DESCRIPTIONS

DC/DC 504W DIN-Rail Power Supply

FEATURES

- Universal 250-850VDC input voltage (Transient 900VDC last for 3s)
- 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 400VDC (%) Typ.	Capacitive Load (μF) Max. **
--	DPVI500-8B-24	504	24V/21.0A	24-26	95	20000
	DPVI500-8B-48		48V/10.5A	48-50	96	10000

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 maximum capacitive load is derated with the proportion of voltage derating.

3.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 (3s)		--	--	900	VDC
				250	--	850	
	Input Current	400VDC		--	--	2.5	A
		800VDC		--	--	1.3	
	Inrush Current	550VDC	Cold start	--	110	140	
	Input Under-voltage Protection	Under-voltage protection start		190	--	220	VDC
		Under-voltage protection release		220	--	250	
	External Input Fuse			1000VDC/4A, required (brand: adler models: A831400710 base models: BH100-01)			
	Input Reverse Polarity Protection			Available			
	Hot Plug			Unavailable			
Output Specifications	Output Voltage Accuracy	All load range		--	±0.5	±1.5	%
	Line Regulation	Rated load		--	±0.5	--	
	Load Regulation	400VDC		--	±1.0	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value), 20%-100% Io	24V	--	50	100	mV
			48V	--	70	150	
	Stand-by Power Consumption	400VDC		--	7	10	W
		550VDC/800VDC		--	3	5	
	Temperature Coefficient			--	±0.03	--	%/℃
	Short Circuit Protection			Hiccup, continuous, self-recovery			
	Over-current Protection			≥150%Io, automatic recover after fault condition is removedr			
	Over-voltage Protection	24V		≤35V	Output voltage hiccup		
		48V		≤60V			
	Over-temperature Protection	400VDC input, rated load	Over-temperature protection start	70	--	85	℃
			Over-temperature protection release	55	--	70	
	Minimum Load			0	--	--	%
	Start-up Delay Time			--	0.5	--	s
	DC OK Signal**	Resistive load		30VDC/1A Max.			
	Hold-up Time	550VDC input		--	20	--	ms
		800VDC input		--	50	--	

General Specifications	Isolation	Input - output	Electric Strength Test for 1min., leakage current < 3mA		4000	--	--	VAC
		Input - PE	Electric Strength Test for 1min., leakage current < 5mA		4000	--	--	
		Output - PE	Electric Strength Test for 1min., leakage current < 2mA		500	--	--	
		Output - DC OK	Electric Strength Test for 1min., leakage current < 1mA		500	--	--	
	Insulation Resistance	Input - output	Test voltage: 500VDC		100	--	--	MΩ
		Input - PE						
		Output - PE						
		Output - DC OK						
	Insulation Type		Primary and secondary meet reinforced insulation					
	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	-30℃ to -10℃	250-499VDC	1.5	--	--	%/℃
			+50℃ to +70℃	High temperature short-term operation 4H, interval 8H	1.5	--	--	
			+70℃ to +85℃		4	--	--	
			+50℃ to +70℃	long term operation	2	--	--	
			+70℃ to +85℃		3.33	--	--	
		Input voltage derating	250VDC - 400VDC		0.33	--	--	%/VDC
			800VDC - 850VDC		0.4	--	--	
		Altitude derating	2000m - 5000m		3.33	--	--	%/Km
	Safety Class				CLASS I			
	MTBF		MIL-HDBK-217F@25℃		≥300,000 h			
Mechanical Specifications	Case Material		Metal (AL5052, SPCC)					
	Package Dimensions		80.00 x 124.00 x 127.00mm					
	Weight		890g (Typ.)					
	Cooling Method		Free air convection					

Note:

*1.The "Tip and barrel method" is used for ripple and noise test, by using a 12" twisted pair-wire terminated, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor;

*2.3 times rated load specifications at 0%-10% load, 2 times rated load specifications at 10%-20% load;

