SPECIFICATION

For

SWITCHING POWER SUPPLY

M/N: MPI-810H

Revision History

Version	Revise Date	Change Items
Rev. 01	May. 30. 2007	Adding index page and OVP description.
Rev. 02	May. 16. 2008	Adding derating curve.
Rev. 03	Set. 28. 2010	Updating the safety approval status.
Rev. 04	Mar. 28. 2011	Updating the safety approval status.
Rev. 05	July. 25. 2011	Updating the efficiency; Revising the operating temperature.
Rev. 06	Feb. 9. 2018	1. Changed form. 2. Added EN 55032.
Rev. 07	Jan. 19. 2019	Added output current to output field.
Rev. 08	Dec. 02. 2020	Changed TUV to ”Designed to meet”.

MPI-810H

120W AC / DC

FEATURES

- ✓ 120Watts forced air-cooling, five outputs switching power supply; and it's designed for General Purpose.

Models & Ratings

Model Number	Wattage (Rated / Max)	Output Voltage		Min. Current	Rated Current	Max. Current
MPI-810H	85 W / 120 W	V1	+5 V	1 A	8.0 A	14.0 A
		V2	+12 V	0 A	2.5 A	6.0 A
		V3	-12 V	0 A	0.5 A	1.0 A
		V4	+3.3 V	0 A	8.0 A	12.0 A
		V5	+5Vsb	0 A	0.75 A	-

Note:
1. At the factory, the +5V output is set between 5.08V to 5.13V and all output at 60% rated load and the other outputs are checked to be within the accuracy range. The maximum total combined output power on the 3.3V and 5V rails is 70W, and the max. load cannot exceed 120W.

Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	90	115 / 230	260	VAC	Continuous input range.
Input Frequency	47		63	Hz	AC input.
Efficiency	70			%	The efficiency is about 81% max. in specified condition that input is at 159V and output are +12V/6A, +5V/4.32A.
Operation Temperature	0		+70	°C	Derate linearly above 50°C by 2.5% per °C to a maximum temperature of 70°C at 50% load.
Weight		386		g	
Dimensions	152.4 (L) x 83.8 (W) x 38.0 (H) mm, Tolerance +/- 0.4mm.				
EMC	FCC docket 20780 curve" B", EN 55022 / EN 55032 / EN 55024 IEC-801-2 Level 3, IEC-801-3 Level 3, IEC-801-4 Level 3				
Safety Approvals	IEC 60950:1991+A1+A2+A3+A4, EN 60950-1: 2006+A11, UL 60950-1, 2nd edition, 2007-03-27, CSA C22.2 No. 60905-1-07, 2nd Edition, 2007-03				

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	90	115 / 230	260	VAC	Continuous input range.
Input Frequency	47		63	Hz	AC input.
Input Current			3 / 1.5	A	Nominal AC Input Voltage (115VAC/230VAC), rated load.
Inrush Current			30 / 60	A	Nominal AC Input Voltage (115VAC/230VAC), one cycle at 25°C.
Input Protection	Non-user serviceable internally located AC input line fuse. Fuse：3.15A / 250VAC * 1pcs				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage		+5 V		DC	
		+12 V			
		-12 V			
		+3.3 V			
		+5Vsb			
Output Current		8.0	14.0	A	
		2.5	6.0		
		0.5	1.0		
		8.0	12.0		
		0.75	-		
Initial Set Accuracy	5.05		5.15	VDC	
	11.25		12.75		
	-11.25		-13.0		
	3.10		3.50		
	4.80		5.20		
Minimum Load		1		A	At Output Voltage +5V
		0			At Output Voltage +12 V, -12 V, +3.3 V, +5Vsb
Hold Up Time	16			mS	Nominal AC Input Voltage (115VAC), rated load.
Line Regulation		±1.0(V1) ±1.0(V2) ±1.0(V3) ±1.0(V4) ±1.0(V5))		%	Less than ±1% at rated load with ±10% changing in input voltage.
Load Regulation		±2.0(V1) +7 ~ -3(V2) +8 ~ -3(V3) ±5.0(V4)		%	While the measuring is done by changing the measured output loading +/-40% from 60% rated load, and keep other output is at 60% rated load.
Ripple & Noise		50(V1) 120(V2) 200(V3) 50(V4) 120(V5)		mV	Measured at rated load by a 15MHz bandwidth limited oscilloscope and the each output is connected with 0.47µF capacitor.
Protection	The power supply will generate the hiccup mode to protect itself against short circuit or over load condition, and will return to normal after wrong condition is removed.				
Over Temperature Protection	For some reason the power supply fails to control itself, the build-in over voltage protection circuit will shut down and into latch off model.				

