

## 160 Watts

- US DoE Energy efficiency level VI
- EU CoC Tier 2 requirements, ErP stage 2
- IEC 60601-1-2 4th edition EMC
- Operation to +70°C (above 12V)
- Single outputs 12 to 48V
- 3 Year warranty



The MDA160 range of external AC-DC power adapters are compliant with the latest medical immunity IEC60601-1-2, energy efficiency Level VI standard, CoC tier 2 and ErP stage 2. The units offer 150-160 watts of output power with output voltages available between 12 and 48VDC. The range is reliable, cost competitive, and comes with a FIDUS 3 year warranty.

Dimensions:

3.19 x 7.2 x 1.65" (81 x 183 x 42mm)

### Models & Ratings

Model Number <sup>(1)</sup>	Output Power	Output Voltage	Output Current
MDA16012-C14	150W	12V	12.50A
MDA16019-C14	160W	19V	8.40A
MDA16024-C14	160W	24V	6.60A
MDA16048-C14	160W	48V	3.30A

### Notes

1. C6 inlet available change –C14 for –C6
2. Alternative output connectors available for production quantities. Contact sales for details
3. For UK/ US/ EU mains power cable please order UK-C14, US-C14 or EU-C14 separately

### Key specifications

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
AC Input range	90		264	VAC	No derating
Operating temperature	0		70	°C	See derating curve pg2
Efficiency	88			%	
Dimensions	3.19 x 7.2 x 1.65" (81 x 183 x 42mm)				
EMC	EN55011 Level B Conducted and Radiated. EN61000-3 and EN61000-4, harmonics, flicker, surge, EFT, ESD, conducted and radiated to IEC 60601-1-2 4th edition				

### Safety Approvals

	Safety standard	Notes & Conditions
UL	ANSI/AAMI 60601-1, UL 60950-1: 2nd edition	
CB	IEC 60601-1, IEC 60950-1:2005 /A2:2013	PSE
TUV	EN 60601-1, EN 60950-1:2006 /A2:2013	
CE		2015/863/EU RoHS Directive and 2014/35/EU Low Voltage Directive
Equipment protection class		Class I

## Input

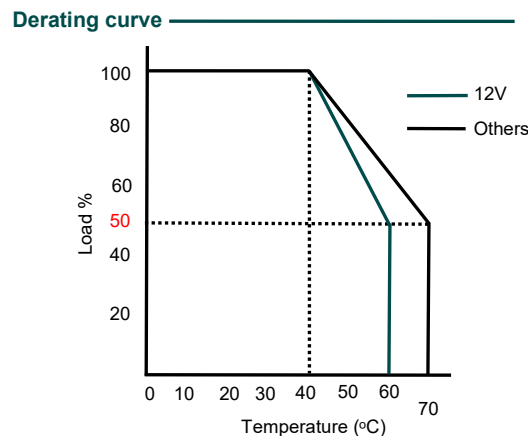
Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Input voltage	90		264	VAC	No derating
Input frequency	47		63	Hz	
Power factor					EN61000-3-2 class A compliant
Input current	0.9		1.8	A	
Inrush current			100	A	High line. Full load, 25°C cool start, Vin=230VAC
No load input power			0.21	W	230VAC

## Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	12		48	VDC	
Total regulation		±5		%	
Minimum load	0			%	
Transient response		0.5		mS	50% load change
Ripple & Noise		2		%Pk-Pk	All models measured with 47uF and 0.1uf capacitor. 20 MHz bandwidth
Hold up time	10			ms	At full load
Overload protection			150	%	Automatic recovery
Short circuit protection					Automatic recovery
Over voltage protection			150	%	Latch off reset
Touch current			100	uA	

## Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	0		70	°C	See derating curve below
Storage temperature	-20		80	°C	
Cooling					Convection cooled
Operating Humidity	20		80	% RH	
Storage Humidity	10		90	% RH	



# MDA160 Series

## General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	88			%	
Isolation	Input to Output: 4000			VAC	For 1 minute. 2 x MOPP
Insulation resistance		10		MOhm	500Vdc input to output and output to ground
Power density			4.22	W/In <sup>3</sup>	
MTBF	300			kHrs	As per Telcordia SR-332
Weight		820		g	

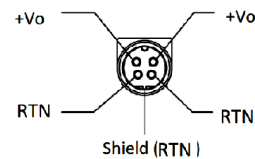
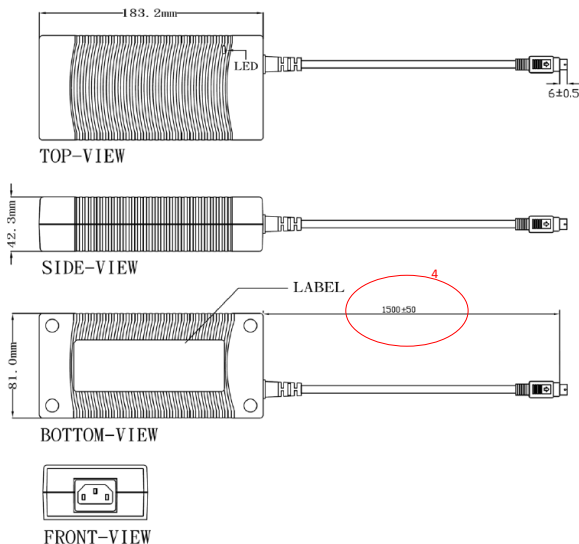
## EMC: Emissions

	Standard	Test level	Criteria	Notes & Conditions
Conducted	EN55011	B		
Radiated	EN55011	B		
Harmonic current	EN61000-3-2	Class A		
Voltage flicker	EN61000-3-3			

## EMC: Immunity

	Standard	Test level	Criteria	Notes & Conditions
ESD	EN61000-4-2	4	A, A	8kV contact, 15kV air
Radiated	EN61000-4-3	3	A	3-28V/m, 80MHz-2700MHz, 1kHz 80% AM Modulation
EFT	EN61000-4-4	3	A	2kV 100kHz
Surges	EN61000-4-5	Installation Class 3	A	2kV L/N to GND, 1kV L to N both at 0°,90°,180°,270°
Conducted	EN61000-4-6	3	A	3/6Vrms, 1kHz 80 AM Modulation 150kHz-80MHz
PFMF	EN61000-4-8	4	A	30A/m
Voltage Dips / Interruptions	EN61000-4-11	100% for 0.5 & 1 cycle, 30% for 25 cycles: 240VAC B,B,B, 100VAC B,B,C, interrupt 250,300 cycles and 30% for 30 cycles: 240VAC C,C,B, 100VAC C,C,C		

## Mechanical Details



For UK/ US/ EU mains power cable please order UK-C14, US-C14 or EU-C14 separately

## Notes

- All dimensions in mm
- Output connector : Kycon 4 pole power adapter, mates with board mount KPJX, panel mount KPJX-PM and cable mount KPJX-CM
- Negative DC output is floating
- Output cable for 12V-15V AWG16 1200mm long, 19-48V AWG16 1500mm long