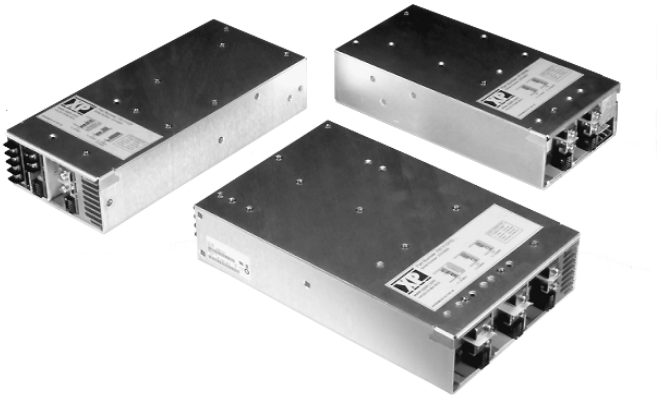
AC/DC Modular

300-2400 Watts
MP Series

THE XPERTS IN POWER



- 48 Hour Delivery
- 1 to 24 Outputs
- Rugged Design
- 90-264 VAC Input
- Floating Outputs
- Featured Signal Set
- Industry Leading Power Density

Specification

Input

Input Voltage	•	*90-264 VAC*
Input Frequency	•	*47 to 63 Hz*
Inrush Current	•	*40 A pk max*
Power Factor	•	*Compliant with EN61000-3-2*

Output

Output Voltage	•	*Dependant on module selected See Module Table*
Output Voltage Adjustment	•	*±5% typical all outputs*
Hold Up Time	•	*20 ms min*
Line Regulation	•	*Typically 0.1%, maximum 0.3%*
Load Regulation	•	*1% max for single output modules & V1 of dual & triple output modules. 2% max for V2 & V3 of dual & triple output modules. The E module requires up to 10% load & the K module up to 5% load on V1 to achieve the specified regulation figures on V2 & V3 outputs.*
Ripple & Noise	•	*50 mV or 1% pk-pk, whichever is greater, 20 MHz bandwidth*
Overvoltage Protection	•	*115-130% of nominal output for single output & output 1 of dual & triple output modules. No OVP fitted to G modules and H modules*
Overload Protection	•	*<140% max of nominal rating*
Remote Sense	•	*See Application Notes*
Current Sharing	•	*Single wire parallel current share, See Application Notes*
Inhibit	•	*TTL compatible, See Application Notes*
DC OK	•	*TTL compatible, See Application Notes*
Power Fail	•	*TTL compatible, See Application Notes*
Housekeeping	•	*5V at 1A*

General

Efficiency	•	*75% typical at nominal input*

Environmental

Operating Temperature	•	*0 °C to +70 °C (for operating above 50°C derate linearly to 50% at +70°C for standard models and above 40°C to 50% at 60°C for reverse air models)*
Storage Temperature	•	*-40 °C to +85 °C*
Operating Altitude	•	*-350 to 7500 ft with no derating*
Temperature Coefficient	•	*0.03%/°C*

EMC & Safety

EMC	•	*EN55022 Class B conducted EN61000-4-2 Level 3, Perf Criteria B EN61000-4-3 Level 3, Perf Criteria B EN61000-4-4 Level 3, Perf Criteria B EN61000-4-5 Level 3, Perf Criteria B EN61000-4-6 Level 3, Perf Criteria B*
Safety Approvals	•	*EN60950, UL1950, CSA22.2-No 950, CE Marked LVD*

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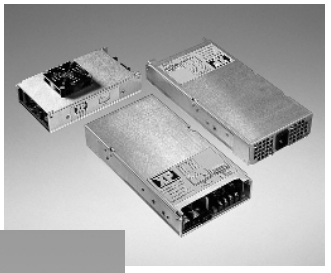
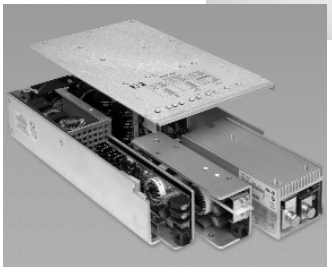
Configured Power Supply Benefits

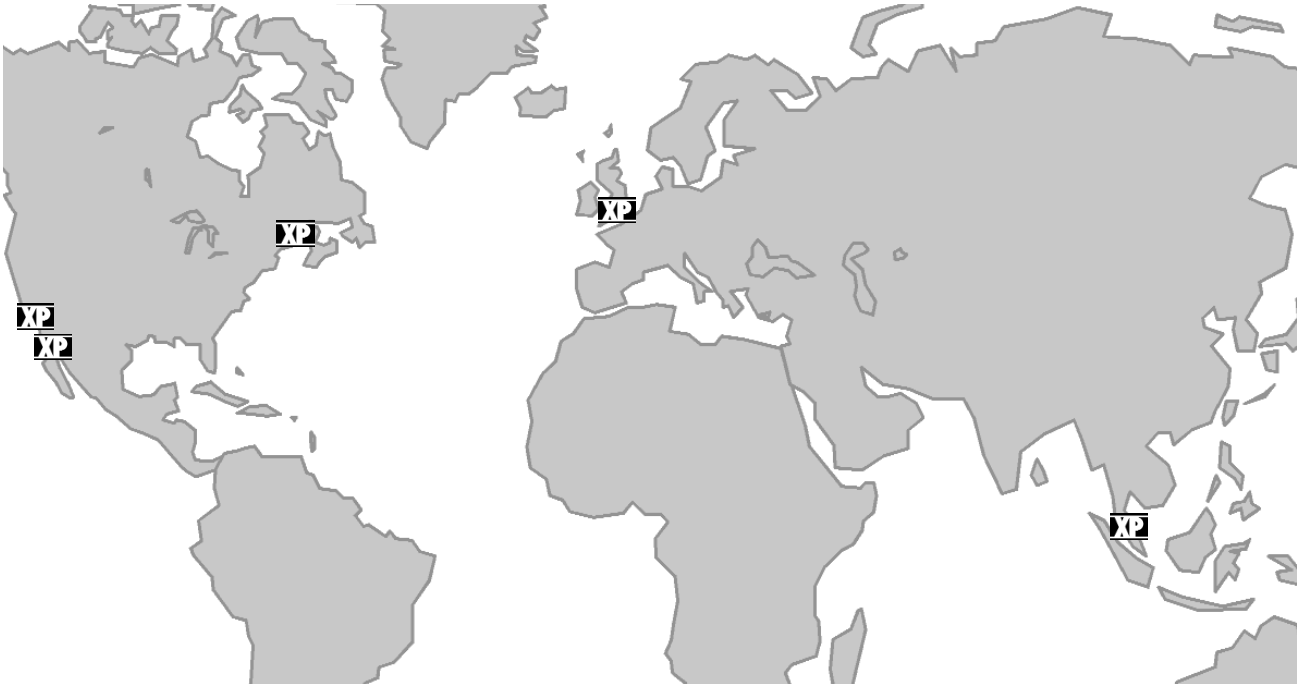


Our configured power supplies bring you all the benefits of custom power solutions without any of the associated risks.