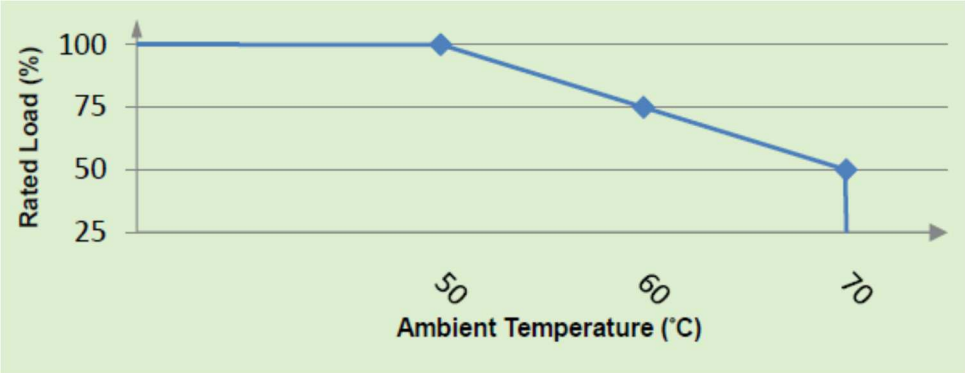
General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	70			%	The efficiency is about 81% max. in specified condition that input is at 159V and output are +12V/6A, +5V/4.32A.
Power On / Off	The power supply will be turned on when the power On/Off pin is connected to secondary GND.				

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	0		+70	˚C	Derate linearly above 50°C by 2.5% per °C to a maximum temperature of 70°C at 50% load.
Storage Temperature	-40		+70	°C	
Relative Humidity	10		90	%RH	Non-condensing.
Cooling	38			CFM	Forced-cooled when > 120W
Operating / Non- Operating Altitude			10000	Feet	

Derating curve



EMC: Emissions

Phenomenon	Standard	Class	Notes & Conditions
Conducted	EN 55032 EN 55024	B	
Radiated	EN 55032 EN 55024	B	

