AD120-xxV2 Series

DESCRIPTIONS

120W, AC-DC DIN-Rail Power Supply



RoHS

3 Years Warranty

c UL us LISTED Ind. Cont. Eq.

CE Report

UK CA Report

UL61010-1 EN62368-1 BS EN62368-1

FEATURES

- Universal 85 - 305VAC or 120 - 430VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40℃ to +85℃
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage, over-temperature protection
- DIN rail TS-35/7.5 or 15 mountable
- Suitable for small chassis and narrow space installation
- Safety according to UL61010, IEC/UL62368, EN60335, EN61558, GB4943

APPLICATIONS

- Industrial
- Electricity
- Security
- Telecommunications

Selection Guide

Certification	Part No	Output Power (W)*	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
UL/EN/BS EN	AD120-24V2	120	24V/5A	24-28V	90	4000
EN/BS EN	AD120-48V2		48V/2.5A	48-53V	91.5	1000

Note:1. Use suffix "Q" for conformal coating.
2.The product picture is for reference only.For details, please refer to the actual product.

Specifications

Product Specifications	Item		Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range		AC input		85	--	305	VAC
			DC input		120	--	430	VDC
	Input Voltage Frequency				47	--	63	Hz
	Input Current		115VAC		--	--	2.7	A
			230VAC		--	--	1.6	
	Inrush Current		115VAC	Cold start	--	35	--	
			230VAC		--	65	--	
	Leakage Current		277VAC		< 1mA			
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		Full load range		--	±1.0	--	%
	Line Regulation		Rated load		--	±0.5	--	
	Load Regulation		0% - 100% load		--	±1.0	--	
	Ripple & Noise*		20MHz bandwidth (peak-to-peak value)	24V	--	120	--	
				48V	--	150	--	
	Temperature Coefficient				--	±0.03	--	%/℃
	Minimum Load				0	--	--	%
	Stand-by Power Consumption		115VAC		--	--	--	W
			230VAC		--	1.0	1.5	
	Hold-up Time		115VAC		--	8	--	ms
			230VAC		--	16	--	
	Short Circuit Protection		Recovery time <5s after the short circuit disappear.		Constant current mode, continuous, self-recovery			
	Over-current Protection		230VAC, rated load		>105%Io, self-recovery			
	Over-voltage Protection		24V		≤33VDC (Hiccup, self-recovery)			
			48V		≤63VDC (Hiccup, self-recovery)			
	Over-temperature Protection		230VAC, rated load, 60℃		Output voltage turn off, self-recovery after the temperature drops			
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <10mA		2000	--	--	VAC
		Input - output			4000	--	--	
		Output - ⏚			500	--	--	

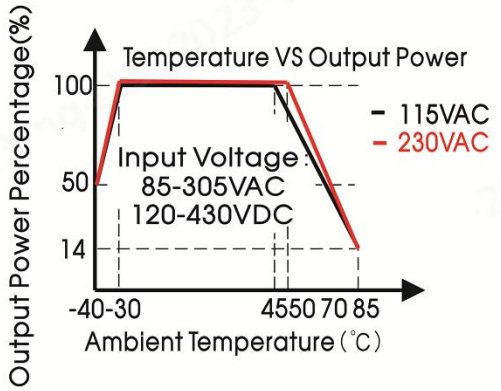
	Insulation Resistance	Input - ⏚	At 500VDC	50	--	--	MΩ
		Input - output		50	--	--	
		Output - ⏚		50	--	--	
	Operating Temperature			-40	--	+85	℃
	Storage Temperature			-40	--	+85	
	Operating Humidity		Non-condensing	10	--	95	%RH
	Storage Humidity			20	--	95	
	Switching Frequency			--	150	--	kHz
	Power Derating	Operating temperature derating	-40℃ to -30℃	5	--	--	%/℃
			+45℃ to +85℃ 115VAC	2.15	--	--	
			+50℃ to +85℃ 230VAC	2.5	--	--	
		Input voltage derating	85VAC - 110VAC	0.8	--	--	%/VAC
			277VAC - 305VAC	0.71	--	--	
	Safety Class			CLASS I			
	MTBF		MIL-HDBK-217F@25℃	≥300,000 h			
Mechanical Specifications	Case Material		Metal (AL1100, SGCC)				
	Dimensions		125.0mm x 87.5mm x 32.0mm				
	Weight		400g (Typ.)				
	Cooling Method		Free air convection				

