

350-1400 Watts

HPS35 Series

Total power: 350W
Input voltage: 90-264VAC
of outputs: One & standby



Special Features

- Active Power Factor Correction
- EN61000-3-2 compliant
- CISPR22, EN55022 Class-B conducted/radiated EMI
- EN61000 immunity standards
- 5V_{SB}@2A
- Overvoltage protection (OVP)
- Overcurrent protection (OCP)
- Overtemperature protection (OTP)
- AC OK signal and indicator LED
- DC OK signal and indicator LED
- Remote inhibit
- Remote Sense on main output
- Hot Plug
- N+1 Redundant
- Optional I²C board (pending)
 - Voltage Monitoring
 - Current Monitoring
 - Remote on/off
 - DC OK / AC OK
 - Temperature
 - Fan fail

Environmental

Operating temperature: 0°C to +50°C ambient, derate output @ 2.5% per degree from 50°C to 70°C

Shock: Operating - 4g, half sine, 22 ms minimum duration, all 6 faces

Non-operating: 30g, half sine, 6 ms minimum duration, all 6 faces

Random Vibration

Operating: 1g rms, 20 min/axis

Non-operating: 12.5g rms, 20min/axis

Humidity: 95% non-condensing

Storage temperature: -40°C to +85°C

Temperature coefficient: 0.04% per °C

Cooling: Internal DC fans

Electrical Specs

Input

Input voltage	90-264 VAC typical
Frequency	47-440 Hz
Inrush current	40 A peak typical @ 25°C
Efficiency	80% typ @ full load, 230 VAC
Power factor	0.98 typical @ 115 VAC, full load
Turn-on time	AC - ON 2 sec.
	Inhibit / Enable 160 ms
EMI filter standard	CISPR 22 EN55022 Level "B"
Leakage current standard	<0.5 mA max @ 230 VAC @ 60Hz (per module)
Radiated EMI	CISPR 22 EN55022 Level "B"
Holdup time	20 ms minimum (independent of input VAC)
AC OK	5 ms early warning minimum before outputs lose regulation
Harmonic distortion	Meets EN61000-3-2
Isolation	Meets EN60950

Output

Adjustability	±5% of nominal output voltage
Overall reg	<3%
Ripple	1% of Vout Pk - Pk (20 MHz bandwidth)
Dynamic response	4% with 50% load step
Recovery time	To within 1% in <300 µsec
Overcurrent protection	115%-130% of rated output current
Short circuit protection	Protected for continuous short circuit. Auto recovery.
Overvoltage protection	120 - 140% . AC Reset.
Reverse voltage protection	100% of rated output current
Thermal protection	Main and Aux disabled when internal temp exceeds safe operating range.
Remote sense	Up to 0.5 V total drop
Single wire parallel	Current share to within 10% of total rated current on main output
DC OK	±5% of nominal
Minimum load*	None required (as a standalone module)
Standby voltage	5 VDC @2A max. present whenever AC input is applied
Global Inhibit	Logic "0"

*3A minimum required for current share operation

Safety

UL	UL60950-1, 1st Ed. (April 1, 2003)
CSA	CSA C22.2 60950-1-03
TUV	EN60950-1:2001 (1st Ed.)
CB	IEC60950-1, 1st Ed. (2001)
CE	Mark (LVD)

AMERICAS

5810 Van Allen Way
Carlsbad, CA 92008
Telephone: 760-930-4600
Facsimile: 760-930-0698

EUROPE

Astec House, Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX, UK
Telephone: 44 (1384) 842-211
Facsimile: 44 (1384) 843-355

ASIA

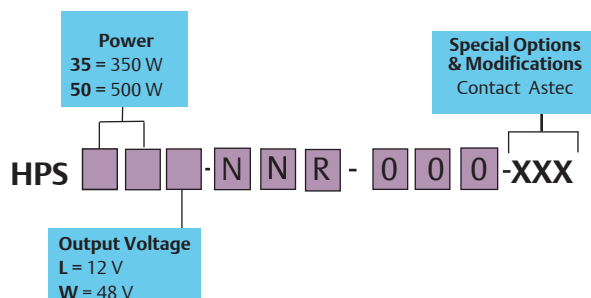
Units 2111-2116, Level 21
Tower1, Metroplaza
223, Hing Fong Road
Fwai Fong, New Territories
Hong Kong
Telephone: 852-2437-9662
Facsimile: 852-2402-4426



