



Medical  
Low Noise

**Medical Power Supply**  
Low Noise 1U size

patents pending  
CE c US

**PLUG & PLAY POWER**  
next generation power source

**FEATURES**

- Low Acoustic Noise 59dBA
- UL60601-1 and EN60601-1 approved
- Less than 300µA leakage current
- 4000VAC isolation
- 1.5V to 58V standard output voltages
- Extra low profile: 1U height (40mm)
- Ultra high efficiency, up to 90%
- Plug & Play Power
  - allows fast custom configuration
  - allow easy logistics
- Reduced system heat dissipation
- Series / Parallel of multiple outputs
- 5V bias standby voltage provided
- Individual output control signals

**APPLICATIONS INCLUDE**

- Clinical diagnostic equipment
- Medical lasers
- Dialysis equipment
- For Standard applications see Xcite, Xqite

The Xzite family of low noise medically approved power supplies provides up to 1200W in an extremely compact 1U x 260 x 127mm package. Boasting industry leading power density of 15W/in<sup>3</sup> and efficiencies of up to 90%, the Xzite 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 medical applications the Xzite 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 Xzite family consists of 3 *powerPacs* 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, UL2601-1, EN60601-1 and are CE marked. For alternative power interfaces contact [support@excelsys.com](mailto:support@excelsys.com)

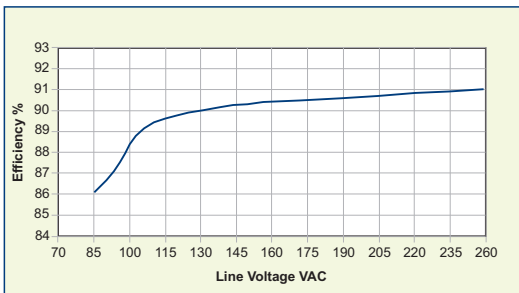
**powerMods**

MODEL	Vmin	Vnom	Vmax	Imax	Watts	
Xg1	1.5	2.5	3.6	50A	125W	
Xg2	3.2	5.0	6.0	40A	200W	
Xg3	6.0	12.0	15.0	20A	240W	
Xg4	12.0	24.0	30.0	10A	240W	
Xg5	28.0	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

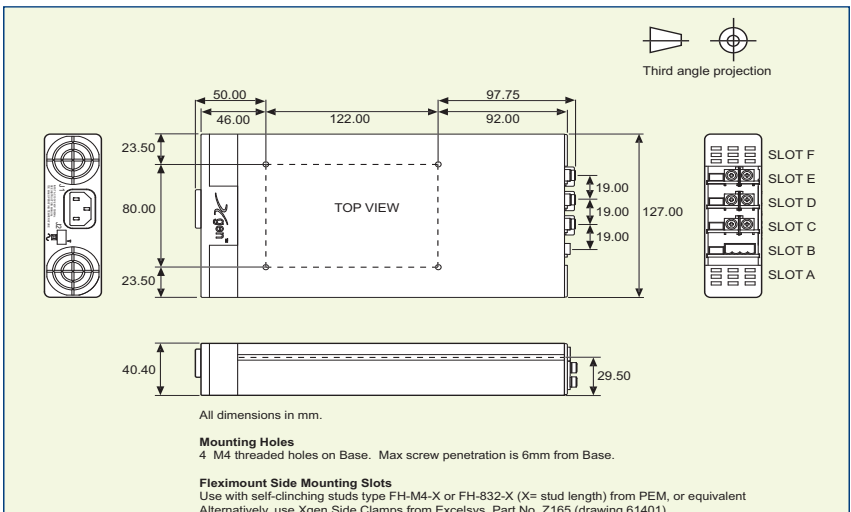
**powerPacs**

	MODEL	Watts
Xzite	XZA	600W
	XZB	900W
	XZC	1200W

**EFFICIENCY (typical)**



**MECHANICAL SPECIFICATIONS**



# 400W-1200W Medical Low Noise AC/DC Plug & Play Power Supply Series

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

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INPUT					
Parameter	Conditions/Description	Min	Nom	Max	Units
<b>Input Voltage Range</b>	Universal Input	85 120		264 380	VAC VDC
<b>Input Frequency Range</b>		47		63	Hz
<b>Power Rating</b> XZA XZB XZC	Derate linearly from 900W at 120VAC to 600W at 85VAC Derate linearly from 900W at 120VAC to 600W at 85VAC			400 900 1200	W W W
<b>Input Current</b> XZA XZB XZC	85VAC in 400W out 85VAC in 600W out 85VAC in 600W out		7.5 11.5 11.5		A A A
<b>Inrush Current</b>	230VAC @ 25°C			25	A
<b>Undervoltage Lockout</b>	Shutdown	65		74	VAC
<b>Fusing</b> XZA XZB XZC	250V 250V 250V		F8A HRC F12A HRC F12A HRC		

