

## DS2000-3

### 2000 Watts 12 V Distributed Power System

#### Data Sheet

#### Distributed Power Bulk Front-End

**Total Output Power:** 2000 Watts

+12 Vdc Main Output

+3.3 or +5.0 Vdc Standby 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 / in<sup>3</sup>
- +12 Vdc output
- +3.3 Vdc or 5.0 V Standby
- 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)
- I<sup>2</sup>C communication interface bus
- PMBus compliant
- EEPROM for FRU data
- Green and Amber LED status
- Internal fan speed control
- INTEL, SSI Std. logic timing
- INTEL, SSI Std. FRU data format
- Two year warranty

#### SAFETY

- UL/cUL 60950 (UL Recognized)
- NEMKO+ CB Report EN60950
- EN60950
- CE Mark
- China CCC



#### Electrical Specifications

Input	
Input voltage 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	40 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	10 ms minimum
Output	
Main DC voltage	+12 V @ 164.2 A    180 - 264 Vac +12 V @ 100 A    90 - 264 Vac
Standby	+3.3 Vsb @ 9 A or 5 V @ 6 A
Adjustment range	Factory set, no pot adjustments
Regulation	+12 Vdc; ±5% +3.3 Vsb/+5.0V; ±5%
Overcurrent	+12 Vdc; latches off if overcurrent lasts over 1 second, otherwise it is auto recovery (See ordering info next page)
Overvoltage	+12 Vdc; 13.2 - 14.4 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc, +5.0Vsb; 5.5 - 6.25Vdc
Undervoltage	+12 Vdc; 9 - 10.8 V (latch off)
Turn-on delay	2 second max
+12 V output rise time	5 - 300 ms, Monotonic Rise

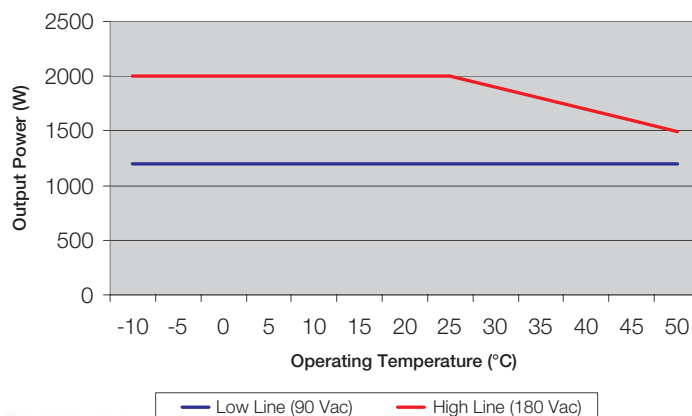
Logic Control	
PRESENT#	TTL logic LOW if power supply is seated into system connector. This is a short pin. A logic HIGH if the PSU is removed.
PWOK#	Active TTL LOW when output is within regulation limits.
AC OK#	A LOW logic level if the input voltage is within allowable limits. A TTL logic HIGH level, and a 2 mS early warning signal before 12.0 V DC output loss of regulation.

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	Standard operating and non-operating random shock and vibration
MTBF (Demonstrated)	300 K Hrs at full load, 40 °C

