ULTRA SMALL, HIGH EFFICIENCY POWER SUPPLIES

XL275 AC-DC Series

- **275 W AC-DC / 3" X 5" FOOTPRINT**
- **UP TO 90% EFFICIENCY**
- **HIGH POWER DENSITY: OVER 12 W / in³**
- **ALL OUTPUTS MAY BE PARALLELED**
- **REMOTE ON / OFF**
- **5W 5V STANDBY SUPPLY**
- **UNIVERSAL AC INPUT**
- **ACTIVE PFC (90 – 264 VAC)**
- **BUILT IN OR'ING MOSFET FOR N, N+1**
- **ACTIVE INRUSH CURRENT PROTECTION**
- **RoHS COMPLIANT**
- **I²C INTERFACE FOR DIGITAL POWER MANAGEMENT**

POWER SUPPLY DESIGN LEADER

N2Power™ leads the power density race with its latest small, high efficiency XL275 Series AC-DC power supplies. Our advanced technology

TWICE THE POWER IN HALF THE SPACE

yields a very small footprint, reduces wasted power, and offers the highest power density in its class. This efficient design means reduced energy costs, a greater return on your investment, greater reliability and longer product life.

ADVANCED DIGITAL CONTROLLER

The XL275 is the first power supply in this class to use a dedicated digital microcontroller to supervise the unit's operation. The micro-controller monitors the following parameters:

- DC voltage on the bulk capacitor (supplied by the AC mains)
- Output voltage
- Output current
- Auxiliary 12V output voltage
- Transformer temperature
- Ambient temperature
- Fan tachometer

The microcontroller enables the main output whenever all of the required startup conditions are met, and shuts it down upon command, loss of input power or whenever excessive loads or temperatures are sensed. It always provides advanced warning of an impending shutdown before power is lost.

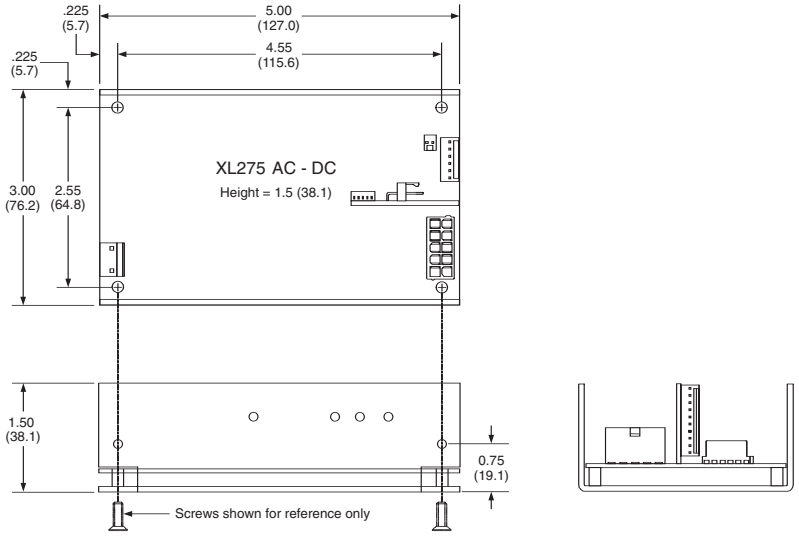
I²C BUS OPTION

An optional I²C digital communications interface is also provided to allow up to four XL275 to communicate over the same bus using the PMBus™ protocol. This interface allows routine remote control of the main outputs and the 12V fans. It can also notify the host if a fan fails (lost tachometer pulses). The host can also query the microcontroller for its output voltage and current plus the ambient and transformer temperatures.

Because it is programmable, the microcontroller code can be customized to meet unique OEM requirements.

Typical Mechanical Drawing:

Inches (millimeters), connectors and pinouts may vary with model.
Refer to XL275 Product Specification for complete information.



