# LCM300

## 310 Watts

### Bulk Front End

Total Power: 310 W
# of Outputs: Single
Output: 12 to 60 V
Optional 5.0 V standby

RoHS

## Special Features

- 310 W (350W Peak) output power
- Low Cost
- 1.61" x 4.0" x 7.0"
- 7.1 Watts Per Cubic Inch
- Industrial/Medical Safety
- -40 °C to 70 °C with derating
- Optional 5 V @ 2 A Housekeeping
- High Efficiency: 91% @ 230VAC
- Variable speed "Smart Fans"
- DSP controlled
- PMBus Comliant
- Conformal coat option
- ± 0.05% adjustment range
- Margin programming
- OR-ing FET

## Compliance

- EMI Class B
- EN61000 Immunity
- RoHS 2
- PMBUS

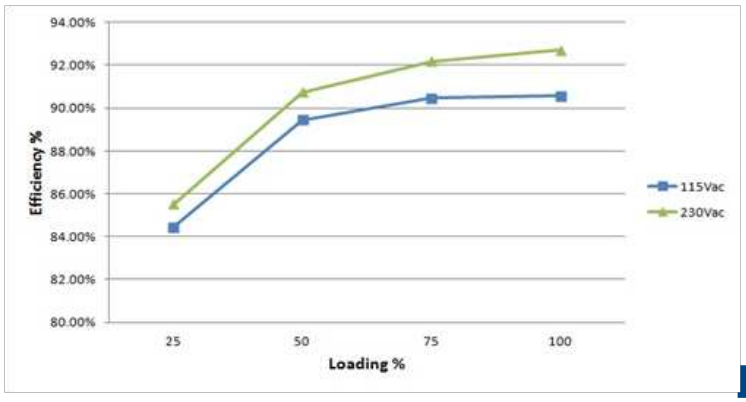
## Safety

- UL 60950-1
  508/1598/1433
  60601-1 Ed 3
- CSA 60950-1
- VDE 60950-1
  60601
- China CCC
- CB Scheme Report/Cert

# Electrical Specifications

| Input | |
|---|---|
| Input range: | 90 - 264 Vac (Operating) (127-374 Vdc)<br>115/230 Vac (Nominal)<br>TERMINAL BLOCK |
| Frequency: | 47 - 63 Hz, Nominal 50/60 |
| Input fusing: | Internal 8 A fuses, both lines fused |
| Inrush current: | < 20 A peak, cold start at 25 °C |
| Power factor: | 0.98 typical, meets EN61000-3-2 |
| Harmonics: | Meets IEC 1000-3-2 requirements |
| Input current: | 5 Arms max input current, at 90 Vac |
| Hold up time: | 20 ms minimum for Main O/P, at full rated load |
| Efficiency: | > 91% typical at full Load / 230VAC 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<br>PRI-SEC 2500 Vdc Reinforced<br>SEC-Chassis 500 Vdc |

LCM300Q Efficiency Without the 5 Vsb




EMERSON
Network Power

| Output | | |
|---|---|---|
| Output rating: | See table 1 | 90 - 264 Vac |
| Set point: | ± 0.5% | 90 - 264 Vac |
| Total regulation range: | Main output ± 2%<br>5 Vsb ± 1% | Combined line/load/transient when measured at output terminal |
| Rated load: | 310W (360W for current Q and U variants) | Derate linear to 50% from 50 °C to 70 °C |
| Minimum load: | Main output @ 0.0 A<br>5 Vsb @ 0.0 A | No loss of regulation |
| Output noise (PARD): | 1% max p-p<br>100 mV max p-p | Main output<br>5 Vsb output<br>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<br>Step load valid between 10% to 100% of output rating<br>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%<br>120% to 170% | Main output<br>5 Vsb output |
| Overvoltage protection (OVP): | 125% to 145%<br>110% to 125% | 12 V output<br>5 Vsb output |

# Environmental Specifications

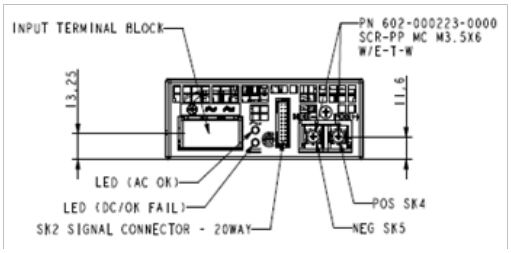
| | |
|---|---|
| Operating temperature: | -40 °C to +70 °C, linear derating to 50% from 50 °C to 70 °C |
| Storage temperature: | -40 °C to +85 °C |
| Humidity: | 20 to 90%, non-condensing. Operating. Conformal coat option available |
| Fan noise: | < 45 dBA, 80% load at 40 °C; Fan Off when unit is inhibited |
| Altitude: | Operating - 16,405 feet (5000m)<br>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

