N2POWER XLM500 AC-DC SERIES

HIGH-EFFICIENCY ITE & MEDICAL SWITCHING POWER SUPPLY

HIGHLIGHTS

- ITE & Medical switching power supply
- High efficiency up to 93%
- P.F.C. function > 0.94
- Built-in 12V / 0.3A fan supply
- Standby 5V / 1A with fan or 5V / 0.4A with convection cooling
- EMI for both Class I (with FG) and Class II (without FG) configurations
- Open Frame, U-Frame and Enclosed models available
- Maximum power: 500W with 30CFM fan or up to 240W with unobstructed convection cooling
- Remote On/Off function
- 4000VAC input to output 2XMOPP Insulation (Suitable for BF application with appropriate system consideration)
- 3-year warranty

XLMO500 (Open-Frame)

XLMU500 (U-Frame)

XLME500 (Enclosed)

POWER SUPPLY LEADER

N2Power continues to lead the power density race with its new small, high efficiency XLM500 Series AC-DC power supplies. Our state of the art technology yields a very small 5" x 3" footprint, reduces wasted power, and offers among the highest power densities in the market in the 500 watt range, exceeding 20 watts per cubic inch. This design means reduced energy costs, a greater return on your investment, higher reliability and longer product life.

HIGH EFFICIENCY IN A SMALL PACKAGE

The XLM500 Series provides up to 93% efficiency in an AC-DC power supply. This unique design reduces energy consumption and generates less wasted heat. It requires little forced air cooling and decreases AC loads, resulting in greater economy of operation.

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N2POWER XLM500 AC-DC SERIES

HIGH-EFFICIENCY ITE & MEDICAL SWITCHING POWER SUPPLY

MODEL	PART NUMBER	OUTPUT	VOLTAGE	REGULATION (%)	MAXIMUM CURRENT (A)	RIPPLE & NOISE (P-P)
XLMO500-12	400525-05-2	VOUT	12	±3.5	41.5 (1) 19.16 (2) 20 (3)	160 mV (4)
XLMU500-12	400525-08-6	VOUT	12			
XLME500-12	400525-11-0	VOUT	12			
XLMO500-15	400525-14-3	VOUT	15	±3.5	33.3 (1) 15.3 (2) 16 (3)	160 mV (4)
XLMU500-15	400525-15-1	VOUT	15			
XLME500-15	400525-16-9	VOUT	15			
XLMO500-24	400525-06-0	VOUT	24	±3.5	20.8 (1) 9.58 (2) 10 (3)	240 mV (4)
XLMU500-24	400525-09-4	VOUT	24			
XLME500-24	400525-12-8	VOUT	24			
XLMO500-48	400525-07-8	VOUT	48	±3.5	10.41 (1) 4.8 (2) 5 (3)	480 mV (4)
XLMU500-48	400525-10-2	VOUT	48			
XLME500-48	400525-13-6	VOUT	48			

All specifications valid at normal input voltage, full load and +25°C after warm-up time, unless otherwise stated.
XLMO models are Open Frame, XLMU models are U-Frame and XLME models are Enclosed.

Compliance *

Safety:
UL / IEC / EN 60601-1 3.1 Edition & UL / IEC / EN 60950 AM2

EMC:

Conducted EMI (7)	EN55011:2009 +A1 Class B Group 1
Radiated Immunity	EN61000-4-3 10V/m
Fast Transient	EN61000-4-4 ± 2kV
Surge	EN61000-4-5 ±1kV
Conducted Immunity	EN61000-4-6 10Vrms
PFMF	EN61000-4-8 30A/m
Dips	EN61000-4-11 30% 10ms
Interruption	EN61000-4-11 >95% 5000ms

Notes

(1) With 30CFM fan
(2) Convection cooling at 115VAC
(3) Convection cooling at 230VAC
(4) Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
(5) Hold-up Time measured at 90% Vout.
(6) Please check the derating curve for more details.
(7) Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment
(8) The fan supply is designed to serve as the source of the additive external fan for the cooling of the power supply, enabling the full load delivery and assuring the best life span of the product. Please do not use this fan supply to drive other devices.

This product is not designed for use in critical life support systems, equipment used in hazardous environment, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other than the ones listed in this datasheet.

