# TE30

20W-30W Single Output External Power
Test & Measurement/Industrial Series

## Features

- Meets DoE Efficiency Level VI Requirements
  - No load input power
  - Average Efficiency
- Up to 30W of AC-DC Power
- Universal Input 90-264Vac Input Range
- Desktop and Wall-Plug versions
- Meets "Heavy Industrial" Levels of EN61000 EMC Requirements
- Meets EN55011/CISPR11, and FCC Part 15.109 Class B Conducted & Radiated Emissions, with 6db margin
- Approved to EN/IEC/UL60950-1, 2nd Ed., Am. 2
- E-cap life of >8 years
- >1,000,000 hours MTBF
- 3 Year Warranty

## Description

A high performance AC to DC external power supply family designed for test & measurement and industrial applications. The TE30A Series models are compliant with Efficiency Level VI requirements per U.S. Dept. of Energy, **PLUS** Heavy Industrial levels of various EN61000-4-x standards for EMC.

## Model Selection

| Model Number | Volts | Output Current | Output Power | Ripple & Noise[1] | Line Regulation | Load Regulation | Overvoltage Trip Range | Output Connector | Input Configuration |
|---|---|---|---|---|---|---|---|---|---|
| TE30A0503F01 | 5.0V | 4.00A | 20W | 75mV pk-pk | ±1% | ±5% | 5.75V-7.75V | 2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive | Class I Desktop, IEC60320 C14 Receptacle |
| TE30A1203F01 | 12.0V | 2.50A | 30W | 120mV pk-pk | ±1% | ±5% | 14.4V-16.8V | | |
| TE30A1503F01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | 18.0V-21.0V | | |
| TE30A1803F01 | 18.0V | 1.67A | 30W | 180mV pk-pk | ±1% | ±5% | 21.6V-25.2V | | |
| TE30A2403F01 | 24.0V | 1.33A | 30W | 240mV pk-pk | ±1% | ±5% | 28.8V-33.6V | | |
| TE30A4803F01 | 48.0V | 0.63A | 30W | 480mV pk-pk | ±1% | ±5% | 55.0V-60.0V | | |
| TE30A0503N01 | 5.0V | 4.00A | 20W | 75mV pk-pk | ±1% | ±5% | 5.75V-7.75V | 2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive | Class II Desktop, IEC60320 C8 Receptacle |
| TE30A1203N01 | 12.0V | 2.50A | 30W | 120mV pk-pk | ±1% | ±5% | 14.4V-16.8V | | |
| TE30A1503N01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | 18.0V-21.0V | | |
| TE30A1803N01 | 18.0V | 1.67A | 30W | 180mV pk-pk | ±1% | ±5% | 21.6V-25.2V | | |
| TE30A2403N01 | 24.0V | 1.33A | 30W | 240mV pk-pk | ±1% | ±5% | 28.8V-33.6V | | |
| TE30A4803N01 | 48.0V | 0.63A | 30W | 480mV pk-pk | ±1% | ±5% | 55.0V-60.0V | | |
| TE30A0503Q01 | 5.0V | 4.00A | 20W | 75mV pk-pk | ±1% | ±5% | 5.75V-7.75V | 2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive | Class II Desktop, IEC60320 C18 Receptacle |
| TE30A1203Q01 | 12.0V | 2.50A | 30W | 120mV pk-pk | ±1% | ±5% | 14.4V-16.8V | | |
| TE30A1503Q01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | 18.0V-21.0V | | |
| TE30A1803Q01 | 18.0V | 1.67A | 30W | 180mV pk-pk | ±1% | ±5% | 21.6V-25.2V | | |
| TE30A2403Q01 | 24.0V | 1.33A | 30W | 240mV pk-pk | ±1% | ±5% | 28.8V-33.6V | | |
| TE30A4803Q01 | 48.0V | 0.63A | 30W | 480mV pk-pk | ±1% | ±5% | 55.0V-60.0V | | |
| TE30A0503B01 | 5.0V | 4.00A | 20W | 75mV pk-pk | ±1% | ±5% | 5.75V-7.75V | 2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive | Class II Wall-Plug, Interchangeable Blades (North American Blade included)[2] |
| TE30A1203B01 | 12.0V | 2.50A | 30W | 120mV pk-pk | ±1% | ±5% | 14.4V-16.8V | | |
| TE30A1503B01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | 18.0V-21.0V | | |
| TE30A1803B01 | 18.0V | 1.67A | 30W | 180mV pk-pk | ±1% | ±5% | 21.6V-25.2V | | |
| TE30A2403B01 | 24.0V | 1.33A | 30W | 240mV pk-pk | ±1% | ±5% | 28.8V-33.6V | | |
| TE30A4803B01 | 48.0V | 0.63A | 30W | 480mV pk-pk | ±1% | ±5% | 55.0V-60.0V | | |
| TE30A0503C01 | 5.0V | 4.00A | 20W | 75mV pk-pk | ±1% | ±5% | 5.75V-7.75V | 2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive | Class II Wall-Plug, Fixed North American Blades[3] |
| TE30A1203C01 | 12.0V | 2.50A | 30W | 120mV pk-pk | ±1% | ±5% | 14.4V-16.8V | | |
| TE30A1503C01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | 18.0V-21.0V | | |
| TE30A1803C01 | 18.0V | 1.67A | 30W | 180mV pk-pk | ±1% | ±5% | 21.6V-25.2V | | |
| TE30A2403C01 | 24.0V | 1.33A | 30W | 240mV pk-pk | ±1% | ±5% | 28.8V-33.6V | | |
| TE30A4803C01 | 48.0V | 0.63A | 30W | 480mV pk-pk | ±1% | ±5% | 55.0V-60.0V | | |

