

### POWER SUPPLY DESIGN LEADER

N2Power continues to lead the power density race with its new small, high efficiency XL160 Series AC-DC power supplies. Our patented technology yields a very small footprint, reduces wasted power, and offers the highest power density in the market in the 160 watt range. This unique design means reduced energy costs, a greater return on your investment, higher reliability and longer product life.

### HIGHLIGHTS

- 160W AC-DC
- Up to 90% Efficiency
- High Power Density: 8.5 W / cu in.
- Universal AC input
- Active PFC (90-264 VAC)
- Built in OR-ing Diodes for N+1 (Optional)
- 3" X 5" Small Footprint
- <1U High: 1.32"
- No Load Operation
- RoHS Compliant
- 48V, 54V POE Special Models available

### HIGH EFFICIENCY IN A SMALL PACKAGE

The XL160 Series provides up to 90% efficiency in an AC-DC power supply. Our unique design reduces energy consumption and generates less wasted heat. It requires little forced air cooling, decreases AC loads, increases reliability and economy of operation.

### UNMATCHED POWER DENSITY

With an overall height of 1.32" and a 3" x 5" footprint, the XL160 Series boasts a power density of 8.5 watts per cubic inch. It is ideally suited for OEMs using industry standard 1U chassis. N2Power's small form factor power supplies allow you to work with additional "real estate" for more functionality inside your product. Decreased space requirements, reduced thermal loads and lower costs will increase your competitive edge in the market.

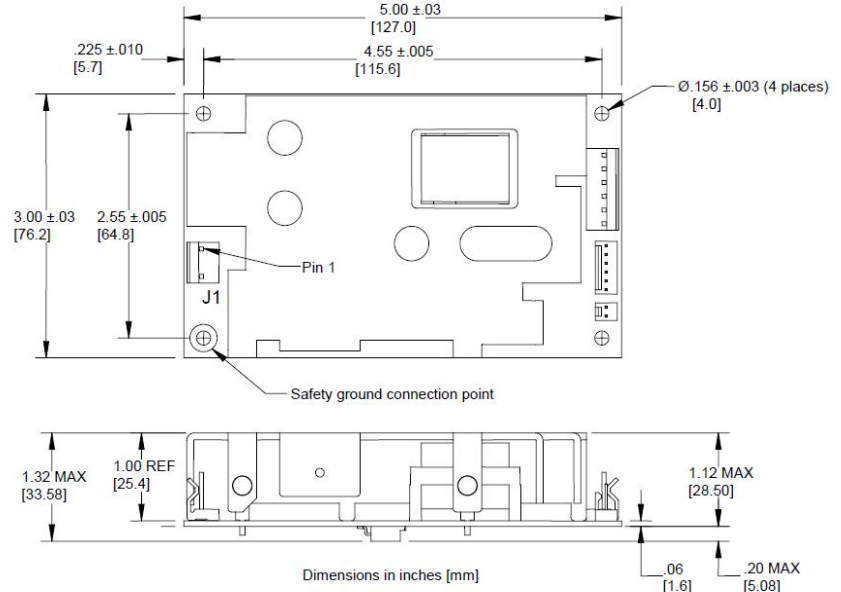
### PFC READY, SAVE ENERGY

Many countries require Power Factor Corrected (PFC) power supplies, which lessen loads at generating stations. All XL160 products incorporate active PFC technology with universal input to provide superior efficiency in each supply. Comparisons of power loading show that our supplies can reduce consumption up to 50%.



#### Typical Mechanical Drawing:

Inches (millimeters), connectors and pinouts may vary with model. Refer to XL160 Product Specification for complete information.



Note: Recommended standoff size is .375" high and all mounting hardware should be less than .28" in diameter. A standoff less than .375" high is acceptable when a thin insulator, 0.4mm thick (polyester, fish paper or equivalent UL rated 94V-2 minimum) is placed between the XL160 and the mounting chassis (refer to applicable UL standard for clearance requirements).

### REPEATABLE QUALITY

We use advanced PCB technology to deliver the highest density and best performance in the industry. Our packaging design incorporates SMT technology to automate processes, ensure reliability, and reduce cost. Each power supply undergoes a complete functional test and a multi-hour burn-in to insure that every unit meets our stringent quality requirements. Detailed statistical production records are maintained and rigid quality and AVL control insures the highest quality product available. Each power supply design is also rigorously tested by UL, with scheduled factory audits to ensure ongoing compliance.

Contact us regarding custom and modified standard supplies for unique applications.



