

Features

- Universal input 85-265VAC
- High Efficiency Rating up to 94%
- Operating ambient temperature range: -40°C to +85°C
- Approved to UKCA, CE, CB, cURs, FCC, RoHS & REACH
- EN/IEC/UL 62368-1 Safety Approved
- Output Voltage 12 - 53VDC



Ideal Power's 43MxD180-USxy 180W AC/DC Power Supply Module Series are certified to cURus, UKCA, CE, FCC, CB, RoHS, REACH & EN 62368-1/IEC 62368-1/UL 62368-1 Standards and comply with the relevant Efficiency Regulations. These are primarily used in ITE, Audio & Video Industries and customised solutions are available upon request.

Part Number Structure

43MxD180- U S 12 A - M □

Series Name	Input Voltage (V AC)	Output Quantity	Output Voltage (V DC)	Protection Type	Package Options
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A: Open type	85 ~ 264	S: Single	12: 12	A: CLASS I	□: Open type
E: Enclosed type			15: 15	B: CLASS II	E1: Enclosed type
D: Din Rail type			18: 18		D1: Din rail type
			24: 24		
			28: 28		
			36: 36		
			48: 48		
			53: 53		

Models

Model Number	Input Range	Output Voltage	Output Current Natural Convection	Forced Air Cooling With 10 CFM	Input Power @ No Load	Efficiency	Maximum Capacitor Load
	V AC	V DC	A	W	W	%	µF
43MAD180US12A-M 43MED180US12A-M 43MDD180US12A-M	85 ~ 264	12	12.5	15	0.15	92	10000
43MAD180US15A-M 43MED180US15A-M 43MDD180US15A-M	85 ~ 264	15	10	12	0.15	92	6800
43MAD180US18A-M 43MED180US18A-M 43MDD180US18A-M	85 ~ 264	18	8.34	10	0.15	92	4700
43MAD180US24A-M 43MED180US24A-M 43MDD180US24A-M	85 ~ 264	24	6.25	7.5	0.15	94	2700
43MAD180US28A-M 43MED180US28A-M 43MDD180US28A-M	85 ~ 264	28	5.36	6.43	0.15	93	1800
43MAD180US36A-M 43MED180US36A-M 43MDD180US36A-M	85 ~ 264	36	4.17	5	0.15	93	1200
43MAD180US48A-M 43MED180US48A-M 43MDD180US48A-M	85 ~ 264	48	3.13	3.75	0.15	93	680
43MAD180US53A-M 43MED180US53A-M 43MDD180US53A-M	85 ~ 264	53	2.83	3.40	0.15	93	560

Input Specifications

Parameter	Conditions	Min	Typ	Max	Unit
Operating input voltage range	AC input	85	--	264	VAC
	DC input	120	--	370	VDC
Input frequency	AC input	47	--	63	Hz
Input current	100VAC and Full Load	--	--	3	A
	240VAC and Full Load	--	--	1.5	A
No load input power	230VAC	--	0.15	--	W
Leakage current	264VAC	--	--	100	µA
Power factor		0.95	--	--	
Start-up time		--	--	1500	ms
Rise time		--	15	--	ms
Hold up time	115VAC and Full Load	10	--	--	ms
Input inrush current	230VAC	--	--	100	A
Input protection	Internal fuse	T4.0A/250VAC			

Output Specifications

Parameter	Conditions	Min	Typ	Max	Unit	
Output power	Forced air cooling with 10CF	--	--	180	W	
	Natural convection	--	--	150		
Output peak power	Peak power	--	--	220	s	
	Peak power time	--	5	--		
	Peak power duty	--	20	--		
	Average operation power (% of Full Load)	--	55	--		
Initial set voltage accuracy	230VAC and Full Load	-1.0	--	+1.0	%	
Line regulation	Low Line to High Line at Full Load	-0.2	--	+0.2		
Load regulation	No Load to Full Load	-0.5	--	+0.5		
	10% Load to 90% Load	-0.4	--	+0.4		
Voltage adjustability		-8	--	+8		
Minimum load		--	0	--		
Ripple and noise	Measured by 20MHz bandwidth		--	--	mVp-p	
	With a 1 μ F/25V 1206 X7R MLCC	12Vout, 15Vout, 18Vout	--	120		--
	With a 1 μ F/50V 1206 X7R MLCC	24Vout, 28Vout, 36Vout	--	120		--
	With a 0.1 μ F/100V 1206 X7R MLCC	48Vout, 53Vout	--	250		--
Temperature coefficient		-0.02	--	+0.02	%/°C	
Transient response	Load step from 50 ~ 75% change at 2.5A/ μ s	Peak deviation	--	3	--	% Vout
		Recovery time	--	600	--	μ s
Over voltage protection	% Of Vout(nom); Latch mode	115	--	135	%	
Overload protection	% Of maximum Iout rated; Hiccup mode	--	150	--		
Short circuit protection		Continuous, automatic recovery				

