DESCRIPTIONS

AC-DC 20W DIN-Rail Power Supply



RoHS

CE Report UKCA Report

EN62368-1 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: -30℃ to +70℃
- Efficiency up to 86%
- 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
- Withstand 305VAC input voltage 3s
- Design refer to UL/EN/IEC/BS EN62368, UL61010, UL508

APPLICATIONS

- Industrial

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	ADP20-2B-05	15	5V/3A	4.75-5.5V	80	7000
	ADP20-2B-12	20	12V/1.67A	10.8-13.2V	83	4000
	ADP20-2B-15	20	15V/1.34A	13.5-16.5V	83	3000
	ADP20-2B-24	24	24V/1A	21.6-26.4V	86	1000

Note: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	--	264	VAC
		DC input		120	--	370	VDC
	Input Voltage Frequency	AC input		47	--	63	Hz
	Input Current	115VAC		--	--	0.55	A
		230VAC		--	--	0.35	
	Inrush Current	115VAC	Cold start	--	20	--	
		230VAC		--	35	--	
	Leakage Current	240VAC		< 0.5mA			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	Full load range	5V	--	±2	--	%
			12V/15V/24V	--	±1	--	
	Line Regulation	Rated load		--	±1	--	
	Load Regulation	230VAC		--	±1	--	
	Minimum Load			0	--	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	5V	--	60	80	mV
			12V/15V	--	100	120	
			24V	--	120	150	
	Temperature Coefficient			--	±0.03	--	%/℃
	Hold-up Time	115VAC		--	20	--	ms
		230VAC		--	50	--	
	DC OK Signal	Output voltage adjustable range ADJ	5V	3.75-6V/50mA			
			12V	9-13.5V/40mA			
			15V	11.5-16.5V/40mA			
			24V	18-27V/20mA			
	Over-current Protection			≥125% Io, constant current mode, self-recover			
	Short Circuit Protection			Constant current mode, recovers automatically after fault condition is removed			
	Over-voltage Protection	5V		≤6.75V	Output voltage hiccup		
		12V		≤16.2V			
		15V		≤20.25V			
		24V		≤32.4V			
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	100	--	--	MΩ
		Input - ⏚					

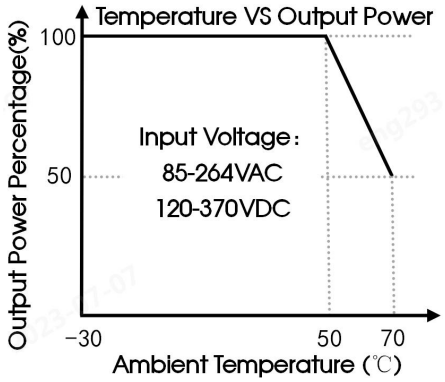
		Output - ⏚					
	Operating Temperature			-30	--	+70	℃
	Storage Temperature			-40	--	+85	
	Storage Humidity	Non-condensing		10	--	95	%RH
	Operating Humidity			20	--	90	
	Power Derating	Operating temperature derating	+50℃ to +70℃	2.5	--	--	%/℃
		Input voltage derating	85VAC-100VAC	1.33	--	--	%/VAC
	Switching 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	95.00 × 22.50 × 85.00mm					
	Weight	125g (Typ.)					
	Cooling Method	Free air convection					

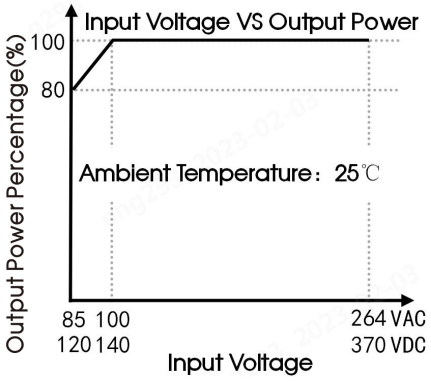
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions	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

