

Features

- Universal input 85~264VAC or 120~370VDC
- Operating Temperature Range: -40~105°
- Open Frame Power Supply (PSU)
- Approved to cURus, UKCA, CE, FCC, CB
- Safety standards to IEC/EN/UL 62368-1, IEC/ EN/ UL 62368-1
- Efficiency up to 90%
- EMC EN60601-1-2, EN55011, EN55032 & FCC Class B Certified
- Single Output 5-53V DC



Ideal Power's 43MAD40Uxy 40W Series DC/DC Converters are certified to cURus, UKCA, CE, FCC, CB, RoHS, REACH & IEC/EN/ANSI/AAMI ES 60601-1, IEC/EN/UL 62368-1 Standards and comply with Efficiency Regulations. These are primarily used in ITE, Video & Audio, Medical Industries and customised solutions are available upon request.

Part Number Structure

43MAD	40	U	□	□	□	□	□	C	XX	YY	- □
Series name	Output Power (W)	Input Voltage (VAC)	Output Quantity	Output Voltage 1 (VDC)	Output Voltage 2 (VDC)	Output Voltage 3 Polarity	Output Voltage 3 (VDC)	Protection Type	Vo2 Voltage Code	Vo3 Voltage Code	Connector Options

A: Open type	U: U chassis type	E: Enclosed type	D: Din rail type	U: Universal 85 ~ 264	D: Dual T: Triple	3: 5 4: 7.5 5: 9 6: 12 7: 15 8: 18 9: 24 0: 28	1: 2.5 2: 3.3 3: 5 x: refer to suffix xx	M: Minus □: Positive	1: 2.5 2: 3.3 3: 5 4: 7.5 5: 9 6: 12 7: 15 8: 18 9: 24 y: refer to suffix yy	C: CLASS I D: CLASS II □: CLASS I (⊗NRND) B: CLASS II (⊗NRND) ⊗NRND: Not recommended for new designs	□: JST M: Molex T: Terminal Block
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Models

Model Number	Output 1			Output2			Output3		Max Output Power	Efficiency %	Maximum Capacitor Load μ F
	Voltage	Current (Normal)	Current (Max)	Voltage	Current (Normal)	Current (Max)	Voltage	Current (Max)			
	VDC	A	A	VDC	A	A	VDC	A			
43MXD40UD32C	+5	5	8	+3.3	4	6	---	---	40	89.5	12000/2000
43MXD40UD63C	+12	2.1	3.34	+5	4	6	---	---	40	89	1750/2000
43MXD40UD62C	+12	2.1	3.34	+3.3	4	6	---	---	40	90	1750/2000
43MXD40UD73C	+15	1.7	2.67	+5	4	6	---	---	40	88.5	1670/2000
43MXD40UD93C	+24	1.05	1.67	+5	4	6	---	---	40	86	440/2000
43MXD40UD03C	+28	0.72	1.43	+5	4	6	---	---	40	85.5	220/2000
43MXD40UT32M3C	+5	5	8	+3.3	4	6	-5	0.5	40	89	10000/2000 /420
43MXD40UT326C	+5	5	8	+3.3	4	6	+12	0.5	40	89	10000/2000 /420
43MXD40UT32M6C	+5	5	8	+3.3	4	6	+12	0.5	40	89	1750/2000 /420
43MXD40UT63M3C	+12	2.1	3.34	+5	4	6	-5	0.5	40	88.5	1750/2000 /420
43MXD40UT63M6C	+12	2.1	3.34	+5	4	6	-12	0.5	40	88	1750/2000 /420
43MXD40UT623C	+12	2.0	3.34	+3.3	4	6	+5	0.5	40	88.5	1750/2000 /420
MXD40UT62M6C	+12	2.1	3.34	+3.3	4	6	-12	0.5	40	88	1750/2000 /420
MXD40UT73M7C	+15	1.7	2.67	+5	4	6	-15	0.5	40	88	1670/2000 /420
MXD40UT936C	+24	1.05	1.67	+5	4	6	+12	0.5	40	86	440/2000 /420
MXD40UT93M6C	+24	1.05	1.67	+5	4	6	-12	0.5	40	86	440/2000 /420

Note* Please use **43MAD** for Open Type, **43MUD** for U Chassis Type, **43MED** for Enclosed Type and **43MDD** for Din Rail Type

