# XCE AC/DC Power Supply

## Ultra-high efficiency 1U size

patents pending

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

### FEATURES

- 1.5V to 58V standard output voltages
- All outputs fully floating
- Extra low profile: 1U height (40mm)
- Ultra high efficiency, up to 90%
- Plug & Play Power
  - allows fast custom configuration
- Up to 1450W peak power for 10 sec
- Reduced system heat dissipation
- 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 XVE

**The XCE addition to the Xgen family of power supplies provides up to an incredible 1340W (peak power of 1450W) in an extremely compact 1U x 268 x 127mm package. Boasting an industry leading power density of 17W/in$^3$ and efficiencies of up to 90%, the XCE family employs the innovative Xgen plug & play architecture that allows users to instantly configure a custom power solution in less than 5 minutes!**

Ultra high efficiencies and high power density are made possible through the combination of low loss technologies and the best field-proven technologies in planar magnetics and surface mount electronics. Significantly increased efficiency reduces system thermal load by more than 50%.

The XCE can be populated with up to 6 *powerMods* selected from the table of *powerMods* shown below.

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

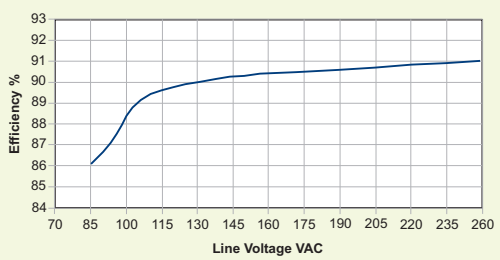
### *powerMods*

| MODEL | Vmin | Vnom | Vmax | Imax | Watts |
|---|---|---|---|---|---|
| Xg1 | 1.5 | 2.5 | 3.6 | 50A | 125W |
| Xg2 | 3.2 | 5.0 | 6.0 | 40A | 200W |
| Xg3 | 6.0 | 12.0 | 15.0 | 20A | 240W |
| Xg4 | 12.0 | 24.0 | 30.0 | 10A | 240W |
| Xg5 | 28.0 | 48.0 | 58.0 | 6A | 288W |
| Xg7 | 5.0 | 24.0 | 28.0 | 5A | 120W |
| Xg8 V1 | 5.0 | 24.0 | 28.0 | 3A | 72W |
| V2 | 5.0 | 24.0 | 28.0 | 3A | 72W |

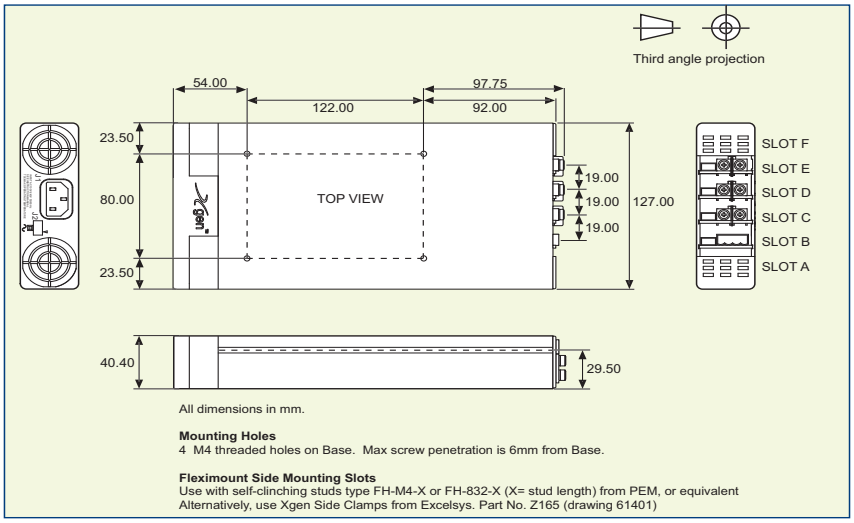
### *powerPacs*

| MODEL | Watts |
|---|---|
| XCE | 1340W |

### EFFICIENCY (typical)




### MECHANICAL SPECIFICATIONS




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)

Xgen Series

**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<br>120 | | 264<br>380 | VAC<br>VDC |
| **Input Frequency Range** | | 47 | | 63 | Hz |
| **Power Rating** XCE | See Xgen Designers' Manual for derating versus input line voltage | | | 1340 (1450) | W |
| **Input Current** XCE | 85VAC in 1000W out | | 14.0 | | A |
| **Inrush Current** | 230VAC @ 25°C | | | 25 | A |
| **Undervoltage Lockout** | Shutdown | 65 | | 74 | VAC |
| **Fusing** XCE | 250V | | F15A 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<br>Electronic: See Xgen Designers' Manual | | | | |
| **Minimum Load** | | | 0 | | A |
| **Line Regulation** | For ±10% change from nominal line | | | ±0.1 | % |
| **Load & Cross Regulation** | For 25% to 75% load change | | | ±0.2 | % |
| **Transient Response** | For 25% to 75% load change Voltage Deviation<br>Settling Time | | | 10<br>250 | %<br>µs |
| **Ripple and Noise** | 20MHz Bandwidth | | | 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<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 | | | 700 / 30 | ms |
| **Rise Time** | Monotonic | | | 5 | ms |
| **Hold-up Time** | For nominal output voltages at full load. 230VAC/115VAC | 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<br>Input to Chassis | 3000<br>1500 | | | VAC<br>VAC |
| **Efficiency** | 230VAC, 1340W @ 24V | | 90 | | % |
| **Safety Agency Approvals** | EN60950, UL60950, CSA22.2 No.950 UL File No. E181875 | | | | |
| **Leakage Current** | 250VAC, 60Hz, 25°C | | | 1.5 | mA |
| **Signals** | See Xgen Series datasheet | | | | |
| **Bias Supply** | Always ON. Current 30mA | 4.9 | 5.0 | 5.1 | VDC |
| **Reliability** | Failures per million hours at 25°C and full load *powerMod*<br>See Designers' Manual. *powerPac* excludes fans *powerPac* | | | 0.98<br>0.92 | fpmh<br>fpmh |

## EMC

| Parameter | Standard | | Level | | Units |
|---|---|---|---|---|---|
| **Emissions** | | | | | |
| **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 | | |
| **Immunity** | | | | | |
| **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 | ℃ |
| **Storage Temperature** | | -40 | | +85 | ℃ |
| **Derating** | See Xgen Designers Manual for full deratings versus temperature | | | | |
| **Relative Humidity** | Non-condensing | 5 | | 95 | %RH |
| **Shock** | 3000 Bumps, 10G (16ms) half sine | | | | |
| **Vibration** | 1.5G | 10 | | 200 | Hz |

**NOTES**

1. This product is not intended for use as a stand alone unit and must be installed by qualified personnel.
2. The specifications contained herein are believed to be correct at time of publication and are subject to change without notice.
3. All specifications at nominal input, full load, 25°C unless otherwise stated.
4. 1450W peak for 10s. Duty Cycle 8%. powerMod output power must not exceed normal ratings.



XCE Rev 00

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