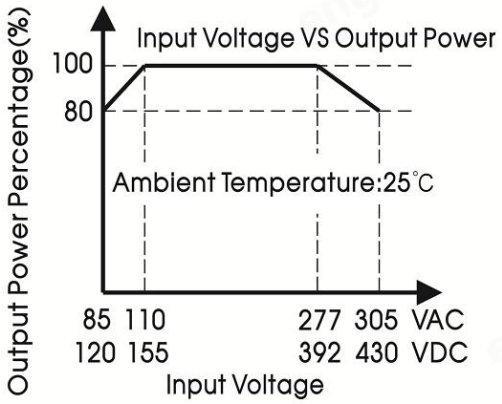
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 CLASS B	
		Harmonic current	IEC/EN61000-3-2 CLASS A	
	Immunity (EMS)	ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV	perf. Criteria A
		RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
		EFT	IEC/EN 61000-4-4 ±2KV	perf. Criteria A
		Surge	IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV	perf. Criteria B
		CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
		Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

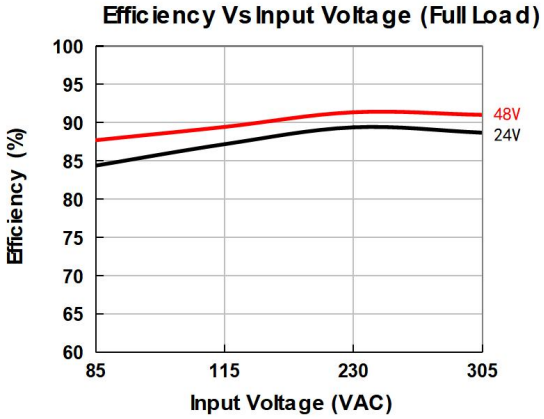
Characteristic Curve

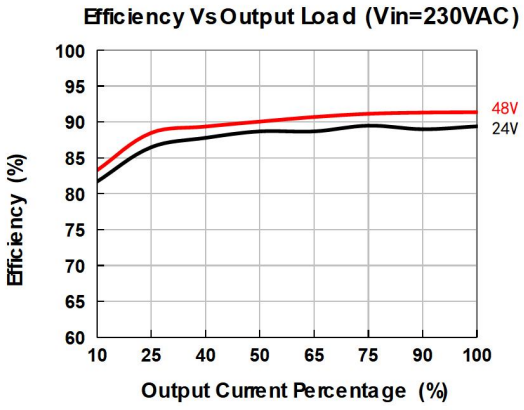




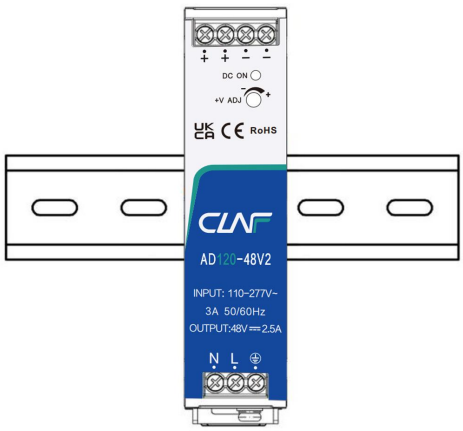
Note: 1. With an AC input voltage between 85 - 110VAC/277 - 305VAC and a DC input between 120 - 155VDC/392 - 430VDC the output power must be derated as per the temperature derating curves;

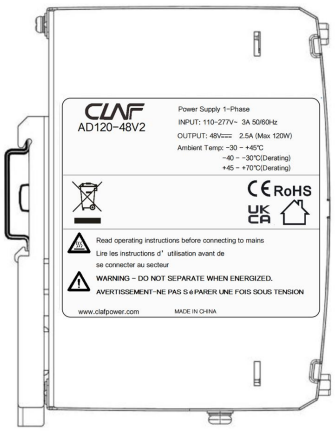
2. This product is suitable for applications using natural air cooling.



