ADF240-2B-xx Series

DESCRIPTIONS

240W, AC-DC DIN-Rail Power Supply



RoHS

UL61010-1 EN62368-1 BS EN 62368-1 IEC 61558-1 IEC 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
- DC OK function
- 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/UL/BS EN 62368
- Operating altitude up to 5000m
- OVC II
- Indoor use

APPLICATIONS

- Industrial Control
- Machinery
- 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.	Max. Capacitive Load (μF)
UL/EN/ BS EN/IEC	ADF240-2B-12	192	12V/16A	12.0-14.0	92	160,000
	ADF240-2B-24	240	24V/10A	24.0-28.0	94	40,000
	ADF240-2B-48		48V/5A	48.0-53.0		10,000
EN/BS EN/IEC	ADF240-2B-55	242	55V/4.4A	52.0-56.0		10,000

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.

Specifications

Product Characteristics	Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range	Rated input (Certified voltage)		100	--	240	VAC
		AC input		85	--	264	
		DC input		120	--	370	VDC
	Input Voltage Frequency	Rated AC input		50	--	60	Hz
		AC input		47	--	63	
	Input Current	Rated Input		--	--	3	A
		115VAC		--	--	3	
		230VAC		--	--	1.5	
	Inrush Current	115VAC	Cold start	--	15	--	
		230VAC		--	30	--	
	Power Factor	115VAC		--	0.98	--	--
		230VAC		--	0.94	--	
	Leakage Current	264VAC		< 0.5 mA			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	Full load range	12V	--	±2.0	--	%
			24V/48V/55V	--	±1.0	--	
	Line Regulation	Rated load		--	±0.5	--	
	Load Regulation	0% - 100% load		--	±1.0	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)	12V	--	50	100	mV
			24V	--	60	120	
			48V	--	75	150	
			55V	--	100	200	
	Stand-by Power Consumption			--	4	--	W
	Hold-up Time			--	20	--	ms
	DC OK Signal*	Resistive load		30VDC/1A Max.			
	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 after the abnormality is removed)			
		24V		≤35V (Hiccup, self-recovery after the abnormality is removed)			
		48V		≤60V (Hiccup, self-recovery after the abnormality is removed)			
		55V		≤63V (Hiccup, self-recovery after the			

				abnormality is removed)			
	Over-temperature Protection		230VAC, rated load	--	80	--	℃
General Specifications	Isolation Test	Input - ⏚	Electric strength test for 1min., leakage current <15mA	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			--	--	95	
	Switching Frequency			--	100	--	kHz
	Power Derating	Operating temperature derating	-40℃ to -25℃	3.34	--	--	%/℃
			+45℃ to +70℃ 115 VAC	2.0	--	--	
			+50℃ to +70℃ 12V 230 VAC	1.25	--	--	
			+60℃ to +70℃ Others 230 VAC	2.5	--	--	
		Input voltage derating	85VAC-100VAC	0.67	--	--	%/VAC
	Safety Class			CLASS I			
	MTBF		MIL-HDBK-217F@25℃	>300,000 h			
	Pollution Degree			2			
Mechanical Specifications	Case Material		Metal (AL5052, SPCC)				
	Dimensions		124.00mm x 41.00mm x 110.00mm				
	Weight		650g (Typ.)				
	Cooling Method		Free air convection				

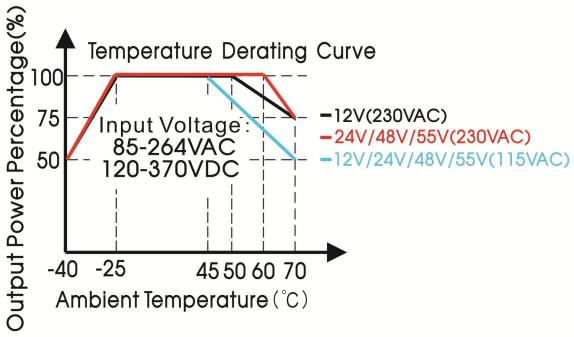
NOTE: 1.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor。

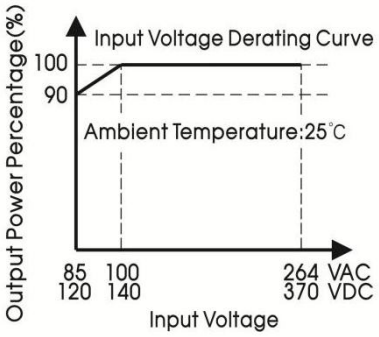
2.*DC OK Signal: When the output voltage is normal, the relay is connected. When the output voltage is abnormal (<90%Vo), the relay is disconnected.

Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions (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 ±8KV/Air ±15KV	perf. Criteria A
		RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
		EFT	IEC/EN 61000-4-4 ±4KV	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 dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

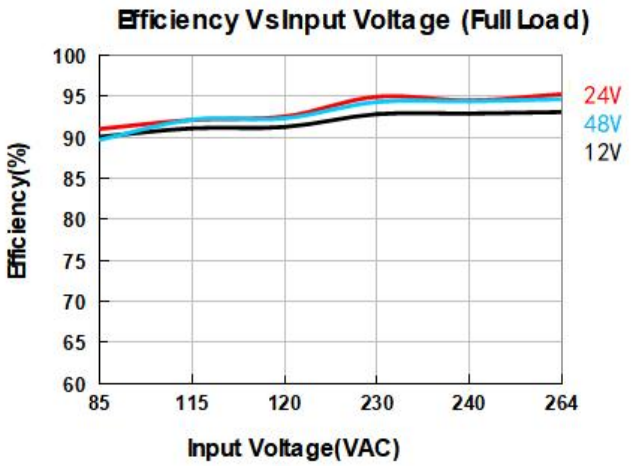
Characteristic Curve

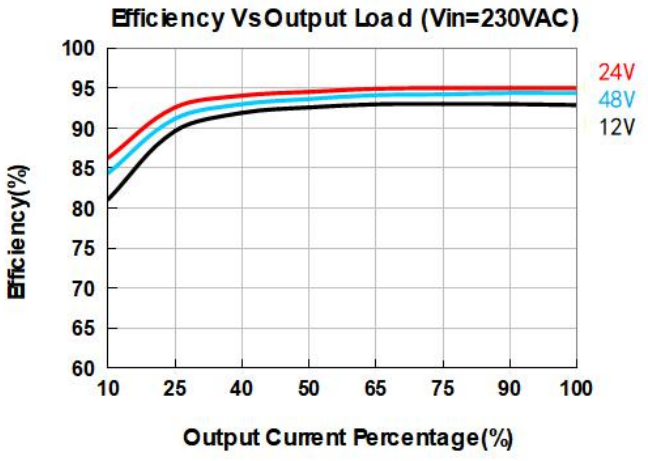




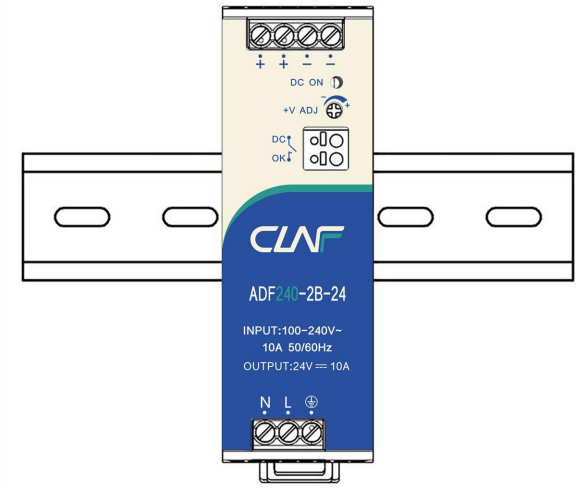
Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

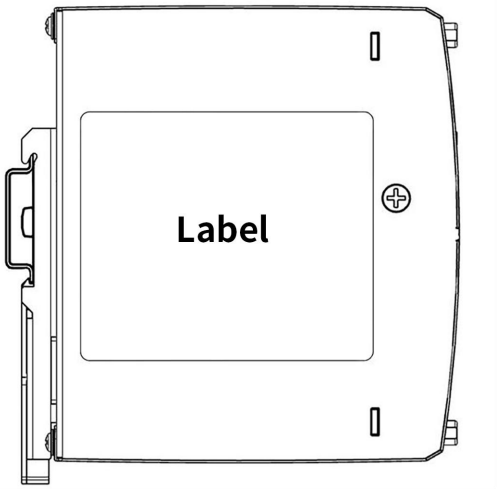
2. This product is suitable for applications using natural air cooling.





