



Industrial

FEATURES AND BENEFITS

Meets DoE efficiency level VI requirements

- No load input power
- Average efficiency

Up to 30W of AC-DC power

Universal input 90-264 VAC input range

- Desktop and Wall-plug versions

Meets "Heavy Industrial" levels of EN61000 EMC requirements

Meets EN55032/CISPR22 and FCC Part 15.109 Class B conducted & radiated emissions, with 6db margin

Approved to EN/CSA/IEC/UL62368-1

E- cap life of >8 years

>10,00,000 hours MTBF

3 years warranty

Note: *IP22 does not include interchangeable blade versions.



MODEL SELECTION

| Model Number | Volts | Output Current | Output Power | Ripple & Noise ¹ | Line Regulation | Load Regulation | Output Cable & Connector | Input Configuration |
|--------------|-------|----------------|--------------|-----------------------------|-----------------|-----------------|---|---|
| TE30A0503F01 | 5.0V | 4.00 | 20W | 75mV pk-pk | ±1% | ±5% | 2.5 x 5.5 x 9.5mm Straight barrel type, Center positive | Class I Desktop, IEC60320 C14 receptacle |
| TE30A0903F01 | 9.0V | 3.00 | 27W | 90mV pk-pk | ±1% | ±5% | | |
| TE30A1203F01 | 12.0V | 2.50 | 30W | 120mV pk-pk | ±1% | ±5% | | |
| TE30A1503F01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | | |
| TE30A1803F01 | 18.0V | 1.67 | 30W | 180mV pk-pk | ±1% | ±5% | | |
| TE30A2403F01 | 24.0V | 1.33 | 30W | 240mV pk-pk | ±1% | ±5% | | |
| TE30A4803F01 | 48.0V | 0.63 | 30W | 480mV pk-pk | ±1% | ±5% | 2.5 x 5.5 x 9.5mm Straight barrel type, Center positive | Class II Desktop, IEC60320 C8 receptacle |
| TE30A0503N01 | 5.0V | 4.00A | 20W | 75mV pk-pk | ±1% | ±5% | | |
| TE30A0903N01 | 9.0V | 3.00 | 27W | 90mV pk-pk | ±1% | ±5% | | |
| TE30A1203N01 | 12.0V | 2.50 | 30W | 120mV pk-pk | ±1% | ±5% | | |
| TE30A1503N01 | 15.0V | 2.00 | 30W | 150mV pk-pk | ±1% | ±5% | | |
| TE30A1803N01 | 18.0V | 1.67 | 30W | 180mV pk-pk | ±1% | ±5% | | |
| TE30A2403N01 | 24.0V | 1.33 | 30W | 240mV pk-pk | ±1% | ±5% | 2.5 x 5.5 x 9.5mm Straight barrel type, Center positive | Class II Desktop, IEC60320 C18 receptacle |
| TE30A4803N01 | 48.0V | 0.63A | 30W | 480mV pk-pk | ±1% | ±5% | | |
| TE30A0503Q01 | 5.0V | 4.00 | 20W | 75mV pk-pk | ±1% | ±5% | | |
| TE30A0903Q01 | 9.0V | 3.00 | 27W | 90mV pk-pk | ±1% | ±5% | | |
| TE30A1203Q01 | 12.0V | 2.50 | 30W | 120mV pk-pk | ±1% | ±5% | | |
| TE30A1503Q01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | | |
| TE30A1803Q01 | 18.0V | 1.67 | 30W | 180mV pk-pk | ±1% | ±5% | | |
| TE30A2403Q01 | 24.0V | 1.33 | 30W | 240mV pk-pk | ±1% | ±5% | | |
| TE30A4803Q01 | 48.0V | 0.63 | 30W | 480mV pk-pk | ±1% | ±5% | | |