General Specifications

Parameter	Conditions	Min	Typ	Max	Unit	
Isolation voltage	1 minute (Reinforced insulation)	Input to Output	4000	--	--	V AC
		Input (Output) to F.G	2500	--	--	
Isolation resistance	500V DC	0.1	--	--	G Ω	
Switching frequency	230VAC, Full load	--	170	--	kHz	
Safety approvals	IEC/ EN/ ANSI/AAMI ES 60601-1 IEC/ EN/ UL 62368-1				UL:E360199 UL:E193009 CB:UL(Demko)	
Weight	43MAD				162g (5.70oz)	
	43MED				218g (7.70oz)	
	43MDD				240g (8.47oz)	
MTBF	MIL-HDBK-217F Ta=25°C, Full load				1.145 x 10 ⁶ hrs	

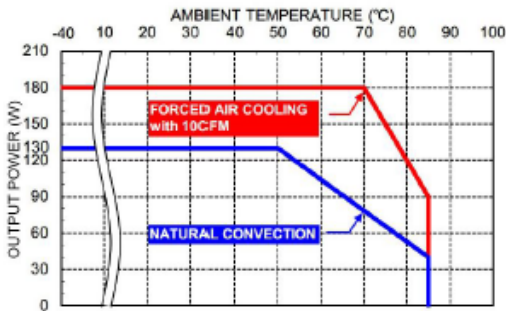
Environmental Specifications

Parameter	Conditions	Min	Typ	Max	Unit
Operating ambient temperature	With derating	-40	--	+85	
Storage temperature range		-40	--	+85	°C
Over temperature protection	Internal thermistor; Hiccup mode	--	125	--	
Operating altitude				5000	m
Thermal shock				MIL-STD-810F	
Shock				IEC60068-2-27	
Vibration				IEC60068-2-6	
Relative humidity	Non-condensing			5% to 95% RH	

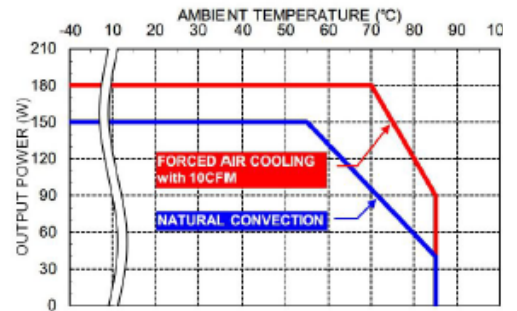
EMC Specifications

Parameter	Conditions	Level
EMI	EN55011, EN55032, EN60601-1-2, and FCC Part 18 / 15	Conducted Radiated Class B Class A
Harmonic currents	EN61000-3-2 Full Load	Class D
Voltage flicker	EN61000-3-3	
EMS	EN55024	
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	

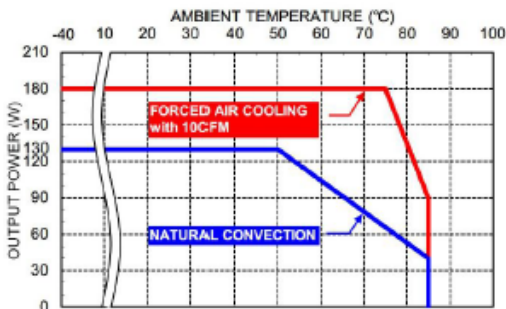
Characteristic Curve



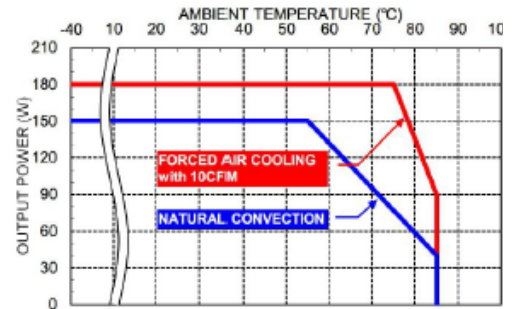
Derating Curve vs. Ambient Temperature
Temperature Vin=115VAC Open type



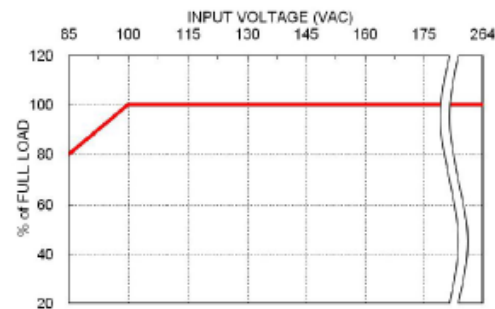
Derating Curve vs. Ambient Temperature
Temperature Vin=230VAC Open type



