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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

RoHS 2002/95/EC

PMBus

Special Features

- Active power factor correction
- EN61000-3-2 harmonic compliance
- Active AC inrush control
- 1U X 3U form factor
- 26.14 W / in^3
- +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)
- I^2C 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	55A 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 @83.0 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%
Over current	+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)
Over voltage	+12 Vdc; 13.2 - 14.4 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc
Under voltage	+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

ASTEC

EMERSON
Network Power

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 2mS early warning signal before 12.0v 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 ; Derate output power to 50% at 70 °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

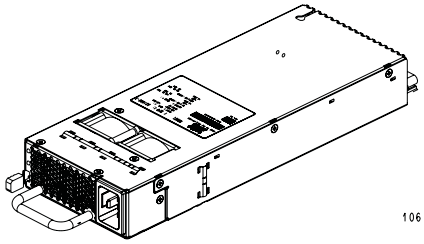
Ordering Information

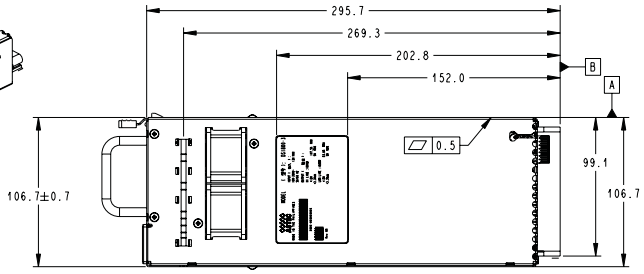
Output	Nominal Output Voltage Set Point	Set Point Tolerance	Total Regulation	Minimum Current	Maximum Current	Output Ripple P/P	Over Current
DS2000-3	12.0 Vdc 3.3 Vsb	±0.2% ±1%	±5% ±5%	0A 0A	164.2 A 7.0 A	120 mV 60 mV	120 - 130% of nominal 100 - 125% of nominal

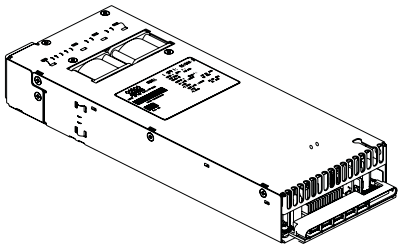
*Over current latches off if overcurrent lasts over 1 second, otherwise it is auto recovery.
*For 5 Vsb, consult marketing.

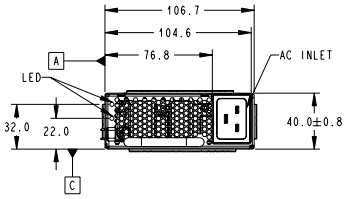
Mechanical Drawing

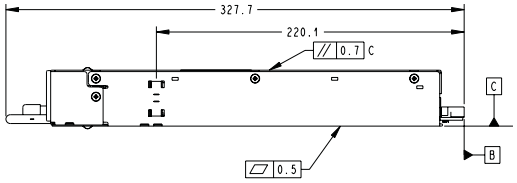
Condition	LED Status
+3V3SB-ON; +12VOUT-OFF; **AC PRESENT**	Blinking Green
+3V3SB-ON, +12VOUT-ON	Solid Green
+12V_OCP, +12V_UVP, +48OVP	Blinking Red
FAN_FAULT, OTP, 3V3 OCP/UVP	Solid Red

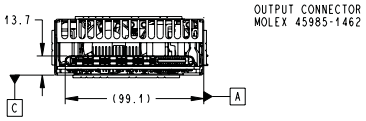


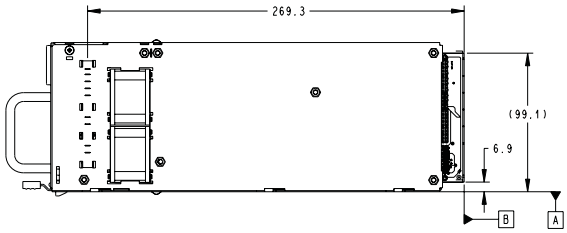


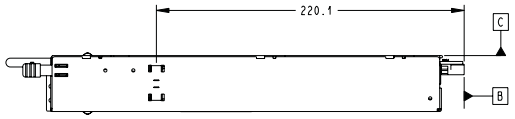












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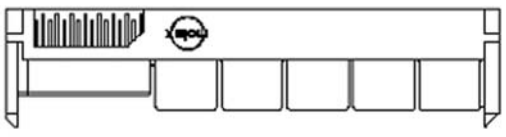
DC Output Connector Pinout / Functions

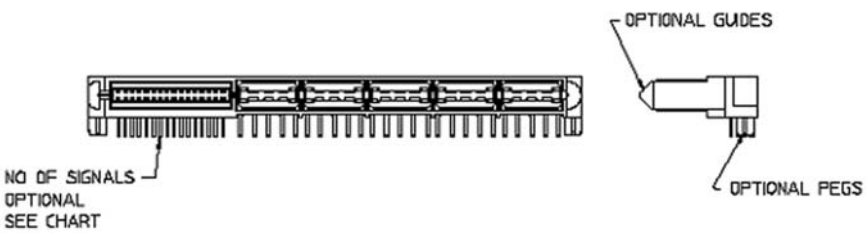
Unit Connector; Molex Blade, (LPH Series) 45985-xxx
Mating Connector; Molex Blade, (LPH Series) SD-45984-1462

Signal Descriptions

Signal Pin #Comp Side Top Row	Signal Function	Signal Description	Signal Pin #Solder Side Bottom Row	Signal Function	Signal Description
A17	SPARE		A1	SPARE	
A18	AC OK#	AC input present	A2	FAN FAIL#	Fan Fail Signal
A19	A0	I²C address bit 0	A3	FAIL	I²CFailure signal
A20	A2	I²C address bit 2	A4	A1	I²C address bit 1
A21	SCL	I²C Clock signal	A5	SDA	I²C 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			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



Signal Pin A1 Bottom Left
Signal Pin A17 Top Left
Power Blade PB1 Bottom Left
Power Blade PB6 Top Left



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