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Find the *Emerson / Artesyn / Astec MP6-2V-2V-20* at our website: *Click HERE*

MVP Series

400 - 1000 Watts

SPECIAL FEATURES

- Current share on all outputs with ratings of 10 A or greater
- Remote sense on all outputs with ratings greater than 2 A
- Overload protection on all outputs
- Voltage adjustment on all outputs
- Margining on all single output modules
- Input-OK-signal and status indicator LED
- Global DC OK signal and status indicator LED
- Global and individual module inhibits/enable
- 1 year warranty
- Forced air cooling, field replaceable fan
- Isolated 5 V bias voltage
- Power factor correction
- IEC EN61000-3-2 harmonic distortion compliance
- CISPR 22, EN55022 Curve B conducted / radiated EMI
- European CE Mark requirements
- Optional VME timing and system DC OK module
- Low leakage option for medical applications
- Immunity - EN61000 -4, -2, -3, -4 & -5 Level 3

ENVIRONMENTAL

Operating temperature: -20°C to 50°C (start @ 0°C)
(derate each output linearly to 50% at 70°C)
(-20°C to 40°C max. with rear air option)

Shock/Vibration: Mil-Hdbk 810E

Humidity: 95% non-condensing

Storage temperature: -40°C to +85°C

Temperature coefficient: 0.02% per °C

Cooling: Internal DC fan (Field replaceable)
(P/N 73-688-0001)

SAFETY

- **UL** UL1950
- **CSA** CSA22.2 No. 234 Level 5
- **IEC** IEC950, Class 1
- **VDE** EN60950,
- **BABT** Compliance to EN 60950, BS 7002
- **CB** Certificate and report
- **CE** Mark



MP4-1E-1Q-1Q-LLE-00 ..... 400 W total



MP6-3E-1E-4LL-0M ..... 600 W total



MP8-3E-1L-1L-4NN-00 ..... 800 W total



MP1-2Q-1D-1E-1L-1N-LLE-00 ..... 1000 W total

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ASTEC

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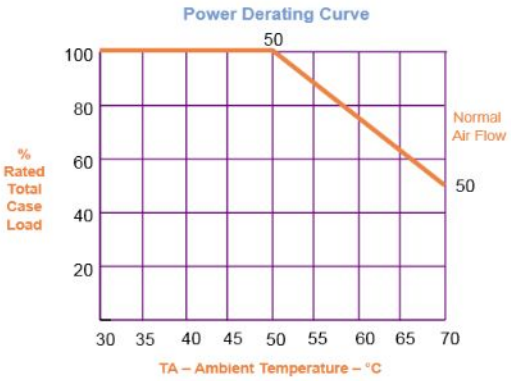
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ELECTRICAL SPECIFICATIONS

Input

Input voltage	85-264 VAC 120-350 VDC
Frequency	47-440 Hz
Inrush current	40 A peak max.
Efficiency	70-80% typ. @ full case load
Power factor	0.99 typ. meets EN61000-3-2
Turn-on time	AC on 1.5 sec typ., Inhibit / Enable 150 ms typ.
EMI filter standard	CISPR 22 EN55022 Level "B"
EMI filter (low leakage option)	CISPR 22 EN55022 Level "A"
Leakage current standard	2.0 mA max. @ 240 VAC
Leakage current (low leakage option).	300 µA max. @ 240 VAC
Radiated EMI	CISPR 22 EN55022 Level "B"
Holdover storage	20 ms minimum (independent of input VAC)
AC OK	>5 ms early warning min. before outputs loose regulation Full cycle ride thru (50 Hz)
Harmonic distortion	Meets EN61000-3-2
Isolation	Meets EN60950
Global Inhibit/Enable	TTL, Logic "1" and Logic "0"
Input fuse (internal)	MP4: 10 A MP6: 15 A MP8: 20 A MP1: 20 A
Warranty	1 year



