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 I^2C 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 since, 22 ms minimum duration, all 6 faces

Non-operating: 30g, half since, 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

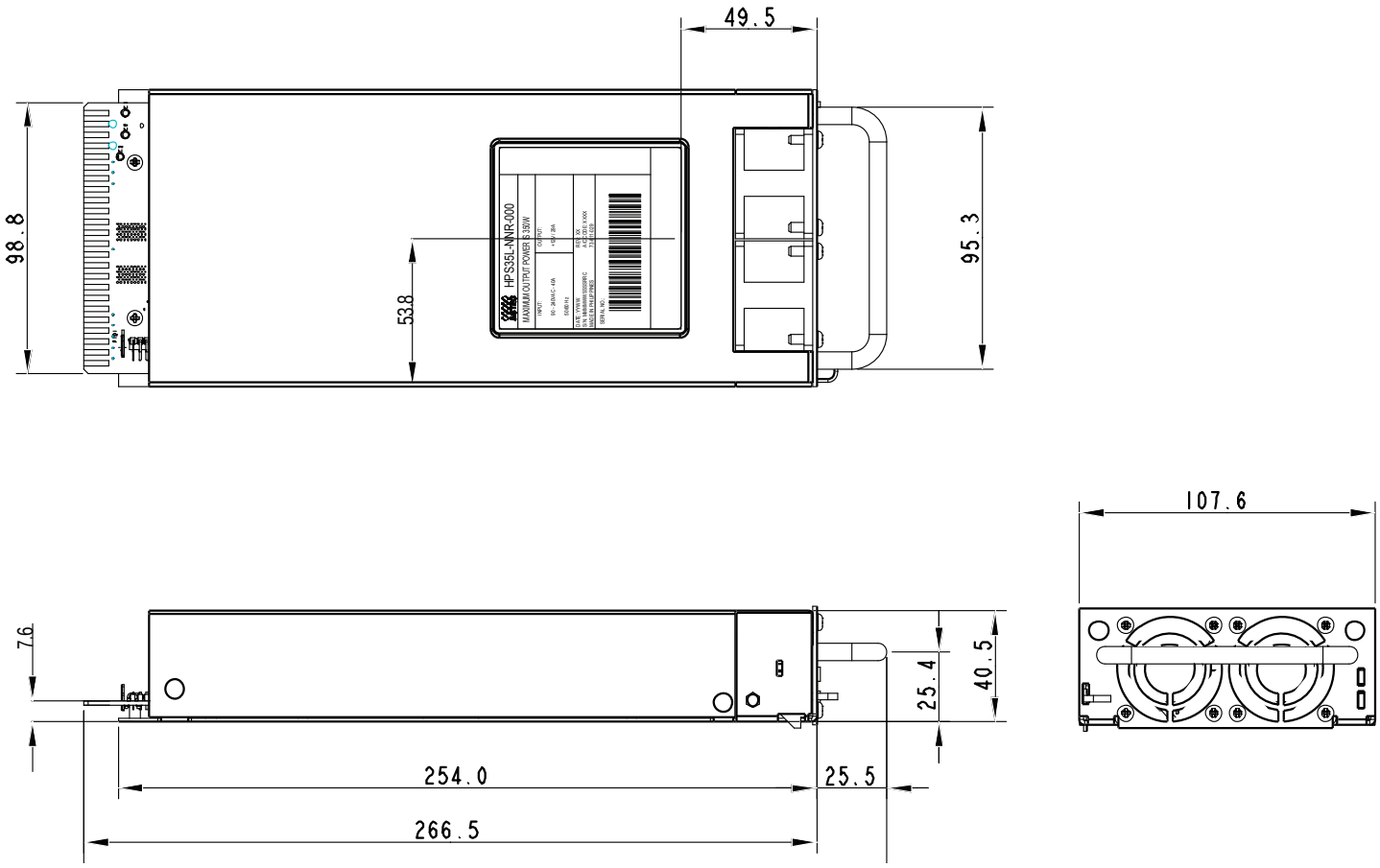
Power
35 = 350 W
50 = 500 W

Special Options & Modifications
Contact Astec

HPS □□□-NNR-000-XXX

Output Voltage
L = 12 V
W = 48 V

HPS35L-NNR-000



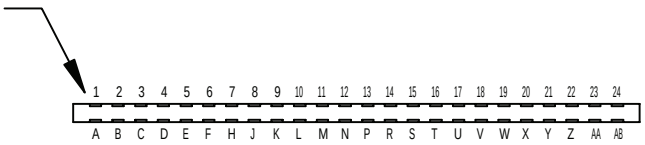
EMERSON Network Power

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	I²C CLK	BB	I²C DATA

TOP SIDE 1-24



Unit Connector

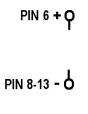
Card Edge Connector with gold fingers double-sided 1.6mm FR-4 PCB