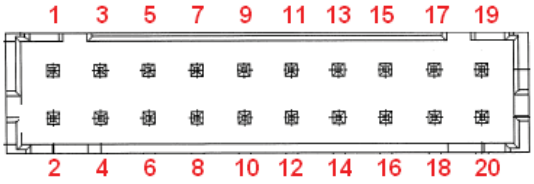
| Model Number* | Output | Nominal Output Voltage Set Point | Set Point Tolerance | Adjustment Range | Current | | Output Ripple P/P (0-50 deg C) | Max Continuous Power | Combined Line/Load Regulation |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Min | Max | | | |
| LCM300L | 12V | 12V | +/-0.5% | 9.6 - 14.4V | 0A | 25.0A | 120mV | 310 | 2% |
| LCM300N | 15V | 15V | +/-0.5% | 12.0 - 18.0V | 0A | 20.0A | 150mV | 310 | 2% |
| LCM300Q | 24V | 24V | +/-0.5% | 19.2 - 28.8V | 0A | 12.5A* | 240mV | 310 | 2% |
| LCM300U | 36V | 36V | +/-0.5% | 28.8 - 43.2V | 0A | 8.4A* | 360mV | 310 | 2% |
| LCM300W | 48V | 48V | +/-0.5% | 38.4 - 57.6V | 0A | 6.3A | 480mV | 310 | 2% |

*14.5A rating on LCM300Q-T and 9.7A on LCM300U-T when max temp does not exceed 45C (Total Power = 350W)

| 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**




**Signal Output Signal Connectors (SK2)**
SK2 Mating Connector: JST Part Number PHDR-20VS;
Contact Pins: JST Part Number SPHD-001T-P0.5

