



Features

- Meets UL/EN/IEC60601-1-2, 4th edition for EMC*
- Approved to EN/IEC/UL60601-1, 3rd edition
- 2 MOPP Input to Output Isolation
- Meets DoE Efficiency Level VI Requirements
 - No load input power
 - Average Efficiency
- Up to 40W of AC-DC Power
- Universal Input 90-264Vac Input Range
 - Desktop and Wall-Plug versions
- Meets EN55011/CISPR11, FCC Part 15.109 Class B Conducted & Radiated Emissions, with 6db margin
- IP22 Rated Enclosure
- 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 medical applications. The ME40A Medical Series low power external AC-DC power supplies are approved to safety EN/IEC/UL60601-1, 3rd edition with isolation levels which satisfy the 2 MOPP requirements and designed to UL/EN/IEC60601-1-2, 4th edition for EMC*. The ME40A Series models will operate at universal input range of 90 to 264Vac over the wide temperature range of -20°C to +50°C, delivering full rated output power up to +40°C and applicable output power derating at 50°C. These models are available in desktop and wall-plug versions, include an IP22 rating per IEC60529 for the enclosure, and output cable terminated at a variety of output connectors.

*Consult Factory for Table 9 compliance information.

Model Selection

Model Number	Volts	Output Current	Output Power	Ripple & Noise ¹	Line Regulation	Load Regulation	Overvoltage Trip Range	Output Connector	Input Configuration
ME40A1203F01	12.0V	3.40A	40W	120mV 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
ME40A1803F01	18.0V	2.22A	40W	180mV pk-pk	±1%	±5%	120%-150%		
ME40A2403F01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		
ME40A1203N01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%	2.5 x 5.5 x 9.5mm Straight Barrel Type, center positive	Class II Desktop, IEC60320 C8 Receptacle
ME40A1803N01	18.0V	2.22A	40W	180mV pk-pk	±1%	±5%	120%-150%		
ME40A2403N01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		
ME40A1203Q01	12.0V	3.40A	40W	120mV 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
ME40A1803Q01	18.0V	2.22A	40W	180mV pk-pk	±1%	±5%	120%-150%		
ME40A2403Q01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		
ME40A1203B01	12.0V	3.40A	40W	120mV 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
ME40A1803B01	18.0V	2.22A	40W	180mV pk-pk	±1%	±5%	120%-150%		
ME40A2403B01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		
ME40A1203C01	12.0V	3.40A	40W	120mV 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
ME40A1803C01	18.0V	2.22A	40W	180mV pk-pk	±1%	±5%	120%-150%		
ME40A2403C01	24.0V	1.70A	40W	240mV pk-pk	±1%	±5%	120%-140%		

- Notes:
- Measured at the output connector, with noise probe directly across output and load terminated with 0.1µF ceramic and 10µF low ESR capacitors.
 - Standard models are fitted with North American blades. Order blade kit KT-1027K for other blades (EU, UK, Australia)
 - 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".
 - All specifications are typical at nominal input, full load, at 25°C ambient unless noted.
 - 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).

General Specifications

AC Input	100-240Vac, $\pm 10\%$, 47-63Hz, 1 ϕ	Turn On Time	Less than 700mS @115Vac, full load
Input Current	115Vac: 1.2A, 230Vac: 01.6A	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 Fuses	F1, F2: 2.0A, 250Vac fuses (line & neutral lines) provided on all models	Overload Protection	130 to 180% of rating, Hiccup Mode
Earth Leakage Current	Input-GND: <500 μ A@264Vac, 60Hz, NC Output-GND: <4mA@264Vac, 60Hz, NC	Short Circuit Protection	Hiccup Mode, auto recovery.
Efficiency	>87%, typical	Overvoltage Protection	Hiccup mode. See models chart for trip ranges.
Output Power	40W continuous – See models chart for specific voltage model ratings.	Isolation	Input-Output: 2 MOPP Input-Ground: 1 MOPP Output-Ground: 1 MOPP
No Load Input Power	<0.1W per DoE Efficiency Level VI Requirements	Safety Standards	EN/IEC/UL60601-1, 3rd edition and
Ripple and Noise	See models chart on pg 1.	Operating Temperature	-20°C to +70°C
Output Voltage	See models chart on pg 1.	Temperature Derating	See derating chart
Transient Response	500 μ S 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 $\pm 3.5\%$.	Storage Temperature	-40°C to +85°C
Regulation	See models chart on pg 1.	Altitude	Operating: to 5000m. Non-operating: -500 to 40,000 ft.
Drop Test	1.4m from table top to wooden platform, 6 faces.	Relative Humidity	5% to 95%, non-condensing
Vibration	Operating: 0.003g/Hz, 1.5grms overall, 3 axes, 10 min/axis, 1-500Hz. 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 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.

