

## Features

- Universal input 85-265VAC
- High Efficiency Rating up to 93%
- 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 05 - 53VDC



Ideal Power's 43TxD180-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

**TxD180 - U S 12 A - M □**

Series Name	Input Voltage (V AC)	Output Quantity	Output Voltage (V DC)	Protection Type	Application Options
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<b>A:</b> Open type	85 ~ 264	<b>S:</b> Single	<b>12:</b> 12	□ : CLASS I	□ : AC Input
<b>E:</b> Enclosed type			<b>15:</b> 15	<b>B:</b> CLASS II	<b>C:</b> OVC III (2000m)
<b>D:</b> Din Rail type			<b>18:</b> 18		<b>G:</b> DC Input
			<b>24:</b> 24		
			<b>28:</b> 28		
			<b>36:</b> 36		
			<b>48:</b> 48		
			<b>53:</b> 53		

**Models**

Model Number	Input Range V AC	Output Voltage V DC	Output Current Natural Convection A	Max Output Power W	Input Power @ No Load W	Efficiency %	Maximum Capacitor Load µF
43TAD180US12A-M 43TED180US12A-M 43TDD180US12A-M	85 ~ 264	12	12.5	15	0.15	92	10000
43TAD180US15A-M 43TED180US15A-M 43TDD180US15A-M	85 ~ 264	15	10	12	0.15	92	6800
43TAD180US18A-M 43TED180US18A-M 43TDD180US18A-M	85 ~ 264	18	8.34	10	0.15	92	4700
43TAD180US24A-M 43TED180US24A-M 43TDD180US24A-M	85 ~ 264	24	6.25	7.5	0.15	94	2700
43TAD180US28A-M 43TED180US28A-M 43TDD180US28A-M	85 ~ 264	28	5.36	6.43	0.15	93	1800
43TAD180US36A-M 43TED180US36A-M 43TDD180US36A-M	85 ~ 264	36	4.17	5	0.15	93	1200
43TAD180US48A-M 43TED180US48A-M 43TDD180US48A-M	85 ~ 264	48	3.13	3.75	0.15	93	680
43TAD180US53A-M 43TED180US53A-M 43TDD180US53A-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	
No load input power	230VAC		0.15		W
Leakage current	264VAC			300	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 $\mu$ F/25V 1206 X7R MLCC	12Vout, 15Vout, 18Vout	120		
	With a 1 $\mu$ F/50V 1206 X7R MLCC	24Vout, 28Vout, 36Vout	120		
	With a 0.1 $\mu$ 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/ $\mu$ s	Peak deviation	3		% Vout
		Recovery time	600		$\mu$ 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	3000		V AC
		Input (Output) to F.G	2000		
Isolation resistance	500V DC	0.1			G $\Omega$
Switching frequency	230VAC, Full load		170		kHz
Safety approvals	IEC/ EN/ UL 62368-1				UL:E193009 CB:UL(Demko)
Weight	43TAD			162g (5.70oz)	
	43TED			218g (7.70oz)	
	43TDD			240g (8.47oz)	
MTBF	MIL-HDBK-217F Ta=25°C, Full load			1.145 x 10 <sup>5</sup> hrs	

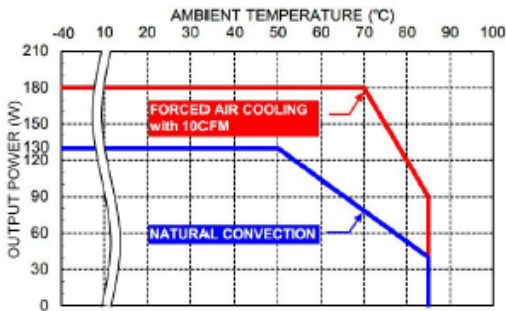
**Environmental Specifications**

Parameter	Conditions	Min	Typ	Max	Unit
Operating ambient temperature	With derating	-40		+85	°C
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	

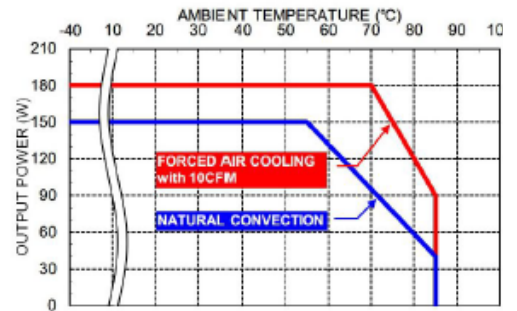
**EMC Specifications**

Parameter	Conditions	Level
EMI	EN55032 and FCC Part 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	