Output

Adjustment range	±10% min. all outputs
Margining	±4-6% nom.[1]
Overall reg	0.4% or 20 mV max. (36 W modules 4% max.)
Ripple	RMS: 0.1% or 10 mV, whichever is greater Pk-Pk: 1.0% or 50 mV, whichever is greater Bandwidth limited to 20 MHz
Dynamic response	<2% or 100 mV, with 25% load step.
Recovery time	To within 1% in <300 µsec.
Overcurrent protection	Single, main of dual output module 105-120% of rated output current. Aux output of dual output module 105-140% of rated output current. Triple output module Internally protected
Short circuit protection	Protected for continuous short circuit. Recovery is automatic upon removal of short
Overvoltage protection (measured at sense connection)	Single output modules 2-5.5 V 122-134% 6-60 V 110-120% Dual output module 2-6 V 122-134% 8-28 V 110-120% Triple output module. No overvoltage protection provided. Recycle the AC input voltage to reset OVP circuit
Reverse voltage protection	100% of rated output current
Thermal protection	All outputs disabled when internal temp exceeds safe operating range. >5 ms warning (AC OK signal) before shutdown
Remote sense	Up to 0.5 V total drop
Single wire parallel	Current share to within 2% of total rated current[2]
DC OK	-2% to -8% of nominal for any monitored output[2]
Minimum load	Not required on single or triple output modules. 10% required on main of dual output modules[3]
Housekeeping Bias voltage	5 VDC @ 1A max. present whenever AC input is applied
Module inhibit	TTL, isolated, singles and dual (both outputs) only
Switching frequency	250 kHz
Output/Output isolation	>1 Megohm
VME signal option board	POR signal

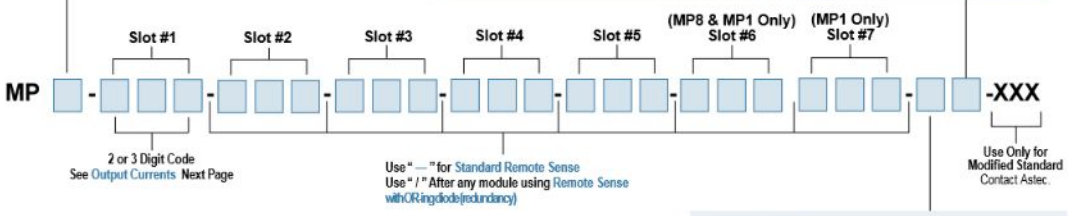
Notes:
1 Single output modules only.
2 Single and main of dual output modules only.
3 Contact factory for optional preload if required.

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Common Examples and Specifications

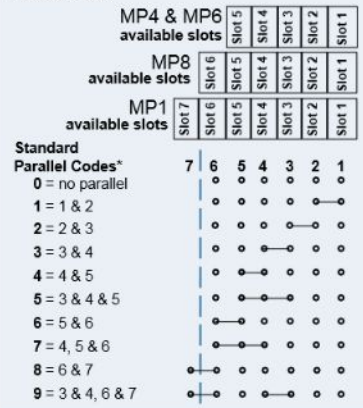
Case Size (inches):
4 = 2.5 x 5 x 10, 5 available slots, 400 W max.
6 = 2.5 x 5 x 11, 5 available slots, 600 W max.
8 = 2.5 x 7 x 10, 6 available slots, 800 W max.
1 = 2.5 x 8 x 11, 7 available slots, 1000 W max.

Option Code:
0 = no options
1 = rear air exhaust
3 = global enable
5 = option package (options 1 & 3)
M = low leakage
N = low leakage plus option 1
P = low leakage plus option 3
R = low leakage plus option 5



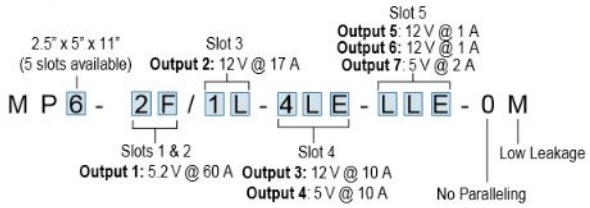
Notes:
1 Omit digits that do not apply.
2 Specify modules from lowest number of outputs to highest. (Single/Dual/Triple)
3 If number of outputs are equal, specify modules from highest to lowest power increments. If power increments are equal, specify in alphabetical order (1A, B, C...).
4 Always start with Slot 1.
5 All MVP model configurations created using this selection guide are standard MVP products with standard availability and lead times.

Parallel Code:



*For custom parallel configurations, contact Astec.

