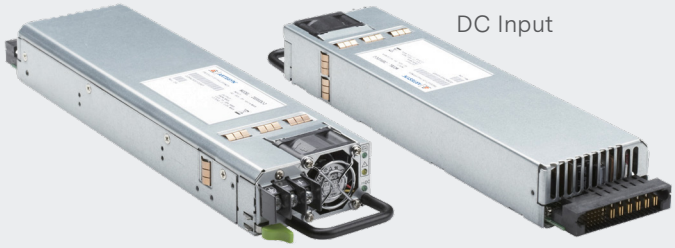
ARTESYN DS450DC-3/DS550DC-3

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 VDC 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 I^2C communication interface is provided for the FRU EEPROM data.

AT A GLANCE

Total Output Power

450 to 550 Watts
+12 VDC Main Output
+3.3 VDC Stand-by Output
DC Input 36 to 75 VDC

SPECIAL FEATURES

- 1U X 2U form factor
- 10.3 W/in^3 (DS550)
  8.4 W/in^3 (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)
- I^2C 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/cUL62368 (UL recognized)
- NEMKO+ CB report EN62368
- EN62368
- CE mark
- China CCC
- UKCA Mark

ELECTRICAL SPECIFICATIONS

Input	
Input range	36 to 75 VDC
Frequency	DC input
Inrush current	21 A maximum
Efficiency	84% @ 75 VDC
Conducted EMI	FCC Subpart J EN55032 Class A
Radiated EMI	FCC Subpart J EN55032 Class A
Power factor	N/A
Leakage current	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 to 15 VDC +3.3 VSB; 3.76 to 4.30 VDC
Undervoltage	+12 VDC; 10.5 to 11.0 VDC +3.3 VSB; 2.77 to 3.00 VDC
Turn-on delay	< 3 seconds
+12 V output rise time	3 ms to 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 Kohms 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 Kohms 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

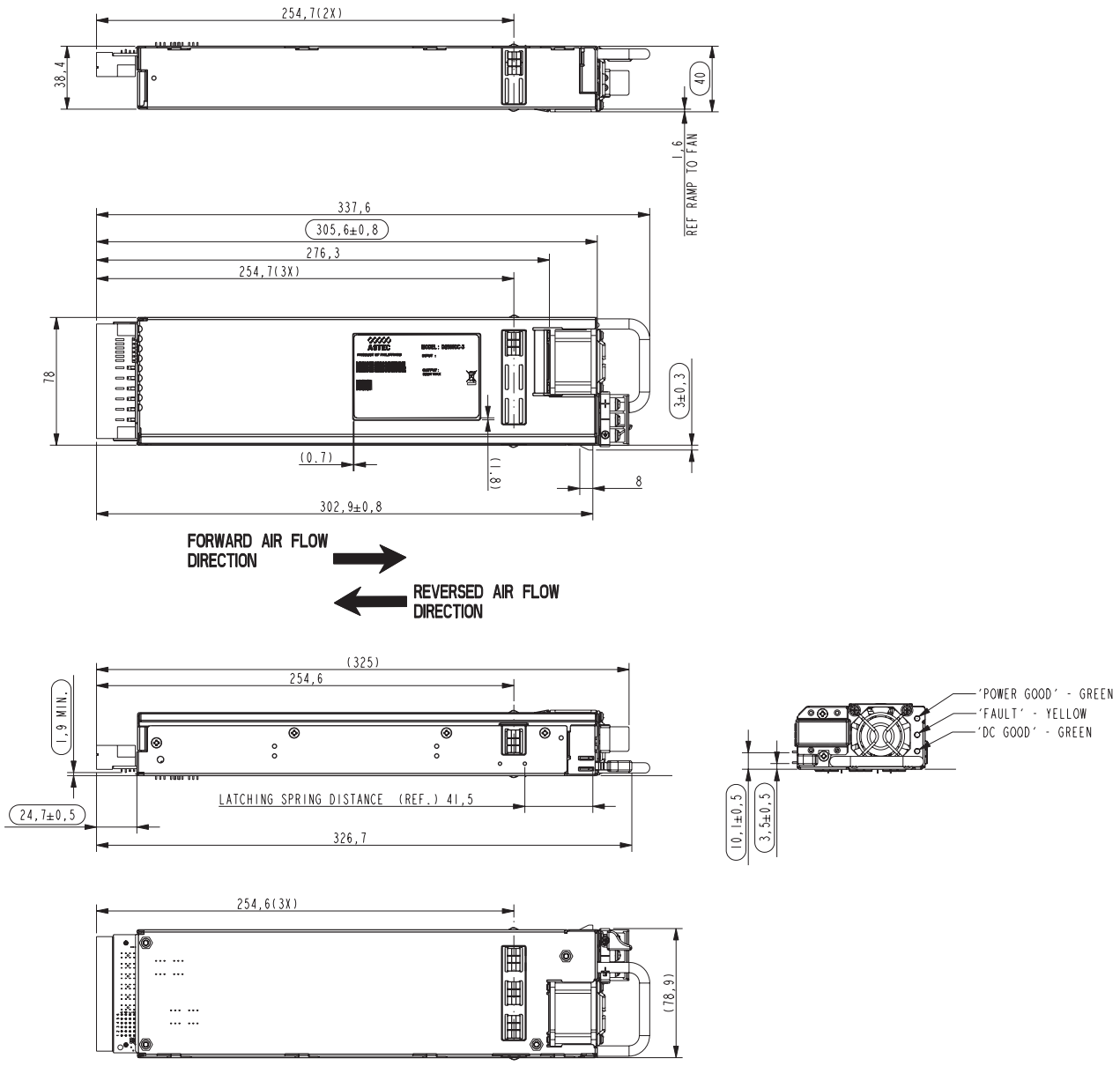
Operating temperature	+10°C to +45°C, able to start-up at -10°C
Storage temperature	-40°C to +70°C
Altitude, operating	10,000 ft.
Electromagnetic susceptibility/Input transients	- EN61000-3-2, -3-3 - EN61000-4-2, 4.3, 4-4, -4-5, 4-11 - EN55024:1998
RoHS & lead-free compliant (no tantalum caps.)	
Humidity	20 to 90% RH, non-condensing
Shock and vibration specificatons 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 to 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 to 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 to 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 to 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 I^2C standard mode (100 kHz) only

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

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

For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832

ENG-DS450DC-3/DS550DC-3-235-02 5.09