ADF240-2B-xxS Series

DESCRIPTIONS

240W, AC/DC DIN-Rail Power Supply



RoHS

Note: 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.

CE Report EN62368-1

UKCA Report BS EN 62368-1

FEATURES

- Universal 85 - 264VAC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40℃ to +70℃
- High efficiency, high reliability
- Built-in active PFC function
- 150% peak load output for 3 seconds
- LED indicator for power on
- Output short circuit, over-current, over-voltage, over-temperature protection
- Safety according to IEC/UL62368, UL508, EN61558

APPLICATIONS

- Industrial control
- Robot
- Wind Power
- DCS
- Charging Post
- Energy Storage
- Intelligent Farming

Selection Guide

Certification	Part No*	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range(V)	Efficiency at 230VAC (%) Typ.	Capacitive Load (uF) Max.
EN/BS EN	ADF240-2B-12S	192	12V/16A	12.0-14.0	93	160000
EN/BS EN	ADF240-2B-24S	240	24V/10A	24.0-28.0	94	40000
EN/BS EN	ADF240-2B-48S		48V/5A	48.0-53.0		10000

Note: 1.*Use suffix "QQ" for double-faced conformal coating.
2.The product picture is for reference only, for details, please refer to the actual product.

Product Specifications

Product Specifications	Item		Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range		Rated input		100	--	240	VAC
			AC input		85	--	264	VAC
			DC input		120	--	370	VDC
	Input Voltage Frequency				47	--	63	Hz
	Input Current		115VAC		--	--	3	A
			230VAC		--	--	1.5	
	Inrush Current		115VAC	Cold start	--	15	--	
			230VAC		--	30	--	
	Power Factor		115VAC		--	0.98	--	--
			230VAC		--	0.95	--	
	Hot Plug				Unavailable			
Output Specifications	Output Voltage Accuracy		Full load range	12V	--	±2.0	--	%
				24V/48V	--	±1.0	--	
	Line Regulation		Full load		--	±0.5	--	
	Load Regulation		0% - 100% load		--	±1.0	--	
	Ripple & Noise*		20MHz bandwidth (peak-to-peak value)		--	75	150	mV
	Hold-up Time				--	20	--	ms
	Short Circuit Protection		Recovery time < 10s after the short circuit disappear.		Hiccup mode, constant current works 1s, turn off 10s, continuous, self-recovery			
	Over-current Protection		230VAC, rated load	Normal temperature, high temperature	110% - 200% Io, self-recovery			
				Low temperature	≥105% Io, self-recovery			
	Over-voltage Protection		12V		≤18V (Hiccup, self-recovery)			
			24V		≤35V (Hiccup, self-recovery)			
			48V		≤60V (Hiccup, self-recovery)			
	Over-temperature Protection		230VAC, rated load		--	80	--	℃
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <10mA		2000	--	--	VAC
		Input - output			3000	--	--	
		Output - ⏚			500	--	--	
	Insulation Resistance	Input - ⏚	Ambient temperature: 25 ± 5℃ Relative humidity: < 95%RH, no condensation Test voltage: 500VDC		50	--	--	MΩ
		Input - output			50	--	--	
		Output - ⏚			50	--	--	
	Operating Temperature				-40	--	+70	℃
	Storage Temperature				-40	--	+85	
	Storage Humidity		Non-condensing		--	--	95	%RH