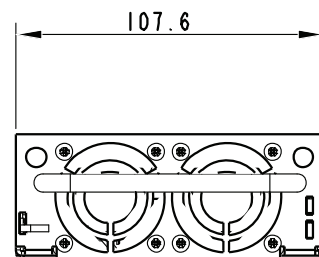
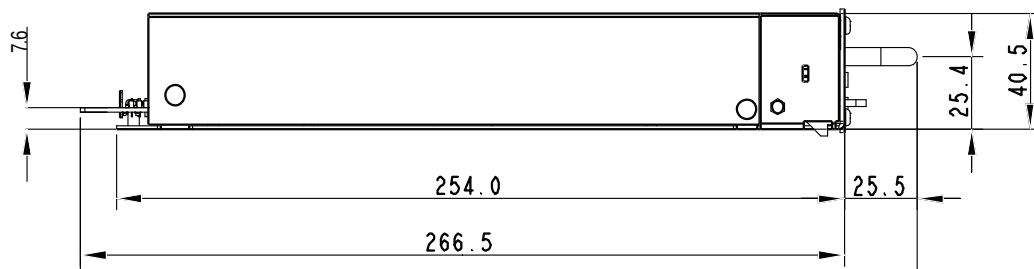
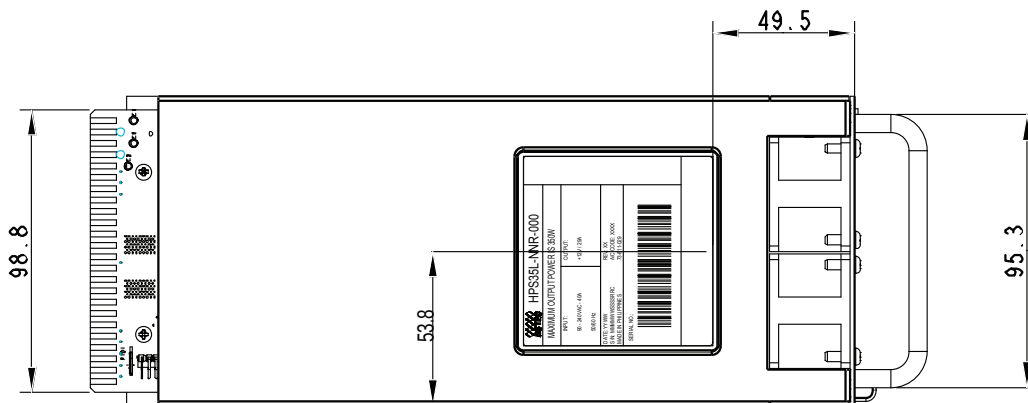
Modules

Watts	350	
Input Voltage	90-264	
Module ID	HPS35	
Code	Volts	Output Amps
L	12.0	29.2
W	48.0	7.3

Module Code	Max. Size (H x W x L)	Max. Module Power	Number per Rack	Unit Weight (lbs)
HPS35	1.6" x 4.3" x 10.5"	350 W	4	3.2



HPS35L-NNR-000

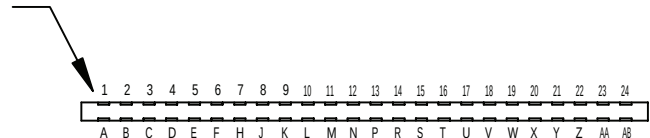


Pin Assignments

HPS35 Module

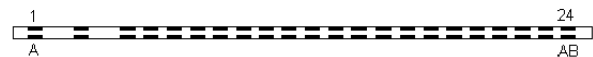
Top		Bottom	
Pin	Description	Pin	Description
1	AC (L)	A	AC (L)
2	BLANK	B	BLANK
3	AC (N)	C	AC (N)
4	BLANK	D	BLANK
5	GND	E	GND
6	SWP	F	-SENSE
7	5V RTN	H	+SENSE
8	COMMON	J	COMMON
9	COMMON	K	COMMON
10	COMMON	L	COMMON
11	COMMON	M	COMMON
12	COMMON	N	COMMON
13	COMMON	P	COMMON
14	V OUT	R	V OUT
15	V OUT	S	V OUT
16	V OUT	T	V OUT
17	V OUT	U	V OUT
18	V OUT	V	V OUT
19	V OUT	W	V OUT
20	BLANK	X	INHIBIT
21	+5 STANDBY	Y	TBA
22	TBA	Z	AC OK
23	FAN MON	AA	DC OK
24	I ² C CLK	BB	I ² C DATA

TOP SIDE 1-24



Unit Connector

Card Edge Connector with gold fingers double-sided 1.6mm FR-4 PCB



Mating connector:

EDAC 307-048-520-201 or equivalent

Rating: 5A per contact



Pin 6 - SWP (IN/OUT Signal) (Single Wire Parallel)

PIN 6 + ϕ SWP Pin is used when connecting units in parallel to achieve current sharing. Current share accuracy is typically 10% of full load.

