Embedded Power for Business-Critical Continuity

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# DS650/DS850

## 650 / 850 Watts

### Distributed Power System

#### Distributed Power Bulk Front-End

Total Output650/850 WattsPower:+3.3 Vdc Stand-by Output

 Wide Range
 90 - 264Vac

 Input Voltage:
 12, 24 and 48V



## **Electrical Specifications**

Input						
Input range	90-264 Vac (wide range)					
Frequency	47-63 Hz, single phase AC					
Inrush current	55 A maximum inrush current					
Efficiency	>82% typical at full load, high line					
Conducted EMI	FCC Subpart J EN55022 Class B					
Radiated EMI	FCC Subpart J EN55022 Class B					
Power factor	0.99 typical					
Leakage current	1.40 mA @ 240 Vac					
Hold up time	20ms minimum					
Output						
Main DC voltage	+12 V @ 52.5 A/70.0 A +24 V @ 26.3 A / 35.0 A +48 V @ 13.1 A / 17.5 A					
Stand-By	+3.3 vsb @ 6 A (5 V @ 4 A available)					
Adjustment range	Factory Set, no pot adjustments					
Regulation	Main output; +5%/-5% +3.3 vsb; +5%/-5%					
Over current	<ul><li>110% - 150% of nominal Latches off if overcurrent lasts</li><li>over 1 second, otherwise it is auto recovery.</li><li>+3.3 vsb, 9 A max (hiccup mode)</li></ul>					
Over voltage	110% - 120% of nominal +3.3 vsb; 3.76 - 4.30 Vdc					
Under voltage	75% - 90% of nominal					
Turn-on delay	2 Second max, 5 - 50 mS, Monotonic Rise					
Main output rise time	5 - 50 mS, Monotonic Rise					





### **Special Features**

- Active power factor correction
- EN61000-3-2 harmonic compliance
- Active AC inrush control
- 1U X 2U form factor
- 15.4W/ in<sup>3</sup>
- 12 Vdc, 24 Vdc and 48 Vdc output
- +3.3 Vdc stand-by (5V standby - consult factory)
- No minimum load required
- Hot plug operation
- N + 1 redundant
- Internal OR'ing fets
  Active current sharing (10 - 100% load)
- Built-in cooling fans (40mm x 28mm)
- I<sup>2</sup>C communication interface bus
- EERPOM for FRU data
- Red/Green bi-color LED status
- Internal fan speed control
- Fan Fail Tach output signal
- INTEL, SSI Std. logic timing
- INTEL, SSI Std. FRU data format
- One year warranty

### Safety

UL/cUL 60950 (UL Recognized) NEMKO+ CB Report EN60950 EN60950 CE Mark China CCC

#### Logic Control

PS_SEATED	TTL logic LOW if power supply is seated into system connector. This is a short pin. A logic HIGH if the PSU is removed.
PWR GOOD	Active TTL HilGH when output is within regulation limits.
AC OK	A LOW logic level if the input voltage is within allowable limits. A TTL logic HIGH level, and a 5mS early warning signal before main output loss of regulation.
Temp OK	A TTL logic HIGH, when operating within allowable temperature range.
PS_INHIBIT/PS_KILL	This signal is connected to a short pin on the PSU When left open power supply operation will be inhibited. When the power supply is inserted into the system, this pin will be pull low by the system and turn the power sup- ply on only after all other power supply pins have seated.

## **Environmental Specifications**

Operating temperature:	-10° to 50°C ; 50% power derating at 70°C
Storage temperature: Altitude, operating 10,000ft.	-40°C to +85°C
Electromagnetic susceptibility / Input transients:	-EN61000-3-2, -3-3 -EN61000-4-2, 4.3, 4-4, -4-5, 4-11 Level -EN55024:1998
RoHS & lead-free compliant (no	tantalum caps.)
Humidity:	20 to 90% RH, non-condensing

Shock and vibration specificatons complies with Astec Std. Specifications, Q3205

MTBF (Demonstrated) 500K Hrs at full load, 40°C

Ordering Information Nominal Output Set Point Total Minimum Maximum **Output Ripple** Output Voltage Set Point Tolerance Regulation Current Current P/P DS650-3 12.0 Vdc ±0.2% ±5% 0A 52.5 A 120mV 50mV 3.3 vsb\* ±5% 0A 6.0 A ±1% 24.0 Vdc ±5% 0A 26.3 A DS650-5 ±0.2% 240 mV 3.3 vsb\* ±1% ±5% 0A 6.0 A 50 mV 48.0 Vdc DS650-9 ±0.2% ±5% 0A 13.1 A 480mV 3.3 vsb\* ±1% ±5% 0A 6.0 A 50mV DS850-3 12.0 Vdc ±0.2% ±5% 0A 70.0 A 120mV ±1% 3.3 vsb\* ±5% 0A 6.0 A 50mV DS850-5 24.0 Vdc ±0.2% ±5% 0A 35.0 A 240 mV 3.3 vsb\* ±1% ±5% 0A 6.0 A 50 mV ±5% 48.0 Vdc ±0.2% 0A 17.5 A 480mV DS850-9 3.3 vsb\* ±1% ±5% 0A 6.0 A 50mV

