



Industrial



FEATURES AND BENEFITS

Meets DoE efficiency level VI requirements

- No load input power
- Average efficiency

Up to 40W of AC-DC power

E-cap life of >8 years

Approved to EN/CSA/IEC/UL62368-1

Meets "Heavy Industrial" levels of EN61000 EMC requirements

Meets EN55032/22, CISPR22, and FCC part 15.109 Class B conducted & radiated emissions, with 6db margin

Universal input 90-264Vac input range

- Desktop and Wall-Plug versions

3 years warranty

>1,000,000 hours MTBF

RoHS compliant

Note: * IP22 does not include interchangeable blade versions.

MODEL SELECTION

Model Number	Volts	Output Current	Output Power	Ripple & Noise ¹	Line Regulation	Load Regulation	Overvoltage Trip Range	Output Cable & Connector	Input Configuration
TE40A0503F01	5.0V	5.00A	40W	90mV pk-pk	±1%	±5%	120%-150%	2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive	Class I Desktop, IEC60320 C14 Receptacle
TE40A1203F01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
TE40A1503F01	15.0V	2.70A	40W	150mV pk-pk	±1%	±5%	120%-150%		
TE40A1803F01	18.0V	2.20A	40W	180mV pk-pk	±1%	±5%	120%-150%		
TE40A2403F01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		
TE40A0503N01	5.0V	5.00A	40W	90mV pk-pk	±1%	±5%	120%-150%	2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive	Class I Desktop, IEC60320 C8 Receptacle
TE40A1203N01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
TE40A1503N01	15.0V	2.70A	40W	150mV pk-pk	±1%	±5%	120%-150%		
TE40A1803N01	18.0V	2.20A	40W	180mV pk-pk	±1%	±5%	120%-150%		
TE40A2403N01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		
TE40A0503Q01	5.0V	5.00A	40W	90mV pk-pk	±1%	±5%	120%-150%	2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive	Class II Desktop, IEC60320 C18 Receptacle
TE40A1203Q01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
TE40A1503Q01	15.0V	2.70A	40W	150mV pk-pk	±1%	±5%	120%-150%		
TE40A1803Q01	18.0V	2.20A	40W	180mV pk-pk	±1%	±5%	120%-150%		
TE40A2403Q01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		
TE40A0503B01	5.0V	5.00A	40W	90mV pk-pk	±1%	±5%	120%-150%	2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive	Class II Wall-Plug, Interchangeable Blades ²
TE40A1203B01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
TE40A0503B01	5.0V	2.70A	40W	150mV pk-pk	±1%	±5%	120%-150%		
TE40A1803B01	18.0V	2.20A	40W	180mV pk-pk	±1%	±5%	120%-150%		
TE40A2403B01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		



MODEL SELECTION

Model Number	Volts	Output Current	Output Power	Ripple & Noise ¹	Line Regulation	Load Regulation	Overvoltage Trip Range	Output Cable & Connector	Input Configuration
TE40A0503C01	5.0V	5.00A	25W	90mV pk-pk	±1%	±5%	120%-150%	2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive	Class II Wall-Plug, Fixed North American Blades ³
TE40A1203C01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
TE40A1503C01	15.0V	2.70A	40W	150mV pk-pk	±1%	±5%	120%-150%		
TE40A1803C01	18.0V	2.20A	40W	180mV pk-pk	±1%	±5%	120%-150%		
TE40A2403C01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		

- 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.
 2. Standard models are fitted with North American blades. 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 (TE40B1203F01).

INPUT

AC Input	100-240Vac, ±10%, 47-63Hz, 1Ø
Input Current	115Vac: 1.2A, 230Vac: 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.

PROTECTION

Overtemperature Protection	Will shutdown upon an overtemperature condition, auto-recovery
Overload Protection	130 to 160% of rating, Hiccup mode
Short Circuit Protection	Hiccup mode, auto recovery
Overvoltage Protection	Hiccup mode. See models chart for trip ranges
Safety Drop Test	1.4m from table top to wooden platform, 6 faces

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

OUTPUT

Hold-Up Time	20mS min., at full load, 100Vac input
Turn On Time	Less than 700mS @115Vac, full load
Output Power	40W 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, Δi/Δt < 0.2A/μs. 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.