Input Specifications

Parameter	Conditions	Min	Typ	Max	Unit
Operating input voltage range	AC input	85	--	264	VAC
Input frequency	AC input	47	--	63	Hz
Input current	100VAC	--	--	1.05	A
No load input power	230VAC	--	0.15	--	Watts
Leakage current	264VAC	--	75	--	μ A
Start-up time		--	--	1000	ms
Rise time		--	20	--	ms
Hold up time	115VAC and Full Load	--	25	--	ms
Input inrush current	230VAC	--	60	--	A
Input protection	Internal fuse in line and neutral	T3.15A/250VAC			

Output Specifications

Parameter	Conditions		Min	Typ	Max	Unit	
Output power	Pout 1+Pout 2+Pout 3	Vout 1	--	--	40	Watts	
Initial set voltage accuracy	230VAC and Full Load	Vout 1	-1.0	--	+1.0	%	
		Vout 2 - Vout 3	-2.0	--	+2.0		
Line regulation	Low Line to High Line at Full Load		-0.2	--	+0.2	%	
Load regulation	No Load to Full Load	Vout 1	-0.5	--	+0.5	%	
		Vout 3	-0.7	--	+0.7		
	0.1W Load to Full Load	Vout 2	-1.5	--	+1.5		
		Vout 2	-0.7	--	+0.7		
Cross regulation	Asymmetrical load 25%/100% FL		-1.5	--	+1.5		
Voltage adjustability			-10	--	+10	%	
Minimum load	43MxD40UD□□		--	0	--	%	
	43MxD40UT□□□; Vout 3 is full load	Vout 1 + Vout 2	--	0.5	--		
Ripple and Noise	Measured by 20MHz bandwidth		--	--	--	mVp-p	
	With a 10μF/25V 1206 X7R MLCC	Vout 1	5V	--	100		--
		Vout 1	12V	--	120		--
		Vout 1	15V	--	150		--
		Vout 1	24V	--	240		--
		Vout 1	28V	--	280		--
	With a 10μF/25V 1206 X7R MLCC	Vout 2	All	--	100		--
		Vout 3	5V	--	100		--
		Vout 3	12V	--	120		--
		Vout 3	15V	--	150		--
Vout 3		15V	--	150	--		
Temperature coefficient			-0.02	--	+0.02	%/°C	
Transient response	Load step from 50 ~ 75% change at 2.5A/μs	Vout 1	Peak deviation	--	--	3	% Vout
			Recovery time	--	600	--	μs
Over voltage protection	% of Vout(nom); Latch mode		Vout 1	125	--	140	%
Overload protection	% of nominal output power; Hiccup mode		Pout 1+Pout 2	--	145	--	%
Short circuit protection	Continuous, automatic recovery						

General Specifications

Parameter	Conditions		Min	Typ	Max	Unit
Isolation voltage	1 minute (2MOPP insulation)	Input to Output	4000			VDC
		Input (Output) to F.G.	2500			
Isolation resistance	500VDC		0.1			GΩ
Switching frequency	230VAC	Vout 1		70		kHz
			5V		115	
			Others		750	
		Vout 3		510		
Safety approvals	IEC/ EN/ ANSI/AAMI ES 60601-1					UL:E360199
	IEC/ EN/ UL 62368-1					UL:E193009 CB:UL(Demko)
Weight	43MAD					150 (5.29oz)
	43MUD					198 (6.98oz)
	43MED					216 (7.62oz)
	43MDD					238 (8.40oz)
MTBF	MIL-HDBK-217F Ta=25°C, Full load					1.716 x 10 ⁶ hrs

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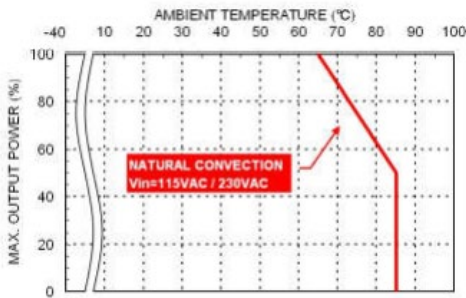
Environmental Specifications

Parameter	Conditions	Min	Typ	Max	Unit
Operating ambient temperature	With derating	-40	--	+85	°C
Storage temperature range		-40	--	+85	°C
Operating altitude		--	--	5000	m
Shock					IEC60068-2-27
Vibration					IEC60068-2-6
Relative humidity	Non-condensing				5% to 95% RH

