

# POWER

## Data Sheet

**Total Output Power:** 650 - 850 Watts  
 +3.3vdc Stand-by Output  
 Standard Telco input range -39 V to -72 VDC

### SPECIAL FEATURES

- 1U X 2U form factor
- 15.4W/ in<sup>3</sup>
- +12Vdc output
- +3.3vdc stand-by (5V standby - consult factory)
- No minimum load required
- Hot plug operation
- N + 1 redundant
- Internal OR'ing fets
- Active current sharing  
 2PSU shared from 30% to 100%  
 4PSU shared from 20% to 100%
- Built-in cooling fan (40mm x 28mm)
- I<sup>2</sup>C communication Interface bus
- EEPROM for FRU data
- Amber/green bi-color LED status
- Internal fan speed control
- Fan fail tach output signal
- One year warranty

### SAFETY

- UL/cUL 60950 (UL recognized)
- NEMKO+ CB report EN60950
- CE mark
- China CCC

# DS650DC-3/DS850DC-3

Distributed Power Bulk Front-End



### Electrical Specifications

Input	
Input range:	-40 Vdc to -75 Vdc
Efficiency:	> 80% typical
Conducted EMI:	FCC Subpart J EN55022 Class B
Radiated EMI:	FCC Subpart J EN55022 Class B
Hold up time:	1 ms @48 Vdc
Output	
Main DC voltage:	+12 V @ 70 A; DS850DC +12 V @ 52.5 A; DS650DC
Stand-By:	+3.3 Vsb @ 6A (5V @ 4A available)
Adjustment range:	Factory Set, no pot adjustments
Regulation:	+12 Vdc; +5%/-5% +3.3 Vsb; +5%/-5%
Overcurrent:	+12 Vdc; 77A - 105A - DS850DC; +12 Vdc 57.75 A - 78.75 A; DS650DC latches off if overcurrent lasts over 1 second, otherwise it is auto recovery. +3.3 vsb, 9A max (hiccup mode)
Overvoltage:	+12 Vdc; 13.2 - 14.4 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc
Under voltage:	+12 Vdc; 9 - 10.8V (latch off)
Turn-on delay:	2 Second max
+12VOutput Rise Time:	10 - 300 mS, Monotonic Rise

### Logic Control

PS_SEATED	TTL logic LOW if power supply is seated into system connector. This is a short pin. A logic HIGH if the PSU is removed.
PWR_GOOD	Active TTL HIGH when output is within regulation limits.
DC Input OK	A LOW logic level if the input voltage is within allowable limits. A TTL logic HIGH level, and a 5mS early warning signal before 12.0v DC output loss of regulation.
Temp OK	A TTL logic HIGH, when operating within allowable temperature range.
PS_INHIBIT/PS_KILL	When left open power supply operation will be inhibited. When the power supply is inserted into the system, this pin will be pulled low by the system and turn the power supply on.

### Environmental Specifications

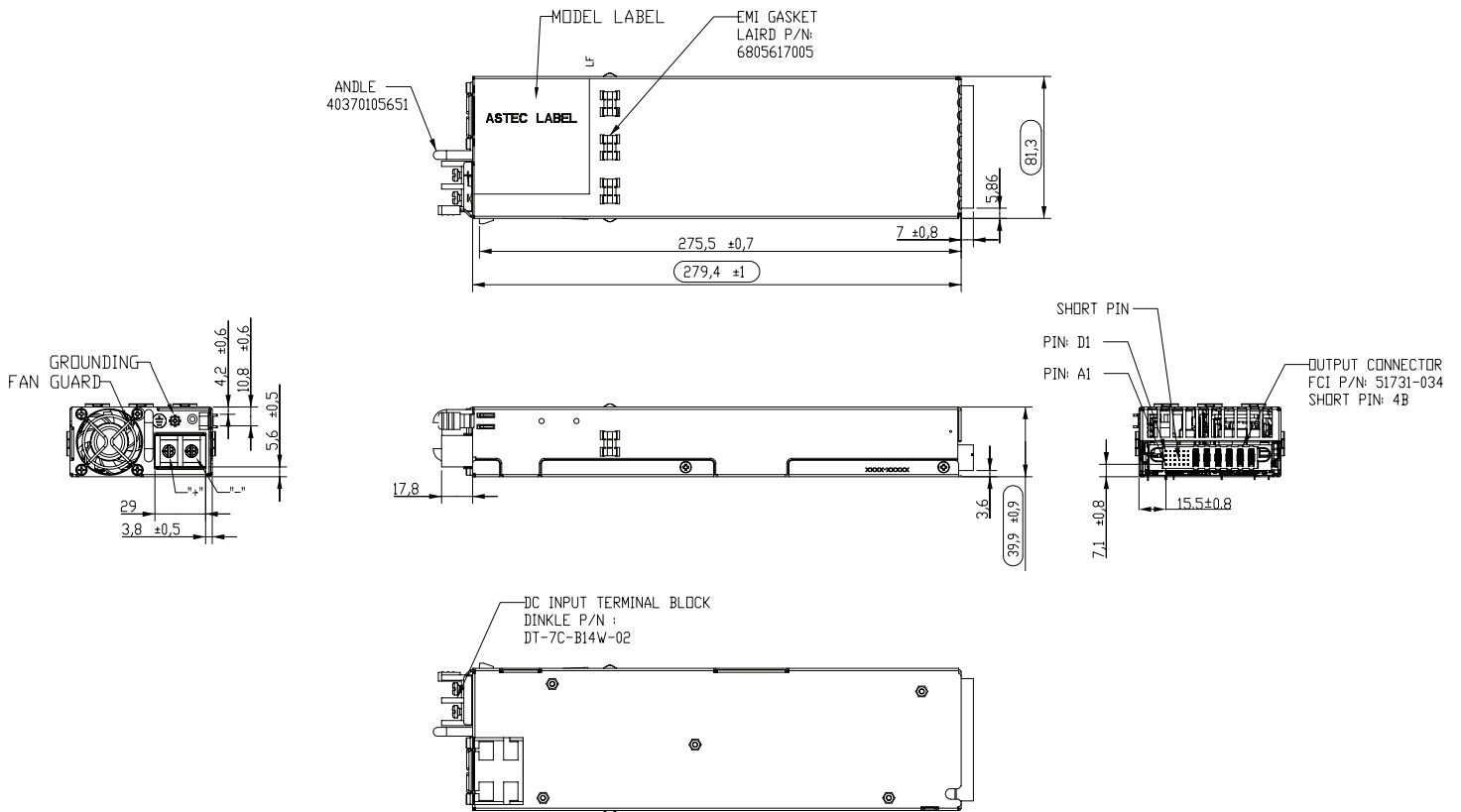
Operating temperature:	0 to 50°C, unimpeded airflow
Storage temperature:	-40 °C to +85 °C
Altitude, operating:	10,000 ft
Electromagnetic susceptibility/Input transients:	-EN61000-3-2, -3-3 -EN61000-4-2, 4.3, 4-4, -4-5, 4-11 -EN55024:1998
RoHS & lead-free compliant (no tantalum caps.)	
Humidity:	20 to 90% RH, non-condensing
Shock and vibration specifications complies with Astec Std. Specifications.	
MTBF (observed)	500K Hrs at 80% load