Note:
SWP Voltage is 5V at 100% load current

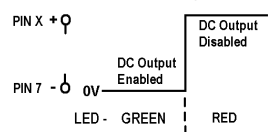
Pin 23 - Fan Monitor (OUT Signal)



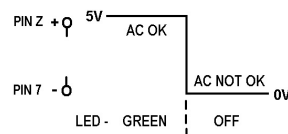
Pin F - --Remote Sense Pin H - + Remote Sense

Compensates for up to 0.5V drop. Recommended shielded twisted wire pair.

Pin X - Module Inhibit (IN Signal)

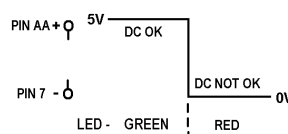


Pin Z - AC OK (OUT Signal)



Note:
Hi state: Source 100uA @ 4V
Low State: Sink 10mA @ 0.5V

Pin AA - DC OK (OUT Signal)

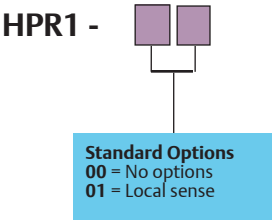


HPS35 Series

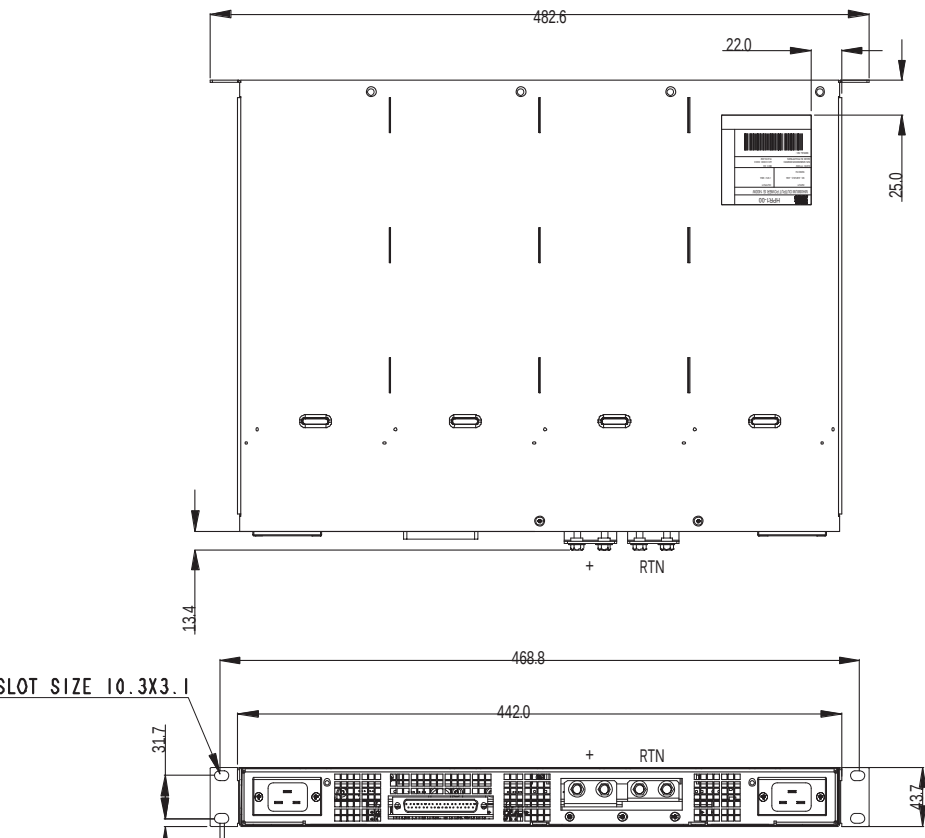
DRAWINGS

Racks		
Watts	1400 (fully populated)	
Input Voltage	90-264	
Module Used	HPS35	
Rack ID	HPR1	
Code	Volts	Output Amps
L	12.0	116.8
W	48.0	29.2

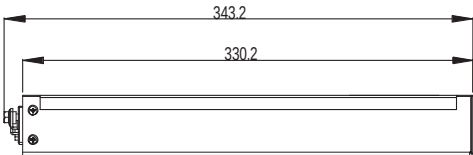
System Code	Max. Size (H x W x L)	Max. System Power	Module Distribution	Standard Size	Unit Weight (lbs.)
HPR1	1.75" x 19.0" x 13.0"	1400 W	(4 ea) HPS35	1U	8.6