INPUT SPECIFICATIONS	
Nominal Input Voltage (6)	90 – 264 VAC
Input Frequency Range	47 – 63 Hz
Input Current	< 6.3 A max.@ 115 VAC < 3.15 A max.@ 230 VAC
Safety Isolation	4000 VAC input to output 2000 VAC input to ground 1500 VAC output to gnd.
Inrush Current	< 40 A max. @ 115 VAC < 80 A max. @ 230 VAC
Leakage Current	< 0.1mA max (Input-Output)
Power Factor @ 230VAC	> 0.94 at full load
OUTPUT SPECIFICATIONS	
Total Output	500 W (1) 230 W (2) 240 W (3)
Output Voltages	12 to 48 V
Voltage Tolerance	±2%
Line Regulation	±0.5% (115- 264 VAC)
Load Regulation	±1% (0-100%, typical)
Hold-up Time (5)	Min. 8 ms @115VAC
Efficiency	Up to 93%
Minimum Load	3%
PROTECTION	
Over Voltage Protection:	Auto recovery
Over Power Protection:	Auto recovery, hiccup mode
Over Temperature:	Auto recovery
Short Circuit Protection:	Auto recovery, hiccup mode
ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature:	–30 to +70˚C (with derating)
Storage Temperature:	– 35 to +85˚C
Relative Humidity:	20% to 90% (non-cond.)
MTBF (full load at 25°C):	> 160,000 hours @ 25°C (MIL-HDBK-217F, Notice 1)
Vibration	10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes.

FAN SUPPLY (OPEN FRAME AND U-FRAME MODELS)(8) AND 5VSB	
Fan Supply Voltage	12V
Voltage Tolerance	10.2V~13.3V (0.1A minimum load)
Maximum Current	0.3A
5VSB	5V
Voltage Tolerance	4.2V ~ 5.5V
Maximum Current	1A with fan 0.4A without fan

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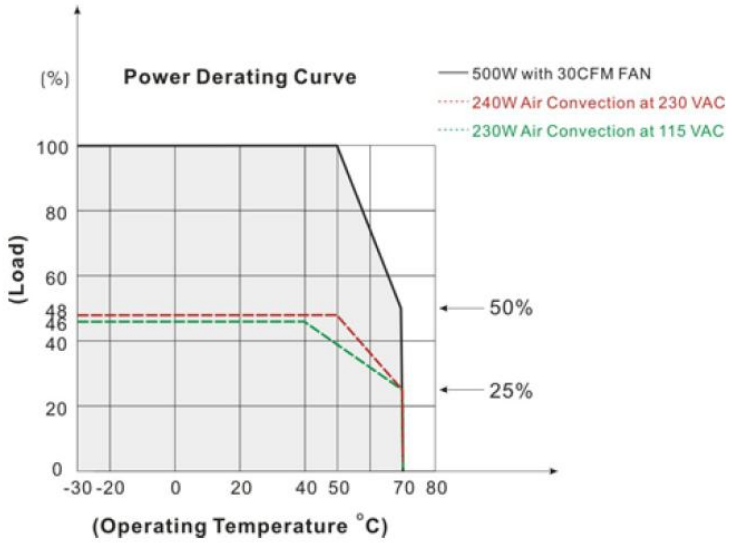
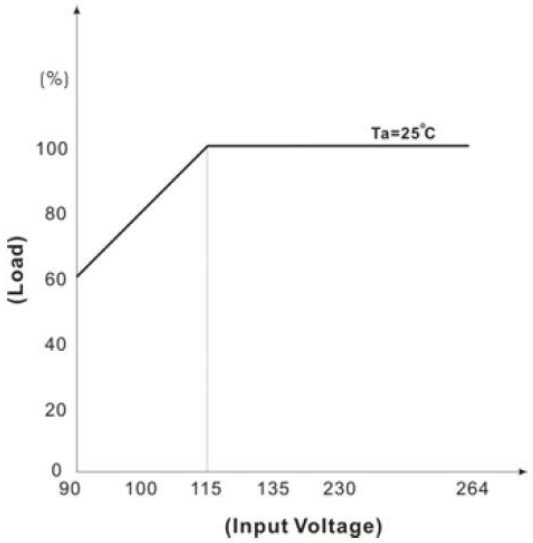
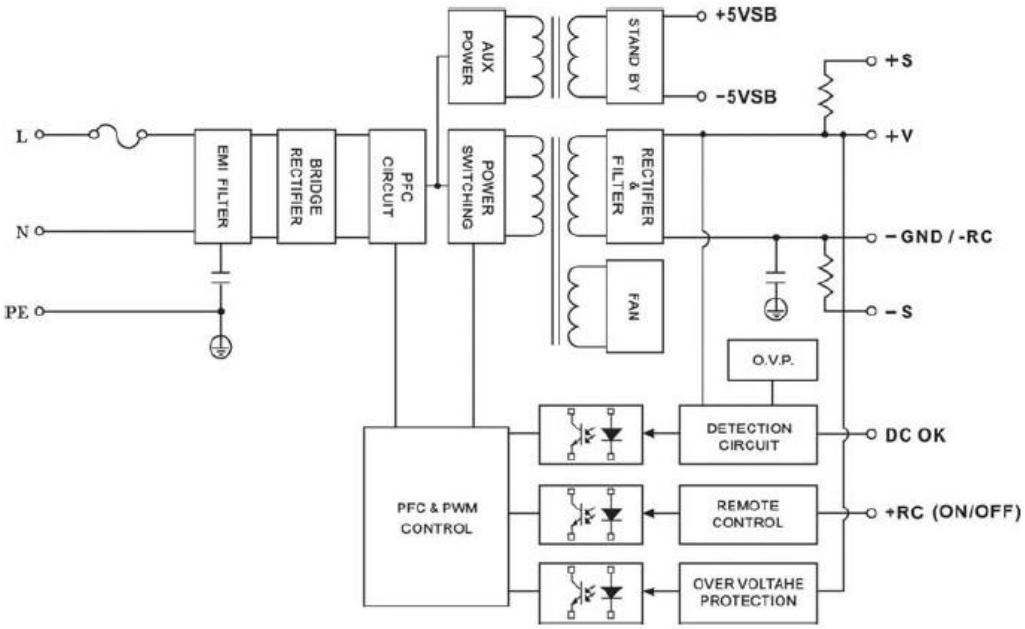
QUALSTAR CORPORATION
www.n2power.com
Tel: 805-583-7744

