DS450-3/DS550-3

450 W - 550 W

Distributed Power System

Distributed Power Bulk Front-End
Total Output Power: 450 - 550 Watts
+12 Vdc Main Output
+3.3 Vdc Stand-by Output
Wide Range Input Voltage: 90 - 264 Vac

Special Features

- Active Power Factor Correction
- EN61000-3-2 Harmonic Compliance
- Active AC Inrush Control
- 1U X 2U Form Factor
- 10.3 W / in^3 (DS550)
  8.4 W / in^3 (DS450)
- +12 Vdc Output
- +3.3 Vdc Stand-By
- No Minimum Load Required
- Hot Plug Operation
- N + 1 Redundant
- Internal OR'ing Fets
- Active Current Sharing
- Built-in Cooling Fans (40 mm x 28 mm)
- I^{2}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

Safety

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

Electrical Specifications

Input	
Input range:	90 - 264 Vac (wide range)
Frequency:	47 - 63 Hz, single phase AC
Inrush current:	15 A 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:	1.30 mA @ 240 Vac
Hold up time:	20 ms minimum
Output	
Main DC voltage:	+12 V
Stand-By:	+3.3 Vsb
Adjustment range:	Factory Set, no pot adjustments
Regulation:	+12 Vdc; +5%/-3% +3.3 Vsb; +5%/-4%
Overcurrent:	See Table 1 next page
Overvoltage:	+12 Vdc; 13.5 - 15 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc
Undervoltage:	+12 Vdc; 11.0 - 11.5 Vdc +3.3 Vsb; 2.77 - 3.00 Vdc
Turn-on delay:	1 Second max
+12 V Output Rise Time:	2 - 20 mS, Monotonic

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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:	I^2C 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:	I^2C port P7. P7 is high except when the power supply turns the main outputs, not +3.3 Vsb, 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:	The PSU will provides an open collector Tach 1 output.
Tach_1:	This signal is generated from the fan. The signal should generate 2 pulses per revolution. The logic in the system will be operating at 3.3 V.