Chassis and modules are held in stock at our locations throughout North America and Europe and are configured to meet a very wide range of customer requirements with guaranteed fast delivery times. All XPiQ locations operate under Management Systems registered to ISO9001:2000. Standard safety approvals include UL, CSA and TUV so that each solution can be easily integrated into our customers' products and fully supported through the design phase to allow for last minute design changes.



The following pages give details of how to configure your own solution, however, should you need further assistance then please contact your local sales office.



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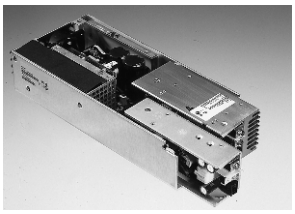
Model Selection & Power Supply Construction



STEP 1
In order to configure a model number for your MP Series power supply, first select the appropriate chassis dependant on your applications continuous, maximum output power requirements.

STEP 2
Next, from the ratings on the following page, select the output modules that suit your output voltage and current requirements. Modules can be positioned as denoted by the ■, ▲ and ● sequence shown below.

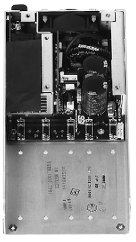
STEP 3
Once the chassis & output modules have been selected, form the model number as shown below.

F3 300 W (500 W)
and FF 350 W (525 W)

Module Position
3 2 1

● ● ●
● ● ▲
▲ ▲ ■

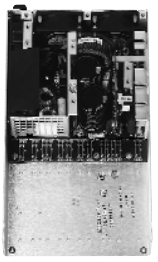
F4 400 W (600 W)
and F6 600 W (750 W)
and F7 700 W (900 W)



Module Position
4 3 2 1

● ● ● ●
● ● ● ▲
● ● ▲ ▲
▲ ■

F8 800 W (1000 W)
and FX 1000 W (1200 W)



Module Position
6 5 4 3 2 1

● ● ● ● ● ●
● ● ● ● ● ▲
● ● ● ● ▲ ▲
● ● ● ▲ ▲ ▲
▲ ● ● ▲ ▲ ■
● ▲ ▲ ■ ■
■ ■ ■

Note
Maximum out power per chassis is shown for universal input (90-264 VAC) followed by increased ratings for high line only operation (180-264 VAC) shown in parenthesis. For example, F6 chassis is 600 W max or 750 W max when using 180-264 VAC input only.

Model Number Construction

Chassis Power	Module Position 1	Module Position 2	Module Position 3	Module Position 4	Module Position 5	Module Position 6	Option	Option
F 7	B 3	J 6	J 6	G 2			- 22	1R
Add the chassis code first. F7 = 700W Chassis	Add Module 1 B3 = ▲ Single O/P 5 V @ 60 A	Add Module 2 J6 = ● Single O/P 24 V @ 8 A	Add Module 3 J6 = ● Single O/P 24 V @ 8 A	Add Module 4 G2 = ● Dual O/P 15 V @ 3 A 15 V @ 3 A F4, F6, F7, F8 & FX only	Add Module 5 F8 & FX only	Add Module 6 F8 & FX only	Add Option Codes: Denotes J6 modules in parallel to give 24 V @ 16 A	Denotes reverse air flow

(For single slot, single O/P modules (●), insert highest power first and the lowest voltage if power is equal.)

Option Codes

No.	*Option*	*Function*
01	2 B modules	parallel connect in slots 1 & 2
02	2 B modules	parallel connect in slots 2 & 3
03	2 B modules	parallel connect in slots 3 & 4
04	2 B modules	parallel connect in slots 1 & 2 and
	2 B modules	parallel connect in slots 3 & 4
05	2 C modules	parallel connect in slots 1 & 2 (2 V to 8 V)
06	2 C modules	parallel connect in slots 1 & 2 (18 V to 48 V)
21	2J modules	parallel connect in slots 1 & 2
22	2J modules	parallel connect in slots 2 & 3
23	2J modules	parallel connect in slots 3 & 4
24	2J modules	parallel connect in slots 4 & 5
25	2J modules	parallel connect in slots 5 & 6
1R	Reverse Air	fans in exhaust configuration using standard fans
1S	Low Noise	standard (air inflow) configuration using Low Noise fans (F8 & FX only)
2R	Reverse Air	fans in exhaust configuration using Low Noise fans (F8 & FX only)