Ordering Example:



COMMON EXAMPLES OF MODEL NUMBERS

SINGLE OUTPUTS

Total Power	Output (Volts/Amps)	Size (inches)	Model Number
360 W	2 / 180	2.5 x 5 x 10	MP4-3A-2A-30
400 W	5 / 80	2.5 x 5 x 10	MP4-3E-00 - 429
600 W	2 / 275	2.5 x 8 x 11	MP6-3A-3A-1A-90
600 W	5 / 120	2.5 x 5 x 11	MP6-3E-00
600 W	48 / 12.5	2.5 x 5 x 11	MP6-3W-00
800 W	5 / 160	2.5 x 7 x 10	MP8-3E-2E-30 - 415
800 W	48 / 16.6	2.5 x 7 x 10	MP8-3W-1W-30
1000 W	5 / 200	2.5 x 8 x 11	MP1-3E-3E-30 - 404



MULTIPLE OUTPUTS

Total Power	Output 1 (Volts/Amps)	Output 2 (Volts/Amps)	Output 3 (Volts/Amps)	Output 4 (Volts/Amps)	Output 5 (Volts/Amps)	Output 6 (Volts/Amps)	Size (inches)	Model Number
400 W	5 / 60	3.3 / 35	12 / 1	12 / 1	12 / 1	—	2.5 x 5 x 10	MP4-2E-1D-LLL-00
400 W	24 / 15	12 / 17	5 / 35	—	—	—	2.5 x 5 x 10	MP4-2Q-1L-1E-00
400 W	5 / 60	12 / 17	12 / 10	5 / 10	—	—	2.5 x 5 x 10	MP4-2E-1L-4LE-00
400 W	5 / 35	12 / 10	3.3 / 10	12 / 1	12 / 1	5 / 2	2.5 x 5 x 10	MP4-1E-4LD-LLE-00
600 W	3 / 60	5 / 60	12 / 10	12 / 4	—	—	2.5 x 5 x 11	MP6-2C-2E-4LL-00
600 W	5 / 120	12 / 17	12 / 10	5 / 10	—	—	2.5 x 5 x 11	MP6-3E-1L-4LE-00
600 W	12 / 30	5 / 35	—	—	—	—	2.5 x 5 x 11	MP6-2L-1E-00
800 W	36 / 16.6	24 / 4	5 / 10	12 / 10	12 / 4	—	2.5 x 7 x 10	MP8-3U-4QE-4LL-00
800 W	5 / 120	3.3 / 35	12 / 17	12 / 10	12 / 4	—	2.5 x 7 x 10	MP8-3E-1D-1L-4LL-00
800 W	15 / 20	5 / 35	15 / 14	24 / 8.5	15 / 8	5 / 10	2.5 x 7 x 10	MP8-2N-1E-1N-1Q-4NE-00
800 W	2 / 180	5 / 60	—	—	—	—	2.5 x 7 x 10	MP8-3A-2A-2E-30
1000 W	3.3 / 120	5 / 120	—	—	—	—	2.5 x 8 x 11	MP1-3D-3E-00

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OUTPUT CURRENTS

Voltage	Voltage Code	Single Output Module Code			Dual Output		Triple Output		
		1[1]	2[2]	3[3]	V1[1]	V2[1]	V1[1]	V2[1]	V3[1]
2 V	A	35A	60 A	120 A	—	10 A	—	—	2 A
2.2 V	B	35 A	60 A	120 A	—	10 A	—	—	2 A
3 V	C	35A	60 A	120 A	—	10 A	—	—	2 A
3.3 V	D	35 A	60 A	120 A	—	10 A	—	—	2 A
5 V	E	35A	60 A	120 A	10 A	10 A	—	—	2 A
5.2 V	F	35 A	60 A	115 A	—	10 A	—	—	2 A
5.5 V	G	34 A	58 A	109 A	—	10 A	—	—	2 A
6.0 V	H	23 A	42 A	78 A	—	10 A	—	—	2 A
8.0 V	I	20 A	36 A	68 A	—	—	1 A	1 A	1 A
10 V	J	18 A	32 A	60 A	—	—	1 A	1 A	1 A
11 V	K	17 A	31 A	54.5 A	—	—	1 A	1 A	1 A
12V	L	17A	30 A	50 A	10 A	4 A	1 A	1 A	1 A
14 V	M	14 A	21 A	40.5 A	9 A	4 A	1 A	1 A	1 A
15 V	N	14 A	20 A	39 A	8 A	4 A	1 A	1 A	1 A
18 V	O	11 A	19 A	33.3 A	—	—	—	0.5 A	0.5 A
20 V	P	10.5 A	18 A	30 A	—	—	—	0.5 A	0.5 A
24 V	Q	8.5 A	15 A	23.5 A	4 A	2 A	—	0.5 A	0.5 A
28 V	R	6.7 A	11 A	21.4 A	3 A	2 A	—	0.5 A	0.5 A
30 V	S	6.5 A	11 A	20 A	—	—	—	—	—
33 V	T	6.2 A	10.9 A	18.2 A	—	—	—	—	—
36 V	U	5.8 A	10 A	16.6 A	—	—	—	—	—
42 V	V	4.2 A	7.5 A	12.5 A	—	—	—	—	—
48 V	W	4.0 A	7.5 A	12.5 A	—	—	—	—	—
54 V	X	3.7 A	6.0 A	11 A	—	—	—	—	—
60 V	Y	3.5 A	6.0 A	10 A	—	—	—	—	—
Non-std	Z								
2.4V-2.7V		35	60	120	—	10	—	—	2
3.6V-4.5V		35	60	120	—	10	—	—	2
6.6V-9.2V		20	36	68	10	4	—	—	1
8.8V-9.0V		18	32	60	10	4	—	—	1

