



Power Mate Technology, Inc

MAF300 Series

2 X 4 Inch AC-DC POWER SUPPLIES
Up to 300 Watts

5

YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT

+85°C
-40°C
AMBIENT TEMP.



Medical



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



PV



Railway

UL US CB CE UK CA



2
x
MOPP

PEAK
POWER

4000
VAC
Reinforced
Insulation

ADJ.
Output
Voltage

Internal
EN55032
Class **B**
Filter

LOW
Leakage
Current

LOW
Standby
Power

Operating
Altitude
5000
meter

Protection
Class I
Class II

FAN
Speed
Control

REMOTE
ON
OFF

POWER
GOOD

OCP

OTP

OVP

SCP

PART NUMBER STRUCTURE

MAF300	U	S	12	A	- M		F3	
Series Name	Universal Input (VAC)	Output Quantity	Output Voltage (VDC)	Protection Type		Package Options	Fan Control Options	Electrical Options
	85~264	Single	12:12V 15:15V 18:18V 24:24V 28:28V 36:36V 48:48V 53:53V	A: CLASS I B: CLASS II		☐ : Open type E1: Enclosed type U2: Base plate type D1: Din rail type	F3: No External FAN with fixed fan speed control F4: No External FAN with variable fan speed control For E1/D1 Type Only F1: External FAN with fixed fan speed control F2: External FAN with variable fan speed control	☐ : Standby power Remote control Power Good signal N: None

TECHNICAL SPECIFICATION All specifications are typical at 230VAC input, full load and 25°C unless otherwise noted

Model Number	Input Range	Output Voltage	Output Current		Input Power @No Load	Efficiency	Maximum Capacitor Load
			Natural Convection	Forced Air Cooling With 21 CFM			
	VAC	VDC	A	A	W	%	uF
MAF300US12A-MF3	85 ~ 264	12	15	25	0.3	91	20000
MAF300US15A-MF3	85 ~ 264	15	12	20	0.3	92	12000
MAF300US18A-MF3	85 ~ 264	18	10	16.66	0.3	93	9000
MAF300US24A-MF3	85 ~ 264	24	7.5	12.5	0.3	93	2400
MAF300US28A-MF3	85 ~ 264	28	6.42	10.71	0.3	93	2000
MAF300US36A-MF3	85 ~ 264	36	5	8.33	0.3	93	1000
MAF300US48A-MF3	85 ~ 264	48	3.75	6.25	0.3	93	650
MAF300US53A-MF3	85 ~ 264	53	3.4	5.67	0.3	93	470

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			3.9	A
	240VAC and Full Load			1.6	
No load input power	230VAC		3		Watts
	Option-F(with Fan) Others		0.3		
Leakage current	264VAC			100	μA
Power Factor	230VAC and Full Load	0.9			
Start up time				2000	ms
Rise time			30		ms
Hold up time	115VAC and 225W	10			ms
Input inrush current	230VAC			70	A
Input protection	Internal fuse in line and neutral			T5.0A/250VAC	

OUTPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output power	Forced air cooling			300	Watts
	Natural convection			180	
Output peak power	Peak power			360	Watts
	Peak power time		5		s
	Peak power duty		20		%
	Average operation power (% of Full Load)		50		%
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	Maximum output deviation is inclusive of remote sense	-10		+10	%
Minimum load			0		%
Ripple and noise	Measured by 20MHz bandwidth With a 1μF/100V 1206 X7R MLCC				mVp-p
			120		
			150		
			180		
			240		
			280		
			360		
			480		
			530		
Temperature coefficient		-0.02		+0.02	%/°C
Transient response	Load step from 50 ~ 75% change at 2.5A/μs		3		% Vout
	Recovery within 1% Vout		600		
Over voltage protection	% of Vout(nom); Latch mode	115		135	%
Over load protection	% of Iout rated; Hiccup mode		150		%
Short circuit protection					Continuous, automatics recovery
Main output remote control	Positive Logic				Open or 3 ~ 12 VDC
	Referenced to "Control"				
Main output Power Good signal	*Standby power always present				Low
	Referenced to "GND"				
Standby power supply	Standby and fan power supply total power 8W				Open collector
Fan power supply	5Vout			1000	mA
	12Vout			500	mA

GENERAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Isolation voltage	1 minute (2MOPP insulation) Input to Output Input (Output) to F.G.	4000 2500			VAC
Isolation resistance	500VDC	0.1			GΩ
Switching frequency	230VAC, Full load		140		kHz
Safety approvals	IEC/ EN/ ANSI/AAMI ES 60601-1 IEC/ EN/ UL 62368-1			UL:E360199 UL:E193009 CB:UL(Demko)	
Weight	Open type Enclosed type Base plate type Din rail type			210g (7.40oz) 318g (11.21oz) 260g (9.17oz) 340g (11.99oz)	
MTBF	MIL-HDBK-217F Ta=25°C, Full load			1.056 x 10 ⁶ hrs	

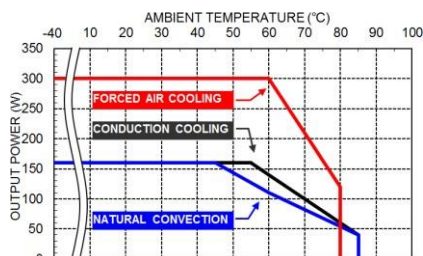
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	With derating Option –F (With Fan) Others	-40 -40		+80 +85	°C
Storage temperature range	Option –F (With Fan) Others	-40 -40		+80 +85	°C
Over temperature protection	Internal thermistor ; Hiccup mode		125		°C
Operating altitude				5000	m
Shock				IEC60068-2-27	
Vibration				IEC60068-2-6	
Relative humidity	Non-condensing			5% to 95% RH	

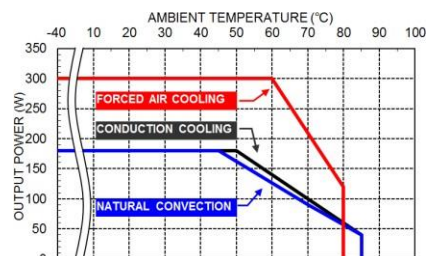
EMC SPECIFICATIONS

Parameter	Conditions	Level
EMI	EN55011, EN55032, EN60601-1-2 and FCC Part 18 / 15	Conducted Radiated Class B Class A
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 30 A/m	Perf. Criteria A
Dip and interruptions	EN61000-4-11	

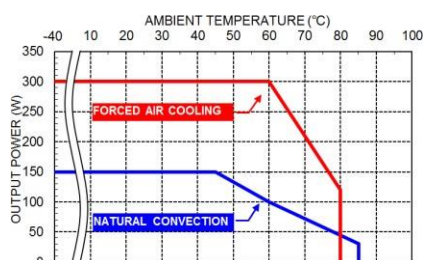
CHARACTERISTIC CURVE



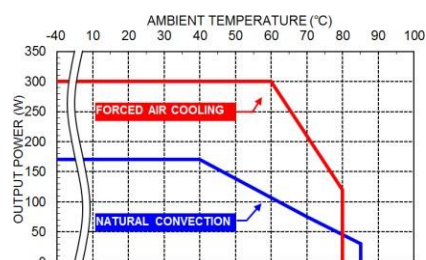
Derating Curve vs. Ambient Temperature
Vin=115VAC Open type



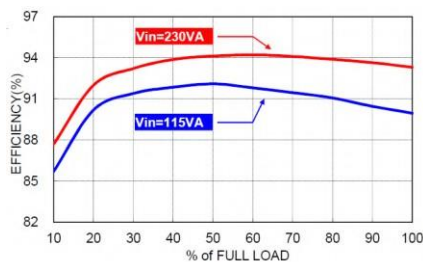
Derating Curve vs. Ambient Temperature
Vin=230VAC Open type



