DESCRIPTIONS DC/DC 240W DIN-Rail Power Supply



FEATURES

- Universal 250-850VDC input voltage(Transient 900VDC last for 5s)
- Meet 150% over-load for 3s
- Operating ambient temperature range: -40℃ to +85℃
- High I/O isolation voltage up to 4000VAC
- Low ripple & noise, high efficiency, high reliability
- DC OK function
- Impulse withstand voltage 1.2/50us 8KV
- LED indicator for power on
- Input under-voltage protection, input reverse polarity protection, output short circuit, over-current, over-voltage, over-temperature protection
- OVC III, 2000m altitude (design refer to IEC/EN62477)
- Design refer to UL61010, UL1741, EN/IEC62109, EN62477

APPLICATIONS

- Energy storage
- Industrial control equipment
- Machinery

Selection Guide

Certification	Part No.	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range ADJ (V)*	Efficiency at 800VDC (%) Typ.	Capacitive Load (μF) Max.
--	DPVI240-8B-24	240	24V/10A	24-29	91	2500
	DPVI240-8B-48		48V/5A	48-58	92	1500

Note:1. * The actual adjustment range may extend outside the values stated, care should be exercised to ensure that the output voltage and power levels remain within the published maximum values.
2.The product picture is for reference only.For details, please refer to the actual product.

Selection Guide

Product Specification	Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range	Transient (5s)		--	--	900	VDC
				250	--	850	
	Input Current	400VDC		--	--	2	A
		800VDC		--	--	1	
	Inrush Current	400VDC	Cold start	--	60	80	
		800VDC		--	120	150	
	Input Under-voltage Protection	50% Io under-voltage protection start		90	--	180	VDC
		50% Io under-voltage protection release		110	--	250	
	External Input Fuse			1000VDC/3A, required (brand: adler models: A831300710 base models: BH100-01)			
	Input Reverse Polarity Protection			Available			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	All load range		--	±1	--	%
	Line Regulation	Rated load		--	±0.5	--	
	Load Regulation	400VDC		--	±1	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)		--	--	150	mV
	Stand-by Power Consumption	250VDC/400VDC		--	1.5	2	W
		850VDC		--	2.5	4	
	Temperature Coefficient			--	±0.03	--	%/℃
	Short Circuit Protection			Hiccup, continuous, self-recovery			
	Over-current Protection			≥150%Io, automatic recover after fault condition is removed			
	Over-voltage Protection	24V		≤33V	Output voltage clamp		
		48V		≤65V			
	Over-temperature Protection	800VDC input	Over-temperature protection start	55	--	90	℃
			Over-temperature protection release	55	--	85	
	Minimum Load			0	--	--	%
	Start-up Delay Time			--	1.5	3	s
	DC OK Signal**	Resistive load		30VDC/1A Max.			
	Hold-up Time	Full load	850VDC input	--	18	--	ms

General Specifications	Isolation	Input - output	Electric Strength Test for 1min., leakage current < 5mA		4000	--	--	VAC
		Input - PE			2000	--	--	
		Output - PE			500	--	--	
		Output - DC OK			500	--	--	
	Insulation Resistance	Input - output	Test voltage: 500VDC		100	--	--	MΩ
		Input - PE						
		Output - PE						
	Impulse Withstand Voltage	Input - output	8KV, 1.2/50us Impulse voltage					
		Input - PE	6KV, 1.2/50us Impulse voltage					
	Operating Temperature				-40	--	+85	℃
	Storage Temperature				-40	--	+85	
	Storage Humidity		Non-condensing		--	--	90	%RH
	Output Power Derating		Operating temperature derating	-40℃ to -25℃	3.33	--	--	%/℃
				+50℃ to +70℃	2.00	--	--	
				+70℃ to +85℃	3.00	--	--	
			Input voltage derating	250VDC - 400VDC	0.33	--	--	%/VDC
			Altitude derating	2000m - 5000m	3.33	--	--	%/Km
	Safety Class				CLASS I			
	MTBF		MIL-HDBK-217F@25℃		≥300,000 h			
Mechanical Specifications	Case Material		Metal (AL1100, SGCC)					
	Package Dimensions		124.60 x 43.10 x 118.54mm					
	Weight		620g (Typ.)					
	Cooling Method		Free air convection					