NOTE: Consult sales for 1200-2400 W model numbers

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OUTPUT VOLTAGE & CURRENT RATINGS - SINGLE OUTPUT MODULES — MP

VOLTS	CURRENT	MODULE CODE	MODULE SIZE	VOLTS	CURRENT	MODULE CODE	MODULE SIZE	VOLTS	CURRENT	MODULE CODE	MODULE SIZE	VOLTS	CURRENT	MODULE CODE	MODULE SIZE	VOLTS	CURRENT	MODULE CODE	MODULE SIZE
2.0 VOLTS				2.2 VOLTS				3 VOLTS				3.3 VOLTS				5 VOLTS			
2.0 V	20.0 A	A1	●	2.2 V	20.0 A	AA	●	3.0 V	20.0 A	AB	●	3.3 V	20.0 A	A2	●	5.0 V	7.0 A	H3	●
2.0 V	35.0 A	J1	●	2.2 V	35.0 A	JA	●	3.0 V	35.0 A	JB	●	3.3 V	35.0 A	J2	●	5.0 V	20.0 A	A3	●
2.0 V	60.0 A	B1	▲	2.2 V	60.0 A	BA	▲	3.0 V	60.0 A	BB	▲	3.3 V	60.0 A	B2	▲	5.0 V	35.0 A	J3	●
2.0 V	100.0 A	C1	■	2.2 V	100.0 A	CA	■	3.0 V	100.0 A	CB	■	3.3 V	100.0 A	C2	■	5.0 V	60.0 A	B3	▲
																5.0 V	100.0 A	C3	■
5.2 VOLTS				5.5 VOLTS				6 VOLTS				8 VOLTS				10 VOLTS			
5.2 V	7.0 A	HC	●	5.5 V	7.0 A	HD	●	6.0 V	17.0 A	AE	●	8.0 V	12.5 A	AF	●	10.0 V	10.0 A	AG	●
5.2 V	20.0 A	AC	●	5.5 V	20.0 A	AD	●	6.0 V	23.0 A	JE	●	8.0 V	20.0 A	JF	●	10.0 V	18.0 A	JG	●
5.2 V	35.0 A	JC	●	5.5 V	35.0 A	JD	●	6.0 V	50.0 A	BE	▲	8.0 V	40.0 A	BF	▲	10.0 V	25.0 A	BG	▲
5.2 V	60.0 A	BC	▲	5.5 V	55.0 A	BD	▲	6.0 V	80.0 A	CE	■	8.0 V	60.0 A	CF	■				
5.2 V	100.0 A	CC	■	5.5 V	90.0 A	CD	■												
11 VOLTS				12 VOLTS				14 VOLTS				15 VOLTS				18 VOLTS			
11.0 V	4.0 A	HH	●	12.0 V	4.0 A	H4	●	14.0 V	3.0 A	HJ	●	15.0 V	3.0 A	H5	●	18.0 V	11.0 A	JK	●
11.0 V	10.0 A	AH	●	12.0 V	10.0 A	A4	●	14.0 V	8.0 A	AJ	●	15.0 V	8.0 A	A5	●	18.0 V	17.0 A	BK	▲
11.0 V	18.0 A	JH	●	12.0 V	17.0 A	J4	●	14.0 V	14.0 A	JJ	●	15.0 V	13.0 A	J5	●	18.0 V	25.0 A	CK	■
11.0 V	25.0 A	BH	▲	12.0 V	25.0 A	B4	▲	14.0 V	20.0 A	BJ	▲	15.0 V	20.0 A	B5	▲				
20 VOLTS				24 VOLTS				28 VOLTS				30 VOLTS				33 VOLTS			
20.0 V	6.0 A	AM	●	24.0 V	2.0 A	H6	●	28.0 V	5.0 A	A7	●	30.0 V	7.0 A	JN	●	33.0 V	4.0 A	AP	●
20.0 V	10.0 A	JM	●	24.0 V	6.0 A	A6	●	28.0 V	7.0 A	J7	●	30.0 V	11.0 A	BN	▲	33.0 V	6.0 A	JP	●
20.0 V	17.0 A	BM	▲	24.0 V	8.0 A	J6	●	28.0 V	14.5 A	B7	▲	30.0 V	16.0 A	CN	■	33.0 V	11.0 A	BP	▲
20.0 V	21.0 A	CM	■	24.0 V	17.0 A	B6	▲	28.0 V	18.0 A	C7	■					33.0 V	14.0 A	CP	■
				24.0 V	21.0 A	C6	■												
36 VOLTS				42 VOLTS				48 VOLTS				54 VOLTS				60 VOLTS			
36.0 V	4.0 A	A8	●	42.0 V	3.0 A	AR	●	48.0 V	3.0 A	A9	●	54.0 V	2.5 A	AS	●	60.0 V	2.0 A	AT	●
36.0 V	6.0 A	J8	●	42.0 V	5.0 A	JR	●	48.0 V	4.0 A	J9	●	54.0 V	3.7 A	JS	●	60.0 V	3.5 A	JT	●
36.0 V	11.1 A	B8	▲	42.0 V	8.5 A	BR	▲	48.0 V	8.5 A	B9	▲								
36.0 V	14.0 A	C8	■	42.0 V	10.5 A	CR	■	48.0 V	10.5 A	C9	■								

OUTPUT VOLTAGE & CURRENT RATINGS - DUAL OUTPUT MODULES — MP

Output V1	Output V2	Module	
		Code	Size
12 V @ 4 A	12 V @ 4 A	G1	●
15 V @ 3 A	15 V @ 3 A	G2	●
12 V @ 4 A	5 V @ 8 A	G3	●
15 V @ 3 A	24 V @ 2 A	G4	●
24 V @ 2 A	5 V @ 8 A	G5	●
5 V @ 8 A	5 V @ 8 A	G6	●
24 V @ 2 A	24 V @ 2 A	G7	●
5 V @ 10 A	5 V @ 10 A	K1	●
5 V @ 10 A	12 V @ 8 A	K2	●
5 V @ 10 A	15 V @ 6 A	K3	●
24 V @ 5 A	5 V @ 10 A	K4[1]	●
12 V @ 10 A	12 V @ 4 A	K5[1]	●
15 V @ 8 A	15 V @ 4 A	K6[1]	●
48 V @ 2 A	5 V @ 10 A	K7	●
3.3 V @ 10 A	6.5 V @ 10 A	K8	●
5 V @ 10 A	12 V @ 10 A	D1	▲
12 V @ 10 A	12 V @ 10 A	D2	▲
5 V @ 10 A	24 V @ 5 A	D3	▲
15 V @ 8 A	15 V @ 8 A	D4	▲

Notes

1. *Maximum available power is 150 W.*

OUTPUT VOLTAGE & CURRENT RATINGS - TRIPLE OUTPUT MODULES — MP

Output V1	Output V2	Output V3	Module	
			Code	Size
5 V @ 20 A	12 V @ 2 A	12 V @ 2 A	E1	▲
5 V @ 20 A	15 V @ 2 A	15 V @ 2 A	E2	▲
12 V @ 10 A	15 V @ 2 A	15 V @ 2 A	E3	▲

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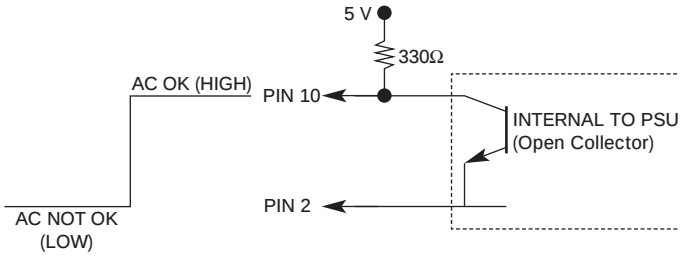
Signal Descriptions

AC OK/Power Fail

Module A, J, B, C, E & K.

When fitted in module position 1 of the chassis, pins 10 and 2 provide a minimum of 5 ms warning of loss of output regulation.



