

Instruction Manual

PLEASE READ THIS INSTRUCTION MANUAL CAREFULLY BEFORE INSTALLATION OR USE OF THIS PRODUCT, AND KEEP IT IN A SAFE PLACE FOR FUTURE REFERENCE. FOLLOW ALL WARNINGS AND INSTRUCTIONS MARKED ON THE PRODUCT.

HIGH VOLTAGE WARNING!

Dangerous voltages are present within these power supplies. These products should only be worked on by qualified personnel.

powerPacs		
Xlite, Xcite	Standard	200W-1340W
Xmite, Xvite	Medical	200W-1340W
Xhite	High Temperature	400W-600W
Xqite, Xkite	Lo-Noise Standard	200W-900W
Xrite, Xzite	Lo-Noise Medical	200W-900W
powerMods		
XG1, XG2, XG3, XG4, XG5, XG7, XG8		1.5V to 58V

Xgen Series products are comprised of:

powerPac Chassis Converters intended for use in Xgen series ONLY. These must NOT be used for any other purpose.

and

powerMod Plug-In Modules intended for use in Xgen series ONLY. These must NOT be used for any other purpose.

Xgen Series products are designed for use within other equipment or enclosures, which restrict access to **authorised competent personnel only**. The unit covers are designed only to protect skilled personnel from hazards. They must not be used as part of the external covers of any equipment where they may be accessible to operators, since, under full load conditions, part or parts of the unit may reach temperatures in excess of those considered safe for operator access.

IMPORTANT CONSIDERATIONS

The powerPac should be supplied only by a power source of the type indicated on its label. A socket outlet shall be installed near the equipment and shall be easily accessible. The unit should only be used with a suitably rated mains cord and appropriate IEC320 type connector, sourced by the end user, and in accordance with the requirements of table 3B of IEC60950-1 (latest edition). If in doubt, contact Excelsys Engineering Department for assistance. For installations in accordance with EN60601-1, UL2601-1, the Neutral input supply lead must be provided with a suitable fuse protection device. See the Fuse table below for details. When adding or removing powerMods from the powerPac, care must be taken to handle the powerMods by the output terminals ONLY, ensuring that all other surface mount components are not unduly damaged.

When securing the product, do not use screws which infringe the maximum penetration depth of 6mm. Customer fixings are provided on the base of the unit in addition to the Excelsys 'fleximount' system which allows the unit to be mounted on either side of the powerPac chassis. The Xgen series of power supplies have integral fans and may be mounted in any orientation provided that the air intake and air outlet areas are not impeded with particular regard paid to provide ventilation holes in any chassis on which or near which the unit is mounted. AFTER DISCONNECTING THE AC SOURCE, ALLOW 4 MINUTES BEFORE DISASSEMBLY TO ALLOW CAPACITORS WITHIN THE UNIT TO DISCHARGE.

INPUT SPECIFICATIONS (powerPac only)

Input Voltage Range	100 to 240Volts AC
Input Frequency	50/60 Hz
Earth Leakage Current	1.5mA Xlite, Xcite,Xhite,Xqite,Xkite 300µA Xmite,Xvite,Xrite,Xzite

Input Fusing

WARNING! To protect against risk of fire, replace only with fuses of same rating and type. Fuses must be replaced by qualified service personnel only.

Model	Reference	Fuse	Type	Voltage	Size
XLA	FS1	5A	F	250V	5.0 x 20mm
XLB	FS1	6.3A	F	250V	5.0 x 20mm
XLC	FS1	8A	F	250V	5.0 x 20mm
XKA	FS1	5A	F	250V	5.0 x 20mm
XKB	FS1	6.3A	F	250V	5.0 x 20mm
XCA	FS1	8A	F	250V	6.25 x 32mm
XCB	FS1	10A	F	250V	6.25 x 32mm
XCC	FS1	12A	F	250V	6.25 x 32mm
XCD	FS1	12A	F	250V	6.25 x 32mm
XCE	FS1	15A	F	250V	6.25 x 32mm
XMA	FS1	5A	F	250V	5.0 x 20mm
XMB	FS1	6.3A	F	250V	5.0 x 20mm
XMC	FS1	8A	F	250V	5.0 x 20mm
XRA	FS1	5A	F	250V	5.0 x 20mm
XRB	FS1	6.3A	F	250V	5.0 x 20mm
XVA	FS1	8A	F	250V	6.25 x 32mm
XVB	FS1	10A	F	250V	6.25 x 32mm
XVC	FS1	12A	F	250V	6.25 x 32mm
XVD	FS1	12A	F	250V	6.25 x 32mm
XVE	FS1	15A	F	250V	6.25 x 32mm
XHA	FS1	8A	F	250V	6.25 x 32mm
XHB	FS1	10A	F	250V	6.25 x 32mm
XQA	FS1	8A	F	250V	6.25 x 32mm
XQB	FS1	12A	F	250V	6.25 x 32mm
XZA	FS1	8A	F	250V	6.25 x 32mm
XZB	FS1	12A	F	250V	6.25 x 32mm

