AC/DC 350W Enclosed Switching Power Supply

LM350-10A24

MORNSUN®

Report EN62368-1 UKCA BS EN 62368-1 RoHS

FEATURES

- Universal 90-132VAC or 180-264VAC input voltage
- DC input voltage range: 240 - 370VDC
- Operating ambient temperature range: -30℃ to +70℃
- The power-on LED indicator
- Output short circuit/over-current/over-voltage protection, over-temperature protection
- Operating altitude up to 5000m
- Built-in DC fan for forced air cooling
- 3 years warranty

LM350-10A24 is one of Mornsun's dual output non-isolation enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, high efficiency, high reliability and double or reinforced insulation. The converter offer excellent EMC performance and meet IEC/EN61000-4, IEC/UL/EN62368, GB4943 standards and it is widely used in areas of the laser galvanometer industry, current sensors, motors, industrial, street light control, electricity, security, telecommunications, smart home etc.

Selection Guide

Certification	Part No.*	Output Power (W)	Nominal Output Voltage and Current		Output Voltage Adjustable Range (ADJ) Io1(V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (uF) (vo1/vo2)
			(Vo1/Io1)	(Vo2/Io2)			
EN	LM350-10A24	350.4	+24V/7.3A	-24V/7.3A	21.6-28.8	87	1000

Note：*The product picture is for reference only. For details, please refer to the actual product.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	Low voltage (switch in position of 115)	90	--	132	VAC
		High voltage (switch in position of 230)	180	--	264	
	DC input	Switch in position of 230	240	--	370	VDC
Input Voltage Frequency			47	--	63	Hz
Input Current	115VAC		--	6.8	8	A
	230VAC		--	3.4	4	
Inrush Current	Cold start		--	60	--	
Input Fuse	Built-in fuse		10A/300VAC			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	10% - 100% load (Balanced load)	Vo1	--	±1.0	--	%
		Vo2	--	±3.0	--	
Line Regulation	10% - 100% load (Balanced load)	Vo1	--	±0.5	--	
		Vo2	--	±0.5	--	
Load Regulation	10% - 100% load (Balanced load)	Vo1	--	±1.0	--	
		Vo2	--	±3.0	--	
Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	Vo1/Vo2	--	150	--	mV
Temperature Coefficient			--	±0.03	--	%/℃
Minimum Load	Balanced load		10	--	--	%
Hold-up Time	115VAC		--	12	--	ms
	230VAC		--	16	--	

Short Circuit Protection	Recovery time <5s after the short circuit disappear.	Hiccup, continuous, self-recover
Over-current Protection	Balanced load	110%-200% Io, hiccup, self-recover
Over-voltage Protection	Balanced load, Vo1	28.8V-33.6V (Hiccup, self-recover)
Over-temperature Protection		Output voltage hiccup, self-recover after fault elimination

Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47μF electrolytic capacitor and 0.1μF ceramic capacitor, please refer to enclosed Switching Power Supply Application Notes for specific information.

General Specifications

Item		Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Test	Input - output	Electric strength test for 1min., leakage current <5mA		3000	--	--	VAC
	Input - ⏚			2000	--	--	
	Output - ⏚			500	--	--	
Insulation Resistance	Input - output	Environment temperature: 25±5℃ Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC		100	--	--	MΩ
	Input - ⏚			100	--	--	
	Output - ⏚			100	--	--	
Operating Temperature				-30	--	+70	℃
Storage Temperature				-40	--	+85	
Operating Humidity		Non-condensing		20	--	90	%RH
Storage Humidity				10	--	95	
Power Derating		Operating temperature derating	+50℃ to +70℃	2	--	--	%/℃
		Input voltage derating	90VAC -100VAC	2	--	--	%/VAC
Leakage Current		240VAC/60Hz	Touch current	--	--	0.75	mA
Safety Class				CLASS I			
MTBF		MIL-HDBK-217F@25℃		⩾300,000 h			

Mechanical Specifications

Case Material	Metal (AL1100, SGCC)
Dimensions	215.00 mm x 115.00 mm x 30.00 mm
Weight	720g (Typ.)
Cooling Method	Forced air cooling

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS A	
	RE	CISPR32/EN55032	CLASS A	
Immunity	ESD	IEC/EN61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria A
	Surge	IEC/EN61000-4-5	line to line ±2KV/line to PE ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s	perf. Criteria A
	Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11	0%, 70%	perf. Criteria B

Note:
1. perf. Criteria:
A: The equipment shall continue to operate as intended without operator intervention;
B: After the test, the equipment shall continue to operate as intended without operator intervention.
2. This power supply does not meet the harmonic current requirements specified in EN61000-3-2.
Please do not use this power supply under the following conditions:
(1) The terminal equipment is used in the European Union.
(2) Supporting terminals are connected to a public power grid with 220VAC or a higher voltage that comply with the requirements of EN61000-3-2.
(3) The power supply is installed in terminal equipment with average or continuous input power greater than 75W.