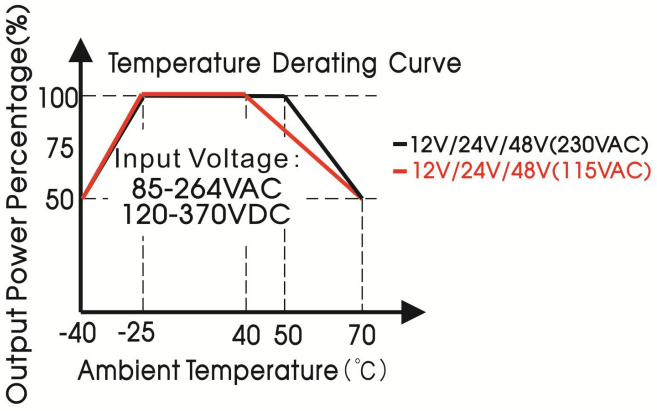
	Operating Humidity			--	--	90	
	Switching Frequency			--	100	--	KHz
	Power Derating	Operating temperature derating	-40℃ to -25℃	3.34	--	--	%/℃
			+40℃ to +70℃ 115VAC	1.67	--	--	
			+50℃ to +70℃ 230VAC	2.5	--	--	
		Input voltage derating	85VAC-100VAC	1.33	--	--	%/VAC
	Leakage current	264VAC, 60Hz	Contact leakage current	< 0.5mA			
			Ground leakage current	< 1mA			
	Safety Class			CLASS I			
	MTBF	MIL-HDBK-217F@25℃		≥300,000 h			
Mechanical Specifications	Case Material	Metal (AL1100, SPCC) and Plastic (PC945)					
	Dimension	124.00 x 54.00 x 110.00mm					
	Weight	600g (Typ.)					
	Cooling Method	Free air convection					

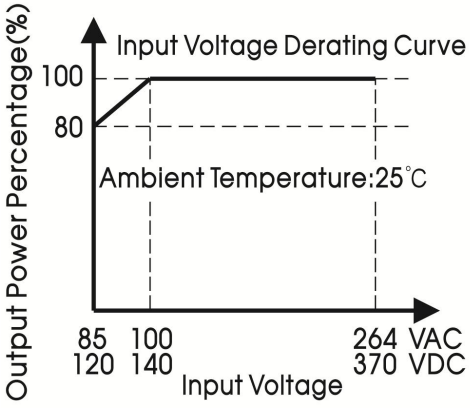
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.

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 and CLASS D
	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 A
		CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
		Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

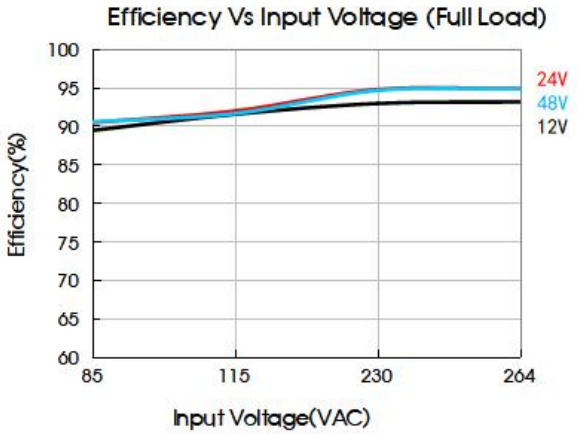
Characteristic Curve

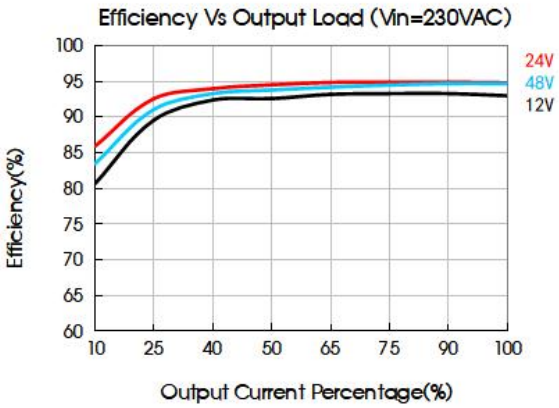




Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

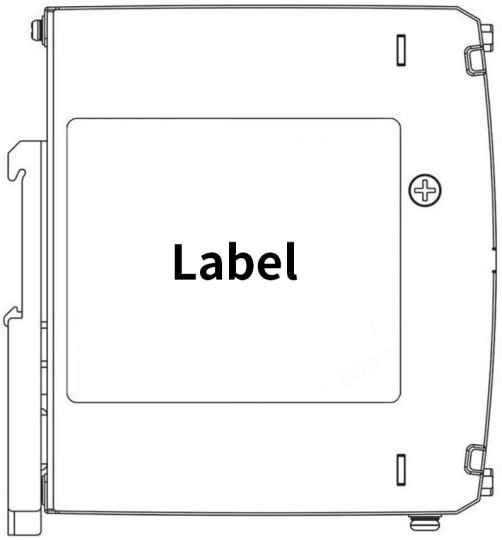
2. This product is suitable for applications using natural air cooling;



