UL62368-1 GB4943.1 IEC60601-1 EN 62368-1 BS EN 62368-1

Size: 7.48in x 5in x 1.59in
(190mm x 127mm x 40.5mm)

FEATURES

- Wide Input Voltage Range 90-264VAC or 120~370VDC
- Wide Range Adjustable Output Voltage
- Accepts AC or DC Input (Dual-Use of Same Terminal)
- Built-In Active PFC Function
- Support 3+1 Parallel Redundancy, Current Sharing
- Output Short Circuit, Over Current, Over Voltage, and Over Temperature Protection
- High Reliability, High Efficiency
- Operating Up to 5000M Altitude
- Automatic Adjustable Fan Speed
- Safety Class I
- Safety According to IEC62368, ES/EN60601

APPLICATIONS

- Industrial
- LED
- Street Light Control
- Security
- Telecommunications
- Smart Home

DESCRIPTION

The PSEW1000 series of AC/DC switching power supplies offers 1000 watts of output power in an enclosed 7.48” x 5” x 1.59” package. This series consists of dual output models with an input voltage range of 90~64VAC or 120~370VAC as this series accepts AC or DC input. Each model features built-in active PFC function3+1 parallel redundancy, and automatic adjustable fan speed. This series has short circuit, over current, over voltage, and over temperature protection, and has safety according to IEC62368, ES/EN60601.

MODEL SELECTION TABLE

Model Number(1)	Input Voltage Range	Output Power		Nominal Output Voltage	Nominal Output Current	Main Output Voltage Adjustable Range ADJ	Typ. Efficiency	Max. Capacitive Load	Certification
PSEW1000-125	90~264VAC (120-370VDC)	Main	960W	12V	80A	12-14.4V	92%	40000μF	UL/EN/IEC/ CCC/BIS
		Auxiliary	10W	5V	2A	/		1000μF	
PSEW1000-155		Main	960W	15V	64A	15-18V		20000μF	
		Auxiliary	10W	5V	2A	/		1000μF	
PSEW1000-245		Main	1008W	24V	42A	24-28.8	94%	10000μF	
		Auxiliary	10W	5V	2A	/		1000μF	
PSEW1000-275		Main	1007W	27V	37.3A	27-32.4		8000μF	
		Auxiliary	10W	5V	2A	/		1000μF	
PSEW1000-365		Main	1008W	36V	28.8A	36-43.2		6000μF	
		Auxiliary	10W	5V	2A	/		1000μF	
PSEW1000-485		Main	1008W	48V	21A	48-56		4000μF	
		Auxiliary	10W	5V	2A	/		1000μF	
PSEW1000-545		Main	1009W	54V	18.7A	54-58		3000μF	UL/EN/IEC/ CCC
		Auxiliary	10W	5V	2A	/		1000μF	

SPECIFICATIONS

All specifications are based on 25°C, Humidity <75%RH, Nominal Input Voltage, and Rated Output Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS			Min	Typ	Max	Unit
INPUT SPECIFICATIONS							
Input Voltage Range	AC Input			90		264	VAC
	DC Input			120		370	VDC
Input Voltage Frequency				47		63	Hz
Input Current	115VAC					12	A
	230VAC					6	
Inrush Current	Cold Start	115VAC			20		A
		230VAC			40		
Power Factor	Room-Temperature, Full Load	115VAC			≥0.99		
		230VAC			≥0.95		
Contact Leakage Current	240VAC					0.5	mA
OUTPUT SPECIFICATIONS							
Output Voltage					See Table		
Voltage Accuracy	Main				±1		%
	Auxiliary				±2		
Line Regulation	Main Output Full Load				±0.5		%
	Auxiliary Output Full Load				±1		
Load Regulation	Main				±0.5		%
	Auxiliary				±1		
Output Voltage Adjustable Range					See Table		
Output Power					See Table		
Output Current					See Table		
Minimum Load				0			%
Dynamic Minimum Load				10			%
Maximum Capacitive Load					See Table		
Ripple & Noise[4]	20MHz bandwidth (peak-to-peak value)	15V/27V			150		mV
		12V/24V/36V/48V/54V			200		
		Auxiliary			100		
Hold-Up Time	Room Temperature, Full Load	115VAC			12		ms
		230VAC			12		
Temperature Coefficient					±0.03		%/°C
Fan	The fan speed is determined by the ambient temperature and output power and linearly adjustable						
PROTECTION							
Short Circuit Protection					Hiccups, continuous, self-recovery		
Over Current Protection[4]	Self-Recovery				≥110		%Io
Over Voltage Protection	Output voltage turn off, re-power on for recovery or PS_ON signal control recover	12V			≤16.5		V
		15V			≤21		
		24V			≤35		
		27V			≤35		
		36V			≤48		
		48V			≤60		
		54V			≤63		
	Hiccup, Self Recovery	Auxiliary			<7		
Over Temperature Protection	Over Temperature Protection Activation					70	°C
	Over Temperature Deactivation			50			
ENVIRONMENTAL SPECIFICATIONS							
Operating Temperature				-40		+70	°C
Storage Temperature				-40		+85	°C
Storage Humidity	Non-Condensing			10		95	%RH
Operating Humidity	Non-Condensing			20		90	%RH
Power Derating	Operating Temperature Derating	-40°C to -30°C		5.0			%/°C
		+45°C to +70°C	12V/15V	1.6			
		+50°C to +70°C	24V/27V/36V/48V/54V	2.0			
	Input Voltage Derating	90VAC to 100VAC		2.0			%/VAC
MTBF	MIL-HDBK-217F@25°C				≥250,000		H

SPECIFICATIONS

All specifications are based on 25°C, Humidity <75%RH, Nominal Input Voltage, and Rated Output Load unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS			Min	Typ	Max	Unit
GENERAL SPECIFICATIONS							
Efficiency	230VAC				See Table		
Isolation Test	Electric Strength Test for 1min., leakage current <10mA		Input – Output	4000			VAC
			Input - ⏚	2000			
			Output - ⏚	1500			
Insulation Resistance	Environment Temperature: 25±5°C Relative Humidity: <95%RH, non-condensing Testing Voltage: 500VDC		Input – Output	100			MΩ
			Input - ⏚	100			
			Output - ⏚	100			
Switching Frequency	PFC Circuit				65		kHz
	LLC Circuit				100		
Isolation Level	Input – Output				2xMOPP		
	Input - ⏚				1xMOPP		
	Output - ⏚				1xMOPP		
FUNCTIONAL SPECIFICATIONS							
Remote Control Switch	All Input Voltage Range All Load Range	Power On			PS_ON (CN2 Pin6) and GND (CN2 pin 7/14) are short		
		Power Off			PS_ON (CN2 Pin6) and GND (CN2 pin 7/14) are open		
DC_OK Signal	All Input Voltage Range All Load Range	Power On		2.5		5	V
		Power Off				0.5	
Oring					Support direct parallel use, achieve 3+1 parallel redundancy		
Current Sharing Accuracy	When units in parallel, each power supply needs to carry rated load of more than 50%				±5		%
LED Signal[5]	Main Output Status Indication		Normal Output		Green On		
			Abnormal Output, Protected		Red On		
			Power Off (AC without Input)		Light Off		
Remote Sense	Total Compensate Voltage (VS+/Vs- shorted to Vo+/V0- respectively)				200		mV
SDA, SCL for I 2 C					Internal 2.4kΩ pull-up resistor to internal 3.3V		
PHYSICAL SPECIFICATIONS							
Weight					2.76lbs (1.25kg)		
Dimensions (L x W x H)					7.48in x 5in x 1.59in (190mm x 127mm x 40.5mm)		
Case Material					SUS 304		
Cooling					Forced Cooling		
SAFETY CHARACTERISTICS							
Safety Standard[6]	12V/24V/48V				IEC/UL62368-1, GB4943.1, IEC60601-1, IS13252 (Part1) safety approved & EN62368-1 (Report) Design refer to ES/EN60601-1-2: 2015 Edition 4		
	15V/36V/27V				IEC60950-1, UL62368-1, GB4943.1, IEC60601-1, IS13252 (Part1) safety approved & EN62368-1 (Report) Design refer to ES/EN60601-1-2: 2015 Edition 4		
	54V				UL62368-1, GB4943.1, IEC60601-1 safety approved & EN62368-1 (Report) Design refer to IEC62368-1, IS13252 (Part1), ES/EN60601-1-2: 2015 Edition		
Safety Class							Class I
Emissions	CE	CISPR32/EN55032					Class B
	RE	CISPR32/EN55032					Class B
	Harmonic Current	EN61000-3-2					Class A
	Flicker	IEC/EN61000-3-3					
Immunity	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	±2KV				Perf. Criteria A
	Surge	IEC/EN 61000-4-5	Line to line ±2KV/line to ground ±4KV				Perf. Criteria A
	CS	IEC/EN 61000-4-6	10 Vr.m.s				Perf. Criteria A
	Voltage dips, short interruptions and voltage variations	IEC/EN 61000-4-11	0%, 70%				Perf. Criteria B