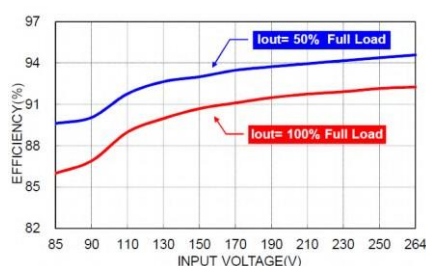
Derating Curve vs. Ambient Temperature
Vin=115VAC Enclosed type / Din rail type



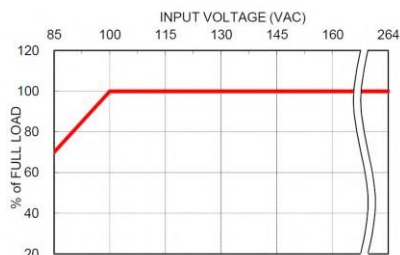
Derating Curve vs. Ambient Temperature
Vin=230VAC Enclosed type / Din rail type



Efficiency vs. Output Load
MAF300US24 with Forced air cooling



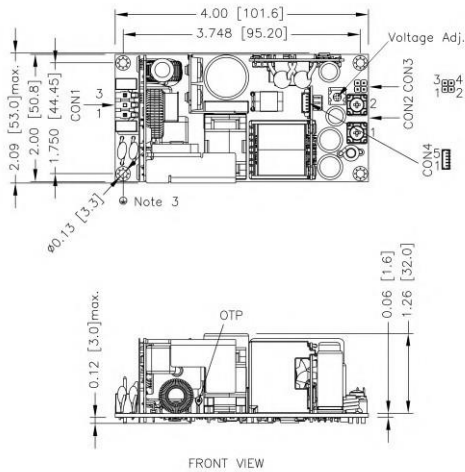
Efficiency vs. Input Voltage
MAF300US24 with Forced air cooling



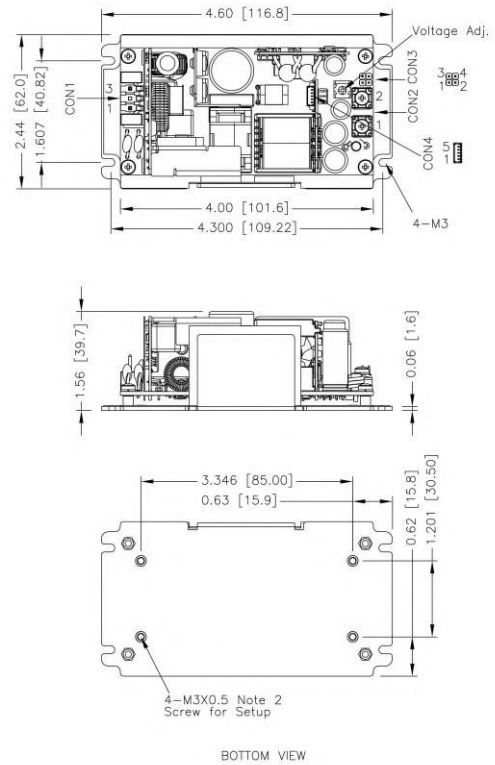
Derating Curve vs. Input Voltage
MAF300

MECHANICAL DRAWING

Open type



Base plate type



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 16.8Kgf.cm/1.65N.m
3. The screws holes can be considered as PE connection for CLASS I application.