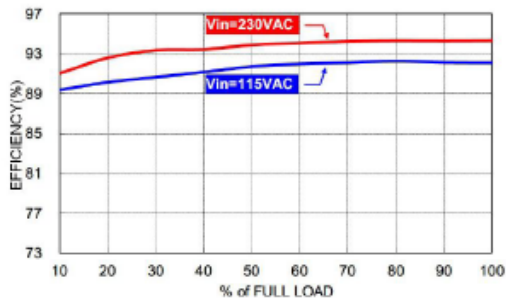
Derating Curve vs. Ambient Temperature
Vin=115VAC Enclosed type / Din rail type



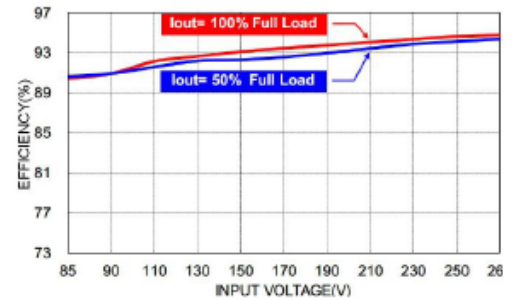
Derating Curve vs. Ambient Temperature
Vin=230VAC Enclosed type / Din rail type



Derating Curve vs. Input Voltage
43MAD180



Efficiency vs. Output Load 43MAD180US24
with Forced air cooling

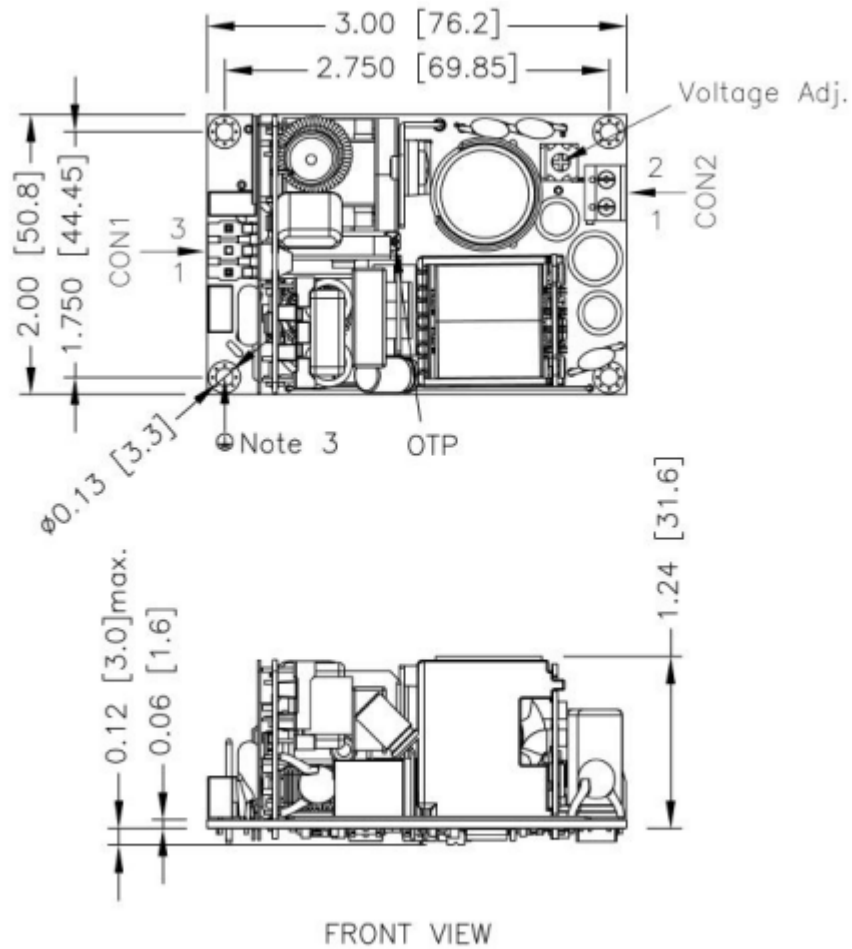


Efficiency vs. Input Voltage
43MAD180US24 with Forced air cooling

AC - DC

Mechanical Drawing

43MAD Open Type

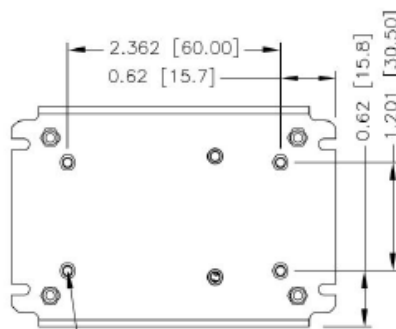
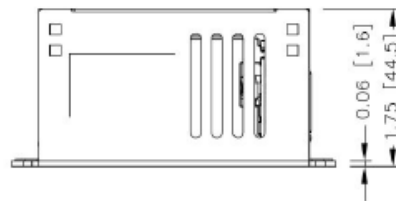
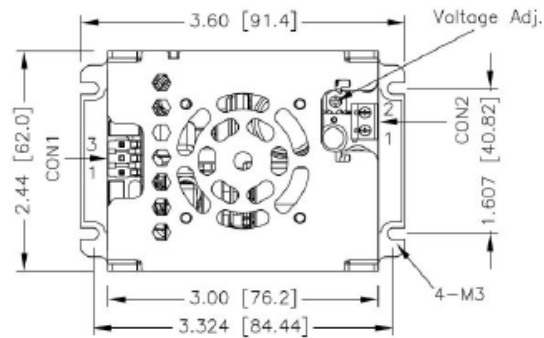


1. All dimensions in inch [mm]
Tolerance : x.xx±0.02 [x.x±0.5]
 x.xxx±0.01 [x.xx±0.25]
2. The CON2 locked torque: MAX 2.5Kgf.cm/0.25N.m
3. The screws holes can be considered as PE connection for CLASS I application.

