

## Features

- Universal input 85~264VAC or 120~370VDC
- Operating Temperature Range: -25~80°
- 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 92%
- EMC EN60601-1-2, EN55011, EN55032 & FCC Class A & Class B Certified
- Single Output 5-53V DC



Ideal Power's 43MxF150USxy 150W 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

43MxF	150	U	S	12	B	- □ □
Series name*	Output Power (W)	Input Voltage (VAC)	Output Quantity	Output Voltage (VDC)	Protection Type	Options

**A:** Open type  
**U:** U chassis type  
**E:** Enclosed type  
**D:** Din rail type

**U:** Universal  
 85 ~ 264

**S:** Single

**12:** 12V  
**15:** 15V  
**18:** 18V  
**24:** 24V  
**28:** 28V  
**36:** 36V  
**48:** 48V

**B:** CLASS II  
 □: CLASS I

**First Code**  
 □: JST  
**M:** Molex  
**T:** Terminal Block

\*Replace x for required product type.

**Second Code**  
**F:** External FAN  
 (for 43MEF/43MDF)

**Models**

Model Number	Input Range VAC	Output Voltage VDC	Output Current		Efficiency %	Maximum Capacitor Load μF
			Natural Convection A	Forced Air Cooling With 10CFM / Option with Fan A		
43MAF150US12B 43MUF150US12B 43MEF150US12B 43MDF150US12B	85 ~ 264	12	8.34 8.34 10.84 10.84	12.5	91	10400
43MAF150US15B 43MUF150US15B 43MEF150US15B 43MDF150US15B	85 ~ 264	15	7.34 7.34 9 9	10	92	6600
43MAF150US18B 43MUF150US18B 43MEF150US18B 43MDF150US18B	85 ~ 264	18	6.12 6.12 7.5 7.5	8.34	92	4600
43MAF150US24B 43MUF150US24B 43MEF150US24B 43MDF150US24B	85 ~ 264	24	4.59 4.59 5.63 5.63	6.25	92	2600
43MAF150US28B 43MUF150US28B 43MEF150US28B 43MDF150US28B	85 ~ 264	28	3.93 3.93 4.83 4.83	5.36	92	1900
43MAF150US36B 43MUF150US36B 43MEF150US36B 43MDF150US36B	85 ~ 264	36	3.06 3.06 3.75 3.75	4.17	92	1150
43MAF150US48B 43MUF150US48B 43MEF150US48B 43MDF150US48B	85 ~ 264	48	2.09 2.09 2.71 2.71	3.13	92	650

**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
	DC input	120	--	370	VDC
Input frequency	AC input	47	--	63	Hz
Input current	11VAC and Full Load	--	--	1.7	A
	230VAC and Full Load	--	--	0.8	
No load input power	230VAC	Option -F (With Fan) Others	0.6	--	Watts
	230VAC		--	0.3	
Leakage current	264VAC	--	--	100	μA
Power Factor		0.95	--	--	
Start-up time		--	--	1000	ms
Rise time		--	20	--	ms
Hold up time	115VAC and Full Load	16	--	--	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	Forced air cooling with 10CFM or Option -F	--	--	150	Watts	
	Natural convection for 15Vout, 18Vout, 24Vout, 28Vout, 36Vout	--	--	110		
	Natural convection for 12Vout, 48Vout	--	--	110		
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		
		-10	--	+10		
Voltage adjustability		-10	--	+10	%	
Minimum load		--	0	--	%	
Ripple and Noise	Measured by 20MHz bandwidth With a 10µF/25V 1206 X7R MLCC	12Vout	--	120	--	mVp-p
		15Vout	--	150	--	
		18Vout	--	180	--	
	With a 1µF/50V 1206 X7R MLCC	24Vout	--	220	--	
		28Vout	--	220	--	
		36Vout	--	250	--	
	With a 0.1µF/100V 1206 X7R MLCC	48Vout	--	250	--	
	Temperature coefficient		-0.02	--	+0.02	
Transient response	Load step from 50 ~ 75% change at 2.5A/µs	Peak deviation	--	--	3	% Vout
		Recovery time	--	500	--	µs
Over voltage protection	% of Vout(nom); Latch mode	115	--	135	%	
Overload protection	% of Iout rated; Hiccup mode	115	--	150	%	
Short circuit protection		Continuous, automatic recovery				
Fan power supply		12V at 50mA				