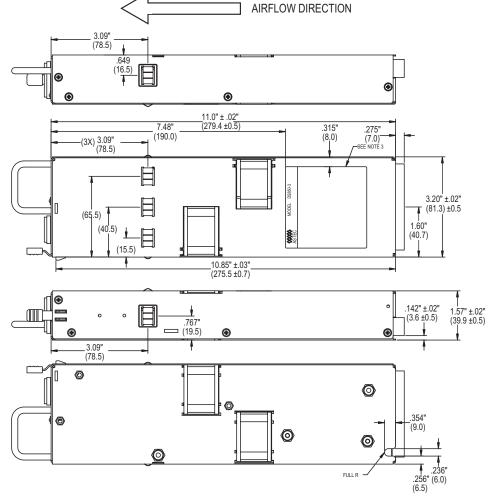
\* For 5 vsb, consult marketing.

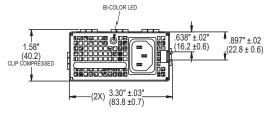
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#### Mechanical Drawing

Power Supply Condition	LED Green/Amber
No AC power to all PSU	OFF
AC present/Standby outpus ON, Main output OFF	Blinking Green
Power supply DC outputs ON and OK	Solid Green
Main output failure (OCP, OVP, UVP)	Blinking Amber
Fan Fail, OTP, Standby output OCP/UVP	Solid Amber





#### DC Output Connector Pinout Assignment

Male connector as viewed from the rear of the supply:

IVIa	ale conr	iecto	r as v	lewe	a tro	m the	e rear	OT T	ne su	ppiy:					
D	1 D2	D3	D4	D5	D6							7			
С	1 C2	C3	C4	C5	C6	PB1	PB2	PB3	PB4	PB5					
В	1 B2	B3	B4	B5	B6	РЫ	PBZ	PB3	PB4	РБЭ	PBC	2			
A	1 A2	A3	A4	A5	A6										
P1 - Power Supply Side								Pin	1		Signal Name				
									PB	1		MAIN O/P RETURN			
1. FCI Power Blade 51721 series									PB	2		MAIN O/P RETURN			
51721-10002406AA								PB			MAIN O/P RETURN				
51721-10002-00AA								PB	4		⊦ MAIN O/P				
2	Mole		wor	Con	noc	tor			PB			+ MAIN O/P			
۷.					nec	LUI			PB			⊦ MAIN O/P			
	SD-87			les					A1			PS_ON			
	8766	/-/(	02						A2			MAIN O/P V RMT SENSE RETURN			
									A3			TEMP_OK			
Mating Connector (System side)							side	:)	A4			PS_SEATED ( Power Supply Seated			
									A5			+3V3 STAND-BY			
1.FCI Power Blade								A6			+3V3SB RETURN				
51741-10002406CC									B1			AC_OK (AC Input Present)			
Strait Pins									B2			MAIN O/P RMT SENSE			
									B3 B4			MAIN O/P CURRENT SHARE			
2.FCI Power Blade									в4 В5			PS_INHIBIT ⊦3V3 STAND-BY			
									BS B6			+3V3SB RETURN			
51761-10002406AA								с1		SDA (I2C Data Signal)					
Right Angle						C2			5CL (I2C Clock Signal)						
								C2 C3			POWER GOOD				
									C4			FAN FAIL (Fan Fail Signal)			
								C5			+3V3 STAND-BY				
								C6			+3V3SB RETURN				
								D1			A0 (I2C Address BIT 0 Signal)				
									D2			A1 (I2C Address BIT 1 Signal)			
									D3			S_INT (Alarm)			

- D4 +3V3 STAND-BY RMT SENSE
- D5 +3V3 STAND-BY
- D6 +3V3SB RETURN

#### Americas

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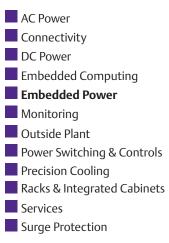
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