

- **250 W AC-DC**
- **UP TO 93% EFFICIENCY**
- **HIGH POWER DENSITY:  
UP TO 9.25 W/in<sup>3</sup>**
- **UNIVERSAL AC INPUT**
- **ACTIVE PFC (90 – 264 VAC)**
- **BUILT IN OR'ING DIODES  
FOR N+1**
- **SMALL FOOTPRINT**
- **<1U HIGH: 1.5"**
- **NO LOAD OPERATION**
- **ACTIVE INRUSH  
CURRENT PROTECTION**

PHOTO TO COME

**POWER SUPPLY DESIGN LEADER**

N2Power leads the power density race with its latest small, high efficiency XL250 Series AC-DC power supplies. Our

**TWICE THE POWER IN HALF THE SPACE**

advanced technology yields a very small footprint, reduces wasted power, and offers the highest power density in the market in the 250 watt range. The unique design means reduced energy costs, a greater return on your investment, greater reliability and longer product life.

*Typical Mechanical Drawing:*

Connectors and pinouts may vary based on model.

Refer to XL250 engineering specifications for complete information.

**UNMATCHED POWER DENSITY**

With an overall height of 1.5" and a 3" x 6" or 3" x 7" footprint, the XL250 Series boasts a power density up to 9.25 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. Increased space, reduced thermal loads and lower costs will increase your competitive edge in the market.

DRAWING TO COME

**HIGH EFFICIENCY IN A SMALL PACKAGE**

Reduced heat generation and greater reliability are key design requirements. The XL250 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 or no forced air cooling, decreases AC loading, increases reliability and economy of operation.

**PFC READY, SAVE ENERGY**

Many countries already require Power Factor Corrected (PFC) power supplies, which lessen loads at generating stations. All XL250 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 losses up to 50%.

### REPEATABLE QUALITY

We use advanced PCB technology to deliver the highest density and best performance in the industry. Our advanced SMT packaging design automates processes, ensures reliability, and reduces 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, DEMKO, and European agencies, with scheduled factory audits to ensure ongoing compliance.

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

| MODEL          | OUTPUT | VOLTAGE | REGULATION (%) | MAXIMUM CURRENT (A) | RIPPLE & NOISE (P-P) | DIMENSIONS W x L x D |
|----------------|--------|---------|----------------|---------------------|----------------------|----------------------|
| XL250-1        | V1     | 3.3     | ±3             | 10.0                | 50 mV                | 3" x 7" x 1.5"       |
|                | V2     | 5       | ±3             | 10.0                | 50 mV                |                      |
|                | V3     | 12      | ±3             | 15.0                | 120 mV               |                      |
|                | V4     | -12     | ±5             | 1.0                 | 120 mV               |                      |
|                | V5     | 5Vsb    | ±5             | 2.0                 | 50 mV                |                      |
| XL250-2 +5VDC  | V1     | 5       | ±3             | 50.0                | 50 mV                | 3" x 6" x 1.5"       |
|                | V2     | 12      | ±5             | 2.5                 | 120 mV               |                      |
|                | V3     | 5Vsb    | ±5             | 2.0                 | 50 mV                |                      |
| XL250-3 +12VDC | V1     | 12      | ±3             | 21.0                | 120 mV               | 3" x 6" x 1.5"       |
|                | V2     | 12      | ±5             | 2.5                 | 120 mV               |                      |
|                | V3     | 5Vsb    | ±5             | 2.0                 | 50 mV                |                      |
| XL250-5 +24VDC | V1     | 24      | ±3             | 10.5                | 200 mV               | 3" x 6" x 1.5"       |
|                | V2     | 12      | ±5             | 2.5                 | 120 mV               |                      |
|                | V3     | 5Vsb    | ±5             | 2.0                 | 50 mV                |                      |
| XL250-6 +48VDC | V1     | 48      | ±3             | 5.25                | 300 mV               | 3" x 6" x 1.5"       |
|                | V2     | 12      | ±5             | 2.5                 | 120 mV               |                      |
|                | V3     | 5Vsb    | ±5             | 2.0                 | 50 mV                |                      |
| XL250-8        | V1     | N/A     | N/A            | N/A                 | N/A                  | 3" x 7" x 1.5"       |
|                | V2     | 5       | ±3             | 15.0                | 50 mV                |                      |
|                | V3     | 12      | ±3             | 15.0                | 120 mV               |                      |
|                | V4     | -12     | ±5             | 1.0                 | 120 mV               |                      |
|                | V5     | 5Vsb    | ±5             | 2.0                 | 50 mV                |                      |