OPERATING CHARACTERISTICS





BLOCK DIAGRAM



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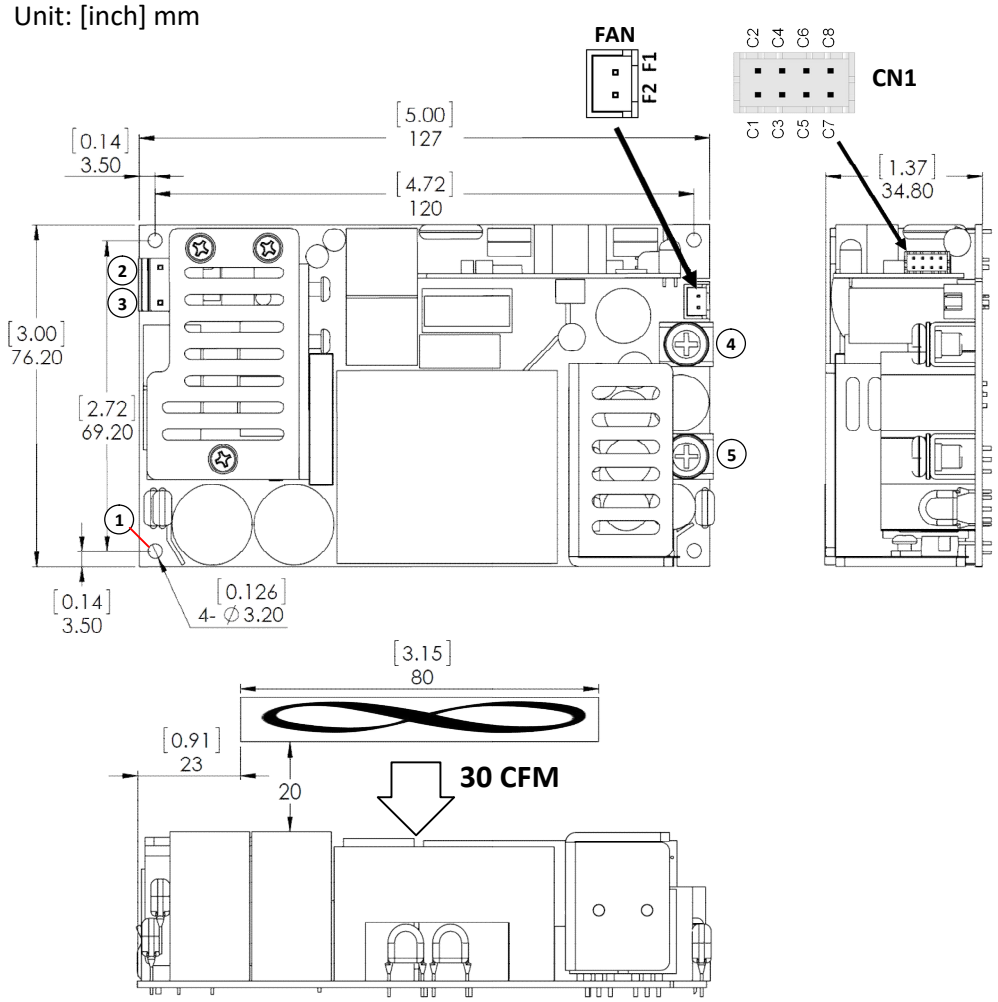
MECHANICAL DRAWINGS – Open Frame Models

