

# 450-550 Watts 12V DS450-3/DS550-3 Distributed Power System

**Distributed Power Bulk Front-End**  
**Total Output Power: 450W - 550W**  
**+12vdc Main Output +3.3vdc Stand-By Output**  
**Wide Range Input Voltage: 90 - 264VAC**



## Special Features

- Active Power Factor Correction
- EN61000-3-2 Harmonic Compliance
- Active AC Inrush Control
- 1U X 2U Form Factor
- 10.3W / in<sup>3</sup> (DS550)  
8.4W / in<sup>3</sup> (DS450)
- +12vdc Output
- +3.3vdc Stand-By
- No Minimum Load Required
- Hot Plug Operation
- N + 1 Redundant
- Internal OR'ing Fets
- Active Current Sharing
- Built-in Cooling Fans (40mm x 28mm)
- I<sup>2</sup>C Communication Interface Bus
- EERPOM for FRU Data
- Amber LED Status, Fan\_Fail
- Green LED Status, Power Good / AC\_OK Status
- Internal Fan Speed Control
- Fan Fail Tach Output Signal
- One Year Warranty

## Environmental

Operating Temperature: -10°C to 50°C  
 (50% power derating at 70°C)  
 Storage Temperature: -40° to +70°C  
 Altitude, Operating 10,000ft  
 Electromagnetic Susceptibility / Input Transients:  
 -EN61000-3-2, -3-3  
 -EN61000-4-2, 4-4, -4-5, 4-11 Level  
 -EN55024:1998  
 Humidity: 20 to 90% RH, non-condensing  
 Shock and Vibration Specification  
 (Complies with Astec Std Specification, Q3205  
 MTBF (Demonstrated): 400KHrs at full load, 40°C

## Electrical Specs

### Input

Input Range	90 - 264vac
Frequency	47 - 63 Hz, single phase AC
Inrush Current	15A Maximum
Efficiency	84% typical at full load, high line
Conducted EMI	FCC Subpart J EN55022 Class A
Radiated EMI	FCC Subpart J EN55022 Class A
Power Factor	0.99 typical
Leakage Current	1.30mA @ 240VAC
Hold Up Time	20ms Minimum

### Output

Main DC Voltage	+12v
Stand-By	+3.3vsb
Adjustment Range	Factory Set, no pot adjustments
Regulation	+12vdc; +5%/-3% +3.3vsb; +5%/-4%
Over Current	See Table 1 next page
Over Voltage	+12vdc; 13.5 - 15vdc +3.3vsb; 3.76 - 4.30vdc
Under Voltage	+12vdc; 11.0 - 11.5vdc +3.3vsb; 2.77 - 3.00vdc
Turn-On Delay	1 Second max,
+12vOutput Rise Time	2 - 20mS, Monotonic

### Logic Control

PS_Inhibit	When supply is inserted into the system the pin is pulled LOW and power supply is ON after all other pins are seated
PS_Status	I2C port P6. When the power supply is on and running normal P6 is low. When the power supply is off, either due to -PS_ON, PS_KILL, or a fault, then P6 is high.
AC_Pfail	I2C port P7. P7 is high except when the power supply turns the main outputs, not +3.3VSB, off due to an AC failure (AC missing or too low for power supply operation). If the supply is turned off due to -PS_ON, PS_KILL, or a fault, then P7 remains high.
Fan_Fault Tach_1	The PSU will provides an open collector Tach 1 output. This signal is generated from the fan. The signal should generate 2 pulses per revolution. The logic in the system will be operating at 3.3V.

## Safety

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

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## Ordering Information

**Table 1**

Output	Nominal Output Voltage Set Point	Set Point Tolerance	Total Regulation	Minimum Current	Maximum Current	Output Ripply P/P	Over Current
DS450-3	12.0vdc	+/-0.2%	+5/-3%	0A	37.0A	120mV	39.5 - 44.4A
	3.30vsb	+/-1%	+5/-4%	0A	3.0A	60mV	4.9A Avg, 7A Max
DS550-3	12.0vdc	+/-0.2%	+5/-3%	0A	45.0A	120mV	48.0A - 54.0A
	3.30vsb	+/-1%	+5/-4%	0A	3.0A	60mV	4.9A Avg, 7A Max

**Table 2**

### DC Output Connector Pinout Assignment

**P1 - Power Supply Side**

1. FCI Power Blade 51721 series  
51721-10002406AA

2. Molex Power Connector  
SD-87667 series  
87667-7002

**Mating Connector (System Side)**

1. FCI Power Blade  
51741-10002406CC  
Strait Pins

2. FCI Power Blade  
51761-10002406AA  
Right Angle

Pin	Signal Name
PB 1	+12V RETURN
PB 2	+12V RETURN
PB 3	+12V RETURN
PB 4	+12V
PB 5	+12V
PB 6	+12V
A1	PS_KILL
A2	+12V CURRENT SHARE
A3	LOGIC RETURN
A4	+3V3 STAND-BY
A5	A0 (I2C Address BIT 0 Signal)
A6	+3V3 STAND-BY
B1	LOGIC RETURN
B2	SPARE
B3	LOGIC RETURN
B4	+3V3 STAND-BY
B5	SDA (I2C Data Signal)
B6	PS_ON (Power Enable Signal)
C1	LOGIC RETURN
C2	TACH 1 (Fan Fail Signal)
C3	LOGIC RETURN
C4	+3V3 STAND-BY
C5	SCL (I2C Clock Signal)
C6	VIN_GOOD (AC Input Present)
D1	-PS_PRESENT ( Power Supply Seated)
D2	SPARE
D3	LOGIC RETURN
D4	+3V3 STAND-BY
D5	S_INT (Alert)
D6	POK (Output Power Ok)

**Male connector as viewed from the rear of the supply:**

D1	D2	D3	D4	D5	D6						
C1	C2	C3	C4	C5	C6	PB1	PB2	PB3	PB4	PB5	PB6
B1	B2	B3	B4	B5	B6						
A1	A2	A3	A4	A5	A6						

