

Data Sheet

Total Input 650/850 Watts
Power: +3.3 Vdc Stand-by Output
Wide Range 90 - 264Vac
Output Voltage: 12, 24 and 48V

SPECIAL FEATURES

- Active power factor correction
- EN61000-3-2 harmonic compliance
- Inrush control
- 1U X 2U form factor
- 15.4 W/ in³
- 12 Vdc, 24 Vdc and 48 Vdc output
- Available in +3.3V and +5.0V standby output versions
- No minimum load required
- Hot plug operation
- N + 1 redundant
- Internal OR'ing fets
- Active current sharing (10 - 100% load)
- Built-in cooling fans (40mm x 28mm)
- I²C 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
- EN60950
- CE Mark
- China CCC

DS650/DS850

Distributed Power Bulk Front-End



Electrical Specifications

| Input | |
|-----------------------|--|
| Input range | 90 - 264 Vac (wide range) |
| Frequency | 47 - 63 Hz, single phase AC |
| Inrush current | 55 A maximum inrush current |
| Efficiency | > 82% typical at full load, high line |
| Conducted EMI | FCC Subpart J EN55022 Class B |
| Radiated EMI | FCC Subpart J EN55022 Class B |
| Power factor | 0.99 typical |
| Leakage current | 1.40 mA @ 240 Vac |
| Hold up time | 20ms minimum |
| Output | |
| Main DC voltage | +12 V @ 52.5 A/70.0 A +24 V @ 26.3 A/35.0 A +48 V @ 13.1 A/17.5 A |
| Stand-By | +3.3 vsb @ 6 A (5 V @ 4 A available) |
| Adjustment range | Factory Set, no pot adjustments |
| Regulation | Main output; +5%/-5% +3.3 vsb; +5%/-5% |
| Over current | 110% - 150% of nominal Latches off if overcurrent lasts over 1 second, otherwise it is auto recovery. +3.3 vsb, 9 A max (hiccup mode) |
| Over voltage | 110% - 120% of nominal +3.3 vsb; 3.76 - 4.30 Vdc |
| Under voltage | 75% - 90% of nominal |
| Turn-on delay | 2 Second max, 5 - 50 mS, Monotonic Rise |
| Main output rise time | 5 - 50 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. |
| AC OK | A LOW logic level if the input voltage is within allowable limits. A TTL logic HIGH level, and a 5mS early warningsig- nal before main output loss of regulation. |
| Temp OK | A TTL logic HIGH, when operating within allowable temperature range. |
| PS_INHIBIT/PS_KILL | This signal is connected to a short pin on the PSU When left open power supply operation will be inhibited. When the power supply is inserted into the system, this pin will be pull low by the system and turn the power supply on only after all other power supply pins have seated. |

Environmental Specifications

| | |
|--|--|
| Operating temperature: | 0 to 50°C, unimpeded airflow |
| Storage temperature: | -40°C to +85°C |
| Altitude, operating 10,000ft. | |
| 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 specifcations complies with Astec Std. Specifications. | |
| MTBF (Demonstrated) | 500K Hrs at full load, 40°C |