Notes:
1. Measured at the output connector, with noise probe directly across output and load terminated with 0.1µF ceramic and 10µF low ESR capacitors. For 5V and 6V models, values listed are typical, 100mV pk-pk maximum with 0.1µF ceramic and 47µF low ESR capacitors used at measurement point.
2. Order blade kit KT-1027K for other blades (EU. UK, Australia)
3. For EU fixed blades, replace "C" in the model number with "M", for UK blades, replace "C" with "G", for Australia blades, replace "C" with "H".
4. All specifications are typical at nominal input, full load, at 25□C ambient unless noted.
5. For Input Class I models: For AC GND connected to output common (-), insert a "B" in the part number where the "A" is located (TE30B1203F01).

## General Specifications

| | | | |
|---|---|---|---|
| **AC Input** | 100-240Vac, ±10%, 47-63Hz, 1∅ | **Turn On Time** | Less than 700mS @115Vac, full load |
| **Input Current** | 115Vac: 1.2A, 230Vac: 0.6A | **Hold-up Time** | 20mS min., at full Load, 100Vac input |
| **Inrush Current** | 264Vac, cold start: will not exceed 40A | **Overtemperature Protection** | Will shutdown upon an overtemperature condition, auto-recovery. |
| **Input Fuse** | 2.0A, 250Vac | **Overload Protection** | 130 to 180% of rating, Hiccup Mode |
| **Earth Leakage Current** | Input-GND: <500µA@264Vac, 60Hz, NC<br>Output-GND: <4mA@264Vac, 60Hz, NC | **Short Circuit Protection** | Hiccup Mode, auto recovery. |
| **Efficiency** | Meets US DoE Efficiency Level VI Average efficiency levels | **Overvoltage Protection** | Hiccup Mode. See model chart above for trip ranges. |
| **Output Power** | 20 to 30W continuous – See models chart for specific voltage model ratings. | **Isolation** | Input-Output: 4000Vac<br>Input-Ground: 1500Vac<br>Output-Ground: 1500Vac |
| **No Load Input Power** | <0.1W per DoE Efficiency Level VI Requirements | **Safety Standards** | EN/CSA/UL/IEC 60950-1, 2nd Edition, Am 2 |
| **Ripple and Noise** | See models chart on pg 1. | **Operating Temperature** | -20°C to +70°C<br>Start Up at -40°C, full load, (warmup period before all parameters are within published specifications). |
| **Output Voltage** | See models chart on pg 1. | **Temperature Derating** | See Derating Charts below. |
| **Transient Response** | 500µs response time for return to within 0.5% of final value for any 50% load step over the range of 5% to 100% of rated load, $\Delta i/\Delta t <$ 0.2A/µs. Max. voltage deviation is +/-3.5%. | **Storage Temperature** | -40°C to +85°C |
| **Regulation** | See models chart on pg 1. | **Altitude** | Operating: to 5000m.<br>Non-operating: -500 to 40,000 ft. |
| **Drop Test** | 1.4m from table top to wooden platform, 4 faces. | **Relative Humidity** | 5% to 95%, non-condensing |
| **Vibration** | Operating: 0.003g/Hz, 1.5grms overall, 3 axes, 10 min/axis, 1-500Hz.<br>Non-Oper.: random waveform, 3 minutes per axis, 3 axes and Sine waveform, Vib. frequency/acceleration: 10-500Hz/1g, sweep rate of 1 octave / minutes, Vibration time of 10 sweeps / axes, 3 axes | **Shock** | Operating: Half-sine, 20gpk, 10mS, 3 axes, 6 shocks total<br>Non-Operating: Half-sine waveform, impact acceleration of 100G, Pulse duration of 6 mS, Number of shocks: 3 for each of the three axis |
| **Dimensions** | See outline drawings | **MTBF** | >1,000,000 hours, full load, 110 & 220Vac input, 25°C amb., per Telcordia 332 Issue 6. |
| **Weight** | 250g | **E-Cap Life** | >8 year life based on calculations at 115Vac/60Hz & 230Vac/50Hz, ambient 25°C at 24 hrs per day, 365 days/year, 6 power up cycles per day. |