**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.

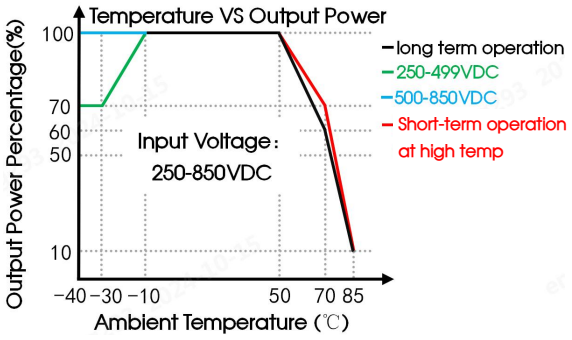
Electromagnetic Compatibility (EMC)

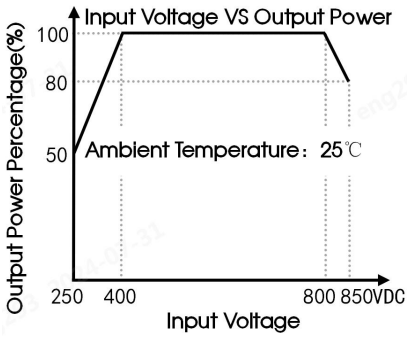
Electromagnetic Compatibility (EMC)	Emissions	CE	CISPR32 EN55032 CLASS A	
		RE	CISPR32 EN55032 CLASS A	
		EN61000-6-4		
	Immunity	ESD	IEC/EN61000-4-2 Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT (input port)	IEC/EN61000-4-4 ±4KV	Perf. Criteria A
		EFT (output port)	IEC/EN61000-4-4 ±2KV	Perf. Criteria A
		EFT (DC OK port)	IEC/EN61000-4-4 ±1KV	Perf. Criteria A
		Surge (input port)	IEC/EN61000-4-5 Line to line ±2KV/line to PE ±4KV	Perf. Criteria A
		Surge (output port)	IEC/EN61000-4-5 Vo+ to Vo- ±500V/Vo+/Vo- to PE ±1KV	Perf. Criteria A
		Surge (DC OK port)	IEC/EN61000-4-5 DC OK to PE, ±1KV	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		

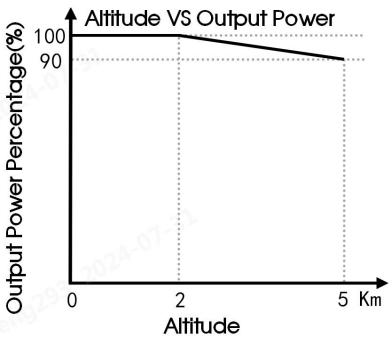
Functional Specifications

Product Specification	Item	Operating Conditions		Min.	Typ.	Max.	Unit
Functional Specifications	DC OK Signal	Full input voltage range, full load range	DC OK power on	0.92Vo - 0.98Vo			
			DC OK power off	< 0.90Vo			

Product Characteristic Curve

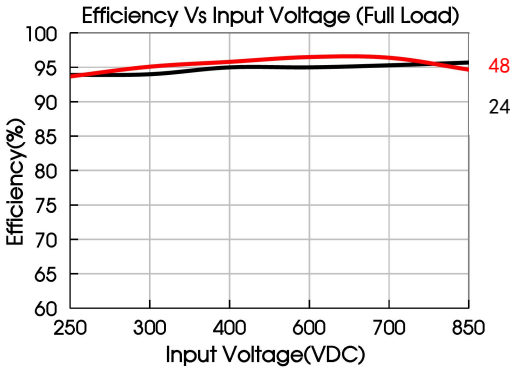


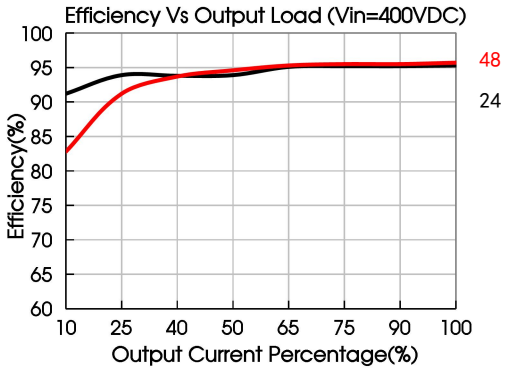




Note: 1. With an DC input between 250-400VDC/800-850VDC, the output power must be derated as per temperature derating curves;