Notes:
1 Takes up one slot.
2 Takes up two slots.
3 Takes up three slots.

Single Output Example

5 V @ 60 A

Module Code — Voltage Code

2 E

Dual Output Example[1]

12 V @ 10 A;
5 V @ 10 A

Module Code (always 4) — Voltage Code

4 L E

Notes:
1 Total Loading not to exceed 144 W.
2 V1 output of 5V from dual is only available if output V2 is 6V or less.

Triple Output Example[1]

12 V @ 1 A[1];
20 V @ 0.5 A;
5 V @ 2 A

Voltage Code[2]

L P E

Notes:
1 Total Loading not to exceed 36 W.
2 No Module Code required.

PFC INPUT

J1 CONTROL CONNECTOR

Pin No.	Function
J1-1	Input AC OK - "Emitter"
J1-2	Input AC OK - "Collector"
J1-3	Global DC OK - "Emitter"
J1-4	Global DC OK - "Collector"
J1-5	Spare
J1-6	Global Inhibit/Optional Enable Logic "0"
J1-7	Global Inhibit/Optional Enable Logic "1"
J1-8	Global Inhibit/Optional Enable Return
J1-9	SELV 5V Housekeeping
J1-10	SELV 5V Housekeeping Return

DC/DC CONVERTER OUTPUT MODULES

CONTROL SIGNAL INFORMATION, J1 CONTROL CONNECTOR

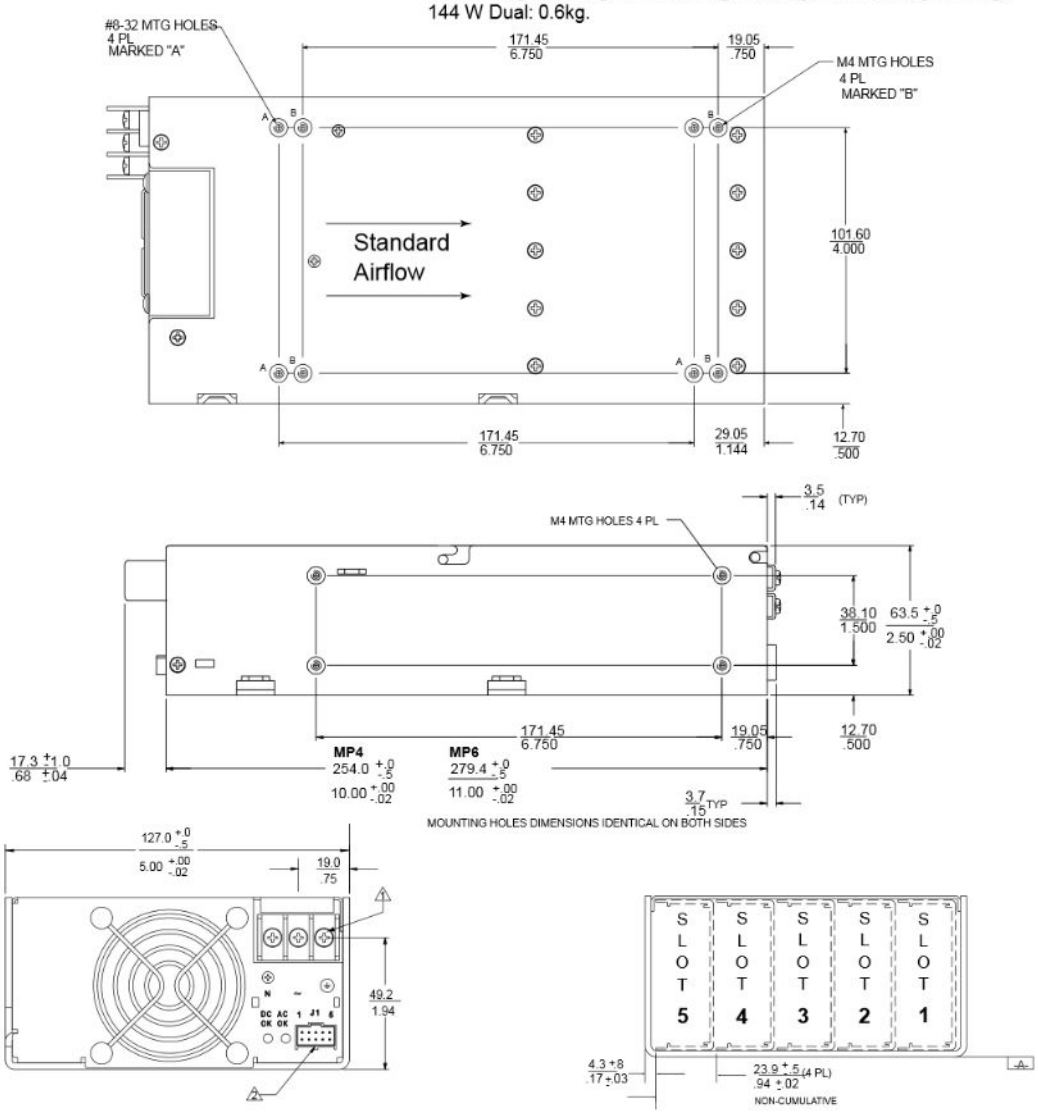
Pin No.	Function	
1	+ Remote Sense	single or dual o/p main
2	Remote Margin / V. Program	single o/p
3	Margin High	single o/p
4	- Remote Sense / Margin Low	single or dual o/p main
5	Spare	
6	Module, Isolated Inhibit	single or dual o/p
7	Module Inhibit return	single or dual o/p
8	Current Share (SWP)	single or dual o/p main
9	+ Remote Sense V2	dual o/p, single is spare