All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

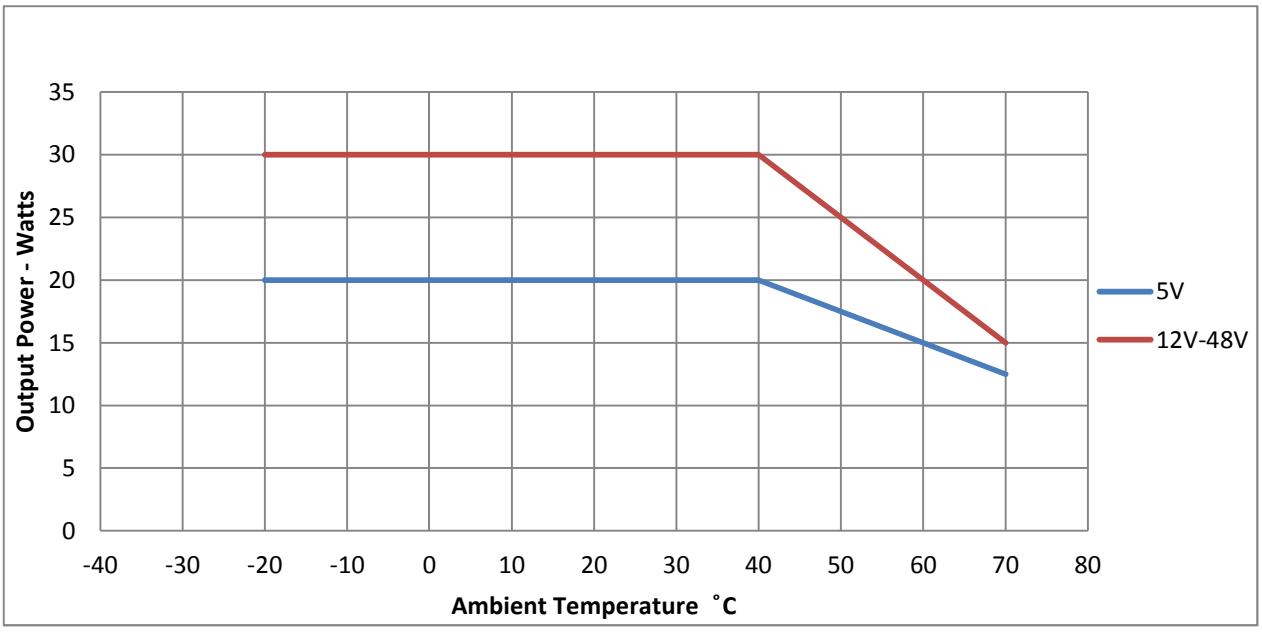
## EMI/EMC Compliance

| | |
|---|---|
| **Conducted Emissions:** | EN55011/CISPR22 Class B, FCC Part 15.107, Class B: 6db margin typ, at 115 and 230Vac |
| **Radiated Emissions:** | EN55022/CISPR22 Class B, FCC Part 15.109, Class B: 3db margin typ, at 115 and 230Vac |
| **Common Mode Noise:** | High Frequency (100kHz-20MHz): <40mA pk-pk |
| **Electro-Static Discharge (ESD) Immunity on Power ports:** | EN55024/IEC61000-4-2, Level 4: +/- 8kV contact, +/- 15kV air, Criteria A |
| **Radiated RF EM Fields Susceptibility** | EN55022/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz |
| **Electrical Fast Transients (EFT) /Bursts:** | EN55024/IEC61000-4-4, Level 4, +/- 4.4kV, 100Khz rep rate, 40A, Criteria A |
| **Surges, Line to Line (Diff Mode) and Line to GND (CMN Mode)** | EN55024/IEC61000-4-5, Level 4, +/-2kV DM, +/-4kV CM, Criteria A |
| **Conducted Disturbances induced by RF Fields** | EN55022/IEC61000-4-6, 3.6V/m – Level 4, 0.15 to 80Mhz; and 12V/m) in ISM and amateur radio bands between 0.15Mhz and 80Mhz, 80% AM at 1KHz |
| **Rated Power frequency magnetic fields** | EN55024/IEC1000-4-8, Level 4: 30 A/m, 50/60 Hz |
| **Voltage Interruptions, Dips, Sags & Surges** | EN55024/IECEN61000-4-11:<br>--100% dip for 20mS, Criteria A<br>--100% dip for 5000mS (250/300 cycles), Criteria B<br>--60% dip for 100mS, Criteria B<br>--30% dip for 500mS, Criteria A |
| **Harmonic Current Emissions** | EN55011/EN61000-3-2, Class A |
| **Flicker Test** | EN61000-3-3 |

