

ARTESYN DS450DC-3/DS550DC-3

Distributed Power Bulk Front-End



Connector input shown

Advanced Energy's Artesyn DS450DC and DS550DC series bulk front end power supplies are the DC-input versions of their DS450 and DS550 AC-input counterparts. Mechanically identical to the AC versions, these products allow system operation from a Telco style 48 Vdc input. Rated at 450 and 550 watts, the DS450/550 power supplies generate a main DC output of 12 Vdc and a 3.3 Vd for powering standby circuitry. Standard features include active current sharing, internal ORing FETs and an EEPROM for storing service data to facilitate efficient field replacement. An I²C communication interface is provided for the FRU EEPROM data.

DATA SHEET

Total Output Power:

450 - 550 Watts
+12 Vdc main Output
+3.3 Vdc Stand-by Output
DC Input 36 - 75 Vdc

SPECIAL FEATURES

- 1U X 2U form factor
- 10.3 W/in³ (DS550)
8.4 W/in³ (DS450)
- +12 Vdc output
- +3.3 Vdc standby
- 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)
- I²C communication interface bus
- EEPROM for FRU data
- Amber LED status, fan_fail
- Green LED status, power good/
DC_OK status (VIN_GOOD)
- 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	84% @ 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
Standby	+3.3 Vsb
Adjustment range	Factory Set, no pot adjustments
Regulation	+12 Vdc; +5%/-5% +3.3 Vsb; +5%/-5%
Overcurrent	See Table 1 next page
Overvoltage	+12 Vdc; 13.5 - 15 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc
Undervoltage	+12 Vdc; 10.5 V - 11.0 V +3.3 Vsb; 2.77 - 3.00 Vdc
Turn-on delay	< 3 seconds
+12 V output rise time	3 ms - 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.

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	+10 °C to +45 °C, able to start-up at -10 °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 - 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.	
MTBF (calculated)	500k hours at full load, 25 °C

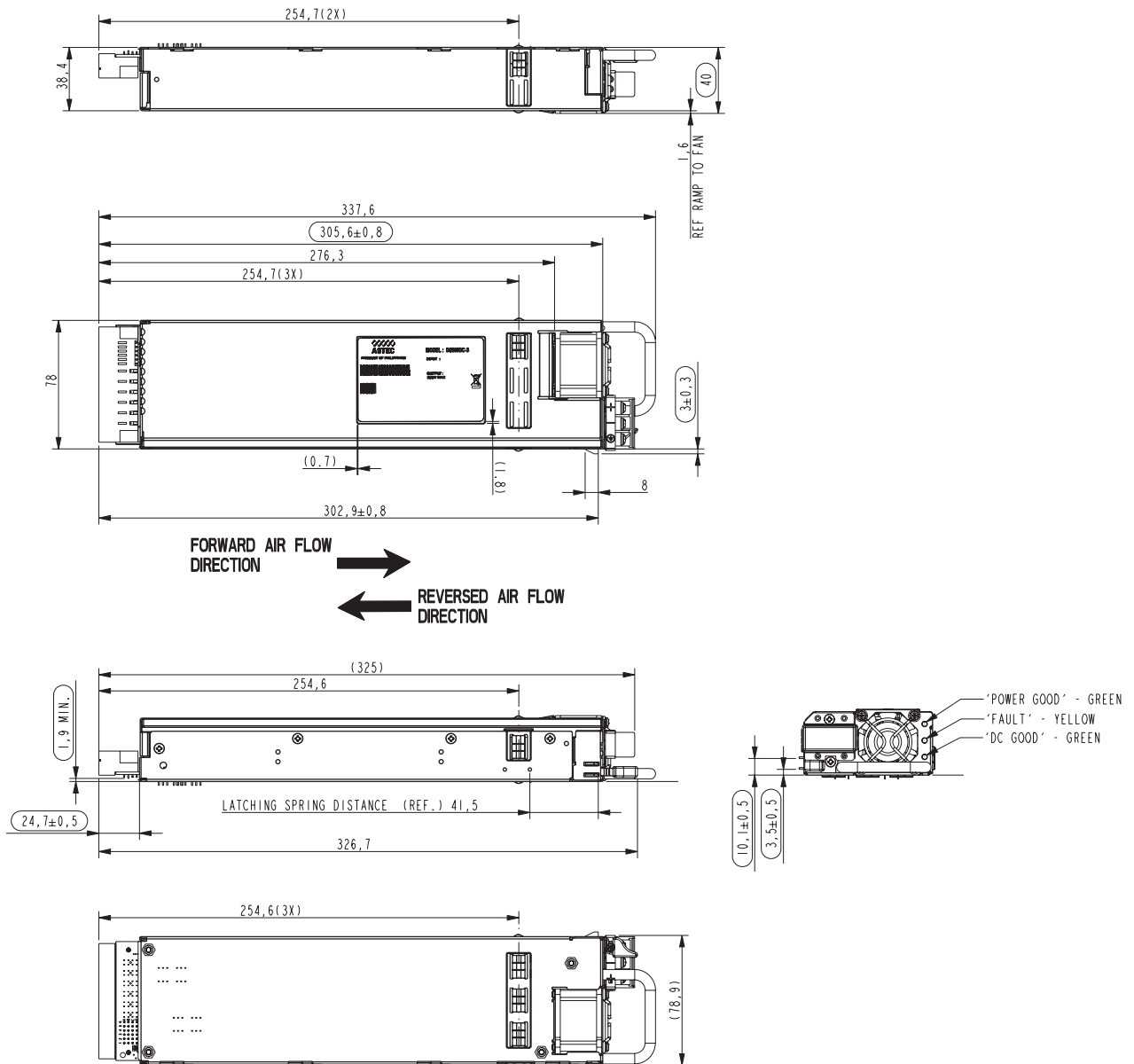
ORDERING INFORMATION

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 60 mV	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 0 A	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, please contact marketing department.

MECHANICAL DRAWINGS



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 ASSIGNMENTS

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)

*Supports I²C standard mode (100 kHz) only



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ABOUT ADVANCED ENERGY

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Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE

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