RELIABILITY

MTBF	>250,000 hours, full load, 110 & 220Vac input, 25°C amb., per Telcordia 332 Issue 6
E-Cap Life	>7 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. (@80% load for the 12V model)

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.

ISOLATION SPECIFICATIONS

Isolation	Input - Output: 4000Vac Input - Ground: 1500Vac Output - Ground: 1500Vac
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Notes : All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

EMI/EMC COMPLIANCE

Conducted Emissions	EN55032/22, CISPR22 Class B, FCC Part 15.107, Class B: 6db margin typ, at 115 and 230Vac
Radiated Emissions	EN55032/22, 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, +/- 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	EN55024/IEC61000-4-6, 3V/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: 30A/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	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.

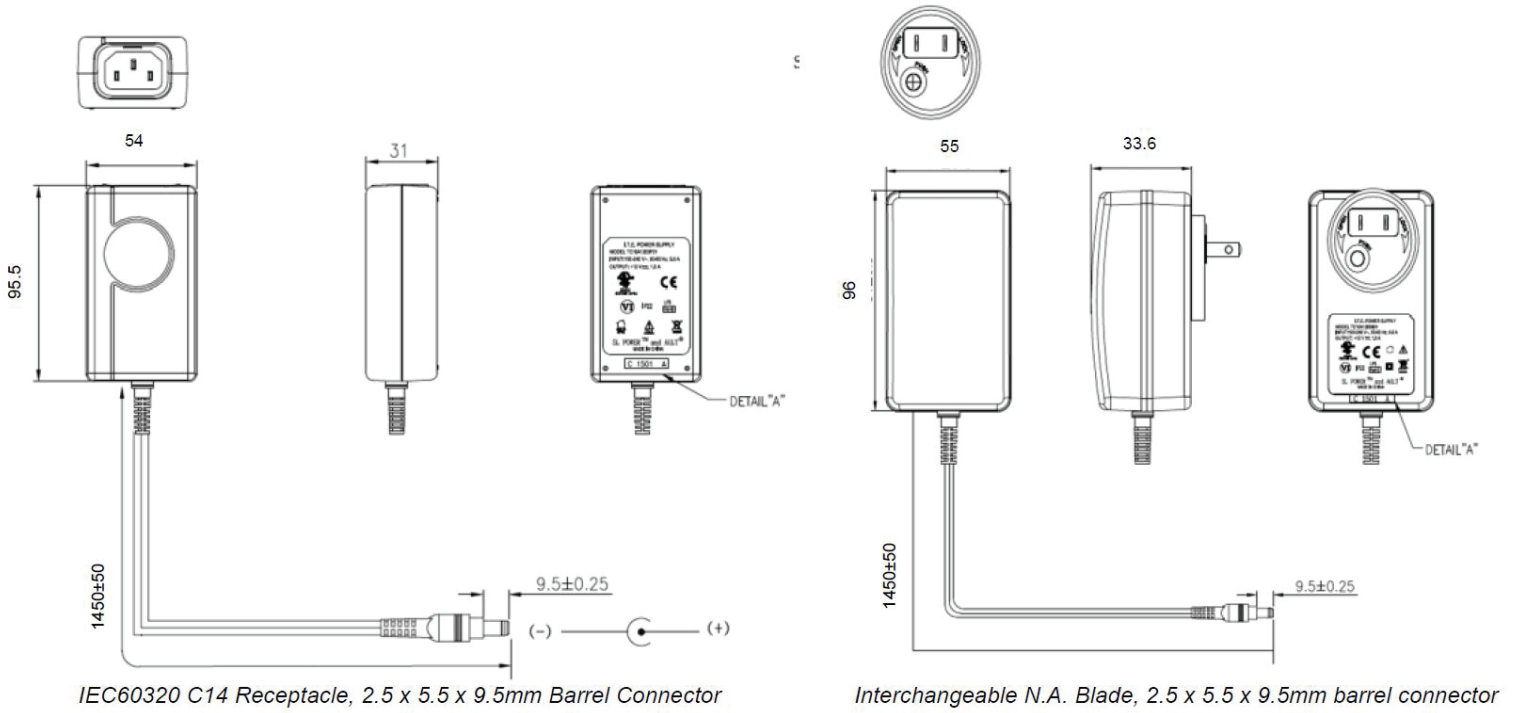
ENVIRONMENT

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 chart
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.



