PIS120

DIN rail power supplies for 1-phase system
AC-DC 120W

Product Family Features

- Universal Input 85~264Vac 127~370Vdc
- 100% Full Load Burn-in Test
- 150% peak load capability
- Cooling by Free Air Convecton
- All Rounad Protectons: SCP/OLP/OVP/OTP
- LED Indicator for DC Power On
- LED Indicator for DC Low

AS/NZS 62368.1 EN IEC62368-1 IEC62368-1 EN IEC62368-1 EN IEC62368-1 TP TC 004/020 LISTED UL 508

Models

Model Number	Output Voltage	Input Voltage	Output Current	Efficiency	Ripple
PIS120-12	12VDC	85-264VAC	10A	86%	100mV P-P
PIS120-24	24VDC	85-264VAC	5A	88%	120mV P-P
PIS120-48	48VDC	85-264VAC	2.5A	89%	150mV P-P

Input Specifications

Parameter	Min.	Typ.	Max.	Note
Input Voltage Range (AC)	85V	230V	264V	
Input Voltage Range (DC)	127V	-	370V	
Input Frequency	50Hz	-	60Hz	
Nominal Input Voltage	100V	-	240V	
Input current	-	-	1.5A	115Vac/full load
	-	-	0.9A	230Vac/full load
Inrush Current Cold Start	-	-	20A	115Vac/full load
	-	-	50A	230Vac/full load
Leakage Current	-	-	1mA	230Vac/full load

* The power supply can operate with DC input. Please connect the positive terminal to the L terminal and the negative terminal to the N terminal.

Output Specifications

Parameter	Min.	Typ.	Max.	Note
Output Voltage Accuracy	-	±1%	-	
Line Regulation	-	-	±2%	
Load Regulation IOUT=0%~100% of	-	-	±1%	
Output Voltage adjust-range	12V	-	14V	PIS120-12
	24V	-	28V	PIS120-24
	48V	-	55V	PIS120-48

General Specifications

Parameter	Min.	Typ.	Max.	Note
Temperature Coefficiency	-	-	±0.03%/℃	0~50℃
Turn-on time	-	-	2500mS	115Vac/full load
	-	-	1200mS	230Vac/full load
Hold-up time	-	-	10mS	115Vac/full load
	-	-	16mS	230Vac/full load
Rise time	30mS	-	-	115Vac/full load
	30mS	-	-	230Vac/full load
Recommended External Fuse	-	-	-	
Operating Temperature Range	-30℃	-	70℃	
Storage Temperature	-40℃	-	85℃	
Storage Humidity	20%	-	95%	non-condensing
Operating Altitude	0m	-	5000m	
Case Material	Plastic Case			
Cooling Method	Air convection cooling			
Vibration	10 ~ 500Hz, 2G 10minutes/cycle, X、Y、Z axis/60 minutes Installation: meet IEC60068-2-6			
MTBF	50,000H,MIL-HDBK-217F(25℃)			
Size	36 x 95.3 x 108.0mm			
Weight	374g			

Safety&EMC Compliance

Safety	TUV Mark	EN IEC 62368-1:2020+A11
	CB scheme	IEC 62368-1:2018
	SAA	AS/NZS 62368.1:2022
	EAC	TP TC 004/2011
Industrial Control Equipment	UL/cUL listed	UL 508 and CSA C22.2 No. 107.1 (File No. E535363)
Isolation Voltage	Ip to Op:3kV Ip to DC-OK:500V	Testtime1minute leakagecurrent<5mA
Isolation Resistance 500VDC, 25°C, 70%RH	100M Ω	
RoHS	RoHS(2011/65/EU) (EU)2015/863	
EMC	CE&RE	Generic Standards: EN 55032:2015+A11:2020 EN 55035:2017+A11:2020
	ESD	IEC 61000-4-2 Criteria A Air Discharge:8KV Criteria A contact Discharge :4 kV
	RS	IEC 61000-4-3 Criteria A 80 MHz to 1000 MHz 10V/m(unmodulated, r.m.s), 1 kHz, 80%, AM modulated
	EFT	IEC 61000-4-4 Criteria A ±2 kV(peak) 5/50ns Tr/Th 5kHz Repetition Frequency