Note:

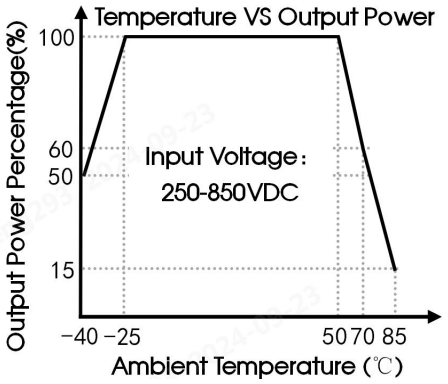
*The "Tip and barrel method" is used for ripple and noise test, with a 0.1uf & 47uf parallel capacitor, please refer to PV Converter Application Notes for specific information;

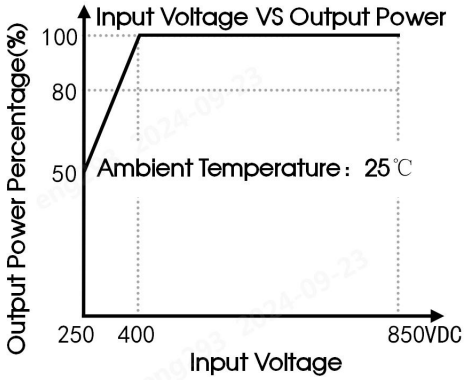
**DC OK Signal: When the output voltage is normal, the relay is connected. When the output voltage is abnormal (<90%Vo), the relay is disconnected.

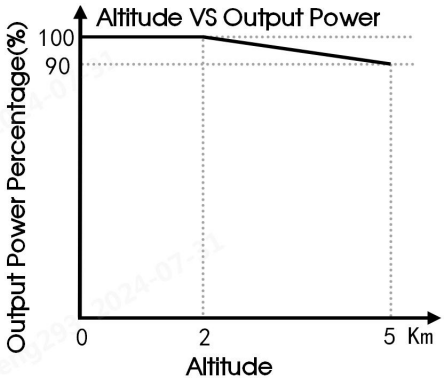
Electromagnetic Compatibility (EMC)

Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32/EN55032	CLASS A	
		RE	CISPR32/EN55032	CLASS A	
		EN61000-6-4			
	Immunity	ESD	IEC/EN61000-4-2	Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN61000-4-3	10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4	±4KV	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
		EN61000-6-2			

Product Characteristic Curve

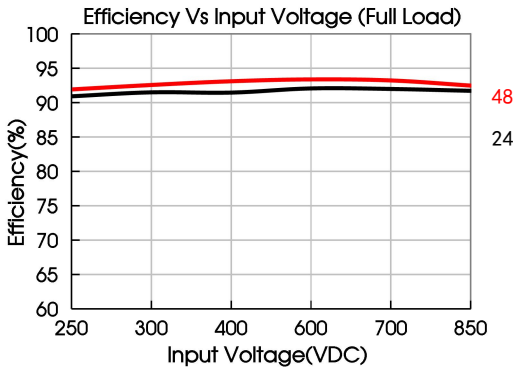


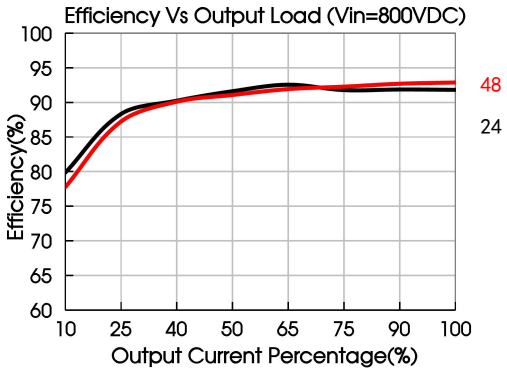




Note: 1. With an DC input between 250-400VDC, the output power must be derated as per temperature derating curves;

2. This product is suitable for applications using natural free air cooling; for applications in closed environment please consult FAE.





