

SPECIFICATION

For

SWITCHING POWER SUPPLY

M/N: MPD-830R

Revision History

Version	Revise Date	Change Items
Rev. 01	Oct. 14. 2005	Established.
Rev. 02	Feb. 14. 2018	1. Changed form. 2. Added EN 55032.
Rev. 03	Dec. 20. 2018	Added output current to output field.



FEATURES

- ✓ MPD-830R is an off-line DC 110V input switching power supply. It's ideal for use in ATX personal computers, workstations, and equivalent systems; designed to meet UL, CSA, and TUV approvals.

Models & Ratings

Model Number	Wattage	Output Voltage		Min. Current	Rated Current	Max. Current ^(Note 1)
MPD-830R	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 110VDC. 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	72	110	136	VDC	
Efficiency	72			%	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, EN 55011, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11				
Safety Approvals	IEC 60950, EN 50155: 2001				

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	72	110	136	VDC	
Input Current			5	A	At 110VDC input.
Inrush Current	10			A	At 110VDC 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 ^(V1) ±1.0 ^(V2) ±1.0 ^(V3) ±1.0 ^(V4) ±1.0 ^(V5) ±1.0 ^(V6)			%	The output line regulation for each output is less than +1% while measuring at rated load and 72V to 136VDC input voltage changing.
Load Regulation	±3.0 ^(V1) ±5.0 ^(V2) ±2.0 ^(V3) ±2.0 ^(V4) ±2.0 ^(V5) ±3.0 ^(V6)			%	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 ^(V1) 100 ^(V2) 100 ^(V3) 100 ^(V4) 50 ^(V5) 100 ^(V6)			mV	Measuring is done by 15MHz bandwidth limited oscilloscope and terminated each output with a 0.47 μF 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	72			%	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, EN 55011	B	
Radiated	EN 55022 / EN 55032, FCC, EN 55011	B	

EMC: Immunity

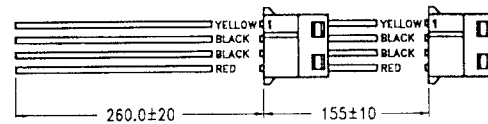
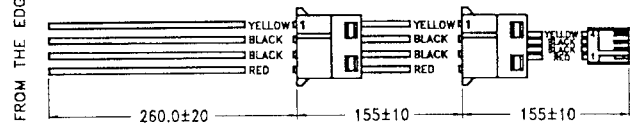
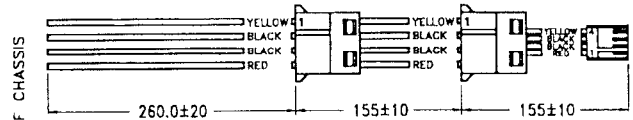
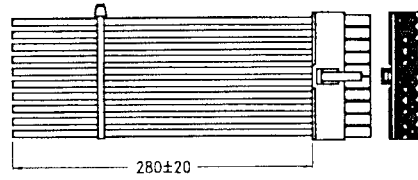
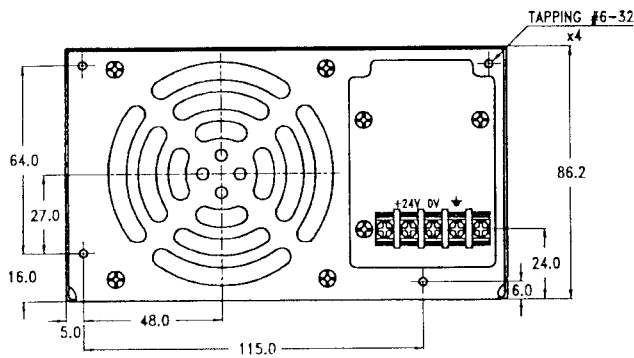
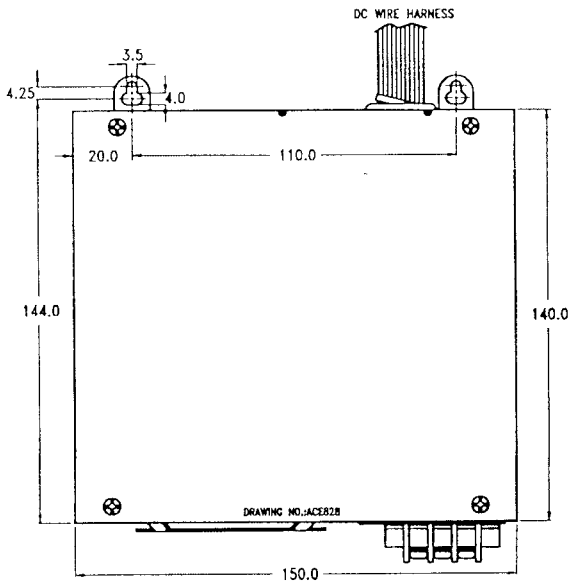
Phenomenon	Standard	Notes & Conditions
ESD	EN 61000-4-2	
Radiated	EN 61000-4-3	
EFT	EN 61000-4-4	
Surges	EN 61000-4-5	
Conducted	EN 61000-4-6	
Dips and Interruptions	EN 61000-4-11	

Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
TUV	EN 50155: 2001 (Railway applications. Electronic equipment used on rolling stock)	Designed to meet.
CB	IEC 60950	Designed to meet.

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 Output 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.