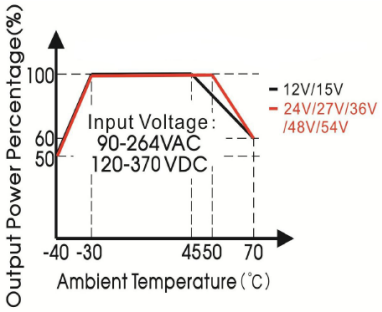
NOTES

1. Add “Q” to model number for conformal coating.
2. Before powering on the product, please confirm whether the control signal connection terminal (CN2) Pin (PS_ON) and Pin (GND) short-circuit jumper cap are connected. If not, the product without output. When the control signal connection terminal (CN2) of the product are external connected as a whole, please ensure that Pin6 and Pin7 (or Pin14) are short-circuit connected. Contact factory for more information.
3. When using the current sharing function for all models, do not directly increase the load on the system beyond the rated load of a single prototype when the power is turned on for the first time.
4. Tip and barrel method is used for ripple and noise test. Output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, contact factory for more information
5. If the product is used in medical equipment, terminal system should shield the LED signal light to meet the medical certification requirements that operators should not see the indicator light after the product is installed.
6. This product is Listed to applicable standards and requirements by UL.
7. Power supply should be considered as a part of the components in a system. RE performance are being tested on a metal plate with a thickness of 3mm and a length of 450mm x 450mm. Power supply must be combined with the terminal equipment for electromagnetic compatibility confirmation.
8. Please refer to Power Application Notes for relevant function control logic and instructions.
9. Room temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m
10. In order to improve the efficiency at high input voltage, there will be audible noise generated, but does not affect product performance and reliability
11. Product customization service is available, please contact factory for more details.
12. Out case needs to be connected to PE (⏚) of system when terminal equipment in operation.
13. Output voltage can be adjusted by the ADJ, clockwise to decrease.
14. Products should be classified according to ISO14001 and related environmental laws and regulations and should be handled by qualified units.
15. Power supply is considered a component which will be installed into terminal equipment. All EMC tests should be confirmed with final equipment. Consult factory for EMC test operation instructions.
16. In the appearance dimension drawing, ±Vo represents the main output, ±S represents the auxiliary output, and the auxiliary output can be selected by the customer, which has no effect on the main output.

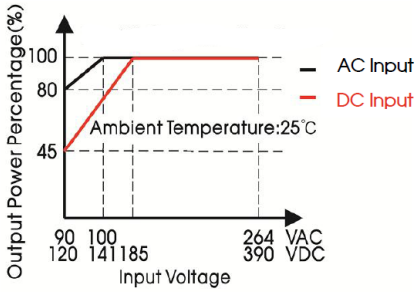
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

Temperature Derating Curve



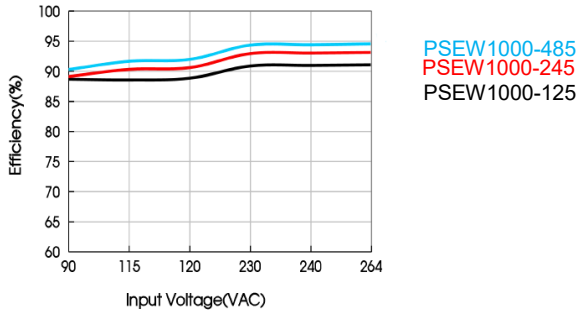
Input Voltage Derating Curve



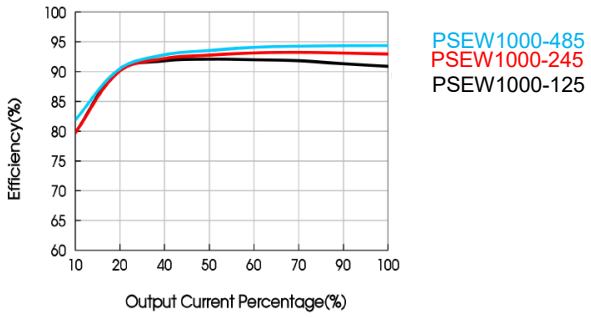
Note:
1. With an AC input voltage between 90-100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves.

EFFICIENCY GRAPHS

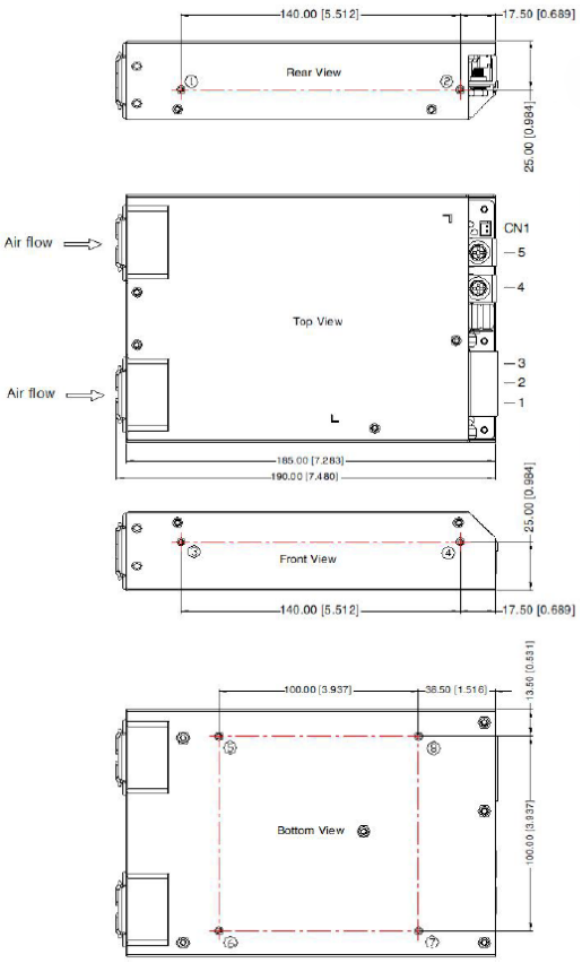
Efficiency vs Input Voltage (Full Load)