OUTPUT					
Parameter	Conditions/Description	Min	Nom	Max	Units
<b>powerMod Power</b>	As per <i>powerMod</i> table				
<b>Output Adjustment Range</b>	Manual: Multi-turn potentiometer. As per <i>powerMod</i> table Electronic: See Xgen Designers' Manual				
<b>Minimum Load</b>			0		A
<b>Line Regulation</b>	For ±10% change from nominal line			±0.1	%
<b>Load &amp; Cross Regulation</b>	For 25% to 75% load change			±0.2	%
<b>Transient Response</b>	For 25% to 75% load change Voltage Deviation Settling Time			10 250	% µs
<b>Ripple and Noise</b>	20MHz Bandwidth			1.0	% pk-pk
<b>Overvoltage Protection</b>	1st level: Vset Tracking. 2nd level: Vmax (Latching)	110		125	%
<b>Overcurrent Protection</b>	Straight line with hiccup activation at <30% of Vnom See Designer's Manual for full details	110		120	%
<b>Remote Sense</b>	Max. line drop compensation. (except Xg7, Xg8)			0.5	VDC
<b>Overshoot</b>				2	%
<b>Turn-on Delay</b>	From AC In / Enable signal			600 / 30	ms
<b>Rise Time</b>	Monotonic			5	ms
<b>Hold-up Time</b>	For nominal output voltages at full load. XZA / XZB & XZC	20 / 15			ms
<b>Output Isolation</b>	Output to Output / Output to Chassis	500 / 500			VDC

GENERAL					
Parameter	Conditions/Description	Min	Nom	Max	Units
<b>Isolation Voltage</b>	Input to Output Input to Chassis	4000 1500			VAC VAC
<b>Efficiency</b>	230VAC, 1200W @ 24V		90		%
<b>Safety Agency Approvals</b>	EN60601-1, UL2601-1, CSA601-1 UL File No. E230761				
<b>Leakage Current</b>	250VAC, 60Hz, 25°C			300	µA
<b>Signals</b>	See Xgen Series datasheet				
<b>Bias Supply</b>	Always ON. Current 250mA	4.8	5.0	5.2	VDC
<b>Reliability</b>	Failures per million hours at 25°C and full load See Designers' Manual. <i>powerPac</i> excludes fans			0.98 0.92	fpmh fpmh

EMC					
Parameter	Standard		Level		Units
<b>Emissions</b>					
<b>Conducted</b>	EN55011, EN55022, FCC		Level B		
<b>Radiated</b>	EN55011, EN55022, FCC		Level B		
<b>Harmonic Distortion</b>	EN61000-3-2		Compliant		
<b>Flicker and Fluctuation</b>	EN61000-3-3		Compliant		
<b>Immunity</b>					
<b>Electrostatic Discharge</b>	EN61000-4-2		Level 4		
<b>Radiated RFI</b>	EN61000-4-3		Level 3		
<b>Fast Transients - burst</b>	EN61000-4-4		Level 4		
<b>Input Line Surges</b>	EN61000-4-5		Class 4		
<b>Conducted RFI</b>	EN61000-4-6		10		V/m
<b>Voltage Dips</b>	EN61000-4-11 (EN55024)		10		ms

ENVIRONMENTAL					
Parameter	Conditions/Description	Min	Nom	Max	Units
<b>Operating Temperature</b>		-20		+70	°C
<b>Storage Temperature</b>		-40		+85	°C
<b>Derating</b>	1.6% per °C above 40°C. See Designers Manual for full deratings				
<b>Relative Humidity</b>	Non-condensing	5		95	%RH
<b>Acoustic Noise</b>	Background noise 28.6dBA, Noise measured 1m from unit		59		dBA
<b>Shock</b>	3000 Bumps, 10G (16ms) half sine				
<b>Vibration</b>	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. See Xgen Designers Manual for detailed power ratings
  5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

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## Voltage Adjustment - Local

The multi-turn potentiometer that adjusts each output within the specified range may be accessed via the output panel of the power supply. Clockwise rotation increases output voltage. Resolution is approximately 5% of nominal voltage (Vnom) per turn.

