

60 Watts

- Latest Medical approval IEC/EN60601-1 3.1
- 4th Edition Medical EMC
- Earth Leakage <0.25mA
- Class I & Class II versions
- Single outputs 12 to 48V
- Level B conducted & radiated emissions
- 5 Year warranty



Medical

Dimensions:

5.17 x 2.18 x 1.46" (131.3 x 55.4 x 37.0mm)

The MDT60 range of 60W external power supplies are designed and approved for use in medical applications complete with 4th edition medical EMC certification . The units offer up to 63 watts of output power in a slim package with output voltages available between 12 and 48VDC. Class I and Class II versions are available. The MDT60 provides customer applications with 2 means of patient protection (MOPP), is reliable, cost competitive and comes with an impressive FIDUS 5 year warranty.

Models & Ratings

SELECT YOUR CONNECTOR PG4

Model Number ⁽¹⁾⁽²⁾⁽³⁾	Output Power	Output voltage	Output Current	Efficiency
MDT6012-C2	63W	12V	5.25A	88.8%
MDT6015-C2	63W	15V	4.20A	89%
MDT6018-C2	63W	18V	3.50A	87.5%
MDT6024-C2	63W	24V	2.62A	87%
MDT6030-C2	63W	30V	2.10A	87%
MDT6036-C2	63W	36V	1.75A	87.5%
MDT6048-C2	63W	48V	1.31A	89%

Notes

1. '-C2' stands for Class II version, with IEC-320-C8 Input Inlet
2. Replace with '-C14' for Class I version, with IEC-320-C14 Input Inlet
3. Replace with '-C6' for Class I version, with IEC-320-C6 Input Inlet
4. Optional output connectors available please see P5

Key specifications

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
AC Input range	80		275	VAC	No derating
Operating temperature	-10		70	°C	Derate linearly from 100% load at 40°C to 50% load at 70°C
Efficiency		87		%	Taken at 230VAC full load
Dimensions	5.17 x 2.18 x 1.46" ±0.04 (131.3 x 55.4 x 37.0mm ±1.0)				
EMC	EN55011/ EN60601-1-2 Level B Conducted and Radiated. IEC60601-1-2 2014 4th edition. EN61000-3 and EN61000-4, harmonics, flicker, Surge, EFT, ESD, conducted and radiated. CISPR-11 and FCC Part-18.				
Safety	IEC 60601-1 3.1, EN60601-1 A12 2014 ES60601-1:2005(R2012), CSAC22.2 No60601-1:14 No 234 as per cUL, CE, CB.				

Input

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Input voltage	80		275	VAC	Derates to 80% at 80VAC from 100% at 90VAC
Input frequency	47		63	Hz	
Power factor					EN61000-3-2 class A compliant
Input current		1.62		A	Low line. Full load, VIN=100VAC
		0.72			High line. Full load, VIN=240VAC
Inrush current	42		85	A	Vin=230VAC 85A, Vin=115VAC 42
No load input power			0.5	W	
Earth leakage current			0.25	mA	Vin=240VAC, Fi=60Hz. Class I version only

Output

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	12		48	VDC	
Total regulation	±3		±5	%	Includes set accuracy & load regulation. ≤18V: ±5%, 24-48V: ±3%
Line regulation			1	%	Changing +/-10% input voltage from nominal at rated load
Load regulation			5	%	Changing +/-40% from 60% rated load
Minimum load	0			%	
Time of Transient response			4	ms	Full load, Vin=110VAC
Ripple & Noise	100		150	mVp-p	12V-24V models 100mV, 30V models 110mV, 36V models 130mV and 48V models 150mV. Measured at 20MHz bandwidth, with 0.47uF capacitor.
Hold up time	12			ms	
Over Load protection	110		150	%	Hiccup, auto recovering
Over Voltage protection	112		132	%	Crowbar mode
Short circuit protection					Automatic recovery

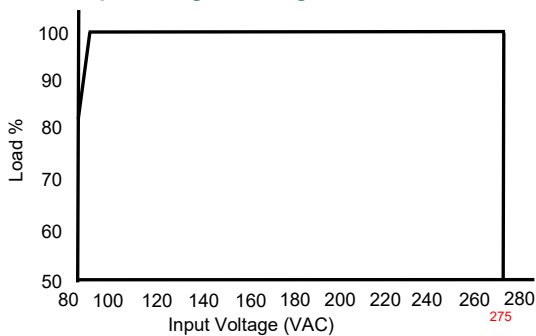
General

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		87		%	See models & ratings table
Isolation	Input to output: 4000, Input to ground: 1500			VAC	Input to ground, Class I versions only
Power density			3.8	W/in ³	
MTBF	100			KHrs	As per MIL-HDBK-217F, 25°C GB
Weight	330		380	g	

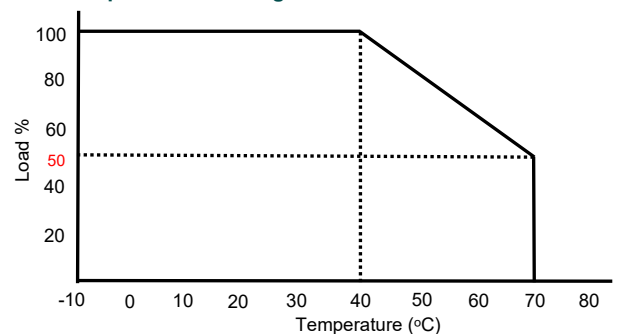
Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-10		70	°C	Derate linearly from 100% load at 40°C to 50% load at 70°C
Storage temperature	-40		85	°C	
Cooling					Convection cooled
Temperature coefficient			±0.04	%/°C	
Humidity			95	% RH	Non-condensing
Vibration			5	G	10-500Hz, 10min/1cycle, 60 mins, each along X,Y,Z