MODEL SELECTION

| Model Number | Volts | Output Current | Output Power | Ripple & Noise ¹ | Line Regulation | Load Regulation | Output Cable & Connector | Input Configuration |
|--------------|-------|----------------|--------------|-----------------------------|-----------------|-----------------|---|---|
| TE30A0503B01 | 5.0V | 4.00A | 20W | 75mV pk-pk | ±1% | ±5% | 2.5 x 5.5 x 9.5mm Straight barrel type, Center positive | Class II Wall-plug, Interchangeable blades (North American blade included) ² |
| TE30A0903B01 | 9.0V | 3.00A | 27W | 90mV pk-pk | ±1% | ±5% | | |
| TE30A1203B01 | 12.0V | 2.50A | 30W | 120mV pk-pk | ±1% | ±5% | | |
| TE30A1503B01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | | |
| TE30A1803B01 | 18.0V | 1.67A | 30W | 180mV pk-pk | ±1% | ±5% | | |
| TE30A2403B01 | 24.0V | 1.33A | 30W | 240mV pk-pk | ±1% | ±5% | | |
| TE30A4803B01 | 48.0V | 0.63A | 30W | 480mV pk-pk | ±1% | ±5% | | |
| TE30A0503C01 | 5.0V | 4.00A | 20W | 75mV pk-pk | ±1% | ±5% | 2.5 x 5.5 x 9.5mm Straight barrel type, Center positive | Class II Wall-plug, Fixed North American blades ³ |
| TE30A0903C01 | 9.0V | 3.00A | 27W | 90mV pk-pk | ±1% | ±5% | | |
| TE30A1203C01 | 12.0V | 2.50A | 30W | 120mV pk-pk | ±1% | ±5% | | |
| TE30A1503C01 | 15.0V | 2.00A | 30W | 150mV pk-pk | ±1% | ±5% | | |
| TE30A1803C01 | 18.0V | 1.67A | 30W | 180mV pk-pk | ±1% | ±5% | | |
| TE30A2403C01 | 24.0V | 1.33A | 30W | 240mV pk-pk | ±1% | ±5% | | |
| TE30A4803C01 | 48.0V | 0.63A | 30W | 480mV pk-pk | ±1% | ±5% | | |

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 k replace "C" in the model number with "M", for UK blades, replace "C" with "G", for Australia blades, replace "C" with "H".

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

4. 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).

INPUT

| | |
|---------------------|---|
| AC Input | 100-240VAC, ±10%, 47-63Hz, 1Ø |
| Input Current | 115VAC: 1.2A, 23VAC: 0.6A |
| Inrush Current | 264VAC, cold start: will not exceed 40A |
| Input Fuses | 2.0A, 250VAC |
| Leakage Current | Input-GND: <500µA @ 264VAC, 60Hz, NC Output-GND: <4mA @ 264VAC, 60Hz, NC |
| Efficiency | Meets US DoE efficiency level VI average efficiency levels |
| No Load Input Power | <0.1W per DoE efficiency level VI requirements |

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

OUTPUT

| | |
|--------------------|---|
| Turn On Time | Less than 700ms @115VAC, Full load |
| Hold-Up Time | 20ms at full load, 100VAC input |
| Output Power | 20 to 30W continuous - See models chart for specific voltage model ratings |
| Output Voltage | See models chart on pg 1 |
| Ripple and Noise | See models chart on pg 1 |
| 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, $\Delta i/\Delta t < 0.2A/\mu s$ Max voltage deviation is +/-3.5% |
| Regulation | See models chart on pg 1 |

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



SAFETY

| | |
|------------------|--|
| Safety Standards | EN/CSA/IEC/UL62368-1 |
| Shock | Operating: Half-sine, 20gpk, 10ms, 3 axes, 6 shocks total Non-Operating: Half-sine waveform, impact acceleration of 100G, Pulse duration of 6ms, Number of shocks: 3 for each of the three axis |

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

RELIABILITY

| | |
|------------|--|
| MTBF | >10,00,000 hours, Full load, 110 & 220VAC input, 25°C amb., per Telcordia 332 Issue 6 |
| E-Cap Life | >8 years 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 |

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

ENVIRONMENT

| | |
|-----------------------|--|
| Operating Temperature | -20°C to +70°C Start Up at -40°C, Full load, (warmup period before all parameters are within published specifications) |
| Temperature Derating | See derating charts below |
| Storage Temperature | -40°C to +85°C |
| Altitude | Operating: to 5000m Non-operating: -500 to 40,000 ft |
| Relative Humidity | 5% to 95%, Non-condensing |
| Vibration | Operating: 0.003g/Hz, 1.5grms overall, 3 axes, 10 min/axis, 1-500Hz Non-Operating: 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 |
| Weight | 250g |
| Dimensions | See outline drawings |

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

ISOLATION SPECIFICATIONS

| | |
|-----------|---|
| Isolation | Input-Output: 4,000VAC Input-Ground: 1,500VAC Output-Ground: 1,500VAC |
|-----------|---|

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

PROTECTION

| | |
|----------------------------|--|
| Overtemperature Protection | Will shutdown upon an overtemperature condition, Auto-recovery |
| Overload Protection | 130 to 180% of rating, Hiccup mode |
| Short Circuit Protection | Hiccup mode, Auto recovery |
| Overvoltage Protection | Hiccup mode. See model chart above for trip ranges |
| Safety Drop Test | 1.4m from table top to wooden platform, 4 faces |

