EXCELSYS XGEN SERIES

THE MODULAR POWER SOLUTION OF CHOICE FOR MISSION CRITICAL APPLICATION



The Xgen series brings OEM power supplies to a new paradigm, combining technical excellence with logistics simplicity to provide the world's most flexible, high efficiency, high reliability modular power supply. Xgen continues the Excelsys tradition of providing an instant, no compromise power solution for any application where a unique set of voltage and current requirements is needed.

The Xgen power supply is the most flexible modular power supply in the world. This power supply family ranges in power from 200 W to 1340 W and is used throughout various industries including Medical, Industrial, Communications and Military.

PRODUCT HIGHLIGHTS

- Ultra high efficiency
- Extra low profile: 1U height (40 mm)
- Plug & Play Power - allows fast custom configuration
- 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
- Product options: Conformal Coating, Low Acoustic Noise, Low Leakage Current, Extra Ruggedisation, Connector, Cabling & Mounting options, Thermal Signals and Reverse Fans

TYPICAL APPLICATIONS

Medical

- Clinical diagnostic equipment, medical lasers, radiological imaging, clinical chemistry

Industrial

- Test and measurement, industrial machines, automation and audio equipment, printing, telecommunications

OVERVIEW

The Xgen series of user configurable power supplies with its unique plug and play architecture allows system designers to define and build 'instant' custom power solutions with industry leading 17 W/in^3 power density and up to 90% efficiency.

Xgen powerPacs

The application specific 4 slot and 6 slot powerPacs provide up to 12 isolated DC outputs from 200 W up to 1340 W. The table below summarises the powerPacs by application and power level. Please refer to the specific product datasheets for full specifications.

powerPacs											
Application	**Slots**	**200 W**	**400 W**	**600 W**	**700 W**	**750 W**	**800 W**	**900 W**	**1000 W**	**1200 W**	**1340 W**
Standard	4 Slot	XLA	XLB	XLC	-	XLD	-	-	-	-	-
	6 Slot	-	XCA	-	XCB	-	-	-	XCC	XCD	XCE
Medical	4 Slot	XMA	XMB	XMC	-	XMD	-	-	-	-	-
	6 Slot	-	XVA	-	XVB	-	-	-	XVC	XVD	XVE
Low Noise Standard	4 Slot	XKA	XKB	XKC	-	-	-	-	-	-	-
	6 Slot	-	XQA	-	-	-	-	XQB	-	XQC	-
Low Noise Medical	4 Slot	XRA	XRB	XRC	-	-	-	-	-	-	-
	6 Slot	-	XZA	-	-	-	-	XZB	-	XZC	-
Ultra Quiet Standard	4 Slot	XTA	XTB	-	-	-	-	-	-	-	-
	6 Slot	-	XBA	XBB	-	-	XBC	-	-	-	-
Ultra Quiet Medical	4 Slot	XNA	XNB	-	-	-	-	-	-	-	-
	6 Slot	-	XWA	XWB	-	-	XWC	-	-	-	-
Hi-Temp	6 Slot	-	XHA	XHB	-	-	-	-	-	-	-

OVERVIEW

Xgen powerMods

High Efficiency Plug and Play DC output modules to provide a wide range of DC output voltages from 1.0 V up to 58.0 V.

Standard Xgen product options include: Conformal Coating, Low Acoustic Noise, Low Leakage Current, Extra Ruggedisation, Connector, Cabling & Mounting options, Thermal Signals and Reverse Fans.



powerMods								
Model	Vnom (V)	Trim Pot Range (V)	Vprog Adjustment Range (V)	Imax (A)	Power (W)	Capacitive Loading (mF)[1,2]	Remote Sense	Power Good
XgA	12.0	10.8-15.6	-	12.5	150	10	-	-
XgB	24.0	19.2-26.4	-	8.3	200	4	-	-
XgC	36.0	28.8-39.6	-	5.6	200	2	-	-
XgD	48.0	38.5-50.4	-	4.2	200	1	-	-
XgE/Xg7	24.0	5.0-28.0	-	5.0	120	2.5	-	Yes
XgF/Xg8	24.0	5.0-28.0	-	3.0	72	1.5	-	Yes
	24.0	5.0-28.0	-	3.0	72	1.5	-	Yes
XgG	2.5	1.5-3.6	1.15-3.6	40.0	100	700	Yes	Yes
XgH	5.0	3.2-6.0	1.5-6.0	36.0	180	550	Yes	Yes
XgJ	12.0	6.0-15.0	4.0-15.0	18.3	220	100	Yes	Yes
XgK	24.0	12.0-30.0	8.0-30.0	9.2	220	20	Yes	Yes
XgL	48.0	28.0-58.0	8.0-58.0	5.0	240	10	Yes	Yes
Xg1	2.5	1.5-3.6	1.15-3.6	50.0	125	900	Yes	Yes
Xg2	5.0	3.2-6.0	1.5-6.0	40.0	200	600	Yes	Yes
Xg3	12.0	6.0-15.0	4.0-15.0	20.0	240	120	Yes	Yes
Xg4	24.0	12.0-30.0	8.0-30.0	10.0	240	25	Yes	Yes
Xg5	48.0	28.0-58.0	8.0-58.0	6.0	288	25	Yes	Yes
XgM	5.0	3.2-6.0	1.0-6.0	40.0	200	850	Yes	Yes
XgN	12.0	6.0-15.0	1.0-15.0	20.0	240	400	Yes	Yes
XgP	24.0	12.0-30.0	1.0-30.0	10.0	240	200	Yes	Yes
XgQ	48.0	24.0-58.0	1.0-58.0	6.0	288	100	Yes	Yes
XgR	24.0	12.0-30.0	8.0-30.0	10.0	240	25	-	Yes
XgT	48.0	28.0-58.0	8.0-58.0	6.0	288	15	-	Yes

Note 1: A diode or other blocking element would be recommended for Xg1-5 and XgG-Q modules if the load capacitance is large to prevent reverse energy during shutdown.
Note 2: Maximum capacitive load of the module to ensure monotonic startup.

XL POWERPAC - 200 W TO 750 W / 4 SLOT / STANDARD

The XL family of power supplies consists of 4 powerPac models in 200W, 400 W, 600 W and 750 W power levels in a slimline 1U package. Each powerPac model may be populated with up to 4 powerMods selected from the table of powerMods shown on page 3. The slimline product boasts unrivalled power density saving valuable system space.

powerPacs		
Series	Model	Power (W)
XL	XLA	200
	XLB	400
	XLC	600
	XLD	750

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XLA XLB XLC XLD	- - - -	200 400 600 750	- - - -	W W W W
Input Current	XLA (85 VAC, 200 W) XLB (85 VAC, 400 W) XLC (85 VAC, 400 W) XLD (85 VAC, 525 W)	- - - -	4.0 6.0 7.5 7.5	- - - -	A A A A
Inrush Current	230 VAC @ 25°C	-	-	50	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XLA (250 V, 5 x 20 mm) XLB (250 V, 5 x 20 mm) XLC, XLD (250 V, 5 x 20 mm)	- - -	F5A HRC F6.3A HRC F8A HRC	- - -	- - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	For ±10% change from nominal line	-	-	±0.1	%
Load Regulation	For 25% to 75% load change	-	-	±0.2	%
Cross Regulation	-	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 (XLA, XLB, XLC) From powerMod enable (XLA, XLB, XLC) From AC in and global enable (XLD) From powerMod enable (XLD)	- - - -	- - - -	700 6 1000 6	ms ms ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load XLA, XLB, XLC XLD	 20 15	 - -	 - -	 ms ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XL POWERPAC - 200 W TO 750 W / 4 SLOT / STANDARD

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	3000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 750 W @ 24 V	-	89	-	%
Safety Agency Approvals	EN60950, UL60950, CSA22.2 No.950 UL File No. E181875	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C	-	-	1.5	mA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.92	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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[7]	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz

Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. XLD: 800W peak for 1s; Duty cycle 7%. powerMod output power must not exceed normal ratings.
6. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.
7. SEMI F47 compliant at input voltages >160 VAC. Consult AE for details.

