ADP60-2B-xx Series

DESCRIPTIONS

60W, AC-DC DIN-Rail Power Supply



RoHS

CE Report EN 62368-1

UKCA Report BS EN62368-1

FEATURES

- Universal 85 - 264VAC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -25℃ to +70℃
- Efficiency up to 88%
- High I/O isolation voltage up to 4000VAC
- DC OK function
- Operating altitude up to 5000m
- Output short circuit, over-current, over-voltage protection
- DIN rail TS35X7.5/ TS35X15 mountable
- Design refer to UL/IEC62368, UL61010, UL508

APPLICATIONS

- Industrial Control
- Security
- Communicate

Selection Guide

Certification	Part No.*	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
EN/BS EN	ADP60-2B-05	50	5V/10A	5-6	83	12000
	ADP60-2B-12	60	12V/5A	12-15	87	6000
	ADP60-2B-24	60	24V/2.5A	24-30	88	1500
	ADP60-2B-48	60	48V/1.25A	48-56	88	680

Note: 1. *Use suffix "QQ" for double-faced conformal coating;ADP60-2B-05-QQ

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

Characteristic

Product characteristics	Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range	AC input		85	--	264	VAC
		DC input		120	--	370	VDC
	Input Voltage Frequency	AC input		47	--	63	Hz
	Input Current	115VAC		--	--	1.8	A
		230VAC		--	--	1.0	
	Inrush Current	115VAC	Cold start	--	30	--	
		230VAC		--	60	--	
	Leakage Current	240VAC		< 0.5mA			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	Full load range	5V	--	±2	--	%
			12V/24V/48V	--	±1	--	
	Line Regulation	Rated load		--	±1	--	
	Load Regulation	230VAC	5V	--	±1.5	--	
			12V/24V/48V	--	±1	--	
	Minimum Load			0	--	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V	--	80	100	mV
			12V	--	100	120	
			24V	--	120	150	
			48V	--	150	200	
	Temperature Coefficient			--	±0.03	--	%/℃
	Hold-up Time	115VAC		--	20	--	ms
		230VAC		--	60	--	
	DC OK Signal**	Resistive load		30VDC/1A Max.			
	Over-current Protection			≥110% Io, constant current mode, self-recover			
	Short Circuit Protection			Constant current mode, recovers automatically after fault condition is removed			
	Over-voltage Protection	5V		≤7.5V	Output voltage hiccup, self-recover		
		12V		≤18V			
		24V		≤36V			
		48V		≤64.8V			
General Specifications	Isolation	Input- output	Electric strength test for 1min., leakage current <10mA	4000	--	--	VAC
		Input - ⏚		2000	--	--	
		Output - ⏚		500	--	--	
	Insulation Resistance	Input- output	Test voltage: 500VDC	50	--	--	MΩ
		Input - ⏚					
		Output - ⏚					
	Operating Temperature			-25	--	+70	℃
	Storage Temperature			-40	--	+85	

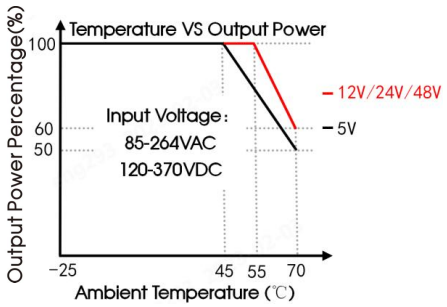
	Storage Humidity	Non-condensing			10	--	95	%RH
	Operating Humidity				20	--	95	
	Power Derating	Operating temperature derating	5V	+45℃ to +70℃	2	--	--	%/℃
			12V/24V/48V	+55℃ to +70℃	2.67	--	--	
		Input voltage derating		85VAC-100VAC	1.33	--	--	%/VAC
	Switching Frequency	230VAC, 100% load			--	65	--	kHz
	Safety Class				CLASS I			
	MTBF	MIL-HDBK-217F@25℃			≥300,000 h			
Mechanical Specifications	Case Material	Plastic, heat-resistant (UL94V-0)						
	Dimensions	100.00 × 36.50 × 90.00mm						
	Weight	230g (Typ.)						
	Cooling Method	Free air convection						