All outputs isolated from the chassis

| INPUT SPECIFICATIONS     |                                                      |
|--------------------------|------------------------------------------------------|
| Nominal Input Voltage:   | 100 - 240 VAC                                        |
| Maximum AC Input:        | 90 - 264 VAC                                         |
| Input Frequency Range:   | 47 - 63 Hz                                           |
| Input Current:           | 3.5 A @ 100 VAC                                      |
| Input Protection:        | 5 A fuse                                             |
| Safety Isolation:        | 3000 VAC input to output<br>1500 VAC input to ground |
| Inrush Current:          | 15 A @ all input voltages                            |
| Power Factor Correction: | active PFC circuitry, meets or exceeds EN61000-3-2   |

| OUTPUT SPECIFICATIONS     |                                              |
|---------------------------|----------------------------------------------|
| Power:                    | 250 W                                        |
| Hold-up Time:             | minimum 20 mS at all input voltages          |
| Efficiency:               | 85% to 93%†                                  |
| Minimum Load:             | none                                         |
| Over/Under Shoot:         | maximum 10% at turn-on                       |
| PROTECTION                |                                              |
| Overvoltage Protection:   | on all main outputs (latch off)              |
| Overpower Protection:     | protected / auto-recovery                    |
| Short Circuit Protection: | all outputs protected against short circuit  |
| Thermal Shutdown:         | protected against overtemperature conditions |

| OPERATING SPECIFICATIONS |                                          |
|--------------------------|------------------------------------------|
| Operating Temperature:   | -25°C to +50°C                           |
| Derating:                | 2.5 watts / degree 50°C to 70°C          |
| Storage Temperature:     | -40°C to +85°C                           |
| Forced Air Cooling:      | 10 CFM†                                  |
| Convection Cooling:      | maximum TBD†, any combination of outputs |
| Leakage Current:         | <0.75 mA                                 |
| MTBF:                    | >200,000 hours calculated                |
| SIGNALS                  |                                          |
| Remote Sense:            | on main outputs†Δ                        |
| Current Sharing:         | active wire with or'ing diode†Δ          |
| Power Good:              | provided†                                |
| PS_OK:                   | output†                                  |
| LED:                     | signals PS OK†Δ                          |

† See Engineering Specification

Δ Some Models

### COMPLIANCE:

#### USA/Canada:

UL60950 / C22.2, 60950 (Bi-National Standard) Safety of Information Technology Equipment

#### Europe:

73/23/EEC "Low Voltage Directive" (Safety)  
IEC 60950 Third Edition (1999) Safety of Information Technology Equipment  
EN60950 (2000) Safety of Information Technology Equipment  
89/336/EEC "Electromagnetic Compatibility Directive" (EMC)  
EN61000-3-3 (1995) Limits of Voltage Fluctuations & Flicker  
EN61000-3-2 (2000) Harmonic Current Emissions (Power Factor Correction)  
EN61204-3 (2001) Stabilized Power Supplies, d.c. Outputs  
EMC Standards Specification EN61204 (2001) is a product family EMC standard which references the following specifications:  
EN61000-4-2 (1995) ESD  
EN61000-4-3 (1996) +A1 (1998) Radiated Radio Frequency  
Electromagnetic Field Immunity  
EN61000-4-4 (1995) Fast Transient / Burst Immunity

EN61000-4-5 (1995) Surge Immunity  
EN61000-4-6 (1996) Immunity to Conducted Disturbances  
EN61000-4-11 (1994) Voltage Dips, Short Interrupts & Voltage Variations

Safety Approvals: UL, cUL, DEMKO, CE Mark  
Emissions: FCC Class B