Efficiency vs Output Load (Vin=230VAC)



MECHANICAL DRAWINGS



THIRD ANGLE PROJECTION

Pin-Out

Pin	Mark
1	AC(L)
2	AC(N)
3	⏚
4	-Vo Main Output
5	+Vo Main Output
6	ADJ Output Adjustable Resistor

Position	Screw Spec.	L (Recommended)	Torque (Max.)
①-⑧	M3	3mm	08N·m

CN1 (Auxiliary Output)

Pin-Out		Customer Connector
Pin	Mark	
1	-S	Connector: XHS2.5-2Y (KANGDAO) or equivalent
2	+S	Terminal: XH2.5-TE (KANGDAO) or equivalent

Pin-Out				Customer Connector
Pin	Mark	Pin	Mark	
1	VS+	8	VS-	Connector: JST PHDR-VS or equivalent Terminal: JST SPHD-002T-P0.5 or equivalent
2	CURRENT SHARE	9	ADDRESS0	
3	DC_OK	10	ADDRESS1	
4	SCL	11	ADDRESS2	
5	SDA	12	RXD	
6	PS_ON	13	TXD	
7	GND	14	GND	

Note:
Unit: mm [inch]
Pin 1,2,3 wire range: 22-12AWG
Pin 1,2,3 Connector tightening torque: M4, 1.2N·m (Max)
Pin 4,5 Connector Tightening Torque: M5, 2.3N·m (Max)
General Tolerances: ±1.00 [±0.039]

APPLICATION NOTES

1. Overview

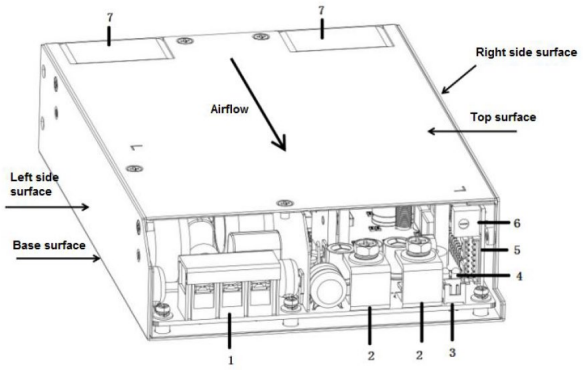
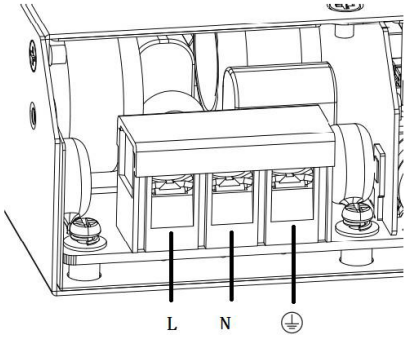


Fig. 1 Appearance Information of PSEW1000

Composition Structure Description
1. AC/DC Input Terminal (J1)
2. DC Main Output Terminal (J2, J3)
3. Auxiliary Road Output Terminal (CN1)
4. Green and Red Status Display LED Lights
5. Signal Connection Press the Terminal (CN2)
6. Output Voltage Regulation Knob
7. Fans

1.1 AC/DC Input Terminal Block (J1)

The input terminal J1, as a standard 3-pin fence welding terminal with upper cover, the center spacing of the pins is 10mm.

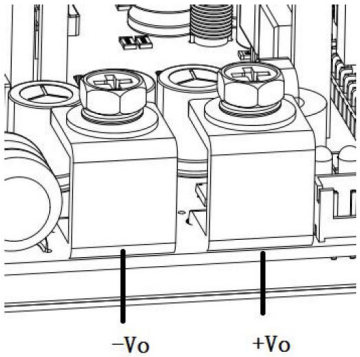


Pin	Features
L	Line (Phase)
N	Neutral
⏚	Ground/Earth

Wire Size: 12-8AWG
Torque: 1.8Nm

1.2 Main DC Output Terminal (J2, J3)

The output terminal J2, J3 with two standard screw lock type materials, the pin spacing between each is 18mm.

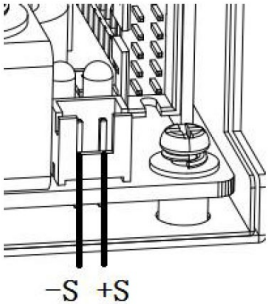


Pin	Features
+Vo	Main Output -
-Vo	Main Output +

Wire size: 4-12AWG
Torque: 2.3Nm

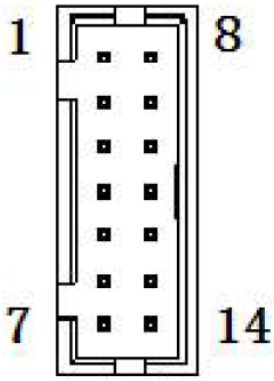
1.3 Auxiliary DC Output Terminal (CN1)

The auxiliary output terminal with a standard terminal of 2.5mm pitch.



Pin	Function
-S	Auxiliary DC Output -
+S	Auxiliary DC Output +

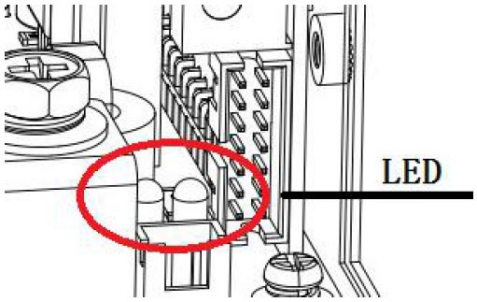
1.4 Signal Port (CN2)



Pin	Label	Features
1	VS+	Remote Compensation Positive End
2	CURRENT SHARE	Current Sharing Bus
3	DC_OK	DC_OK Signal
4	SCL	I2C Communication Line
5	SDA	I2C Communication Line
6	PS_ON	Remote Control Signal
7	GND	Signal Terminal Reference Ground
8	VS-	Remote Compensation Negative Terminal
9	ADDRESS0	ADDRESS Code 0
10	ADDRESS1	ADDRESS Code 1
11	ADDRESS2	ADDRESS Code 2
12	RXD	Serial Communication
13	TXD	Serial Communication
14	GND	Signal Terminal Reference Ground

Note: The reference ground of all pins on the signal terminal is pin7 and pin8

1.5 Green and Red Status Display LED Lights

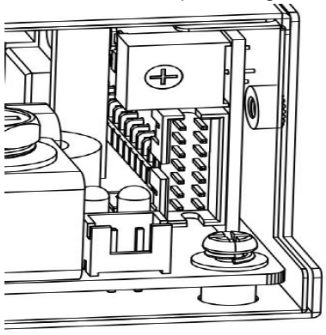


Two kinds of LED lights indicate different working states of the power supply:

Green LED	Red LED	Status
ON	OFF	Normal Work
OFF	ON	Main or Auxiliary Road Alarm
OFF	OFF	No AC Input

