

40 Watts

- Medical safety approvals
- Single, dual and triple outputs
- 90-264VAC Input, 47-440Hz
- EN55011 Level B conducted & radiated
- -25 to +70°C Operation
- 5 Year warranty



Medical

Dimensions:

3.5 x 2.5 x 1.06" (89.0 x 63.5 x 27.0mm)

The AMM40 encapsulated AC/DC series is designed for use in medical applications. The units are PCB mount and have low emissions, meeting EN55011 level B for both conducted and radiated noise. They have a wide temperature range from -25 to +70°C and offer low no-load power consumption of <0.75W. Units are single, dual and triple output variants; all come with a FiDUS 5 year warranty.

Models & Ratings

Model Number	Output Power	Output 1		Output 2		Output 3		Efficiency
		Voltage	Current	Voltage	Current	Voltage	Current	
AMM4003	26.4W	3.3V	8A					74%
AMM4005 ⁽¹⁾	40W	5V	8A					79%
AMM4009	40W	9V	4.44A					82%
AMM4012 ⁽¹⁾	40W	12V	3.33A					83%
AMM4015	40W	15V	2.67A					83%
AMM4024 ⁽¹⁾	40W	24V	1.67A					84%
AMM40D01	40W	+5V	4A	-5V	4A			80%
AMM40D02	40W	+12V	1.67A	-12V	1.67A			83%
AMM40D03	40W	+15V	1.33A	-15V	1.33A			83%
AMM40D04 ⁽³⁾	40W	5V	5A	12V	1.25A			80%
AMM40D05 ⁽³⁾	40W	5V	5A	24V	0.63A			79%
AMM40T01	40W	5V	5A	+12V	0.6A	-12V	0.6A	79%
AMM40T02	40W	5V	5A	+15V	0.5A	-15V	0.5A	79%

Notes

1. High stock items
2. Outputs 1 and 2 have separate return

Key specifications

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
AC Input range	90		264	VAC	No derating
Operating temperature	-25		70	°C	Derate linearly from 100% load at 50°C to 40% load at 70°C.
Efficiency	74		84	%	
Dimensions	3.5 x 2.5 x 1.06" (89.0 x 63.5 x 27.0mm)				
EMC	EN55011 Level B Conducted and Radiated. EN61000-3 and EN61000-4, harmonics, flicker, Surge, EFT, ESD, conducted and radiated,				
Safety	IEC60601-1, ES60601-1, CAN/CSA-C22.2 No. 60601-1, CE				

Input					
Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Input voltage	90		264	VAC	No derating
	100		375	VDC	DC fuse required
Input frequency	47		440	Hz	
Power factor					EN61000-3-2 class A compliant
Input current			860	mA rms	At 115VAC
Inrush current		55/95		A	115/230VAC cold start at 25°C
No load input power			0.75	W	
Earth leakage current					Class II construction, no earth
Input protection	3.15A slow blow fuse required				

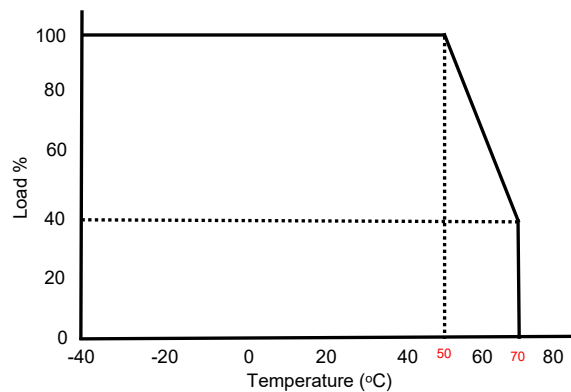
Output					
Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Output voltage	3.3		24	VDC	See Model & Ratings table
Set point accuracy	Singles: All outputs $\pm 2\%$			%	
	Duals: AMM40D01, D02 and D03, V1 and V2 $\pm 2\%$. AMM40D04 and D05, V1 $\pm 3\%$, V2 $\pm 5\%$				
	Triples: V1 $\pm 3\%$, V2 and V3 $\pm 5\%$				
Line regulation	Singles: All outputs 0.5%			%	
	Duals: AMM40D01, D02 and D03, V1 and V2 0.5%. AMM40D04 and D05, V1 0.5%, V2 5%				
	Triples: V1 0.5%, V2 and V3 5%				
Load regulation	Singles: All outputs 1%			%	1 to 100% for single outputs. 10 to 100% for dual outputs 25 to 100 for triple outputs
	Duals: AMM40D01, D02 and D03, V1 and V2 1% (symmetric load). AMM40D04 and D05, V1 2%, V2 6% (symmetric load).				
	Triples: V1 3%, V2 and V3 7% (symmetric load).				
Minimum load	Singles: All models, 1%			%	
	Duals: AMM40D01, D02 and D03, 10%. AMM40D04 and D05, 25%				
	Triples: Both models, 25%				
Transient response			4	%	For a 25% load change, recovery to within 1% in less than 500uS.
Ripple & Noise			50	mV pk-pk	3.3V model
			$\pm 1\%$	pk-pk	All other models. All models measured with 0.1uF ceramic and 47uF electrolytic. 20MHz bandwidth.
Hold up time			18	mS	
Overload protection	105		186	%	
Short circuit protection					Trip & restart. Automatic recovery
Overvoltage protection	114		141	%	