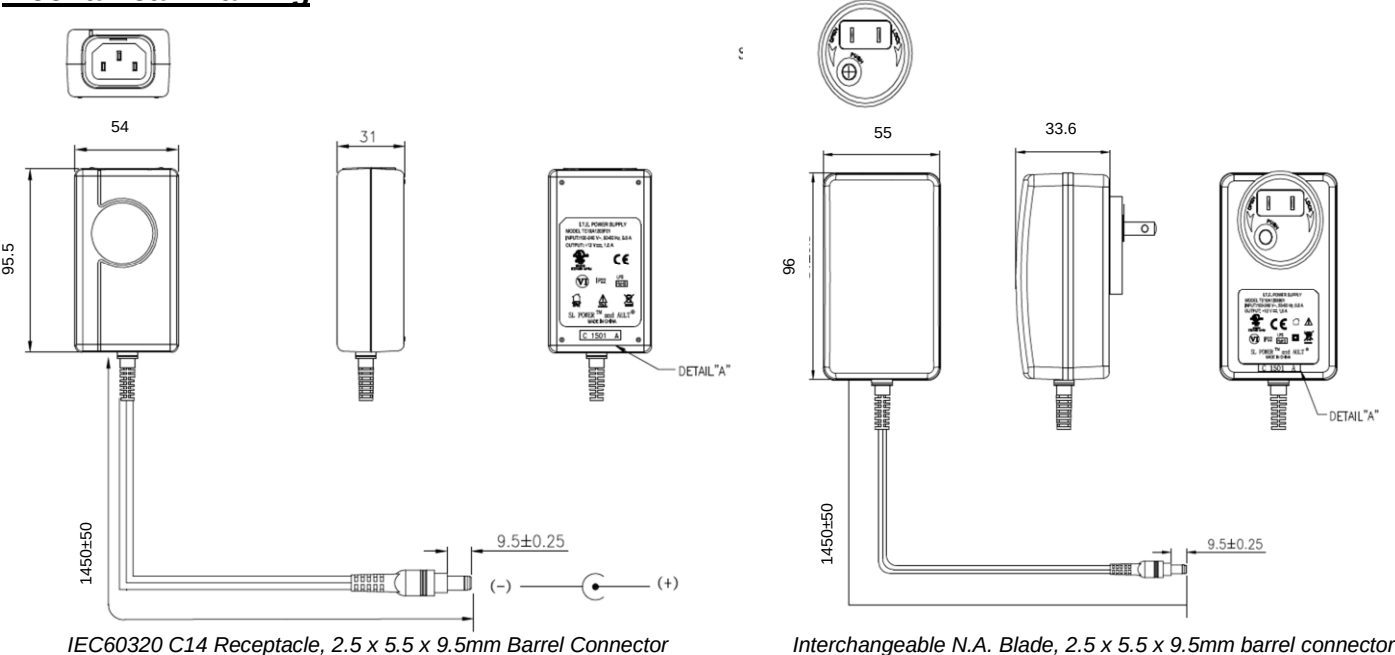
All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