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

EMI/EMC COMPLIANCE

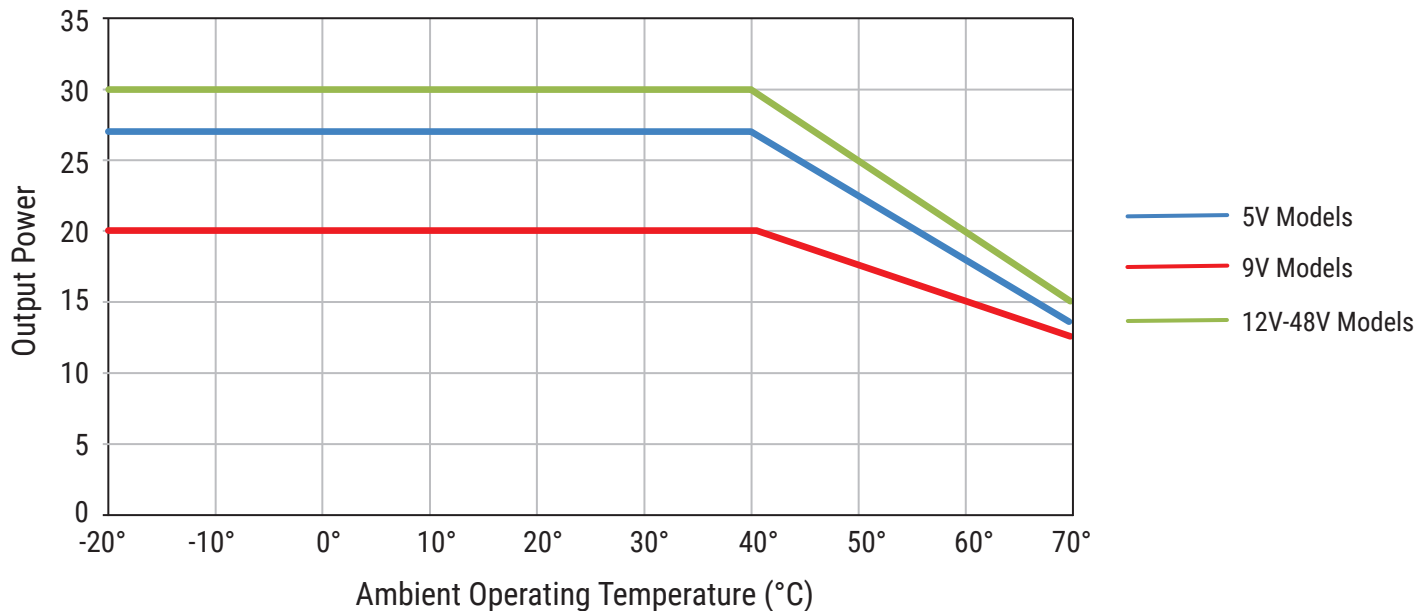
| | |
|---|--|
| Conducted Emissions | EN55032/CISPR22 Class B, FCC Part 15 Class B: 6db margin typ, at 115 and 230VAC |
| Radiated Emissions | EN55032/CISPR22 Class B, FCC Part 15 Class B: 3db margin typ, at 115 and 230VAC |
| Common Mode Noise | High frequency (100kHz-20MHz): <40mA pk-pk |
| Electro-Static 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: --100% dip for 20ms, Criteria A --100% dip for 500ms (250/300 cycles), Criteria B --60% dip for 100ms, Criteria B --30% dip for 500ms, Criteria A |
| Harmonic Current Emissions | EN55011/EN61000-3-2, Class A |
| Flicker Test | EN61000-3-3 |