General					
Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	74		84	%	See Model & Ratings table
Isolation	4000			VAC	Input to output
Switching frequency	124		140	KHz	
Power density			4.3	W/in ³	
MTBF	200		400	KHrs	At 25°C
Weight		280		g	

Environmental

Parameter	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating temperature	-25		70	°C	Derate linearly from 100% load at 50°C to 40% load at 70°C.
Storage temperature	-40		85	°C	
Cooling					Convection cooled
Temperature coefficient			±0.01	%/°C	
Humidity			95	%RH	Non condensing

Derating curve



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			

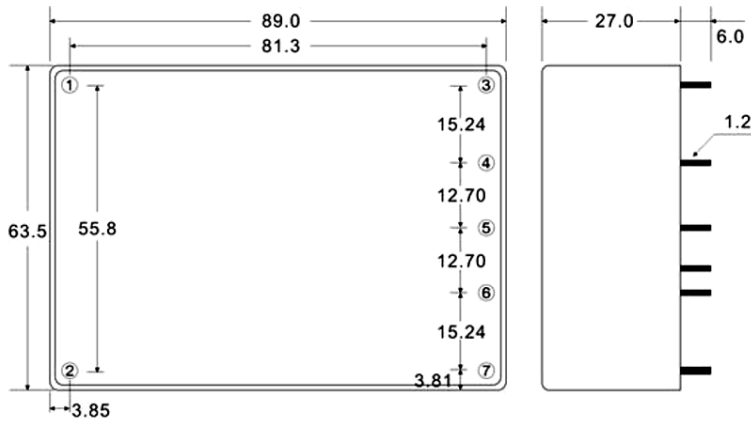
EMC: Immunity

	Standard	Test level	Criteria	Notes & Conditions
ESD	EN61000-4-2	±6kV contact, ±8kV air	A	
Radiated	EN61000-4-3	3V/m	A	
EFT	EN61000-4-4	3	A	
Surges	EN61000-4-5	Installation Class 3	A	
Conducted	EN61000-4-6	3Vrms	A	
Magnetic Fields	EN61000-4-8	3A/m		

Safety Approvals

	Safety standard	Notes & Conditions
UL	ANSI/AAMI ES60601-1: 2005, 1st Edition and CAN/CSA-C22.2 No. 60601-1:08, 2nd Edition	
CB	IEC60601-1	
CE		2011/65/EU RoHS Directive and 2014/35/EU Low voltage directive
Means of protection	Input to Output: 2 x MOPP	
Equipment protection class		Class II

Mechanical Details



Pin Connections				
Pin	Single	Dual	AMM40D04 AMM40D05	Triple
1	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
2	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
3	+DC OUT	+DC OUT	+OUT2	+DC OUT
4	NO PIN	NO PIN	+OUT1	+5V
5	-DC OUT	COMMON	+OUT2 RTN	COMMON
6	NO PIN	NO PIN	+OUT1RTN	+5 RTN
7	NO CONNECT	-DC OUT	NO PIN	-DC OUT

Dimension notes

- All dimensions shown in millimetres
- Pin diameter 0.5 ± 0.05 (0.02 ± 0.002)

- Case tolerance ± 0.5 (± 0.002)