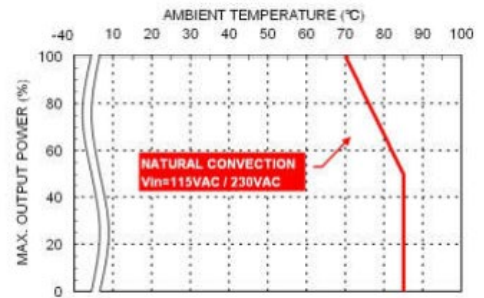
EMC Specifications

Parameter	Conditions	Level	
EMI	EN55011, EN55032, EN60601-1-2 and FCC Part 18 / 15 External components may be required for class I application.	Conducted	Class B
		Radiated	Class B
Harmonic currents	EN61000-3-2 Full Load		Class A
Voltage flicker	EN61000-3-3		
EMS	EN55024 and EN60601-1-2		
ESD	EN61000-4-2		Perf. Criteria A
Radiated immunity	EN61000-4-3 20 V/m		Perf. Criteria A
Fast transient	EN61000-4-4 ± 2kV		Perf. Criteria A
Surge	EN61000-4-5 DM ± 1kV and CM ± 2kV		Perf. Criteria A
Conducted immunity	EN61000-4-6 20 Vr.m.s		Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 30A/m		Perf. Criteria A
Dip and interruptions	EN61000-4-11		

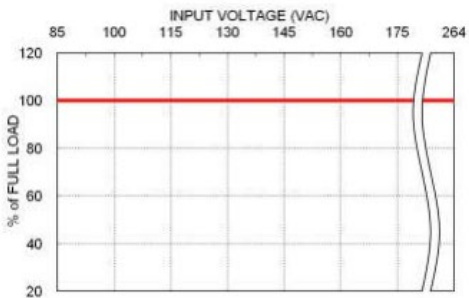
Characteristic Curve



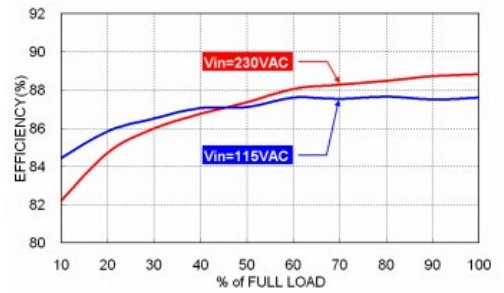
Derating Curve vs. Ambient Temperature
43MxD40UD



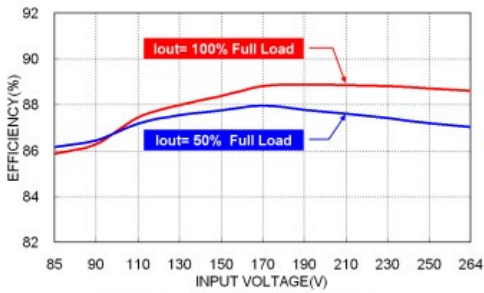
Derating Curve vs. Ambient Temperature
43MxD40UT



Derating Curve vs. Input Voltage
43MAD40



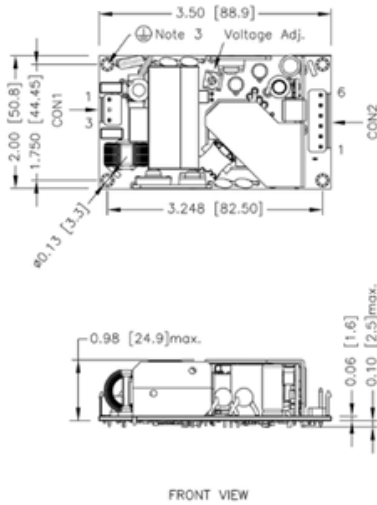
Efficiency vs. Output Load
43MxD40UT63M6B



Efficiency vs. Input Voltage
43MxD40UT63M6B

Mechanical Drawing

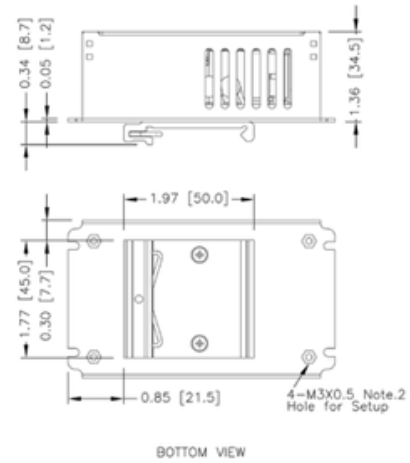
43MAD Open type



FRONT VIEW

- All dimensions in inch[mm]
Tolerance: x.xx±0.02[x.x±0.5] x.xxx±0.010[x.xx±0.25]
- The screw locked torque: MAX 5.0kgf-cm/0.49N-m
- The screws holes can be considered as PE connection for CLASS I application.

