

## SPECIFICATION

For

## SWITCHING POWER SUPPLY

### M/N: MPD-830V

#### Revision History

Version	Revise Date	Change Items
Rev. 01	Sep. 28. 2010	Updating the safety approval status.
Rev. 02	Mar. 28. 2011	Updating the safety approval status.
Rev. 03	Jan. 8. 2013	Updating the safety approval status.
Rev. 04	Feb. 14. 2018	1.Changed form. 2. Added EN 55032.
Rev. 05	Dec. 24. 2018	Added output current to output field.



### FEATURES

- ✓ The MPD-830V is an off-line DC 48V input switching power supply is ideal for use in ATX personal computers, workstations, and equivalent systems. This power supply has designed to meet UL, CSA, and TUV safety approval.

### Models & Ratings

Model Number	Wattage	Output Voltage		Min. Current	Rated Current	Max. Current <sup>(Note 1)</sup>
MPD-830V	300 W	V1	+5 V	2.0 A	25.0 A	30.0 A
		V2	+12 V	0.1 A	10.0 A	15.0 A
		V3	-12 V	-	1.0 A	2.0 A
		V4	-5 V	-	1.0 A	2.0 A
		V5	+3.3 V	-	8.0 A	15.0 A
		V6	+5Vsb	-	0.72 A	1.2 A

- Note:
- At factory, all outputs in 60% rated load condition; the +5V output is set to between 4.80V and 5.20V. The other outputs are checked to be within the specified voltage accuracy range.
  - The total DC continuous power shall be kept within 300W ambient temperature of 40°C below, and input voltage at -48VDC. The maximum, total combined output power on the 3V3 and 5V rails is 150W.

### Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	-40		-72	VDC	
Efficiency	65			%	While measuring at nominal line and rated output.
Operation Temperature	0		+70	°C	When the ambient temperature is over 40°C(110VDC), the output power should be derated as following curve.
Dimensions	150.0 (L) x 140.0 (W) x 86.2 (H) mm, Tolerance specified is +/-0.4mm between mounting holes, +/-0.8mm for other dimensions.				
EMC	EN 55022 / EN 55032 & FCC, IEC-801-2, IEC-801-3, IEC-801-4, IEC-801-5				
Safety Approvals	EN 60950-1, 2 <sup>nd</sup> edition, UL 60950-1, 2 <sup>nd</sup> Edition, CAN/CSA C22.2 No. 60905-1-07				

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	-40		-72	VDC	
Input Current			10	A	At -48VDC input.
Inrush Current	10			A	At -48VDC input cold start, 25°C.

### Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage		+5 V		DC	
		+12 V			
		-12 V			
		-5 V			
		+3.3 V			
		+5Vsb			
Output Current		25.0	30.0	A	
		10.0	15.0		
		1.0	2.0		
		1.0	2.0		
		8.0	15.0		
		0.72	1.2		
Initial Set Accuracy	4.80		5.20	VDC	
	11.4		12.60		
	-11.4		-12.60		
	-4.75		-5.25		
	3.13		3.40		
	4.75		5.25		
Minimum Load		2.0		A	At Output Voltage +5V
		0.1			At Output Voltage +12 V
		0			At Output Voltage -12V, -5V, +3.3V, +5Vsb
Line Regulation	±1.0 <sup>(V1)</sup> ±1.0 <sup>(V2)</sup> ±1.0 <sup>(V3)</sup> ±1.0 <sup>(V4)</sup> ±1.0 <sup>(V5)</sup> ±1.0 <sup>(V6)</sup>			%	The output line regulation for each output is less than +1% while measuring at rated load and -40V to -72VDC input voltage changing.
Load Regulation	±3.0 <sup>(V1)</sup> ±5.0 <sup>(V2)</sup> ±2.0 <sup>(V3)</sup> ±2.0 <sup>(V4)</sup> ±2.0 <sup>(V5)</sup> ±3.0 <sup>(V6)</sup>			%	The output voltage load regulation is less than the values in the following table by changing each output load +-40% from 60% from rated load, and keep other outputs at 60% rated load.
Ripple & Noise	50 <sup>(V1)</sup> 100 <sup>(V2)</sup> 100 <sup>(V3)</sup> 100 <sup>(V4)</sup> 50 <sup>(V5)</sup> 100 <sup>(V6)</sup>			mV	Measuring is done by 15MHz bandwidth limited oscilloscope and terminated each output with a 0.47 µF capacitor.
Oversvoltage Protection	For some reasons the power supply might fail to control itself, the build-in crowbar circuit will automatically shut down the outputs to avoid damaging the external circuits. The trip point of O.V.P. circuit is around 5.7V to 7.0V.				
Short circuit protection	The power supply will go into hiccup mode function against short circuit or over load conditions. If the faults condition removed, the power supply will restart automatically.				
Power ON signal	This TTL compatible signal (active low) is use to switch ON the main output. When Power on is disconnected from secondary common, all outputs except +5Vsb shall turn off.				

## General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	65			%	While measuring at nominal line and rated output.
Power good signal	When power start-up, the power good signal will increase between 100ms to 500ms after all output DC voltages are within regulation limits.				
Power fail signal	The power fail signal will fall at least 1ms before any of the output voltages lower than the regulation limits.				

## Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Low temperature start up	-20			°C	
Operating Temperature	0		+70	°C	When the ambient temperature is over 40°C(110VDC), the output power should be derated as following curve.
Storage Temperature	-40		+75	°C	
Relative Humidity	5		95	%RH	Non-condensing.
Operating Altitude	0		10000	Feet	

## EMC: Emissions

Phenomenon	Standard	Class	Notes & Conditions
Conducted	EN 55022 / EN 55032, FCC	B	
Radiated	EN 55022 / EN 55032, FCC	B	

## EMC: Immunity

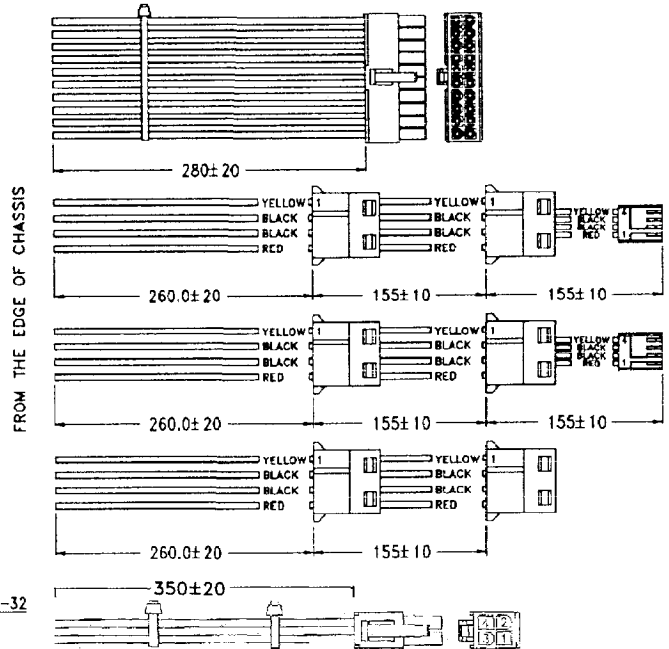
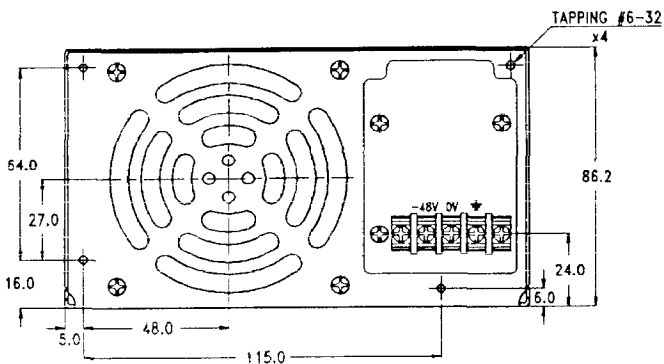
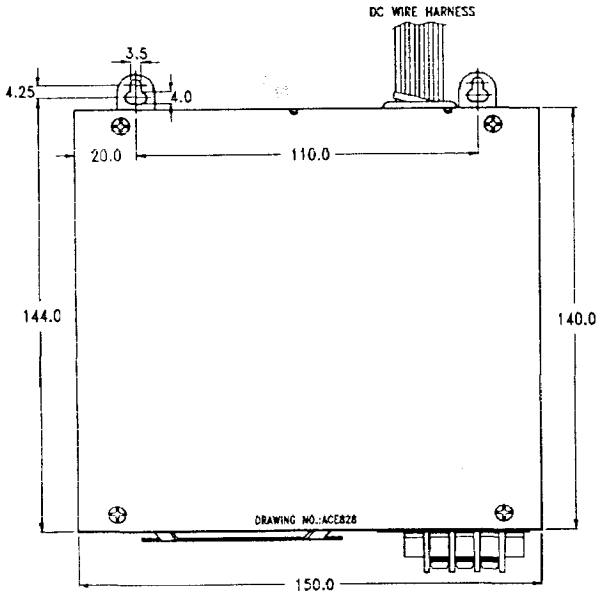
Phenomenon	Standard	Notes & Conditions
ESD	IEC-801-2	8KV air discharge
Radiated	IEC-801-3	3V/m
EFT	IEC-801-4	2KV
Surges	IEC-801-5	2KV

## Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
TUV	EN 60950-1, 2 <sup>nd</sup> edition	CE (LVD) declaration
UL/cUL	UL 60950-1, 2 <sup>nd</sup> Edition CAN/CSA C22.2 No. 60905-1-07	Approved.

## Mechanical Details

SIZE : 150.0 (L) x 140.0 (W) x 86.2 (H) mm, Tolerance specified is +/-0.4mm between mounting holes, +/-0.8mm for other dimensions.



Wire Color	VOLTAGE
ORANGE	3.3V
RED	5V
YELLOW	12V
BLUE	-12V
GREY	P.G
WHITE	-5V
BLACK	GND
PURPLE	+5Vsb
GREEN	POWER ON

DC Connectors:

3 positions terminal blocks

DC connectors:

ATX : Molex 39-01-2200 or equivalent.

Disk drive : AMP 1-480424-0 or equivalent.

3 1/2" floppy driver : AMP 171822-4 or equivalent.

P4 : Molex 39-01-2045 or equivalent.