10	- Remote Sense V2	dual o/p, single is spare

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MVP Series

DRAWINGS • MVP SERIES MP4 (400 WATTS MAX) AND MP6 (600 WATTS MAX)

5-Inch Case Size: MP4: 2.5" x 5" x 10" (63.5mm x 127mm x 254mm)
5-Inch Case Size: MP6: 2.5" x 5" x 11" (63.5mm x 127mm x 279.4mm)
Weight: MP4 Case: 1.2kg. • MP6 Case: 1.45kg. • 36 W Triple: 0.22kg.
210 W Single: 0.27kg. • 360 W Single 0.45kg. • 600 W Single: 0.9kg.
144 W Dual: 0.6kg.



NOTES

1. Input: Barrier type. Three No. 6-32 B.H. screws (0.375" centers). Max torque: 6 in-lbs. (0.67 N-m).
2. Control connectors: (J1 and J2) 10 position housing, gold plated contacts. Mates with Molex 90142-0010 housing with 90119-2110 crimp contacts (Molex C - Grid III Series) or AMP Model number 87977-3 with 87309-8 pins.
   Connector kit includes mating connector and 10 pins, Astec part #70-841-004.
3. Chassis material: aluminum with chemical film coating. (Conductive)
4. All dimensions are in millimeters and inches and are typical.
5. Customer mounting -3 sides M4, bottom also includes 8-32 mounting holes. Max. penetration is 0.150" (3.8mm). Max. torque: 5in-lbs.
6. Output module connections: All single O/P modules are M4 x 8mm screws. Max. torque: 10in-lbs.
   Dual O/P module is M3 x 8mm screws. Max. torque: 5 in-lbs.
   Triple O/P module is .045" square pins on .156" centers. (Mates with Molex 09-50-8063 or equivalent.)