Design Reference

1. Typical application

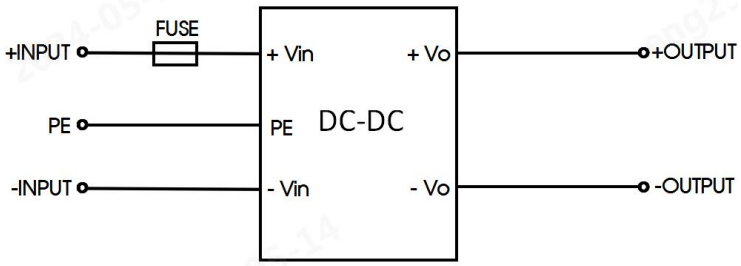
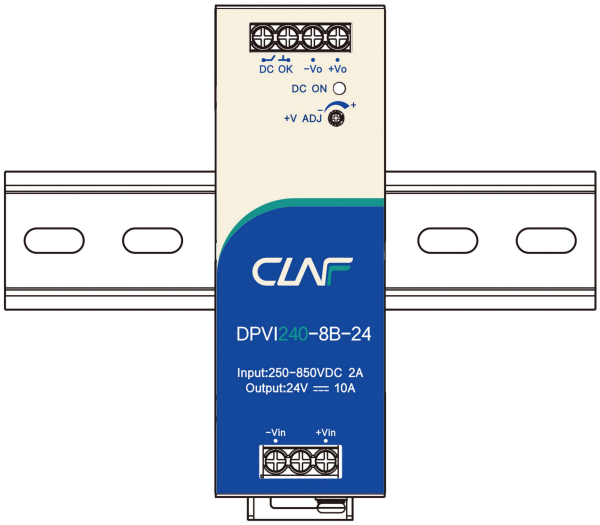
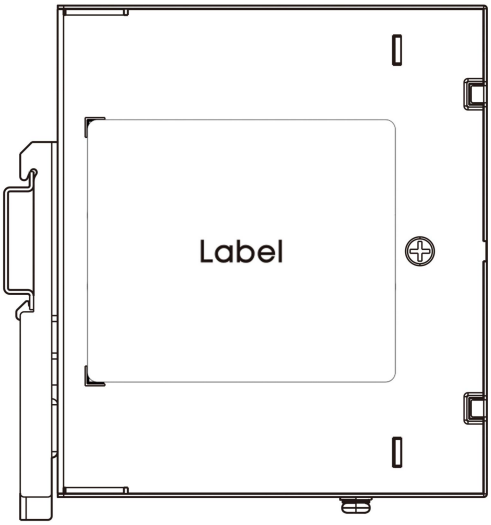


Fig. 1

Part No.	FUSE
DPVI240-8B-xx	1000VDC/3A, required (brand: adler models: A831300710 base models: BH100-01)

Installation Diagram





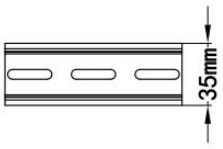
Materials required in the installation		
1	Product	1 PC
2	Phillips screwdriver Slotted screwdriver	1 PC
3	TS35/7.5 or TS35/15	1 PC
	24–10AWG Wire	/ PCS
4	The content is for reference only. Regarding the actual wire diameter and tightening torque, refer to the dimensional drawing.	