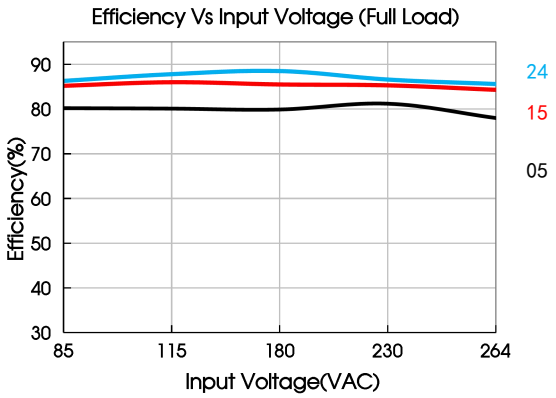
Product Characteristic Curve

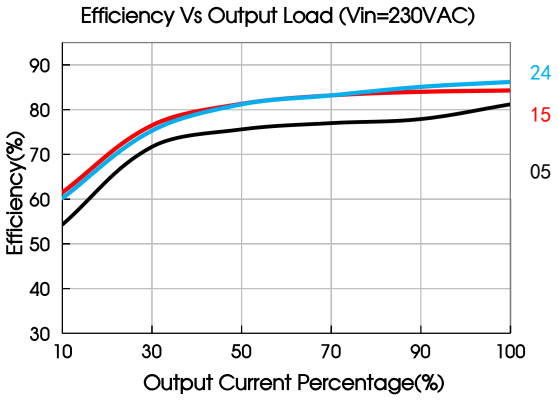




Note: 1.With an AC input voltage between 85-100VAC and a DC input between120-140VDC the output power must be derated as per the temperature derating curves;

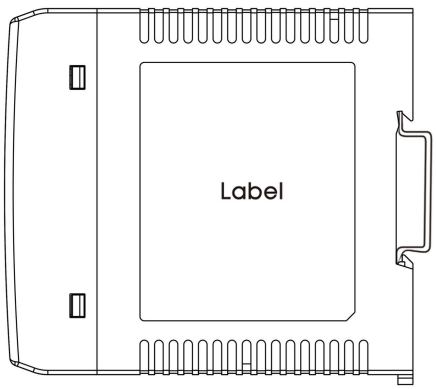
2.This product is suitable for applications using natural air cooling.



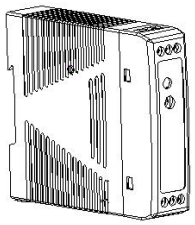


Product Characteristic Curve





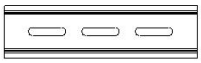
Materials required in the installation		
1	Product	1PCS
2	Slotted screwdriver	1PCS
3	TS35/7.5 or TS35/15	1PCS
4	22–12AWG Wire	/PCS
5	The content is for reference only. Regarding the actual wire diameter and tightening torque, refer to the dimensional drawing.	



