LCM600

600 Watts

Bulk Front End

Total Power: 600 W
# of Outputs: Single
Output: 3.3 to 60 V
Optional 5.0 V standby

Preliminary

RoHS 2002/95/EC

Special Features

- 600 W output power
- Low Cost
- 2.4" x 4.5" x 7.5"
- 7.41 W/cu-in
- 5 V Standby (Housekeeping)
- Industrial/Medical safety
- -40 °C to 70°C with derating
- 5 V Housekeeping
- High Efficiency: 89% typical
- Variable speed "Smart Fans"
- DSP controlled front end
- Conformal coat option
- ± 20% adjustment range
- Margin programming
- OR-ing FET option

Compliance

- EMI Class B
- EN61000 Immunity

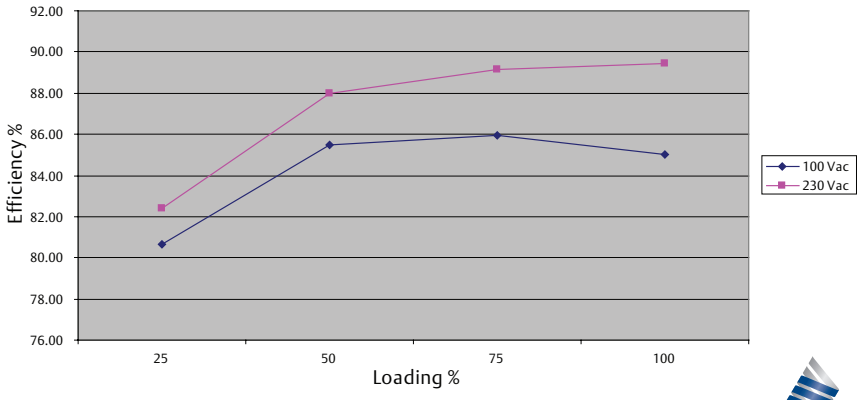
Safety

- UL 60950-1
  508/1598/1433
  60601-1
- CSA 60950-1
- VDE 60950-1
  60601
- China CCC
- CB Scheme Report/Cert

Electrical Specifications

Input	
Input range:	85 - 264 Vac (Operating) 115/230 Vac (Nominal) Input through standard IEC connector
Frequency:	47 - 440 Hz, Nominal 50/60
Input fusing:	Internal 10 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:	8 A RMS max input current, at 100 Vac
Hold up time:	20 ms minimum for Main O/P, at full rated load
Efficiency:	> 88% at full load
Leakage current:	< 0.3 mA at 264 Vac
ON/OFF power switch:	N/A
Power line transient:	MOV directly after the fuse

LCM600Q Efficiency Without the 5 Vsb and 24 V ORing FETS



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Output		
Output rating:	See table 1	85 - 264 Vac
Set point:	± 0.5%	85 - 264 Vac
Total regulation range:	Main output ± 2% 5 Vsb ± 1%	Combined line/load/transient when measured at output terminal
Rated load:	600 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 duing 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

Operating temperature:	-40 °C to +70 °C, linear derating to 50% from 50 °C to 70 °C
Storage temperature:	-40 °C to +85 °C
Humidity:	20 to 90%, non-condensing. Operating. Conformal coat option available
Fan noise:	< 45 dBA, 80% load at 30 °C
Altituude:	Operating - 15,000 feet Storage - 30,000 feet
Shock:	MIL-STD-810F 516.5, Procedure I, VI. Storage
Vibration:	MIL-STD-810F 514.5, Cat. 4, 10. Storage

Ordering Information

Model Number	Output	Nominal Output Voltage Set Point	Set Point Tolerance	Adjustment Range	Current		Output Ripple P/P	Combined Line/ Load Regulation	Status
					Min	Max			
LCM600C	3 V	3 V	± 0.5%	2.0 - 4.0 V	0 A	150 A	50 mV	2%	Coming Soon
LCM600E	5 V	5 V	± 0.5%	4.0 - 6.0 V	0 A	120 A	50 mV	2%	Coming Soon
LCM600L	12 V	12 V	± 0.5%	9.6 - 14.4 V	0 A	54 A	120 mV	2%	Coming Soon
LCM600N	15 V	15 V	± 0.5%	12.0 - 19.5 V	0 A	44 A	150 mV	2%	Coming Soon
LCM600Q	24 V	24 V	± 0.5%	19.2 - 28.8 V	0 A	27 A	240 mV	2%	Released
LCM600W	48 V	48 V	± 0.5%	38.4 - 57.6 V	0 A	14 A	280 mV	2%	Coming Soon

Pin Assignment			
CN1 Signals	Name Description	Pin Qty.	Pin Number(s)
+12VS		1	1
MARGIN_PROG		1	2
MARGIN_HIGH		1	3
-VS		1	4
24VLS	Load share	1	7
NONE	No signal connection	4	5, 6, 8, 9, 10
CN1	Output connector	10	Two rows of 5 pins
CN2 Signals	Name Description	Pin Qty.	Pin Number(s)
G_ACOK E		1	1
G_ACOK C		1	3
G_DCOK E		1	3
G_DCOK C		1	4
GND	Ground	3	5, 7, 8
INH/EH		1	6
5VSB	5 V standby	2	9, 10
CN2	Output connector	10	Two rows of 5 pins

LED Indicators

1 have indicators that are identical to the present system and 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 is bicolor. It shall light green if the DC output is within specification, and amber if the output falls out of specification.