1.6 Output Voltage Adjustment Knob

Turn Counterclockwise to Increase Output Voltage



Model	Rated Output Voltage	Adjustable Range of Output Voltage
PSEW1000-125	12V	12-14.4V
PSEW1000-155	15V	15-18V
PSEW1000-245	24V	24-28.8V
PSEW1000-275	27V	27-32.4V
PSEW1000-365	36V	36-43.2V
PSEW1000-485	48V	48-56V
PSEW1000-545	54V	54-58V

2. Function Manual

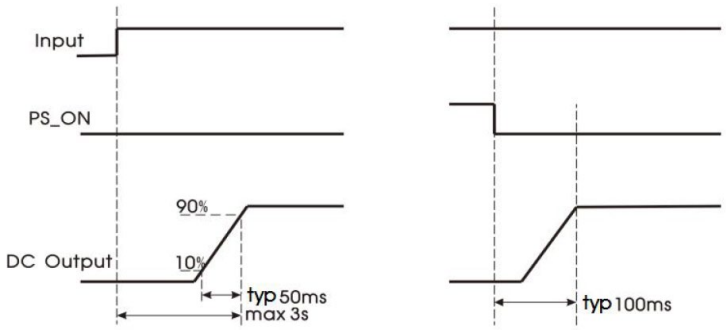
2.1 Input Requirements

The AC input voltage and DC input voltage must be within the defined voltage range (refer to data sheet), otherwise the power supply may not work properly or could malfunction.
The internal L and N line of the power module have been connected in series with a 250V 20A fuse. For better protection, it is recommended that customers use a circuit breaker not greater than 20A. (Non-mandatory requirement).

2.2 Output Requirements

Main Output
At any voltage value, the maximum output current and power must not exceed the rated/specified value. The output current must not exceed the maximum output current value.
Auxiliary Output
The auxiliary circuit supports a maximum current of 2A.

2.3 Start-Up Timing



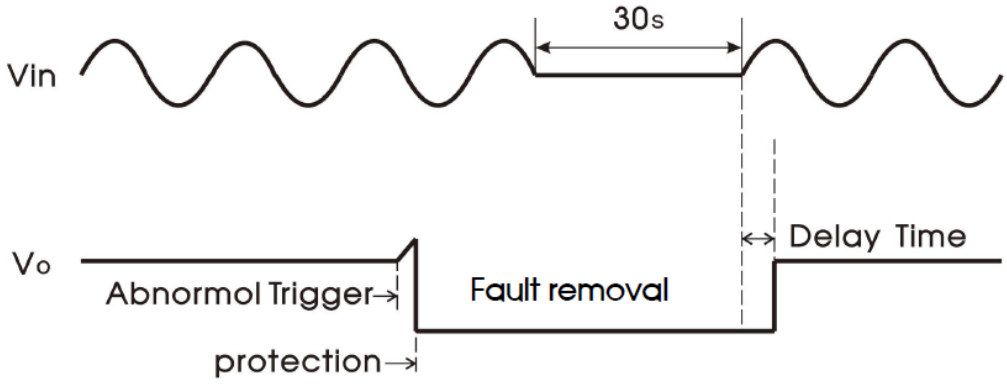
Item	Operating Conditions		Min.	Typ.	Max.	Unit
Power-Off Hold Time	Room Temperature, Full Load	115VAC	-	12	-	ms
		230VAC	-	12	-	
Start Delay Time	230VAC, Full Load		-	-	3	s

2.4 Fan Speed Control

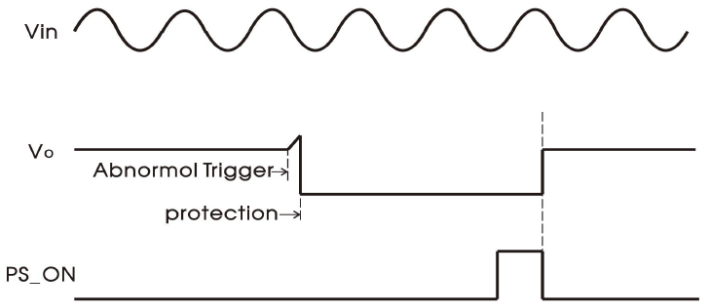
The fan speed is determined by the ambient temperature and output power and linearly adjusted. When the ambient temperature is greater than 45°C and the output power is greater than 600W, the fan reaches 100% speed. In order to improve the reliability of the power supply module, the fan keeps a minimum speed of 10% when the ambient temperature is higher than -5°C under no load, the fan will stop rotating when the ambient temperature is lower than -5°C.

2.5 Output Over-Voltage Protection (OVP)

Man Output
The over-voltage protection function is to close the main output when the output voltage reaches the protection voltage value. When the main circuit over-voltage protection occurs, the main circuit output voltage of the module will be shut off, and the auxiliary circuit output will not be affected. The main circuit output can be restored after disconnecting the input power for at least 30 seconds.

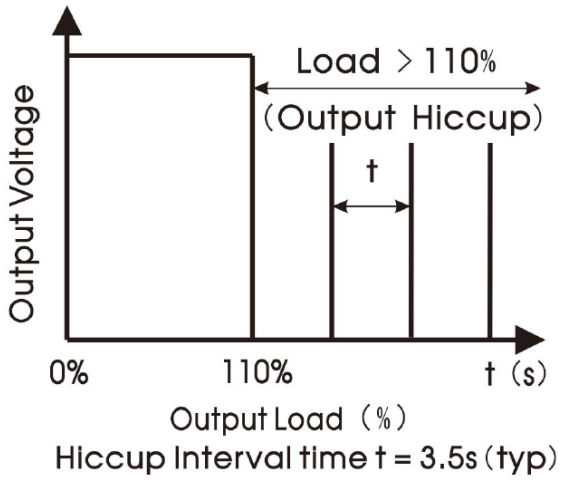


In addition, it can be quickly restarted by the PS_ON signal:



Auxiliary Output
When the auxiliary circuit voltage reaches 7VDC (maximum value), the auxiliary output will be in hiccup status, and the main circuit will be without output until the auxiliary output returns to normal after the fault is eliminated.

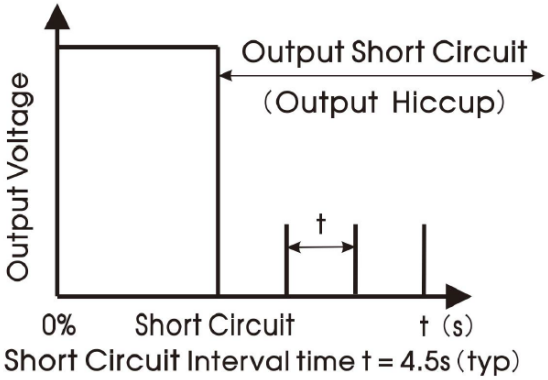
2.6 Output Over-Current Protection (OCP)



Main Output
When the output current exceeds 110% (minimum) of the rated output current, the DC output will be off. The OCP protection function adopts hiccup mode. After the over-current condition is eliminated, the main output will automatically recovery, and the auxiliary output will not be affected.
The main circuit output has OCP delay function. When the output current reaches 120% (typical value) of the rated load current 300mS, the main circuit output will be off; when the main circuit output reaches 150% (typical value) of the rated load current 15mS, the main circuit output will be off.
When the output current of the auxiliary circuit exceeds 120% (typical value) of the rated current, the main circuit output will be off. After the over-current state of the auxiliary circuit is eliminated, the main circuit automatically resumes output.