EMC: Immunity

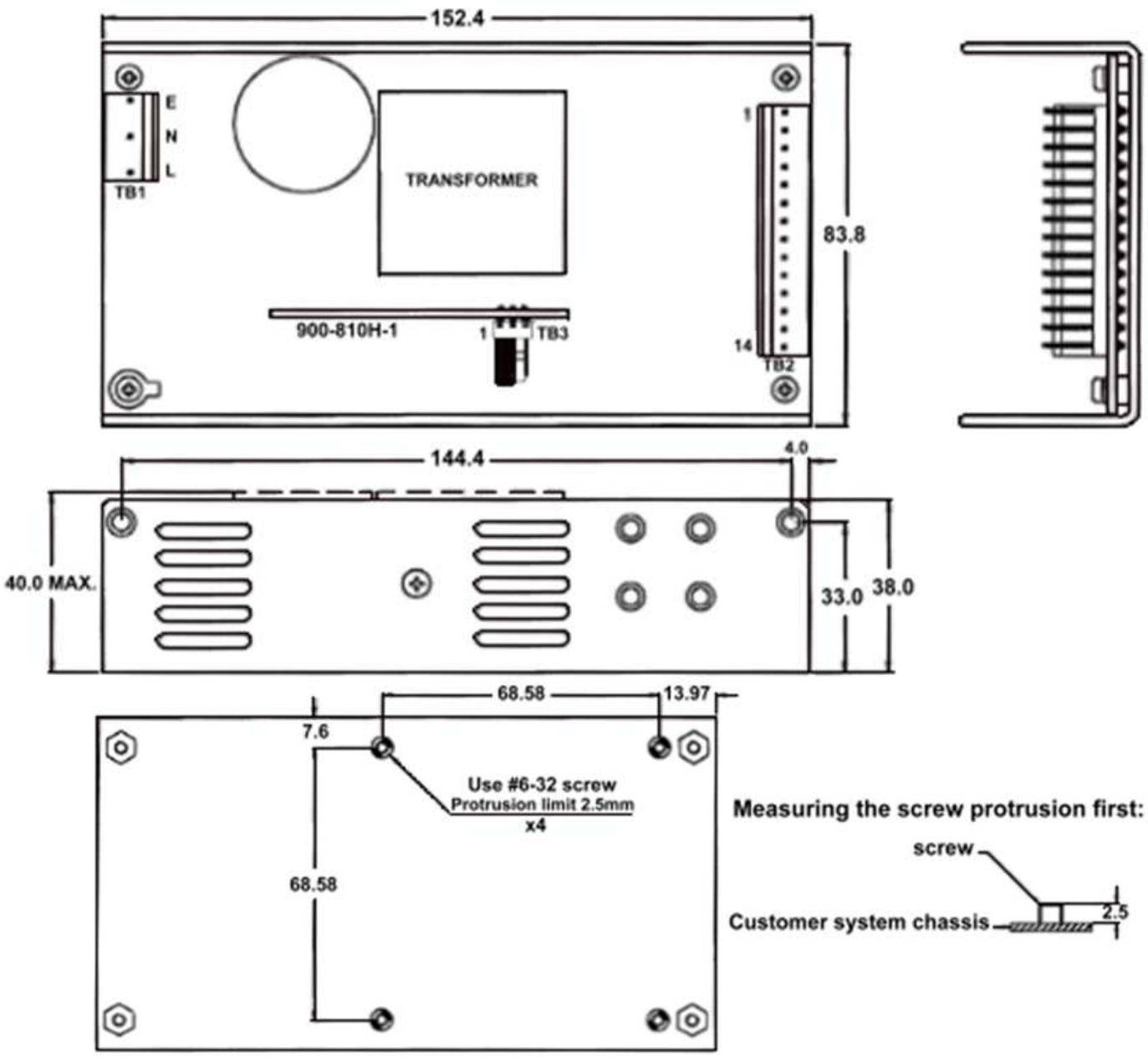
Phenomenon	Standard	Criteria	Notes & Conditions
ESD	IEC 61000-4-2	A	±4KV air discharge, ±8KV contact discharge
Radiated	IEC 61000-4-3	A	3V/m
EFT	IEC 61000-4-4	A	1KV Line & PE
Surges	IEC 61000-4-5	A	1KV L-N, 2KV L/N-PE

Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
TUV	EN 60950-1: 2006+A11	Designed to meet.
CB	IEC 60950:1991+A1+A2+A3+A4	Approved.
UL/cUL	UL 60950-1, 2nd edition, 2007-03-27 CSA C22.2 No. 60905-1-07, 2nd Edition, 2007-03	Approved.

Mechanical Details

SIZE：152.4 (L) x 83.8 (W) x 38.0 (H) mm, Tolerance +/- 0.4mm.



Connectors:

TB1 --- AC input : Molex 5273-05A withdraws 2 pins or equivalent.

TB2 --- DC output : Molex 5273-14A or equivalent.

TB3 --- DC output : Molex 5045-03A

DC output pin assignment:

TB2	Pin	1. +5V	6. GND	11. 3.3V
		2. +5V	7. GND	12. 3.3V
		3. +5V	8. GND	13. 3.3V
		4. GND	9. +12V	14. -12V
		5. GND	10. +12V	
TB3	Pin	1. PS On/OFF	2. GND	3. +5Vsb