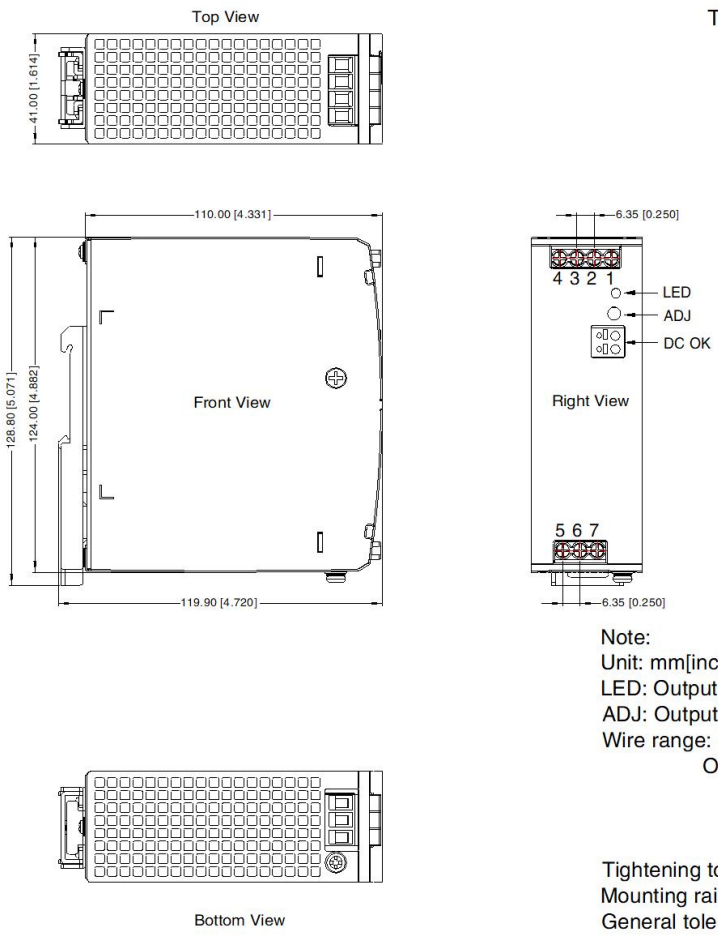
Installation Diagram





Notice: 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, 55V: 18-10AWG
DC OK: 24-16AWG
Tightening torque: Max 0.79N・m
Mounting rail: TS35, rail needs to connect safety ground
General tolerances: ±1.00[±0.039]

WARNING Risk of electrical shock, fire, personal injury or death:

AVERTISSEMENT AVERTISSEMENT Risque de choc électrique, d'incendie, de blessures corporelles ou de décès :

1. Do not use the power supply without proper grounding (Protective Earth). Use the terminal on the input block for earth connection and not one of the screws on the housing;
   N'utilisez pas l'alimentation électrique sans mise à la terre appropriée (Terre protectrice). Utilisez le terminal sur le bloc d'entrée pour la connexion terrestre et non pas une des vis sur le boîtier;
2. Turn power off before working on the device, protect against inadvertent re-powering;
   Éteignez l'alimentation avant de travailler sur l'appareil, protégez-vous contre la réénergisation accidentelle;
3. Make sure that the wiring is correct by following all local and national codes;
   Assurez-vous que le câblage est correct en suivant tous les codes locaux et nationaux;
4. Do not modify or repair the unit; Do not open the unit as high voltages are present inside;
   Ne modifiez pas ou ne réparez pas l'appareil; Ne modifiez pas ou ne réparez pas l'appareil;
5. Use caution to prevent any foreign objects from entering the housing;
   Faire preuve de prudence pour empêcher les objets étrangers d'entrer dans le logement;
6. Do not use in wet locations or in areas where moisture or condensation can be expected;
   Faire preuve de prudence pour empêcher les objets étrangers d'entrer dans le logement;
7. Do not touch during power-on, and immediately after power-off, hot surfaces may cause burns;
   Ne touchez pas pendant l'alimentation et, immédiatement après l'alimentation, les surfaces chaudes peuvent causer des brûlures.
8. For ambient temperature ≤60℃, use ≥90℃ - copper wire only; for ambient temperature >60℃ to 85℃, use ≥105℃ - copper wire only;
   Température ambiante ≤60℃, utiliser ≥90℃ - seulement fils de cuivre; Température ambiante >60℃ et 85℃, utiliser ≥105℃ - seulement fils de cuivre;
9. use only wires with a minimum dielectric strength of 300V (input) and 60V (output);
   Uniquement pour l'ulilisation de fils de cuivre d'une résisitance d'isolation minimale de 300V (d'entrée) et 60V (de sortie).

1. ≤5000m TO indicate that the appliance is intended to be usable up to the maximum altitude 5000m.
2. t_a 70℃
3. SMPS(Switch mode power supply unit).
4. SMPS incorporating a short--circuit-proof safety isolating transformer.

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 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.