**General Specifications**

Parameter	Conditions	Min	Typ	Max	Unit
Isolation voltage	1 minute (2MOPP insulation)	Input to Output	4000		
		Input (Output) to F.G.	2000		VAC
Isolation resistance	500VDC	0.1			GΩ
Switching frequency			60		kHz
Safety approvals	IEC/ EN/ ANSI/AAMI ES 60601-1 IEC/ EN/ UL 62368-1				UL:E360199
					UL:E193009
					CB:UL(Demko)
Weight		43MAF			187g (6.60oz)
		43MUF			235g (8.29oz)
		43MEF			256g (9.03oz)
		43MDF			278g (9.81oz)
MTBF	MIL-HDBK-217F Ta=25°C, Full load				7.861 x 10 <sup>5</sup> hrs

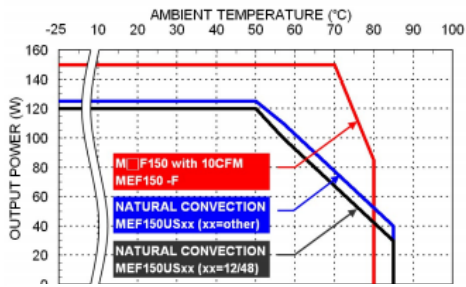
**Environmental Specifications**

Parameter	Conditions	Min	Typ	Max	Unit
Operating ambient temperature	With Derating	Option -F (With Fan)		+80	°C
		Others		+85	
Storage temperature range		Option -F (With Fan)		+75	°C
		Others		+85	
Operating altitude				5000	m
Shock				IEC60068-2-27	
Vibration				IEC60068-2-6	
Relative humidity	Non-condensing			5% to 95% RH	

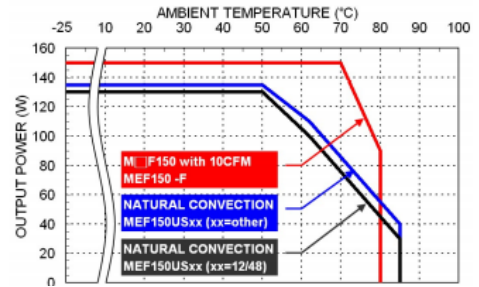
**EMC Specifications**

Parameter	Conditions	Level
EMI	EN55011, EN55032, EN60601-1-2 and FCC Part 18 / 15	Conducted
		Radiated
	External components may be required for class I application.	Class B Class A
Harmonic currents	EN61000-3-2 Full Load	Class A and D
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	

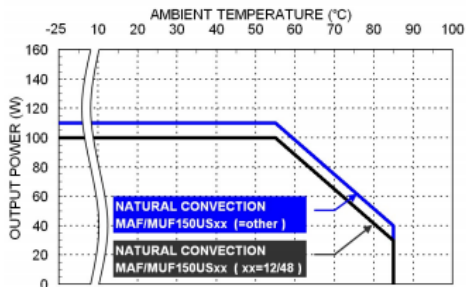
## Characteristic Curve



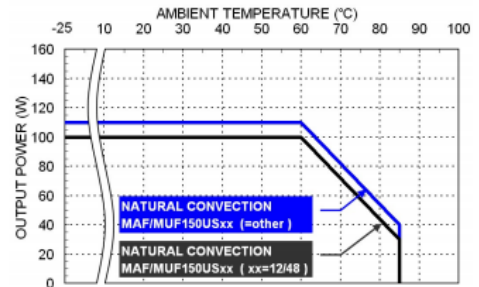
Derating Curve vs. Ambient Temperature  
Vin=115VAC