OUTPUT SPECIFICATIONS (powerMod only)

See powerMod table below, with more detail in Designers' Manual. Each module may be adjusted over the full voltage range shown in the table subject to not exceeding the maximum rated Voltage and Power shown on the table.

SAFETY

The Xgen, when correctly installed in a limited access environment are designed to comply with the following requirements
Xlite, Xcite, Xhite, Xqite, Xkite : IEC60950, EN60950, UL1950, CSA 22.2 No. 234 and IEC61010
Xmite, Xvite, Xzite, Xrite: EN60601-1, UL2601-1 and CSA 22.2-601-1 and EN61010

For current approval status, please contact Excelsys Sales. Equipment manufacturers must protect service personnel against inadvertent contact with the module output terminals.

Environmental Parameters

The Xgen Series is designed for the following parameters:

- Pollution Degree 2
- Installation Category 2
- Class 1
- For use as part of another piece of equipment such that

unit is accessible to service engineers only.

- Altitude: -155 metres to +2000 metres from sea level.
- Humidity: 10 to 95% non-condensing.
- Operating temperature 0°C to 70°C
- Derate at 1.67% per °C above 40°C and up to 70°C.
- Derating applies to both powerPacs and powerMods

Approval Limitations

Use In North America

When this product is used on 180 to 253 Volts AC mains with no neutral, connect one live wire to L (live) terminal and the other live wire to N (neutral) terminal on the input connector. For installation in accordance with EN60601-1, UL2601-1 and IEC60950-1, UL60950-1 the wires connected to the Neutral terminal must be provided with a suitable fuse protection device. See Fuse Table.

The attachment plug shall be rated to a current not less than 125% of the rated current of the equipment

Levels Of Insulation

Subject to the limitations above

- Xlite, Xcite, Xhite, Xkite and Xqite
- Primary mains circuits to earth: 2.5mm spacing
- Primary mains circuits to secondary: 5mm spacing

- Dielectric strength testing is carried out as follows:
- Primary mains circuits to chassis: 1500V AC
- Primary mains circuits to secondary: 3000V AC.

Xmite, Xvite, Xrite and Xzite

- Primary mains circuits to earth: 4mm spacing
- Primary mains circuits to secondary: 8mm spacing

- Dielectric strength testing is carried out as follows:
- Primary mains circuits to chassis: 1500V AC
- Primary mains circuits to secondary: 4000V AC.

Earth Terminal Marking IMPORTANT

If in the end use equipment the incoming mains cable earth wire connects directly to the "GND" connection Xgen without being interrupted or junctioned on its way to that connection, then this connection forms the main protective earth of the system. To comply with IEC60950, EN60950, UL1950 requirements and to comply with EN60601-1, UL2601-1, CSA22.2-601-1 requirements then this must be marked with the symbol defined in the IEC417 No. 5019a. The customer should therefore affix an adhesive label which will pass the 15 Second rub test (IEC60950 section 1.7.15) showing the symbol here adjacent to the earth connection. This symbol must only be used at the first interruption / connection of the incoming earth wire.

Health And Safety At Work Act (UK only)

To protect service personnel and users and to comply with section 6 of the Health And Safety Acts, a clearly visible label should be fitted warning that surfaces of these units may be hot and must not be touched when the units are in operation.

Receipt And Unpacking

On receipt a unit should be unpacked carefully and checked for transit damage. If the unit is damaged, do not apply power or install the unit. SEEK SPECIALIST ADVICE!

Warranty

Warranty conditions are contained in our standard terms and conditions. Contact your authorised outlet for repair.

Options

- Thermal Signals (Option 01)
- Temperature Alarm & Fan Fail

Open Collector signal indicators.