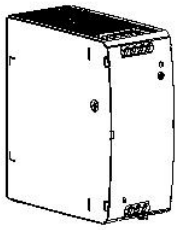


Installation Diagram

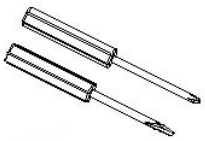




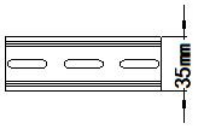
Materials required in the installation		
1	Product	1 PC
2	Phillips screwdriver Slotted screwdriver	1 PC
3	TS35/7.5 or TS35/15	1 PC
4	26–10AWG Wire	/ PCS
	The content is for reference only. Regarding the actual wire diameter and tightening torque, refer to the dimensional drawing.	



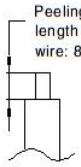
Product



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

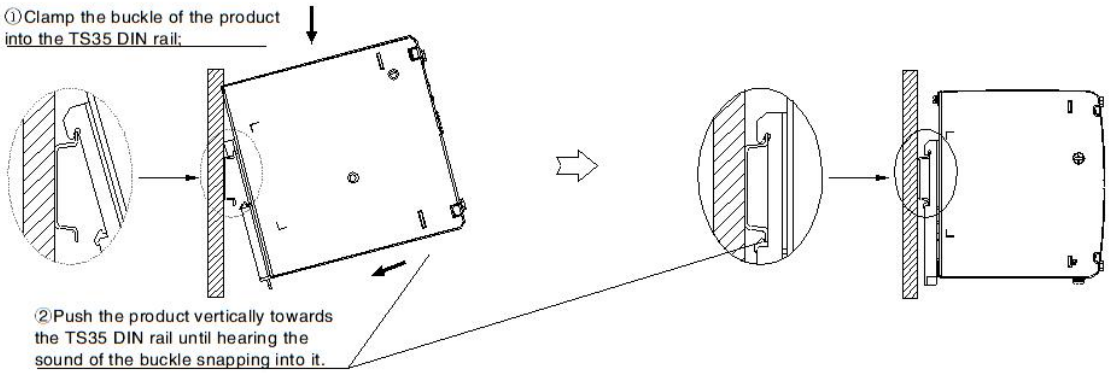


TS35/7.5 or TS35/15

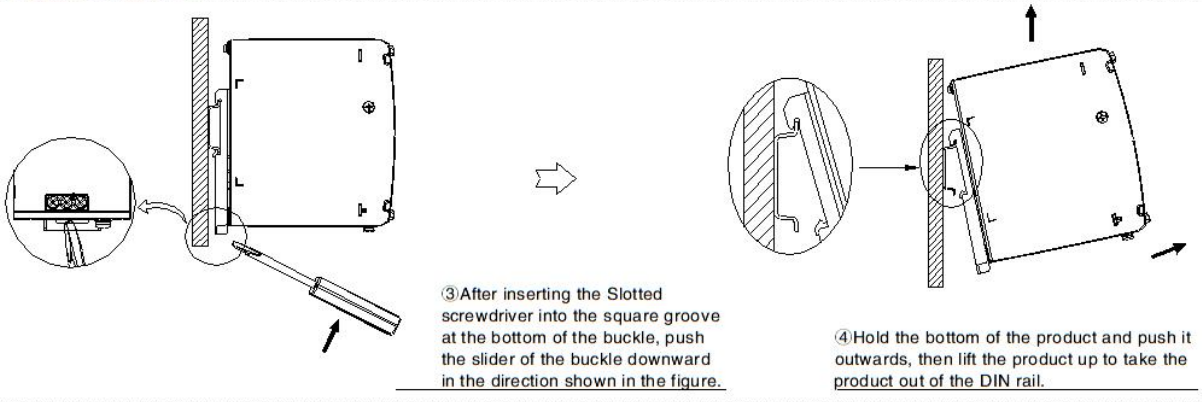


26–10AWG Wire

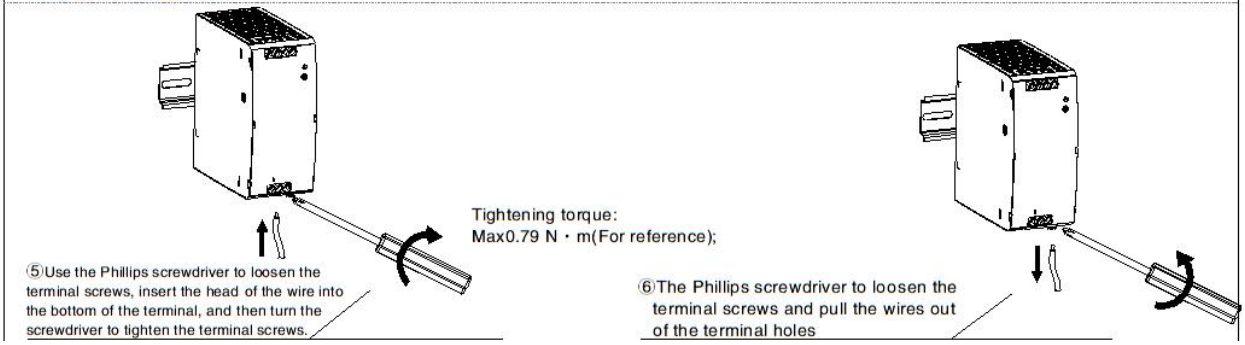
Installation Steps ①–②



Disassembly Steps ③–④