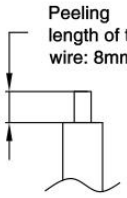
Product



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



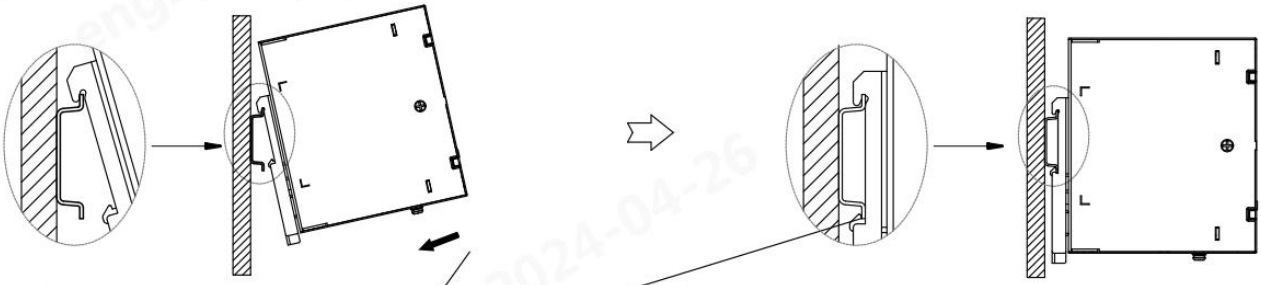
TS35/7.5 or TS35/15



22–10AWG Wire

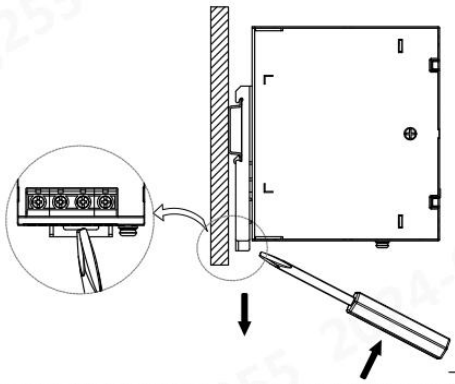
Installation Steps ①–②

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

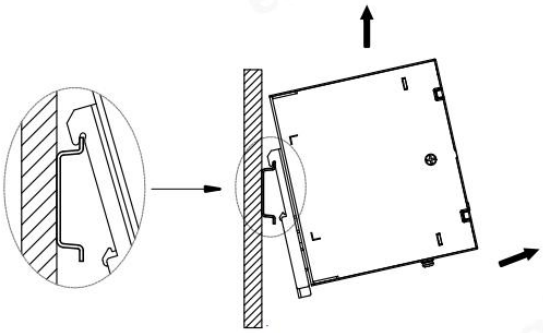


②Push the product vertically towards the TS35 DIN rail until hearing the sound of the buckle snapping into it.

Disassembly Steps ③–④

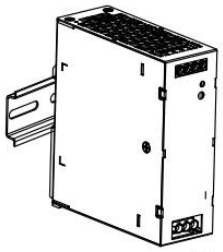


③After inserting the Slotted screwdriver into the square groove at the bottom of the buckle, push the slider of the buckle downward in the direction shown in the figure.

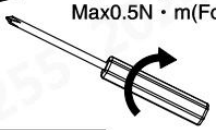


④Hold the bottom of the product and push it outwards, then lift the product up to take the product out of the DIN rail.

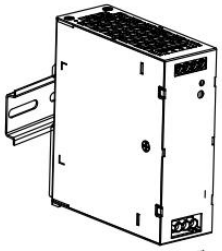
Wiring / Unwiring Steps ⑤–⑥

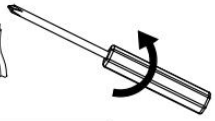


Tightening torque:
Max0.5N・m(For reference);



⑤Use the Phillips screwdriver to loosen the terminal screws, insert the head of the wire into the bottom of the terminal, and then turn the screwdriver to tighten the terminal screws.