2.7 Output Short Circuit Protection (SCP)

When the output is short-circuited, the power output in hiccup with interval 4.5s. After the short circuit is removed, the power module will automatically return to normal, and the auxiliary output will not be affected.
When the auxiliary circuit output is short-circuit, the main circuit is without output.

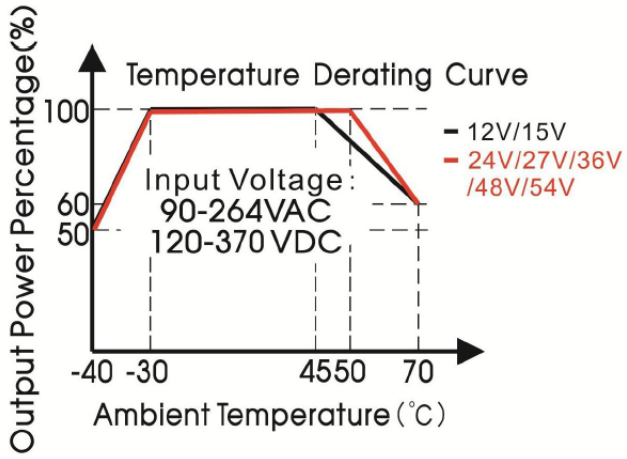


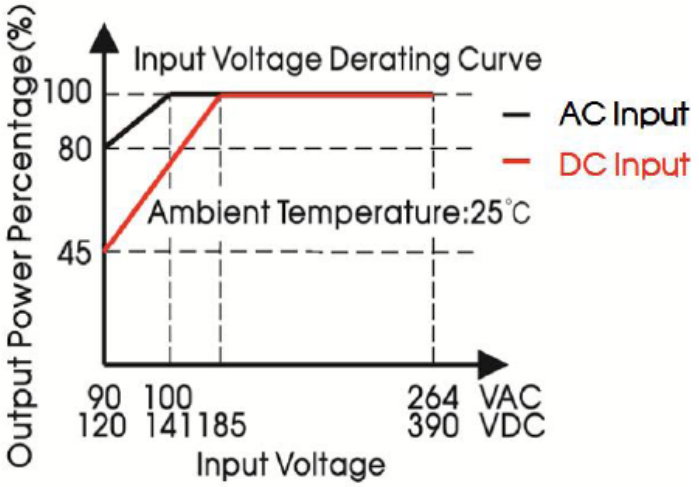
2.8 Over Temperature Protection (OTP)

When the ambient temperature of the power supply exceeds the rated temperature for a period of time, the power supply will be turned off and the power supply will resume normal operation after the ambient temperature drops to the set value.

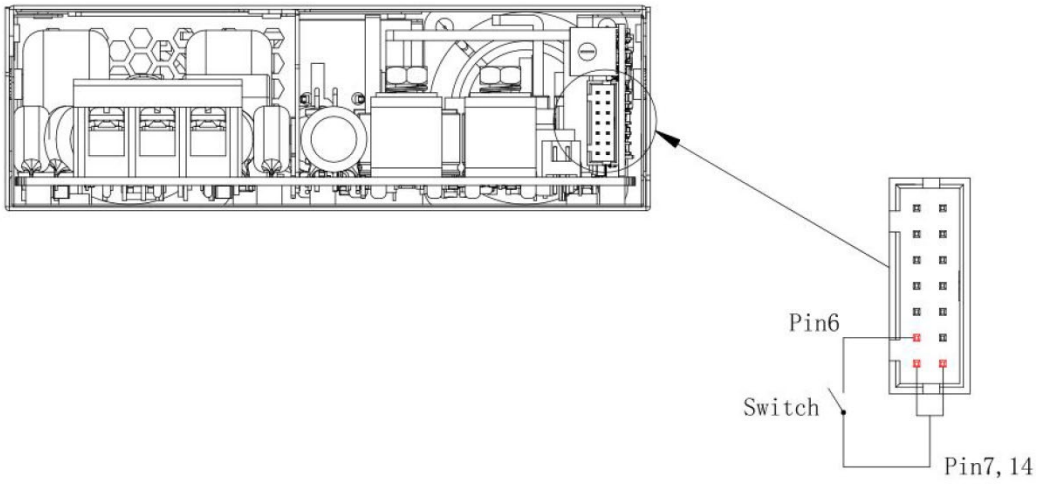
2.9 Output Power Derating

When the input voltage is greater than 100VAC (or 185VDC), only need to derate according to the temperature derating curve.
When the input voltage is lower than 100VAC (or 185VDC), the output power will need to be derated according to the following input voltage derating curve after temperature derating.





2.10 Remote Control

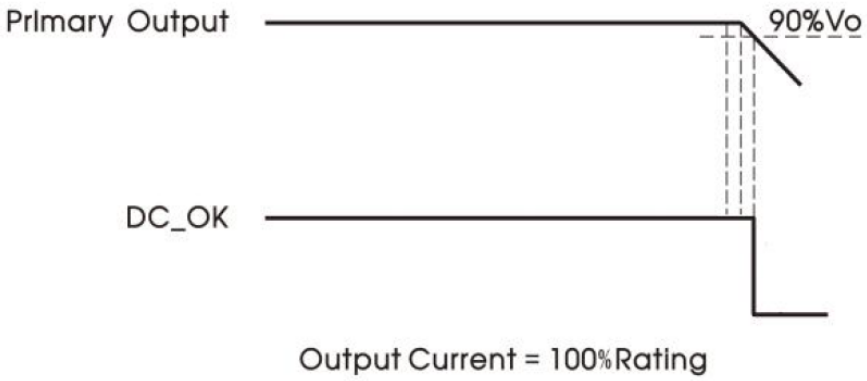


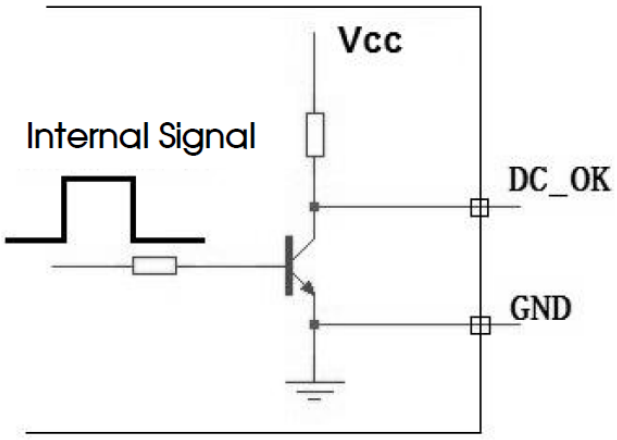
PS_ON (Pin6) and GND (Pin7 or Pin14)	Output Status
Short-Circuit	Output On
Pin Floating	Output Off

If the input terminal of the power module has been connected to a power source, the PS_ON signal pin can be used to control the on and off of the main output, and the PS_ON signal does not affect the output voltage of the auxiliary circuit.
Note: the internal PS_ON input impedance of the module is 5.1K