Environmental Specifications

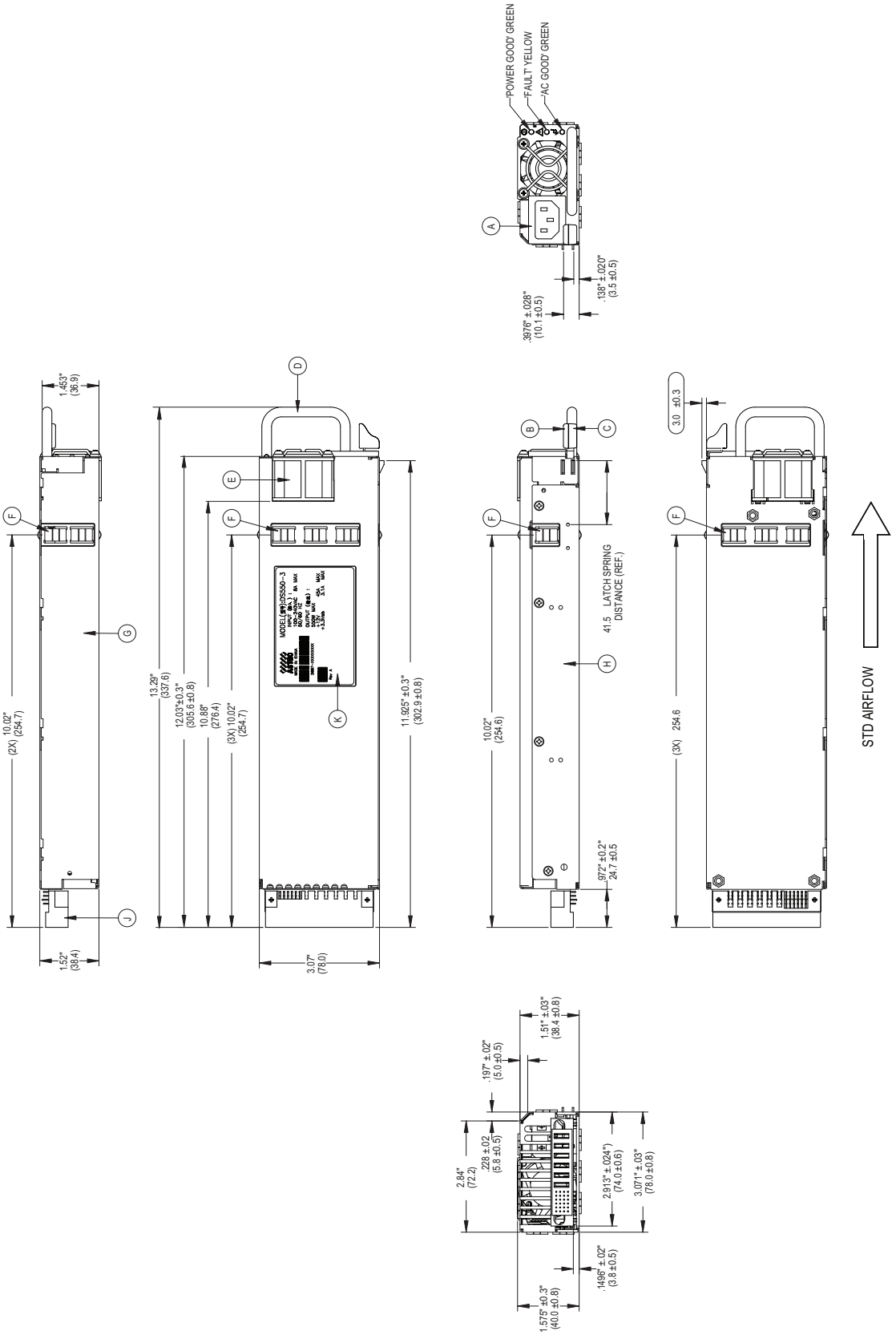
Operating temperature:	-10 °C to 50 °C
Storage temperature:	-40 °C to +70 °C
Altitude, operating:	10,000 ft.
Electromagnetic susceptibility / Input transients:	-EN61000-3-2, -3-3 -EN61000-4-2, 4.3, 4-4, -4-5, 4-11 Level -EN55024:1998
RoHS & lead-free compliant (no tantalum caps)	
Humidity:	20 to 90% RH, non-condensing
Shock and vibration specificatons complies with Emerson Network Power Std. Specification, Q3205	
MTBF (Demonstrated):	400K Hrs at full load, 40 °C

Ordering Information

Output	Nominal Output Voltage Set Point	Set Point Tolerance	Total Regulation	Minimum Current	Maximum Current	Output Ripple P/P	Overcurrent
DS450-3	12.0 Vdc 3.3 Vsb	± 0.2% ± 1%	+5 / -3% +5 / -4%	0 A 0 A	37.0 A 3.0 A	120 mV 60 mV	39.5 A - 44.4 A 4.9 A Avg, 7 A max
DS550-3	12.0 Vdc 3.3 Vsb	± 0.2% ± 1%	+5 / -3% +5 / -4%	0 A 0A	45.0 A 3.0 A	120 mV 60 mV	48.0 A - 54.0 A 4.9 A Avg, 7 A max

*Overcurrent latches off if overcurrent lasts over 1 second, otherwise it is auto recovery.
*For 5 Vsb, consult marketing.

Mechanical Drawing



DC Output Connector Pinout Assignment

Male connector as viewed from the rear of the supply:

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

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	+12 V Return
PB 2	+12 V Return
PB 3	+12 V Return
PB 4	+12 V
PB 5	+12 V
PB 6	+12 V
A1	PS_KILL
A2	+12 V_Current Share
A3	Logic Return
A4	+3.3 V Stand-By
A5	A0 (I^2C Address BIT 0 Signal)
A6	+3.3V Stand-By
B1	Logic Return
B2	Spare
B3	Logic Return
B4	+3.3 V Stand-By
B5	SDA (I^2C Data Signal)
B6	PSON (Power Enable Signal)
C1	Logic Return
C2	Tach_1 (Fan Fail Signal)
C3	Logic Return
C4	+3.3 V Stand-By
C5	SCL (I^2C Clock Signal)*
C6	VIN_GOOD (AC Input present)
D1	-PS_Present (Power Supply Seated)
D2	Spare
D3	Logic Return
D4	+3.3 V Stand-By
D5	S_INT (Alert)
D6	POK (Output Power Ok)

*Supports I^2C standard mode (100 kHz) only

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