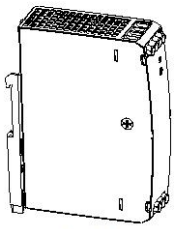


Installation Diagram

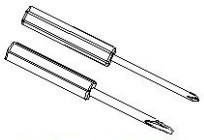




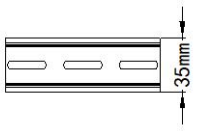
Bill Of Material		
1	Product	1 PCS
2	Phillips screwdriver Slotted screwdriver	1 PCS
3	TS35/7.5 or TS35/15	1 PCS
4	26–10AWG wires	/ PCS
	All above is only for reference, the actual wiring diameter and locking torque refer to the appearance size diagram	



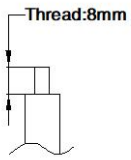
Product



Phillips screwdriver
Slotted screwdriver
Diameter of the cutting tools: 3mm

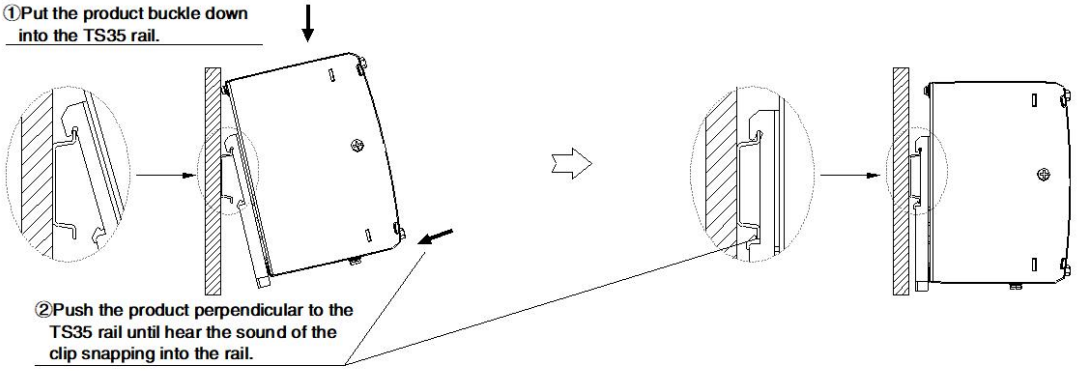


TS35/7.5 or TS35/15

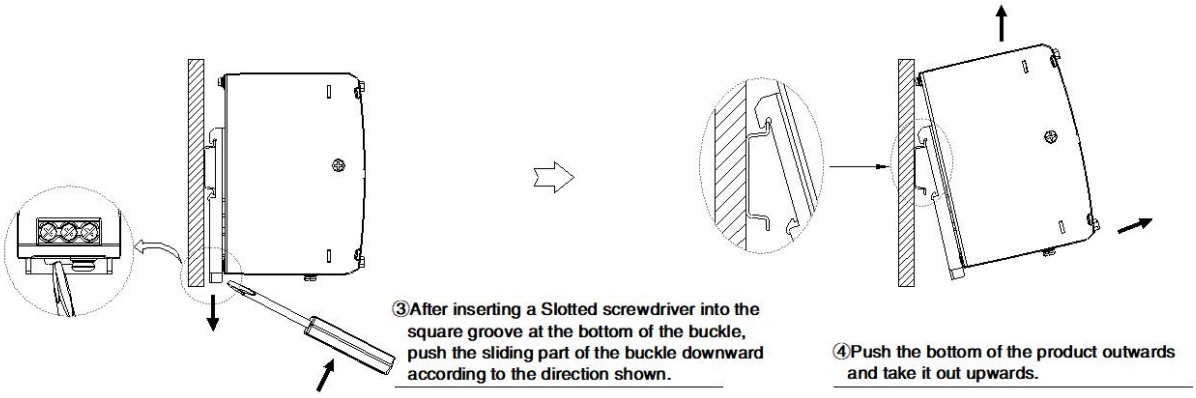


26–10AWG wires

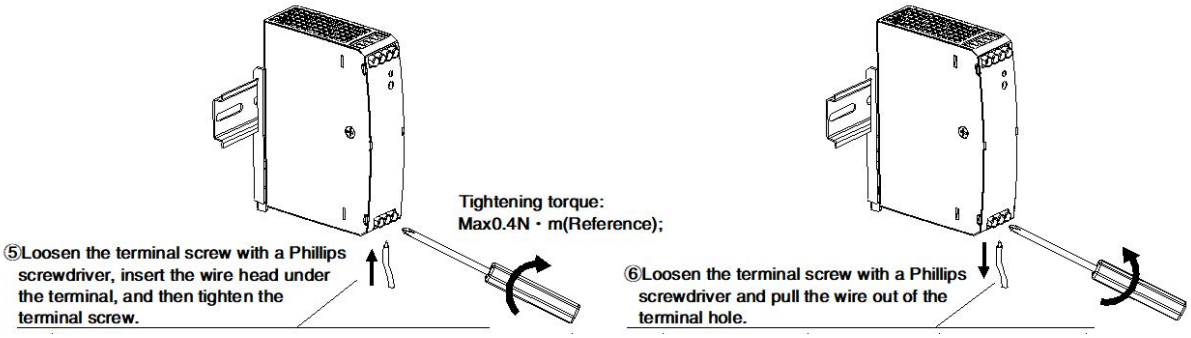
Installation steps ①–②



Disassembly steps ③–④

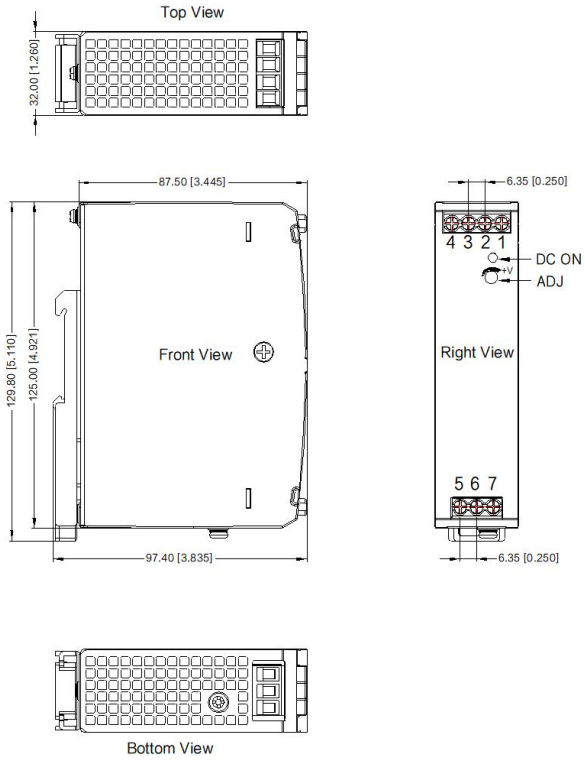


Connecting/Disconnecting Steps ⑤–⑥



Note: Keep the following installation clearances: 20mm on top, 20mm on the bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. another power supply).

Dimensions and Recommended Layout



THIRD ANGLE PROJECTION

Pin-Out	
Pin	Mark
1	-Vo
2	-Vo
3	+Vo
4	+Vo
5	AC(N)
6	AC(L)
7	⏚

Note:
Unit: mm[inch]
ADJ: Output adjustable resistor
Wire range: 26-10 AWG
Tightening torque: Max 0.79 N・m
Mounting rail: TS35, rail needs to connect safety ground
General tolerances: ± 1.00[± 0.039]

Note:

1. 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;
2. The room temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
7. The output voltage can be adjusted by the ADJ, clockwise to increase;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
9. 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.
10. The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.