AC – DC

Mechanical Drawing (continued)

43MED Enclosed Type


 4-M3X0.5 Note 2
Screw for Setup

BOTTOM VIEW

1. All dimensions in inch [mm]

Tolerance : x.xx±0.02 [x.x±0.5]

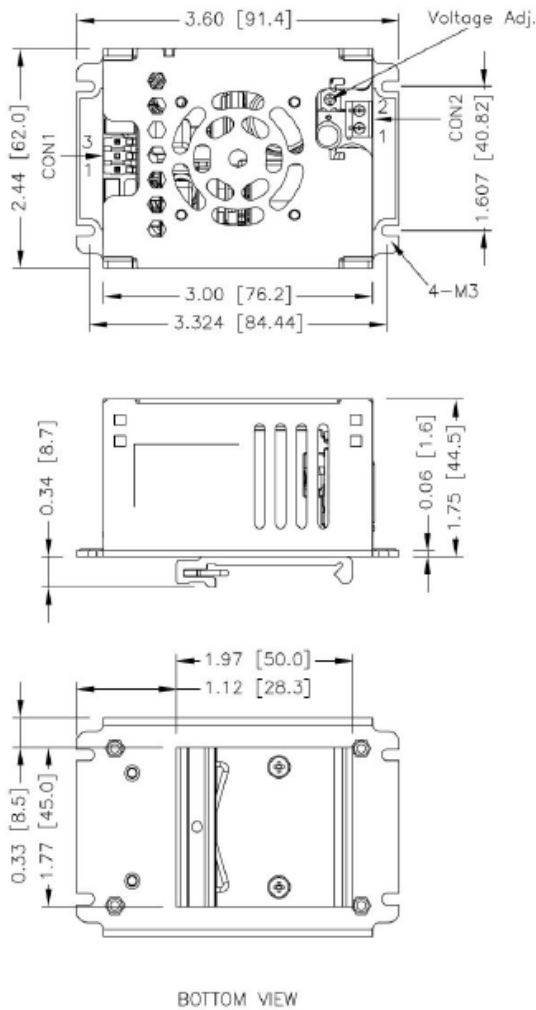
x.xxx±0.01 [x.xx±0.25]

2. The screw locked torque: MAX 5Kgf.cm/0.49N.m

3. The CON2 locked torque: MAX 2.5Kgf.cm/0.25N.m

Mechanical Drawing (continued)

43MDD Din Rail Type



- All dimensions in inch [mm]
Tolerance : x.xx±0.02 [x.x±0.5]
 x.xxx±0.01 [x.xx±0.25]
- The screw locked torque: MAX 5Kgf.cm/0.49N.m
- The CON2 locked torque: MAX 2.5Kgf.cm/0.25N.m

CON1-Input Connector

Pin 3	Line
Pin 1	Neutral

CON2-Output Connector

Pin 1	+Vout
Pin 2	-Vout

Mates with
Molex housing : **09-50-8031**
Molex crimp terminals : **2478,6838,45570**

Mates with
Screw locked torque MAX 2.5Kgf.cm/0.25N.m
Wire dimension range 24 ~ 14AWG