

# LCM1500 SERIES

AC/DC Power Supply 1500W



## Data Sheet

**Total Power:** 1500 W  
**# of Outputs:** Single  
**Outputs:** 12 to 48 V  
Optional 5.0 V standby



## SPECIAL FEATURES

- 1500 W output power
- Low Cost
- 2.5" x 5.2" x 10.0"
- 12 Watts Per Cubic Inch
- Industrial/Medical safety
- 40 °C to 70 °C with derating
- Optional 5 V @ 2 A Housekeeping
- High Efficiency: 89% typical
- Variable speed "Smart Fans"
- DSP controlled
- Conformal coat option
- ± 10% adjustment range
- Margin programming
- OR-ing FET

## COMPLIANCE

- EMI Class A
- EN61000 Immunity
- RoHS 2

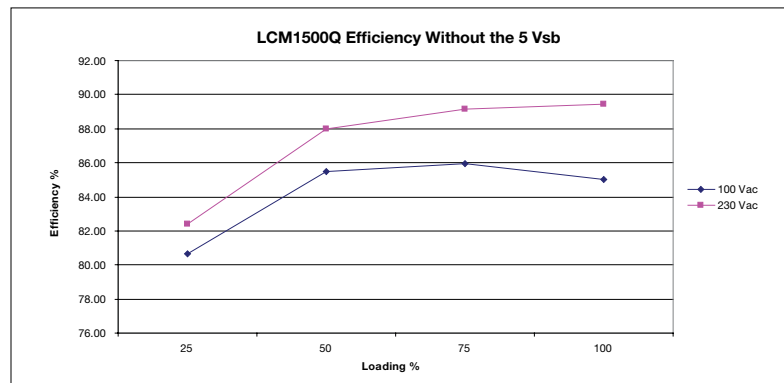
## SAFETY

- ULcUL Recognized ITE (UL60950-1)
- ULcUL Recognized Medical (ANSI/AAMI ES60601-1)
- TUV-SuD ITE + Medical (EN60950-1 and EN60601-1)
- CE LVD (EN60950-1 + ROHS)
- BSMI
- CB Report
  - through Demko for IEC60950-1
  - through TUV-SuD for IEC60601-1



## Electrical Specifications

Input	
Input range:	90 - 264 Vac (Operating) 115/230 Vac (Nominal) TERMINAL BLOCK
Frequency:	47 - 440 Hz, Nominal 50/60
Input fusing:	Internal 20 A fuses, both lines fused
Inrush current:	≤ 25 A peak, either hot or cold start
Power factor:	0.99 typical, meets EN61000-3-2
Harmonics:	Meets IEC 1000-3-2 requirements
Input current:	18 A RMS max input current, at 100 Vac
Hold up time:	20 ms minimum for Main O/P, at full rated load
Efficiency:	> 91% typical at full load / 230 Vac nominal
Leakage current:	< 0.3 mA at 264 Vac
ON/OFF power switch:	N/A
Power line transient:	MOV directly after the fuse
Isolation:	PRI-Chassis 2500 Vdc Basic PRI-SEC 4000 VAC Reinforced 2xMOPP SEC-Chassis 500 Vdc



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## Electrical Specifications

Output		
Output rating:	See table 1	90 - 264 Vac
Set point:	± 0.5%	90 - 264 Vac
Total regulation range:	Main output ± 2% 5 Vsb ± 1%	Combined line/load/transient when measured at output terminal
Rated load:	1500 W maximum	Derate linear to 50% from 50 °C to 70 °C
Minimum load:	Main output @ 0.0 A 5 Vsb @ 0.0 A	No loss of regulation
Output noise (PARD):	1% max p-p 50 mV max p-p	Main output 5 Vsb output Measured with a 0.1 µF Ceramic and 10 µF Tantalum Capacitor on any output, 20 MHz
Output voltage overshoot:		No overshoot/undershoot outside the regulation band during on or off cycle
Transient response:	< 300 µSec	50% load step @ 1 A/µs Step load valid between 10% to 100% of output rating Recovery time to within 1% of set point at onset of transient
Max units in parallel:		Up to 10
Short circuit protection:	Protected, no damage to occur	Bounce mode
Remote sense:		Compensation up to 500 mV
Output isolation:		Standard per safety requirements
Forced load sharing:	To within 10% of all shared outputs	Analog sharing control
Overload protection (OCP):	105% to 125% 120% to 170%	Main output 5 Vsb output
Overvoltage protection (OVP):	125% to 145% 110% to 125%	12 V output 5 Vsb output
Overtemp protection:	10 - 15 °C above safe operating area	Both PFC and output converter monitored

