

DS2000-3

2000 Watts 12 V

Distributed Power System

Distributed Power Bulk Front-End
Total Output Power: 2000 Watts
+12 Vdc main Output
+3.3 Vdc Stand-by Output
Wide Range Input voltage: 90 - 264 Vac



Special Features

- Active power factor correction
- EN61000-3-2 harmonic compliance
- Active AC inrush control
- 1U X 3U form factor
- 26.14 W / in³
- +12 Vdc output
- +3.3 Vdc Stand-By (5 V standby - consult factory)
- No minimum load required
- Hot plug operation
- N + 1 redundant
- Internal OR'ing fets
- Active current sharing (10 - 100% load)
- Built-in cooling fans (40 mm x 28 mm)
- I²C communication interface bus
- PM Bus compliant
- EERPOM for FRU data
- Red/Green bi-color LED status
- Internal fan speed control
- INTEL, SSI Std. logic timing
- INTEL, SSI Std. FRU data format
- 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) 90 - 264 1200 W load, nominal 100 Vac 180 - 264 2000 W load, nominal 200 Vac |
| Frequency | 47 - 63 Hz, single phase AC |
| Inrush current | 55 A maximum inrush current |
| Efficiency | > 89% 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 | 12 ms minimum |
| Output | |
| Main DC voltage | +12 V @ 164.2 A 180 - 264 Vac +12 V @ 100 A 90 - 264 Vac |
| Stand-By | +3.3 Vsb @ 9 A (5 V @ 5 A TBA) |
| Adjustment range | Factory Set, no pot adjustments |
| Regulation | +12 Vdc; ±5% +3.3 Vsb; ±5% |
| Overcurrent | +12 Vdc; latches off if overcurrent lasts over 1 second, otherwise it is auto recovery (See ordering info next page) +3.3 Vsb, 9 A max (same as +12 Vdc) |
| Overvoltage | +12 Vdc; 13.2 - 14.4 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc |
| Undervoltage | +12 Vdc; 9 - 10.8 V (latch off) |
| Turn-on delay | 2 second max, 5 - 300 ms, Monotonic Rise |
| +12 V 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 LOW 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 2 mS early warning signal before 12.0 V DC output loss of regulation. |
| 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 | -10 °C to 50 °C |
| 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 Level -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, Q3205 |
| MTBF (Demonstrated) | 500 K Hrs at full load, 40 °C |

Ordering Information

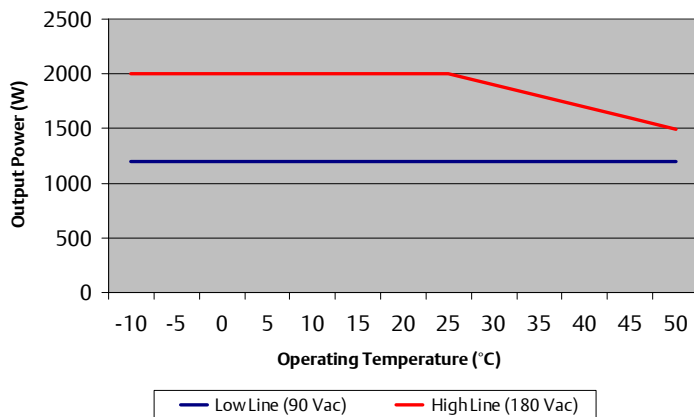
| Model Number | Nominal Output Voltage Set Point | Set Point Tolerance | Total Regulation | Minimum Current | Maximum Current | Output Ripple P/P | Overcurrent | Airflow |
|--------------|----------------------------------|---------------------|------------------|-----------------|--------------------|-------------------|--|----------|
| DS2000-3 | 12.2 Vdc 3.3 Vsb | ±0.2% ±1% | ±5% ±5% | 0A 0A | 161.5 A 9.0 A | 120 mV 60 mV | 120 - 130% of nominal 100 - 125% of nominal | Standard |
| DS2000-3-001 | 12.2 Vdc 3.3 Vsb | ±0.2% ±1% | ±5% ±5% | 0A 0A | 161.5 A** 9.0 A | 120 mV 60 mV | 120 - 130% of nominal 100 - 125% of nominal | Reverse |

*Overcurrent latches off if overcurrent lasts over 1 second, otherwise it is auto recovery.