(4) The power supply belong to a part of lighting system.

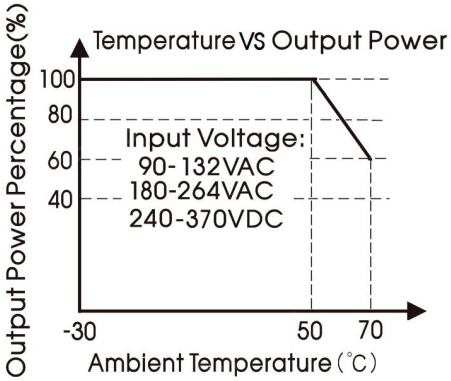
Exception: The power supply used in the following terminal equipment does not need to meet EN61000-3-2.

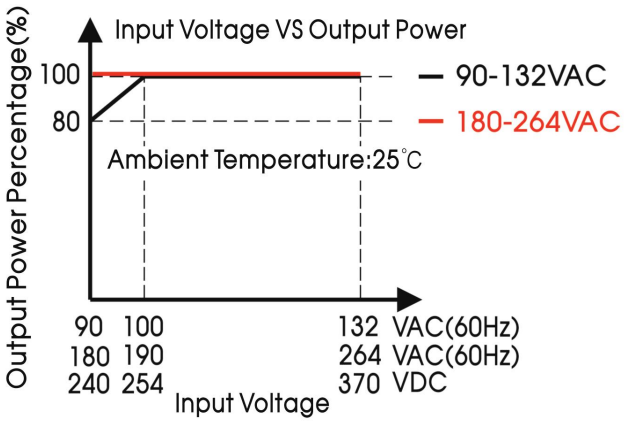
(1) Professional equipment with a total rated input power greater than 1000W.

(2) Symmetrically controlled heating element with a rated power less than or equal to 200W.

3. If no harmonic current is required or customers can solve harmonic current problems by themselves, this product can be used.

Product Characteristic Curve

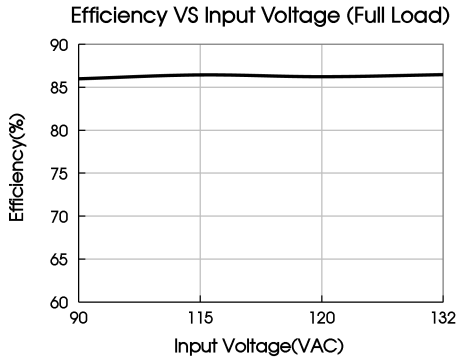


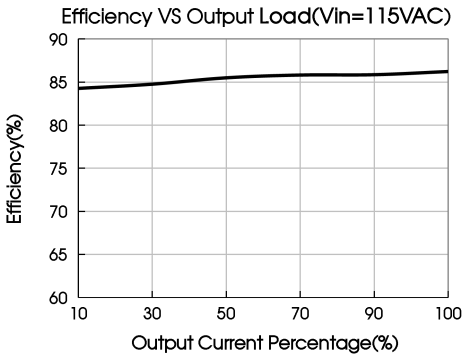


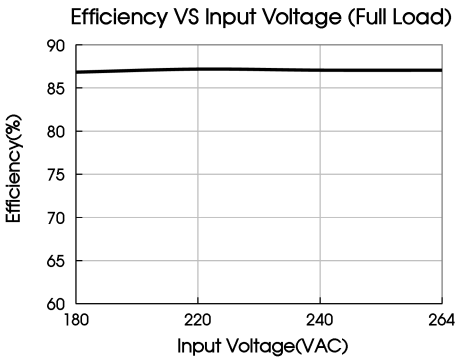
Note:

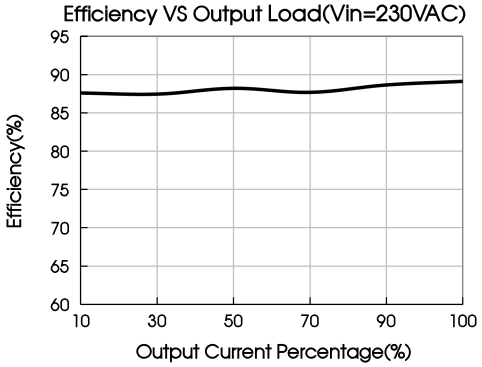
1. With an AC input voltage between 90-100VAC the output power must be derated as per the temperature derating curves, while the AC input voltage of 180-190VAC and a DC input between 240-254VDC is not required.

