

# XL275 DC-DC Series

- 275 W DC-DC / 3" X 5" FOOTPRINT
- UP TO 90% EFFICIENCY
- HIGH POWER DENSITY: OVER 12 W / in<sup>3</sup>
- ALL OUTPUTS MAY BE PARALLELED
- REMOTE ON / OFF
- 5W 5V STANDBY SUPPLY
- ACTIVE CURRENT SHARING
- BUILT IN OR'ING MOSFET FOR N, N+1
- RoHS COMPLIANT
- I<sup>2</sup>C INTERFACE FOR DIGITAL POWER MANAGEMENT



### POWER SUPPLY DESIGN LEADER

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

**TWICE THE POWER IN HALF THE SPACE**

technology 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 microcontroller monitors the following parameters:

- DC voltage on the bulk capacitor
- Output voltage
- Output current
- Transformer temperature
- Ambient temperature
- Fan tachometer

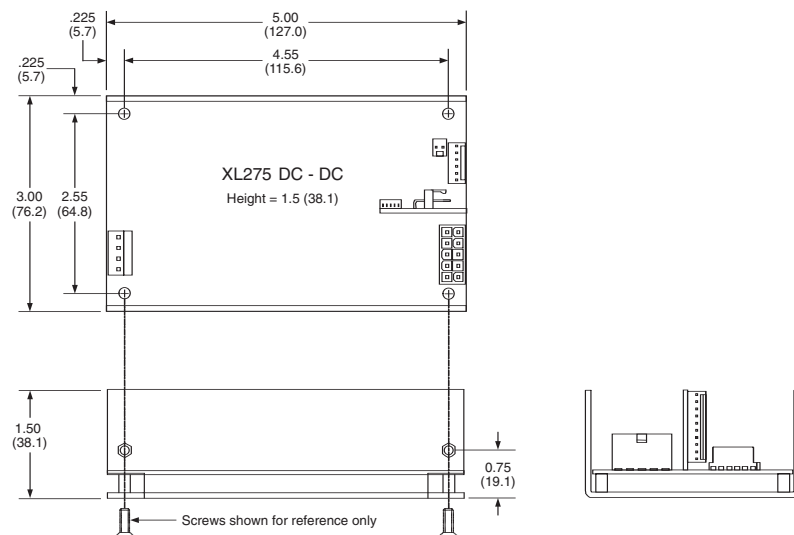
The microcontroller enables the main output whenever all of the required startup conditions are met, and shuts it down upon command, loss of input power or whenever excessive loads or temperatures are sensed. It always provides advanced warning of an impending shutdown before power is lost.

### I<sup>2</sup>C BUS OPTION

An optional I<sup>2</sup>C digital communications interface is also provided to allow up to four

### Typical Mechanical Drawing:

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



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.

# XL275 DC-DC Series

MODEL	PART NUMBER	OUTPUT	VOLTAGE	REGULATION (%)	MAXIMUM CURRENT (A)	RIPPLE & NOISE (P-P)
XL275-12DC XL275-12DC CS	400084-03-4 400085-03-1	V1	12	±3	22.9	100 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-24DC XL275-24DC CS	400084-05-9 400085-05-6	V1	24	±3	11.5	200 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-48DC XL275-48DC CS	400084-06-7 400085-06-4	V1	48	±3	5.7	200 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-54DC XL275-54DC CS	400084-09-1 400085-09-8	V1	54	±3	5.1	200 mV
		V2	12	±5	1.0	80 mV
		V3	5sb	±5	1.0	50 mV
XL275-56DC XL275-56DC CS	400084-10-9 400085-10-6	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:	36 – 76 VDC
Input Current:	9.2 A @ 36 VDC
Input Protection:	10 A fuse
Safety Isolation:	3000 V input to output 1500 V input to ground
OUTPUT SPECIFICATIONS	
Total Output:	275 W
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

† See Product Specification

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 I <sup>2</sup> C 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:	DC On, Power Good

**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)"

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:

CISPR 22: High frequency line conducted phenomena

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

Safety Approvals:

UL, cUL, CB Certificate, CB Report, CE Mark



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