## Environmental Specifications

<b>Operating temperature:</b>	-40 °C to +70 °C, linear derating to 50% from 50 °C to 70 °C
<b>Storage temperature:</b>	-40 °C to +85 °C
<b>Humidity:</b>	20 to 90%, non-condensing. Operating. Conformal coat option available
<b>Fan noise:</b>	< 45 dBA, 80% load at 30
<b>Altitude:</b>	Operating - 16,405 feet (3000m) Storage - 30,000 feet
<b>Shock:</b>	MIL-STD-810F 516.5, Procedure I, VI. Storage
<b>Vibration:</b>	MIL-STD-810F 514.5, Cat. 4, 10. Storage

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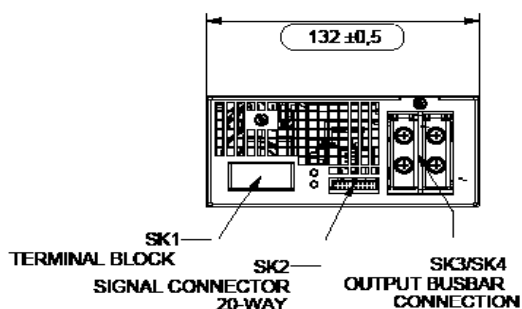
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## Pin Assignment

Signals	Name Description	Pin Number(s)
+Vout	Power rail	SK4
GND	Power GND	SK5
Signals	Name Description	SK2 Pin Number
A2	EEPROM Address	1
-VPROG	Return connection of external supply for Margin Programming	2
A1	EEPROM Address	3
-Vsense	Remote Sense Return	4
ISHARE	Load share voltage	5
A0	EEPROM Address	6
SDA1	Serial Data Signal (I2C)	7
+VPROG	Positive connection of external supply for Margin Programming	8
SCL1	Serial Clock Signal (I2C)	9
+Vsense	Remote Sense Positive	10
5VSB	5V standby	11
GND	5V standby Return	12
5VSB	5V standby	13
G_DCOK_C	Global DCOK Collector	14
GPIOA6	EEPROM Write Protect	15
G_DCOK_E	Global DCOK Emitter (GND)	16
GND	Return Ground for output signal and I2C communication	17
G_ACOK_C	Global ACOK Collector	18
INH_EN	Turn Off Main Output	19
G_ACOK_E	Global ACOK Emitter (GND)	20

Note: Mating connector for SK2 is LANDWIN CI0120P1HD0-LF



PSU Front View (24V & 48V UNITS)



Signal Output Signal Connectors (SK2)

### LED INDICATORS

2 provided are clearly visible up to a 45 degree offset from vertical with office environment ambient lighting. The status is reflected in the indicator color.

**The DC\_OK LED** shall light green if the DC output is within specification, and shall be off if the output falls out of specification.

**The AC\_OK LED** is green if the AC is within specification and off when out of specification.

### CONTROL SIGNALS

**AC\_OK** Open collector 0.5 V maximum at 10 mA. Both emitter and collector access provided.

**DC\_OK** Open collector 0.5 V maximum at 10 mA. Both emitter and collector access provided.

**PS\_INHIBIT/ENABLE Signal** 0.0 - 0.5 V contact closure, output OFF

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## AC/DC Power Suply 1500W



### Ordering Information Table 1

Model Number*	Output	Nominal Output Voltage Set Point	Set Point Tolerance	Adjustment Range	Current		Output Ripple P/P (0-50 °C)	Max Continuous Power	Combined Line/Load Regulation
					Min	Max			
LCM1500-12	12 V	12 V	±0.5%	10.8 - 13.2 V	0 A	133 A	120 mV	1500 W	2%
LCM1500-15	15 V	15 V	±0.5%	13.5 - 16.5 V	0 A	100 A	150 mV	1500 W	2%
LCM1500-24	24 V	24 V	±0.5%	21.6 - 26.4 V	0 A	67 A	240 mV	1500 W	2%
LCM1500-28	28 V	28 V	±0.5%	25.2 - 30.8 V	0 A	53.6 A	280 mV	1500 W	2%
LCM1500-36	36 V	36 V	±0.5%	32.4 - 39.6 V	0 A	43 A	360 mV	1500 W	2%
LCM1500-48	48 V	48 V	±0.5%	43.2 - 52.8 V	0 A	33 A	480 mV	1500 W	2%

### Ordering Information Table 2

LCMXXXXY	-	A	-	B	-	C	-	###
Case Size		Input Termination		Acoustic Noise		Option Codes		Hardware Code
1-Phase input where XXXX =								
1500 = 2.4" x 5.0" x 10.0", 1500 W				Blank = Standard		Blank = No Options		Factory Assigned for Modified standards
		T = Terminal Block				1 = Conformal Coat		
Voltage Code Y =						4 = 5 V Standby		
Code						5 = Opt 1 + 4		
L	12							
N	15							
Q	24							
U	36							
W	48							