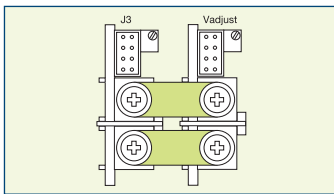
## Voltage Adjustment - Remote (resistive / electronic)

The output voltage may be adjusted or trimmed by means of an external resistor or potentiometer network connected to the Vtrim pin. Linear Electronic programming is also possible and may be implemented according to the formula  $V_{out} = K V_{control}$ . See Xgen series Designers' Manual for full details.

## Paralleling

To achieve increased current capacity, simply parallel outputs using the standard parallel links. Excelsys 'wireless' sharing ensures that current hogging is not possible. To parallel connect outputs:

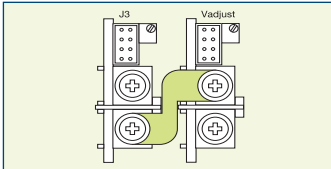
1. Switch on IShare switch to ON on powerMods.
2. Connect Negative parallel link.
3. Adjust output voltages of powerMods to within 5mV of each other.
4. Connect Positive Parallel Link.



Parallel Links available to order. Part Number XP1

## Seriesing

To achieve increased output voltages, simply series outputs using standard series links, paying attention to the requirements to maintain SELV levels if required in your system.



Series Links available. Part Number XS1

## Remote Sensing

When the load is remote from the power supply, the remote sense pins may be used to compensate for drops in the power leads. Where the power cabling contributes significant dynamic impedance, see Xgen series Designers' Manual.

## Bias Voltage

A SELV isolated 5V (always on) bias voltage rated at 250mA is provided on J2 to facilitate miscellaneous control functions.

## Current Limit Adjustment

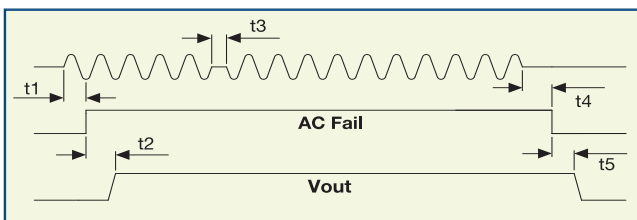
The output current limit setting may be adjusted (downwards only) by means of an external resistor connection to the I trim pin.

## Inhibit/Enable

Inhibiting may be implemented either globally or on a per module basis (*powerPac* or *powerMod* inhibiting). Reverse logic (Enabling) may also be implemented, see Xgen series Designers' Manual.

## AC Fail

Open collector signal indicating that the input voltage has failed or is less than 80Vac. This signal changes state giving 5mS of warning before loss of output regulation. See Xgen series Designers' Manual for full specifications.

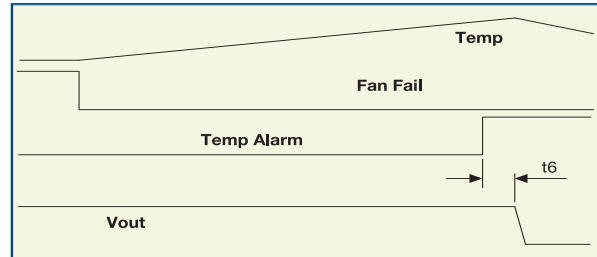


## Temperature Alarm (Option 01)

Open collector signal indicating excessive *powerPac* temperatures due to fan failure or operation beyond ratings. This signal is activated at least 10ms prior to system shutdown.

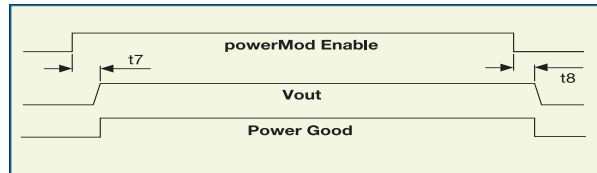
## Fan Fail (Option 01)

Open collector signal indicating that at least one of the system fans have failed. This does not cause system shutdown.



## Power Good

Opto-isolated output signal indicates that the *powerMod* is operating correctly and output voltage is within normal band. Opto transistor ON = Good.



## Indication LEDs

Each powerMod has a visual indicator to identify that it is operating within normal ratings. Very useful for system diagnosis.