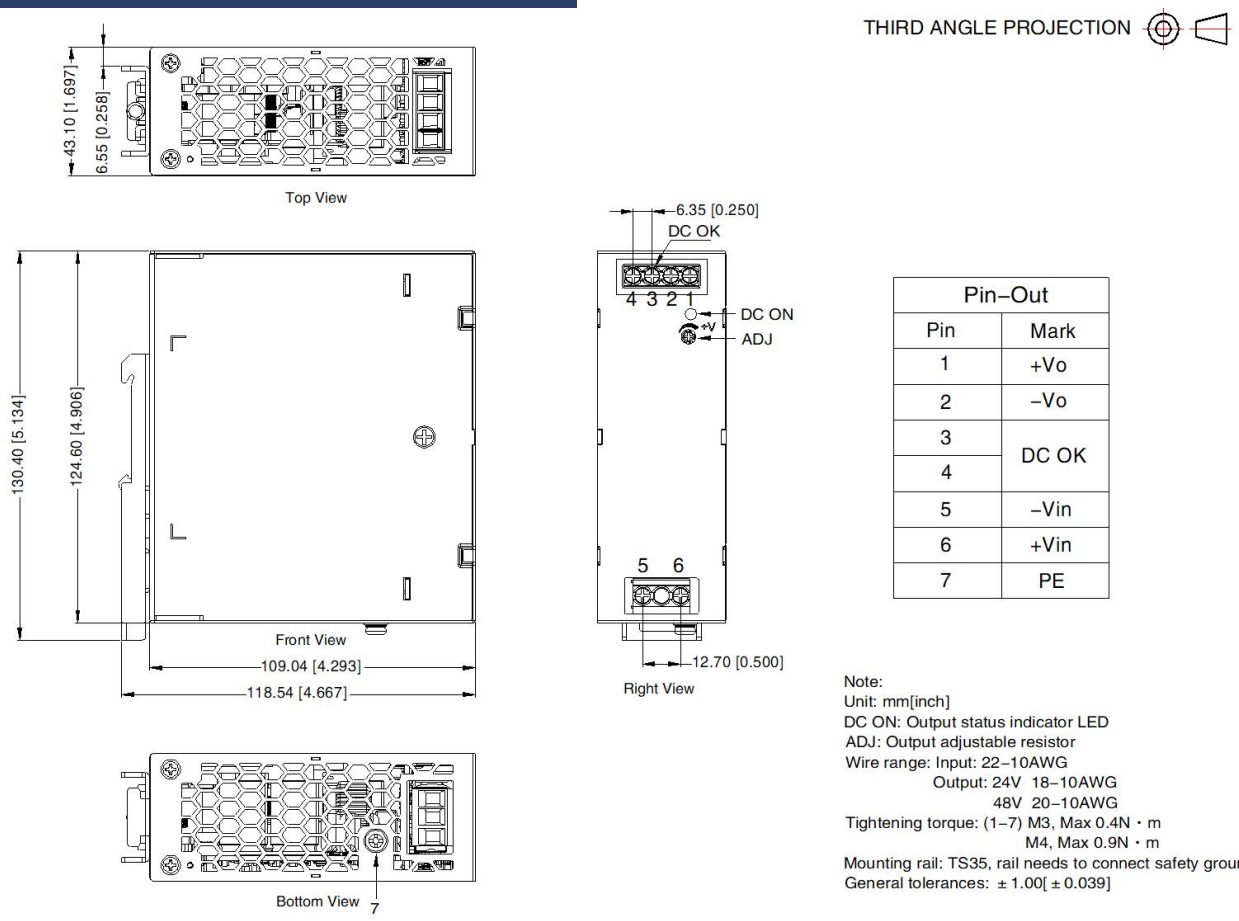




⑥The Phillips screwdriver to loosen the terminal screws and pull the wires out of the terminal holes

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



Pin–Out	
Pin	Mark
1	+Vo
2	–Vo
3	DC OK
4	
5	–Vin
6	+Vin
7	PE

Note:
Unit: mm[inch]
DC ON: Output status indicator LED
ADJ: Output adjustable resistor
Wire range: Input: 22–10AWG
Output: 24V 18–10AWG
48V 20–10AWG
Tightening torque: (1–7) M3, Max 0.4N・m
M4, Max 0.9N・m
Mounting rail: TS35, rail needs to connect safety ground
General tolerances: ±1.00[±0.039]

Note:

1. For additional information on Product Packaging ;
2. 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;
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 out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
8. The output voltage can be adjusted by the ADJ, clockwise to decrease;
9. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.