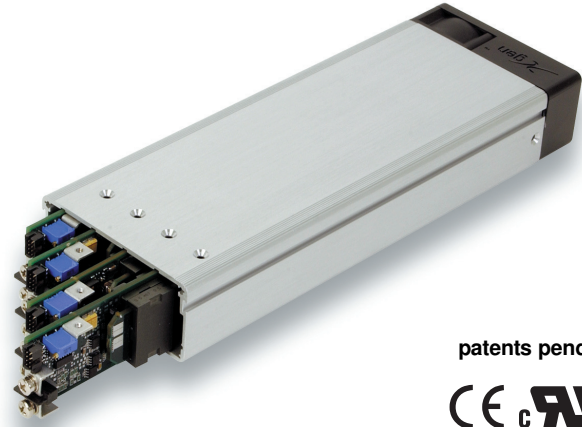




## Slimline Power Supply

User Configurable 1U size



patents pending



Slimline

### PLUG & PLAY POWER next generation power source

#### FEATURES

- Slimmest 750W configurable power
- Extra low profile: 1U height (40mm)
- Up to 800W peak power
- Ultra high efficiency, up to 89%
- Plug & Play Power
  - allows fast custom configuration
  - allow easy logistics
- FLEXIMOUNT Flexible mounting system
- Few electrolytic capacitors (all long life)
- Visual LED indicators
- Series / Parallel of multiple outputs
- 5V bias standby voltage provided
- Individual output control signals

#### APPLICATIONS INCLUDE

- Industrial machines
- Test and measurement
- Automation equipment
- Printing
- Telecommunications
- For Medical applications see Xmite

The XLD is the latest addition to the Xlite family of power supplies and provides an unprecedented 750W in a slimline 1U x 268 x 89mm package. Providing up to 8 isolated outputs, the Xlite family is the most flexible power supply in its class and brings affordable configurable power to the 750W market.

With 800W peak power capability the slimline product boasts unrivalled power density saving valuable system space. Combine with ultra high efficiencies, the Xlite family provides system designers with flexible instant solutions that significantly shorten and simplify system design-in time.

The XLD 750W *powerPac* model may be populated with up to 4 *powerMods* selected from the table of *powerMods* shown below.

All configurations carry full safety agency approvals, UL60950, EN60950 and are CE marked. For alternative power interfaces contact [support@excelsys.com](mailto:support@excelsys.com)

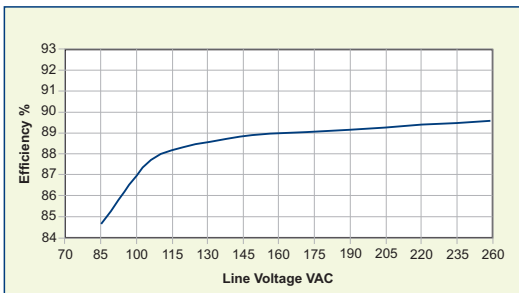
#### powerMods

| MODEL | Vtrim | Vmin <sup>(4)</sup><br>Vpot | Vnom | Vmax <sup>(4)</sup> | I <sub>max</sub> | Watts |
|-------|-------|-----------------------------|------|---------------------|------------------|-------|
| Xg1   | 1.0   | 1.5                         | 2.5  | 3.6                 | 50A              | 125W  |
| Xg2   | 1.5   | 3.2                         | 5.0  | 6.0                 | 40A              | 200W  |
| Xg3   | 4.0   | 6.0                         | 12.0 | 15.0                | 20A              | 240W  |
| Xg4   | 8.0   | 12.0                        | 24.0 | 30.0                | 10A              | 240W  |
| Xg5   | 8.0   | 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                | 3A               | 72W   |
|       | v2    | 5.0                         | 5.0  | 24.0                | 3A               | 72W   |

