

DESCRIPTIONS

240W, AC/DC DIN-Rail Power Supply



RoHS



UL62368-1



EN62368-1



BS EN 62368-1



UL61010-2-201

FEATURES

- Universal 85 - 264VAC or 120 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -40°C to +70°C
- 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/TUV	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	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	--	°C		
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°C Relative humidity: < 95%RH, no condensation Test voltage: 500VDC		50	--	--	MΩ		
		Input - output			50	--	--			
		Output - 			50	--	--			
	Operating Temperature				-40	--	+70	°C		
	Storage Temperature				-40	--	+85			
	Storage Humidity		Non-condensing		--	--	95	%RH		
	Operating Humidity				--	--	95			
	Switching Frequency				--	100	--	kHz		
	Power Derating		Operating temperature derating	-40°C to -25°C		3.34	--	--	% / °C	
				+45°C to +70°C		11 5V AC	2.0	--		--
				+50°C to +70°C	12V	23 0V AC	1.25	--		--
				+60°C to +70°C	Others	23 0V AC	2.5	--		--
			Input voltage derating		85VAC-100VAC		0.67	--	--	% / VAC
	Safety Class				CLASS I					
	MTBF		MIL-HDBK-217F@25°C		>300,000 h					
	Pollution Degree				2					
	Warranty		Ambient temperature: <25°C		3 years					
Mechanical Specifications	Case Material		Metal (AL5052, SPCC)							
	Dimensions		124.00mm x 41.00mm x 110.00mm							
	Weight		650g (Typ.)							
	Cooling Method		Free air convection							

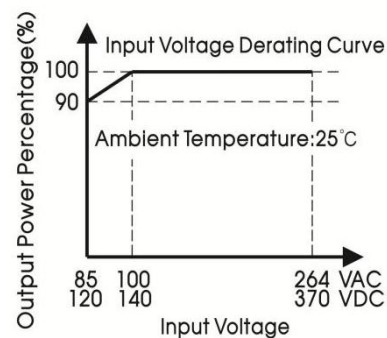
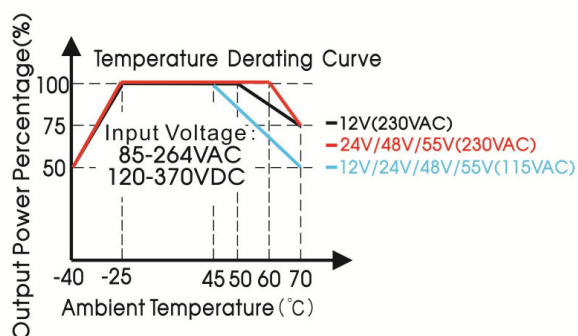
NOTE: 1.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.

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.

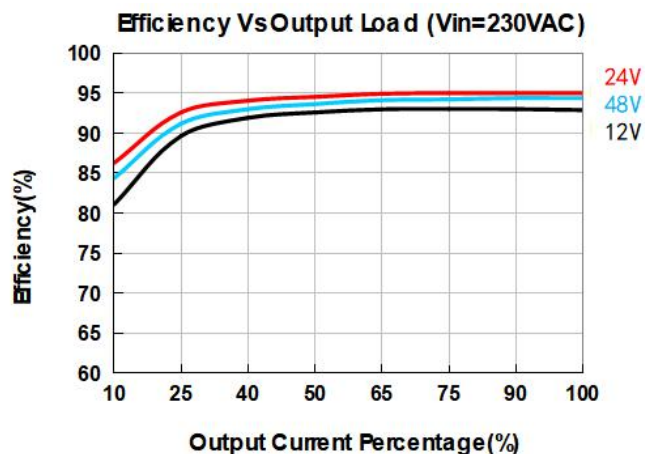
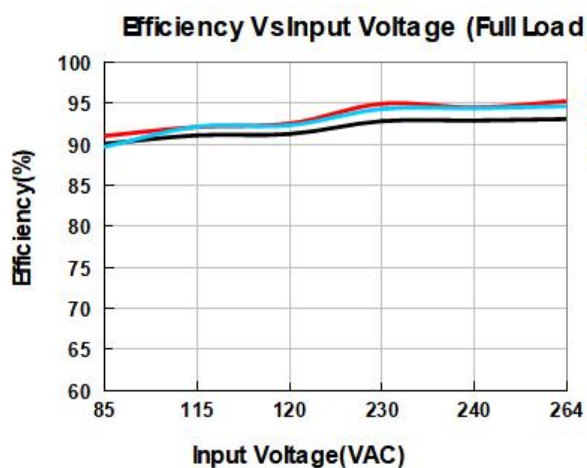
Electromagnetic Compatibility (EMC)