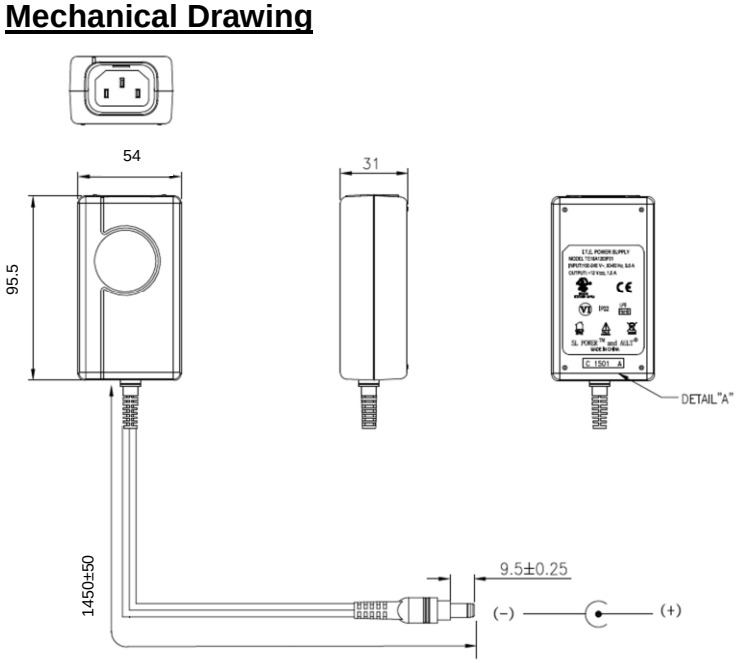
All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

## Output Power Derating

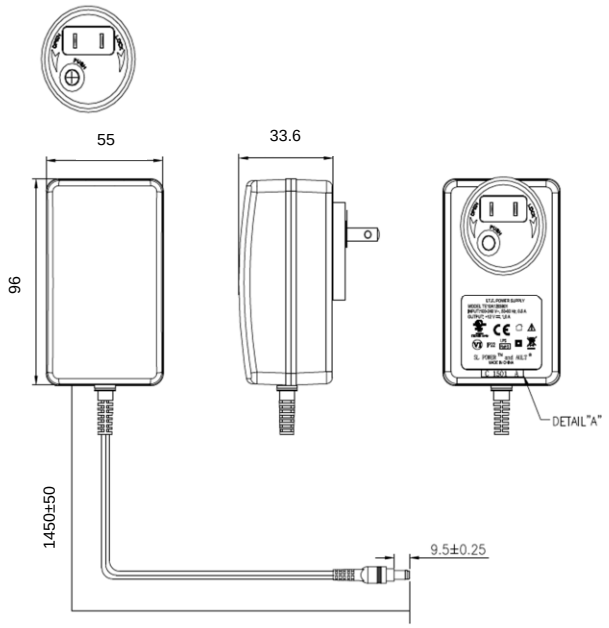
Output power is derated above 40°C as follows, for operation over the entire AC input range (90-264Vac).



## Mechanical Drawing




*IEC60320 C14 Receptacle, 2.5 x 5.5 x 9.5mm Barrel Connector*




*Interchangeable N.A. Blade, 2.5 x 5.5 x 9.5mm barrel connector*

**Notes:**
1. All dimensions in mm.
2. Interchangeable blade models come with North American blade fitted. For other blades (EU, UK, Aust.) order blade kit KT1027K.
3. Cable length for 5V models is 1200 +/- 50mm.