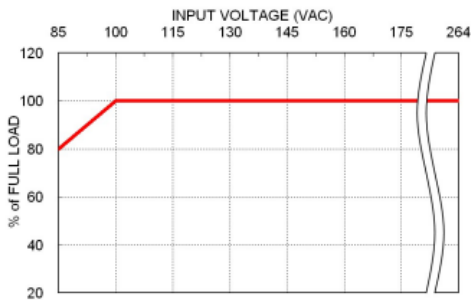
Derating Curve vs. Ambient Temperature  
Vin=230VAC



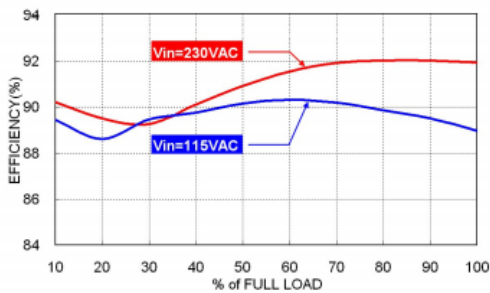
Derating Curve vs. Ambient Temperature  
Vin=115VAC



Derating Curve vs. Ambient Temperature  
Vin=230VAC



Derating Curve vs. Input Voltage 43MxF150

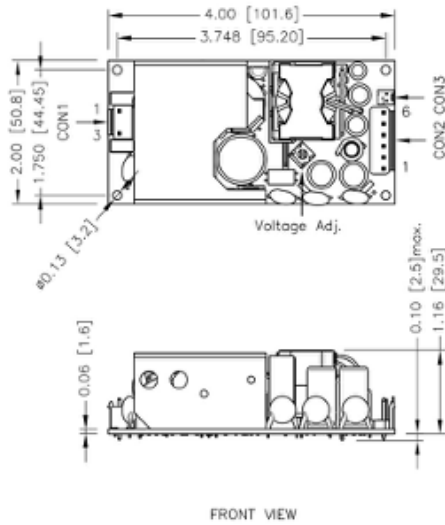
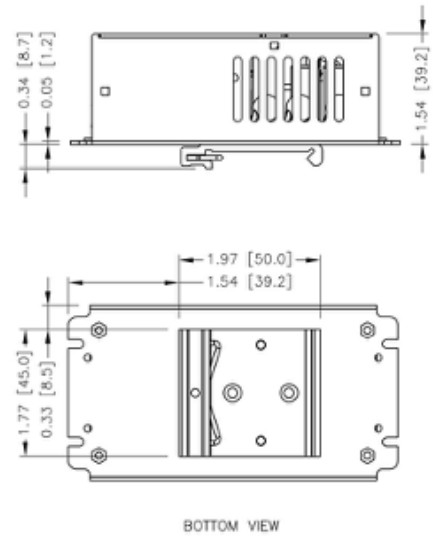


Efficiency vs. Output Load 43MxF150US24B



Efficiency vs. Input Voltage 43MxF150US24B

AC - DC

**Mechanical Drawing**
**43MAF Open type**

**43MDF Din Rail type**


- All dimensions in inch [mm]  
Tolerance: x.xx±0.02 [x.x±0.5] x.xxx±0.010 [x.xx±0.25]
- M3×0.5 screw locked torque MAX 5Kgf.cm/0.49N.m

