

# Statronics Power Supplies

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ISO 9001

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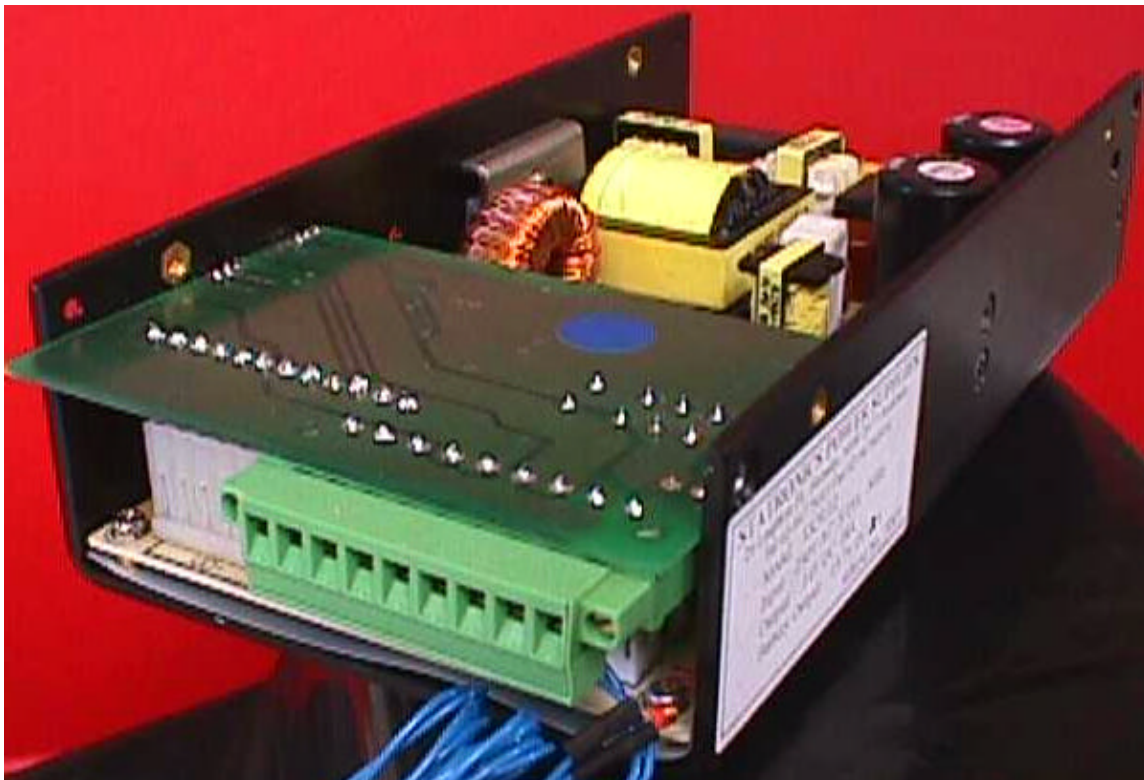
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## **XK3U12, 12V NOMINAL, 20AMP, BATTERY-BACKED, POWER SUPPLY**



### FEATURES

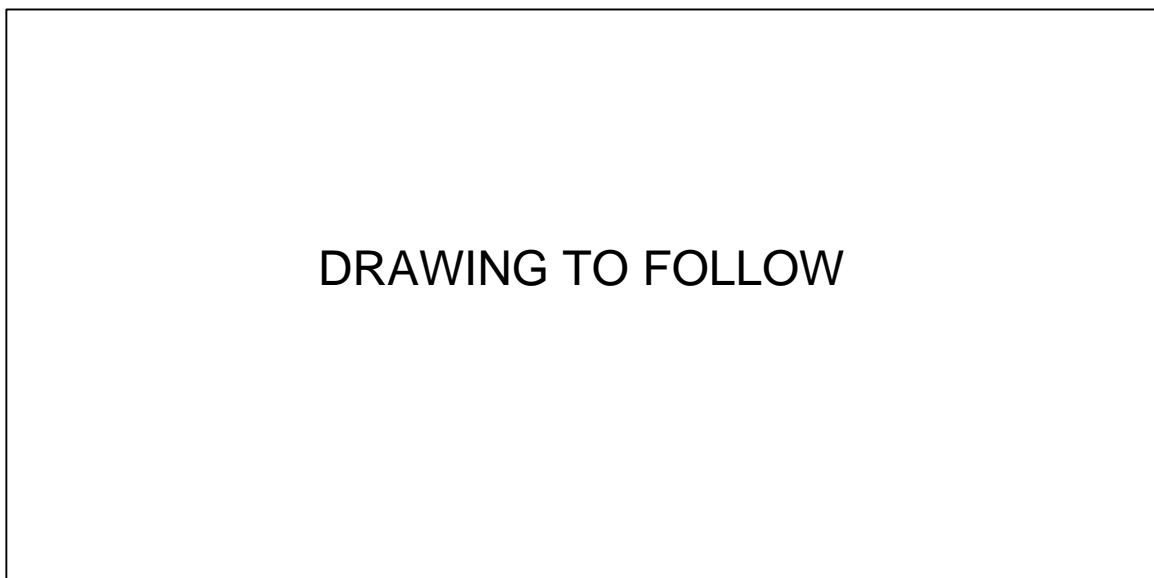
- ◆ Compact and Efficient
- ◆ Charge Current Control
- ◆ Fast Charge
- ◆ Low Battery Disconnect
- ◆ Economical
- ◆ Battery Hot-Swappable
- ◆ Battery Overload Protection
- ◆ Automatic Battery Test
- ◆ Float Voltage Temperature Compensation
- ◆ Extensive Alarm Signals
- ◆ Five - Year Warranty

The Battery is not supplied. Optimised for 12 A-H to 40 A-H Recombination Electrolyte (Sealed) Lead Batteries in stand-by application.

