

**POWER FACTOR  
CORRECTED  
150 WATTS**

**TEK 150  
PFC SERIES**

**POWER FACTOR CORRECTED 150 WATTS**


**SMX POWER**

3005 Avenida Simi, Simi Valley, CA 93063

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[www.smxpower.com](http://www.smxpower.com)

#### FEATURES

- Universal autoselected AC input with power factor correction
- Wide selection of single outputs
- World-wide agency approval
- 100% Burn-in, hi pot tested
- Stock to 6 week delivery
- High quality
- Superior performance
- Price competitive
-  Marked

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**DESCRIPTION**

The **TEK Series**, Power Factor Corrected Switch Mode Power Supplies are available in 6 single output models and provide output power up to 150 watts. These high performance switchers are low profile and available in U channel configuration. The **TEK Series** is an ideal choice and a powerful solution for any application where up to 150 watts may be required. They are intended for installation as a component in OEM systems.

**SPECIFICATION**

**AC Input Specifications**

**Input Frequency:** 47-63 Hz  
**Input Voltage:** 90-132 / 180-264V AC Auto Select or Strappable (Optional).  
**Input Current:** 4/2 A at 115/230V AC  
**Inrush Current:** 70 A Peak maximum (Measured at 230V AC and full load, cold start.)  
**PFC:** Passes Power Factor Correction requirements to EN61000-3-2 Class 'A'

**DC Output Specifications**

**Output Rating:** Measured at the output power connector.  
**Output Current:**

Model	Output	Min	Max	Regulation Max.	Ripple & Noise
TEK150UPSA	3-4V DC	0.5A	30A	+/- 1%	50mV
TEK150UPSB	5-6V DC	0.5A	30A	+/- 1%	50mV
TEK150UPSC-12	12V DC	0.5A	12.5A	+/- 1%	+/- 1%
TEK150UPSC-15	15V DC	0.5A	10A	+/- 1%	+/- 1%
TEK150UPSD	24-30V DC	0.5A	6.25A	+/- 1%	+/- 1%
TEK150UPSE	35-56V DC	0.5A	4.25A	+/- 1%	+/- 1%

Notes:

- a. All models except TEK150UPSA supply Maximum 150W continuous output with 16 C.F.M Min. forced air.
- b. Maximum 100W continuous output with air convection, except TEK150UPSA for which current is limited to 20A.
- c. Outputs are fully isolated.
- d. Ripple and noise is measured from 10KHZ to 20MHz bandwidth at output terminals with parallel 0.1µF ceramic and 22µF electrolytic capacitors.

**Fan Drive:** Designated as FAN on the PCB; 12VDC/160mA is available to drive an external fan.

**Electrical Characteristics**

**Transient Response:** Output voltage returns to within 1% in less than 500µs for a 50% load change, peak does not exceed 5%.  
**Overshoot:** Turn-on and turn-off overshoot should not exceed 5% of nominal voltage.  
**Efficiency:** 80% minimum (Measured with 115V AC input and full load)  
**Turn On Delay:** 1 Second maximum at 120V AC input  
**Hold Up Time:** 20 mS minimum at 120V AC input and 80% of rated maximum load  
**Adjustability:** User adjustable +/- 5% minimum  
**Remote On-Off:** Designated as RMSW on the CN1. Requires a low signal to inhibit output.  
**Power Supply On:** Green LED designated as LED 1 on the PCB. When this LED is on, the power supply is operating.  
**Power Good:** Designated as PG on CN1. This is a Power On Reset signal. This signal will go high 100-500 mSec after the output reaches regulation. It goes low at least 1 mSec before loss of regulation.

**Protection Circuit**

**Input Circuit (Primary):**

A protective fuse is installed in the primary circuit of the power supply. The fuse shall be blown only by an internal fault of the power supply. Any overload or short on the output, either momentary or permanent, shall not blow the input fuse or create a fire or shock hazard.

**Input Circuit (Secondary):**

**Overcurrent Protection:**

Current limits at 110-135% of the rated output current and recovers automatically.

**Short Circuit Protection:**

Short circuit can be continuous without damage and the power supply recovers automatically when the short is removed.

**Over Voltage Protection:**

Output is protected against over voltage. Unit will latch down when the output exceeds 130% of the output voltage. Recycle AC input to reset.

**Over Temperature Protection:**

Power supply is protected in the event of the temperature exceeding 85°C, and recovers automatically when it cools.

**Mechanical Specifications**

**Enclosure:** 127mm(5")L X 81.28mm(3.2")W X 38.1mm(1.5")H U-Channel construction.

**AC Input Connector (CN3):**

Mates with Molex P/N 09-91-0500 or equivalent  
(5 pins, pins 2 & 4 removed.)  
PCB is labeled: L=Line, N=Neutral, G=Chassis Ground.  
Mating pins – Molex engineering series 2478, 2578, 8818.