Safety&EMC Compliance

EMC	Surge	IEC 61000-4-5 Criteria A Differential ±2kV(peak)1.2/50(8/20)Tr/Thμs (line to line) ±4kV(peak)1.2/50(8/20)Tr/Thμs (line to earth or ground)
	CS	IEC 61000-4-6 Criteria A 0.15 MHz to 80 MHZ 10V(unmodulated, r.m.s), 1kHz 80%, AM 150 Ω source impedance
	DIP	IEC 61000-4-11 Voltage dips: Residual voltage<5% Criteria B 0.5 cycle Residual voltage<70% Criteria C 25 cycle(50Hz), 30 cycle (60Hz) Voltage interruptions: Residual voltage<5% Criteria C 250 cycle (50Hz), 300 cycle (60Hz)
	PFMFI	IEC 61000-4-8 Criteria A 50Hz or 60Hz 30A/Meter(r.m.s)

Protection Functions

Over output Voltage protection	12V:15-17V 24V:28-34V 48V:60-66V
	Enter the overvoltage protection state, the input power consumption of the power supply is less than its no-load power, there is no output voltage, the fault source needs to be eliminated, and the AC voltage should be restarted to resume normal operation.
Over load protection	Rated output power:105%~ 150%
	Protection type: Constant current limiting, recovers automatically after fault condition is removed.
Short protection	Shut off output voltage, the power supply will recover after the power is turned on again.

All specifications valid at nominal voltage 230VAC, Rated full load and +25°C after warm-up time, unless otherwise stated.

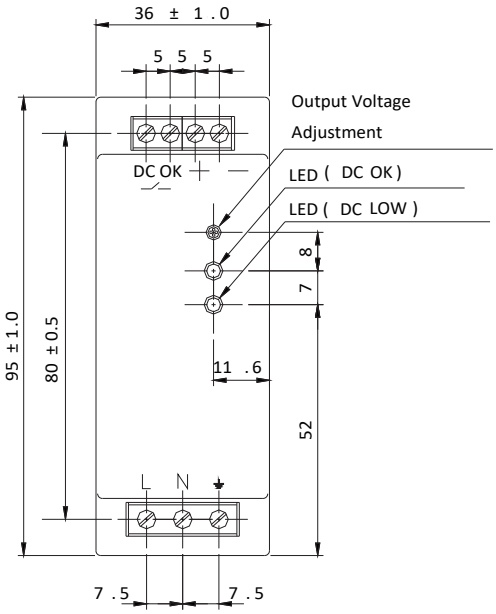
1.Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with 0.1uf & 47uf parallel capacitor

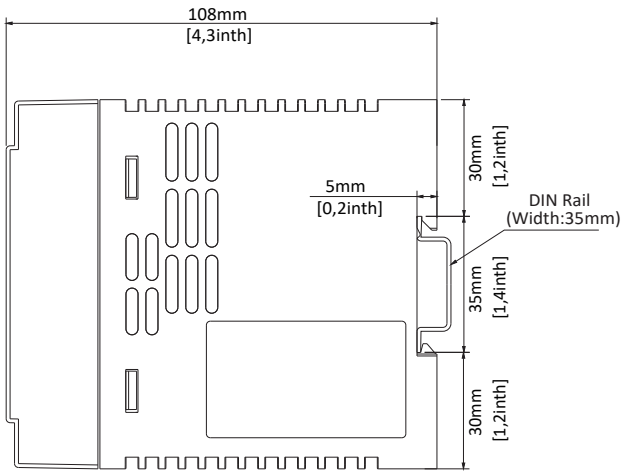
2.Accuracy： include the setting tolerance, line regulation and load regulation.

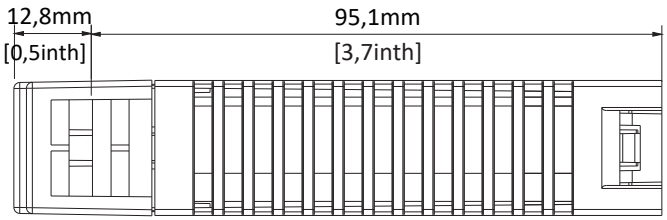
3.Power supply that is as a part of system， must be test before install in the end of system.