## SPECIFICATIONS

AC Input Range	90-132V AC / 180-264V AC Auto-select, 47-63Hz.
Total Output Power	285 W continuous
Input Fuse	3 A 250V fast-blow fuse, internal
Inrush Current	< 70A max. peak, cold start at 25°C
Efficiency	80% minimum at full load and any input voltage within limits range
Short Circuit Protection	Short circuit on any output causes no damage to the power supply.
Over Load Protection	Over power at 105% to 135% rated power, shut-off with auto restart
Minimum Load	No minimum load is required
Switching frequency	100KHz.
Over Voltage Protection	Over Voltage trip point at Vout +10% to 25%
Operating Temperature	0°C to +50°C, relative humidity: 10% - 95%. (Natural convection, full load)
Shipping and Storage	-20°C to 85°C , Relative Humidity: 5% to 95%
Complies to Safety Standards	AS3260, UL195, EN60950, TUV, VDE
Complies to EMC Standards (conducted)	EN55011 Class A, AS 2064 Class A, FCC part 15 Class B, VDE 0878 PT3 Class A.
<b>DC Load Output</b>	
DC Output Voltage AC ON	14.3 V to 14.4 (When AC Power Available)
DC Output Voltage AC OFF	= Battery Voltage – <500mV at 20A (< 25 mΩ series resistance)
Maximum Continuous Load	20A
Maximum Surge Load	22A (See “Discharge 3.”)
Output Ripple and Noise	< 150 mV P – P at full load
Overload Protection	20A nominal, 18-25A over temperature. Resets when AC power applied.
<b>Battery Terminal</b>	See below, is fully protected. EXCEPT REVERSE BATTERY POLARITY
<b>Thermistor</b>	A matched thermistor is fitted for float voltage temperature compensation (Lead length 500mm) Mount sensor near battery.
<u>Dimensions (LxWxH)</u>	213 x 108 x 50.8 mm (8.4 x 4.25 x 2”)
Mounting	Three alternative faces possible – see drawing.
Vibration	3g 5 to 200 Hz, 1g 5 to 500Hz, three orthogonal axes, 1 oct/min, 5 min. dwell at four major resonances. (operational)
Shock	30g, any axis
Terminations	Outputs by Screw terminal – pluggable. Input Molex KK Header. With cover option, input is by IEC entry.

## MECHANICAL SPECIFICATIONS



## Battery and Load Management Functions.

### Charge

Independent control is provided for charge current and voltage. Charge takes place in three stages.

1. A current source of 3A to 4A is supplied (towards lower limit at high temperature).
2. This current source is voltage limited to 13.9V. When the current falls to < 400mA, mode is changed to stage 3.
3. Charge voltage is dropped to “Float” at 2.25V per cell at 25°C, temperature compensated at – 4mV per cell per °C. For this function to operate correctly, the thermistor provided should be located close to the battery to accurately measure its temperature.

### Discharge

1. On loss of AC power, the Load terminal voltage will drop from 14.25V ± 1% to the battery voltage.
2. Between the battery and the load terminal, there is a series resistance of < 25 mΩ, so the voltage delivered to the load, if 20A, will be battery float (13.7V) – 0.5V = 13.2V. As the battery discharges, the load voltage will follow.
3. If an overload of > 20A occurs, the battery will be disconnected. The overload threshold is thermally tailored between 18A and 25A over the ambient temperature range. (18A at high temperature). This means that a surge load can be handled if the normal load has been lower. The overload protection will reset when AC power is restored, or if AC Power is present, when the overload is removed.
4. Prior to “Low Voltage Disconnect” (LVD) at Battery voltage 11V, an alarm signal will be sent, then at 10.5V Battery voltage, the load is disconnected from the battery.

### Battery Test

During float charge, at approximately four hour intervals, the battery is tested for capacity by applying a known load for one minute and examining the discharge voltage rate. Note that, during the test, the battery is still available in case there is an AC Power failure.

## Signals Available.

### Multi-function LED indicator:

Green	= AC Power present, battery is charged
Green flashing	= AC Power present, battery is charging
Red	= AC Power present, battery is faulty
Orange	= no AC Power, battery is supplying load
Orange flashing	= no AC Power, low voltage disconnect is imminent

### Relay 1 “MAINS” (pins #8 & #9)

ON indicates AC Power is present.

### Relay 2 “READY” (pins #10 & #11)

ON indicates that the battery is OK and charged

- During discharge, this relay will open when disconnect is imminent.
- During charging, it will turn on when the battery has recovered 60% of capacity.

### Output Connections:

1. COMMON	5. 13.8V (to load)	9. “MAINS” indicator relay
2. COMMON	6. BATTERY +	10. “READY” relay
3. Not used	7. BATTERY +	11. “READY” relay
4. 13.8V (to load)	8. “MAINS” indicator relay	

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