

## DS450DC-3/ DS550DC-3

450 - 550 Watts  
Distributed Power System

Distributed Power Bulk Front-End  
**Total Output Power:** 450 - 550 Watts  
+12 Vdc main Output  
+3.3 Vdc Stand-by Output  
DC Input 36 - 75 Vdc



Connector input shown

### Special Features

- 1U X 2U Form Factor
- 10.3 W / in<sup>3</sup> (DS550)  
8.4 W / in<sup>3</sup> (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<sup>2</sup>C Communication Interface Bus
- EERPOM for FRU Data
- Amber LED Status, Fan\_Fail
- Green LED Status, Power Good /  
DC\_OK Status (VIN\_GOOD)
- 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:	36 - 75 Vdc
Frequency:	DC input
Inrush current:	21 A maximum
Efficiency:	EVT: 87% @ 72 Vdc; 87.4% @ 75 Vdc
Conducted EMI:	FCC Subpart J EN55022 Class A
Radiated EMI:	FCC Subpart J EN55022 Class A
Power factor:	N/A
Leakage current:	N/A No touch current required.
Hold up time:	1 ms minimum
Output	
Main DC voltage:	+12 V
Stand-By:	+3.3 Vsb
Adjustment range:	Factory Set, no pot adjustments
Regulation:	+12 Vdc; +5%/-5% +3.3 Vsb; +5%/-5%
Over current:	See Table 1 next page
Over voltage:	+12 Vdc; 13.5 - 15 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc
Under voltage:	+12 Vdc; 10.5 V - 11.0 V +3.3 Vsb; 2.77 - 3.00 Vdc
Turn-on delay:	< 3 seconds, EVT: 2 seconds
+12 V Output Rise Time:	3 - 300 mS



### Logic Control

PS_ON/L: (Power supply enable)	The power supply output will be enabled when this signal is pulled low (< 0.8 V). HIGH = Output V1 OFF LOW = Output V1 ON
VIN_GOOD/H (Input OK):	Active High signal asserted when the input voltage rises above the min input voltage specified. This signal is internally pulled up through 4.7 K ohms to the 3.3 V housekeeping voltage.
POK/H (Output OK):	Active High signal asserted when the output is within regulation. This signal is internally pulled up through 1.0 K ohms to the 3.3 V housekeeping voltage.
TACH_1:	This open collector signal generates two pulses per each fan revolution. This signal is eternally pulled up to the housekeeping voltage.
PS_KILL:	This signal will cause the output to shut down when drive high (> 24 V) or left floating. The PS_KILL will cause the output to latch off and requires recycle of PS_ON or DC input to reset.
Digital Control:	PMBus - I <sup>2</sup> C compliant

## 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 specifications	complies with Astec Std. Specifications, Q3205
MTBF (observed):	500K Hrs at 80%, 40 °C