XM POWERPAC - 200 W TO 750 W / 4 SLOT / MEDICAL

The XM family of medically approved power supplies consists of 4 powerPac models in 200 W, 400 W, 600 W and 750 W power levels in a slimline 1U package. Each powerPac model may be populated with up to 4 powerMods selected from the table of powerMods shown on page 3. The XM family carries the latest safety agency approvals to EN60601-1 and UL60601-1 3rd Edition, meeting the stringent creepage and clearance requirements in this compact package.

powerPacs		
Series	Model	Power (W)
XM	XMA	200
	XMB	400
	XMC	600
	XMD	750

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XMA XMB XMC XMD	- - - -	200 400 600 750	- - - -	W W W W
Input Current	XMA (85 VAC, 200 W) XMB (85 VAC, 400 W) XMC (85 VAC, 400 W) XMD (85 VAC, 525 W)	- - - -	4.0 6.0 7.5 7.5	- - - -	A A A A
Inrush Current	230 VAC @ 25°C	-	-	50	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XMA (250 V, 5 x 20 mm) XMB (250 V, 5 x 20 mm) XMC, XMD (250 V, 5 x 20 mm)	- - -	F5A HRC F6.3A HRC F8A HRC	- - -	- - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	For ±10% change from nominal line	-	-	±0.1	%
Load Regulation	For 25% to 75% load change	-	-	±0.2	%
Cross Regulation	-	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 (XMA, XMB, XMC) From powerMod enable (XMA, XMB, XMC) From AC in and global enable (XMD) From powerMod enable (XMD)	- - - -	- - - -	700 6 1000 6	ms ms ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load XMA, XMB, XMC XMD	 20 15	 - -	 - -	 ms ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XM POWERPAC - 200 W TO 750 W / 4 SLOT / MEDICAL

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	4000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 750 W @ 24 V	-	89	-	%
Safety Agency Approvals	EN60601-1, UL60601-1 3rd Edition, CSA601-1 UL File no. E230761	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C 250 VAC, 60 Hz, 25°C, option 04	- -	- -	300 150	µA µA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.92	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz

Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. XMD: 800W peak for 1 s; Duty cycle 7%. powerMod output power must not exceed normal ratings.
6. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

XK POWERPAC - 200 W TO 600 W / 4 SLOT / LOW NOISE STANDARD

The XK family of low acoustic noise power supplies consists of 3 powerPac models in 200 W, 400 W and 600 W power levels in a slimline 1U x 260 mm x 89 mm package. Each powerPac model may be populated with up to 4 powerMods selected from the table of powerMods shown on page 3. Ideal for acoustic sensitive applications, the XK boasts unrivalled power density saving valuable system space.

powerPacs		
Series	Model	Power (W)
XK	XKA	200
	XKB	400
	XKC	600

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XKA XKB XKC	- - -	200 400 600	- - -	W W W
Input Current	XKA (85 VAC, 200 W) XKB (85 VAC, 400 W) XKC (85 VAC, 400 W)	- - -	4.5 5.5 7.5	- - -	A A A
Inrush Current	230 VAC @ 25°C	-	-	50	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XKA (250 V, 5 x 20 mm) XKB (250 V, 5 x 20 mm) XKC (250 V, 5 x 20 mm)	- - -	F5A HRC F6.3A HRC F8A HRC	- - -	- - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	For ±10% change from nominal line	-	-	±0.1	%
Load Regulation	For 25% to 75% load change	-	-	±0.2	%
Cross Regulation	-	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load	20	-	-	ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XK POWERPAC - 200 W TO 600 W / 4 SLOT / LOW NOISE STANDARD

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	3000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 600 W @ 24 V	-	89	-	%
Safety Agency Approvals	EN60950, UL60950, CSA22.2 No.950 UL File No. E181875	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C	-	-	1.5	mA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.92	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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[6].	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz
Acoustic Noise	Measured from distance of 1 m	-	39.8	-	dBA

Notes:

1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.
6. SEMI F47 compliant at input voltages >160VAC. Consult AE for details.

XR POWERPAC - 200 W TO 600 W / 4 SLOT / LOW NOISE MEDICAL

The XR family of low acoustic noise medically approved power supplies consists of 3 powerPac models in 200 W, 400 W and 600 W power levels in a slimline 1U x 260 mm x 89 mm package. Each powerPac model may be populated with up to 4 powerMods selected from the table of powerMods shown on page 3. Ideal for acoustic sensitive medical equipment, the XR family carries full safety agency approvals to EN60601-1 and UL60601-1 3rd Edition, meeting the stringent creepage and clearance requirements in this compact package.

powerPacs		
Series	Model	Power (W)
XR	XRA	200
	XRB	400
	XRC	600

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XRA XRB XRC	- - -	200 400 600	- - -	W W W
Input Current	XRA (85 VAC, 200 W) XRB (85 VAC, 400 W) XRC (85 VAC, 400 W)	- - -	4.5 5.5 7.5	- - -	A A A
Inrush Current	230 VAC @ 25°C	-	-	50	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XRA (250 V, 5 x 20 mm) XRB (250 V, 5 x 20 mm) XRC (250 V, 5 x 20 mm)	- - -	F5A HRC F6.3A HRC F8A HRC	- - -	- - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	For ±10% change from nominal line	-	-	±0.1	%
Load Regulation	For 25% to 75% load change	-	-	±0.2	%
Cross Regulation	-	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	 - -	 - -	 10 250	 % µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load	20	-	-	ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XR POWERPAC - 200 W TO 600 W / 4 SLOT / LOW NOISE MEDICAL

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	4000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 600 W @ 24 V	-	89	-	%
Safety Agency Approvals	EN60601-1, UL2601-1, CSA601-1 UL File No. E230761	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C 250 VAC, 60 Hz, 25°C option 04	- -	- -	300 150	µA µA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.92	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz
Acoustic Noise	Measured from distance of 1 m	-	39.8	-	dBA

Notes:

1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

XT POWERPAC - 200 W TO 400 W / 4 SLOT / ULTRA QUIET STANDARD

The XT family of Ultra Low Noise power supplies consists of 2 powerPac models ranging in power levels from 200 W to 400 W in an extremely compact 1U x 260 mm x 89 mm package. Each powerPac model may be populated with up to 4 powerMods selected from the table of powerMods shown on page 3. Ideal for acoustic sensitive applications such as audio applications, the XT 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.

powerMod Maximum Power outputs (W) have been derated to operate with XT range of Ultra Low-Noise Power Supplies. See Section 4.11 Xgen Designers' Manual for full derating details.

powerPacs		
Series	Model	Power (W)
XT	XTA	200
	XTB	400

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XTA XTB	- -	200 400	- -	W W
Input Current	XTA (85 VAC, 200 W) XTB (85 VAC, 283 W)	- -	4.5 5.0	- -	A A
Inrush Current	230 VAC @ 25°C	-	-	50	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XTA (250 V) XTB (250 V)	- -	F5A HRC F6.3A HRC	- -	- -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	For ±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load XTA XTB	 20 15	 - -	 - -	 ms ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XT POWERPAC - 200 W TO 400 W / 4 SLOT / ULTRA QUIET STANDARD

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	3000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 400 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60950, UL60950, CSA22.2 No.950 UL File No. E181875	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C	-	-	1.5	mA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.92	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz
Acoustic Noise	Measured from distance of 1 m	-	37.3	-	dBA

Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

XN POWERPAC - 200 W TO 400 W / 4 SLOT / ULTRA QUIET MEDICAL

The XN family of medically approved Ultra Low Noise power supplies consists of 2 powerPacs ranging in power levels from 200W to 400W peak in an extremely compact 1U package. Simply select the appropriate powerPac and up to 4 powerMods from the table of powerMods on page 3 to complete your custom power supply.

powerMod Maximum Power outputs (W) have been derated to operate with XN range of Ultra Low-Noise Power Supplies. See Section 4.11 Xgen Designers' Manual for full derating details.

powerPacs		
Series	Model	Power (W)
XN	XNA	200
	XNB	400

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XNA XNB	- -	200 400	- -	W W
Input Current	XNA (85 VAC, 200 W) XNB (85 VAC, 283 W)	- -	4.5 5.0	- -	A A
Inrush Current	230 VAC @ 25°C	-	-	50	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XNA (250 V) XNB (250 V)	- -	F5A HRC F6.3A HRC	- -	- -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	 - -	 - -	 10 250	 % µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load XNA XNB	 20 15	 - -	 - -	 ms ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XN POWERPAC - 200 W TO 400 W / 4 SLOT / ULTRA QUIET MEDICAL

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	4000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 400 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60601-1 3rd Edition, UL60601-1, CSA601-1 UL File No. E230761	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C 250 VAC, 60 Hz, 25°C option 04	- -	- -	300 150	µA µA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.92	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz
Acoustic Noise	Measured from distance of 1 m	-	37.3	-	dBA

Notes:

1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

XC POWERPAC - 400 W TO 1340 W / 6 SLOT / STANDARD

The XC family of power supplies consists of 5 powerPac models in 400 W, 700 W, 1000 W, 1200 W and 1340 W power levels in a slimline 1U package. Each powerPac model may be populated with up to 6 powerMods from the table of powerMods on page 3.
Combined with ultra high efficiencies, the XC family provides system designers with flexible instant solutions that significantly shorten and simplify system design-in time.

powerPacs		
Series	Model	Power (W)
XC	XCA	400
	XCB	700
	XCC	1000
	XCD	1200
	XCE	1340

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XCA XCB XCC XCD XCE	- - - - -	400 700 1000 1200 1340	- - - - -	W W W W W
Input Current	XCA (85 VAC, 400 W) XCB (85 VAC, 700 W) XCC, XCD (85 VAC, 850 W) XCE (85 VAC, 1000 W)	- - - -	7.5 9.5 11.5 14.0	- - - -	A A A A
Inrush Current	230 VAC @ 25°C	-	-	25	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XCA (250 V) XCB (250 V) XCC, XCD (250 V) XCE (250 V)	- - - -	F8A HRC F10A HRC F12A HRC F15A HRC	- - - -	- - - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 (XCA, XCB, XCC, XCD) From powerMod enable (XCA, XCB, XCC, XCD) From AC in and global enable (XCE) From powerMod enable (XCE)	- -	- -	700 6 1000 6	ms ms ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load XCA, XCB, XCC XCD, XCE	 20 15	 - -	 - -	 ms ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XC POWERPAC - 400 W TO 1340 W / 6 SLOT / STANDARD

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	3000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 1340 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60950, UL60950, CSA22.2 No.950 UL File No. E181875	-	-	-	-
Earth Leakage Current	250 VAC, 60 Hz, 25°C	-	-	1.5	mA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA (30 mA for XCE) 500 mA option available	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.92	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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[7].	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz

Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. XCE: 1450 W peak for 10 s; Duty cycle 8%. powerMod output power must not exceed normal ratings.
6. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.
7. SEMI F47 compliant at input voltages >160 VAC. Consult AE for details.

