ARTESYN DS450-3/DS550-3

Distributed Power Bulk Front-End

Advanced Energy's Artesyn DS450 and DS550 series bulk front end AC-DC power supplies accept a wide range 90–264 Vac input and provide a main 12 Vdc output, plus a 3.3 Vdc standby output. Rated at 450 watts and 550 watts respectively, the DS450 and DS550 have a typical full load conversion efficiency of 84%. 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 Standby Output

Wide Range Input Voltage:

90 - 264 Vac

RoHS 6/6 COMPLIANT

SPECIAL FEATURES

- Active power factor correction
- EN61000-3-2 harmonic compliance
- 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 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^{2}C communication interface bus
- EEPROM 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
Standby	+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

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

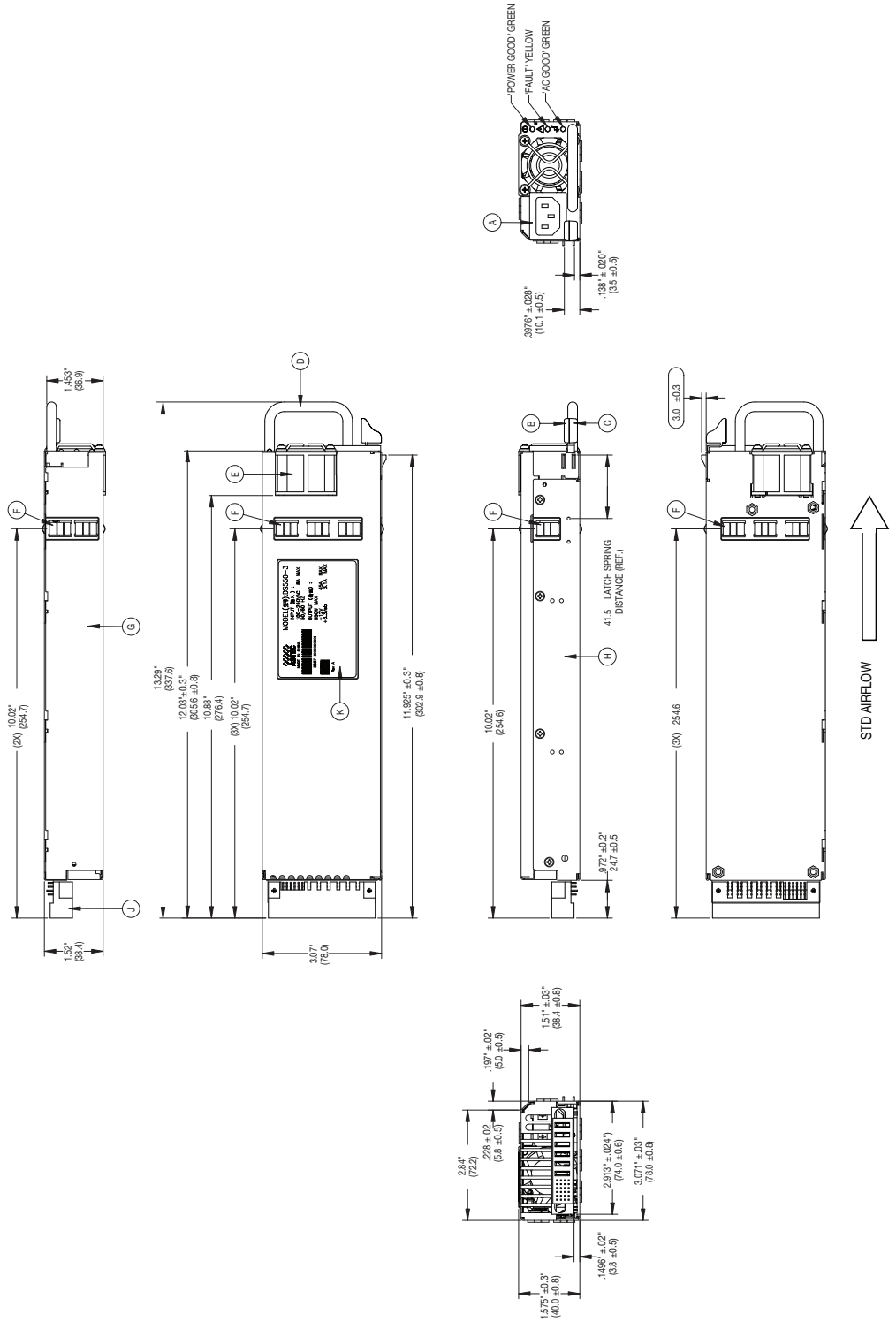
Operating temperature	-10 °C to 50 °C
Storage temperature	-40 °C to +70 °C
Altitude, operating	10,000 ft.
Electromagnetic susceptibility/Input transients	-EN61000-3-2, -3-3 -EN61000-4-2, 4.3, 4-4, -4-5, 4-11 -EN55024:1998
RoHS & lead-free compliant (no tantalum caps)	
Humidity	20 to 90% RH, non-condensing
Shock and vibration specificatons complies with Artesyn Embedded Power Std. Specification.	
MTBF (Demonstrated)	400 K 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	Options
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	Standard
DS450-3-002	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 A - 44.4 A 4.9 A Avg, 7 A max	Reverse Air
DS550-3	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	48.0 A - 54.0 A 4.9 A Avg, 7 A max	Standard

*Overcurrent 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	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

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.

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