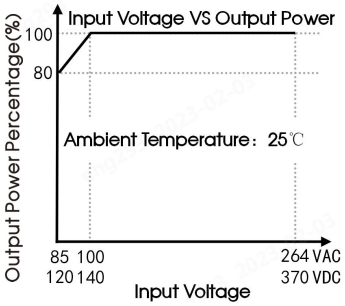
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor;
**DC OK Signal: When the output voltage is normal, the relay is connected. When the output voltage is abnormal (<90%Vo), the relay is disconnected.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32/EN55032 CLASS B	
		RE	CISPR32/EN55032 CLASS B	
		Harmonic current	IEC/EN61000-3-2 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 ±2KV	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
		PFMF	IEC/EN61000-4-8 30A/m	Perf. Criteria A
		Voltage dips, short interruption and voltage variations	IEC/EN61000-4-11 100% dip 1 periods, 30% dip 25 periods (50Hz), 30 periods (60Hz)	Perf. Criteria B

Product Characteristic Curve

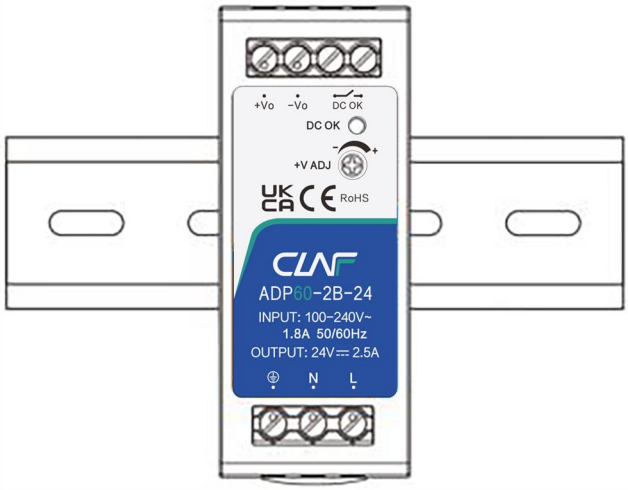


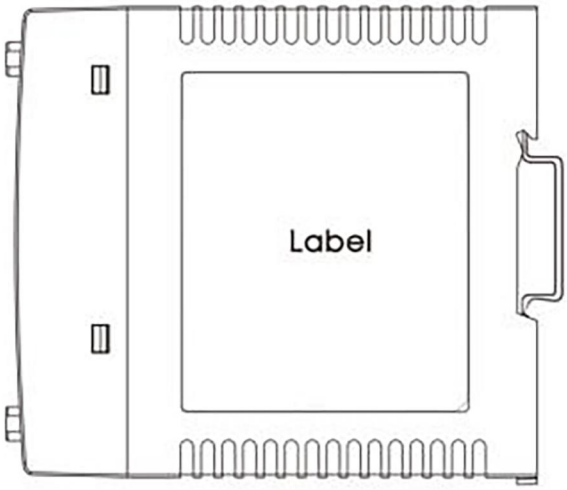


Note: 1.With an AC input voltage between 85-100VAC and a DC input between120-140VDC the output power must be derated as per the temperature derating curves;

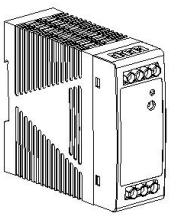
2.This product is suitable for applications using natural air cooling.

Installation Diagram





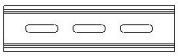
Materials required in the installation		
1	Product	1PCS
2	Slotted screwdriver	1PCS
3	TS35/7.5 or TS35/15	1PCS
4	26–10AWG Wire	/ PCS
5	The content is for reference only. Regarding the actual wire diameter and tightening torque, refer to the dimensional drawing.	



Product



Slotted screwdriver
Diameter : 3mm

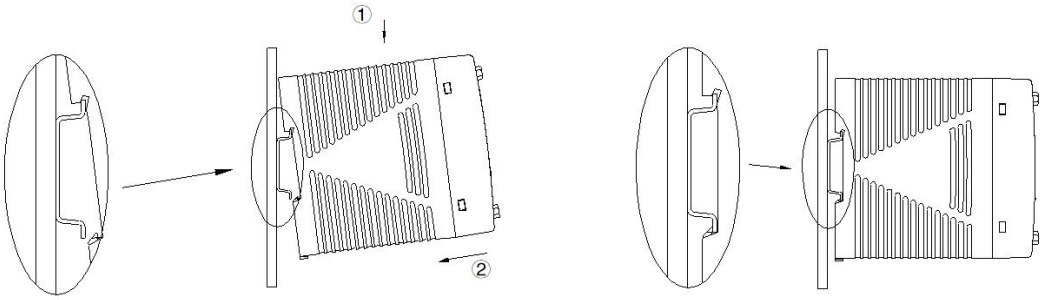


TS35/7.5 or TS35/15



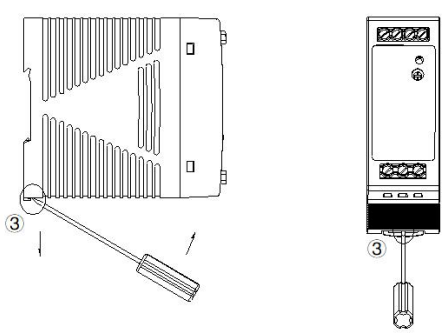
Installation steps ①-②

①Clamp the buckle of the product into the TS35 DIN rail.

