



### FEATURES

- High power density, 8.2W / in<sup>3</sup>
- Net Weight:< 2.2 KG
- Low profile : 40.8mm (fit 1U 19" shelf – R2400 series)
- Efficiency: 84% ~ 88 % typical
- Power factor correction (meet IEC1000-3-2 requirements)
- Overvoltage & overcurrent protection
- Overtemperature warning & protection
- Redundant parallel operation (up to 12 units)
- Remote On/Off and Remote sense
- Active load sharing
- Hot insertion/removal (Hot Swap)
- Power fail warning and fault alarm
- 400Hz input available
- I<sup>2</sup>C for voltage, current, temperature report & Power Supply ID.
- Front panel LED indicator
- Low Start-Up Temp: -30°C

### APPLICATIONS

- Advanced workstations
- Telecom / Datacom equipment
- Midrange computers
- Mainframes
- File servers
- LAN/WAN applications
- Mass storage



A0800

### POWER SUPPLY DESIGN EXCELLENCE

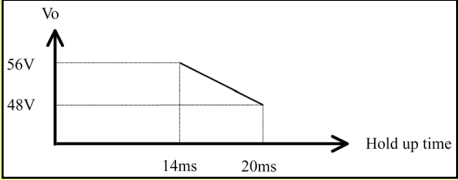
The Powerstax A0800 series of front-end power modules is specifically designed to operate as an integral part of a complete distributed power system, with or without battery backup.

A full complement of protection, alarm and control features has been incorporated into the power unit to provide the versatility of applications.

The flexible feature set makes this front-end power module an excellent choice for applications requiring modular AC-to-DC power systems such as distributed power and DC UPS.



### SPECIFICATIONS

INPUT	
Voltage Range	85-264Vac (750W max for under 90V AC input)
Frequency	47-63Hz (400Hz available with safety approvals. Consult Powerstax for details.)
Inrush Current (peak)	50A @ ≥50% full load
Power Factor	>0.95 (also see opposite)
Leakage Current	≤1.7mA @ 264Vac, 50Hz
Lighting Surge & Transients (damage free operation)	EC1000-4-5 Level 3 IEC1000-4-4 Level 3
Hold Up Time	>20ms 
EMC (conducted)	CISPR22 Class B, EN55022 Class B, with 3dB margin
Line Harmonics	Active power factor correction circuitry ensures that this power supply meets requirements of IEC 1000-3-2

A0800

OUTPUT	
Voltage Setpoint	A0800-085-480 - 48.0V   A0800-085-545 - 54.5V   A0800-085-562 - 56.2V
Regulation	±2% (line, load, temperature & setpoint - measured at remote sense)
Remote-sense Drop	<0.5Vdc
Current, max. (800W)	A0800-085-480 - 16.6A   A0800-085-545 - 14.7A   A0800-085-562 - 14.2A
Ripple & Noise	<300mV pk-pk (50MHz bandwidth)
Transmission Noise	<45 dBnc (50MHz bandwidth)
Rise Time	20-100 mS, Rise from 10% to 90% of final output level (resistive load)
Oversvoltage Protection	62-64Vdc (Reset by cycling ac input, On/Off, or reinsertion)
Output Current Limit	23A
Transient Response	<±1.0%, 25% step load transient with slew rate 0.1A/us within the range from 25% to 75% of full load.
Active Current Sharing Differential	±1.7A (Single-wire current share at full load)
Efficiency (also see opposite)	>83% @ 120Vac   >87% @ 264Vac (At full load with Oring diode)
Reserve Output Current Protection	ORing diode
Start-Up delay	1.3s typical   2s max. (Measured from application of valid ac voltage)
Turn-On delay	<200ms (Measured from DC on/off)



EFFICIENCY AND POWER FACTOR VS. INPUT VOLTAGE AT FULL LOAD		
INPUT VOLTAGE	EFFICIENCY (TYPICAL)	POWER FACTOR (TYPICAL)
90Vac	83%	0.99
100Vac	84%	0.99
120Vac	85%	0.99
160Vac	85%	0.98
190Vac	86%	0.98
220Vac	86%	0.98
240Vac	87%	0.98
264Vac	88%	0.98

ENVIRONMENTAL	
Storage Temperature	-40°C to 85°C
Operating Temperature	0°C to 60°C, derating 5%/°C from 50°C to 60°C
Acoustics	47dBA Typical   52dBA max. (ISO 7779 SPL)
Relative Humidity	5% to 95% (non-condensing)
Altitude	-200 to 13,000 Feet, Derated at 2°C/1000 ft. above 8000 ft.
ESD   EMI	IEC1000 -4-2 Level 3 stand-alone   meet IEC1000-4-2 Level 2 stand-alone
Isolation Voltage	3,000Vac - Primary to Secondary 1,500Vac - Primary to chassis GND 500Vac - Secondary to chassis GND
MTBF	>4 x 10 <sup>5</sup> hrs @110V Input 80% load, T <sub>A</sub> = 30°C
Vibration	Meets IEC68-2-6
Shock	Meet IEC68-2-36
Weight	2.2Kg typical

### POWER MODULE INTERFACES

**Input Voltage** - The product can be used with any standard global line voltage; consult Powerstax for any particular regional application concerns.

