

## SPECIFICATION

For

## SWITCHING POWER SUPPLY

### M/N: MPD-830C

#### Revision History

Version	Revise Date	Change Items
Rev. 01	Jun. 13. 2008	Correct typo of output voltage.
Rev. 02	Sep. 28. 2013	Updating the safety approval status.
Rev. 03	Mar. 28. 2011	Updating the safety approval status.
Rev. 04	Jan. 8. 2013	Updating the safety approval status.
Rev. 05	Feb. 13. 2018	1.Changed form. 2. Added EN 55032.
Rev. 06	Dec. 22. 2018	Added output current to output field.
Rev. 07	Sep. 05. 2019	Added LVD 62368-1 Approved.



### FEATURES

- ✓ MPD-830C is an off-line DC 24V input switching power supply. It is ideal for use in ATX personal computers, workstations, and equivalent systems. This power supply has designed to meet UL, CSA, and TUV safety approvals.
- ✓ CE-LVD EN 62368-1 Approved.

### Models & Ratings

Model Number	Wattage	Output Voltage		Min. Current	Rated Current	Max. Current <sup>(Note 1)</sup>
MPD-830C	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 4.90V and 5.10V the other outputs can be used single and checked to be within the specified voltage accuracy range.
- The total DC continuous power shall be kept within 300W ambient temperature of 30°C below, and input voltage at +24V ~ +32V . When input voltage is +19V ~ +23V the total DC continuous power shall be kept within 250W. The maximum total combined output power on the 3.3V and 5V rails is 150W.

### Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	+19		+32	VDC	Continuous input range.
Efficiency	65			%	While measuring at nominal line and rated output.
Operation Temperature	0		+70	°C	
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				
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 CE-LVD EN 62368-1:2014+A11:2017				

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	+19		+32	VDC	Continuous input range.
Input Current			20	A	At +24VDC input.
Inrush Current	5			A	At +24VDC 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 line regulation for each output is less than +/- 1% while measuring at rated load and +19V to +32V of 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 value in the following table by changing each output load +/-40% from 60% from rated load, and keep all 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 0.47µF capacitor.
Overvoltage 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 go between 100ms to 500ms high after all output DC voltages are within regulation limits.				
Power fail signal	The power fail signal will low down at least 1ms before any of the output voltages fall below 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

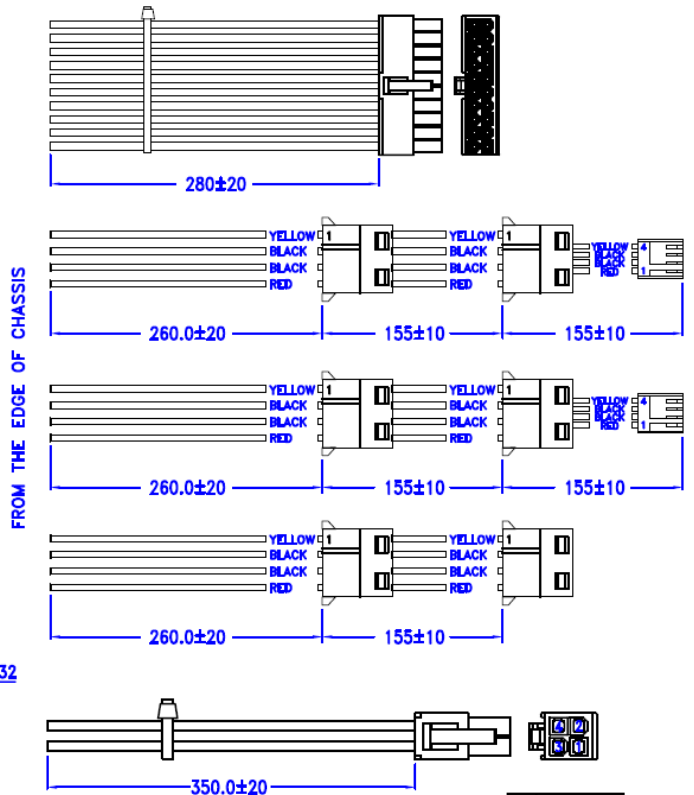
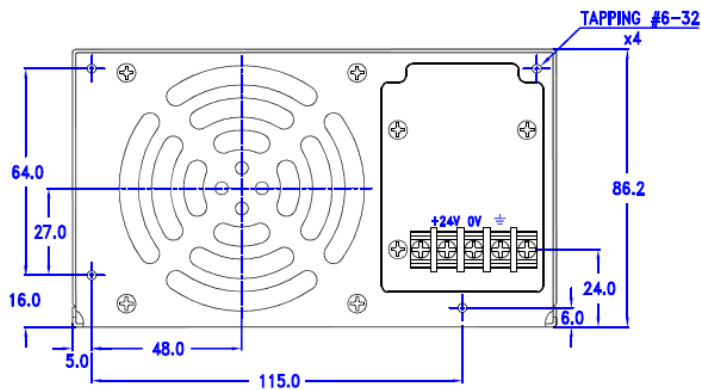
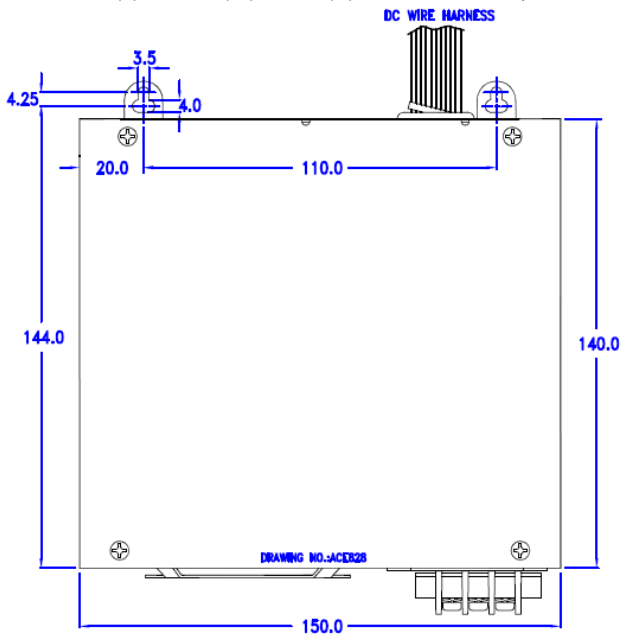
Phenomenon	Standard	Notes & Conditions
ESD	IEC-801-2	8KV air discharge
Radiated	IEC-801-3	3V/m
EFT	IEC-801-4	2KV

### Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
TUV	EN 60950-1, 2 <sup>nd</sup> edition	Approved.
UL/cUL	UL 60950-1, 2 <sup>nd</sup> Edition, CAN/CSA C22.2 No. 60905-1-07	Approved.
CE-LVD	EN 62368-1:2014+A11:2017	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.



PIN	WIRE COLOR
1	BLACK
2	BLACK
3	YELLOW
4	YELLOW

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.