



## Low Acoustic Noise Power Supply

Ultra-high efficiency 1U size



### PLUG & PLAY POWER next generation power solution

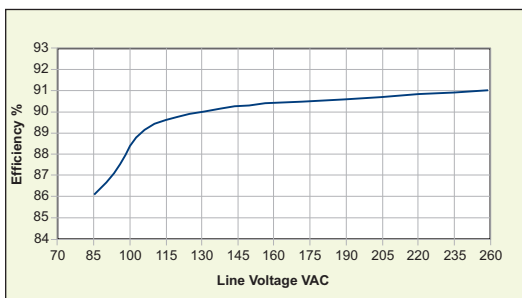
#### FEATURES & OPTIONS

- Low Acoustic noise 42.7dBA
- Ultra high efficiency, up to 89%
- Extra low profile: 1U height (40mm)
- Plug & Play Power - allows fast custom configuration
- Individual output control signals
- All outputs fully floating
- Series / Parallel of multiple outputs
- Few electrolytic capacitors (all long life)
- Visual LED indicators
- 5V bias standby voltage provided
- SEMI F47 Compliant
- Standard Xgen product options include:  
Conformal Coating, Low Acoustic Noise, Low Leakage Current, Extra Ruggedisation, Connector, Cabling & Mounting options, Thermal Signals and Reverse Fans. See Section 4.10 for more information

#### APPLICATIONS INCLUDE

- Audio Equipment
- Test and measurement
- Telecommunications

#### EFFICIENCY (typical)



The XQ family of low acoustic noise power supplies provides up to 1200W in an extremely compact 1U x 260mm x 127mm package. Boasting industry leading power density of 15W/in<sup>3</sup> and efficiencies of up to 90%, the XQ family employs an innovative plug & play architecture that allows users to instantly configure a custom power solution in less than 5 minutes!

Ideal for acoustic sensitive applications such as audio applications, the XQ family provides unmatched efficiency and high power density, made possible through the combination of low loss technologies and the best field-proven technologies in planar magnetics and surface mount electronics.

The XQ family consists of 3 *powerPac* models ranging in power levels from 400W to 1200W. each model may be populated with up to 6 *powerMods* selected from the table of *powerMods* shown below.

All configurations carry full safety agency approvals, UL60950, EN60950 and are CE marked.

#### powerMods

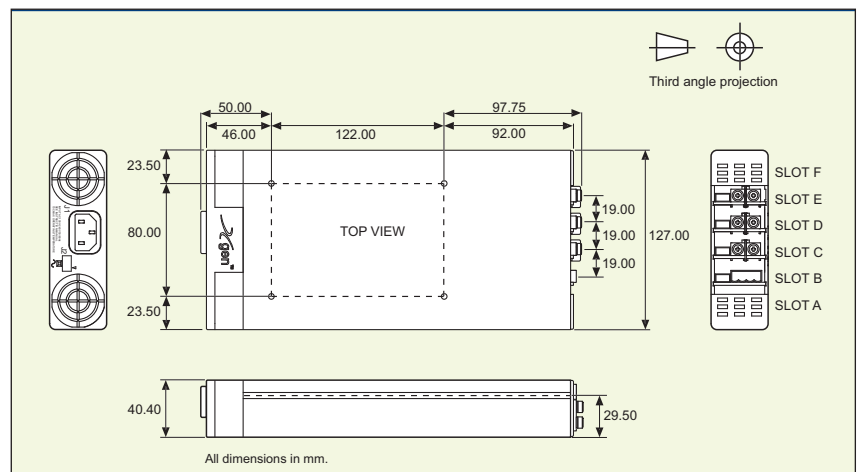
MODEL	Vmin Vtrim	Vnom Vpot	Vmax	Imax	Watts
Xg1	1.0	1.5	2.5	3.6	50A 125W
Xg2	1.5	3.2	5.0	6.0	40A 200W
Xg3	4.0	6.0	12.0	15.0	20A 240W
Xg4	8.0	12.0	24.0	30.0	10A 240W
Xg5	8.0	28	48.0	58.0	6A 288W
Xg7		5.0	24.0	28.0	5A 120W
Xg8 v1		5.0	24.0	28.0	3A 72W
v2		5.0	24.0	28.0	3A 72W