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

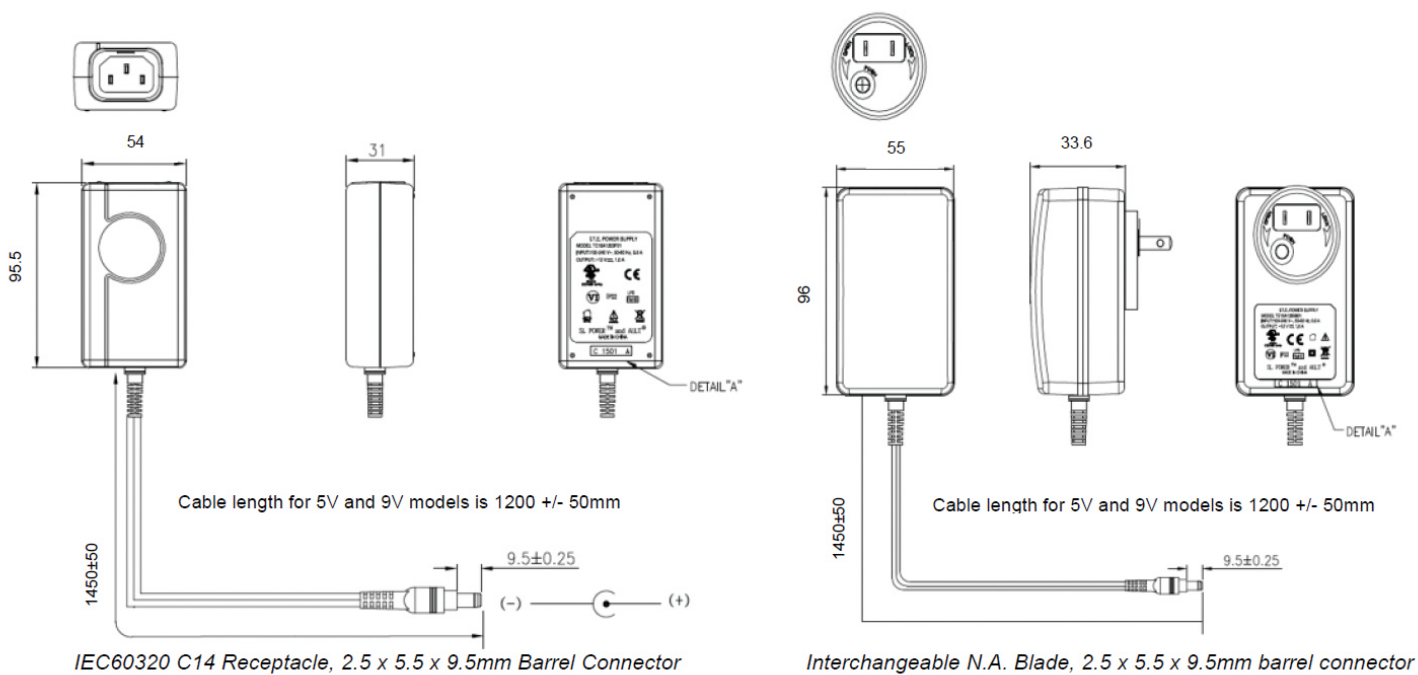


DERATING CHART

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



MECHANICAL DRAWING





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 9.5 mm straight barrel plug Center Positive |  | 44 | 2.1 x 5.5 x 9.5 mm straight barrel plug, locking Center positive |  |
| 03 | 2.5 x 5.5 x 9.5 mm straight barrel plug Center Positive (Standard models) |  | 45 | 2.5 x 5.5 x 9.5 mm 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 (Pins 8 = (+), pins 5=(-), all others=NC) |  | 65 | Stripped and Tinned Leads |  |
| 33 | 2.5 x 5.5 x 12.5 mm straight barrel plug Center positive |  | 70 | 2.1 x 5.5 x 11 mm right angle barrel plug (High retention) Center positive |  |
| 40 | 2.1 x 5.5 x 9.5 mm right angle barrel plug (High retention) Center positive |  | 71 | 2.5 x 5.5 x 11 mm right angle barrel plug (High retention) Center positive |  |
| 41 | 2.5 x 5.5 x 9.5 mm right angle barrel plug (High retention) Center positive |  | 72 | 2.1 x 5.5 x 9.5 mm straight barrel plug (High retention, No spark) Center positive |  |
| 42 | 2.1 x 5.5 x 11 mm straight barrel plug (High retention) Center positive |  | 73 | 2.5 x 5.5 x 9.5 mm straight barrel plug (High retention, No spark) Center positive |  |
| 43 | 2.5 x 5.5 x 11 mm straight barrel plug (High retention) Center positive |  | 74 | EIAJ#5 style connector - Central 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] |
| $P_{out} \leq 1 \text{ W}$ | $\geq 0.5 \times P_{out} + 0.16$ | ≤ 0.100 |
| $1 \text{ W} < P_{out} \leq 49 \text{ W}$ | $\geq 0.071 \times \ln(P_{out}) \text{ ---}$ $0.0014 \times P_{out} + 0.67$ | ≤ 0.100 |
| $49 \text{ W} < P_{out} \leq 250 \text{ W}$ | ≥ 0.880 | ≤ 0.210 |
| $P_{out} > 250 \text{ W}$ | ≥ 0.875 | ≤ 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] |
| $P_{out} \leq 1 \text{ W}$ | $\geq 0.517 \times P_{out} + 0.087$ | ≤ 0.100 |
| $1 \text{ W} < P_{out} \leq 49 \text{ W}$ | $\geq 0.0834 \times \ln(P_{out}) \text{ ---}$ $0.0014 \times P_{out} + 0.609$ | ≤ 0.100 |
| $49 \text{ W} < P_{out} \leq 250 \text{ W}$ | ≥ 0.870 | ≤ 0.210 |
| $P_{out} > 250 \text{ W}$ | ≥ 0.875 | ≤ 0.500 |

TE30A Series
9V-48V models

TE30A Series
5V models

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