

# 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 45°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

Male connector as viewed from the rear of the supply:

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)

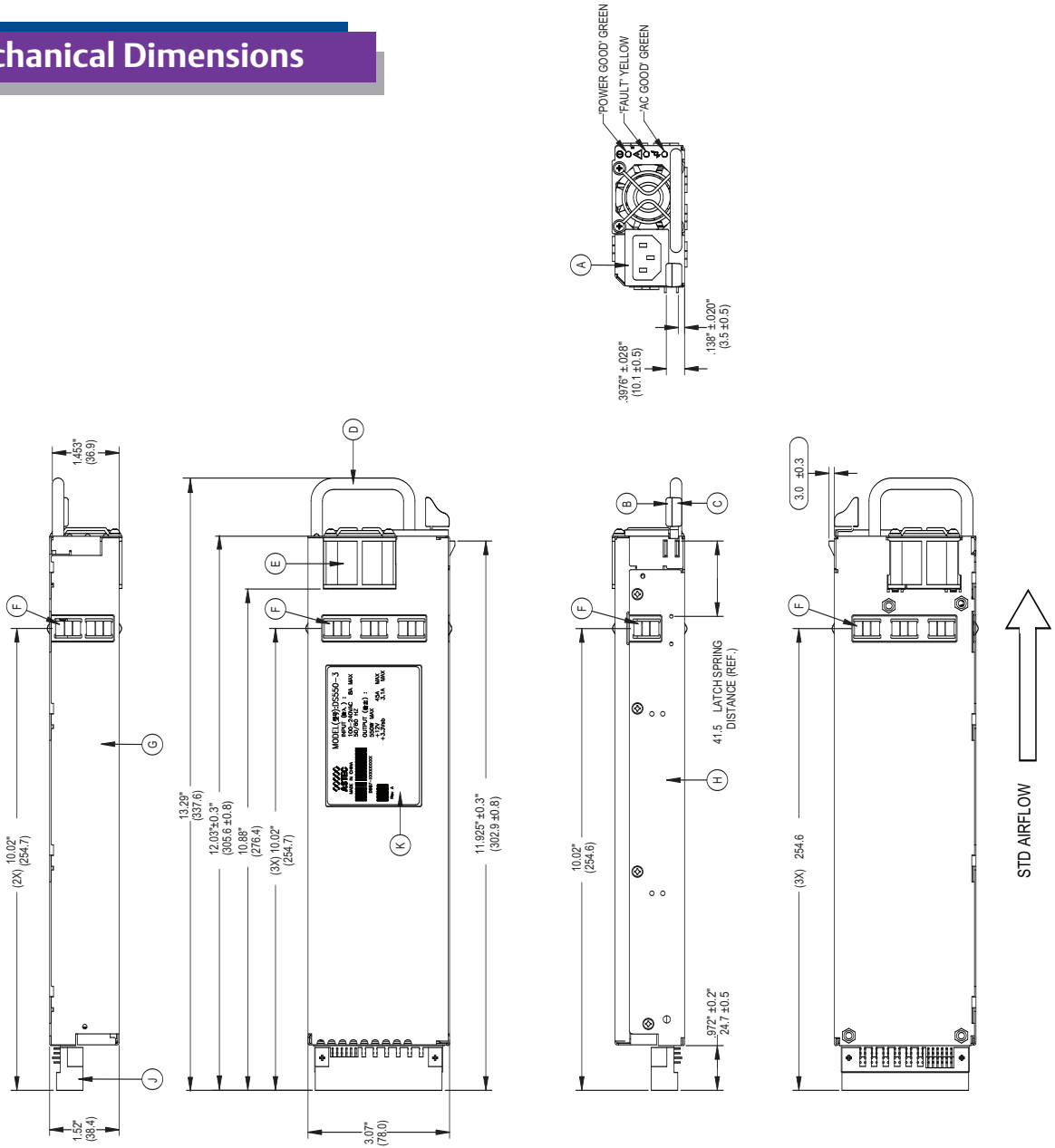
1. FCI Power Blade  
 51741-10002406CC  
 Strait Pins

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)

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						

# Mechanical Dimensions



NOTE: Dimensions given in (mm).