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 $\pm 8\text{KV}$ /Air $\pm 15\text{KV}$	perf. Criteria A
		RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
		EFT	IEC/EN 61000-4-4	$\pm 4\text{KV}$	perf. Criteria A
		Surge	IEC/EN 61000-4-5	line to line $\pm 2\text{KV}$ /line to ground $\pm 4\text{KV}$	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

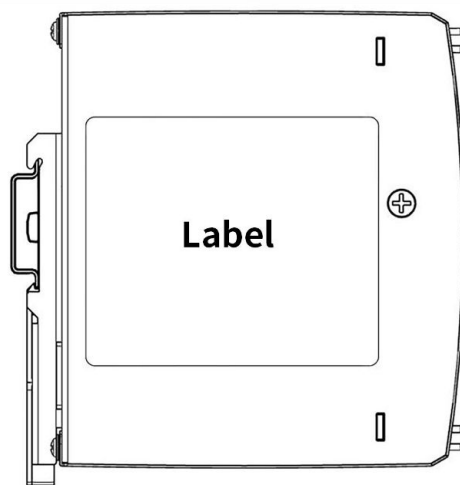
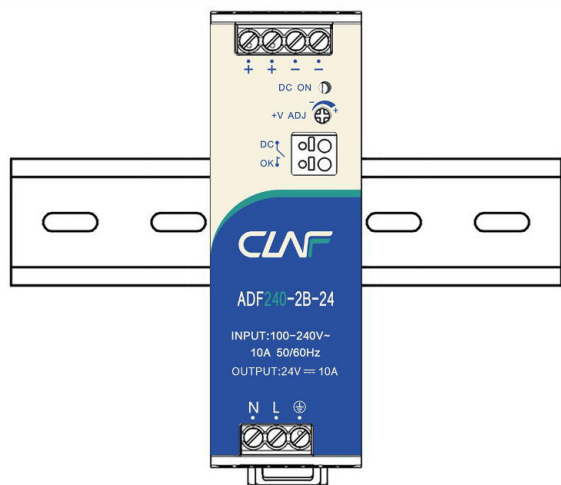
Characteristic Curve



- 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.

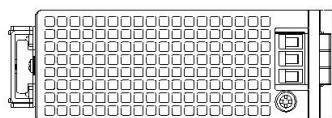
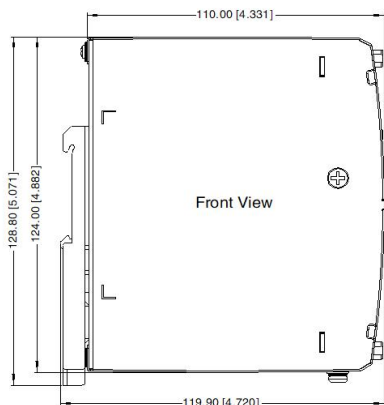
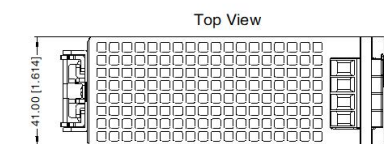


Installation Diagram



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

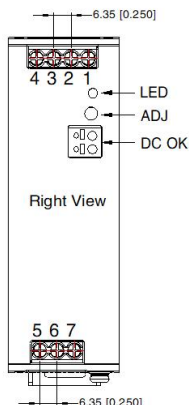


Bottom View

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: $\pm 1.00[\pm 0.039]$



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 $\leq 60^{\circ}\text{C}$, use $\geq 90^{\circ}\text{C}$ - copper wire only; for ambient temperature $> 60^{\circ}\text{C}$ to 85°C , use $\geq 105^{\circ}\text{C}$ - copper wire only;
Température ambiante $\leq 60^{\circ}\text{C}$, utiliser $\geq 90^{\circ}\text{C}$ - seulement fils de cuivre; Température ambiante $> 60^{\circ}\text{C}$ et 85°C , utiliser $\geq 105^{\circ}\text{C}$ - seulement fils de cuivre;
9. use only wires with a minimum dielectric strength of 300V (input) and 60V (output);
Uniquement pour l'utilisation de fils de cuivre d'une résistance d'isolation minimale de 300V (d'entrée) et 60V (de sortie).



Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity $< 75\% \text{RH}$ with nominal input voltage and rated output load;
2. The room temperature derating of $5^{\circ}\text{C}/1000\text{m}$ 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 ($\oplus$) 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.