Unit: [inch] mm



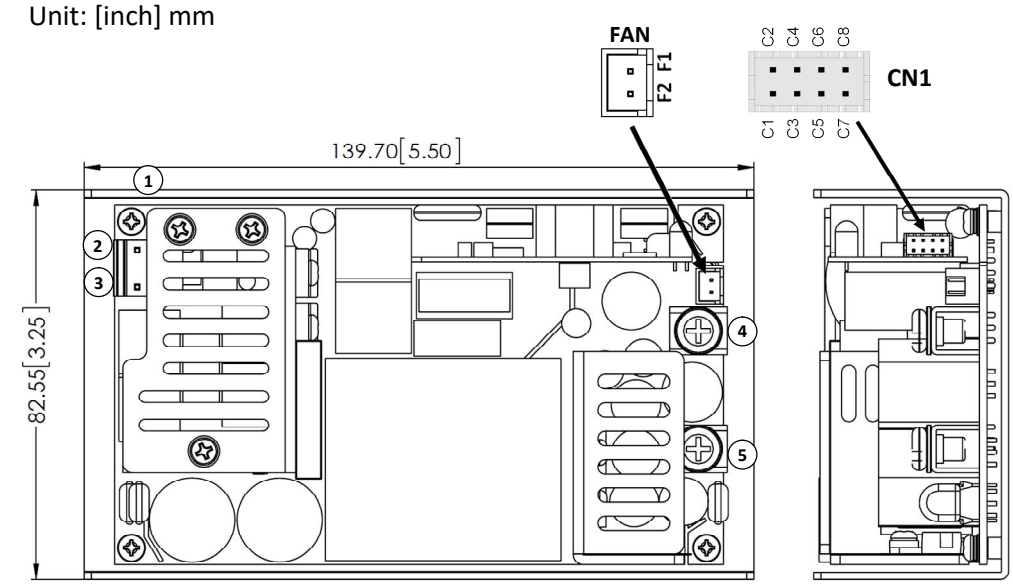
PIN#	Assignment
1	FG
2	AC NEUTRAL
3	AC LINE
4	VOUT (+OUTPUT)
5	RTN (RETURN)

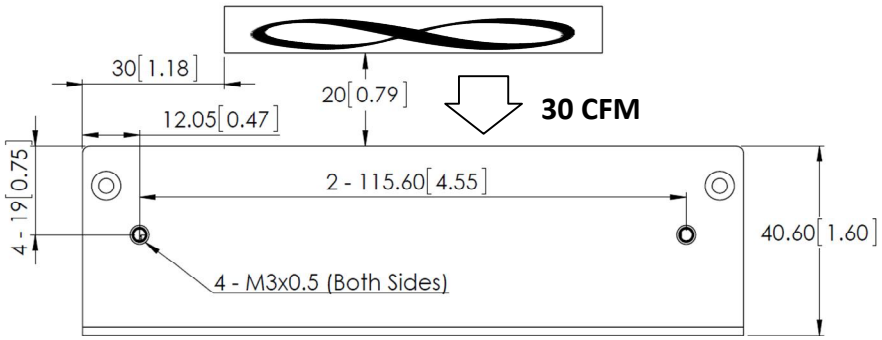
FAN CONNECTOR	
PIN#	**Assignment**
F1	+12V (fan supply)
F2	RTN (RETURN)