**For 5 Vsb, consult marketing.

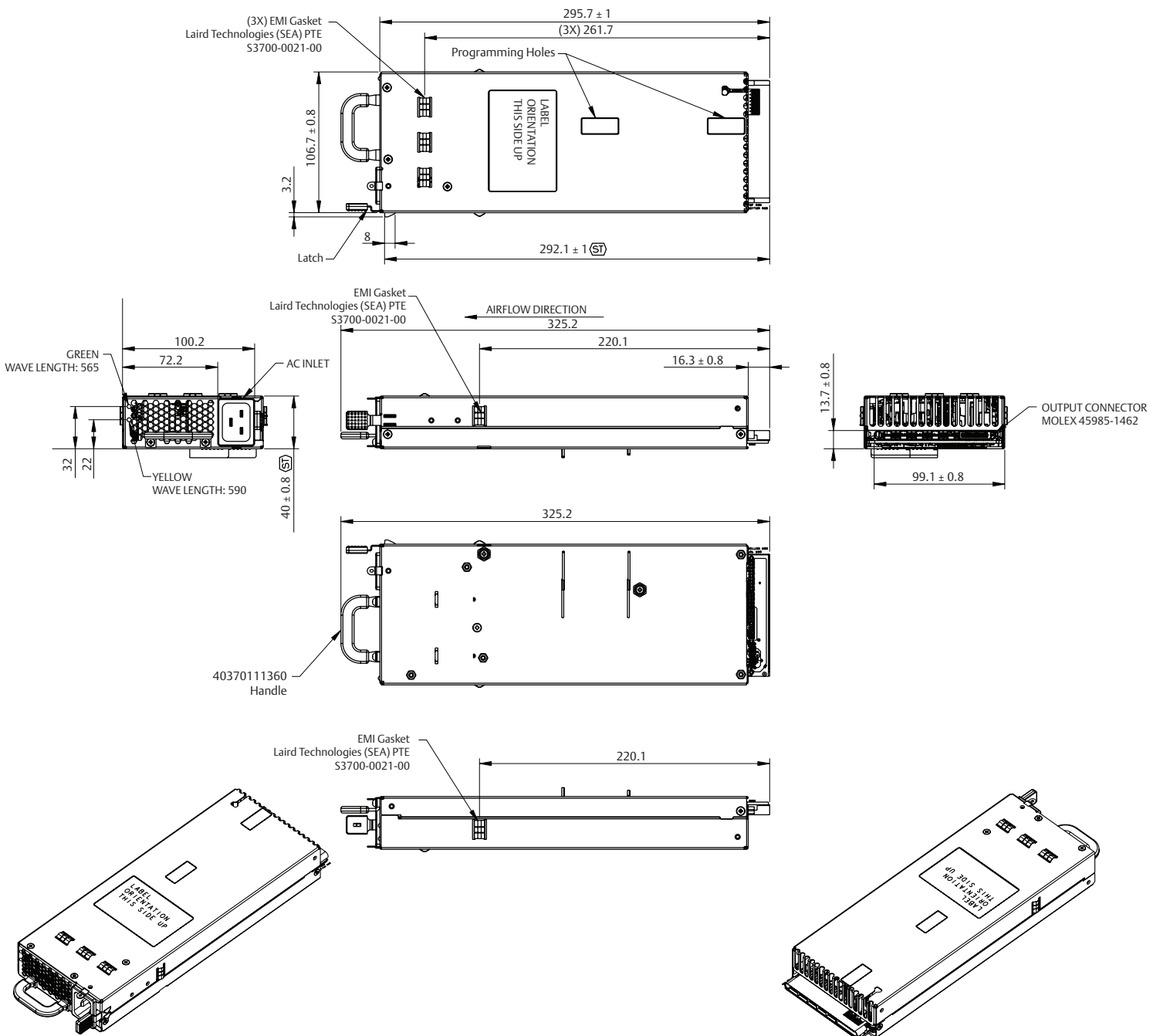
** Derates per below curve (-001) reverse air