XV POWERPAC - 400 W TO 1340 W / 6 SLOT / MEDICAL

The XV family of medically approved power supplies consists of 5 powerPacs ranging in power levels from 400 W to 1450 W peak and 7 powerMod DC output modules. Simply select the appropriate powerPac and up to 6 powerMods from the table of powerMods on page 3 to complete your custom power supply. The XV family boasts an industry leading power density of 17 W/in^3 and ultra-high efficiencies (up to 90%). The significant system space savings and reduced heat dissipation radically simplify system design.

powerPacs		
Series	Model	Power (W)
XV	XVA	400
	XVB	700
	XVC	1000
	XVD	1200
	XVE	1340

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XVA XVB XVC XVD XVE	- - - - -	400 700 1000 1200 1340	- - - - -	W W W W W
Input Current	XVA (85 VAC, 400 W) XVB (85 VAC, 700 W) XVC, XVD (85 VAC, 850 W) XVE (85 VAC, 1000 W)	- - - -	7.5 9.5 11.5 14.0	- - - -	A A A A
Inrush Current	230 VAC @ 25°C	-	-	25	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XVA (250 V) XVB (250 V) XVC, XVD (250 V) XVE (250 V)	- - - -	F8A HRC F10A HRC F12A HRC F15A HRC	- - - -	- - - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 (XVA, XVB, XVC, XVD) From powerMod enable (XVA, XVB, XVC, XVD) From AC in and global enable (XVE) From powerMod enable (XVE)	- -	- -	700 6 1000 6	ms ms ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load XVA, XVB, XVC XVD, XVE	 20 15	 - -	 - -	 ms ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XV POWERPAC - 400 W TO 1340 W / 6 SLOT / MEDICAL

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	4000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 1340 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60601-1, UL2601-1, CSA601-1 UL File No. E230761	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C 250 VAC, 60 Hz, 25°C, option 04	- -	- -	300 150	µA µA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA (30 mA for XVE). 500 mA option available	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.92	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz

Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. XVE: 1450 W peak for 10 s; Duty cycle 8%. powerMod output power must not exceed normal ratings.
6. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

XQ POWERPAC - 400 W TO 1200 W / 6 SLOT / LOW NOISE STANDARD

The XQ family of low acoustic noise power supplies consists of 3 powerPac models ranging in power levels from 400 W to 1200 W in an extremely compact 1U x 260 mm x 127 mm package. Each model may be populated with up to 6 powerMods selected from the table of powerMods on page 3.

powerPacs		
Series	Model	Power (W)
XQ	XQA	400
	XQB	900
	XQC	1200

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XQA XQB XQC	- - -	400 900 1200	- - -	W W W
Input Current	XQA (85 VAC, 400 W) XQB (85 VAC, 850 W) XQC (85 VAC, 850 W)	- - -	7.5 11.5 11.5	- - -	A A A
Inrush Current	230 VAC @ 25°C	-	-	25	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XQA (250 V) XQB (250 V) XQC (250 V)	- - -	F8A HRC F12A HRC F12A HRC	- - -	- - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load XQA, XQB XQC	 20 15	 - -	 - -	 ms ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XQ POWERPAC - 400 W TO 1200 W / 6 SLOT / LOW NOISE STANDARD

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	3000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 1340 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60601-1, UL2601-1, CSA601-1 UL File No. E230761	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C	-	-	1.5	mA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.946	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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[6].	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz
Acoustic Noise	Measured from distance of 1 m	-	42.7	-	dBA

Notes:

1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.
6. SEMI F47 compliant at input voltages >160 VAC. Consult AE for details.

XZ POWERPAC - 400 W TO 1200 W / 6 SLOT / LOW NOISE MEDICAL

The XZ family of low acoustic noise medically approved power supplies consists of 3 powerPac models ranging in power levels from 400 W to 1200 W in an extremely compact 1U x 260 mm x 127 mm package. Each model may be populated with up to 6 powerMods selected from the table of powerMods on page 3.

powerPacs		
Series	Model	Power (W)
XZ	XZA	400
	XZB	900
	XZC	1200

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XZA XZB XZC	- - -	400 900 1200	- - -	W W W
Input Current	XZA (85 VAC, 400 W) XZB (85 VAC, 850 W) XZC (85 VAC, 850 W)	- - -	7.5 11.5 11.5	- - -	A A A
Inrush Current	230 VAC @ 25°C	-	-	25	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XZA (250 V) XZB (250 V) XZC (250 V)	- - -	F8A HRC F12A HRC F12A HRC	- - -	- - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load XZA, XZB XZC	 20 15	 - -	 - -	 ms ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XZ POWERPAC - 400 W TO 1200 W / 6 SLOT / LOW NOISE MEDICAL

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	4000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 1200 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60601-1, UL60601-1 3rd Edition, CSA601-1 UL File no. E230761	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C 250 VAC, 60 Hz, 25°C option 04	- -	- -	300 150	µA µA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.946	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz
Acoustic Noise	Measured from distance of 1 m	-	42.7	-	dBA

Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. See Xgen Designers Manual for detailed power ratings.
6. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

XB POWERPAC - 400 W TO 800 W / 6 SLOT / ULTRA QUIET STANDARD

The XB family of Ultra Low Noise power supplies consists of 3 powerPac models ranging in power levels from 400 W to 800 W in an extremely compact 1U x 260 mm x 127 mm package. Each model may be populated with up to 6 powerMods selected from the table of powerMods shown on page 3.

powerMod Maximum Power outputs (W) have been derated to operate with XB range of Ultra Low-Noise Power Supplies. See Section 4.11 Xgen Designers' Manual for full derating details.

powerPacs		
Series	Model	Power (W)
XB	XBA	400
	XBB	600
	XBC	800

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XBA XBB XBC	- - -	400 600 800	- - -	W W W
Input Current	XBA (85 VAC, 400 W) XBB (85 VAC, 600 W) XBC (85 VAC, 625 W)	- - -	7.5 9.5 11.5	- - -	A A A
Inrush Current	230 VAC @ 25°C	-	-	25	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XBA (250 V) XBB (250 V) XBC (250 V)	- - -	F8A HRC F10A HRC F12A HRC	- - -	- - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	 - -	 - -	 10 250	 % µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load	20	-	-	ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XB POWERPAC - 400 W TO 800 W / 6 SLOT / ULTRA QUIET STANDARD

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	3000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 800 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60950, UL60950, CSA22.2 No.950 UL File No. E181875	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C	-	-	1.5	mA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.946	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz
Acoustic Noise	Measured from distance of 1 m	-	38.3	-	dBA

Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

XW POWERPAC - 400 W TO 800 W / 6 SLOT / ULTRA QUIET MEDICAL

The XW family of medically approved Ultra Low Noise power supplies provides up to 800 W in an extremely compact 1U package. The XW family consists of 3 powerPacs ranging in power levels from 400 W to 800 W peak and 7 powerMod DC output modules. Simply select the appropriate powerPac and up to 6 powerMods from the tables of powerMods shown on page 3 to complete your custom power supply.

powerMod Maximum Power outputs (W) have been derated to operate with XW range of Ultra Low-Noise Power Supplies. See Section 4.11 Xgen Designers' Manual for full derating details.

powerPacs		
Series	Model	Power (W)
XW	XWA	400
	XWB	600
	XWC	800

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XWA XWB XWC	- - -	400 600 800	- - -	W W W
Input Current	XWA (85 VAC, 400 W) XWB (85 VAC, 600 W) XWC (85 VAC, 625 W)	- - -	7.5 9.5 11.5	- - -	A A A
Inrush Current	230 VAC @ 25°C	-	-	25	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XWA (250 V) XWB (250 V) XWC (250 V)	- - -	F8A HRC F10A HRC F12A HRC	- - -	- - -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	- -	- -	10 250	% µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load	20	-	-	ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XW POWERPAC - 400 W TO 800 W / 6 SLOT / ULTRA QUIET MEDICAL

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	4000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 800 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60601-1 3rd Edition, UL60601-1, CSA601-1 UL File No. E230761	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C 250 VAC, 60 Hz, 25°C option 04	- -	- -	300 150	µA µA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.946	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	-	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz
Acoustic Noise	Measured from distance of 1 m	-	38.3	-	dBA

Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

XH POWERPAC - 400 W TO 600 W / 6 SLOT / HI-TEMP

The XH family of high temperature power supplies provides up to 600 W in an extremely compact 1U x 260mm x 127mm package. The XH family is ideal for use in harsh environments where there can be high ambient temperatures and wide temperature fluctuations. The XH family consists of 2 powerPac models ranging in power levels from 400 W to 600 W. Each model may be populated with up to 6 powerMods selected from the table of powerMods shown on page 3.

powerPacs		
Series	Model	Power (W)
XW	XWA	400
	XWB	600

powerMod Maximum Power outputs (W) have been derated to operate with XH range of Hi-Temp Power Supplies. See Section 4.11 Xgen Designers' Manual for full derating details.

