## **ME40 Family**

# 40W Single Output External Power Medical Grade















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

Note: \* Consult Factory for Table 9 compliance information.

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

### **MODEL SELECTION**

Madal Noneban	Valta	Output	Output	Ripple &	Line	Load	Overvoltage	Output Cable	Input
Model Number	Volts	Current	Power	Noise <sup>1</sup>	Regulation	Regulation	Trip Range	& Connector	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	
ME40A0903N01	9.0V	4.00A	36W	100mV pk-pk	±1%	±5%	120%-150%		Class II Desktop, IEC60320 C8 receptacle
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,	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%	Center positive	
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%		Class II Wall-plug, Interchangeable blades <sup>2</sup>
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 <sup>1</sup>	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 <sup>3</sup>
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	500 $\mu$ 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 +/-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.

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### **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 5,000m 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**

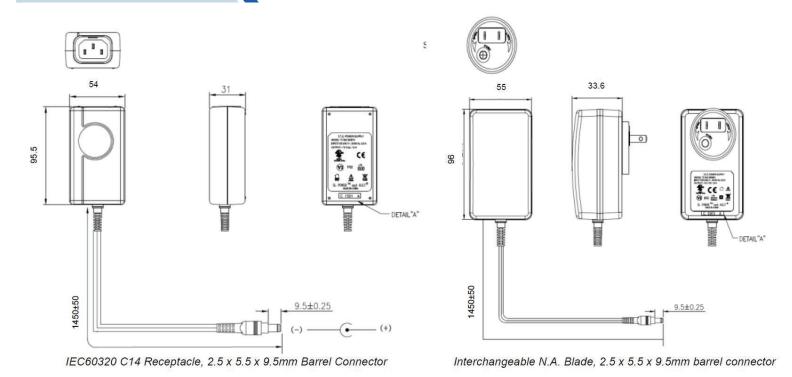
	EN55011/CISPR22 Class B, FCC Part 15.107, Class B: 6db margin typ, At 115 and 230VAC
Radiated Emissions	ENERGO (OLORDO) Class D. FOO Dart 1F 100 Class D. Odla magrip to a 4 11 F and 200 (A.O.
11001010	EN55022/CISPR22 Class B, FCC Part 15.109, Class B: 3db margin typ, At 115 and 230VAC
Common Mode Noise	High frequency (100kHz - 20MHz): <40mA pk-pk
	EN55024/IEC61000-4-2, Level 4: +/- 8kV contact, +/- 15kV air, Criteria A IEC60601-1-2, 4th edition, Table 4
	EN55022/EN61000-4-3, 10V/m, 80MHz-2.7GHz, 80% AM at 1kHz IEC60601-1-2, 4th edition, Table 4
	EN55024/IEC61000-4-4, Level 4, +/- 4kV, 100kHz rep rate, 40A, Criteria A IEC60601-1-2, 4th edition, Table 5
MINION STATE TO ISSUE	EN55024/IEC61000-4-5, Level 4, +/-2kV DM, +/-4kV CM, Criteria A Surpasses IEC60601-1-2, 4th edition requirements
induced by PE 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
	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 A100% dip for 5000ms (250/300 cycles), Criteria B60% dip for 100ms, Criteria B30% 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**

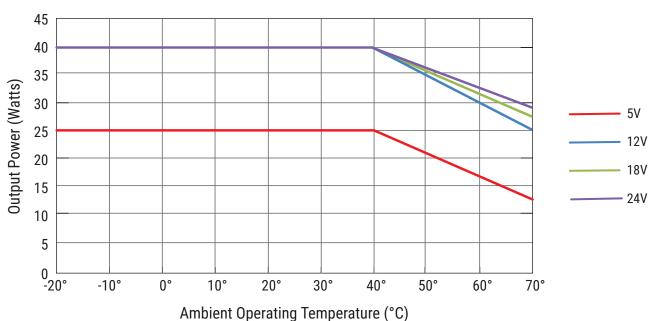


Note: 1. All dimensions in mm.

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

### **DERATING CHART**

### ME40 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.	ne standard model number is replaced by the applicable digits below  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

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