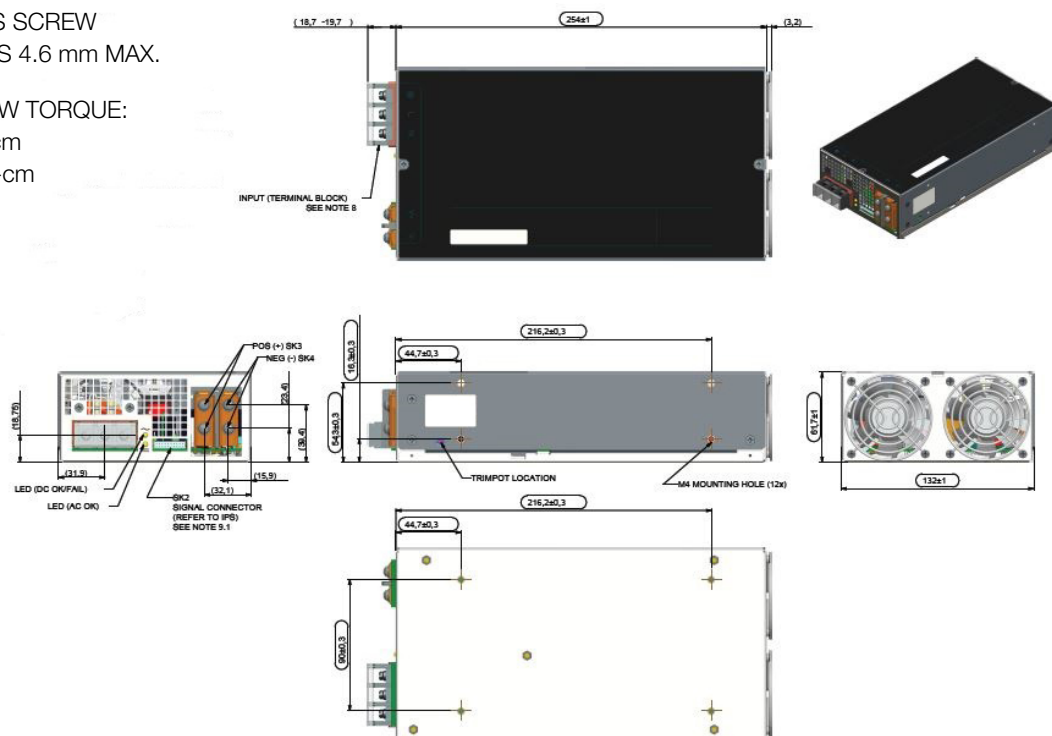
### Mechanical Drawings

MOUNTING LOCATIONS SCREW PENETRATION DEPTH IS 4.6 mm MAX.

RECOMMENDED SCREW TORQUE:

M3.5 x 0.6P = 6 - 8kgf-cm

M4.0 x 0.7P = 8 - 10kgf-cm

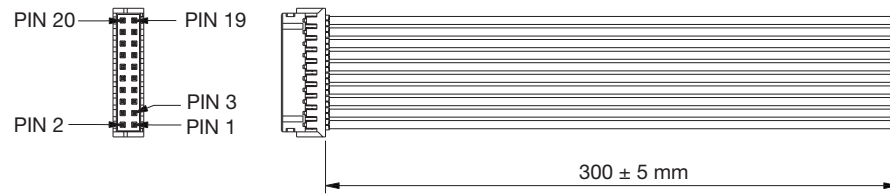


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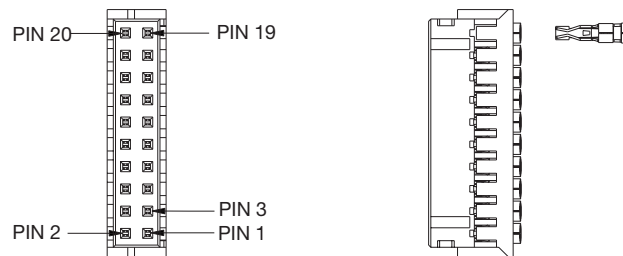
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## Accessories



Order kit part number 73-788-001 for control connector interface with .3m wires attached



Order kit part number 73-788-002 for control connector interface with unloaded housing and 20 pins

## Miscellaneous Specifications

### BURN-IN

100% Burn-in at 45 °C, at 80 - 90 % load. Duration of burn-in determined by Quality Assurance Procedures.

### MTBF

The power supply has a minimum MTBF of 300K hours using the Bell core 332, issue 6 specification @ 25 °C and 40 °C, ambient, at full load. With the power supply installed in a system in a 25 °C ambient environment and operating at full load, capacitor life shall be 10 years, minimum for ALL electrolytic capacitors contained within this power supply. The power supply shall demonstrate a MTBF level of > 500,000 hours.