#### powerPacs

MODEL	Watts
XQA	400W
XQB	900W
XQC	1200W

#### MECHANICAL SPECIFICATIONS

Note: See diagrams on pages 34-37



**SPECIFICATION** applies to configured units consisting of *powerMods* plugged into the appropriate *powerPac*

INPUT					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440Hz	85 120		264 380	VAC VDC
Power Rating	XQA:600W, XQB:900W, XQC:1200W See Section 4.11 for line voltage deratings				
Input Current	XQA 85VAC in 400W out XQB 85VAC in 850W out XQC 85VAC in 850W out		7.5 11.5 11.5		A A A
Inrush Current	230VAC @ 25°C			25	A
Undervoltage Lockout	Shutdown	65		74	VAC
Fusing	XQA 250V XQB 250V XQC 250V		F8A HRC F12A HRC F12A HRC		
OUTPUT					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table				
Output Adjustment Range	Manual: Multi-turn potentiometer. As per powerMod table Electronic: See Section 4.6				
Minimum Load			0		A
Line Regulation	For $\pm 10\%$ change from nominal line			$\pm 0.1$	%
Load & Cross Regulation	For 25% to 75% load change			$\pm 0.2$	%
Transient Response	For 25% to 75% load change Voltage Deviation Settling Time			10 250	% $\mu$ s
Ripple and Noise	20MHz 100mV or 1.0% pk-pk				
Overvoltage Protection	1st level: Vset Tracking. 2nd level: Vmax (Latching)	110		125	%
Overcurrent Protection	Straight line with hiccup activation at <30% of Vnom See Section 4.6	110		120	%
Remote Sense	Max. line drop compensation. (except Xg7, Xg8)			0.5	VDC
Overshoot				2	%
Turn-on Delay	From AC in and Global Enable / powerMod Enable			700 / 6	ms
Rise Time	Monotonic			5	ms
Hold-up Time	For nominal output voltages at full load. XQA, XQB/XQC	20 / 15			ms
Output Isolation	Output to Output / Output to Chassis	500 / 500			VDC
GENERAL					
Parameter	Conditions/Description	Min	Nom	Max	Units
Isolation Voltage	Input to Output Input to Chassis	3000 1500			VAC VAC
Efficiency	230VAC, 1200W @ 24V		90		%
Safety Agency Approvals	EN60950, UL60950, CSA22.2 No.950 UL File No. E181875				
Leakage Current	250VAC, 60Hz, 25°C			1.5	mA
Signals	See Section 4.9				
Bias Supply	Always on. Current 250mA. 500mA option available	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load powerMod See Section 4.12. powerPac excludes fans powerPac			0.958 0.946	fpmh fpmh
EMC					
Parameter	Standard		Level		Units
Emissions					
Conducted	EN55011, EN55022, FCC		Level B		
Radiated	EN55011, EN55022, FCC		Level B		
Harmonic Distortion	EN61000-3-2 Class A		Compliant		
Flicker & Fluctuation	EN61000-3-3		Compliant		
Immunity					
Electrostatic Discharge	EN61000-4-2		Level 2		
Radiated Immunity	EN61000-4-3		Level 3		
Fast Transients-Burst	EN61000-4-4		Level 3		
Input Line Surges	EN61000-4-5		Level 3		
Conducted Immunity	EN61000-4-6		Level 3		
Voltage Dips	EN61000-4-11, SEMI F47 compliant. See note 7.		Compliant		
ENVIRONMENTAL					
Parameter	Conditions/Description	Min	Nom	Max	Units
Operating Temperature		-20		+70	°C
Storage Temperature		-40		+85	°C
Derating	See Section 4.11 for full temperature deratings				
Relative Humidity	Non-condensing	5		95	%RH
Acoustic Noise	Measured from distance of 1m		42.7		dBA
Shock	3000 Bumps, 10G (16ms) half sine				
Vibration	1.5G	10		200	Hz

## NOTES

1. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
2. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
3. All specifications at nominal input, full load, 25°C unless otherwise stated.
4. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.
5. Conformal Coating option: See Sections 3.1 and 4.10 for details.
6. For section references above go to the Xgen Designers Manual.
7. SEMI F47 compliant at input voltages >160VAC. Consult Excelsys for details.