HPR1 -00



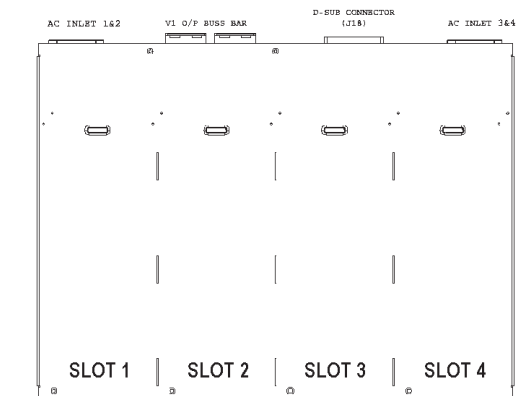
- AC Cord: (North America)**
 For all other countries, please contact factory.
- 1) Quail Electronics Series 5050 or equivalent (15A/125V)
 Supply End - NEMA 5-15P
 Equipment End - IEC 60320-C19
 - 2) Quail Electronics Series 5052 or equivalent (20A/125V)
 Supply End - NEMA 5-20P
 Equipment End - IEC60320-C19
- Blank Panel:**
 Astec P/N 73-686-000



D-sub Connector Pin outs

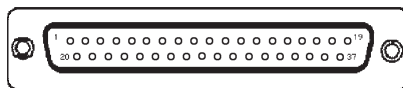
HPR1 -00

Pin	Description	Pin	Description
1	5V Return (std-by)	20	I2C CLOCK
2	+ Remote Sense	21	I2C DATA
3	- Remote Sense	22	SWP
4	5V Stand by	23	Unused (I2C_INT)
5	Unused	24	Module Inhibit
6	Module Inhibit	25	DC OK
7	DC OK	26	AC OK
8	AC OK	27	I2C_ADD#1
9	I2C_ADD#1	28	I2C_ADD#2
10	I2C_ADD#2	29	Fan Monitor
11	Fan Monitor	30	Unused
12	Global AC OK	31	Module Inhibit
13	Module Inhibit	32	DC OK
14	DC OK	33	AC OK
15	AC OK	34	I2C_ADD#1
16	I2C_ADD#1	35	I2C_ADD#2
17	I2C_ADD#2	36	Fan Monitor
18	Fan Monitor	37	Unused
19	Global Inhibit		



PSU Connector

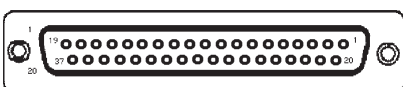
617-A-037-P-AJ-1-21 (Male socket) Amphenol



Pin Out Diagram D-sub Connector (male)

Mating Connector

617-A-037-S-AJ-1-20 (Female socket) Amphenol



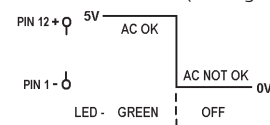
Pin Out Diagram D-sub Connector (female)

Pin 2 + Remote Sense

Pin 3 - Remote Sense

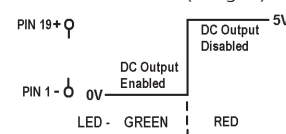
Compensates for up to 0.5V drop. Recommended shielded twisted wire pair.

Pin 12 - Global AC OK (OUT signal)



Note: AC OK signals are OR'ed together internally. If any module fails, the LED on the affected module will be off and the logic signal will indicate AC NOT OK.

Pin 19 - Global Inhibit (IN signal)



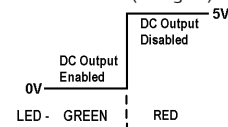
Note: All outputs disabled when Pin 19 is open or High.

Pin 22 - SWP (IN/OUT signal)

SWP Pin is used when connecting racks in parallel to achieve current sharing. Current share accuracy is typically 10% of full load.

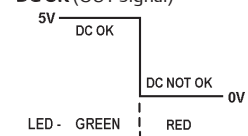
Note: SWP Voltage is 5V at 100% load current.

Module Inhibit (IN Signal)



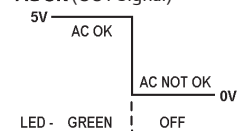
Note: Module Inhibit signals for each slot in the rack is accessible in the D-sub connector (J18). Refer to Connector Pin-out table for pin assignments. Pin 1 is the Return Pin.

DC OK (OUT Signal)



Note: DC OK signals for each slot in the rack is accessible in the D-sub connector (J18). Refer to Connector Pin-out table for pin assignments. Pin 1 is the Return Pin.

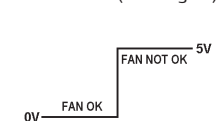
AC OK (OUT Signal)



Note: AC OK signals for each slot in the rack is accessible in the D-sub connector (J18). Refer to Connector Pin-out table for pin assignments. Pin 1 is the Return Pin.

Hi state: Source 100uA @ 4V
Low State: Sink 10mA @ 0.5V

Fan Monitor (OUT Signal)



Note: Fan Monitor signals for each slot in the rack is accessible in the D-sub connector (J18). Refer to Connector Pin-out table for pin assignments. Pin 1 is the Return Pin.

I2C_ADD#1
I2C_ADD#2
TBD