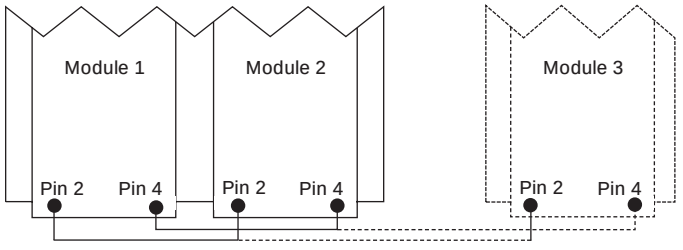
Modules in Parallel

Single output modules with the same part number and V1 of dual and triple output modules can be paralleled to obtain increased output current. These modules can be either fitted in the same chassis or different chassis with their outputs connected directly together and current share connections made, see below.

Current Share

Module A, J, B, C & V1 of E & K.

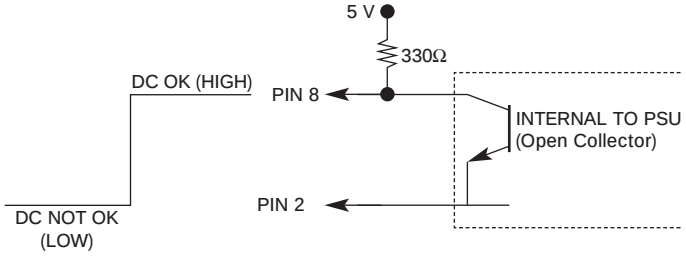
Connecting pins 2 & 4 of like part number modules (3 maximum) within the same chassis or separate chassis will force current share the outputs.



DC OK

Module A, J, B, C & V1 of D, E & K.

Pins 8 and 2 provide notification that the output voltage is within regulation via a logic 1.



(Reverse logic option available, i.e. high or DC NOT OK).

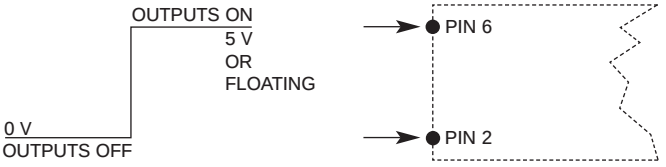
Global Inhibit

Inhibiting the module fitted in position 1 will inhibit all outputs of other modules & the cooling fan. If individual inhibit is required on the module fitted in chassis postion 1 alternate configurations are available, please consult our application engineering team.

Inhibit

Module A, J, B, C, E & K.

Pins 6 and 2 (return) provide on/off control of the module. Applying a logic '0' between these pins turns the outputs off. (E module pins 6 and 7). Open or logic high to enable.



(Reverse logic option available, i.e. high for outputs off or low for outputs on). Reverse logic is standard for the 'J' & 'K' modules via Pin 7.

Remote Sense

Module A, J, B, C, K & V1 of E.

Pins 1 (+ve) and 2 (-ve) provide compensation for voltage drops in application wiring up to a maximum of 0.5 V.

Module D.

Pins 2 (V2 -ve) and 7 (V1 -ve) provide compensation for voltage drops in the return of application wiring upto a maximum of 0.25 V.

Module H, G & V2, V3 of E.

Remote sense not fitted.

Modules in Series

Single output modules can be connected in series to obtain alternate output voltages not available from a single module. For example a 10 V (AG module) can be connected in series with a 6 V (AE module) to obtain an output voltage of 16 V. For voltages >80 V consult sales for details.

Lower Earth Leakage Current

All chassis can be supplied with less than 300 µA or 500 µA earth leakage current as an option, conducted EMC is Class A with these options, consult sales for details and part numbering.

Output Voltage Programming

Module J

The voltage of the 'J' module can be remotely programmed via a 0-5 V signal, consult sales for details.

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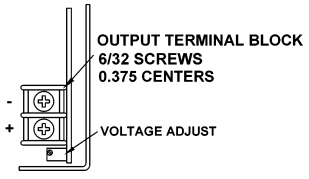
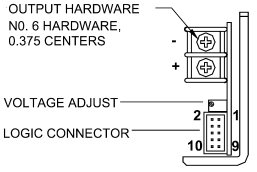
Output Module Connection Details

H Module
Single Output
Module Size ●



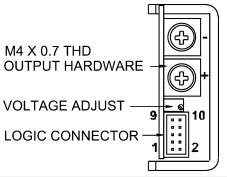
A Module
Single Output
Module Size ●

Logic Connector	
Pin	Function
1	+ Sense
2	- Sense
3	+ Sense
4	Current Share
5	Not Used
6	Inhibit
7	- Sense
8	DC OK
9	Not Used
10	Power Fail
AMP 87631-5 1-87309-4 pins	



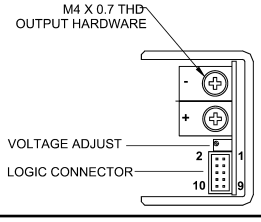
J Module
Single Output
Module Size ●

Logic Connector	
Pin	Function
1	+ Sense
2	- Sense
3	Remote Voltage ADJ
4	Current Share
5	Current Monitor
6	Inhibit Lo
7	Inhibit Hi
8	DC OK
9	Alternate V Prog
10	Power Fail
AMP 87631-5 1-87309-4 pins	



B Module
Single Output
Module Size ▲

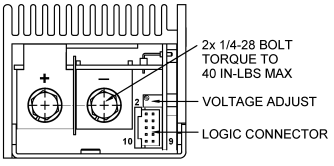
Logic Connector	
Pin	Function
1	+ Sense
2	- Sense
3	+ Sense
4	Current Share
5	Not Used
6	Inhibit
7	- Sense
8	DC OK
9	Not Used
10	Power Fail
AMP 87631-5 1-87309-4 pins	



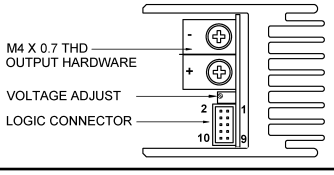
C Module
Single Output
Module Size ■

Logic Connector			
Pin	Function	Pin	Function
1	+ Sense	6	Inhibit
2	- Sense	7	- Sense
3	+ Sense	8	DC OK
4	Current Share	9	Not Used
5	Not Used	10	Power Fail
AMP 87631-5 with 1-87309-4 pins			