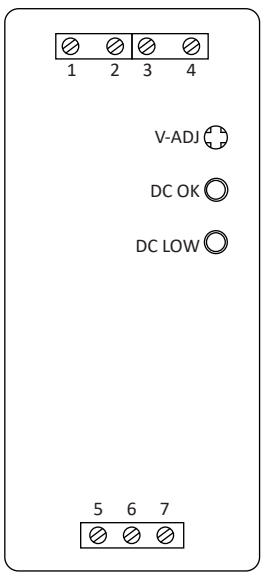
4.Installation clearances : 25mm on top, 25mm on the bottom, 25mm on the left and right side are recommended when loaded permanently， with full
power. In case the adjacent device is a heat source.25mm clearance is recommended.

Dimensions & Lnterface Definition



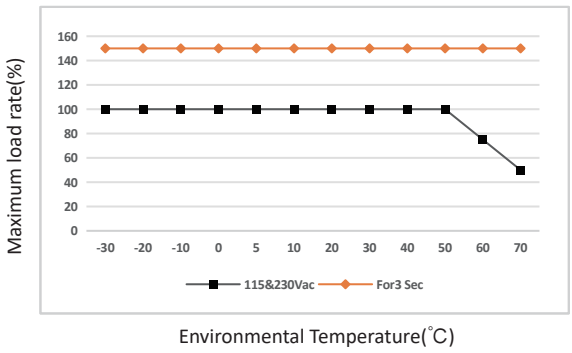






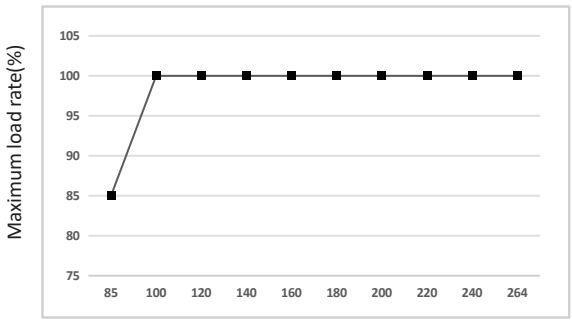
NO	Marking	Assignment
1	DC-OK	
2		
3	+	DC(+)Output terminal
4	-	DC(-)Output terminal
5	AC(L)	AC(L)input terminal
6	AC(N)	AC(N)input terminal
7	NC	
/	V-ADJ	DC Output voltage adjustment trimmer
/	DC-OK	DC Output OK indication LED(Geen)
/	DC-LOW	DC Output Low indication LED(Red)

Electrical Curve



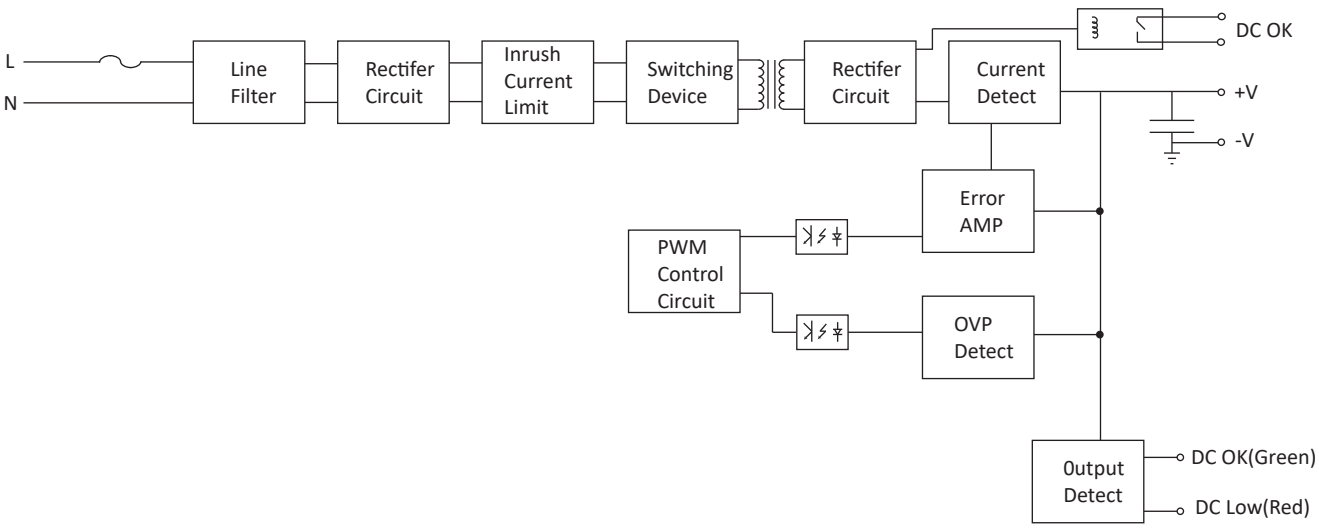
Environmental Temperature(˚C)