Input Voltage Derating



Temperature Derating Curve



MDT60 Series

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			

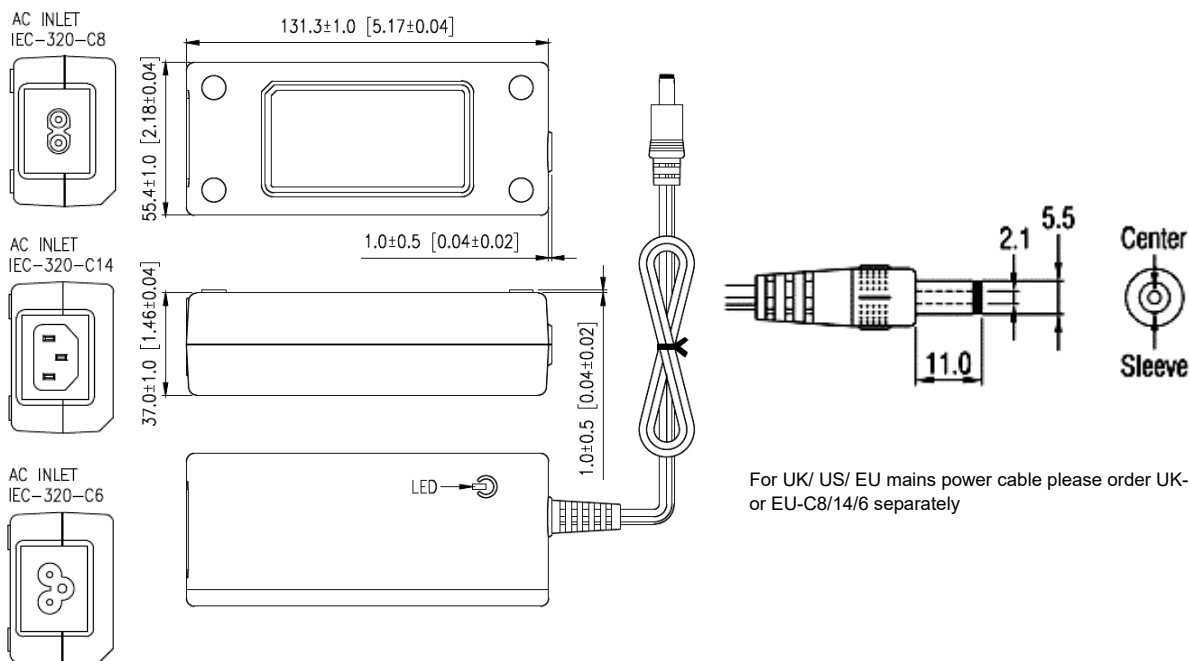
EMC: Immunity

	Standard	Test level	Criteria	Notes & Conditions
ESD	EN61000-4-2	3	A	8kV contact, 15kV air
Radiated	EN61000-4-3		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		A	3/6Vrms, 1KHz 80 AM Modulation 150KHZ-80MHz
Power frequency magnetic field	EN61000-4-8		A	30A/m
Voltage Dips / Interruptions	EN61000-4-11	100% for 0.5 & 1 cycle, 30% for 25/30 cycles, interrupt 250/300 cycles -performance criteria B,C,C		

Safety Approvals

	Safety standard	Notes & Conditions
UL	ES60601-1:2005(R2012), CSA22.2 No. 60601-1:14	
CB	IEC 60601-1, 3.1 edition	
TUV	EN60601-1:2006/A12:2014	
CE		2011/65/EU RoHS Directive and 2014/35/EU Low voltage directive
Equipment protection class		Class I & Class II models

Mechanical Details

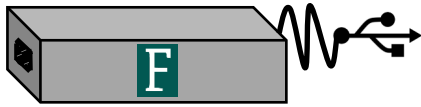


For UK/ US/ EU mains power cable please order UK-C8/14/6, US-C8/14/6 or EU-C8/14/6 separately

Notes

- All dimensions in mm (inches)
- Output cable 1219.2mm in length for 12 to 18V outputs AWG16.
1828.8mm in length for 24 to 48V outputs AWG18
- Output connector : Barrel female plug: OD: 5.5mm, ID: 2.1mm, L: 11mm.
Other connectors available for production quantities, contact sales
- Class I models: IEC-320-C14 and IEC-320-C6, Class II models: IEC-320-C8.
- Negative DC output is floating and not tied to AC earth

Connector Selection



The MDT60 series is available with an range of output connectors, allowing customers to use the connector that best fits their industry and product.

- + Rapid prototypes for evaluation
- + Available for high & low volume applications

MDT6012-C2 - [CONNECTOR SELECTOR]

	Universal	5.5mm/2.5mm Straight Barrel Jack (11mm length)			All models	-P01N
	Universal	5.5mm/2.1mm Straight Barrel Jack (9.5mm length)			All models	-P01J
	Universal	5.5mm/2.5mm Straight Barrel Jack (9.5mm length)			All models	-P01M
	Compact Tight to enclosure	5.5mm/2.1mm Right Angle Jack (11mm length)			All models	-P02K
	Compact Tight to enclosure	5.5mm/2.5mm Right Angle Jack (9mm length)			All models	-P02M
	Simple Durable	DIN-5 plug Male			All models	-P05B
	Locking Perfect for AV	Kycon plug Locking, male			All models	-P09B
	Locking Unique	Molex 43025-0600 or CVILUX CP35006S0010			All models	P35C

Still can't find your ideal connector? Contact sales for assistance

+44 (0)1183 420 730