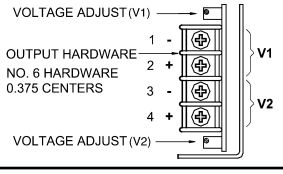
2 to 8 V Low Voltage Modules



18 to 48 V High Voltage Modules

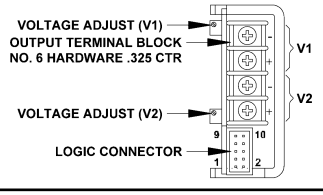


G Module
Dual Output
Module Size ●



K Module
Dual Output
Module Size ●

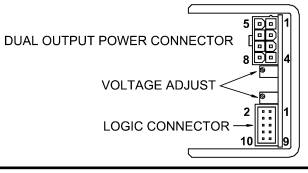
Logic Connector	
Pin	Function
1	+ Sense (V1)
2	- Sense (V1)
3	Remote V Adj.
4	Current Share
5	+ Sense (V2)
6	Inhibit LOW
7	Inhibit HIGH
8	DC OK (V1)
9	- Sense (V2)
10	Power Fail
AMP 87631-5 1-87309-4 pins	



D Module
Dual Output
Module Size ▲

Logic Connector	
Pin	Function
1	Not Used
2	- Sense (V2)
3	Not Used
4	Not Used
5	Not Used
6	Inhibit
7	- Sense (V1)
8	DC OK
9	GND
10	Power Fail
AMP 87631-5 1-87309-4 pins	

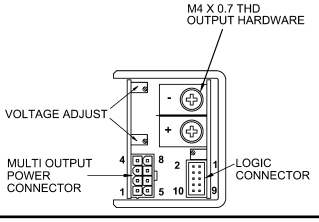
Output Connector	
Pin	Function
3, 7	Output V2+
4, 8	Output V2 Rtn
1, 5	Output V1+
6, 2	Output Rtn V1
Molex 39-01-2080 39-00-0056 pins	



E Module
Triple Output
Module Size ▲

Logic Connector	
Pin	Function
1	+ Sense (V1)
2	- Sense (V1)
3	+Sense (V1)
4	Current Share
5	Not Used
6	Inhibit
7	-Sense (V1)
8	DC OK
9	Not Used
10	Power Fail
AMP 87631-5 1-87309-4 pins	

Output Connector	
Pin	Function
1	Output V3 Rtn
2	
3	
4	Output V2 Rtn
5	Output V3+
6	
7	
8	Output V2+
Molex 39-01-2080 39-00-0056 pins	



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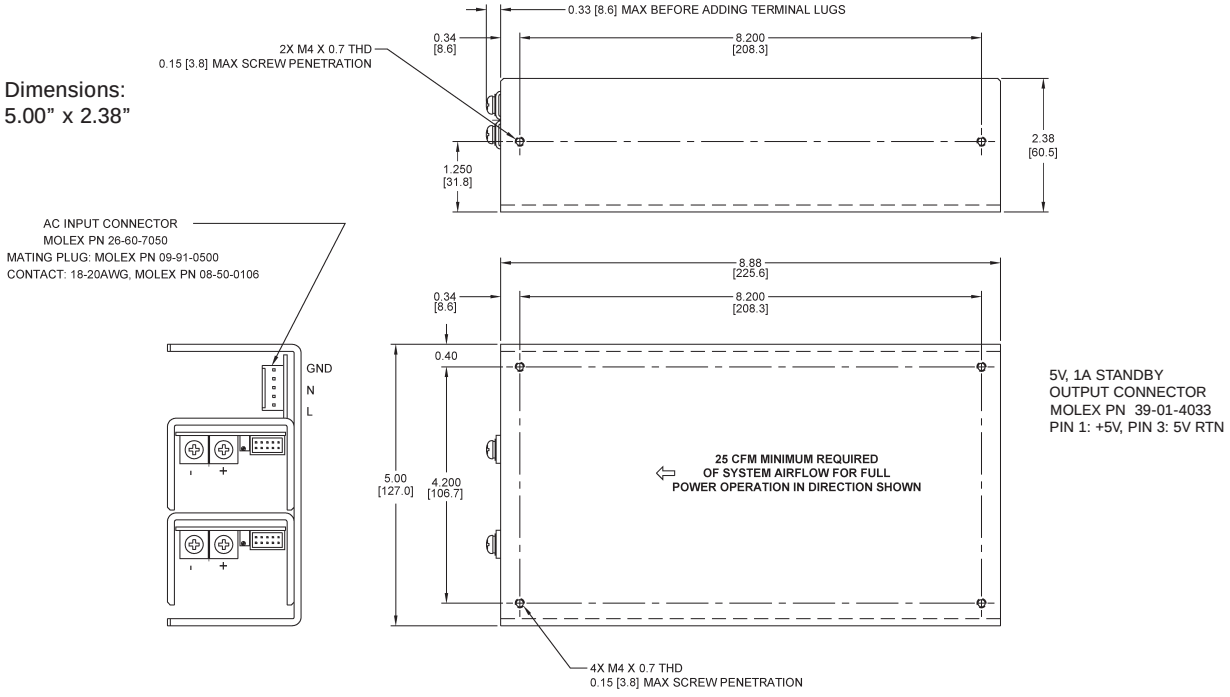
Mechanical Details - 300 (500)[1] Watt F3 Model