Green if the AC is within specication and off when out of specification.

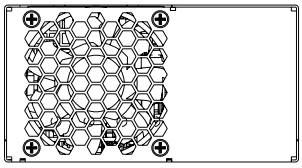
Note: With 5 V standby, Amber also indicates that PSU is in standby mode/output off.

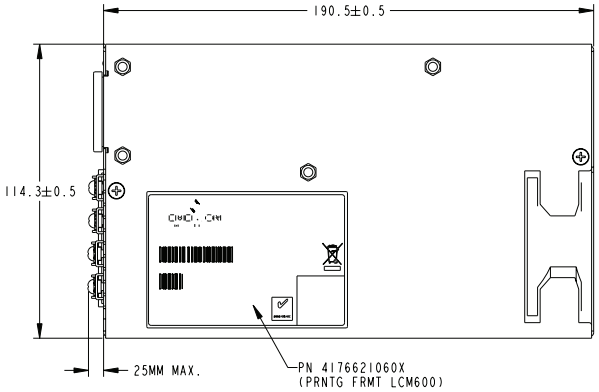
AC_OK Open collector 0.5 V maximum at 10 mA.

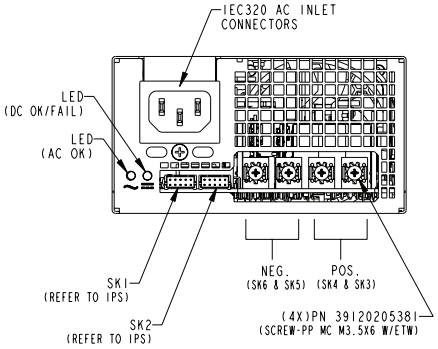
DC_OK Open collector 0.5 V maximum at 10 mA.

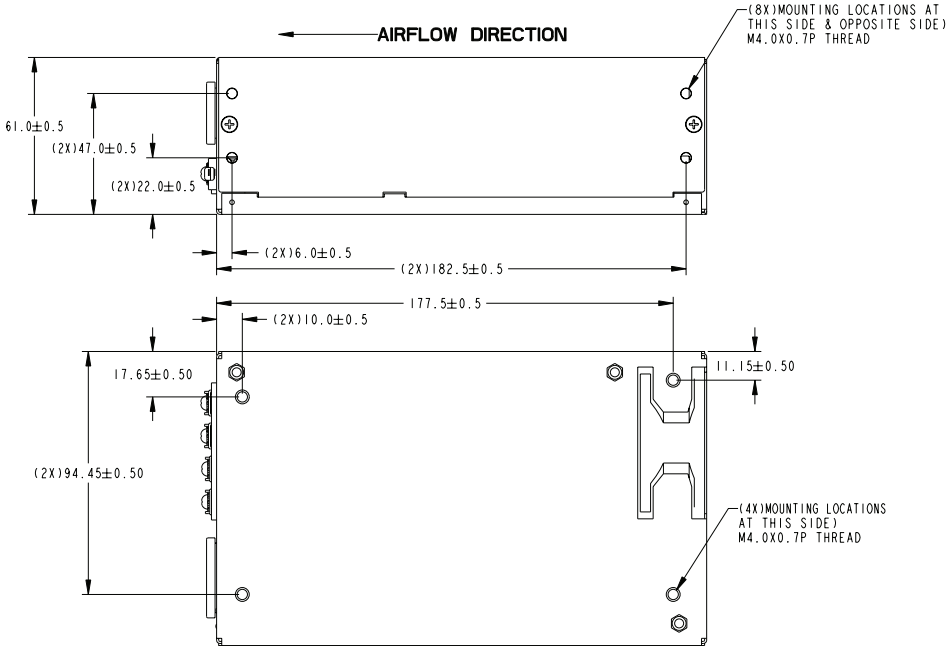
PS_INHIBIT/ENABLE Signal 0.0 - 0.5 V contact clocure, output OFF

Mechanical Drawing









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 containedc within this power supply. The power supply shall demonstrate a MTBF level of > 500,000 hours.

Quality Assurance

Full QAV testing shall be conducted in accordance with Emerson Network Power Standards with reports available upon request.

Warranty

Emerson Network Power shall warrant the power supply to be free of defects in materials and workmanship for a minimum period of **three years** from the date of shipment, when operated within specifications. The warranty shall be fully transferable to the end owner of the equipment powered by the supply.

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