Reverse Fan (Option 02)

Reverse direction of air flow through the Xgen. Not available for 1200W models. XCE/XVE model with Reverse Fan derate from 1250W at 210VAC to 980W at 100VAC

powerPacs

Family	Model	Watts	L x H x W (mm)
Xlite	XLA	200W	260 x 40.4 x 89
	XLB	400W	260 x 40.4 x 89
	XLC	600W*	260 x 40.4 x 89
Xkite	XKA	200W	260 x 40.4 x 89
	XKB	400W**	260 x 40.4 x 89
Xcite	XCA	400W	260 x 40.4 x 127
	XCB	700W	260 x 40.4 x 127
	XCC	1000W***	260 x 40.4 x 127
	XCD	1200W****	260 x 40.4 x 127
	XCE	1340W*****	268 x 40.4 x 127
	Xmite	XMA	200W
XMB		400W	260 x 40.4 x 89
XMC		600W*	260 x 40.4 x 89
Xrite	XRA	200W	260 x 40.4 x 89
	XRB	400W**	260 x 40.4 x 89
Xvite	XVA	400W	260 x 40.4 x 127
	XVB	700W	260 x 40.4 x 127
	XVC	1000W***	260 x 40.4 x 127
	XVD	1200W****	260 x 40.4 x 127
	XVE	1340W*****	268 x 40.4 x 127
Xhite	XHA	400W	260 x 40.4 x 127
	XHB	600W	260 x 40.4 x 127
Xqite	XQA	400W	260 x 40.4 x 127
	XQB	900W*****	260 x 40.4 x 127
Xzite	XZA	400W	260 x 40.4 x 127
	XZB	900W*****	260 x 40.4 x 127

*Derate linearly from 600W at 200VAC to 410W at 100VAC nom.
**Derate linearly from 400W at 134VAC to 315W at 100VAC nom.
***Derate linearly from 1000W at 134VAC to 900W at 100VAC nom.
****Derate linearly from 1200W at 134VAC to 900W at 100VAC nom.
*****Derate linearly from 1340W at 210VAC to 1070W at 100VAC nom.
*****Derate linearly from 900W at 134VAC to 600W at 100VAC nom.

powerMods

Model	Vmin	Vnom	Vmax	I _{max}	Watts
Xg1	1.5	2.5	3.6	50	125
Xg2	3.2	5.0	6.0	40	200
Xg3	6.0	12.0	15.0	20	240
Xg4	12.0	24.0	30.0	10	240
Xg5	28.0	48.0	58.0	6	288
Xg7	5	24.0	28.0	5	120
Xg8	5/5	24/24	28/28	3/3	72/72

powerMod maximum power ratings must not be exceeded

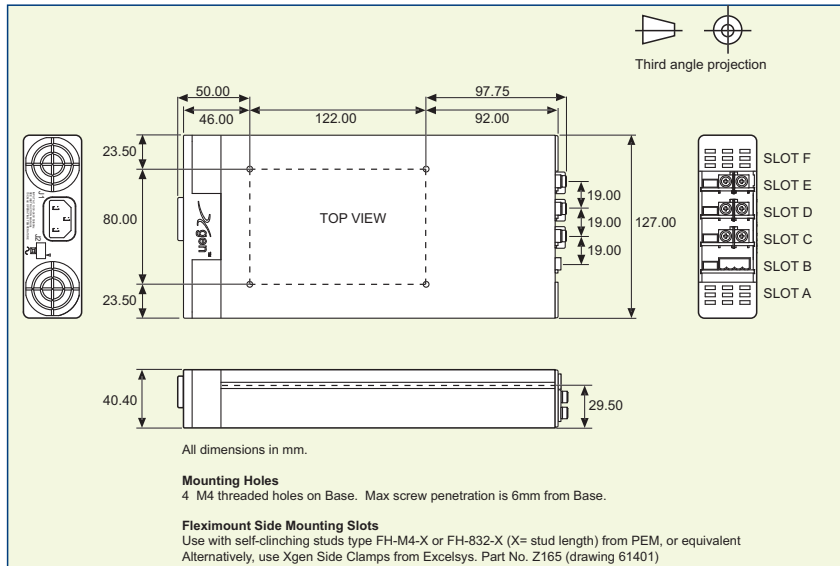
Permitted Power Ratings for Reliable Operation.