Input					
Parameter	Conditions/Description	Min	Nom	Max	Units
Input Voltage Range	Universal Input 47-440 Hz	85 120	- -	264 380	VAC VDC
Power Rating	XHA XHB	- -	400 600	- -	W W
Input Current	XHA (85 VAC, 400 W) XHB (85 VAC, 600 W)	- -	6.5 7.5	- -	A A
Inrush Current	230 VAC @ 25°C	-	-	25	A
Undervoltage Lockout	Shutdown	65	-	74	VAC
Fusing	XWA (250 V) XWB (250 V)	- -	F10A HRC F12A HRC	- -	- -

Output					
Parameter	Conditions/Description	Min	Nom	Max	Units
powerMod Power	As per powerMod table on page 3	-	-	-	-
Output Adjustment Range	As per powerMod table on page 3	-	-	-	-
Minimum Load	-	-	0	-	A
Line Regulation	±10% change from nominal line	-	-	±0.1	%
Load Regulation	25% to 75% load change	-	-	±0.2	%
Cross Regulation	25% to 75% load change	-	-	±0.2	%
Transient Response	25% to 75% load change Voltage deviation Settling time	 - -	 - -	 10 250	 % µs
Ripple and Noise	20 MHz 100 mV 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	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 From powerMod enable	- -	- -	700 6	ms ms
Rise Time	Monotonic	-	-	5	ms
Hold-Up Time	Nominal output voltages at full load	20	-	-	ms
Output Isolation	Output to Output Output to Chassis	500 500	- -	- -	VDC VDC

XH POWERPAC - 400 W TO 600 W / 6 SLOT / HI-TEMP

General					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Isolation Voltage	Input to output Input to chassis	3000 1500	- -	- -	VAC VAC
Efficiency	230 VAC, 600 W @ 24 V	-	90	-	%
Safety Agency Approvals	EN60950, UL60950, CSA22.2 No.950 UL File No. E181875	-	-	-	-
Leakage Current	250 VAC, 60 Hz, 25°C	-	300	-	mA
Signals	See section 4.9 of Xgen Designers Manual	-	-	-	-
Bias Supply	Always on, current 250 mA. (500 mA option available)	4.8	5.0	5.2	VDC
Reliability	Failures per million hours at 40°C and full load. Details see section 4.12 of Xgen Designers Manual. powerMod powerPac (excludes fans)	 - -	 - -	 0.958 0.946	 fpmh fpmh

EMC		
Parameter	**Standard**	**Level**
Emissions		
Conducted	EN55011, EN55022, FCC	Class B
Radiated	EN55011, EN55022, FCC	Class 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[6].	Compliant

Environmental					
Parameter	**Conditions/Description**	**Min**	**Nom**	**Max**	**Units**
Operating Temperature	Full load	-20	-	+70	°C
Storage Temperature	-	-40	-	+85	°C
Derating	See "POWER DERATING" section for full temperature deratings	-	-	-	-
Relative Humidity	Non-condensing	5	-	95	%RH
Shock	3000 Bumps, 10G (16 ms) half sine	-	-	-	-
Vibration	1.5 G	10	-	200	Hz

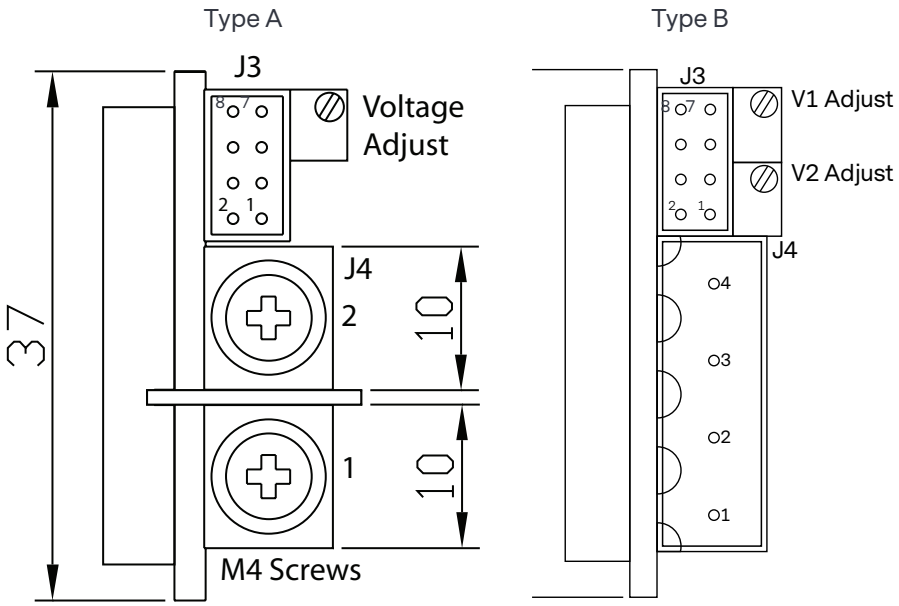
Notes:
1. Specification applies to configured units consisting of powerMods plugged into the appropriate powerPac.
2. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
3. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
4. All specifications at nominal input, full load, 25°C unless otherwise stated.
5. When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.
6. SEMI F47 compliant at input voltages >160 VAC. Consult AE for details.

INTERFACE

The output powerMods connection details are shown below. Type A connectors are for single output powerMods XgA-XgT and Xg1-Xg7. The Type B connector is for the dual output XgF/Xg8 powerMod. The power and signal connectors are as follows:

Output Signals and Power Connector Pinout							
Pin	J3	J3	J3	J3	J3	J4	J4
Module	(XgA-XgD)	(XgG-XgQ)	(XgR-XgT)	(XgE)	(XgF)	(Type A)	(Type B)
	-	(Xg1-Xg5)	-	(Xg7)	(Xg8)	-	-
1	not used	+Sense	not used	not used	-pg (V2)	-Vout	-Vout 2
2	Common	-Sense	-Vtrim	not used	+pg (V2)	+Vout	+Vout 2
3	not used	Vtrim	+Vtrim	not used	Inhibit V2)	-	-Vout 1
4	not used	Itrim	Itrim	Common	Common (V2)	-	+Vout 1
5	+Inhibit	+Inhibit/enable	+Inhibit/enable	-pg	-pg (V1)	-	-
6	-Inhibit	-Inhibit/enable	-Inhibit/enable	+pg	+pg (V1)	-	-
7	not used	+pg	+pg	Inhibit	Inhibit (V1)	-	-
8	not used	-pg	-pg	Common	Common (V1)	-	-

Output Mating Connectors	
J3	Locking Molex 51110-0860; Non Locking Molex 51110-0850; Crimp Terminal: Molex p/n 50394. Or Molex 51110-0856, includes locking tab and polarization keying
J4 (Type A)	M4 screw (8 mm) Max Torque 0.74 Nm
J4 (Type B)	Connector(s): Camden CTB9200/4A



Type A : powerMods	Type B: powerMod
XgA to XgE	XgF/Xg8
XgG to XgT	-
Xg1 to Xg7	-

INTERFACE (CONTINUED)

The Xgen series has a variety of input connector options to ease system integration. These include IEC, input cables (3-wire) and IEC to screw terminal adaptor.

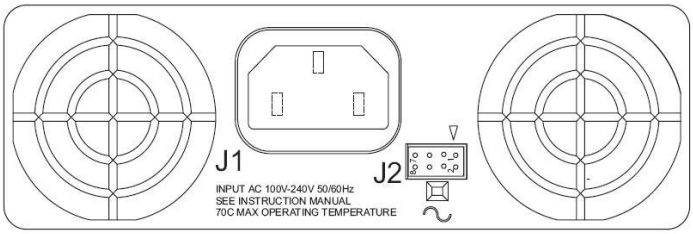
Input Mating Connectors	
J1	IEC320 type female plug rated 13 A, locking IEC cable and connector: Schaffner EMC part number IL13-US1-SVT-3100-183.
J2	Housing: Molex p/n 51110-0850 (Non Locking), 51110-0860

Input Cable (Option D)
The Xgen series is also available with an input cable connection option allowing greater flexibility when mounting the Xgen in the system. Input cables are 300 mm in length and come supplied with Faston connectors.

IEC to Screw Terminal Adaptor
Some applications may require a screw terminal input rather than the standard IEC320 connector provided with the Xgen. For such applications, Advanced Energy can offer the XE1, the IEC to Screw terminal adaptor accessory plug.
This is a press fit connector that plugs securely into the Xgen powerPac and provides the system integrator with screw terminals for mains connection.