Mating connector:

EDAC 307-048-520-201 or
equivalent

Rating: 5A per contact

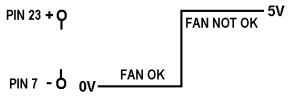
Pin 6 - SWP (IN/OUT Signal)
(Single Wire Parallel)



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

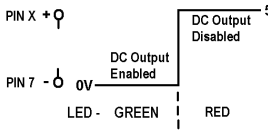
Note:
SWP Voltage is 5V at 100% load current

Pin 23 - Fan Monitor (OUT Signal)

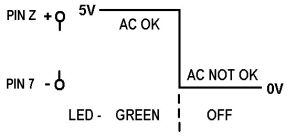


Pin F - --Remote Sense
Pin H - + Remote Sense
Compensates for up to 0.5V drop. Recommended shielded twisted wire pair.

Pin X - Module Inhibit (IN Signal)

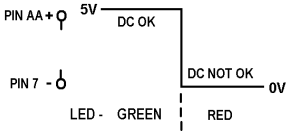


Pin Z - AC OK (OUT Signal)



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

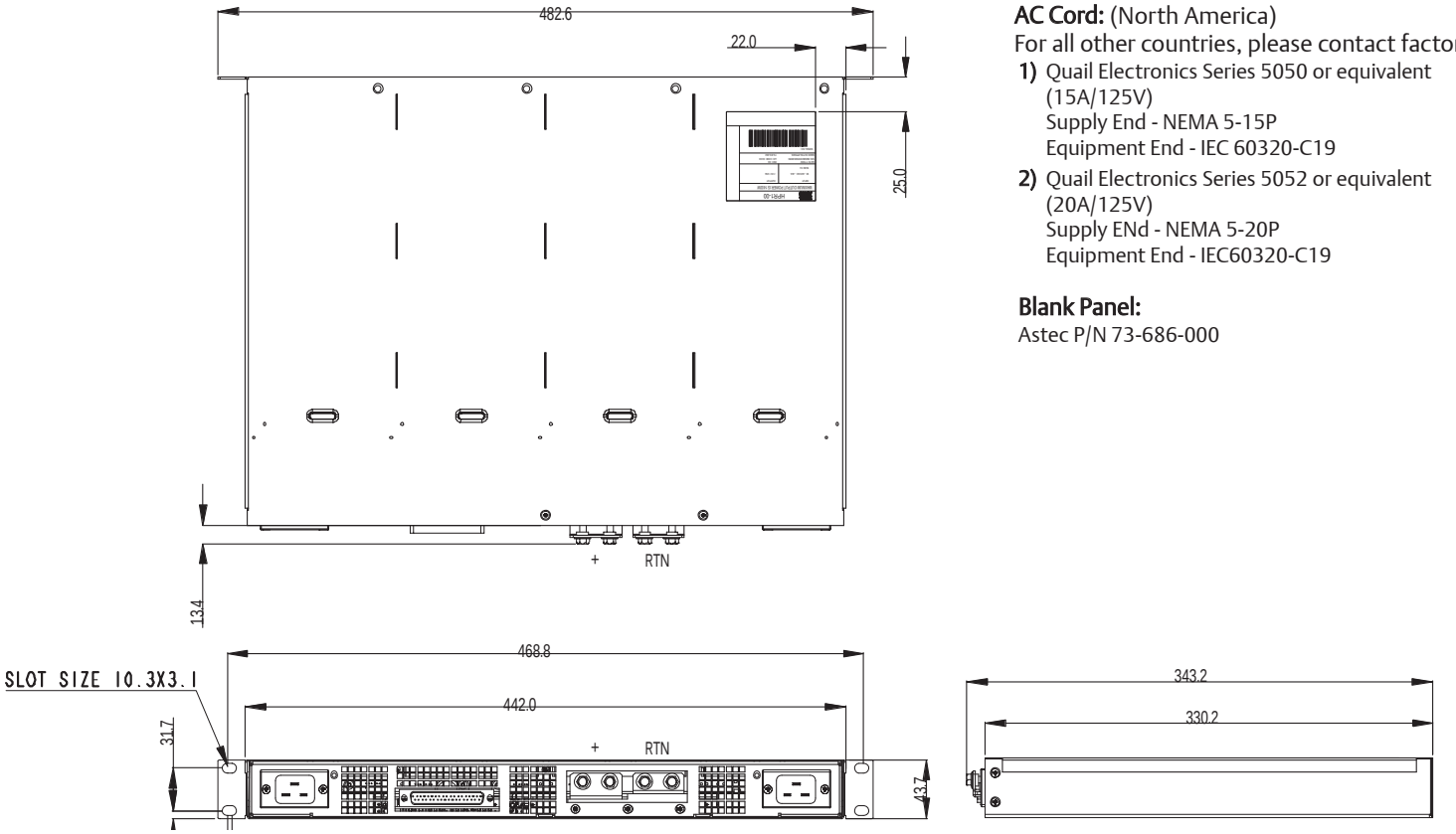
Code	Volts	Output Amps
L	12.0	116.8
W	48.0	29.2