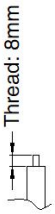
Product



Slotted screwdriver
Diameter : 3mm

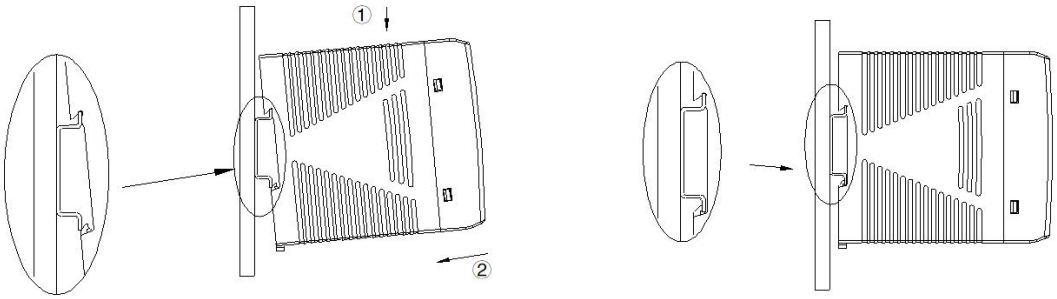


TS35/7.5 or TS35/15



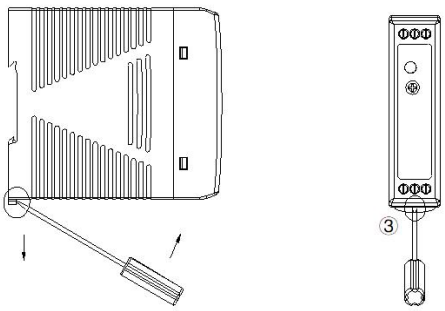
Installation steps ①-②

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

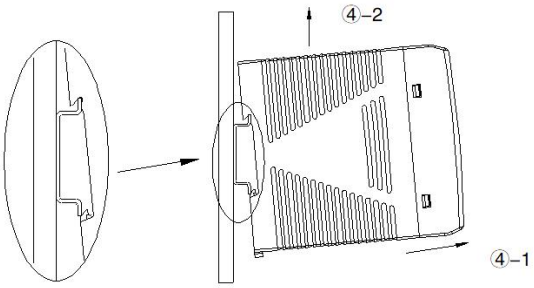


②Push the product vertically towards the TS35 DIN rail until hearing the sound of the buckle snapping into it.

Disassembly Steps③–④

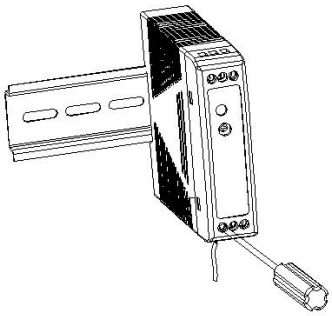


③After inserting the slotted screwdriver into the square groove at the bottom of the buckle, push the slider of the buckle downward in the direction shown in the figure.

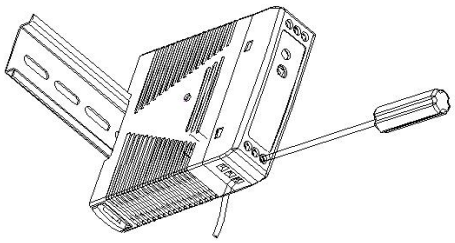


④Hold the bottom of the product and push it outwards while pushing down the slider, then lift the product up to take the product out of the DIN rail.

Wiring / Unwiring Steps ⑤–⑥



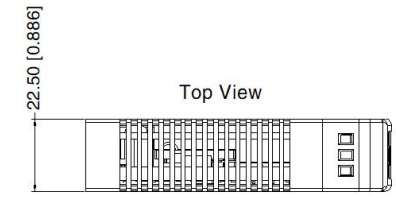
⑤Turn the Slotted screwdriver to the left to loosen the terminal screws, insert the head of the wire into the bottom of the terminal, and then turn the screwdriver to the right to tighten the terminal screws

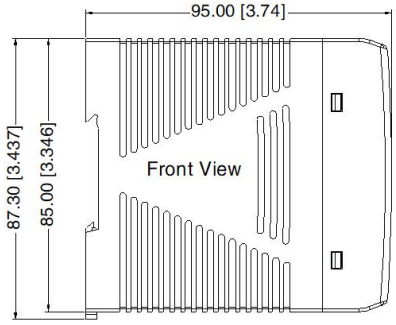


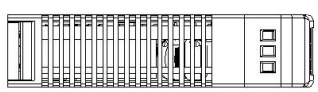
⑥Turn the Slotted screwdriver to the left to loosen the terminal screw and pull the wire out of the bottom of the terminal

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

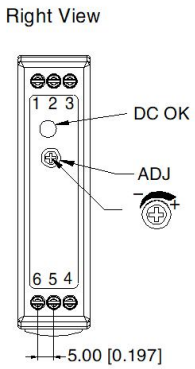






THIRD ANGLE PROJECTION

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



Note:
Unit: mm[inch]
DC OK：Output status indicator LED
ADJ: Output adjustable resistor
Wire range: Input:22–12 AWG
Output:20–12AWG
Tightening torque: 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.