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

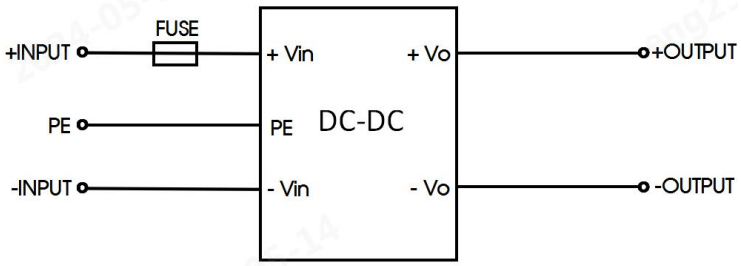
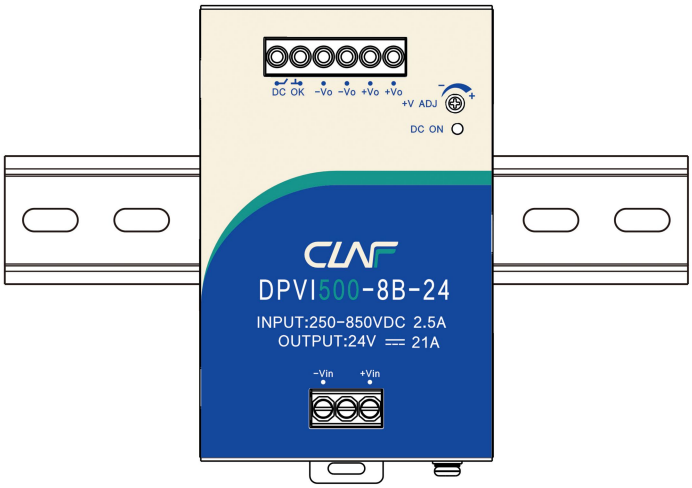
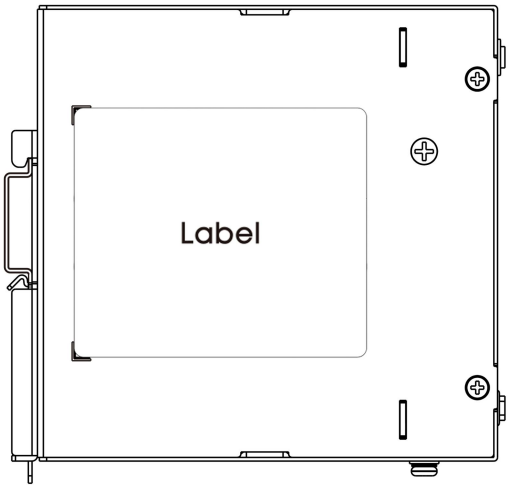


Fig. 1

Part No.	FUSE
DPVI500-8B-xx	1000VDC/4A, required (brand: adler models: A831400710 base models: BH100-01)

Installation Diagram

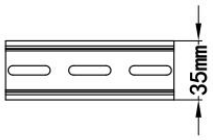




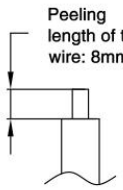
Materials required in the installation		
1	Product	1 PC
2	Phillips screwdriver Slotted screwdriver	1 PC
3	TS35/7.5 or TS35/15	1 PC
4	24–10AWG Wire	/ PCS
	The content is for reference only. Regarding the actual wire diameter and tightening torque, refer to the dimensional drawing.	