1.If the power supply is continuously used outside the range specified by the derating curve, it may cause degradation or damage to its components. For details, please refer to Figure 1.
2.The power supply will have a relatively long rise time when the ambient temperature is between -30°C and -40°C.
3.To ensure normal functionality, the power supply must maintain a safe distance from other equipment.
4.If the ambient temperature is higher than 50°C, attention must be paid to power derating.



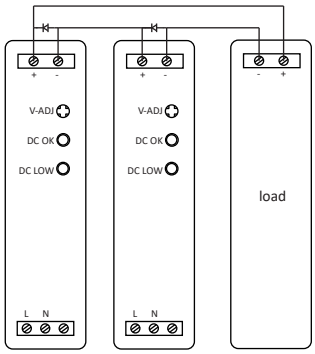
Input Voltage(Vac)

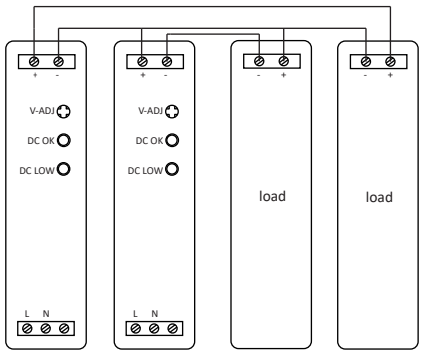
Block diagram



Application Note

1.Series Operation

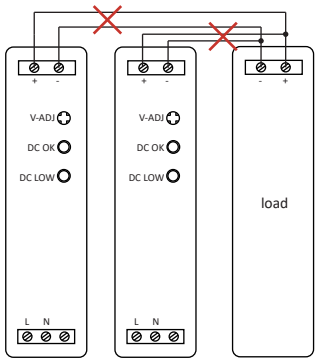




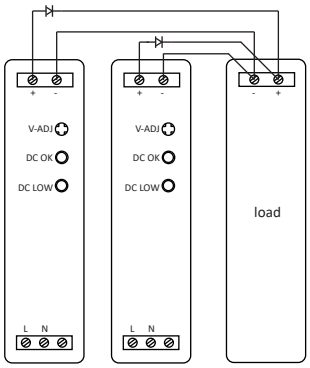
Note:

1. Series operation can be connected as shown in above;
2. Load current should be less than the current value of the product with the lowest output current specified at the product specification with the power supply at series connection.

2.Series Operation



Parallel Operation A
(Unable to use)



Parallel Operation B
(Backup)

Note:

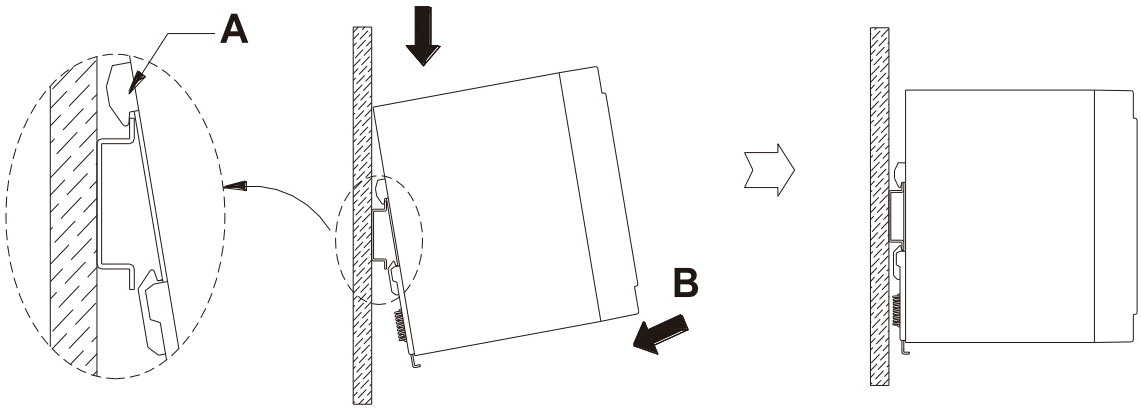
1. Parallel operation should be composed with the same products, while the connection should be as shown as “Parallel operation B”;
2. In parallel operation B, current capacity cannot be increased, while it should be used forbackup only. Moreover, diode that is to be added during parallel operation should be selected after considering it’s voltage drop, output voltage and current capacity.