MECHANICAL DRAWING

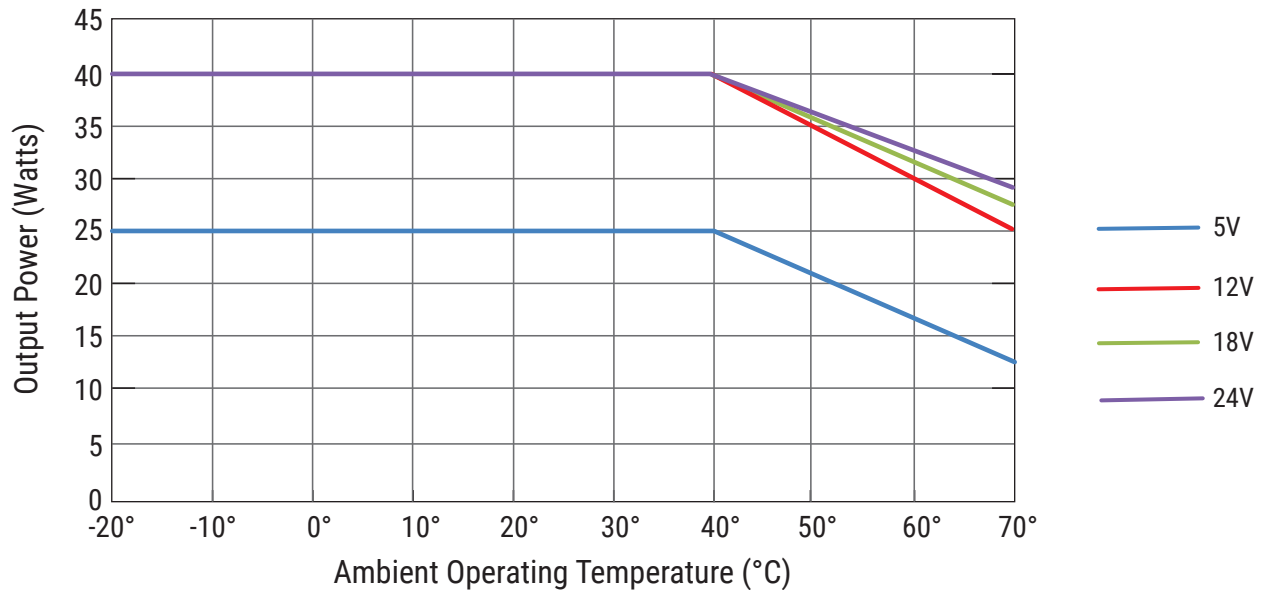


Notes : 1. All dimensions in mm.

2. Interchangeable blade models come with North American blade fitted. For other blades (EU, UK, Aust.) order blade kit KT1027K.

DERATING CHART

TE40 Series Power Derating





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 (pin 1, 3 = (+), pin 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 (pin 1, 4 = (+), pin 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

TE40 Series

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} ≤ 1 W	≥ 0.5 × P _{out} + 0.16	≤ 0.100
1 W < P _{out} ≤ 49 W	≥ 0.071 × ln(P _{out}) --- 0.0014 × P _{out} + 0.67	≤ 0.100
49 W < P _{out} ≤ 250 W	≥ 0.880	≤ 0.210
P _{out} > 250 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} ≤ 1 W	≥ 0.517 × P _{out} + 0.087	≤ 0.100
1 W < P _{out} ≤ 49 W	≥ 0.0834 × ln(P _{out}) --- 0.0014 × P _{out} + 0.609	≤ 0.100
49 W < P _{out} ≤ 250 W	≥ 0.870	≤ 0.210
P _{out} > 250 W	≥ 0.875	≤ 0.500

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