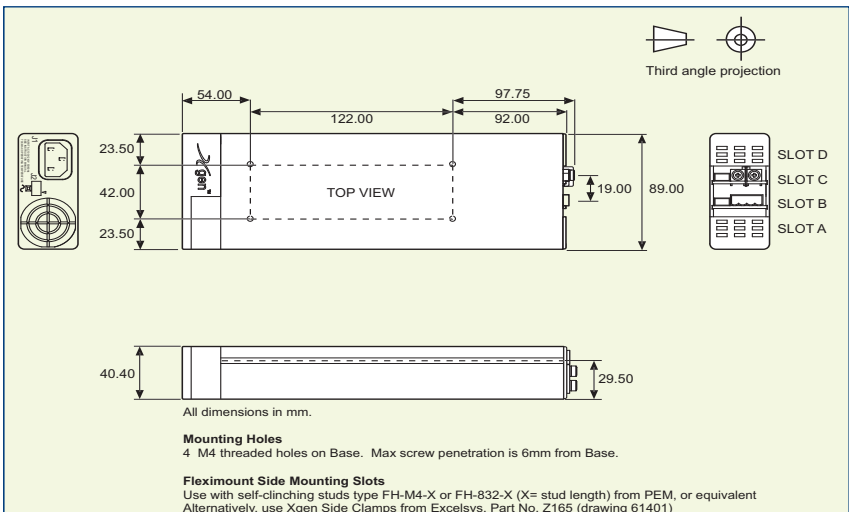
#### powerPacs

| MODEL | Watts |
|-------|-------|
| XLD   | 750W  |

#### EFFICIENCY (typical)



#### MECHANICAL SPECIFICATIONS



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

| INPUT                 |  |     |         |          |       |
|-----------------------|--|-----|---------|----------|-------|
| Parameter             | Conditions/Description                                       | Min | Nom     | Max      | Units |
| Input Voltage Range   | Universal Input  | 85  |         | 264      | VAC   |
|                       |  | 120 |         | 380      | VDC   |
| Input Frequency Range |  | 47  |         | 63       | Hz    |
| Power Rating XLD      | Derate linearly from 750W at 140VAC to 525W at 85VAC. Note 5 |     |         | 750(800) | W     |
| Input Current XLD     | 85VAC in 525W out  |     | 7.5     |          | A     |
| Inrush Current        | 230VAC @ 25°C  |     |         | 50       | A     |
| Undervoltage Lockout  | Shutdown   | 65  |         | 74       | VAC   |
| Fusing XLD            | 250V 5 x 20mm  |     | F8A HRC |          |       |

| OUTPUT                  |  |           |     |          |         |
|-------------------------|--|-----------|-----|----------|---------|
| Parameter               | Conditions/Description   | Min       | Nom | Max      | Units   |
| powerMod Power          | As per powerMod table  |           |     |          |         |
| Output Adjustment Range | Manual: Multi-turn potentiometer. As per powerMod table  |           |     |          |         |
|                         | Electronic: See Xgen Designers' Manual   |           |     |          |         |
| 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      | For 25% to 75% load change Voltage Deviation<br>Settling Time                                  |           |     | 10       | %       |
|                         |  |           |     | 250      | µs      |
| Ripple and Noise        | 20MHz Bandwidth  |           |     | 1.0      | % pk-pk |
| Overvoltage Protection  | Two-level. 1st level: Vset Tracking. 2nd level: Vmax (Latching)                                | 110       |     | 125      | %       |
| Overcurrent Protection  | Straight line with hiccup activation at <30% of Vnom<br>See Designer's Manual for full details | 110       |     | 120      | %       |
| Remote Sense            | Max. line drop compensation. (except Xg7, Xg8)   |           |     | 0.5      | VDC     |
| Overshoot               |  |           |     | 2        | %       |
| Turn-on Delay           | From AC In / Enable signal   |           |     | 1000/ 30 | ms      |
| Rise Time               | Monotonic  |           |     | 5        | ms      |
| Hold-up Time            | For nominal output voltages at full load   | 15        |     |          | ms      |
| Output Isolation        | Output to Output / Output to Chassis   | 500 / 500 |     |          | VDC     |

| GENERAL                 |   |      |     |      |       |
|-------------------------|---|------|-----|------|-------|
| Parameter               | Conditions/Description                                    | Min  | Nom | Max  | Units |
| Isolation Voltage       | Input to Output   | 3000 |     |      | VAC   |
|                         | Input to Chassis  | 1500 |     |      | VAC   |
| Efficiency              | 230VAC, 750W @ 24V  |      | 89  |      | %     |
| Safety Agency Approvals | EN60950, UL60950, CSA22.2 No.950 UL File No. E181875      |      |     |      |       |
| Leakage Current         | 250VAC, 60Hz, 25°C  |      |     | 1.5  | mA    |
| Signals                 | See Xgen Series datasheet                                 |      |     |      |       |
| Bias Supply             | Always ON. Current 250mA                                  | 4.8  | 5.0 | 5.2  | VDC   |
| Reliability             | Failures per million hours at 25°C and full load powerMod |      |     | 0.98 | fpmh  |
|                         | See Designers' Manual. powerPac excludes fans powerPac    |      |     | 0.92 | fpmh  |

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

| ENVIRONMENTAL         |  |     |     |     |       |
|-----------------------|--|-----|-----|-----|-------|
| Parameter             | Conditions/Description                           | Min | Nom | Max | Units |
| Operating Temperature |  | -20 |     | +70 | °C    |
| Storage Temperature   |  | -40 |     | +85 | °C    |
| Derating              | 0.667% per °C 40-60°C.; 1.33% per per °C 60-70°C |     |     |     |       |
| Relative Humidity     | Non-condensing                                   | 5   |     | 95  | %RH   |
| Shock                 | 3000 Bumps, 10G (16ms) half sine                 |     |     |     |       |
| Vibration             | 1.5G   | 10  |     | 200 | Hz    |

- NOTES**
- This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
  - The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
  - All specifications at nominal input, full load, 25°C unless otherwise stated.
  - Vmin and Vmax voltages achieved when using Vtrim function on powerMod or the on board potentiometer. Vtrim is the lowest voltage that can be achieved using Vtrim pin on powerMod. Vpot is the minimum voltage that can be achieved using the on-board potentiometer. See Xgen series Designers' Manual for full details on Vtrim and adjustment ranges.
  - 800W peak for 1s; Duty cycle 7%. powerMod output power must not exceed normal ratings.
  - When powering inductive or capacitive loads, it is recommended to use a blocking diode on the output.