Application Note

3.MountingMethod

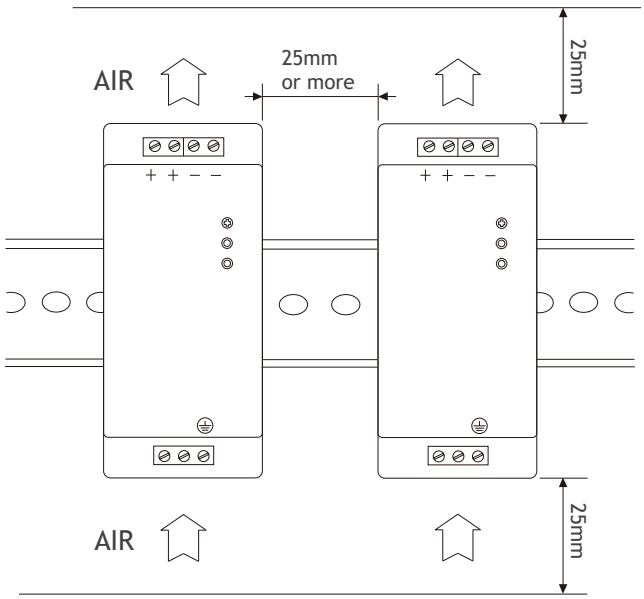
(1) How to fix

Firstly hang A part on the top of Rail as shown in below, then push the power supply into B direction to fix it.



(2) Mounting Spacing

Mounting method should be considered with airflow. Leave enough space between the units when several units are mounted together. Forced air cooling makes protection against heat better.



Application Note

4. Cautions

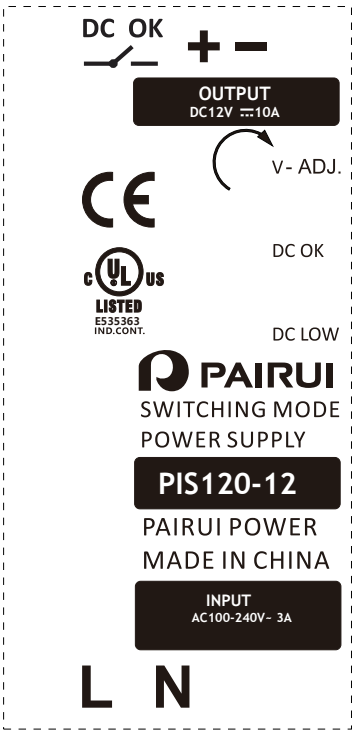
(1) Please confirm if the capacity of the product is suitable for your intended application beforeputting it in use;
(2) Only the rated input voltage specified on the product should be used;
(3) Only the wires with rated capacity should be connected to this product, as allowable voltage and current is varied according to each type of wire;
(4) Ground terminal of the power supply must be grounded before use to prevent electric shock or electromaganetic interference;
(5) Be cautions to keep the product clean as foreign matter near the input & output terminal or inside if the product could cause series damages;
(6) If a fuse installed in the product blows off, the product should experience damages not only to the fuse but also to other parts as well. Therefore, the product is to be required for maintenance work from customer service department as well as replacement of the fuse;
(7) Due to constant leakage current flows within the product, extra caution should be made if multiple number of products are used connecting to each other as total leakage current could be amounted beyond the capacity;
(8) Be sure to avoid any physical contact with the product since some of the parts inside of the product are being functioned at high voltage, which could cause serious electric shock;
(9) For the purpose of safety as well as reliability of the product, please avoid using the product at the following sites:
- A place near water or fire
- A place with high room temperature and poor ventilation
- A place with a presence of foreign subject or dust
- A place near volatile or flammable compounds
- A place with high humidity
- A place vulnerable for vibration or shock