## Connector Information

**Standard models include a 2.5 x 5.5 x 9.5mm straight barrel type connector (Ault #3), center positive. Other standard options are listed below. The "03" in the standard model number is replaced by the applicable digits below:**

| Connector No. | Description | Connector No. | Description |
|---|---|---|---|
| 02 | 2.1 x 5.5 x 9.5mm straight barrel plug - Center Positive | 44 | 2.1 x 5.5 x 9.5mm straight barrel plug, locking - Center Positive |
| 03 | 2.5 x 5.5 x 9.5mm straight barrel plug - Center Positive (Standard Models) | 45 | 2.5 x 5.5 x 9.5mm straight barrel plug, locking - Center Positive |
| 12 | 5 pin DIN-180 male connector (Pins 3, 5 = (+), pins 1, 2, 4 = (-)) | 48 | 3 pin Snap n Lock, Kycon Kpp-3P or equivalent(Pin 1 = (+), pin 2 = (-)) |
| 22 | 6 pin DIN male connector(Pins 1, 2 = (+), pins 4, 5 = (-)) | 49 | 4 pin Snap n Lock, Kycon Kpp-4P or equivalent(Pins 1, 3 = (+), pins 2, 4 = (-)) |
| 23 | 8 pin DIN male connector(Pins 3, 7 = (+), pins 1, 4, 6, 8 = (-), shell = FG)) | 51 | 6 pin Minifit - Molex 39-01-2060 or equivalent (Pins 1, 4 = (+), pins 3, 6 = (-)) |
| 32 | 9 pin "D" type, female (Pin 8 = (+), pin 5 = (-), all others = NC) | 65 | Stripped and Tinned Leads |
| 33 | 2.5 x 5.5 x 12.5mm straight barrel plug - Center Positive | 70 | 2.1 x 5.5 x 11mm right angle barrel plug (high retention) - Center Positive |
| 40 | 2.1 x 5.5 x 9.5mm right angle barrel plug (high retention) - Center Positive | 71 | 2.5 x 5.5 x 11mm right angle barrel plug (high retention) - Center Positive |
| 41 | 2.5 x 5.5 x 9.5mm right angle barrel plug (high retention) - Center Positive | 72 | 2.1 x 5.5 x 9.5mm straight barrel plug (high retention, no spark) - Center Positive |
| 42 | 2.1 x 5.5 x 11mm straight barrel plug (high retention) - Center Positive | 73 | 2.5 x 5.5 x 9.5mm straight barrel plug (high retention, no spark) - Center Positive |
| 43 | 2.5 x 5.5 x 11mm straight barrel plug (high retention) - Center Positive | 74 | EIAJ#5 style connector - Center Positive |

## Efficiency Level VI Information:

| Single-Voltage External AC-DC Power Supply, Basic-Voltage | | |
|---|---|---|
| **Nameplate Output Power ($P_{out}$)** | **Minimum Average Efficiency in Active Mode** *(expressed as a decimal)* | **Maximum Power in No-Load Mode [W]** |
| $P_{out} \leq 1$ W | $\geq 0.5 \times P_{out} + 0.16$ | $\leq 0.100$ |
| 1 W < $P_{out} \leq 49$ W | $\geq 0.071 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.67$ | $\leq 0.100$ |
| 49 W < $P_{out} \leq 250$ W | $\geq 0.880$ | $\leq 0.210$ |
| $P_{out} > 250$ W | $\geq 0.875$ | $\leq 0.500$ |
| **Single-Voltage External AC-DC Power Supply, Low-Voltage** | | |
| **Nameplate Output Power ($P_{out}$)** | **Minimum Average Efficiency in Active Mode** *(expressed as a decimal)* | **Maximum Power in No-Load Mode [W]** |
| $P_{out} \leq 1$ W | $\geq 0.517 \times P_{out} + 0.087$ | $\leq 0.100$ |
| 1 W < $P_{out} \leq 49$ W | $\geq 0.0834 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.609$ | $\leq 0.100$ |
| 49 W < $P_{out} \leq 250$ W | $\geq 0.870$ | $\leq 0.210$ |
| $P_{out} > 250$ W | $\geq 0.875$ | $\leq 0.500$ |

TE30A Series

*Data Sheet © 2015 SL Power Electronics Corp. The information and specifications contained herein are believed to be correct at the time of publication. However, SL Power accepts no responsibility for consequences arising from reproduction errors or inaccuracies. Specifications are subject to change without notice.*

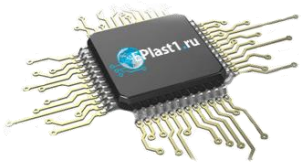
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

**Телефон:** 8 (812) 309 58 32 (многоканальный)
**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.