

## IPM300

### Dual 48 V ATCA Input Power Module

**Total Power:** 300 Watts  
**Input Voltage:** -48 Vdc  
**Output:** 3.3 V Management Bus  
5.0 V Management Bus



### Special Features

- Optimized footprint for high density ATCA applications
- Accepts inputs from -48 V and B Feeds
- Hot Swap and ORing functionality
- 3.3 Vdc and 5.0 Vdc Isolated Management Power
- Adjustable Hold Up Voltage from 50 to 95 Vdc
- I2C serial bus interface for monitoring and reporting
- Programmable alarm thresholds via I2C bus
- Hardware alarms via opto-isolators for loss of A or B Feeds
- Comprehensive protection circuitry - current, voltage and temperature, inrush current, reverse polarity
- EU directive 2002/95/EC compliant for RoHS

### Safety

- UL/cUL 60950-1 (E186249)
- TUV EN60950-1 (B100551485779)

## Electrical Specifications

### Input

Input Range:	-36 V to -75 Vdc
Transient:	-100 Vdc (< 1 ms)
External Input Capacitance:	82 uF max
Inrush Current:	13 A typ
Inrush Duration:	< 2 ms
Undervoltage Lockout:	$-36 < V_{in}$
Overvoltage Lockout:	$-78 \leq V_{in} < 85$ Vdc
Efficiency:	98% @ 300 W

### Output

	5.0 V Management Bus	3.3 V Management Bus
Nominal Setpoint:	5.0 V	3.35 V
Total Regulation Band <sup>1</sup> :	4.8 - 5.2 V	3.17 - 3.43 V
Output Current:	0 - 0.15 A	0 - 3.6 A
Current Limit:	130% I <sub>o</sub> , max (typ)	130% I <sub>o</sub> , max (typ)
Short Circuit:	Shutdown/Autorecovery	
Ripple and Noise <sup>2</sup> :	60 mVp-p	65 mVp-p
Overvoltage:	V <sub>o</sub> > 13.4 Vdc	V <sub>o</sub> > 5.0 Vdc (typ)
External Output Capacitance:	TBD	1000 uF max

### Isolation Characteristics

Input to Output Isolation Voltage:	2250 Vdc
Input to Output Insulation:	Basic

## Environmental Specifications

Operating temperature range:	-40 °C to +85 °C ambient
Storage temperature:	-55 °C to +125 °C
MTBF:	> 1 MHours @ 25 °C 100% Load (Target)

## Part Number System with Options

### Ordering Information

Model Number	Input	Output	Output Current	Typical	Max. Load	Note
IPM300	-36 to -75 Vdc	3.3 V 5.0 V	3.6 A 0.150 A	98% @ -48 V / 300 W	3%	With I <sup>2</sup> C Interface

### Pin Assignments

Pin Number/Pin Name	Function	Note
1. -48V A Feed	Power input from A' bus	Connects to ATCAZone 1 connector pin 33 via external 10 A fuse
2. -48V B Feed	Power input from B' bus	Connects to ATCAZone 1 connector pin 34 via external 10 A fuse
3. 48V Return A Feed	Power return from A' bus	Connects to ATCAZone 1 connector pin 28 via external 12 A fuse
4. 48V Return V Feed	Power return from B' bus	Connects to ATCAZone 1 connector pin 29 via external 12 A fuse
5. Enable A Feed	When connected to RTN A, turns ON isolated open collector A enabled' device (See Note 3)	Connects to ATCAZone 1 connector pin 32 via external 1 A fuse. Used to signal to management suystem correct board insertion and presence of A' bus
6. Enable B Feed	When connected to RTN B, turns ON isolated open collector B enabled' device (See Note 3)	Connects to ATCAZone 1 connector pin 27 via external 1 A fuse. Used to signal to management suystem correct board insertion and presence of B' bus
7. SHELF_GND	Shelf/Chassis/Safety Ground	
8. +5.0V Management Power	+5.0V Management Power - Blue Service LED	
9. +3.3V Management Power	3.3V Isolated Management Power Output	
10.Address	I <sup>2</sup> C Address	I <sup>2</sup> C lines, address strapping
11.Data	I <sup>2</sup> C Data	I <sup>2</sup> C lines, serial data
12.Clock	I <sup>2</sup> C Clock	I <sup>2</sup> C lines, clock line input
13. LOGIC_GND	Logic/Secondary/Isolated Ground	
14.ALARM	Opto-Isolated -48V A/B Feed Loss or Open Fuse Alarm with respect to LOGIC_GND	
15. -48V_OUT	OR'd and Inrush Protected -48VDC Output	The -48VDC Output connects directly to the Input of an External Intermediate Bus Converter (IBC) from Emerson
16.Holdup Trim	Adjustable 50 to 95 V Hold Up Trim	
17.VRTN_OUT	OR'd and Inrush Protected -VRTN Output	The VRTN_Out connects directly to the Input of an External Intermediate Bus Converter (IBC) from Emerson
18.Holdup Capacitor	Holdup/Bulk Capacitor output voltage	

#### Notes:

1. Regulation band over line, load and temperature.
2. Measured at 20 MHz with external 22  $\mu$ F Tantalum in parallel with 1  $\mu$ F ceramic, 25 V rated low ESR type capacitors across each output.
3. Both Enables (A/B) have to be connected to their respective RTNS to enable the Internal power management I<sup>2</sup>C.
4. All specifications are typical at nominal line, T<sub>A</sub> = 25 °C unless otherwise indicated.
5. All specifications are subject to change without notice.
6. Technical Reference Notes and Application Notes should be consulted for complete product details
7. Warranty 2 years.

Mechanical Drawing

IPM300

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