2.11 DC_OK Signal

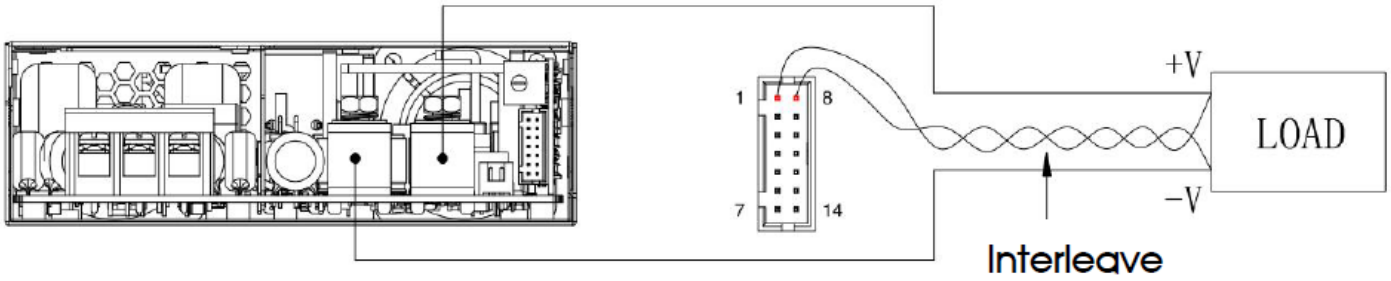
The DC_OK signal is used to monitor whether the power supply is working normally, and the signal is at Pin3 of the signal terminal CN2.
Note: When the DC_OK signal is connected to the external circuit, the impedance of the external circuit (i.e. between Pin3 and Pin7 or Pin14 of CN2) is not less than 10kΩ.





DC_OK (Pin3) and GND (Pin 7 or Pin 14)	Output State
2.5-5V	Output On
0-0.5V	Output Off

2.12 Remote Compensation



Note:
1. VS+ and VS-+ cannot be shorted or reversed, otherwise the power module will be damaged.
2. Before powering on the product, please confirm whether the control signal connection terminal (CN2) Pin6 (PS_ON) and Pin7 (GND) short-circuit jumper cap are connected. If not, the product without output. When the control signal connection terminal (CN2) of the product are external connected as a whole, please ensure that Pin6 and Pin7(or Pin14) are short-circuit connected. See Note 2.10.
Pin 1 and Pin 8 of the signal terminal CN2 can compensate the voltage drop on the output cable. The remote compensation circuit can compensate up to 200mV cable voltage drop. This voltage includes the sum of the cable drop connected to the output positive terminal and the output negative terminal. If you need to use the remote compensation function, the signal pin needs to be connected with the load end with a twisted pair cable.

