ME40 Family

40W Single Output External Power Medical Grade

Medical

FEATURES AND BENEFITS

- 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
- Universal input 90 - 264VAC input range
  - Desktop and Wall-plug versions
- Up to 40W of AC-DC power
- Meets EN55011/CISPR11, FCC Part 15.109 Class B conducted & radiated emissions, with 6db margin
- IP22 rated enclosure
- E-cap life of >8 years
- >10,00,000 hours MTBF
- 3 years warranty

Note: * Consult Factory for Table 9 compliance information.

* 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
ME40A0503F01	5.0V	5.00A	25W	100mV 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
ME40A0903F01	9.0V	4.00A	36W	100mV pk-pk	±1%	±5%	120%-150%		
ME40A1203F01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
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%		
ME40A0503N01	5.0V	5.00A	25W	100mV 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
ME40A0903N01	9.0V	4.00A	36W	100mV pk-pk	±1%	±5%	120%-150%		
ME40A1203N01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
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%		
ME40A0503Q01	5.0V	5.00A	25W	100mV 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
ME40A0903Q01	9.0V	4.00A	36W	100mV pk-pk	±1%	±5%	120%-150%		
ME40A1203Q01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
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%		
ME40A0503B01	5.0V	5.00A	25W	100mV 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]
ME40A0903B01	9.0V	4.00A	36W	100mV pk-pk	±1%	±5%	120%-150%		
ME40A1203B01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
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%		

MODEL SELECTION

Model Number	Volts	Output Current	Output Power	Ripple & Noise[1]	Line Regulation	Load Regulation	Overvoltage Trip Range	Output Cable & Connector	Input Configuration
ME40A0503C01	5.0V	5.00A	25W	100mV 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]
ME40A0903C01	9.0V	4.00A	36W	100mV pk-pk	±1%	±5%	120%-150%		
ME40A1203C01	12.0V	3.40A	40W	120mV pk-pk	±1%	±5%	120%-150%		
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%		

Note: 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: 01.6A
Inrush Current	264VAC, cold start: will not exceed 40A
Input Fuses	F1, F2: 2.0A, 250VAC fuses (line & neutral lines) provided on all models
Leakage Current	Input-GND: <500µA @ 264VAC, 60Hz, NC Output-GND: <4mA @ 264VAC, 60Hz, NC
Efficiency	>87%, Typical
No Load Input Power	<0.1W per DoE efficiency level VI requirements

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

OUTPUT

Hold-Up Time	20ms 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

Note: 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 models chart for trip ranges
Safety Drop Test	1.4m from table top to wooden platform, 6 faces

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

SAFETY

Safety Standards	EN/IEC/UL60601-1, 3rd edition
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

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

ISOLATION SPECIFICATIONS

Isolation	Input-Output: 2 MOPP Input-Ground: 1 MOPP Output-Ground: 1 MOPP

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

RELIABILITY

MTBF	>1,000,000 hours, Full load, 110 & 220 VAC 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

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

ENVIRONMENT

Operating Temperature	-20°C to +70°C
Temperature Derating	See derating chart
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
Altitude	Operating: to 4,000m Non-operating: -500 to 40,000 ft
Relative Humidity	5% to 95%, Non-condensing
Storage Temperature	-40°C to +85°C
Weight	250g
Dimensions	See outline drawings

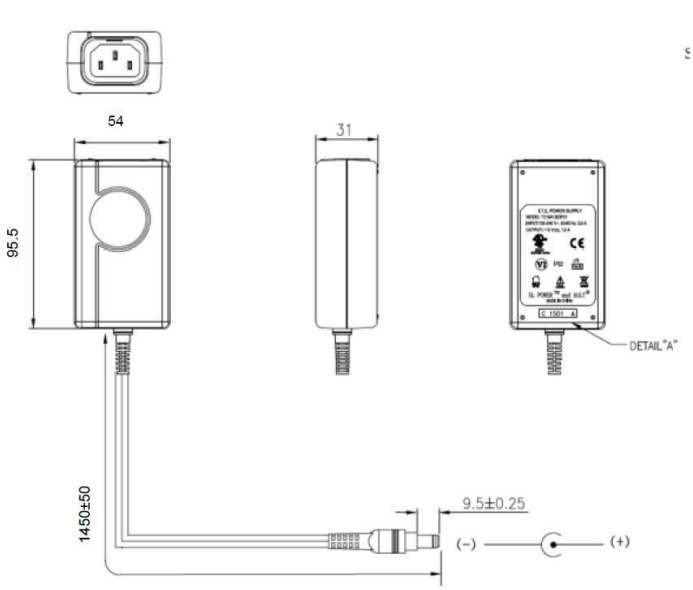
Note: All specifications are typical at nominal input, full load, at 25°C ambient unless noted.