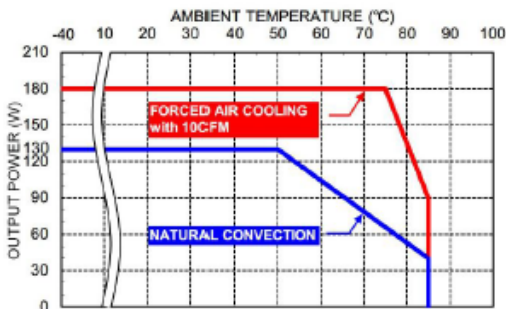
**Characteristic Curve**



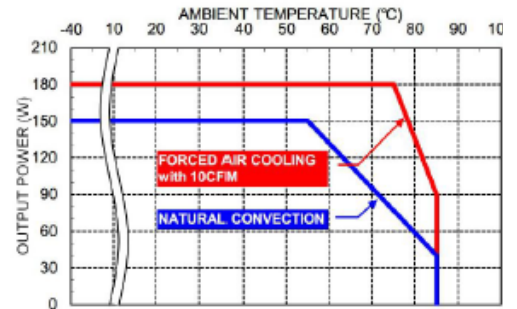
Derating Curve vs. Ambient Temperature  
TemperatureVin=115VAC Open type



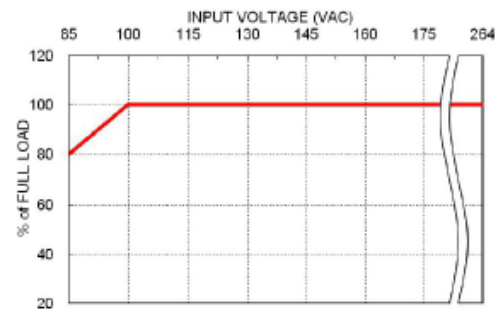
Derating Curve vs. Ambient Temperature  
TemperatureVin=230VAC Open type



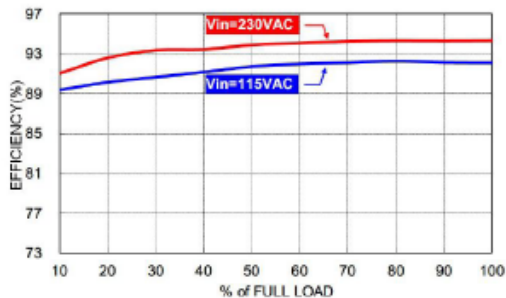
Derating Curve vs. Ambient Temperature  
Vin=115VAC Enclosed type / Din rail type



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



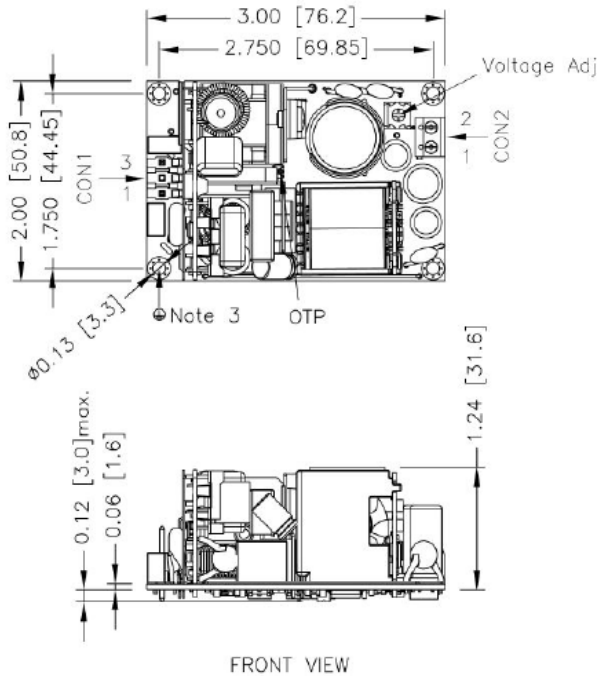
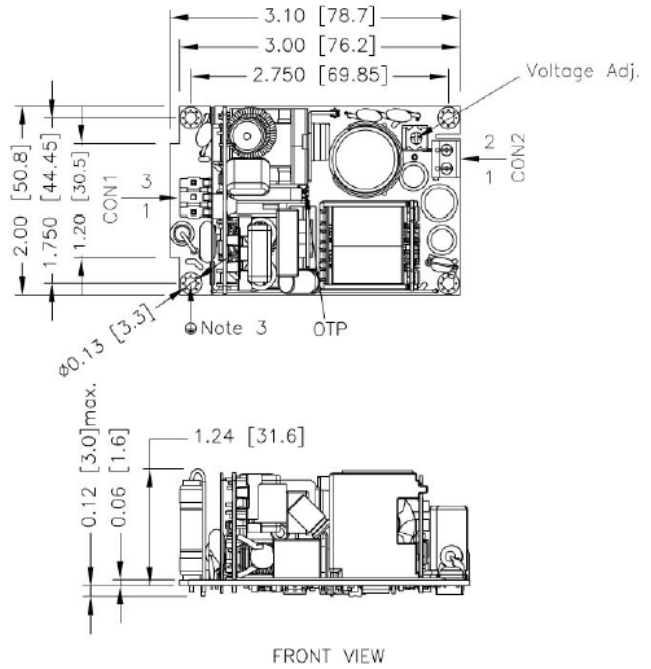
Derating Curve vs. Input Voltage  
43TAD180