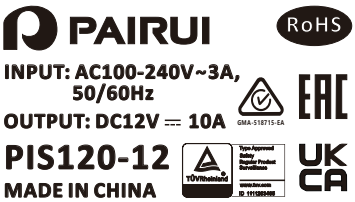
(10) Do not inspect or repair the product while the power is applied;
(11) Unauthorized modification should be avoided in order to prevent series injury or physical loss due to any malfunction;
(12) In case of power outage while in operation, be sure to turn off the power supply.

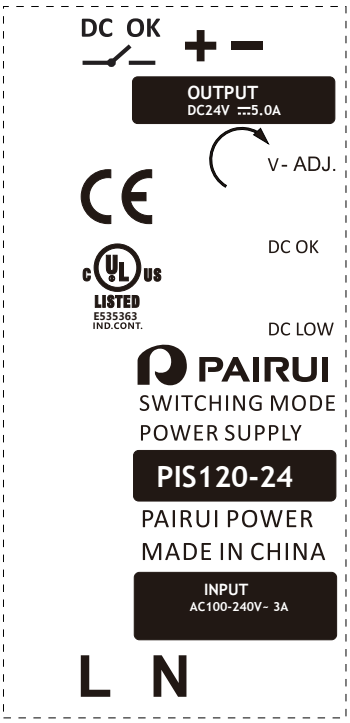
5. Warranty

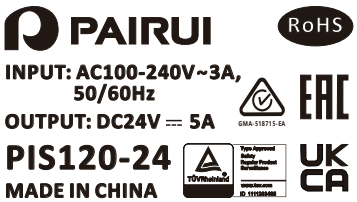
(1) Repair service will be provided for free upon any mechanical, technical or functional defects during the guaranteed warranty, however, any defects or malfunction due to international infliction or negligence by customers will be repaired at the customer’s expense;
(2) Guaranteed warranty of the product runs for 3 years, while appearance and specification of the product is subject for change without any prior notification for the purpose of quality improvement of the product.

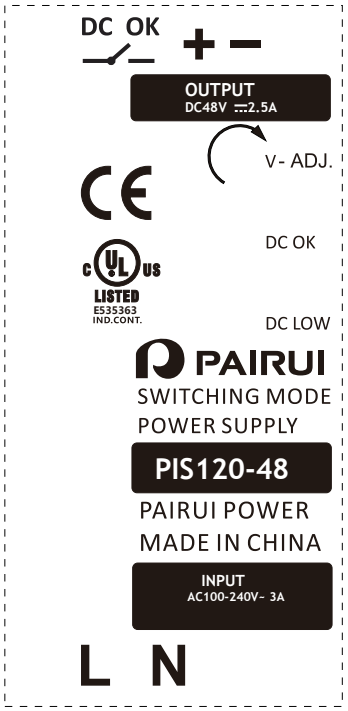
Label

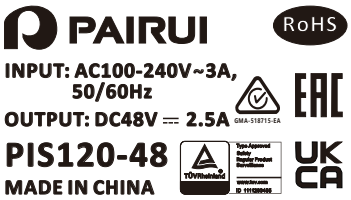












Attention: Used in controlled environments. For environmental conditions, please refer to the manual.
REMARQUE: Implementing Resource Utilization in Environmental Control

Packaging Information

Quantity per box (PCS)	Outer Box Size L * W * H (mm)	Net Weight (kg)	Gross Weight (kg)
24	425*320*200	9.0	9.7

Change History

2024.06.8	Publication and distribution
2025.03.25	Add on page 1 VoltageADJ. Range,Remove packaging information,increase 150% peak load capability, Modify the temperature derating curve； Adjust the input voltage range
2025.8.27	1. Increase EMC project testing standards and levels 2. Change the input voltage to 85-264Vac 3. Modify the temperature curve to -30~+70℃