Doc. XLD Rev02 11/09



|                    |   |   |                      |   |  |
|--------------------|---|---|----------------------|---|--|
| <b>Europe/Asia</b> | Excelsys Technologies Ltd<br>27 Eastgate Drive<br>Eastgate Business Park<br>Little Island, Cork, Ireland<br>IRELAND | t: +353 21 4354716<br>f: +353 21 4354864<br>e: sales@excelsys.com | <b>North America</b> | Excelsys Technologies<br>519 Interstate 30, #309<br>Rockwall, TX 75087<br>USA | t: (972) 771 4544<br>f: (972) 421 1805<br>e: salesusa@excelsys.com |
|--------------------|---|---|----------------------|---|--|

## 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.

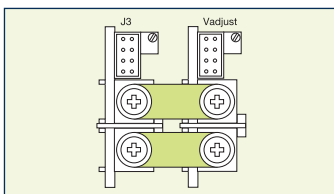
## Voltage Adjustment - Remote (resistive / electronic)

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:

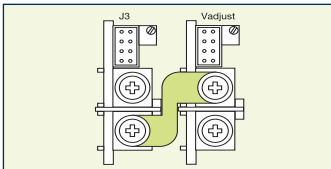
1. Switch on IShare switch to ON on powerMods.
2. Connect Negative parallel link.
3. Adjust output voltages of powerMods to within 5mV of each other.
4. Connect Positive Parallel Link.



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

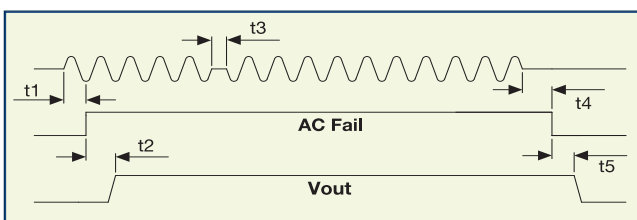
The output current limit setting may be adjusted (downwards only) by means of an external resistor connection to the I trim pin.

## 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.

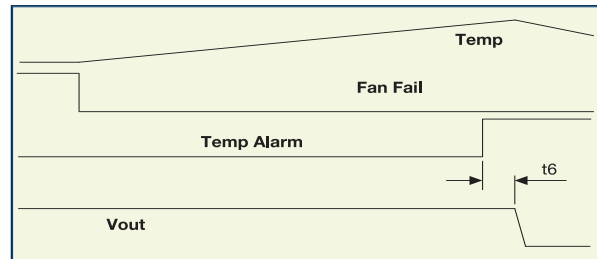


## Temperature Alarm (Option 01)

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.

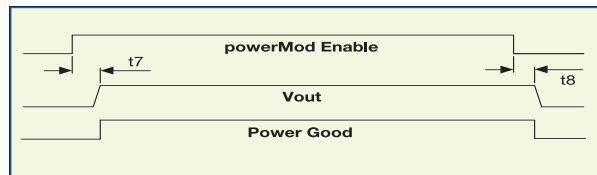
## Fan Fail (Option 01)

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.

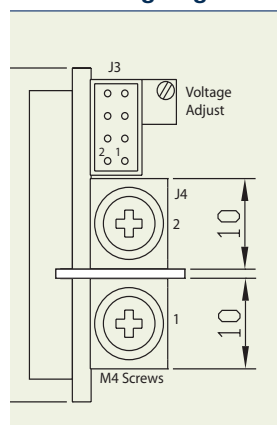
## Signal Connector Pinout

| Pin | J2 ( <i>powerPac</i> ) | J3 ( <i>powerMod</i> )<br>Type A | J3 ( <i>powerMod</i> )<br>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

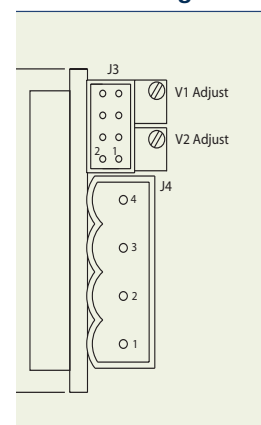
### TYPE A Xg1-Xg7



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.



**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  |
|               |        | XME   | 1000W |
| Low Noise Med | Xrite  | XRA   | 200W  |
|               |        | XRB   | 400W  |
|               |        | XRC   | 600W  |



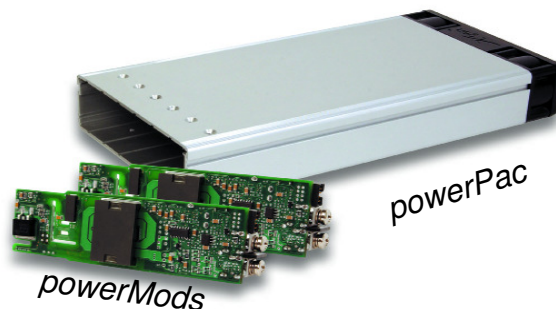
**powerPacs** (6slot package, 127mm wide)

|           | 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.