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 screw locked torque: MAX 5Kgf.cm/0.49N.m
3. The CON2 locked torque: MAX 16.8Kgf.cm/1.65N.m

CONNECTORS CONNECTIONS

CON1 – Input Connector	
Pin 3	Line
Pin 1	Neutral

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

CON2 – Output Connector	
Pin 1	+Vout
Pin 2	-Vout

Mates with
KST ring terminal : **RVS2-3.7**

CON3 – Aux Connector	
Pin 1	+Fan
Pin 2	-Fan
Pin 3	+V Sense
Pin 4	-V Sense

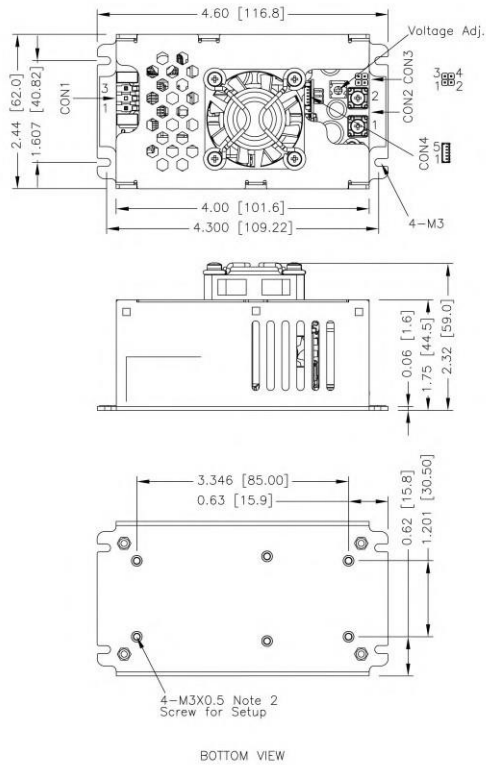
Mates with
Molex housing : **90143-0004**
Molex crimp terminals : **90119**

CON4 – Aux Connector	
Pin 1	+Standby
Pin 2	-Standby
Pin 3	+PG
Pin 4	-Control
Pin 5	+Control

Mates with
Molex housing : **51021-0500**
Molex crimp terminals :
50058,50079

MECHANICAL DRAWING

Enclosed type with FAN



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 screw locked torque: MAX 5Kgf.cm/0.49N.m
3. The CON2 locked torque: MAX 16.8Kgf.cm/1.65N.m

CONNECTORS CONNECTIONS

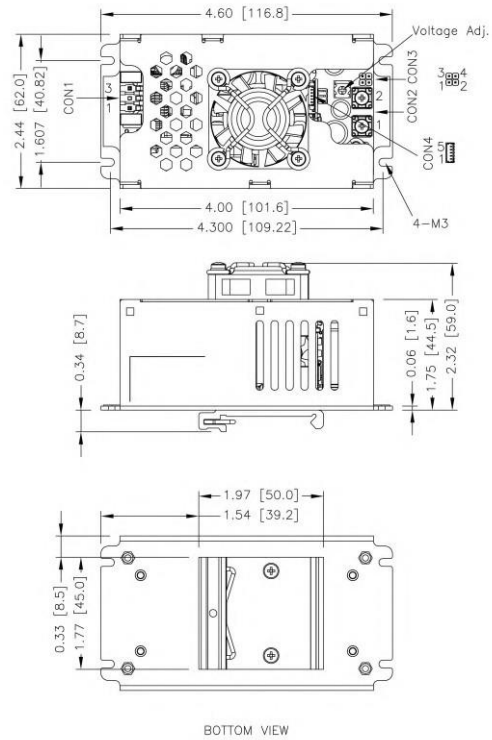
CON1 – Input Connector	
Pin 3	Line
Pin 1	Neutral

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

CON2 – Output Connector	
Pin 1	+Vout
Pin 2	-Vout

Mates with
KST ring terminal : **RVS2-3.7**

Din rail type with FAN



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 16.8Kgf.cm/1.65N.m

CON3 – Aux Connector	
Pin 1	+Fan
Pin 2	-Fan
Pin 3	+V Sense
Pin 4	-V Sense

Mates with
Molex housing : **90143-0004**
Molex crimp terminals : **90119**

CON4 – Aux Connector	
Pin 1	+Standby
Pin 2	-Standby
Pin 3	+PG
Pin 4	-Control
Pin 5	+Control

Mates with
Molex housing : **51021-0500**
Molex crimp terminals :
50058,50079