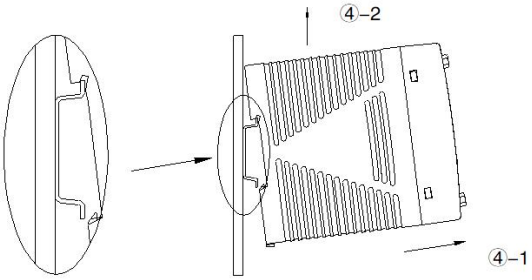


②Push the product vertically towards the TS35 DIN rail until hearing the sound of the buckle snapping into it.

Disassembly Steps③–④



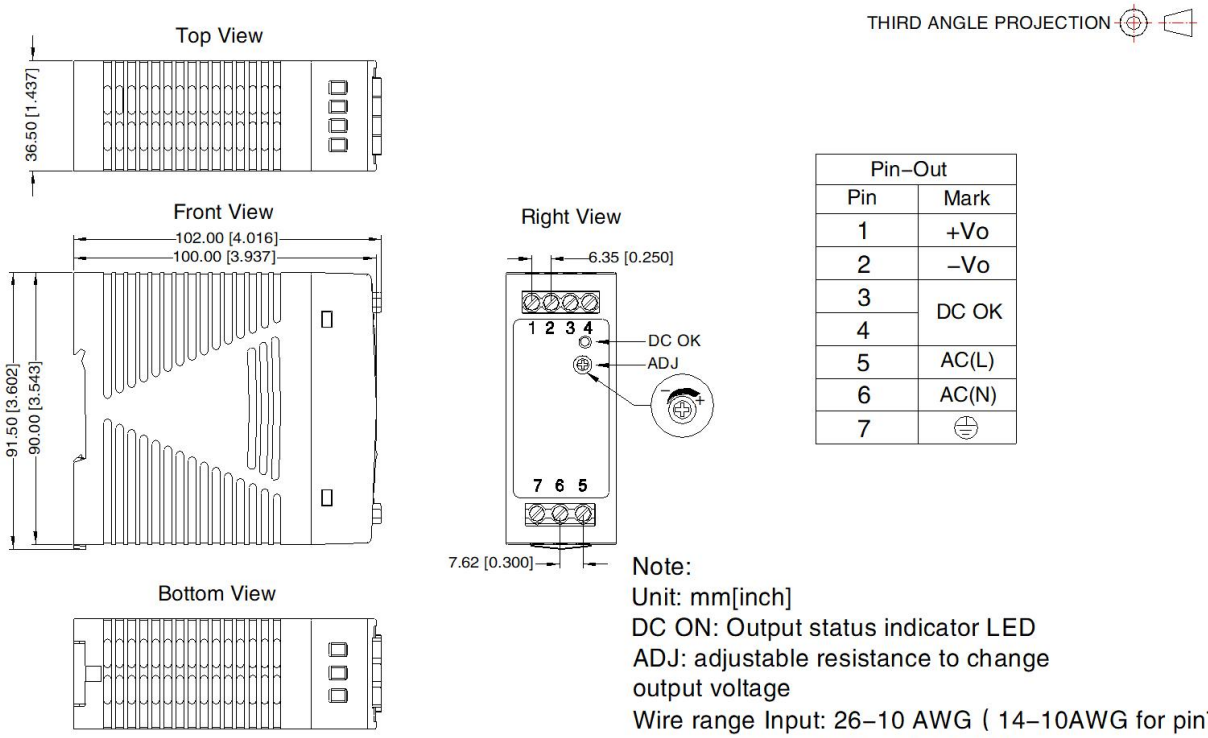
③After inserting the slotted screwdriver into the square groove at the bottom of the buckle, push the slider of the buckle downward in the direction shown in the figure.



④Hold the bottom of the product and push it outwards while pushing down the slider, then lift the product up to take the product out of the DIN rail.

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



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

Note:
Unit: mm[inch]
DC ON: Output status indicator LED
ADJ: adjustable resistance to change output voltage
Wire range Input: 26–10 AWG (14–10AWG for pin7)
Output: 5V：14–10AWG
12V：18–14AWG
24V、48V：20–18AWG
Tightening torque: M3, Max 0.4 N・m
Mounting rail: TS35
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 3.5℃/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. 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 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. Please consult our FAE for EMC test operation instructions.
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.