Pin	J1	J2
1	Line	Common
2	Neutral	+5V bias
3	Earth	not used
4	-	AC Fail
5	-	Fan Fail
6	-	Global Fnable
7	-	Temp Alarm*
8	-	Global Inhibit

*Option 01 only

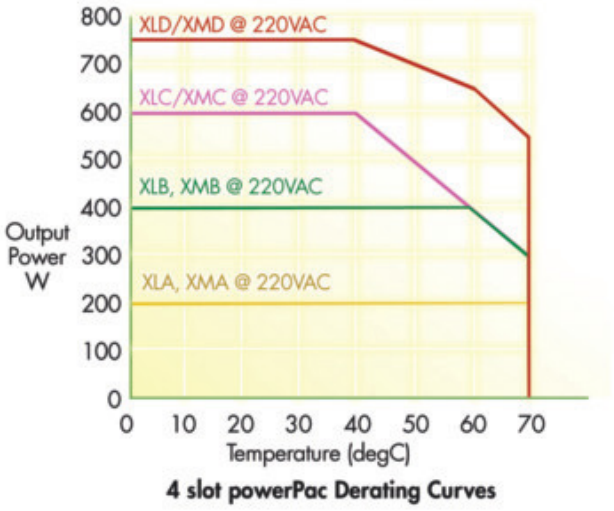


J1 and J2 Connectors

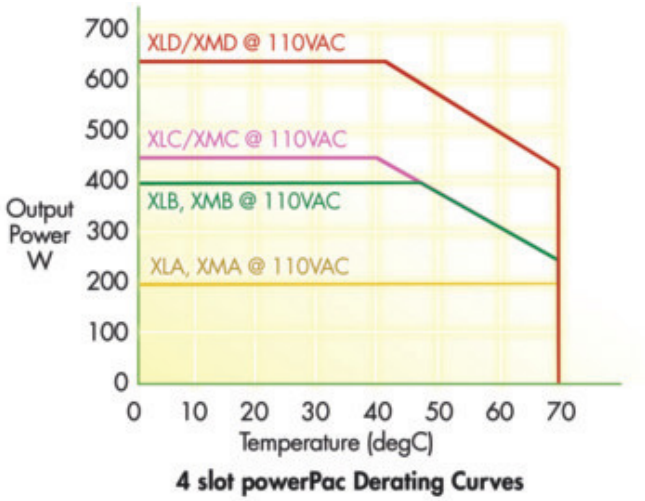
POWER DERATING

When specifying an Xgen series power supply in an application it is necessary to ensure that powerPacs and powerMods are operating within their power output capabilities, taking into account the Temperature Derating and Input Voltage Derating. powerMods are designed to provide maximum output power at the nominal output voltages. The maximum permissible output power that may be drawn from any powerMod is given in the table of powerMod on page 3.

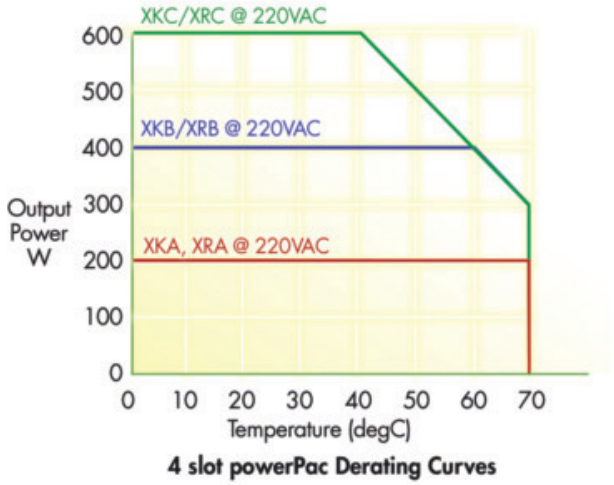
powerPac Derating



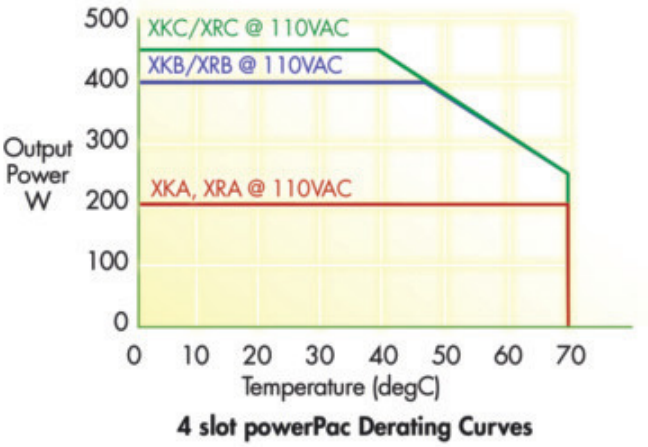
XLA/XLB/XLC/XLD and XMA/XMB/XMC/XMD
@ 220VAC Derating



XLA/XLB/XLC/XLD and XMA/XMB/XMC/XMD
@ 110VAC Derating

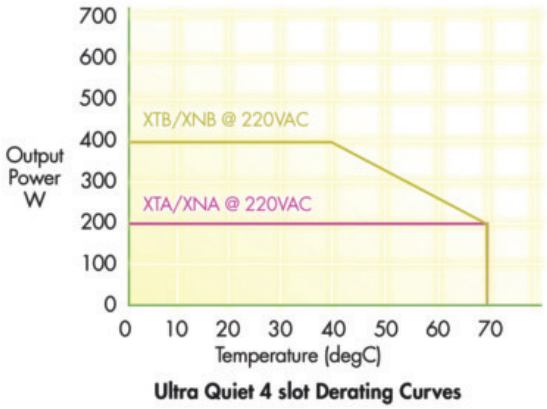


XKA/XKB/XKC and XRA/XRB/XRC
@ 220VAC Derating

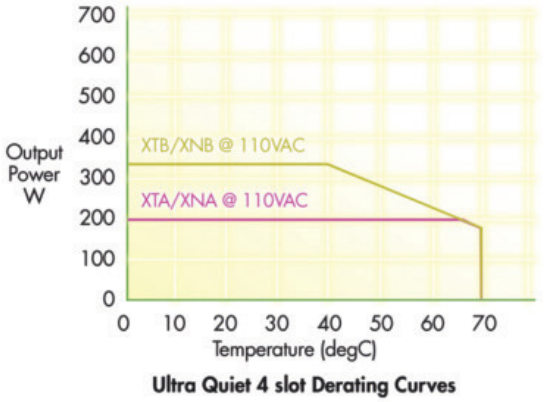


XKA/XKB/XKC and XRA/XRB/XRC
@ 110VAC Derating

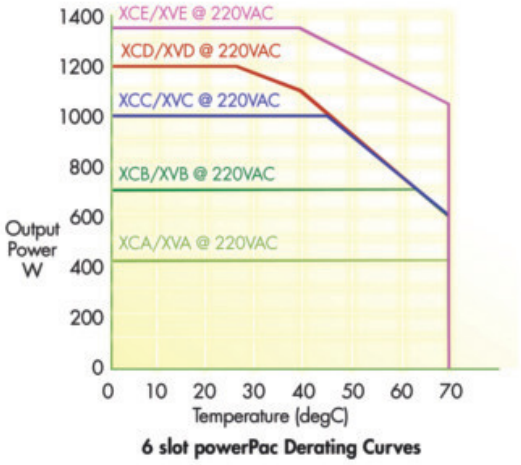
POWER DERATING



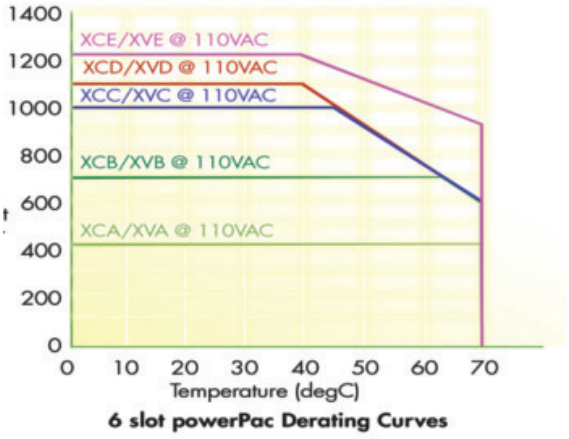
XTA/XTB and XNA/XNB @ 220VAC Derating



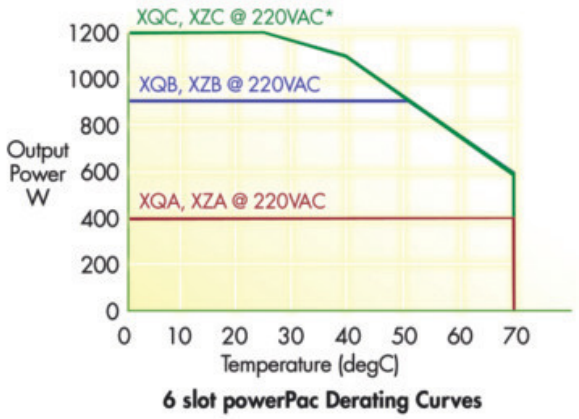
XTA/XTB and XNA/XNB @ 110VAC Derating



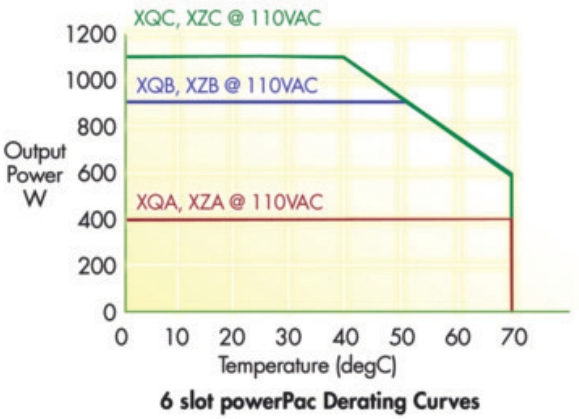
XCA/XCB/XCC/XCD/XCE and XVA/XVB/XVC/
XVD/XVE @ 220VAC Derating