EMI/EMC COMPLIANCE

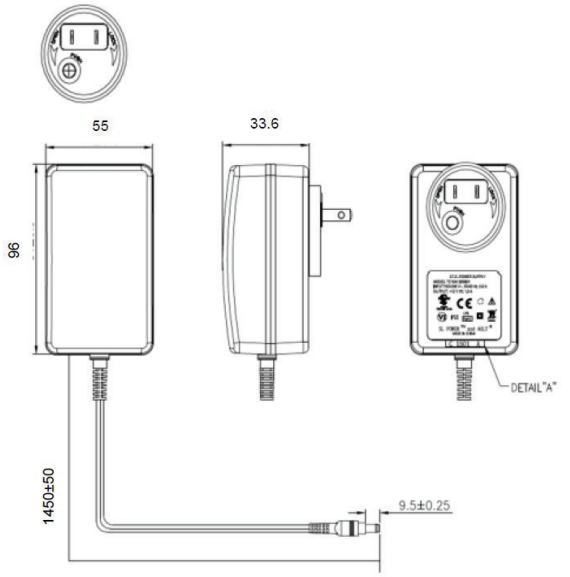
Conducted Emissions	IEC60601-1-2/EN55011/CISPR11 Class B, FCC Part 15, Class B, 6db margin typ., at 115 and 230Vac
Radiated Emissions	IEC60601-1-2/EN55011/CISPR11 Class B, FCC Part 15, Class B, 3db margin typ., at 115 and 230Vac
Common Mode Noise	High frequency (100kHz - 20MHz): <40mA pk-pk
Electro-Static Discharge (ESD) Immunity on Power ports	EN55024/IEC61000-4-2, Level 4: +/- 8kV contact, +/- 15kV air, Criteria A IEC60601-1-2, 4th edition, Table 4
Radiated RF EM Fields Susceptibility	EN55022/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz IEC60601-1-2, 4th edition, Table 4
Electrical Fast Transients (EFT)/Bursts	EN55024/IEC61000-4-4, Level 4, +/- 4kV, 100kHz rep rate, 40A, Criteria A IEC60601-1-2, 4th 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, 4th 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, 4th edition, Table 5
Rated Power Frequency Magnetic Fields	EN55024/IEC1000-4-8, Level 4: 30 A/m, 50/60 Hz IEC60601-1-2, 4th edition, Table 4
Voltage Interruptions, Dips, Sags & Surges	EN55024/IECEN61000-4-11: --100% dip for 10ms, 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, 4th edition, Table 5
Harmonic Current Emissions	EN55011/EN61000-3-2, Class A
Flicker Test	EN61000-3-3

Note: 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



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

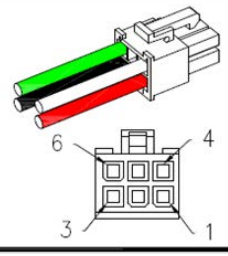


Interchangeable N.A. Blade, 2.5 x 5.5 x 9.5mm barrel connector

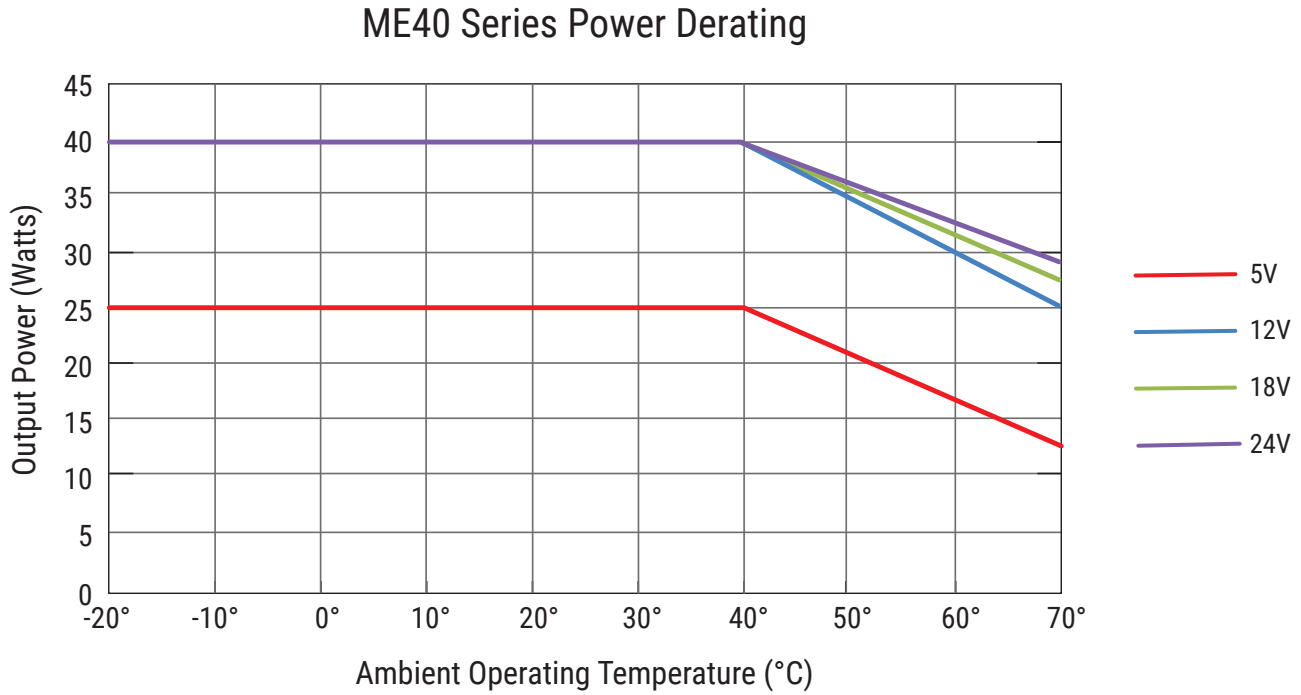
Note: 1. All dimensions in mm.
2. Interchangeable blade models come with North American blade fitted. For other blades (EU, UK, Aust.) order blade kit KT1027K.

Note: Pins 4,5,6 are located closest to the locking tab

LEADWIRE HOOK-UP		
PIN #	FUNCTION	COLOR
1	+V	RED
2	NC	-
3	COMMON	BLACK
4	+V	WHITE
5	NC	-
6	COMMON	GREEN
	BRAID	FG4



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 9.5 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