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MODEL	PART NUMBER	OUTPUT	VOLTAGE	REGULATION (%)	MAXIMUM CURRENT (A)	RIPPLE & NOISE (P-P)
XL275-12 XL275-12 CS	400029-02-1 400029-01-3	V1	12	±3	22.9	100 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-15 XL275-15 CS	400029-05-4 400029-03-9	V1	15	±3	18.3	150 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-16 XL275-16 CS	400029-06-2 400029-04-7	V1	16	±3	17.1	150 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-24 XL275-24 CS	400030-02-9 400030-01-1	V1	24	±3	11.5	200 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-28 XL275-28 CS	400032-06-6 400032-05-8	V1	28	±3	9.8	200 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-48 XL275-48 CS	400031-02-7 400031-01-9	V1	48	±3	5.7	200 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-54 XL275-54 CS	400032-04-1 400032-03-3	V1	54	±3	5.1	200 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-56 XL275-56 CS	400032-02-5 400032-01-7	V1	56	±3	4.9	200 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV

CS = Current Sharing

INPUT SPECIFICATIONS

Nominal Input Voltage:	100 – 240 VAC
Tested Input Limits:	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 1500 VAC input to ground
Inrush Current:	13 A @ 240 VAC†
Leakage Current:	0.7mA†
Power Factor Correction:	Active PFC circuitry, meets or exceeds EN61000-3-2

OUTPUT SPECIFICATIONS

Total Output:	275 W
Hold-up Time:	Minimum 22 mS
Efficiency:	Up to 90%†
Minimum Load:	No load
Over / Under Shoot:	Maximum 10% at turn-on

PROTECTION

Overvoltage Protection:	V1 (latches off)
Overpower Protection:	Protected / Auto Recovery
Short Circuit Protection:	Auto recovery of all outputs protected against short circuit
Thermal Shutdown:	Auto recovery protection against over temperature conditions

OPERATING SPECIFICATIONS

Operating Temperature:	–25°C to +50°C
Temperature Derating:	2.5% / degree 50°C to 70°C
Storage Temperature:	–40°C to +85°C
Forced Air Cooling:	10 CFM minimum†
Convection Cooling:	150W
MTBF:	>200,000 hours calculated

SIGNALS

Remote Sense:	V1 and Return
Active Current Sharing:	V1 using OR'ing MOSFET
Passive Redundancy:	V2 and V3 outputs may be wire OR'ed
Fan Output 1:	V2 on a 2-pin keyed connector
Fan Output 2:	ON above 45°C ambient or hot transformer†
Fan Tachometer Input:	(Optional) Reports fan speed via PMBus™
Optional I²C Data / Clock:	Provides PMBus™ control / status interface
Power Good (PG) Output:	High-true CMOS logic and LED drive outputs
Standby Output:	LED drive on when V1 and V2 outputs disabled
Remote Enable Input:	Low-true input enables V1 and V2 outputs
Onboard LED Indicators:	AC On, Power Good

† See Product Specification

COMPLIANCE:

USA/Canada:
UL60950-1:2007 (2nd Edition) / C22.2 No. 60950-1-07 (Bi-National Standard) Safety of Information Technology Equipment

Europe:
Directive 2006/95/EC - "Low Voltage (Safety) Directive"

IEC 60950-1:2005 (2nd Edition) Safety of Information Technology Equipment. (CB Report)

Directive 2004/108/EC "Electromagnetic Compatibility (EMC) Directive"

EN61204-3:2001 Stabilized Power Supplies, d.c. Outputs EMC Standards Specification
EN61204-3:2001 is a product family EMC standard referencing the following standards:
EN61000-3-3 Limits of Voltage Fluctuations & Flicker
EN61000-3-2 Harmonic Current Emissions (Power Factor Correction)
EN61000-4-3 Radiated Radio Frequency. Electromagnetic Field Immunity
EN61000-4-4 Fast Transient / Burst Immunity
EN61000-4-5 Surge Immunity
EN61000-4-6 Immunity to Conducted Disturbances
EN61000-4-11 Voltage Dips, Short Interrupts & Voltage Variations

Directive 2002/95/EC - "Restriction of Hazardous Substances (RoHS)"

Safety Approvals:
UL, cUL, CB Certificate, CB Report. CE Mark

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