XCA/XCB/XCC/XCD/XCE and XVA/XVB/XVC/
XVD/XVE @ 110VAC Derating

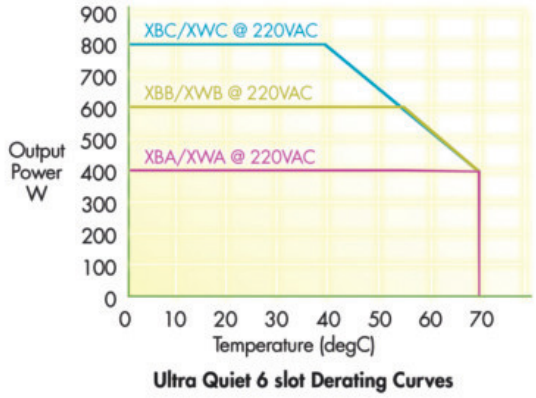


XQA/XQB/XQC and XZA/XZB/XZC
@ 220VAC Derating

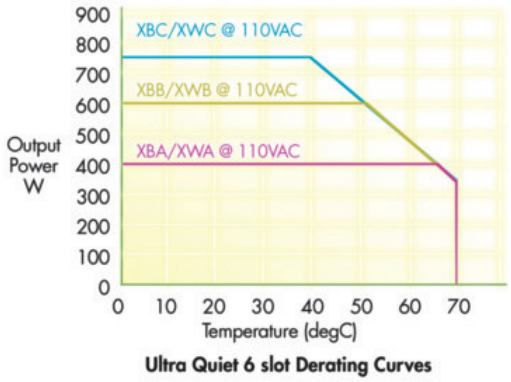


XQA/XQB/XQC and XZA/XZB/XZC
@ 110VAC Derating

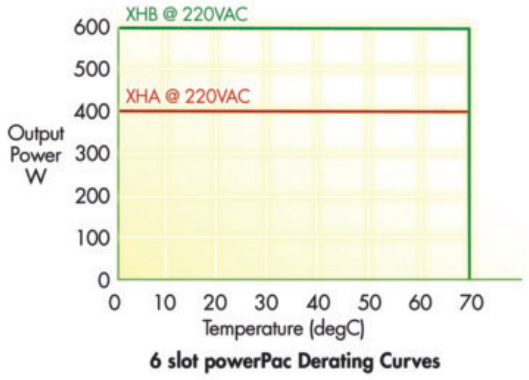
POWER DERATING



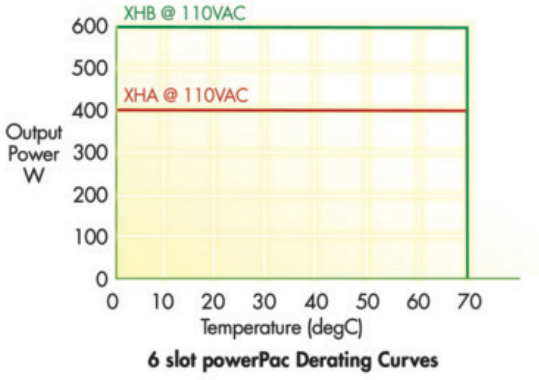
XBA/XBB/XBC and XWA/XWB/XWC @ 220VAC Derating



XBA/XBB/XBC and XWA/XWB/XWC @ 110VAC Derating



XHA/XHB @ 220VAC Derating



XHA/XHB @ 110VAC Derating

XCE and XVE powerPac Considerations

1. XCE and XVE can deliver 1450 W for a duration of 10 s with an 8% duty cycle.

2. When 6 powerMods are operated in parallel, the XCE output power must be derated to 1280 W.

3. At operation above 40°C, it is necessary to apply minumum load to the outputs. See table for minimum load requirements.

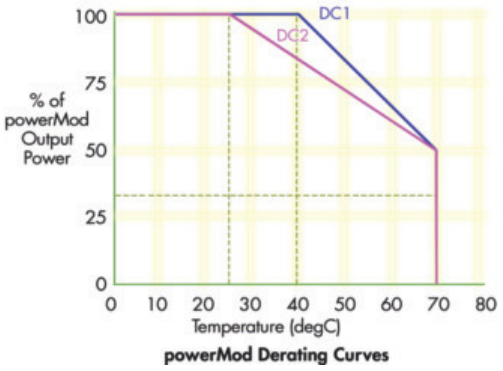
XVC/XVE Minimum Load Requirements	
T ambient (°C)	Min Load (W)
40	0
50	100
60	175
70	250

POWER DERATING

powerMod Derating

All powerMods may be used in any powerPac slot position. When used in different slot locations, the appropriate temperature derating curve must be observed as set out in the following tables. Derating is independent of Input voltage. Using the following derating curves will ensure that the Xgen is populated with powerMods in the best locations to optimise system performance.

Max Power (W)			
PowerMod	All Models Except XH, XB, XW, XT, XN	Model XH	Models XB, XW, XT, XN
Xg1	125	65	104
Xg2	200	100	166
Xg3	240	120	200
Xg4	240	120	200
Xg5	288	144	240
Xg7	120	60	100
Xg8	72/72	36/36	60/60



powerMod Derating Curves

powerMod Temperature Derating								
Product	Slot	Xg1	Xg2	Xg3	Xg4	Xg5	Xg7	Xg8
4 Slot	A	DC2	DC2	DC2	DC1	DC1	DC1	DC1
	B	DC2*	DC2*	DC2	DC1	DC1	DC1	DC1
	C	DC2	DC2	DC1	DC1	DC1	DC1	DC1
	D	DC1	DC1	DC1	DC1	DC1	DC1	DC1
6 Slot	A	DC1	DC2	DC1	DC1	DC1	DC1	DC1
	B	DC2*	DC2*	DC1	DC1	DC1	DC2	DC2
	C	DC2	DC1	DC1	DC1	DC1	DC1	DC1
	D	DC1	DC1	DC1	DC1	DC1	DC1	DC1
	E	DC1	DC1	DC1	DC1	DC1	DC1	DC1
	F	DC1	DC1	DC1	DC1	DC1	DC1	DC1

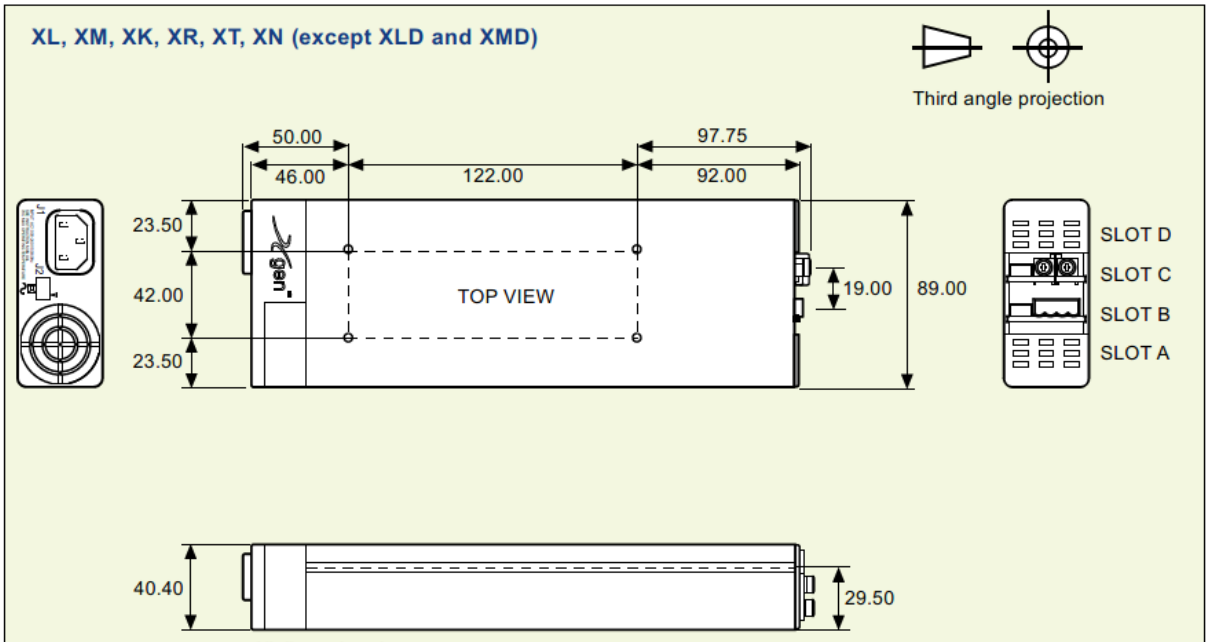
* Device can deliver 95% of rated power at 25degC.

powerMod Slot Positon Derating								
Product	Slot	Xg1	Xg2	Xg3	Xg4	Xg5	Xg7	Xg8
4 Slot	A	DC1	DC2	DC1	DC1	DC1	DC1	DC1
	B	DC2	DC2	DC1	DC1	DC1	DC1	DC1
	C	DC2	DC2	DC1	DC1	DC1	DC1	DC1
	D	DC1	DC2	DC1	DC1	DC1	DC1	DC1
6 Slot	A	DC1	DC2	DC1	DC1	DC1	DC1	DC1
	B	DC2	DC2*	DC1	DC1	DC1	DC2	DC2
	C	DC2	DC2	DC1	DC1	DC1	DC1	DC2
	D	DC2	DC1	DC1	DC1	DC1	DC1	DC1
	E	DC1	DC1	DC1	DC1	DC1	DC1	DC1
	F	DC1	DC1	DC1	DC1	DC1	DC1	DC1

* Device can deliver 95% of rated power at 25degC.