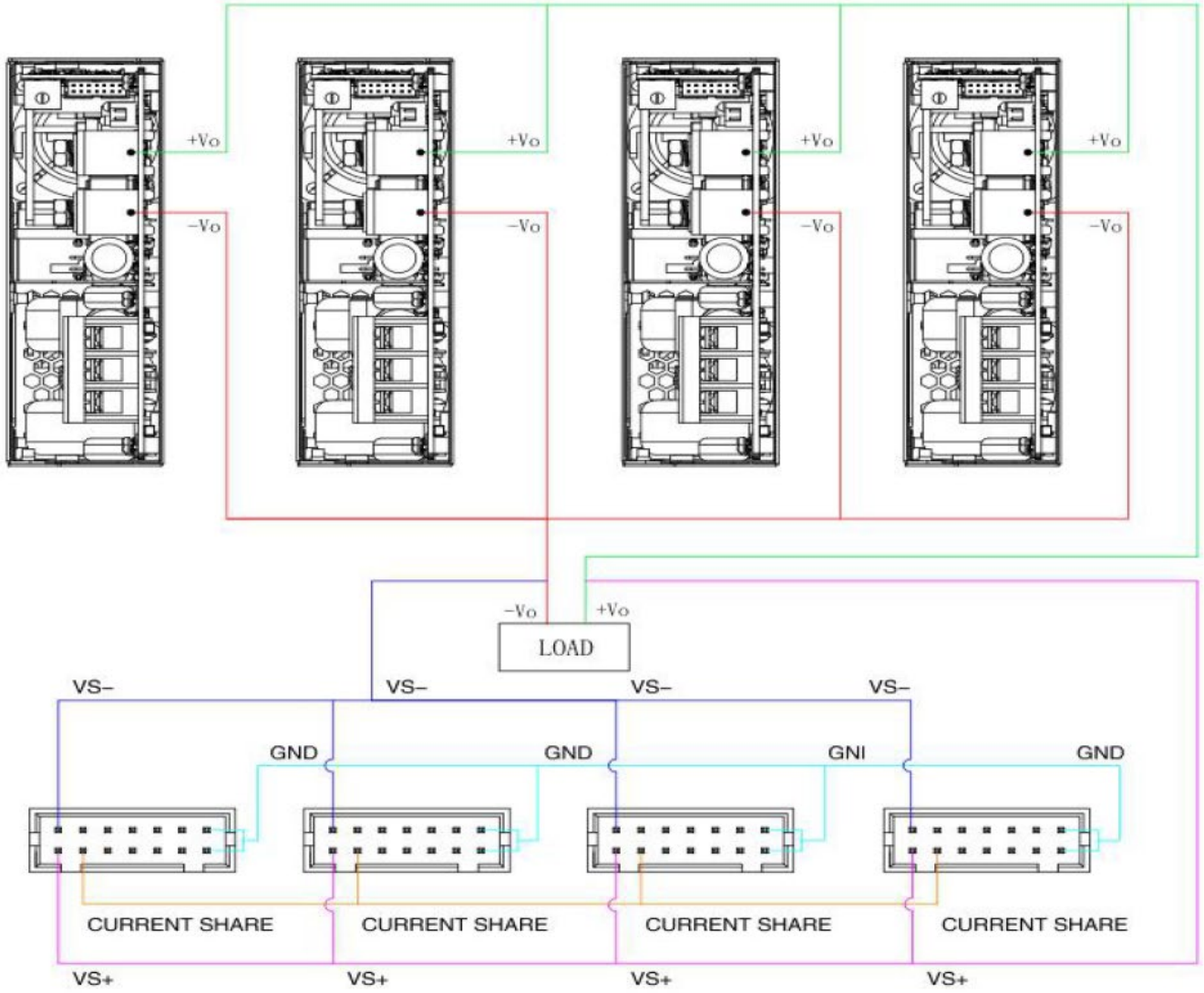
2.13 Parallel Operation

2.13.1 Redundancy

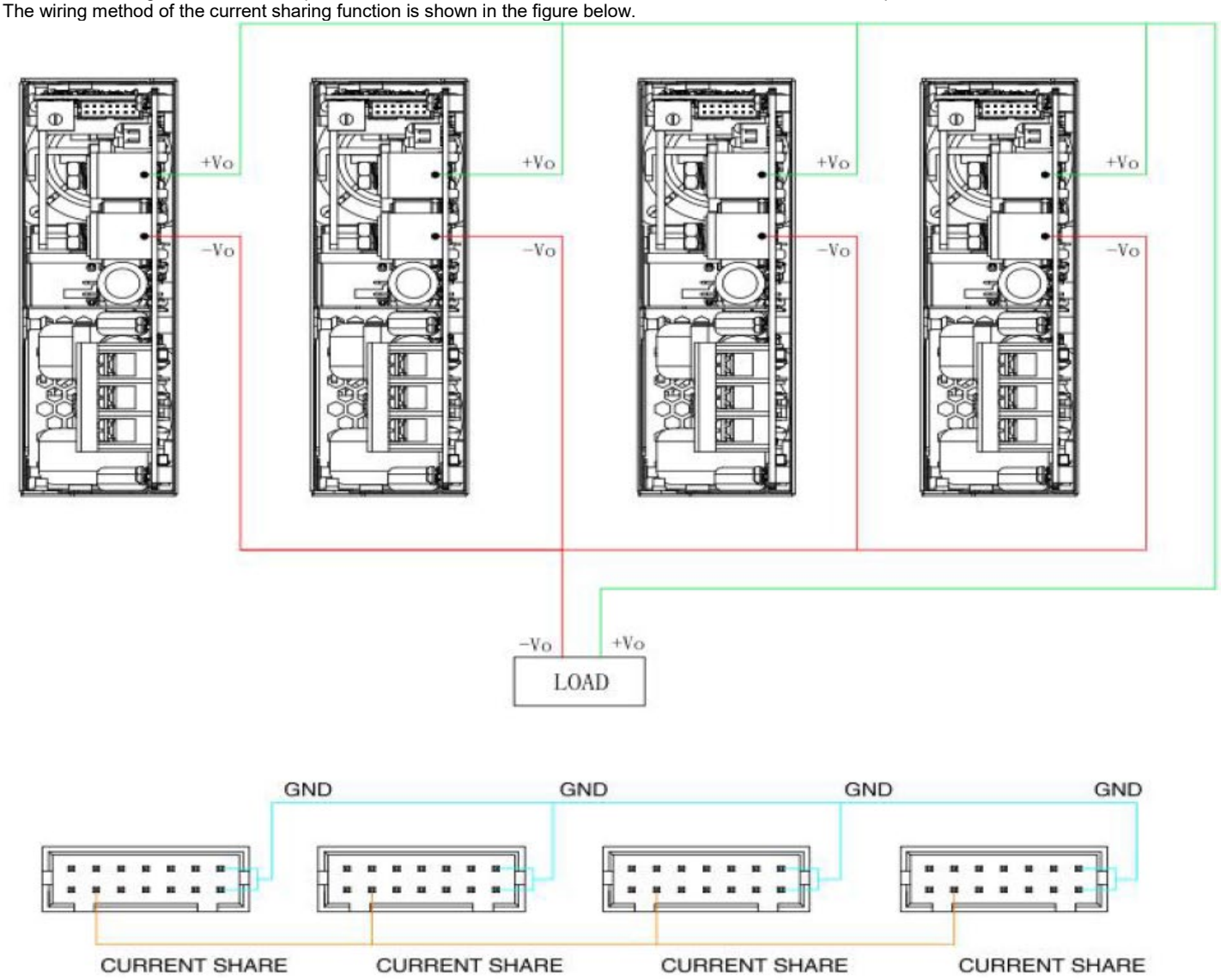
The power module output can be connected in parallel to achieve redundancy, thereby improving system reliability. The maximum power of the redundant system needs to be derated to ensure that the redundant system can still meet the rated load requirements when a power supply module fails. The current common practice is to construct a redundant system by the N+1 method, that is, N+1 power supplies are connected in parallel, to support the maximum load current N*Iomax, where Iomax is the rated output current of each power supply. For example, the rated output current of each power supply is 40A, and 3+1 units are connected in parallel to construct a 3*40A=120A redundant system.
The power module supports 3+1 parallel redundant operation.
The ORing circuit is used inside the power module, and when any one of the power modules in the parallel fails, it will not affect the work of other power modules.
When used in parallel, the maximum load current cannot exceed the maximum output current of a single power supply module, otherwise the whole parallel power supply module will not start normally.

2.13.2 Current Sharing

Method 1: Current Sharing bus and remote compensation lines are both connected. For load line loss ≤200mV, and the output voltage difference of each single module ≤50mV, this type of connection is recommended to obtain a better line-end output voltage and current sharing effect. The wiring method of the current sharing function is shown in the figure below:



Method 2: Only the current sharing bus is connected, and the remote compensation is not connected.
For the load line loss >200mV, or the output voltage difference of each single module cannot or does not need to be accurately adjusted to <50mV, this type of connection is recommended to obtain a better current sharing effect of the parallel machine. In the same way, when the load loss is unknown or the current sharing fails to meet the specifications under the first connection method, it is recommended to replace it with this connected method.
The wiring method of the current sharing function is shown in the figure below.



Note: 1. When using in parallel, the number of parallel modules cannot exceed 4.
2. Before powering on the product, please confirm whether the control signal connection terminal (CN2) Pin6 (PS_ON) and Pin7 (GND) short-circuit jumper cap are connected. If not, the product without output. When the control signal connection terminal (CN2) of the product are external connected as a whole, please ensure that Pin6 and Pin7(or Pin14) are short-circuit connected. See 2.10 Remote control.
When power modules work in parallel, there is an internal active current sharing circuit to ensure that the current between each module is balanced. The active current sharing circuit adopts the automatic master-slave current sharing method. Each power module has a current sharing bus signal (CURRENT SHARE BUS). When working in parallel, the current sharing bus of all power modules must be connected together. The current-sharing bus signal is located at pin 2 of CN2.
The output voltage of each power module will affect the current sharing accuracy. The output voltage of the power module is the rated voltage ±50mV. In practical applications, if the output voltage value needs to be adjusted, the output voltage of all parallel power supply modules needs to be adjusted to the same voltage. The recommended voltage range: target voltage value ±50mV.
After the output load of each power module is greater than 50% of the rated load, the current sharing accuracy should be ±5%. The current sharing calculation formula is:

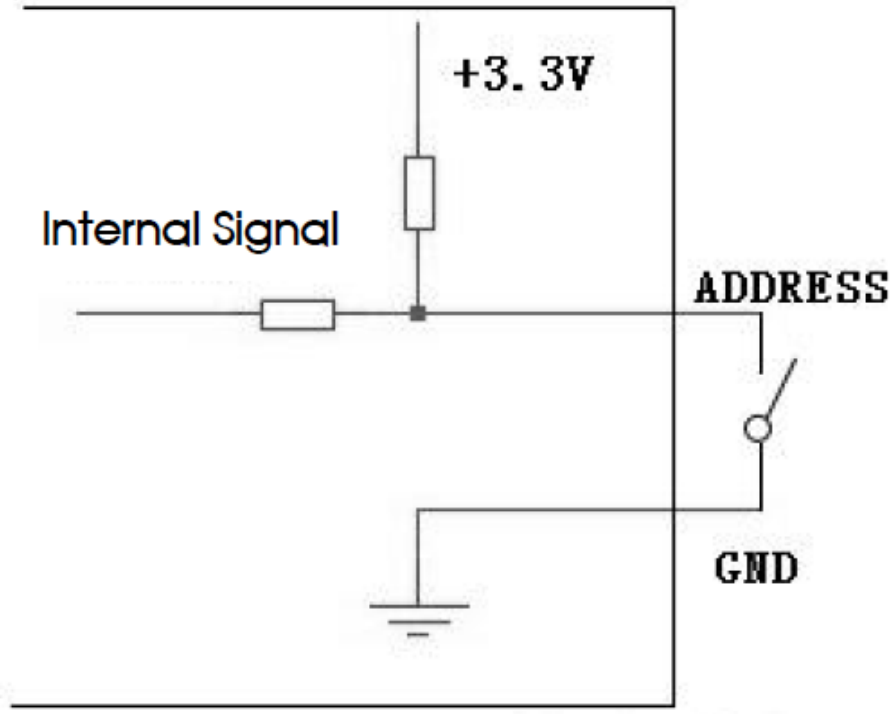
$$\text{Current sharing accuracy} = \frac{Io\max - Io\min}{Io\max} * 100\%$$