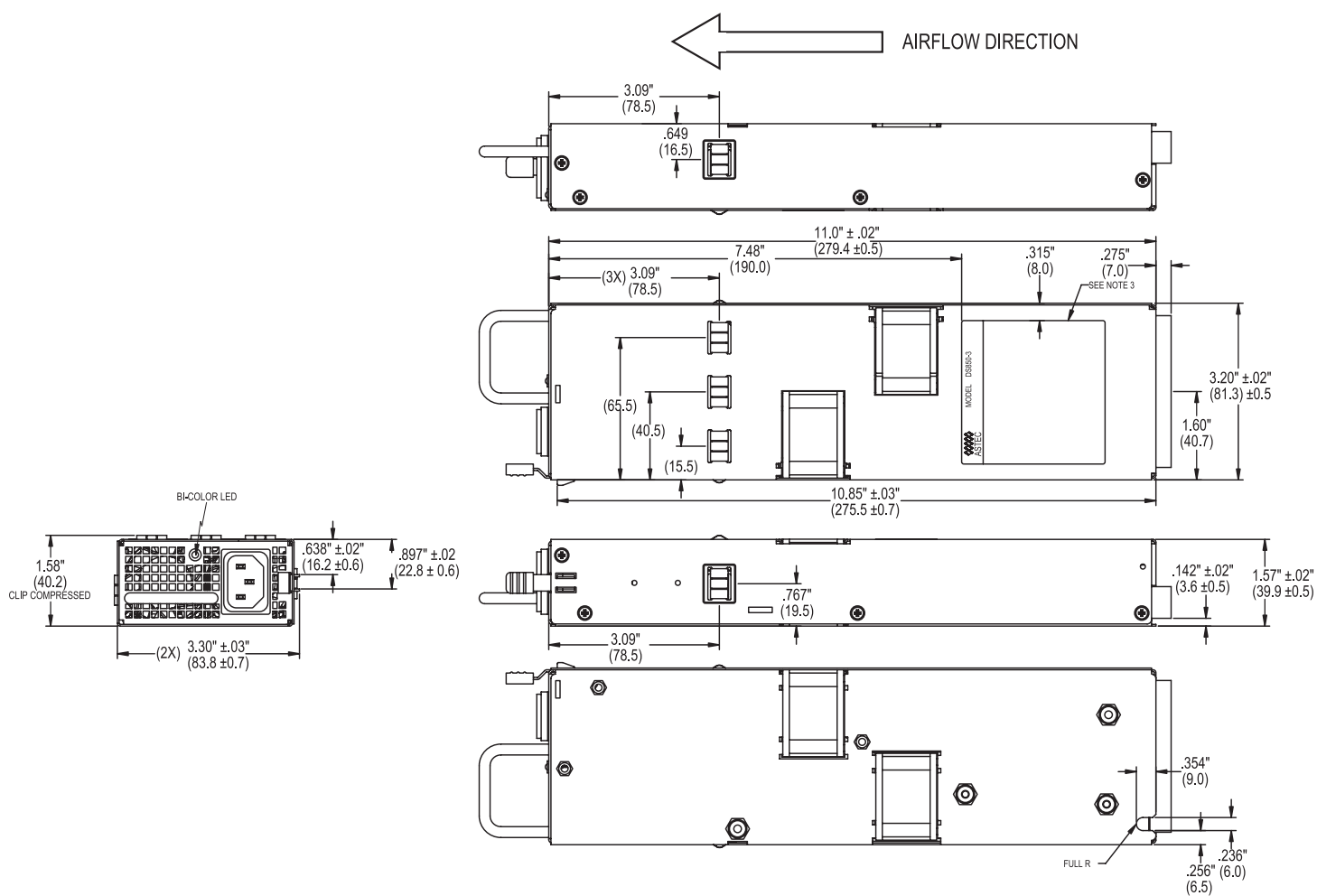
Ordering Information

| Output | Nominal Output Voltage Set Point | Set Point Tolerance | Total Regulation | Minimum Current | Maximum Current | Output Ripple P/P |
|---------|-------------------------------------|---------------------|---------------------|--------------------|--------------------|----------------------|
| DS650-3 | 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 |
| DS650-5 | 24.0 Vdc 3.3 vsb* | ±0.2% ±1% | ±5% ±5% | 0 A 0 A | 26.3 A 6.0 A | 240 mV 50 mV |
| DS650-9 | 48.0 Vdc 3.3 vsb* | ±0.2% ±1% | ±5% ±5% | 0 A 0 A | 13.1 A 6.0 A | 480 mV 50 mV |
| DS850-3 | 12.0 Vdc 3.3 vsb* | ±0.2% ±1% | ±5% ±5% | 0 A 0 A | 70.0 A 6.0 A | 120 mV 50 mV |
| DS850-5 | 24.0 Vdc 3.3 vsb* | ±0.2% ±1% | ±5% ±5% | 0 A 0 A | 35.0 A 6.0 A | 240 mV 50 mV |
| DS850-9 | 48.0 Vdc 3.3 vsb* | ±0.2% ±1% | ±5% ±5% | 0 A 0 A | 17.5 A 6.0 A | 480 mV 50 mV |

*For 5 vsb, please contact marketing department.

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 |



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 | MAIN O/P RETURN |
| PB 2 | MAIN O/P RETURN |
| PB 3 | MAIN O/P RETURN |
| PB 4 | + MAIN O/P |
| PB 5 | + MAIN O/P |
| PB 6 | + MAIN O/P |
| A1 | PS_ON |
| A2 | MAIN O/P V RMT SENSE RETURN |
| A3 | TEMP_OK |
| A4 | PS_SEATED (Power Supply Seated) |
| A5 | +3V3 STAND-BY |
| A6 | +3V3SB RETURN |
| B1 | AC_OK (AC Input Present) |
| B2 | MAIN O/P RMT SENSE |
| B3 | MAIN O/P CURRENT SHARE |
| B4 | PS_INHIBIT |
| B5 | +3V3 STAND-BY |
| B6 | +3V3SB RETURN |

Pin Assignments

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

*Supports I²C 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

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www.artesyn.com

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For support: productsupport.ep@artesyn.com

DS650/DS850-DS Rev. 07.03.14

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