2. This product is suitable for applications using forced air cooling; for applications in closed environment please consult Mornsun FAE.

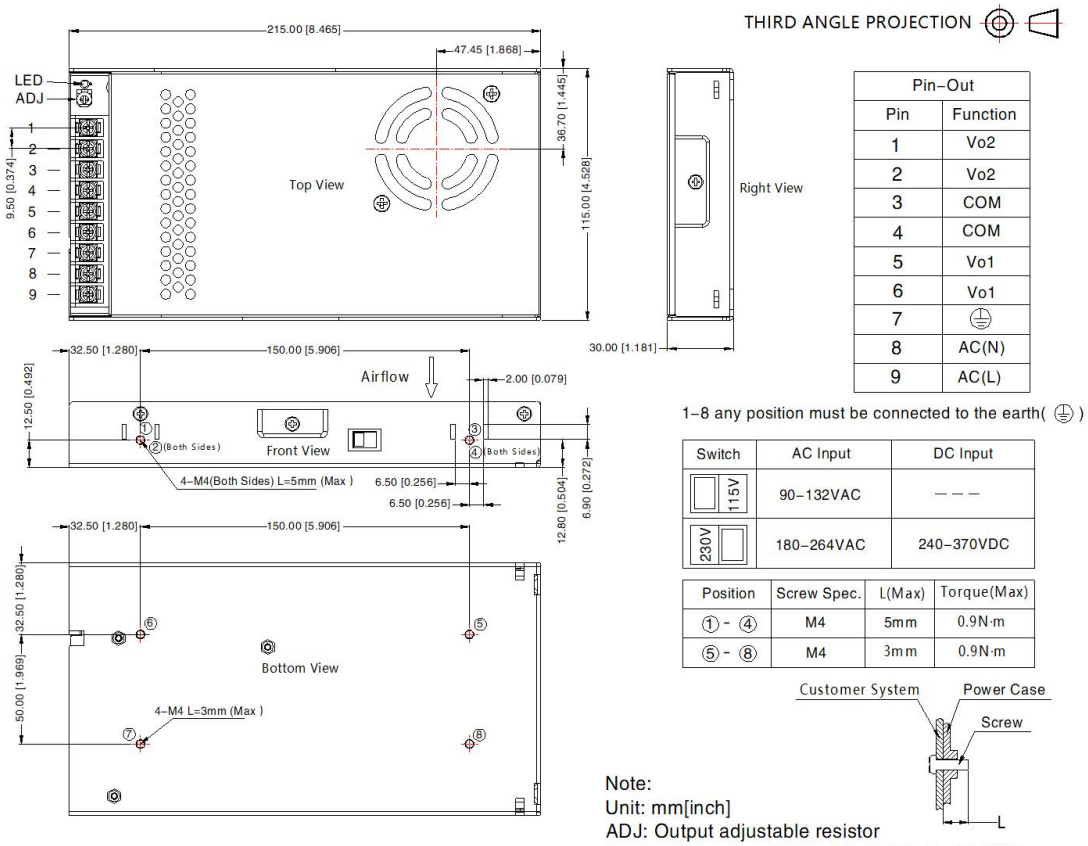








Dimensions and Recommended Layout



Pin-Out	
Pin	Function
1	Vo2
2	Vo2
3	COM
4	COM
5	Vo1
6	Vo1
7	⏚
8	AC(N)
9	AC(L)

1-8 any position must be connected to the earth(⏚)

Switch	AC Input	DC Input
115V	90-132VAC	— — —
230V	180-264VAC	240-370VDC

Position	Screw Spec.	L(Max)	Torque(Max)
① - ④	M4	5mm	0.9N·m
⑤ - ⑧	M4	3mm	0.9N·m

Note:
Unit: mm[inch]
ADJ: Output adjustable resistor
Connection range: Input: 90-132V 18-14AWG
180-264V 20-14AWG
Output: 18-14AWG
Connector tightening torque: M3.5, Max 0.8N · m
General tolerances: ± 1.00[± 0.039]

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220115;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. In order to improve the efficiency, there will be audible noise generated when work at light load, but it does not affect product performance and reliability;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
8. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing."/"ATTENTION: Double pôle/fusible sur le neutre. Débrancher lalimentation avant lentretien;
9. The output voltage can be adjusted by the ADJ, clockwise to decrease;
10. If product involves multi-brand materials and there are differences in color etc, please refer to the standards of each manufacturer;
11. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
12. The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

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