**CONNECTORS CONNECTIONS**
**CON1 – Input Connector**

Pin Number	AC Input
Pin 1	Line
Pin 3	Neutral

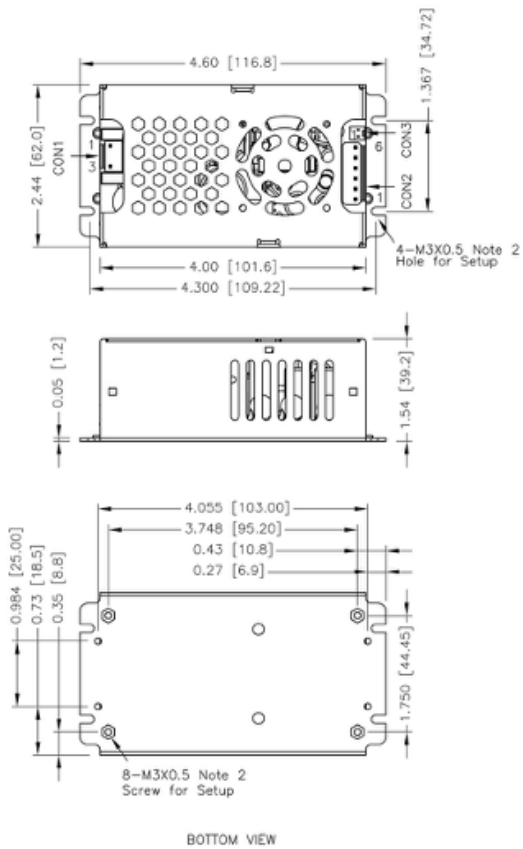
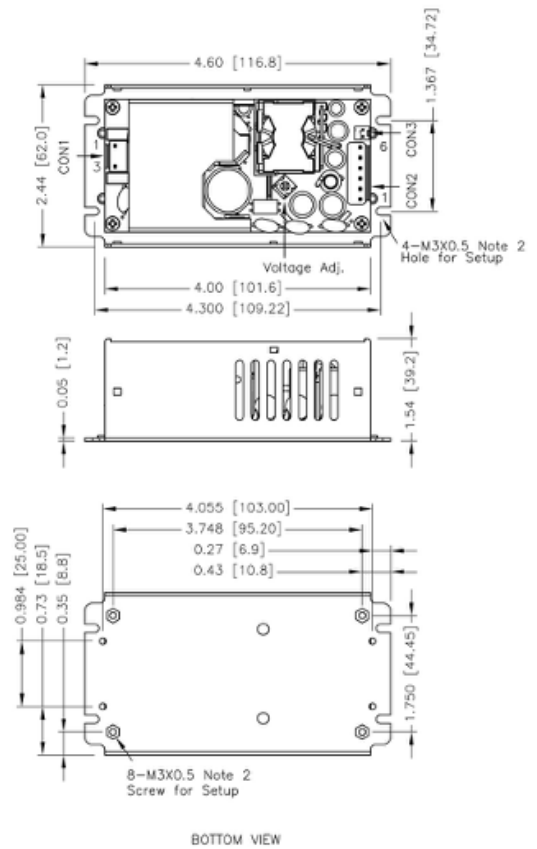
**CON2 – Output Connector**

Pin 1,2,3	-Vout
Pin 4,5,6	+Vout

**CON3 – Fan Connector**

Pin 1	-Fan
Pin 2	+Fan

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

**Mechanical Drawing**
**43MEF Enclosed**

**43MUF U Chassis type**


- All dimensions in inch [mm]  
Tolerance: x.xx±0.02 [x.x±0.5] x.xxx±0.010 [x.xx±0.25]
- M3x0.5 screw locked torque MAX 5Kgf.cm/0.49N.m

**CONNECTORS CONNECTIONS**
**CON1 – Input Connector**

Pin Number	AC Input
Pin 1	Line
Pin 3	Neutral

**CON2 – Output Connector**

Pin 1,2,3	-Vout
Pin 4,5,6	+Vout

**CON3 – Fan Connector**

Pin 1	-Fan
Pin 2	+Fan

Mates with:

Molex housing : 22-01-1022

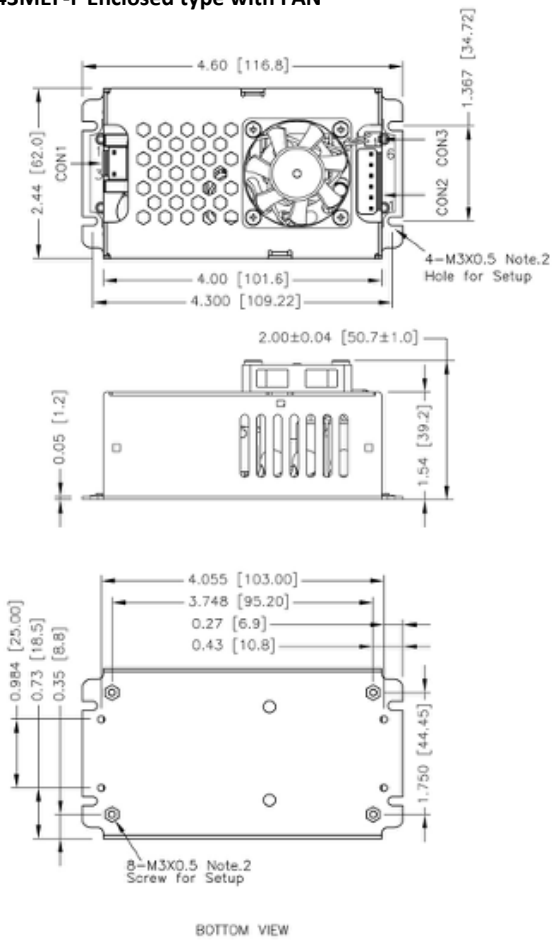
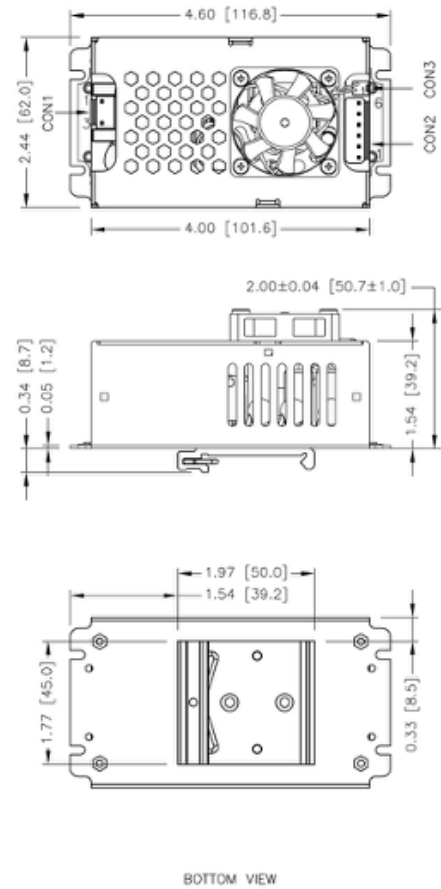
Molex crimp terminals : 2759

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

Ideal Power Limited

14 Larks Way, Tree Beech Enterprise Park, Gunn, Barnstaple, Devon, England, EX32 7NZ.

www.idealpower.co.uk | +44 (0) 845 260 3400

**Mechanical Drawing**
**43MEF-F Enclosed type with FAN**

**43MDF-F U Chassis type with FAN**


- All dimensions in inch [mm]  
Tolerance: x.xx±0.02 [x.x±0.5] x.xxx±0.010 [x.xx±0.25]
- M3x0.5 screw locked torque MAX 5Kgf.cm/0.49N.m

**CONNECTORS CONNECTIONS**
**CON1 – Input Connector**

Pin Number	AC Input
Pin 1	Line
Pin 3	Neutral

**CON2 – Output Connector**

Pin 1,2,3	-Vout
Pin 4,5,6	+Vout

**CON3 – Fan Connector**

Pin 1	-Fan
Pin 2	+Fan

Mates with:




Molex housing : 22-01-1022

Molex crimp terminals : 2759

\*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	-M	Molex Type	-T	Terminal Block
	Mates with housing CON1: VHR-3N CON2: VHR-6N		Mates with housing CON1: 09-50-8031 CON2: 09-50-8061		Screw locked torque MAX 2Kgf.cm/0.2N.m
	Crimp terminals CON1: SVH-21T-P1.1 CON2: SVH-21T-P1.1		Crimp terminals CON1: SD-2478 CON2: SD-2478		Wire dimension range 26 ~ 16AWG

## External FAN Options

There is an external fan option for MEF and MDF. The fan's life is shorter than power supply and has only 2 years warranty. Here are specifications for replacement.

Fan dimensions	40 x 40 x 10 mm
Air flow	7 CFM