F3 Models do not have an integral fan & require system cooling

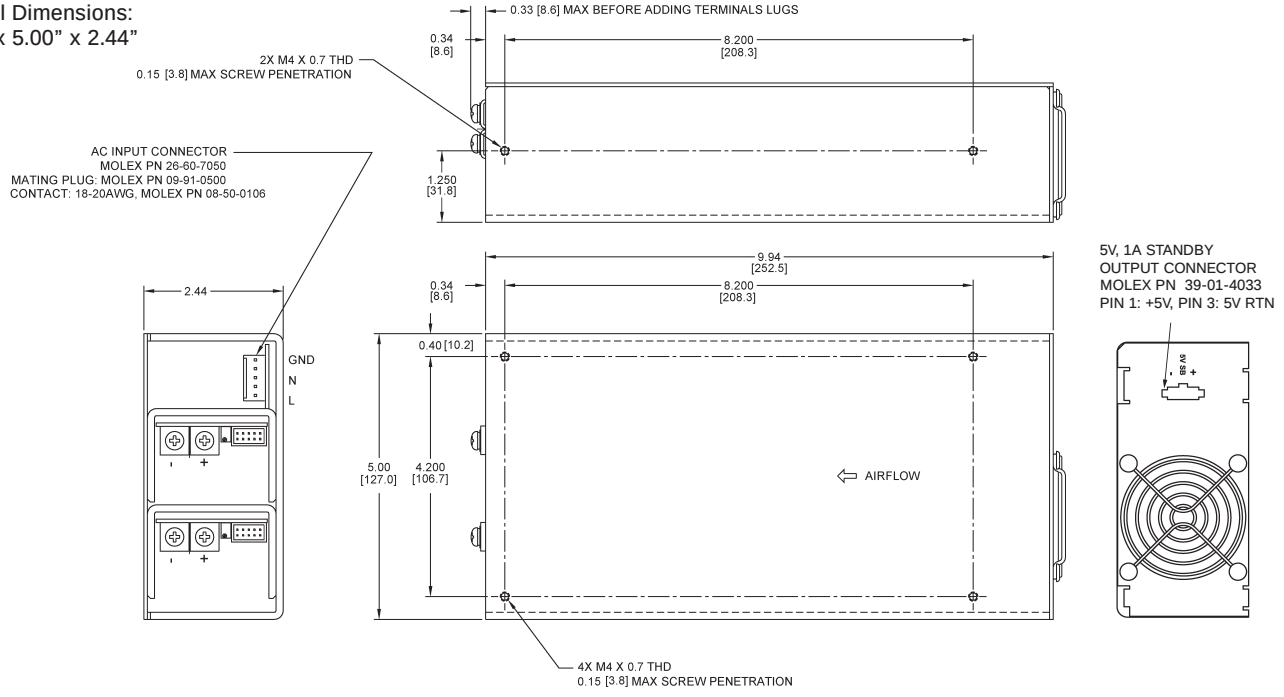
Overall Dimensions:
8.88" x 5.00" x 2.38"



NOTES:
1. Output power available when used with 180-264 VAC.
2. Mating Connector Kit, order part number 'F3/FF CONN KIT'
3. Dimensions in Inches (mm)

Mechanical Details - 350 (525)[1] Watt FF Model

Overall Dimensions:
9.94" x 5.00" x 2.44"



NOTES:
1. Output power available when used with 180-264 VAC.
2. Mating Connector Kit, order part number 'F3/FF CONN KIT'
3. Dimensions in Inches (mm)

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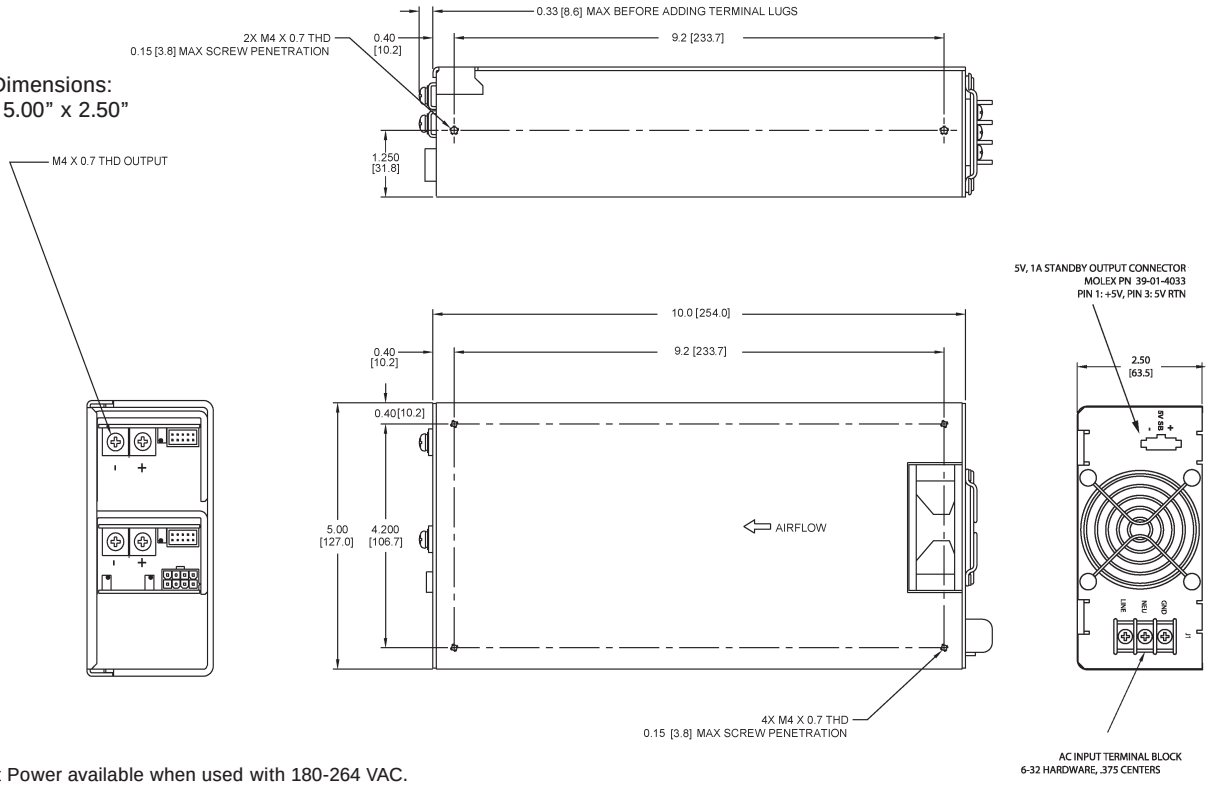
Mechanical Details - 400 (600)[1] Watt F4 Model