CN1	
PIN#	**Assignment**
C1	RTN (RETURN)
C2	+5VSB
C3	RTN (RETURN)
C4	DC_OK
C5	RTN (RETURN)
C6	ENABLE
C7	-RS
C8	+RS

MECHANICAL DRAWINGS – U-Frame Models

Unit: [inch] mm





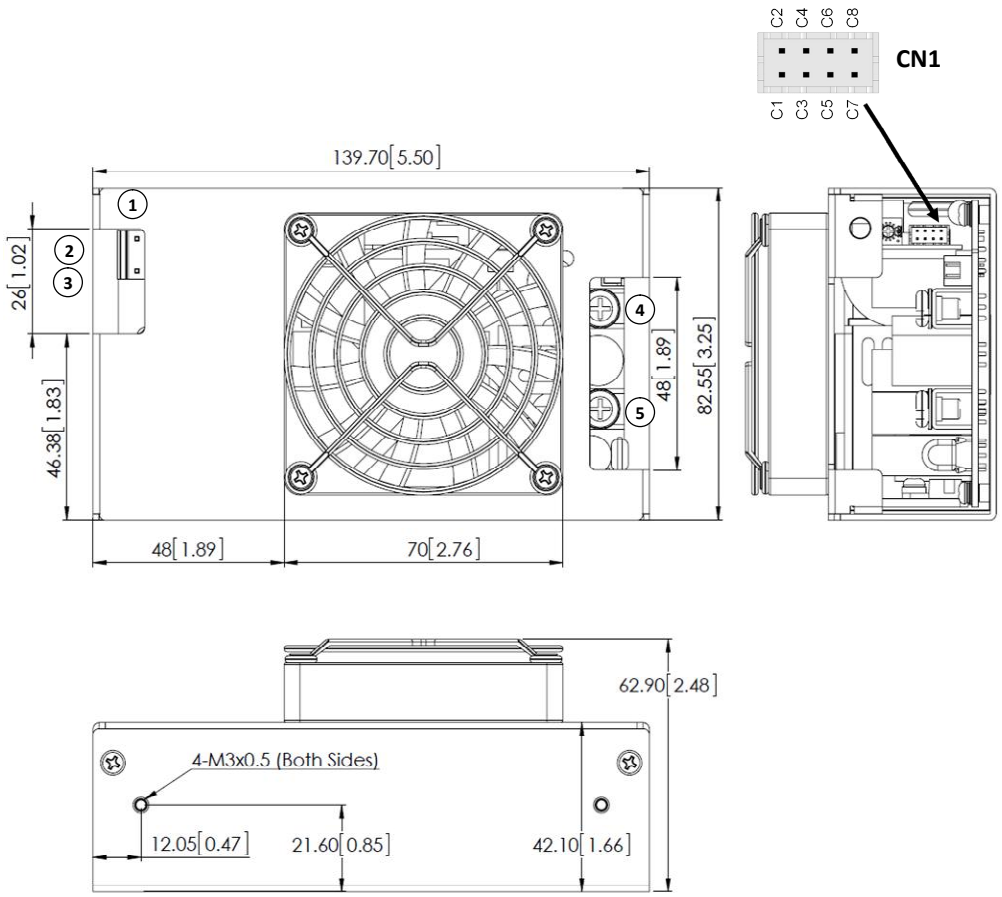
PIN#	Assignment
1	FG
2	AC NEUTRAL
3	AC LINE
4	VOUT (+OUTPUT)
5	RTN (RETURN)

FAN CONNECTOR	
PIN#	**Assignment**
F1	+12V (fan supply)
F2	RTN (RETURN)

CN1	
PIN#	**Assignment**
C1	RTN (RETURN)
C2	+5VSB
C3	RTN (RETURN)
C4	DC_OK
C5	RTN (RETURN)
C6	ENABLE
C7	-RS
C8	+RS

MECHANICAL DRAWINGS – Enclosed Models

Unit: [inch] mm



PIN#	Assignment
1	FG
2	AC NEUTRAL
3	AC LINE
4	VOUT (+OUTPUT)
5	RTN (RETURN)

CN1	
PIN#	**Assignment**
C1	RTN (RETURN)
C2	+5VSB
C3	RTN (RETURN)
C4	DC_OK
C5	RTN (RETURN)
C6	ENABLE
C7	-RS
C8	+RS

Pin No.	Function	Description
C1	RTN (RETURN)	This pin connects to the RTN (Return) of VOUT, DC-OK and ENABLE (Remote Enable).
C2	+5VSB	Stand by voltage : 4.2~5.5V with respect to RTN. The maximum load current is 1A with Fan, 0.4A without Fan.
C3	RTN (RETURN)	This pin connects to the RTN (Return) of VOUT, DC-OK and ENABLE (Remote Enable).
C4	DC_OK	DC-OK Signal is a DC output with respect to RTN.
C5	RTN (RETURN)	This pin connects to the RTN (Return) of VOUT, DC-OK and ENABLE (Remote Enable).
C6	ENABLE	Turns the output on and off by electrical or dry contact between pin C6 (ENABLE) and RTN. Short: Power OFF, Open: Power ON.
C7	-RS	Negative Remote Sense. The -RS signal should be connected to the negative terminal of the load. The +RS and -RS leads should be twisted in pair to minimize noise pick-up effect.
C8	+RS	Positive Remote Sense. The +RS signal should be connected to the positive terminal of the load. The +RS and -RS leads should be twisted in pair to minimize noise pick-up effect.