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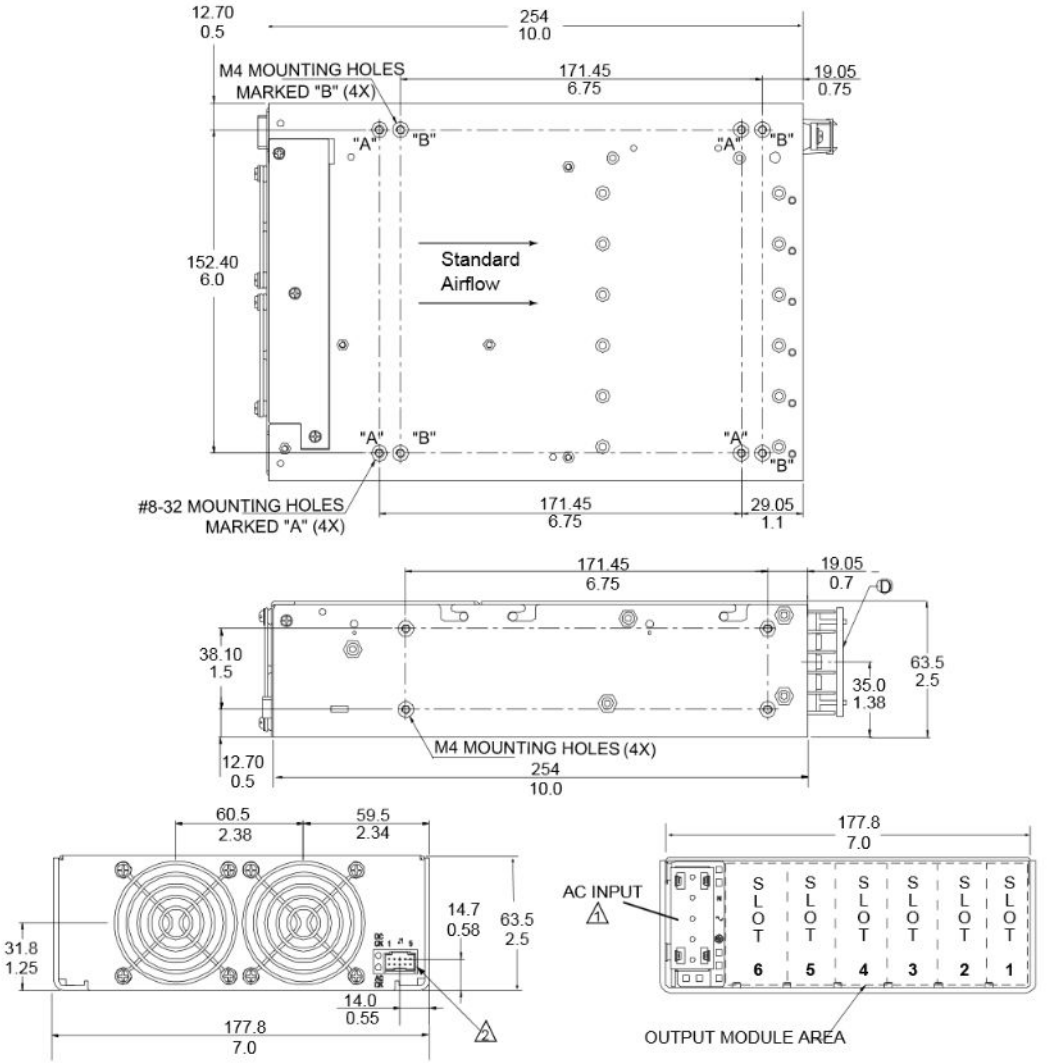
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DRAWINGS • MVP SERIES MP8 (800 WATTS MAX)

7-Inch Case Size: MP8: 2.5" x 7" x 10" (63.5mm x 177.8mm x 254mm)
Weight: MP8 Case: 1.86kg. • 36 W Triple: 0.22kg. • 210 W Single: 0.27kg. • 360 W Single: 0.45kg. • 600 W Single: 0.9kg. • 144 W Dual: 0.6kg.