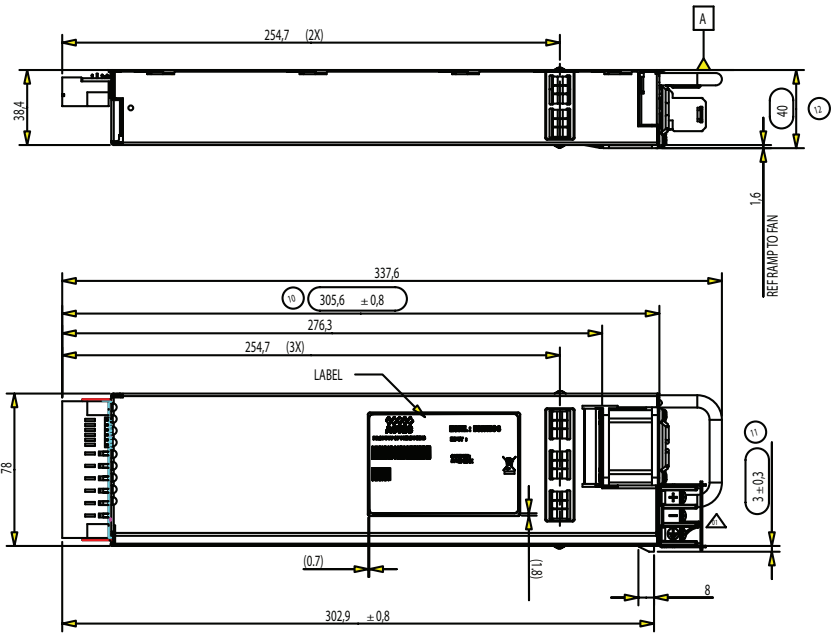
### Ordering Information

Output	Nominal Output Voltage Set Point	Set Point Tolerance	Total Regulation	Minimum Current	Maximum Current	Output Ripple P/P	Over Current	Options
DS450DC-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 - 44.4% 4.9 A Avg, 7 A max	Standard
DS450DC-3-002	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 60mV	39.5 - 44.4% 4.9 A Avg, 7 A max	Reverse Air
DS550DC-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	48.0A - 54.0A 4.9 A Avg, 7 A max	Standard
DS550DC-3-003	12.0 Vdc 3.3 Vsb	± 0.2% ± 1%	+5 / -3% +5 / -4%	0 A 0 A	45.0 A 3.0 A	120 mV 60 mV	48.0A - 54.0A 4.9 A Avg, 7 A max	Reverse Air

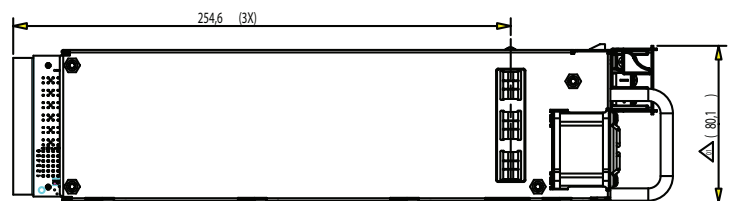
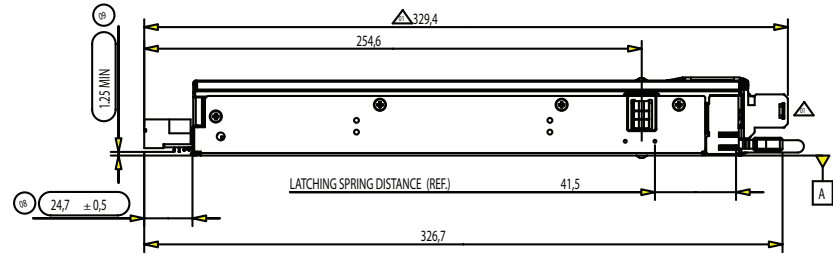
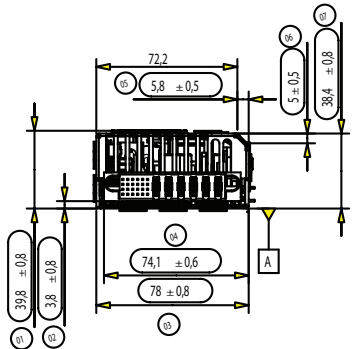
\*Over current latches off if overcurrent lasts over 1 second, otherwise it is auto recovery.

\*For 5 Vsb, consult marketing.

# Mechanical Drawing



STANDARD AIR FLOW DIRECTION →  
-002 REVERSE AIR FLOW DIRECTION ←



## DC Output Connector Pinout Assignment

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						

### 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	Return
A4	Write Protect
A5	PS A0
A6	+3.3 V SB
B1	Return
B2	12 V RTN Sense
B3	Return
B4	+3.3 V SB
B5	SDA
B6	-PS_ON/L
C1	Return
C2	Tach_1
C3	Return
C4	+3.3 V SB
C5	SCL
C6	VIN_GOOD/H
D1	-Present/L
D2	+12 V_Sense
D3	Return
D4	+3.3 V SB
D5	Alert/L (S_INT)
D6	POK/H (PWROK/H)

### Americas

5810 Van Allen Way  
Carlsbad, CA 92008  
USA  
Telephone: +1 760 930 4600  
Facsimile: +1 760 930 0698

### Europe (UK)

Waterfront Business Park  
Merry Hill, Dudley  
West Midlands, DY5 1LX  
United Kingdom  
Telephone: +44 (0) 1384 842 211  
Facsimile: +44 (0) 1384 843 355

### Asia (HK)

14/F, Lu Plaza  
2 Wing Yip Street  
Kwun Tong, Kowloon  
Hong Kong  
Telephone: +852 2176 3333  
Facsimile: +852 2176 3888

For global contact, visit:

[www.PowerConversion.com](http://www.PowerConversion.com)  
[techsupport.embeddedpower@emerson.com](mailto:techsupport.embeddedpower@emerson.com)

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

### Emerson Network Power.

The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Computing
- **Embedded Power**
- Monitoring
- Outside Plant
- Power Switching & Controls
- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

### EmersonNetworkPower.com

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co.  
©2009 Emerson Electric Co.