When specifying an Xgen in an application, it is necessary to ensure that the powerPacs and powerMods are operating within their power ratings as listed above, taking care to factor in the appropriate derating if the ambient temperature exceeds 40°C (except for Xhite models).

Unused Slots

UNUSED SLOTS MUST ALWAYS BE FITTED WITH APPROPRIATE SLOT COVERS XB1, XB2 or XB3. Units must NOT be operated with empty slots.

Connectors and Pin-Outs



J1: Input Mains Connector IEC320

Note: For use in ambient temperatures >60C, a hot condition mating connector and cable must be used.

J2: powerPac Signal Connector

Pin	J2 powerPac
1	Common
2	+5V Bias
3	
4	AC Fail
5	Fan Fail*
6	Global Enable
7	Temp Alarm*
8	Global Inhibit

Mating parts:
Housing Molex p/n 51110-0850 or -0860
Crimp Terminal Molex p/n 50394

J3: powerMod Signal Connector

Pin	Type A	Type B
1	+Sense	-PG (V2)
2	-Sense	+PG (V2)
3	Vtrim	Inhibit (V2)
4	Itrim	Common (V2)
5	+Inhibit/Enable	-PG (V1)
6	-Inhibit/Enable	+PG (V1)
7	+Power Good	Inhibit (V1)
8	-Power Good	Common (V1)

Mating parts:
Housing Molex p/n 51110-0850 or -0860
Crimp Terminal Molex p/n 50394

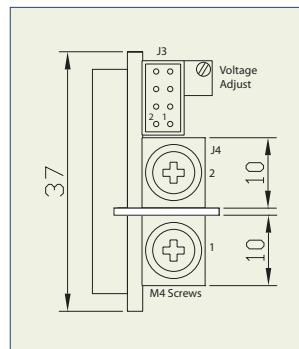
J4: powerMod Output Connector

Pin	Type A	Type B
1	-Vout	-V2
2	+Vout	+V2
3		-V1
4		+V1

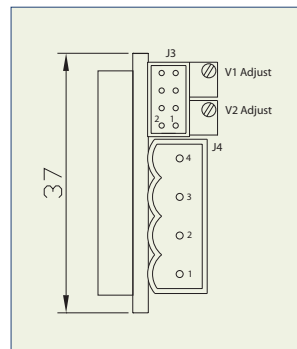
Type A : M4 Screw Terminals
Type B : Mating part:
Camden - CTB9200/4A

Note: Cables must be rated 105C minimum (style UL1015 or equivalent)

powerMod Type A



powerMod Type B



Labeling and Model Numbers

powerMod

powerMod labels contain:
..Minimum, Nominal & Maximum voltage adjustment range.
..Maximum current (Imax)
..Maximum power (Watts)
..Model number
Model numbers are easily identified by the number marked on the top of signal connector J3.

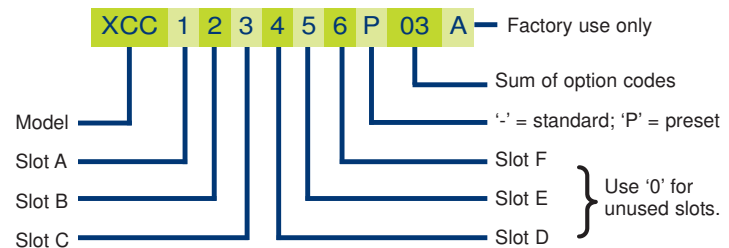
powerPac

powerPac labels contain:
..Input Freq
..Input Voltage
..Fuse rating
..Serial Number
..Maximum combined power rating of inserted powerMods
..Maximum Line current under rated conditions
..Model Number in the format XCD [] [] [] [] - 01 as an example for a 1200W Xcite model, with optional Thermal Signals.

When the powerPac has no powerMods inserted, its Model number is simply XCD-01.

When the powerPac has one or more powerMods inserted, its model number may be easily read to be XCD012340-01 as an example, where powerMods XG1, XG2, XG3, XG4 are inserted in Slots B,C,D,E respectively with slot covers in the remaining slots A and F.

Xgen Series Part Numbering System



Excelsys Technologies Ltd. reserves the right to alter or improve the specification, internal design or manufacturing process without notice. Please check with your Excelsys representative or visit www.excelsys.com to ensure that you have the current and complete specification for your product before use. For information and instructions on use, please consult the Xgen Designers' Manual.

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