**Input / Output Connector** - The input / output connector is PCB24W9M400A1 / Postronic, with 9 power pins and 15 signal pins. 3 out of the 9 power pins are for the AC input.

### CONNECTOR PIN ASSIGNMENT - VIEW INTO REAR OF POWER UNIT

Please refer to "Definition of Terms" for detailed description for each pin.

1	3	5	7	10	13	16	19	23
V+	V+	V+	ON/OFF	RS-	CS	OTP	DC FAIL	LINE
			8	11	14	17	20	
			N.C.	SDA	Signal RTN	A2	A1	
2	4	6	9	12	15	18	21	22
V-	V-	V-	RS+	SCL	A3	A0	INT. BUS	FG
								24
								Neutral



## SMBUS FUNCTION

FUNCTION	COMMAND CODE	PROTOCOL <sup>1</sup>			UNIT
Temperature	0x08	Read	Word	No PEC	K
Voltage	0x09	Read	Word	No PEC	mV
Current	0x0A	Read	Word	No PEC	mA
Manufacture Date <sup>2</sup>	0x0B	Read	Word	No PEC	
Serial Number	0x22	Read	Word	No PEC	
Manufacturer Name	0x20	Read	Block <sup>3</sup>	No PEC	
Device Name	0x21	Read	Block <sup>3</sup>	No PEC	
Manufacture Data (version)	0x23	Read	Block <sup>3</sup>	No PEC	

1. Reference: System management bus specification v1.1

2.The date is packed in the following fashion:

(Year - 1980) \* 512 + Month \* 32 + Day = data byte high: data byte low

FIELD	DATA BYTE	ALLOW VALUE
Day	Bit 0~4	1 - 31 (corresponds to date)
Month	Bit 5~8	1 - 12 (corresponds to month number)
Year	Bit 9~15	0 - 127 (corresponds to year biased by 1980)

Example: 2001/11/29 = 10101101111101 (bin) = 2B7D (hex)

Where 2B(hex) is data byte high, 7D(hex) is data byte low.

3.Read block data byte 1~N is in ASCII code, where N is the value of byte count.

## Address Definition

RACK	SHELF	P.S. NO.	ADDRESS	A3	A2	A1	A0
	1	1	1	0x00	0	0	0
2		2	0x02	0	0	0	1
3		3	0x04	0	0	1	0
2	4	4	0x20	0	1	0	0
	5	5	0x22	0	1	0	1
	6	6	0x24	0	1	1	0
3	7	7	0x40	1	0	0	0
	8	8	0x42	1	0	0	1
	9	9	0x44	1	0	1	0
4	10	10	0x10	1	1	0	0
	11	11	0x12	1	1	0	1
	12	12	0x14	1	1	1	0