### Ordering Information

Output	Nominal Output Voltage Set Point	Set Point Tolerance	Total Regulation	Minimum Current	Maximum Current	Output Ripple P/P
DS850DC-3	12.0 Vdc 3.3 Vsb*	± 0.2% ± 1%	± 5% ± 5%	0 A 0 A	70 A 6.0 A	120 mV 50 mV
DS850DC-3-003	12.0 Vdc 5 Vsb*	± 0.2% ± 1%	± 5% ± 5%	0 A 0 A	70 A 4.0 A	120 mV 50 mV
DS850DC-3-004 (Reverse airflow)	12.0 Vdc 3.3 Vsb*	± 0.2% ± 1%	± 5% ± 5%	0 A 0 A	70 A 6.0 A	120 mV 50 mV
DS650DC-3	12.0 Vdc 3.3 Vsb*	± 0.2% ± 1%	± 5% ± 5%	0 A 0 A	52.5 A 6.0 A	120 mV 50 mV
DS650DC-3-002	12.0 Vdc 5 Vsb*	± 0.2% ± 1%	± 5% ± 5%	0 A 0 A	52.5 A 4.0 A	120 mV 50 mV
DS650DC-3-003 (Reverse airflow)	12.0 Vdc 3.3 Vsb*	± 0.2% ± 1%	± 5% ± 5%	0 A 0 A	52.5 A 6.0 A	120 mV 50 mV

### Mechanical Drawing

Power Supply Condition	LED Green/Amber
No AC power to all PSU	OFF
AC present/Standby output ON, Main output OFF	Blinking Green
Power supply DC outputs ON and OK	Solid Green
Main output failure (OCP, OVP, UVP)	Blinking Amber
Fan Fail, OTP, Standby output OCP/UVP	Solid Amber



Terminalblockinputshown

## 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	+12V RETURN
PB 2	+12V RETURN
PB 3	+12V RETURN
PB 4	+12V
PB 5	+12V
PB 6	+12V
A1	PS_ON
A2	+12V RMT SENSE RETURN
A3	TEMP_OK
A4	PS_SEATED ( Power Supply Seated)
A5	+3V3 STAND-BY
A6	+3V3SB RETURN
B1	DC input OK
B2	+12V RMT SENSE
B3	+12V CURRENT SHARE
B4	PS_INHIBIT/PS_KILL
B5	+3V3 STAND-BY
B6	+3V3SB RETURN

### Pin Assignments

Pin	Signal Name
C1	SDA (I <sup>2</sup> C Data Signal)
C2	SCL (I <sup>2</sup> C Clock Signal)*
C3	POWER GOOD
C4	FAN FAIL (Fan Fail Signal)
C5	+3V3 STAND-BY
C6	+3V3SB RETURN
D1	A0 (I <sup>2</sup> C Address BIT 0 Signal)
D2	A1 (I <sup>2</sup> C Address BIT 1 Signal)
D3	S_INT (Alarm)
D4	+3V3 STAND-BY RMT SENSE
D5	+3V3 STAND-BY
D6	+3V3SB RETURN

\*Supports I<sup>2</sup>C standard mode (100 kHz) only

## WORLDWIDE OFFICES

### Americas

2900 S.Diablo Way  
Tempe, AZ 85282  
USA  
+1 888 412 7832

### Europe (UK)

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

### Asia (HK)

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

**ARTESYN**<sup>TM</sup>  
EMBEDDED TECHNOLOGIES

[www.artesyn.com](http://www.artesyn.com)

While every precaution has been taken to ensure accuracy and completeness in this literature, Artesyn Embedded Technologies assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions. Artesyn Embedded Technologies, Artesyn and the Artesyn Embedded Technologies logo are trademarks and service marks of Artesyn Embedded Technologies, Inc. All other names and logos referred to are trade names, trademarks, or registered trademarks of their respective owners.  
© 2014 Artesyn Embedded Technologies, Inc.

For more information: [www.artesyn.com/power](http://www.artesyn.com/power)  
For support: [productsupport.ep@artesyn.com](mailto:productsupport.ep@artesyn.com)