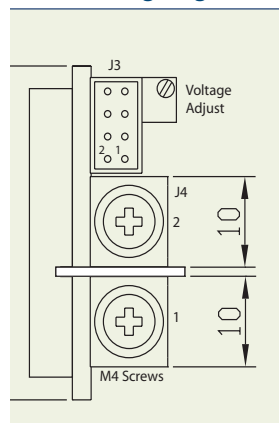
## Signal Connector Pinout

Pin	J2 ( <i>powerPac</i> )	J3 ( <i>powerMod</i> ) Type A	J3 ( <i>powerMod</i> ) Type B)
1	common	+sense	+pg (V2)
2	+5V bias	-sense	-pg (V2)
3		V trim	inhibit (V2)
4	ac fail	I trim	common (V2)
5	fan fail*	+inhibit/enable	+pg (V1)
6	global enable	-inhibit/enable	-pg (V1)
7	temp alarm*	+power good	inhibit (V1)
8	global inhibit	-power good	common (V1)

\*Option 01 only

## Signal Connector Pinout

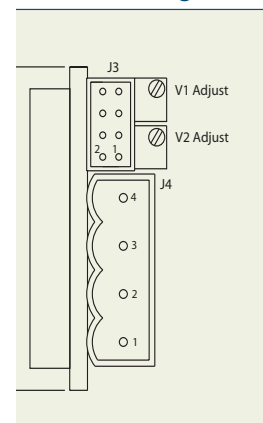
### TYPE A Xg1-Xg7



J4 Connector : M4 Screw

J3 Connector Mating Connector  
Housing: Locking Molex 51110-0860  
Non Locking Molex 51110-0850  
Crimp Terminal: Molex p/n 50394

### TYPE B : Xg8



J4Connector : Camden 9200/4A

J3 Connector Mating Connector  
Housing: Locking Molex 51110-0860  
Non Locking Molex 51110-0850  
Crimp Terminal: Molex p/n 50394

See Xgen series Designers' Manual for full signal connector details.

## Xgen Series

**powerPacs** (4slot package, 89mm wide)



	Family	MODEL	Watts
Standard	Xlite	XLA	200W
		XLB	400W
		XLC	600W
		XLD	750W
Low Noise	Xkite	XKA	200W
		XKB	400W
		XKC	600W

	Family	MODEL	Watts
Med	Xmite	XMA	200W
		XMB	400W
		XMC	600W
		XMD	750W
		XRE	750W
Low Noise Med	Xrite	XRA	200W
		XRB	400W
		XRC	600W



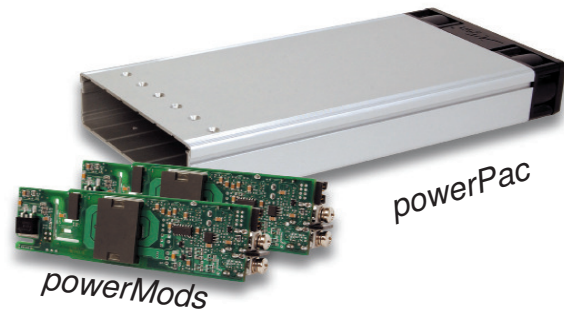
**powerPacs** (6slot package, 127mm wide)

	Family	MODEL	Watts
Standard	Xcite	XCA	400W
		XCB	700W
		XCC	1000W
		XCD	1200W
		XCE	1340W
High Temp	Xhite	XHA	400W
		XHB	600W
Low Noise	Xqite	XQA	400W
		XQB	900W
		XQC	1200W

	Family	MODEL	Watts
Med	Xvite	XVA	400W
		XVB	700W
		XVC	1000W
		XVD	1200W
		XVE	1340W
Low Noise Med	Xzite	XZA	400W
		XZB	900W
		XZC	1200W

**powerMods** (for use with all powerPac models)

MODEL	Vmin <sup>(4)</sup>		Vnom	Vmax <sup>(4)</sup>		Imax	Watts
	Vtrim	Vpot					
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	24.0	48.0	58.0	6A	288W	
Xg7	5.0	5.0	24.0	28.0	5A	120W	
Xg8	v1	5.0	5.0	24.0	28.0	3A	72W
	v2	5.0	5.0	24.0	28.0	3A	72W



## Part Numbering

**Configured Units** may be specified and ordered using the part numbering system shown opposite. For example, part number XVC123400-00 specifies the following 1000W medical power supply.

- XVC-00 powerPac 1000W medically approved powerPac
- Xg1 2.5V @ 50A powerMod
- Xg2 5V @ 40A powerMod
- Xg3 12V @ 20A powerMod
- Xg4 24V @ 10A powerMod

## Accessories

PowerMods can be parallel connected for higher current and series connected for higher voltages. Configured units will have parallel and series links fitted as required.