Efficiency vs. Output Load 43TAD180US24  
with Forced air cooling



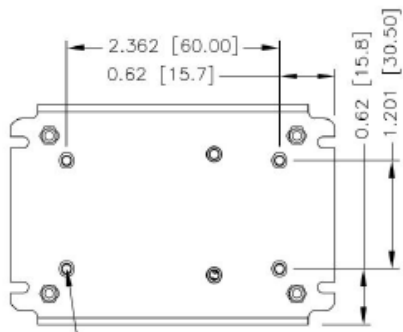
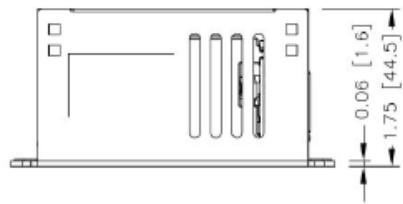
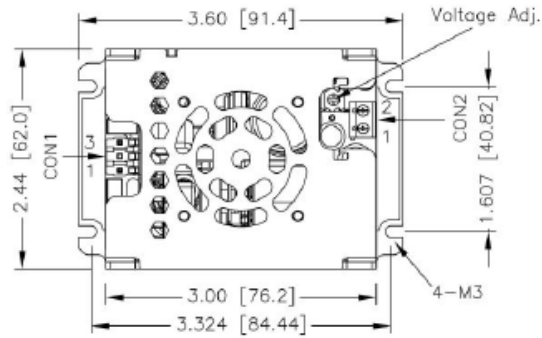
Efficiency vs. Input Voltage  
43TAD180US24 with Forced air cooling

**Mechanical Drawing**
**43TAD Open Type - AC Input**

**43TAD Open Type - DC Input**


1. All dimensions in inch [mm]  
 Tolerance :  $x.xx \pm 0.02$  [ $x.x \pm 0.5$ ]  
 $x.xxx \pm 0.01$  [ $x.xx \pm 0.25$ ]
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.

**Mechanical Drawing (continued)**

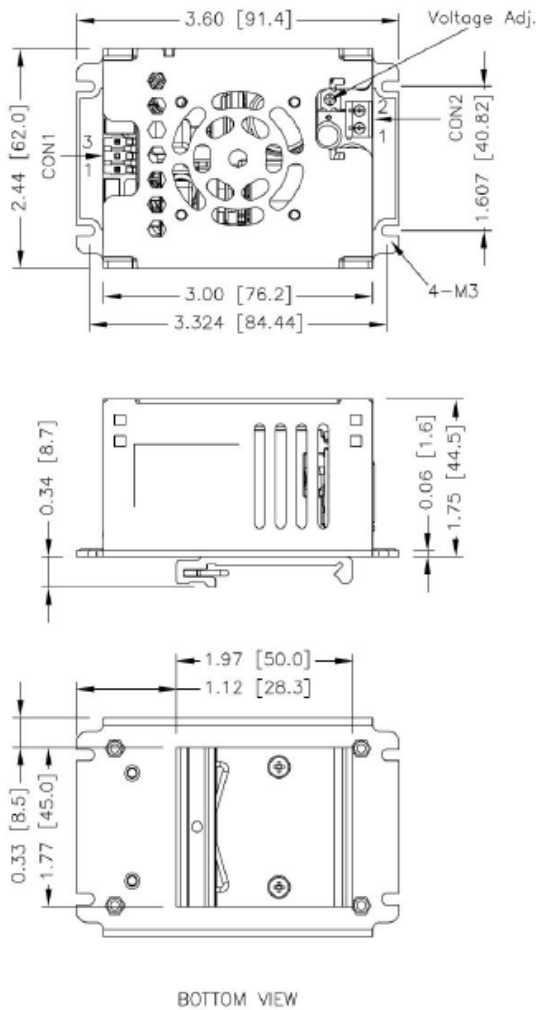
43TED Enclosed Type



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)**
**43TDD Din Rail 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 screw locked torque: MAX 5Kgf.cm/0.49N.m
3. The CON2 locked torque: MAX 2.5Kgf.cm/0.25N.m

**CON1-Input Connector**

Pin Number	AC Input	DC Input
Pin 3	Line	DC+
Pin 1	Neutral	DC-

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

**CON2-Output Connector**

Pin 1	-Vout
Pin 2	+Vout

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