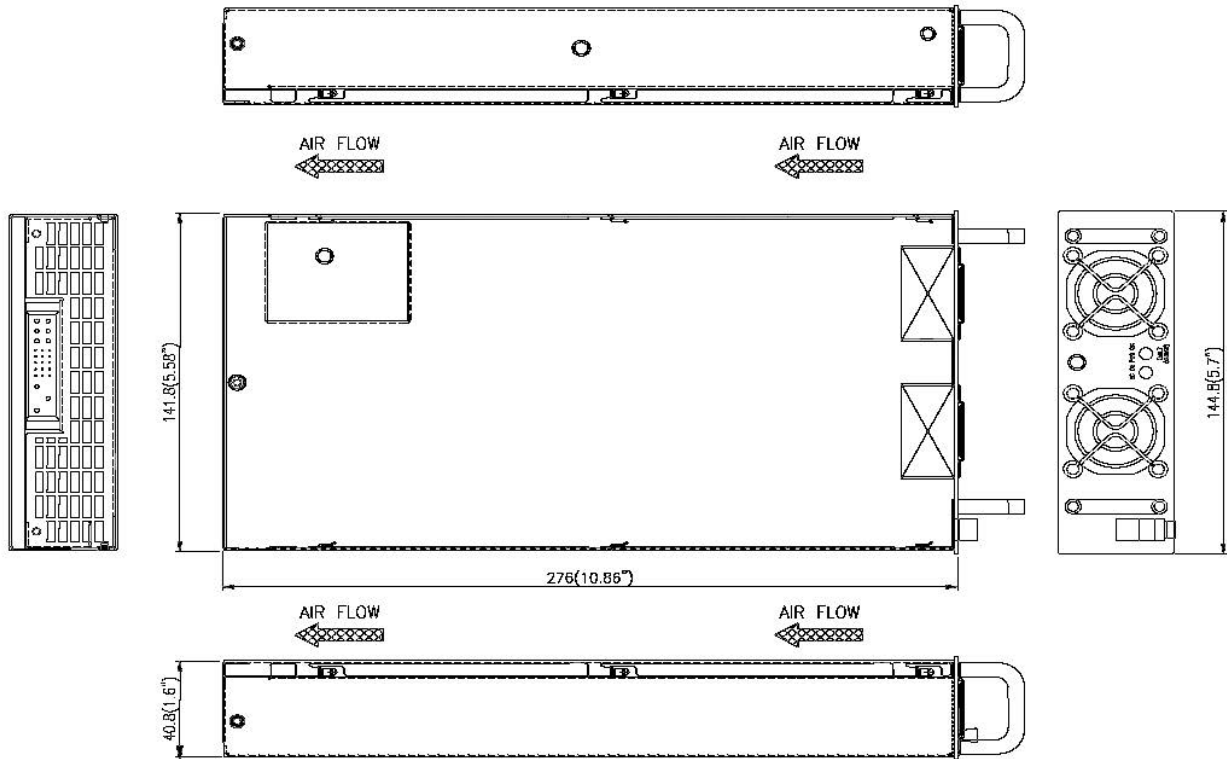


# Powerstax

## A0800 AC-DC POWER MODULE

AC Input: 85V to 264V, Single DC Output: 48 - 56.2VDC, 800W - 5

### MECHANICALS



A0800

### MODEL REFERENCE GUIDE

**POWERSTAX A0800 - 085 - 480 - XXX**

1U HIGH AC:DC  
power module 800W

Input Voltage  
085 = 85 to 264VAC

FEATURES:  
Customer Unique  
Factory allocated

Output Voltage  
480 = 48.0V  
545 = 54.5V  
562 = 56.2V



### DEFINITION OF TERMS

#### AC Line Discrimination

The unit senses the input line range at power up and shuts the unit down if the input drops below the line range for a specified period of time.

#### Current Monitor

The output current could be reported through the I2 bus.

#### Front Panel LEDs

LED 1 -- AC OK (green): Input voltage OK

LED 2 -- Output OK (green): The unit is powered up and operating normally

or

Output fail (amber): The unit has detected an internal fault.

#### Input Overcurrent Protection

An internal fuse is provided for input protection in compliance with safety agency requirements.

#### Current Share Bus (CS)

A single-wire interface between each of the power units forces them to share the load current equally.

#### Overcurrent Protection

In the event of an overload condition, the power supply limits the output current.

#### Overvoltage Protection

The power unit turns itself off before the output voltage reaches the OVP threshold.

#### I<sup>2</sup>C Serial Bus Interface support

The power unit provides I<sup>2</sup>C serial bus interface to receive/transmit data

**SCL:** Clock signal input for I<sup>2</sup>C functionality.

**SDA:** Data signal I/O for I<sup>2</sup>C functionality.

**A0~A3:** Address pin for I<sup>2</sup>C address Bit 0~3.

#### ORing Diode

A diode at the output of the power unit protects the DC bus during a power supply failure or hot plugging of the power unit.

#### Overtemperature Protection

In the event of an overtemperature condition, the power unit protects itself by shutting off, restarts automatically after cooling down.

#### Remote Sense (RS+, RS-)

These signals permit the power units to compensate for a voltage drop across the output distribution.

#### On/Off

This is an input signal referenced to the negative output. Shorting this signal to the negative output will turn on the power unit.

#### Status Signals

The following are the optically isolated open-collector signals:

**DC FAIL:** This signal indicates the output fail. It becomes low with a turn on delay of 100 to 500ms after the output voltage reaches in the regulation window. It will go to a high level at least 1ms before output voltage runs out of regulation window.

**OTP:** This signal indicates fan fail or over temperature. It becomes low with a turn on delay of 100 to 500ms after the output voltage reaches in the regulation window. It will go to a high level 200ms before the unit shuts down if a fan fail or over temperature is sensed. The logic low level is lower than 0.6V with the sink current of the photo-transistor less than 1mA.

**INT. bus:** Intermediate DC bus. It is a DC output from the power module for shelf internal usage. There is a reserved slot for a DC-DC converter on the back plane of the power shelf. The DC-DC may transfer DC bus voltage to a standby DC output that may be customized upon request.

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