NOTES

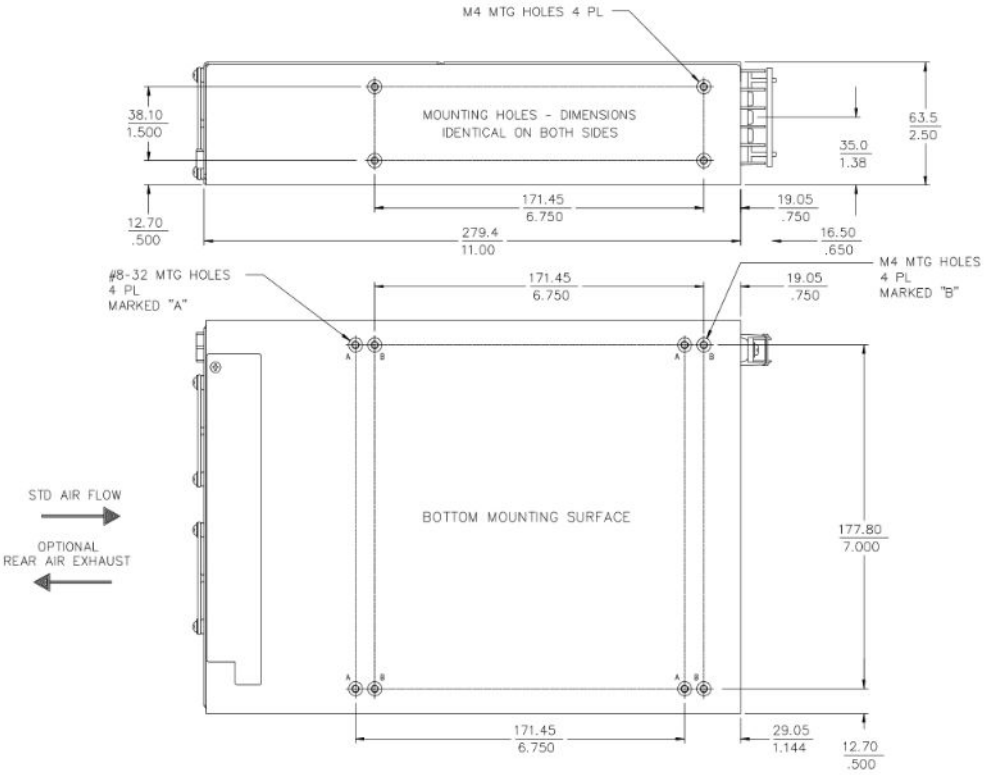
1. Input: Barrier type. Three No. 6-32 B.H. screws (0.375" centers). Max torque: 6 in-lbs. (0.67 N-m).
2. Control connectors: (J1 and J2) 10 position housing, gold plated contacts. Mates with Molex 90142-0010 housing with 90119-2110 crimp contacts (Molex C - Grid III Series) or AMP Model number 87977-3 with 87309-8 pins.
   Connector kit includes mating connector and 10 pins, Astec part #70-841-004.
3. Chassis material: aluminum with chemical film coating. (Conductive)
4. All dimensions are in millimeters and inches and are typical.
5. Customer mounting -3 sides M4, bottom also includes 8-32 mounting holes. Max. penetration is 0.150" (3.8mm). Max. torque: 5in-lbs.
6. Output module connections: All single O/P modules are M4 x 8mm screws. Max. torque: 10in-lbs.
   Dual O/P module is M3 x 8mm screws. Max. torque: 5 in-lbs.
   Triple O/P module is .045" square pins on .156 centers. (Mates with Molex 09-50-8063 or equivalent.)

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MVP Series

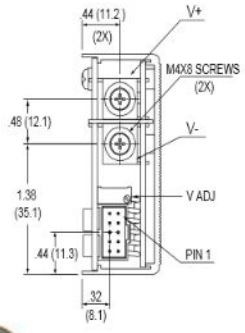
DRAWINGS • MVP SERIES MP1 (1000 WATTS MAX)

8-Inch Case Size: MP1: 2.5" x 7" x 10" (63.5mm x 203.2mm x 279.4mm)
Weight: MP1 Case: 2.25kg. • 36 W Triple: 0.22kg. • 210 W Single: 0.27kg. • 360 W Single 0.45kg. • 600 W Single: 0.9kg. • 144 W Dual: 0.6kg.