**Output Connector (CN2):**

Mates with Molex P/N 09-91-0600  
Output Pin Assignment: Vo+: Pins 1-3  
Return: Pins 4-6  
Mating Pins: Molex engineering series 2478, 2578, 8818

**Power Good, Remote On/Off Mating Connectors (CN1):**

Connector: JST P/N XHP-3 or equivalent  
(CHYAO SHIUNN JS-2001-03)  
Mating Pins: JST SXH-002T-P0.6 for AWG 30 to 26  
Pin 1: Power Good  
Pin 2: Remote Switch  
Pin 3: Return

**Mounting Inserts:** 8 places M3. Maximum penetration 4mm, See outline drawing for location

**Weight:** Maximum weight is 400g.

**Environmental Specifications**

**Operating Temperature:** 0 to 50°C for all models except TEK150UPSA and TEK150UPSB whose operating ambient is limited to 40°C

**Storage Temperature:** -20 to +85°C

**Operating Humidity:** 5% to 90% RH Non-condensing

**Storage Humidity:** 5% to 95% RH Non-condensing

**Vibration:** Frequency: 5 to 50Hz

Acceleration: +/- 7.35 ms<sup>2</sup> on X, Y and Z Axis

**Safety and EMI Requirement:**

**EMI specifications:** Designed to meet FCC Part 15 Subpart B class B, CISPR 22 class B.  
Passes EN61000-3-2 class A

**Safety Regulation:** PASS, UL, CUL, TUV, CE

**Leakage Current:** The AC leakage current shall not exceed 3.5mA when the power supply is connected to a supply voltage equal to the upper limit of the rated voltage range.

**HI-POT and Grounding test**

**HI-POT:** The power supply shall withstand for 3 Sec without breakdown the application of a 1500 VAC supply voltage applied between both input line and chassis (10mA DC cut off current). Isolating transformers shall withstand 3000VAC applied between primary and secondary windings and primary to core 1500VAC.

**Grounding Test:** Apply 25A current from the ground pin of the three prong plug to the far most earthed connection point. The maximum allowable resistance measured during the test is 0.1 ohm.

**Reliability and MTBF**

**Reliability:** The operational life of the power supply is one year.

**MTBF:** 100,000 hours (According to MIL-HBK-217F) at 30°C.

**Cooling:** Full ratings can be obtained when unit is force cooled with 16 CFM of air.

**Burn In**

**Input Voltage:** Applying 230V AC for input voltage.

**Burn In Condition:** Applying full load for this product in 45 (+/-5)°C burn in room for one hour.

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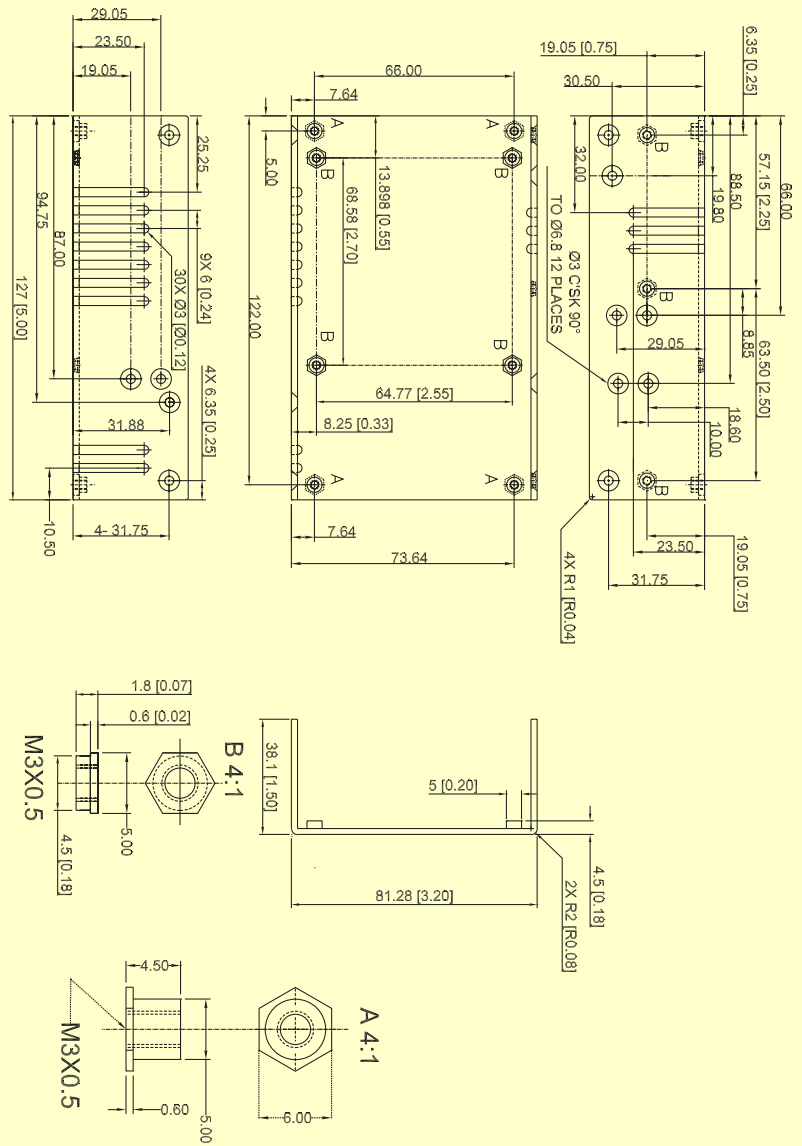
These component power supplies meet the requirements of EC Directive 73/23/EEC (LVD)



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**SPECIFICATION OUTLINE DRAWING**



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Revision: 07/03

**Drawing dimensions are in mm (inches)**

Design developments may result in specification changes