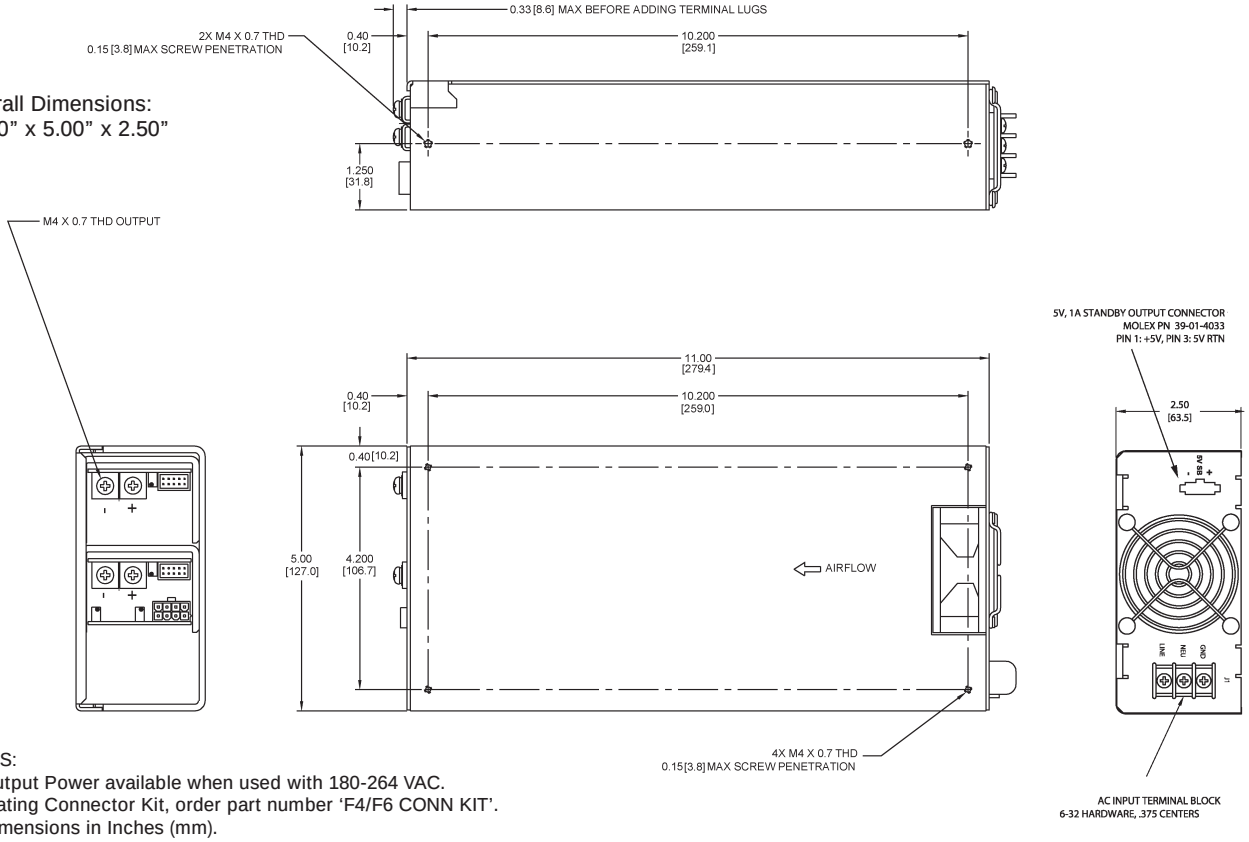
Overall Dimensions:
10.00” x 5.00” x 2.50”



NOTES:
1. Output Power available when used with 180-264 VAC.
2. Mating Connector Kit, order part number ‘F4/F6 CONN KIT’.
3. Dimensions in Inches (mm).

Mechanical Details - 600 (750)[1] Watt F6 Model

Overall Dimensions:
11.00” x 5.00” x 2.50”



NOTES:
1. Output Power available when used with 180-264 VAC.
2. Mating Connector Kit, order part number ‘F4/F6 CONN KIT’.
3. Dimensions in Inches (mm).

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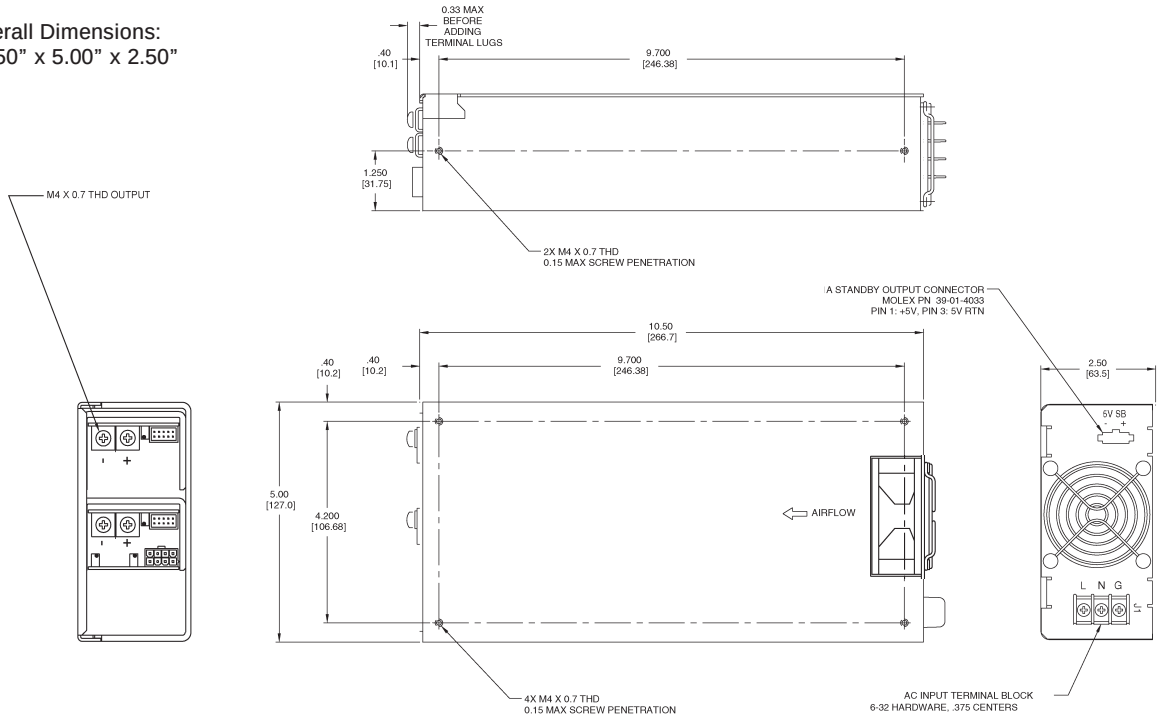
Mechanical Details - 700 (900)[1] Watt F7 Model