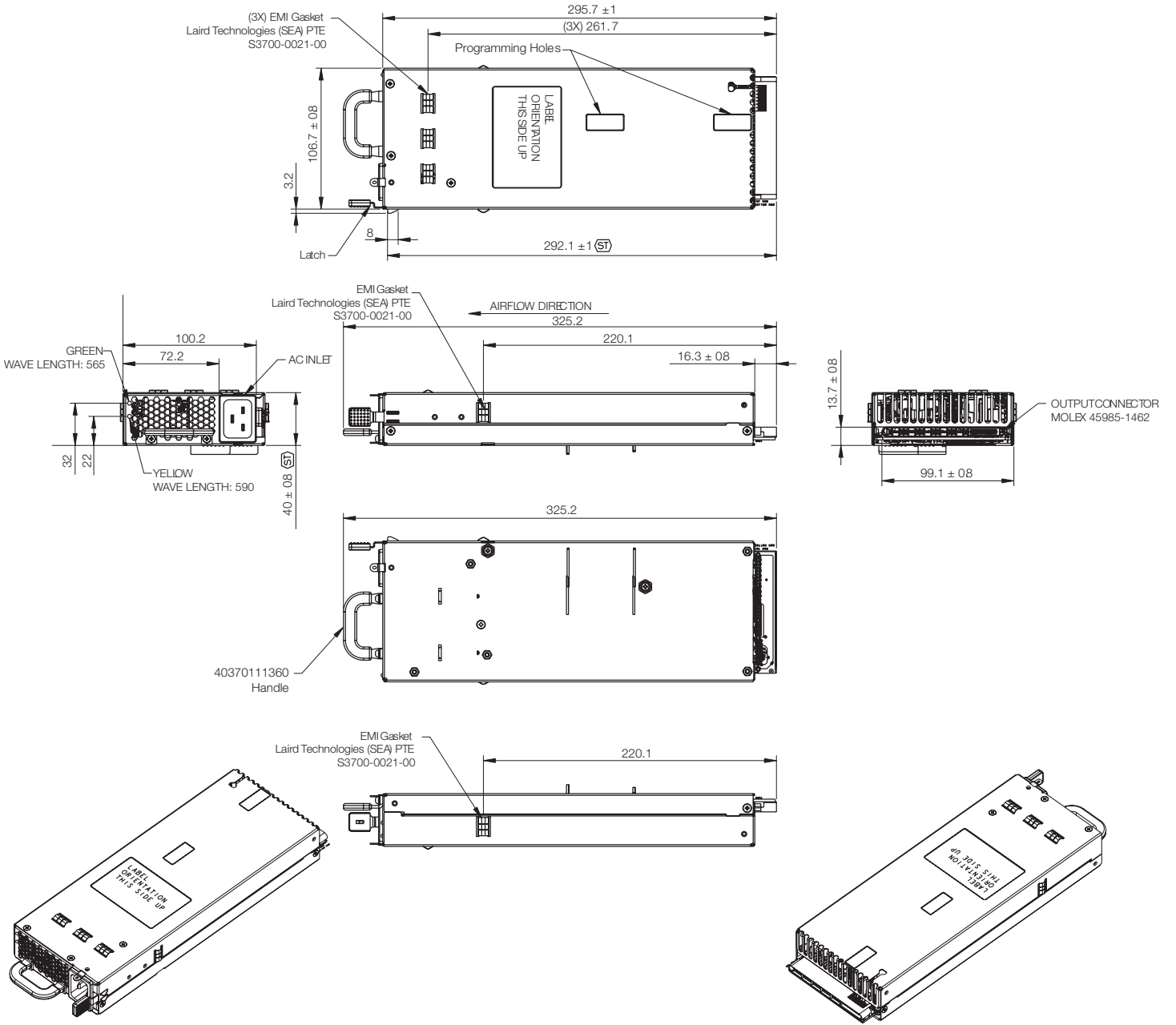
Ordering Information								
Model Number	Nominal Output Voltage Set Point	Set Point Tolerance	Total Regulation	Minimum Current	Maximum Current	Output Ripple P/P	Overcurrent	Airflow
DS2000-3	12.2 Vdc 3.3 Vsb	±0.2% ±1%	±5% ±5%	0 A 0 A	161.5 A 9.0 A	120 mV 60 mV	120 - 130% of nominal 100 - 125% of nominal	Standard
DS2000-3-001	12.2 Vdc 3.3 Vsb	±0.2% ±1%	±5% ±5%	0 A 0 A	161.5 A** 9.0 A	120 mV 60 mV	120 - 130% of nominal 100 - 125% of nominal	Reverse
DS2000-3-002	12.2 Vdc 5.0 Vsb	±0.2% ±1%	±5% ±5%	0 A 0 A	161.5 A 6.0 A	120 mV 60 mV	120 - 130% of nominal 120 - 140% of nominal	Standard

\* Overcurrent latches off if overcurrent lasts over 1 second, otherwise it is auto recovery.  
 \*\* Derates per below curve (-001 reverse air)

DS2000-3-001 Derating Curve



Mechanical Drawing



Power Supply Condition	Power LED (Green)	Fail LED (Amber)
No AC power to PSU	OFF	OFF
AC Present/Standby Output ON	Blinking	OFF
Power Supply Main Output ON and OK	ON	OFF
Power Supply Main Output Failure (overvoltage and overtemperature)	OFF	ON
Over-current	ON	Blinking

## DC Output Connector Pinout/Functions

Unit Connector; Molex Blade, (LPH Series) 45985-xxx

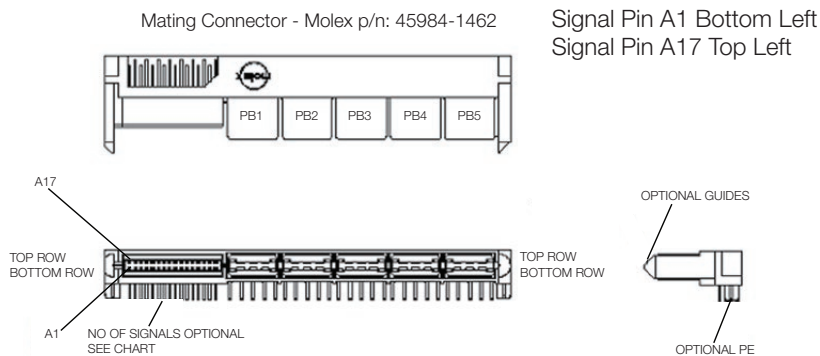
Mating Connector; Molex Blade, (LPH Series) SD-45984-1462 or any approved equivalent

### Signal Descriptions

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

Power Blade			Power Blade		
PB1 Top	+12 vdc	Main Output	PB1 Bottom	+12 vdc	Main Output
PB2 Top	+12 vdc	Main Output	PB2 Bottom	+12 vdc	Main Output
PB3 Top	+12 vdc	Main Output	PB3 Bottom	+12 vdc Rtn	Main Output
PB4 Top	+12 vdc Rtn	Main Output	PB4 Bottom	+12 vdc Rtn	Main Output
PB5 Top	+12 vdc Rtn	Main Output	PB5 Bottom	+12 vdc Rtn	Main Output

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



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