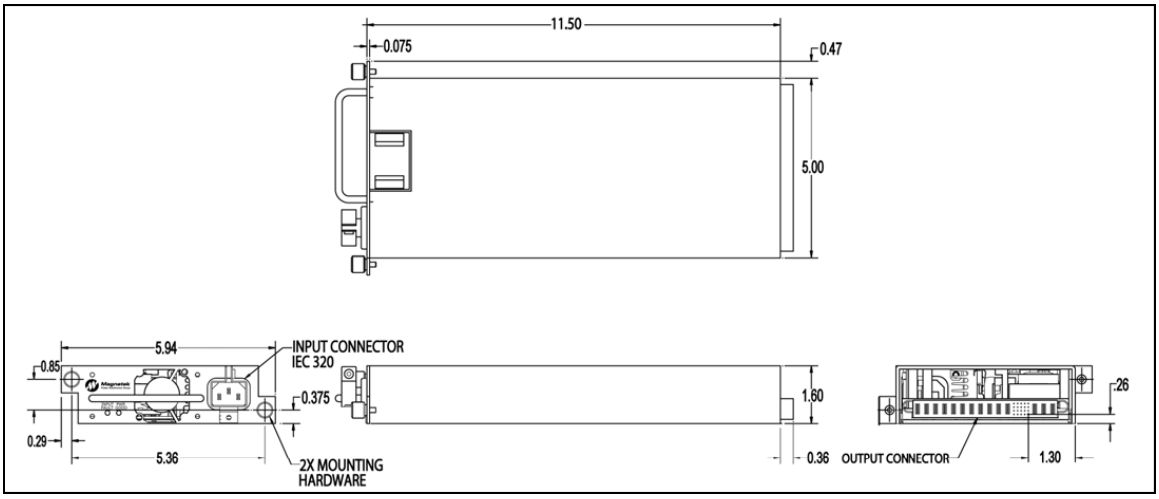
Sensor Device Commands:
- Get voltage readings
- Get temperature readings
- Get fan speed readings

FRU (Field Replaceable Unit) Information Storage:
- Manufacturer's name
- Product name
- Product part/model number
- Product version/revision
- Product serial number

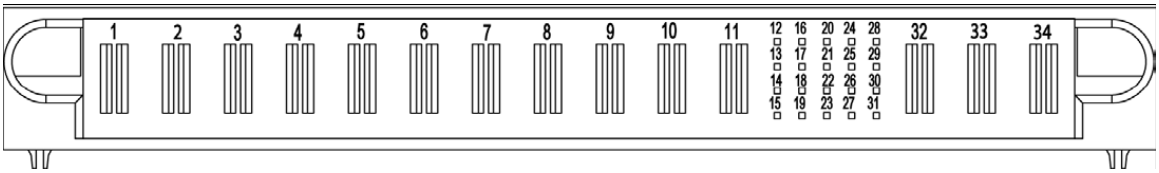
Safety & Environmental

Operating Temperature: 0 to 50 °C
Storage Temperature: -40 °C to +85 °C
Operating Humidity: Maximum 95% RH non-condensing
Operating Altitude: 10,000 feet
Non-operating Altitude: 40,000 feet
Temperature Coefficient: 0.02% per °C within rated load
Safety Agency Compliance: TUV, cTUVus & CB report
EMI: Meets EN55022, Class B
Harmonic Suppression: Meets EN6100-3-2
Input Transient Protection:
Electrostatic Discharge: EN61000-4-2, Criteria B
Radiated, Radio-Frequency, Electromagnetic Field: EN61000-4-3, Criteria A
Electrical Fast Transients/Burst: EN61000-4-4, Criteria B
Voltage Fluctuations and Flickers: EN61000-3-3, Criteria B
Surge Test: EN61000-4-5, Criteria B
Conducted Immunity: EN61000-4-6, Criteria A
Dielectric Withstand:
Input-to-ground: 2200 VDC
Input-to-output: 4300 VDC
Output-to-case: 25 VDC
Ac Leakage Current: 1.2 mA maximum at 240 VAC, 50 Hz

HP6 Outline Drawings and Dimensions



HP6 Connector Pin Descriptions



HP6 PIN Numbers and Signal Names

1 Ground	18 Share V2
2 Ground	19 +Sense V2
3 V2 Output	20 SDA
4 V2 Output	21 SCL
5 V2 Output	22 Share V3
6 Ground	23 Power Fail OK
7 Ground	24 5V Standby
8 Ground	25 5V Standby
9 V1 Output	26 +Sense V3
10 V1 Output	27 Power OK
11 V1 Output	28 Present
12 Dc Enable	29 A0
13 A1	30 Interrupt
14 -Sense	31 Share V1
15 +Sense V1	32 Ground
16 V4 Output (-12V)	33 V3 Output (+12V)
17 V4 Output (-12V)	34 V3 Output (+12V)

HP6 J5 Connector Detail