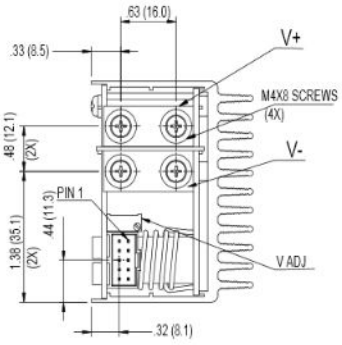


SINGLE OUTPUT MODULES

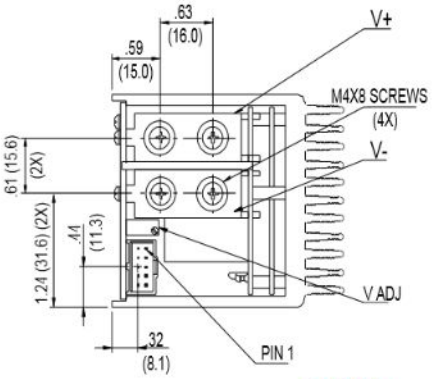
1 slot, 210 watt



2 slot, 360 watt



3 slot, 600 watt



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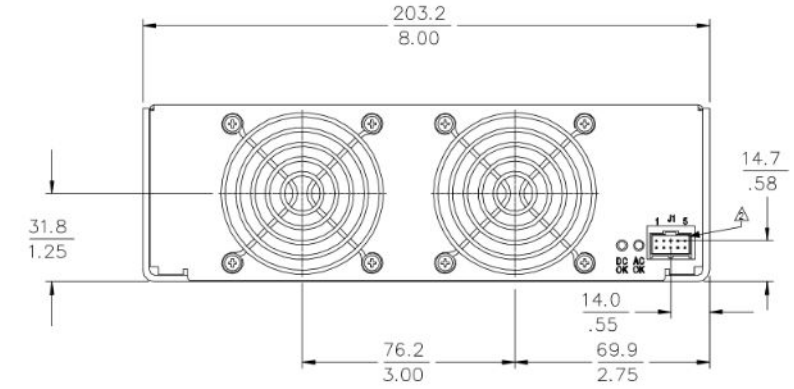
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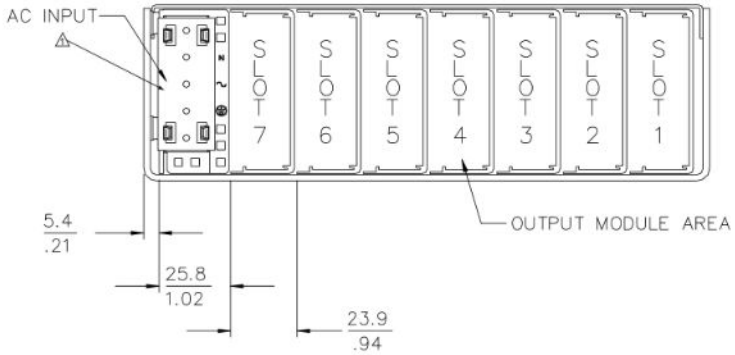
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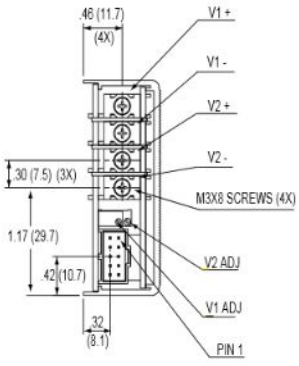
DRAWINGS • MVP SERIES MP1 (1000 WATTS MAX)





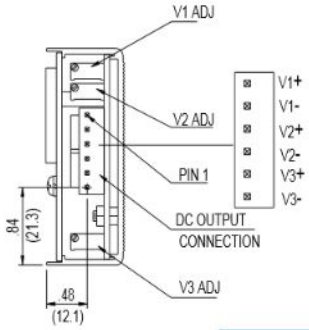
DUAL OUTPUT MODULE

1 slot, 144 watt



TRIPLE OUTPUT MODULE

1 slot, 36 watt



NOTES

1. Input: Barrier type. Three No. 6-32 B.H. screws (0.375" centers). Max torque: 6 in-lbs (0.67 N-m).
2. Control connectors: (J1 and J2) 10 position housing, gold plated contacts. Mates with Molex 90142-0010 housing with 90119-2110 crimp contacts (Molex C - Grid III Series) or AMP Model number 87977-3 with 87309-8 pins.
   Connector kit includes mating connector and 10 pins, Astec part #70-841-004.
3. Chassis material: aluminum with chemical film coating. (Conductive)
4. All dimensions are in millimeters and inches and are typical.
5. Customer mounting -3 sides M4, bottom also includes 8-32 mounting holes. Max. penetration is 0.150" (3.8mm). Max. torque: 5in-lbs.
6. Output module connections: All single O/P modules are M4 x 8mm screws. Max. torque: 10in-lbs.
   Dual O/P module is M3 x 8mm screws. Max. torque: 5 in-lbs.
   Triple O/P module is .045" square pins on .156 centers. (Mates with Molex 09-50-8063 or equivalent.)

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