MECHANICAL DRAWINGS

XL, XM, XK, XR, XT, XN (except XLD and XMD)

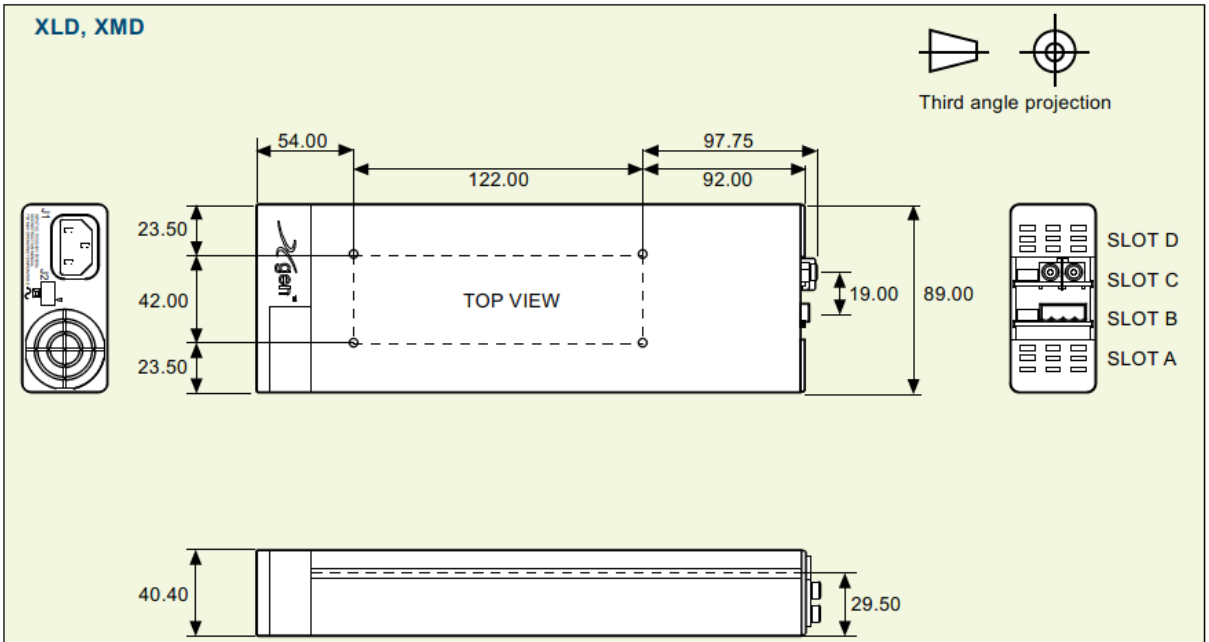


All dimensions in mm.

Mounting Holes
4 M4 threaded holes on Base. Max screw penetration is 6mm from Base.

Fleximount Side Mounting Slots
Use with self-clinching studs type FH-M4-X or FH-832-X (X= stud length) from PEM, or equivalent
Alternatively, use Xgen Side Clamps from Excelsys. Part No. Z165 (drawing 61401)

XLD, XMD



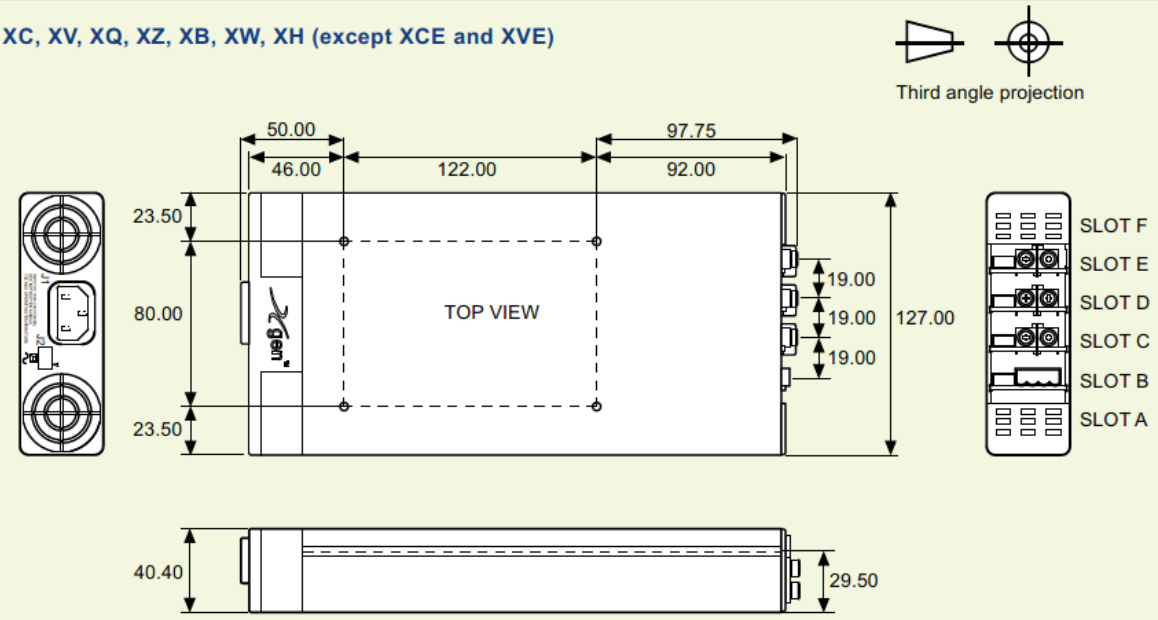
All dimensions in mm.

Mounting Holes
4 M4 threaded holes on Base. Max screw penetration is 6mm from Base.

Fleximount Side Mounting Slots
Use with self-clinching studs type FH-M4-X or FH-832-X (X= stud length) from PEM, or equivalent
Alternatively, use Xgen Side Clamps from Excelsys. Part No. Z165 (drawing 61401)

MECHANICAL DRAWINGS

XC, XV, XQ, XZ, XB, XW, XH (except XCE and XVE)

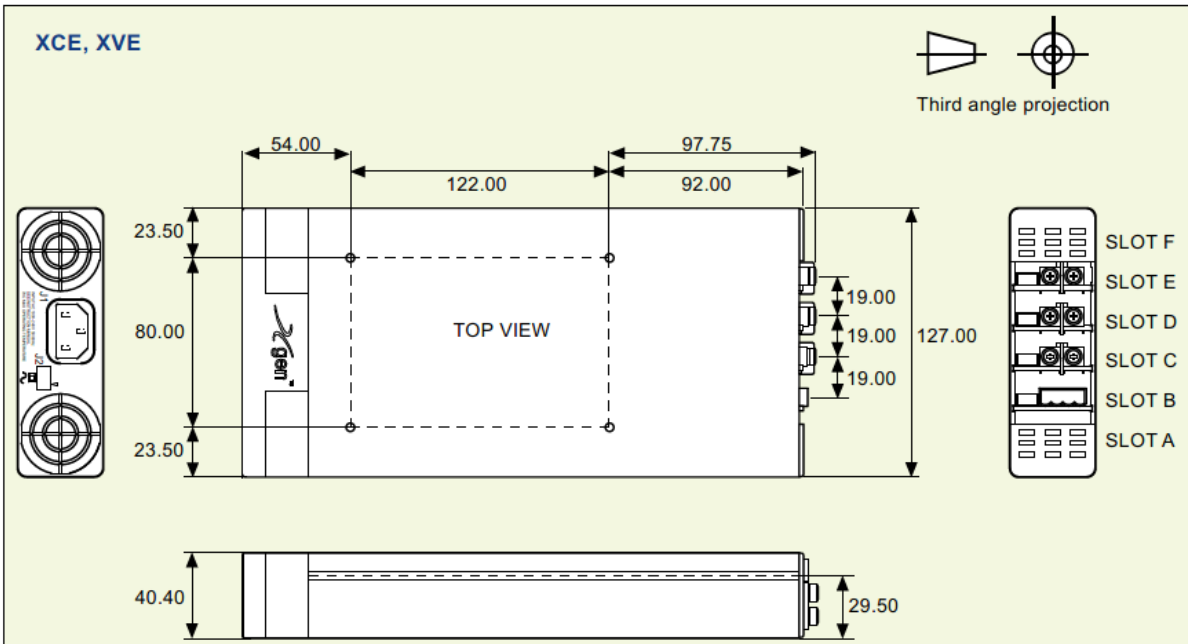


All dimensions in mm.

Mounting Holes
4 M4 threaded holes on Base. Max screw penetration is 6mm from Base.