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

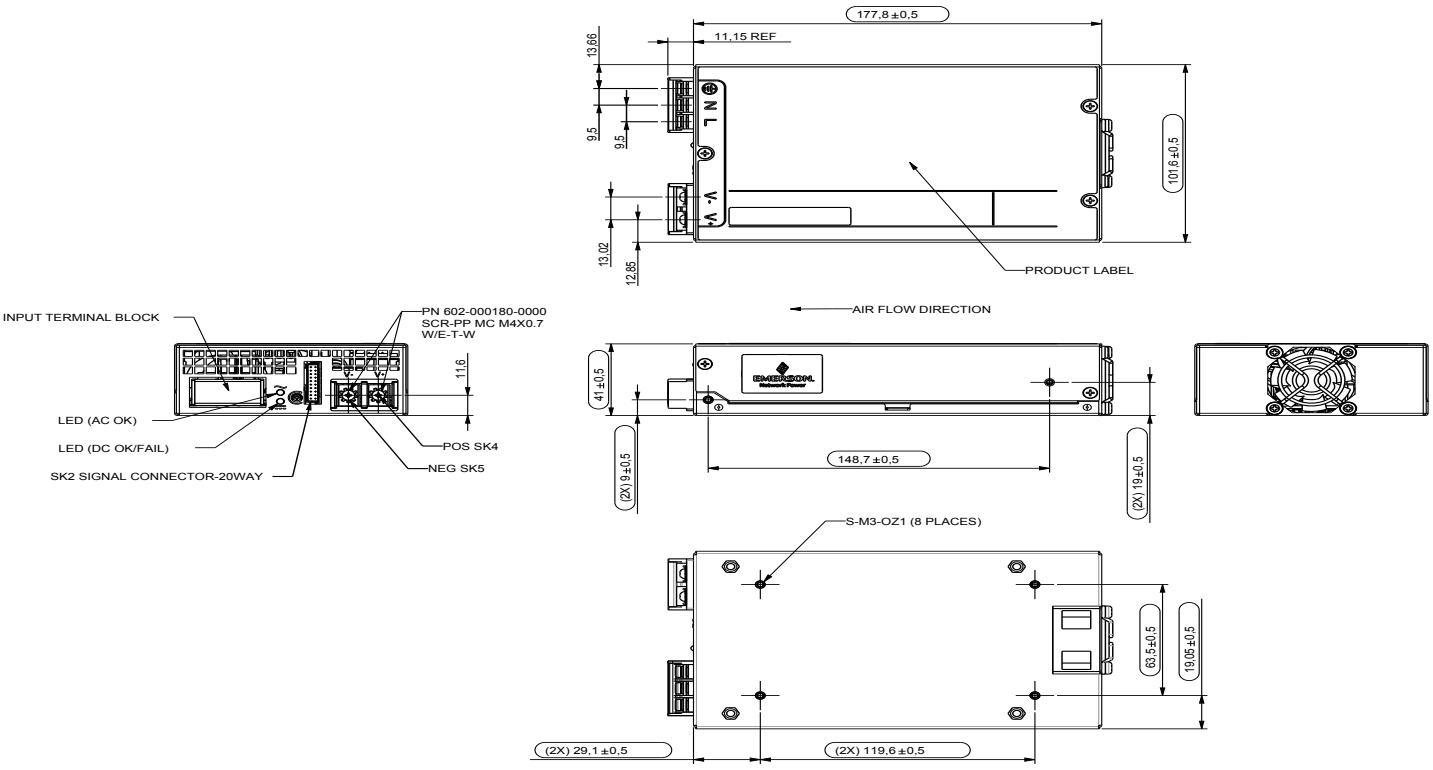
## Control Signals

**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 (output ON for LCM300U-T-4-401)

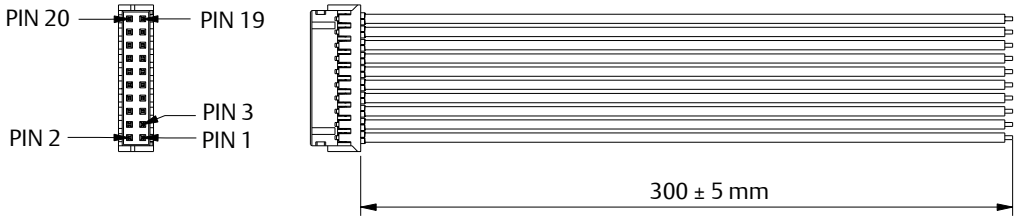
| Ordering Information | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LCMXXXXY | | - | A | - | B | - | C | - | ### |
| Case Size | | | Input Termination | | Acoustic Noise | | Option Codes | | Hardware Code |
| 1-Phase input where XXXX= | | | | | | | | | |
| 300 = 1.61" x 4.0" x 7.0" , 300W | | | | | Blank = Standard | | Blank = No Options | | Factory Assigned for Modified standards |
| | | | T = Terminal Block | | | | 1 = Conformal Coat | | |
| Voltage Code Y = | | | | | | | 4 = 5V Standby | | |
| Code | | | | | | | 5 = Opt 1 + 4 | | |
| L | 12 | | | | | | | | |
| N | 15 | | | | | | | | |
| Q | 24 | | | | | | | | |
| U | 36 | | | | | | | | |
| W | 48 | | | | | | | | |

# Mechanical Drawing

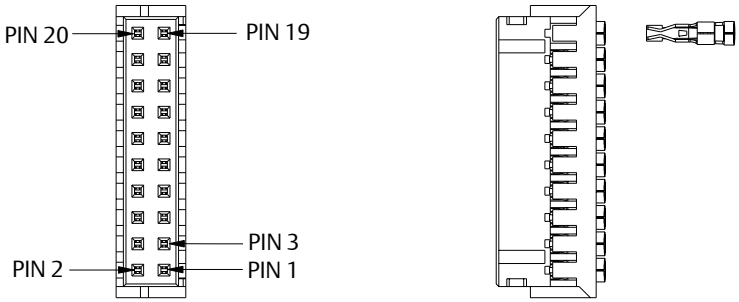
Weight: 1.76 lbs (0.8 Kg)



# 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 5 years at 50 °C, minimum for ALL electrolytic capacitors contained 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.

**Americas**
5810 Van Allen Way
Carlsbad, CA 92008
USA
Telephone: +1 760 930 4600
Facsimile: +1 760 930 0698

**Europe (UK)**
Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
Telephone: +44 (0) 1384 842 211
Facsimile: +44 (0) 1384 843 355

**Asia (HK)**
14/F, Lu Plaza
2 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
Telephone: +852 2176 3333
Facsimile: +852 2176 3888

For global contact, visit:
**www.Emerson.com/EmbeddedPower**
**techsupport.embeddedpower@emerson.com**



**Emerson Network Power.**
The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Computing
- **Embedded Power**
- Monitoring
- Outside Plant
- Power Switching & Controls
- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

**EmersonNetworkPower.com**