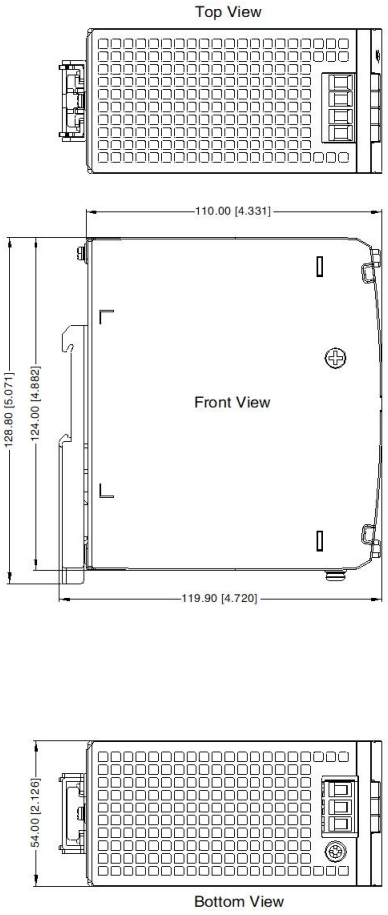


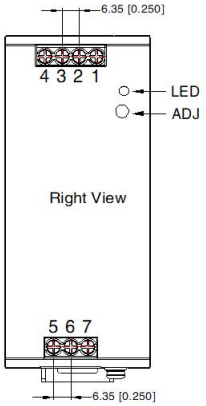
Wiring / Unwiring Steps ⑤–⑥



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





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]
LED: Output status indicator LED
ADJ: Output adjustable resistor
Wire range: Input: 26–10AWG(12–10AWG for pin7)
Output: 12V: 12–10AWG
24V: 16–10AWG
48V: 18–10AWG
Tightening torque: Max 0.79N・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. 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;
4. Products are related to laws and regulations: see "Features" and "EMC";
5. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
6. The output voltage can be adjusted by the ADJ, clockwise to increase;