Fleximount Side Mounting Slots
Use with self-clinching studs type FH-M4-X or FH-832-X (X= stud length) from PEM, or equivalent
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XCE, XVE



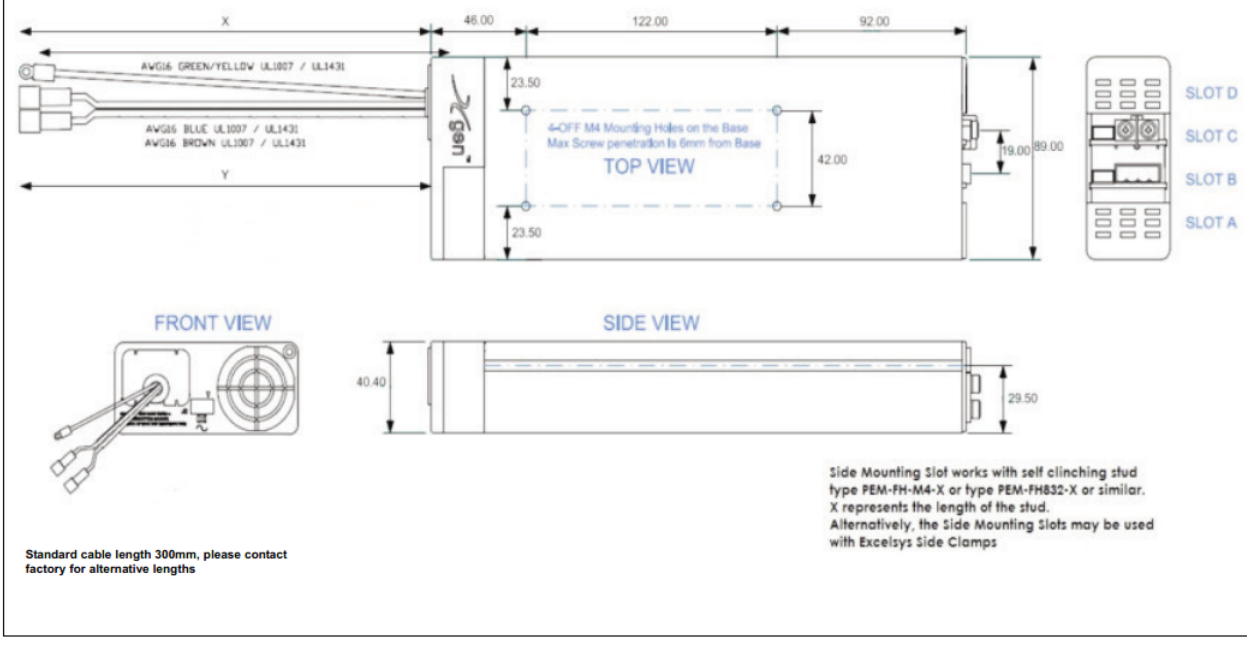
All dimensions in mm.

Mounting Holes
4 M4 threaded holes on Base. Max screw penetration is 6mm from Base.

Fleximount Side Mounting Slots
Use with self-clinching studs type FH-M4-X or FH-832-X (X= stud length) from PEM, or equivalent
Alternatively, use Xgen Side Clamps from Excelsys. Part No. Z165 (drawing 61401)

MECHANICAL DRAWINGS

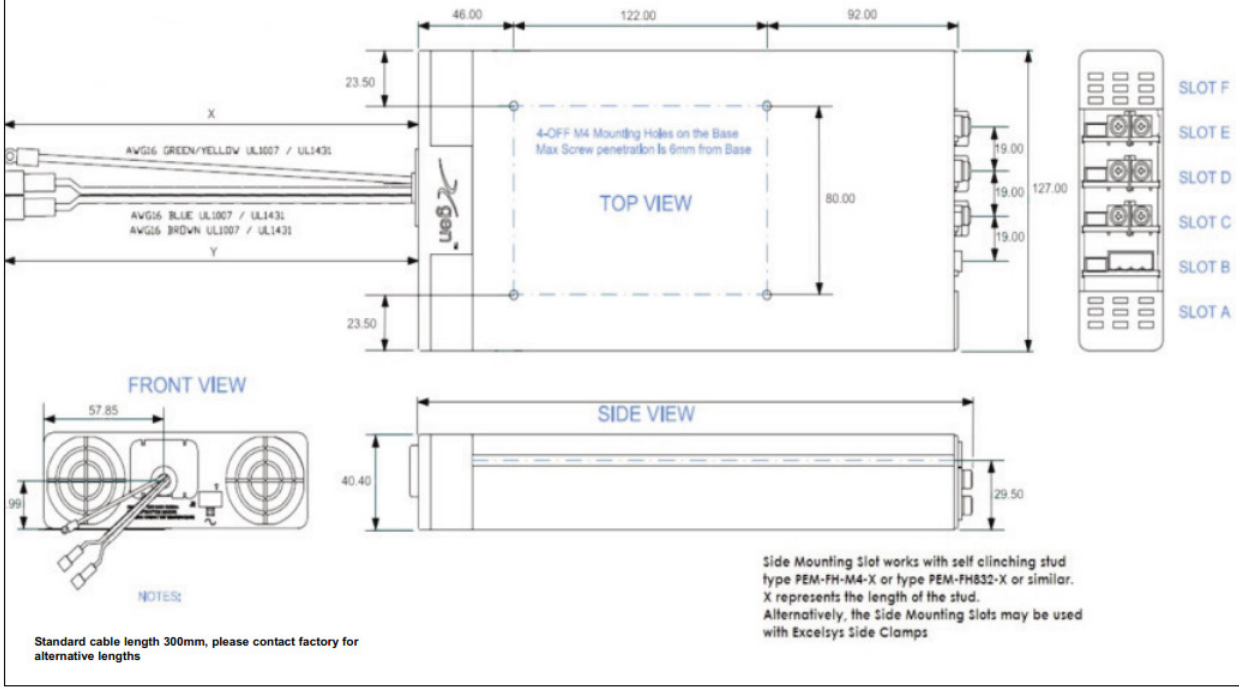
4 slot Input Cable Version (Option D)



Side Mounting Slot works with self clinching stud type PEM-FH-M4-X or type PEM-FH832-X or similar.
X represents the length of the stud.
Alternatively, the Side Mounting Slots may be used with Excelsys Side Clamps

Standard cable length 300mm, please contact factory for alternative lengths

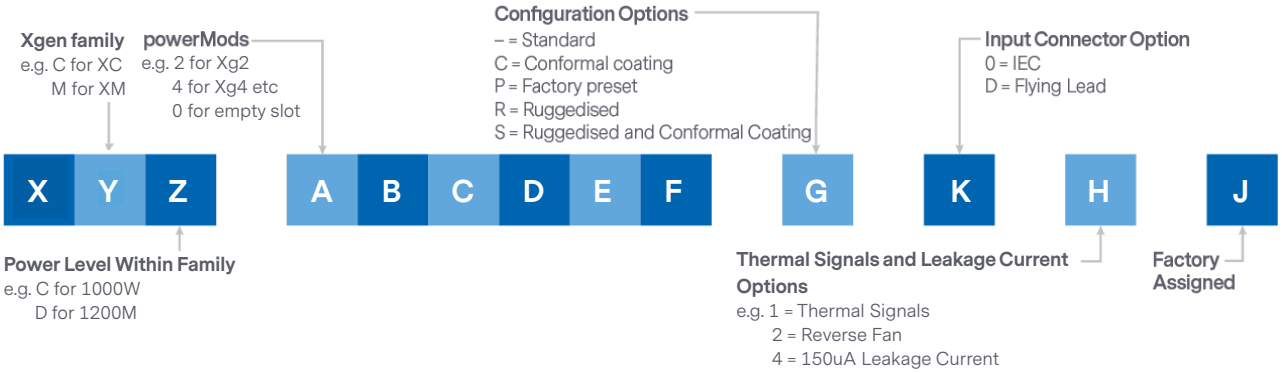
6 slot Input Cable Version (Option D)



Side Mounting Slot works with self clinching stud type PEM-FH-M4-X or type PEM-FH832-X or similar.
X represents the length of the stud.
Alternatively, the Side Mounting Slots may be used with Excelsys Side Clamps

Standard cable length 300mm, please contact factory for alternative lengths

CONFIGURATION



Option Codes Explained

"G" Configuration Codes

"-"	Standard. No additional configuration. Standard output voltages and no options
"C"	Conformal Coating
"P"	Preset. Voltage Adjustments, Series, Parallel outputs
"R"	Extra Ruggedisation for Shock and Vibration
"S"	Conformal Coating and Extra Ruggedisation for Shock and Vibration

"K" Input Connector Configuration Codes

"0"	Standard IEC Input Connector
"D"	Input Cable option

"H" Thermal And Leakage Current Configuration Codes

"1"	Thermal Signals: Fan Fail and Overtemperature Warning
"2"	Reverse Fan
"3"	Thermal Signals + Reverse Fan
"4"	150µA Leakage Current (medical versions only)
"5"	150µA Leakage Current + Thermal Signals (medical versions only)
"6"	150µA Leakage Current + Reverse Fan (medical versions only)
"7"	150µA Leakage Current + Thermal Signals + Reverse Fan (medical versions only)

Example:

XVD234580-D4A contains

XVD powerPac:	1200W medically approved
Powermods	Xg2: 5V/40A, Xg3: 12V/20A, Xg4: 24V/10A, Xg5: 48V/6A, Xg8: 24V/3A, 24V/3A
Option D :	Input cable option
Option 4:	150 µA leakage current option
A:	Factory assigned unique identifier

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE | TRUST

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ENG-LV_XGEN 02.19.24