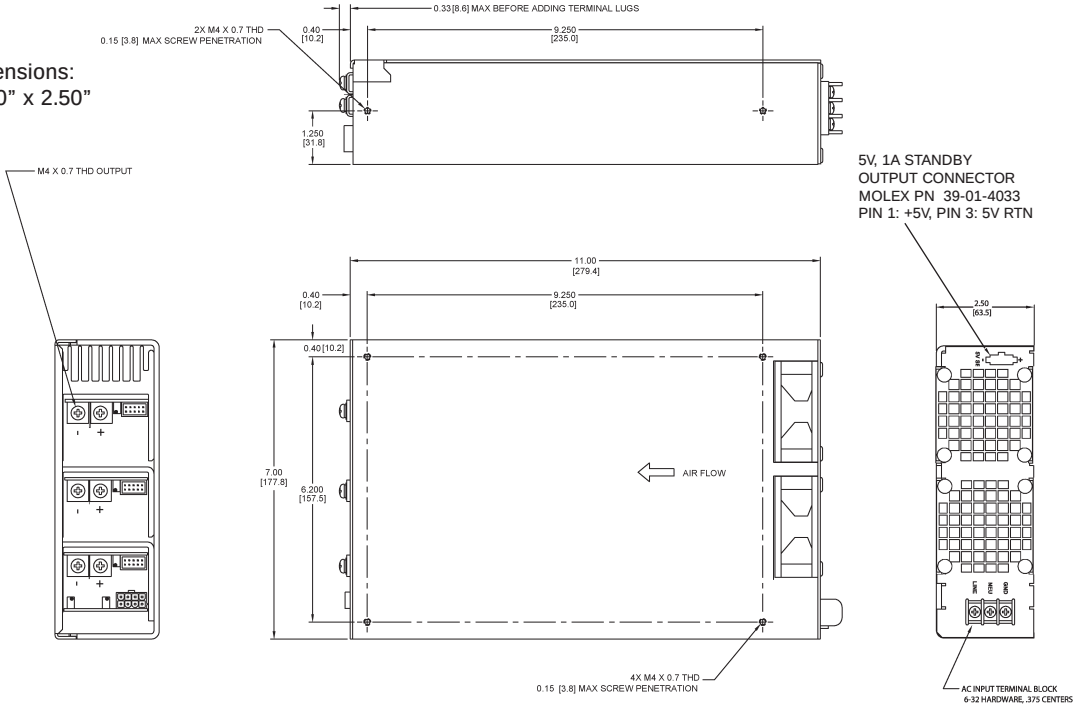
Overall Dimensions:
10.50” x 5.00” x 2.50”



NOTES:
1. Output Power available when used with 180-264 VAC.
2. Mating Connector Kit, order part number ‘F4/F6 CONN KIT’.
3. Dimensions in Inches (mm).

Mechanical Details - 800 (1000)[1] Watt F8 & 1000 (1200)[1] Watt FX Models

Overall Dimensions:
11.00” x 7.00” x 2.50”



NOTES:
1. Output Power available when used with 180-264 VAC.
2. Mating Connector Kit, order part number ‘F8/FX CONN KIT’.
3. Dimensions in Inches (mm).

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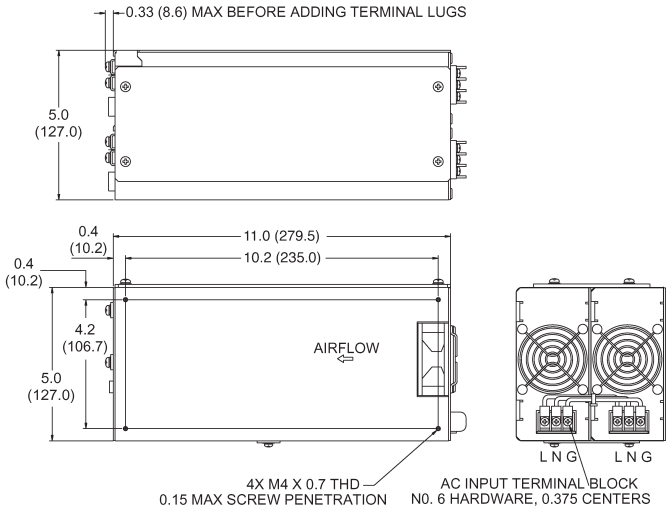
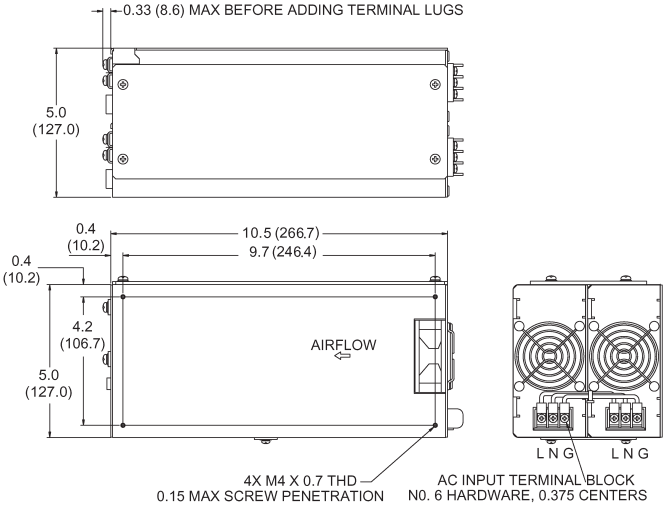
Mechanical Details - 1200 (1500)[1] Watt F6DD Models

Overall Dimensions:
11.00” x 5.00” x 5.00”



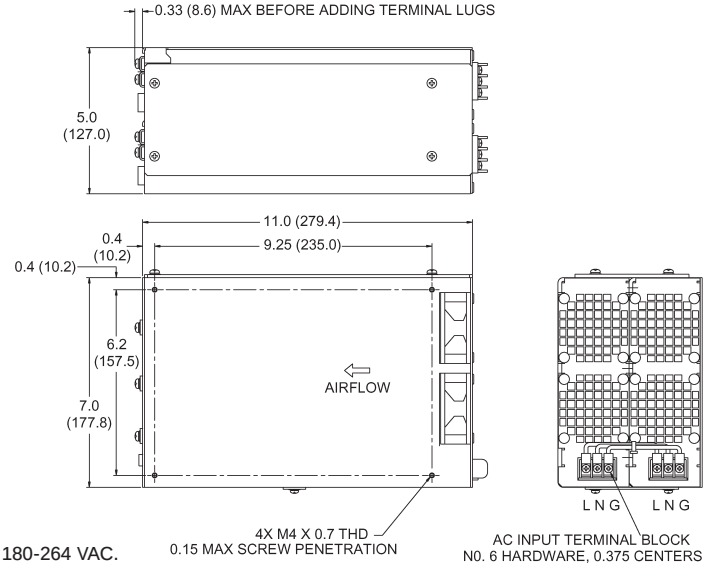
Mechanical Details - 1400 (1800)[1] Watt F7DD Models

Overall Dimensions:
10.50” x 5.00” x 5.00”



Mechanical Details - 1600 (2000)[1] Watt F8DD/2000 (2400)[1] Watt FXDD Models

Overall Dimensions:
11.00” x 7.00” x 5.00”



NOTES:
1. Output Power available when used with 180-264 VAC.

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