DS2000-3-001 Derating Curve



Mechanical Drawing

| Condition | LED Status |
|------------------------------------|----------------|
| +3V3SB-ON; +12VOUT-OFF; AC PRESENT | Blinking Green |
| +3V3SB-ON, +12VOUT-ON | Solid Green |
| +12V_OCP, +12V_UVP, +480VP | Blinking Red |
| FAN_FAULT, OTP, 3V3 OCP/UVP | Solid Red |



DC Output Connector Pinout / Functions

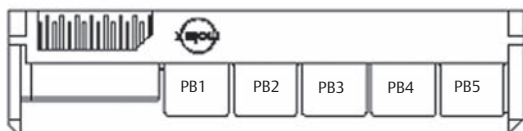
Unit Connector; Molex Blade, (LPH Series) 45985-xxx
Mating Connector; Molex Blade, (LPH Series) SD-45984-1462

Signal Descriptions

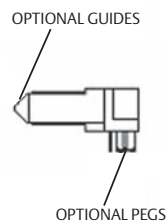
| Signal Pin #Comp Side Top Row | Signal Function | Signal Description | Signal Pin #Solder Side Bottom Row | Signal Function | Signal Description |
|-------------------------------|-----------------|--------------------------------|------------------------------------|-----------------|--------------------------------|
| A17 | 3.3V Sense RTN | 3.3V Sen Rtn | A1 | SPARE | |
| A18 | AC OK# | AC input present | A2 | SPARE | |
| A19 | A0 | I ² C address bit 0 | A3 | #ALERT | |
| A20 | A2 | I ² C address bit 2 | A4 | A1 | I ² C address bit 1 |
| A21 | SCL* | I ² C Clock signal | A5 | SDA | I ² C Data signal |
| A22 | PWOK# | Pwr OK output | A6 | PRESENT# | Power supply present |
| A23 | 12LS | 12V load share bus | A7 | PSON# | Power enable input |
| A24 | +12VRS Rtn | +12V Rmt Sen Rtn | A8 | +12V RS | +12V Remote Sense |
| A25 | 3.3vsb | Stand-By | A9 | 3.3vsb | Stand-By |
| A26 | 3.3vsb | Stand-By | A10 | 3.3vsb | Stand-By |
| A27 | 3.3vsb | Stand-By | A11 | 3.3vsb | Stand-By |
| A28 | 3.3vsb | Stand-By | A12 | 3.3vsb | Stand-By |
| A29 | 3.3vsb Rtn | Stand-By return | A13 | 3.3vsb Rtn | Stand-By return |
| A30 | 3.3vsb Rtn | Stand-By return | A14 | 3.3vsb Rtn | Stand-By return |
| A31 | 3.3vsb Rtn | Stand-By return | A15 | 3.3vsb Rtn | Stand-By return |
| A32 | 3.3vsb Rtn | Stand-By return | A16 | 3.3vsb Rtn | Stand-By return |
| Power Blade | | | | | |
| PB1 Top | +12vdc | Main Output | PB1 Bottom | +12vdc | Main Output |
| PB2 Top | +12vdc | Main Output | PB2 Bottom | +12vdc | Main Output |
| PB3 Top | +12vdc | Main Output | PB3 Bottom | +12vdc Rtn | Main Output |
| PB4 Top | +12vdc Rtn | Main Output | PB4 Bottom | +12vdc Rtn | Main Output |
| PB5 Top | +12vdc Rtn | Main Output | PB5 Bottom | +12vdc Rtn | Main Output |

*Supports I²C standard mode (100 kHz) only

Mating Connector - Molex p/n: 45984-1462



Signal Pin A1 Bottom Left
Signal Pin A17 Top Left



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