MODEL	PART NUMBER	OUTPUT	VOLTAGE	REGULATION (%)	MAXIMUM CURRENT (A)	RIPPLE & NOISE (P-P)
XL160-05	400012-12-6	V1	5	±3	32.0	50 mV
XL160-05 CS	400012-01-9	V2	12	±5	1.0	120 mV
XL160-07 CS	400012-05-0	V1	7	±3	22.9	70 mV
		V2	12	±5	1.0	120 mV
XL160-08 CS	400012-10-0	V1	8	±3	20.0	80 mV
		V2	12	±5	1.0	120 mV
XL160-12	400013-12-4	V1	12	±3	13.3	120 mV
XL160-12 CS	400013-01-7	V2	12	±5	1.0	120 mV
XL160-15	400014-03-1	V1	15	±3	10.7	150 mV
XL160-15 CS	400014-01-5	V2	12	±5	1.0	120 mV
XL160-19 CS	400015-04-6	V1	19	±3	8.4	190 mV
		V2	12	±5	1.0	120 mV
XL160-24	400015-07-9	V1	24	±3	6.7	240 mV
XL160-24 CS	400015-01-2	V2	12	±5	1.0	120 mV
XL160-28	400015-13-7	V1	28	±3	5.7	280 mV
XL160-28 CS	400015-12-9	V2	12	±5	1.0	120 mV
XL160-30 CS	400015-08-7	V1	30	±3	5.3	300 mV
		V2	12	±5	1.0	120 mV
XL160-48	400016-07-7	V1	48	±3	3.3	480 mV
XL160-48 CS	400016-01-0	V2	12	±5	1.0	120 mV
XL160-51	400016-08-5	V1	51	±3	3.1	510 mV
XL160-51 CS	400016-03-6	V2	12	±5	1.0	120 mV
XL160-54	400033-02-3	V1	54	±3	2.9	540 mV
XL160-54 CS	400033-01-5	V2	12	±5	1.0	120 mV
XL160-56	400034-02-1	V1	56	±3	2.8	560 mV
XL160-56 CS	400034-01-3	V2	12	±5	1.0	120 mV
XL160-1	400011-01-1	V1	3.3	±3	15.0	50 mV
		V2	5	±5	20.0	50 mV
		V3	12	±5	6.0	120 mV
		V4	-12	±5	1.0	120 mV
XL160-7	400017-01-8	V1	2.5	±3	15.0	50 mV
		V2	5	±4	20.0	50 mV
		V3	12	±5	6.0	120 mV
		V4	-12	±5	1.0	120 mV
XL160-8	400018-01-6	V2	5	±4	20.0	50 mV
		V3	12	±5	6.0	120 mV
		V4	-12	±5	1.0	120 mV
XL160-10	400028-01-5	V1	5.6	±3	24.0	56mV
		V2	-5.8	±5	1.5	58mV
XL160-11*	400060-01-8	V1	5.3	±4	20.0	50 mV
		V2	12	±5	6.0	120 mV
		V3	-12	±5	1.0	120 mV

CS = Current Sharing \*OR-ing diode on V1 / V2 output

INPUT SPECIFICATIONS	
Nominal Input Voltage:	100 – 240 VAC
Maximum AC Input:	90 – 264 VAC
Input Frequency Range:	47 – 63 Hz
Input Current:	2.2 A @ 100 VAC
Input Protection:	3.15 A fuse
Safety Isolation:	3000 VAC input to output 1500 VAC input to ground
Inrush Current:	33 A @ 115 VAC
Leakage Current:	< 0.75 mA
Power Factor Correction:	Active PFC circuitry, meets or exceeds EN61000-3-2
OUTPUT SPECIFICATIONS	
Total Power:	160W
Hold-up Time:	Minimum 22 mS at all input voltages
Efficiency:	Up to 90% †
Minimum Load:	No load †
Over / Under Shoot:	Maximum 10% at turn-on
PROTECTION	
Overvoltage Protection:	On all main outputs
Overpower Protection:	Protected / Auto-recovery
Short Circuit Protection:	All outputs protected against short circuit
Thermal Shutdown:	Protected against over-temperature conditions
OPERATING SPECIFICATIONS	
Operating Temperature:	-25°C to +50°C
Temperature Derating:	2.5% / degree C to 70°C
Storage Temperature:	-40°C to +85°C
Forced Air Cooling:	10 CFM
Convection Cooling:	See Product Specification
MTBF:	675,333 hours @ 25°C *
SIGNALS	
Remote Sense:	On main output † Δ
Current Sharing:	Active current sharing with OR-ing diode or MOSFETs † Δ
Power Good:	Provided †
PS_OK:	Output †
LED:	Some models †

† See Product Specification      Δ Some Models  
\* See MTBF Report for additional temperature values

#### Compliance: <sup>1</sup>

##### USA / Canada

**Safety:** Underwriters Laboratories: UL 60950-1:2007 (2nd Edition) / C22.2 No. 60950-1-07  
UL 62368-1 (Second Edition)  
Safety of Information Technology Equipment (ITE)

**EMC:** FCC part 15, subpart B

##### Europe

2006/95/EC - "Low Voltage (Safety) Directive"  
Demko: EN 60950-1:2006 (2nd Edition) +A1:2010 +A11:2009 +A12:2011 +A2:2013  
EN 62368-1:2014 / A11:2017

2004/108/EC "Electromagnetic Compatibility (EMC) Directive"  
EN 61204-3 Class B

##### International

IEC 60950-1:2005 (2nd Edition)+ Am1:2009 + Am2:2013  
IEC 62368-1:2014  
Safety of Information Technology Equipment

IEC 61204-3 Class B

<sup>1</sup> See Product Specification for additional information

**For complete specifications on all models, please visit our website at: [www.n2power.com](http://www.n2power.com)**

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