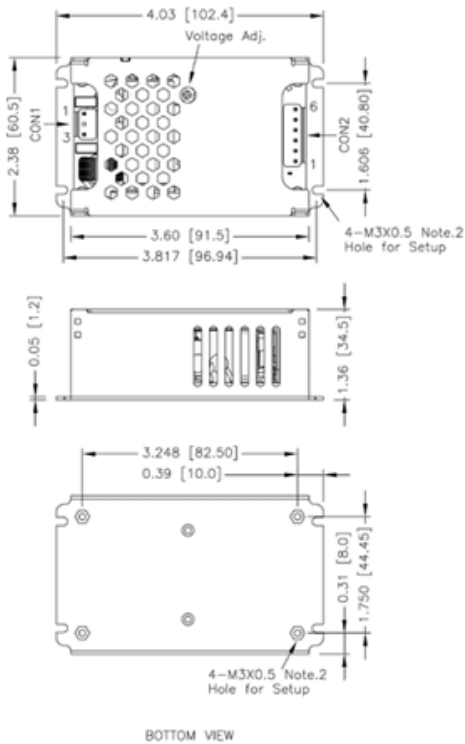
43MDD Din Rail type



BOTTOM VIEW

- All dimensions in inch[mm]
Tolerance: x.xx±0.02[x.x±0.5] x.xxx±0.010[x.xx±0.25]
- The screw locked torque: MAX 5.0kgf-cm/0.49N-m

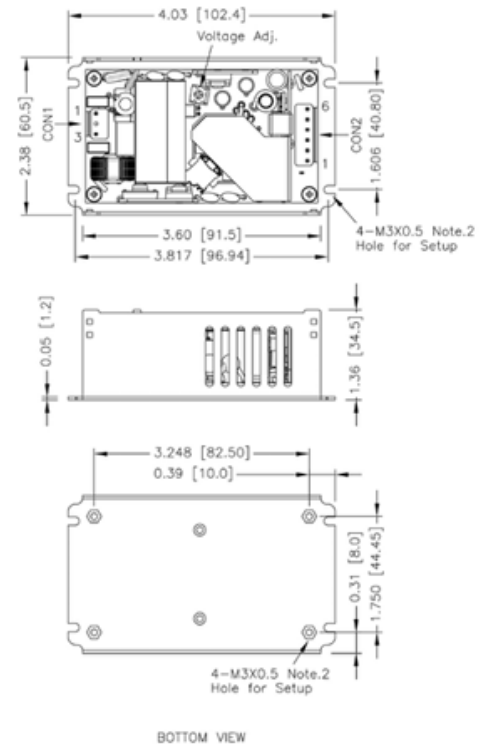
43MED Enclosed type



BOTTOM VIEW

- All dimensions in inch[mm]
Tolerance: x.xx±0.02[x.x±0.5] x.xxx±0.010[x.xx±0.25]
- The screw locked torque: MAX 5.0kgf-cm/0.49N-m

43MUD U Chassis type



BOTTOM VIEW

- All dimensions in inch[mm]
Tolerance: x.xx±0.02[x.x±0.5] x.xxx±0.010[x.xx±0.25]
- The screw locked torque: MAX 5.0kgf-cm/0.49N-m

CONNECTORS CONNECTIONS

CON1 – Input Connector

Pin Number	AC Input	DC Input 43xAD640UDXXC, 43MxD40UDXXD, 43MxD40UTXXC, 43MxD40UTXXD
Pin 1	Line	DC+
Pin 3	Neutral	DC-

CON2 – Output Connector

Pin 1	Vout3
Pin 2,3	Com
Pin 4,5	Vout2
Pin 6	Vout1

*Either one of four screws holes of Open / Chassis type can be considered as PE connection for CLASS I application.

Connector Options

Blank:

JST Type

Mates with housing

CON1: VHR-3N

CON2: VHR-6N



Crimp terminals

CON1: SVH-21T-P1.1

CON2: SVH-21T-P1.1

-M

Molex Type

Mates with housing

CON1: 09-50-8031

CON2: 09-50-8061



Crimp terminals

CON1: SD-2478

CON2: SD-2478

-T

Terminal Block

**Screw locked torque
MAX 2Kgf.cm/0.2N.m**



**Wire dimension range
26 ~ 16AWG**