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 IEC60601-1-2, 4 th Edition, Table 4
Radiated RF EM Fields Susceptibility	EN55022/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz IEC60601-1-2, 4 th Edition, Table 4
Electrical Fast Transients (EFT) /Bursts:	EN55024/IEC61000-4-4, Level 4, +/- 4kV, 100Khz rep rate, 40A, Criteria A IEC60601-1-2, 4 th Edition, Table 5
Surges, Line to Line (Diff Mode) and Line to GND (CMN Mode)	EN55024/IEC61000-4-5, Level 4, +/-2kV DM, +/-4kV CM, Criteria A Surpasses IEC60601-1-2, 4 th Edition requirements.
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 IEC60601-1-2, 4 th Edition, Table 5.
Rated Power frequency magnetic fields	EN55024/IEC1000-4-8, Level 4: 30 A/m, 50/60 Hz IEC60601-1-2, 4 th Edition, Table 4
Voltage Interruptions, Dips, Sags & Surges	EN55024/IECEN61000-4-11: --100% dip for 10 mS, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees, 100% dip for 20mS, 0 deg., Criteria A --100% dip for 5000mS (250/300 cycles), Criteria B --60% dip for 100mS, Criteria B --30% dip for 500mS, Criteria A IEC60601-1-2, 4 th Edition, Table 5
Harmonic Current Emissions	EN55011/EN61000-3-2, Class A
Flicker Test	EN61000-3-3

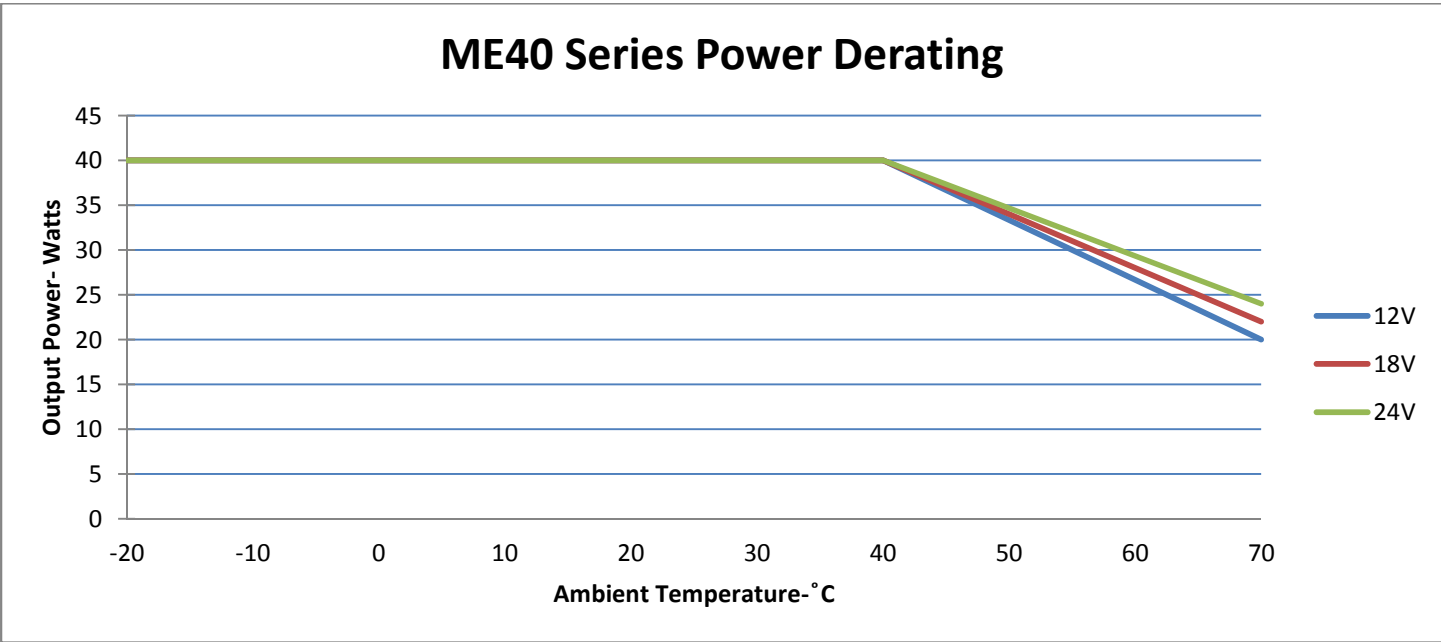
All specifications are typical at nominal input, full load, at 25°C ambient unless noted. Consult factory for information regarding testing for or usage under special environments.

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:



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	