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 - ▢▢

Standard Options
00 = No options
01 = Local sense

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

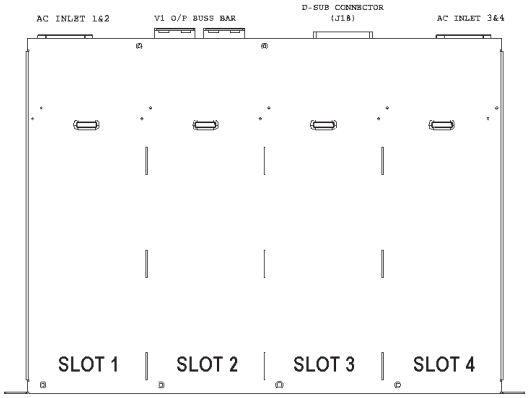
Blank Panel:
Astec P/N 73-686-000

D-sub Connector Pin outs

HPR1 -00

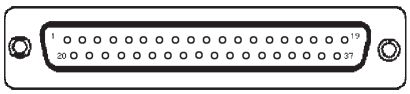
	Pin	Description
SLOT 1	1	5V Return (std-by)
	2	+ Remote Sense
	3	- Remote Sense
	4	5V Stand by
	5	Unused
	6	Module Inhibit
	7	DC OK
	8	AC OK
	9	I2C_ADD#1
	10	I2C_ADD#2
	11	Fan Monitor
	12	Global AC OK
SLOT 2	13	Module Inhibit
	14	DC OK
	15	AC OK
	16	I2C_ADD#1
	17	I2C_ADD#2
	18	Fan Monitor
	19	Global Inhibit

	Pin	Description
	20	I2C CLOCK
	21	I2C DATA
	22	SWP
	23	Unused (I2C_INT)
SLOT 3	24	Module Inhibit
	25	DC OK
	26	AC OK
	27	I2C_ADD#1
	28	I2C_ADD#2
	29	Fan Monitor
	30	Unused
SLOT 4	31	Module Inhibit
	32	DC OK
	33	AC OK
	34	I2C_ADD#1
	35	I2C_ADD#2
	36	Fan Monitor
	37	Unused



PSU Connector

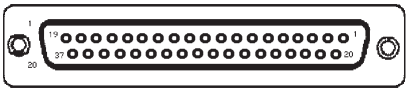
617-A-037-P-AJ-1-21 (Male socket) Amphenol



Pin Out Diagram D-sub Connector (male)

Mating Connector

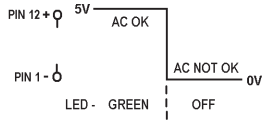
617-A-037-S-AJ-1-20 (Female socket) Amphenol



Pin Out Diagram D-sub Connector (female)

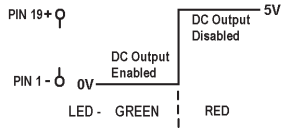
Pin 2 + Remote Sense
Pin 3 - Remote Sense
Compensates for up to 0.5V drop. Recommended shielded twisted wire pair.

Pin 12 - Global AC OK (OUT signal)



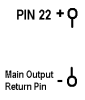
Note: AC OK signals are OR'ed together internally. If any module fails, the LED on the affected module will be off and the logic signal will indicate AC NOT OK.

Pin 19 - Global Inhibit (IN signal)



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

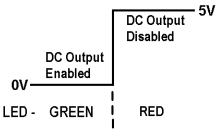
Pin 22 - SWP (IN/OUT signal)



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

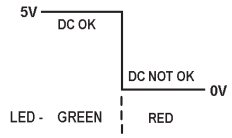
Note: SWP Voltage is 5V at 100% load current.

Module Inhibit (IN Signal)



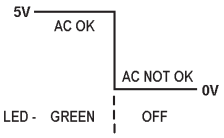
Note: Module Inhibit signals for each slot in the rack is accessible in the D-sub connector (J18). Refer to Connector Pin-out table for pin assignments. Pin 1 is the Return Pin.

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