Product

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

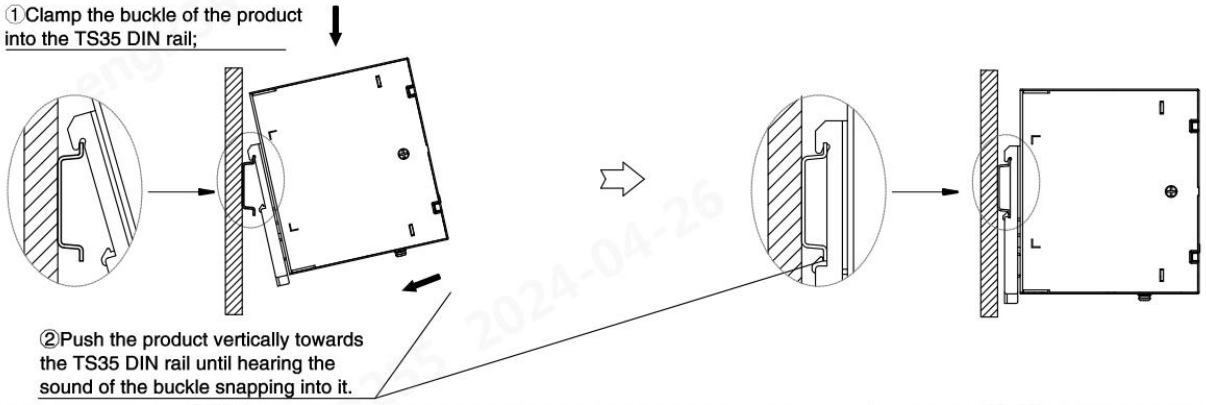


TS35/7.5 or TS35/15

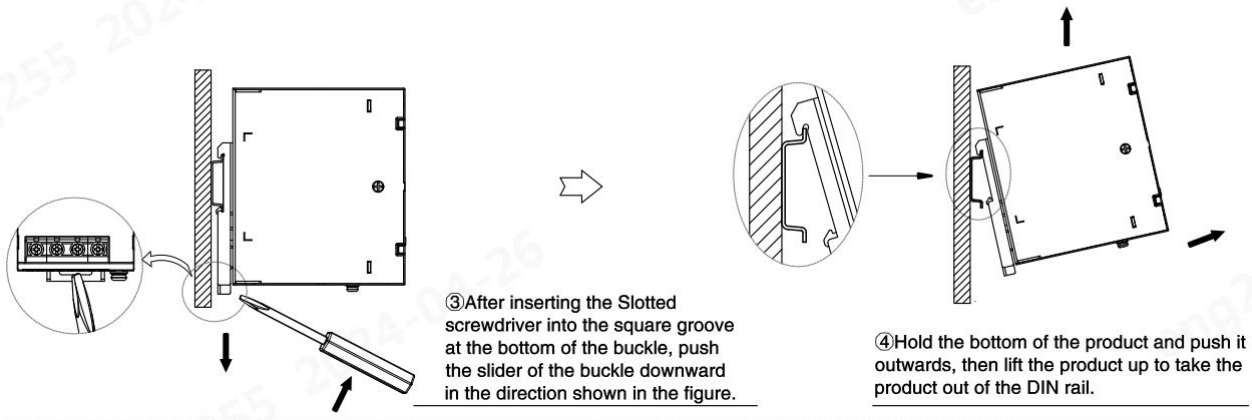


22–10AWG Wire

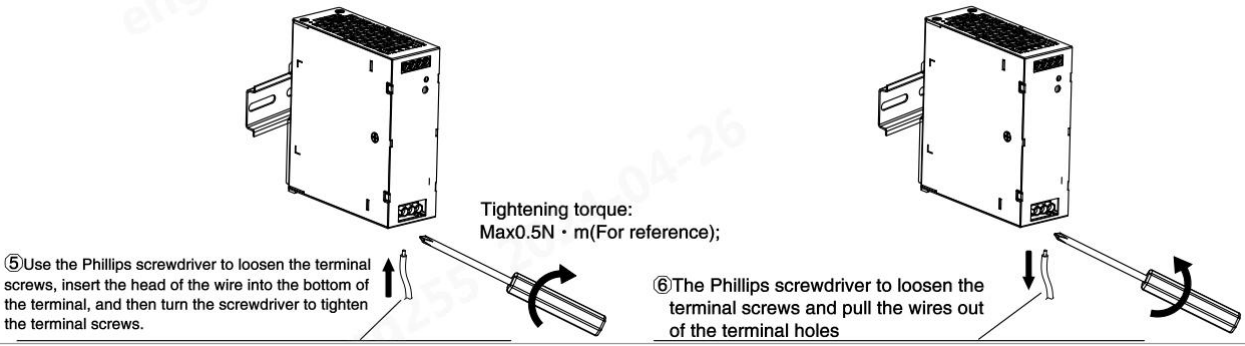
Installation Steps ①–②



Disassembly Steps ③–④

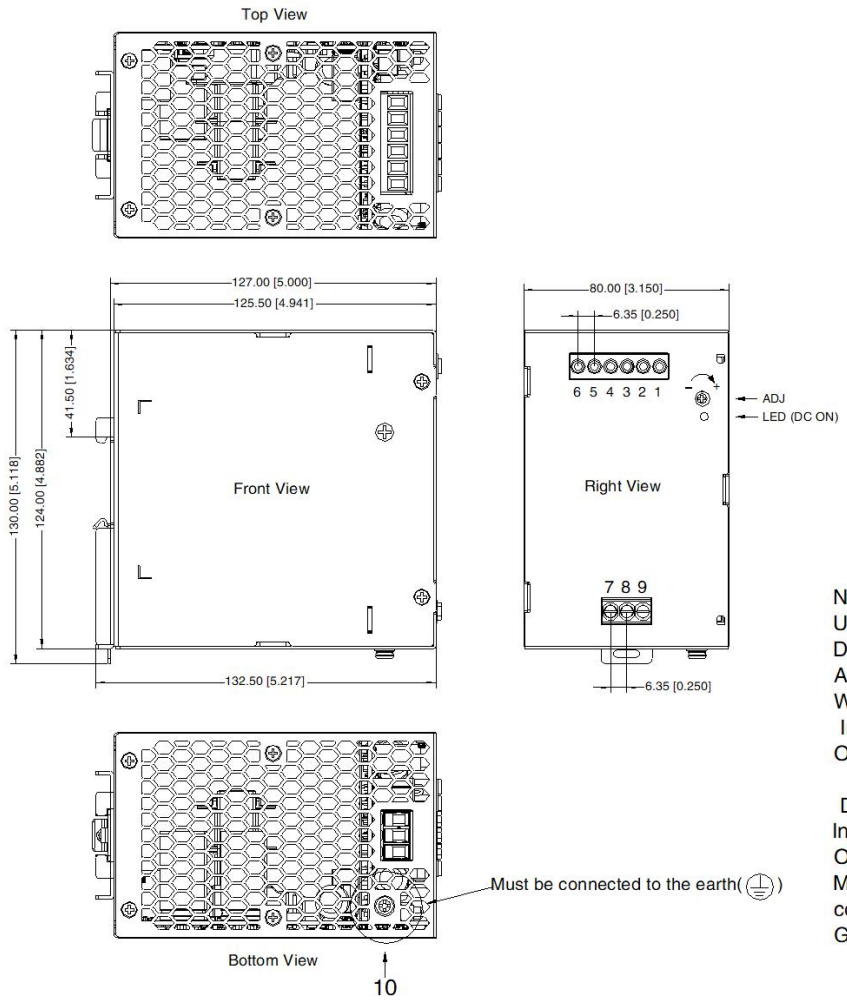


Wiring / Unwiring Steps ⑤–⑥



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 Layout



THIRD ANGLE PROJECTION

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

Note:
Unit: mm[inch]
DC ON： Output status indicator LED
ADJ: Output adjustable resistor
Wire range:
Input(Pin7,Pin9): 20–10 AWG
Output(Pin1–4): 24V: 14–10AWG
48V: 18–10AWG
DC OK(Pin5–6): 24–16AWG
Input Tightening torque: Max 0.5 N•m
Output Tightening torque: Max 0.5 N•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 increase;
9. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.