Iomax: The maximum output current value in parallel power supply modules
Iomin: The minimum output current value in parallel power supply modules

2.14 I2C Communication Address

In the parallel system, if you need to identify the power module information, you need to set the I2C communication address for each parallel power module, and exchange data with the host computer through I2C. The setting of the communication address is determined by pins 9, 10, and 11 of the signal terminal CN2. When these three pins are short-circuited with pin 7 or 14 of CN2, it will be low level (L, voltage range: 0~1.31V). When disconnected, it is high level (H, voltage range: 1.99V~3.3V). The specific address number is show in the table below:

ADDRESS 2	ADDRESS 1	ADDRESS 0	Address Number
L	L	L	0
L	L	H	1
L	H	L	2
L	H	H	3
H	L	L	4
H	L	H	5
H	H	L	6
H	H	H	7



The internal pull-up resistance value of the power module is 10kΩ, and the external impedance can be matched according to the actual application to meet the high and low voltage range.

3. Installation Requirements

3.1 Safety Introduction

Warning
Risk of electric shock
During high voltage operating

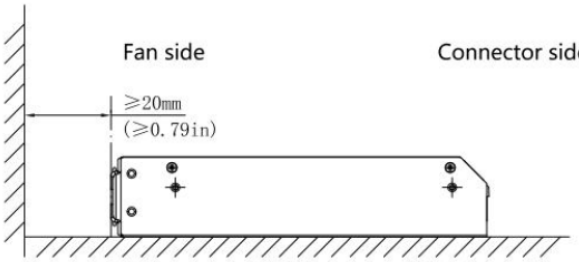
- The power supply module is disconnected from the input DC or the AC power and placed for at least one minute before starting to operate it.
- When installing the input wire to the power module, please connect the ground terminal first, and then connect the L line and the N line.
- When removing the input wire, please remove the L wire and the N wire first, and then remove the ground wire.
- When disassembling, make sure that no objects fall into the power module
- Pay attention to high temperature
- After the power module is working in a high temperature environment, wait for its shell to cool down before operating.
- This product needs to be installed by professionals and needs to be used with other equipment.

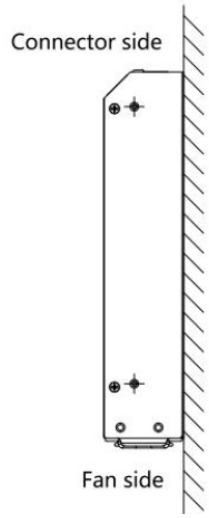
3.2 Safety Requirements

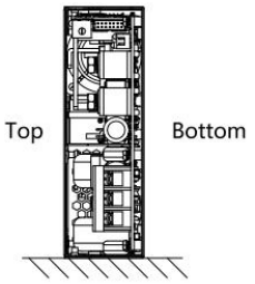
When installing, pay attention to the primary side and the protective ground, the creep distance and the electrical clearance of the primary side and the secondary side refer to EN60601-1.

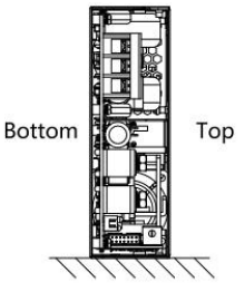
3.3 Installation Method

Standard Mounting Orientation:

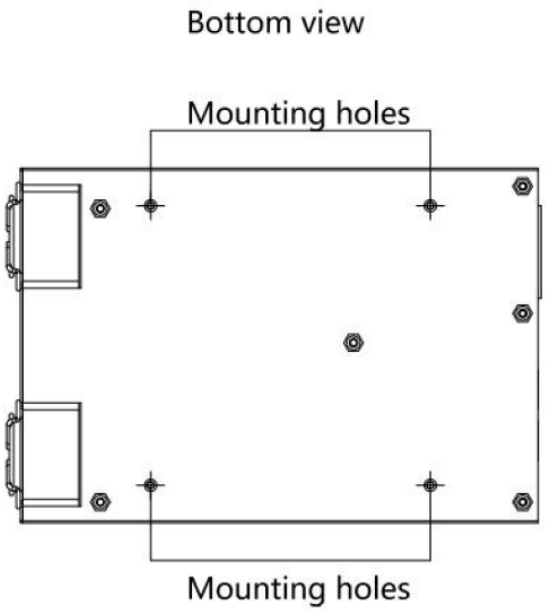


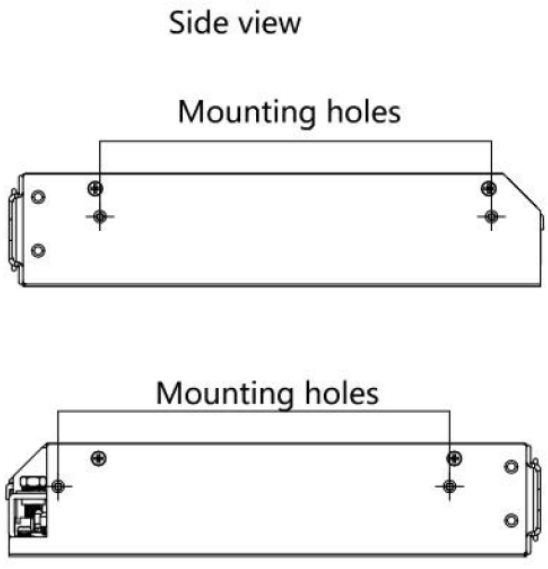






Position of Mounting Holes:





Note: The fan panel cannot be blocked by other objects and a distance of at least 20mm must be maintained, otherwise it will affect the heat dissipation and performance of the power module.

4. Communication Protocol

The PSEW1000 series power modules support standard communication protocols and manage and monitor the power modules through I2C bus.

Command Code	Command Name	Access Type	Data Bytes	Data Format	Description
0x9A	PMB_MFR_MODEL	Block Read	32	ASCII	Product Model
0x8B	PMB_READ_VOUT	Read Word	2	Direct	Main Circuit Output Voltage (10mV)
0x8C	PMB_READ_IOUT	Read Word	2	Direct	Main Output Current (10mV)
0x96	PMB_READ_POUT	Read Word	2	Direct	Main Output Power (10mV)
0xC4	PMB_MFR_AUX_VOUT	Read Word	2	Direct	Auxiliary Output Voltage (10mV)
0xC5	PMB_MFR_AUX_IOUT	Read Word	2	Direct	Auxiliary Output Current (10mV)
0xC7	PMB_MFR_FAULT_BIT	Read Word	2	Bit Field	Fault Status Word

Describe of Fault Status through PBM_MFR_FAULT_BIT

Bit Segment	Description
BIT: 0	0: Fan 1 Normal 1: Fan 1 Fault
BIT: 1	0: Fan 2 Normal 1: Fan 2 Fault
BIT: 2	0: Auxiliary Output Normal 1: Auxiliary Output Abnormal
BIT: 3	0: No Over-Voltage in Main Circuit 1: Over-Voltage in Main Circuit
BIT: 4	0: No Under-Voltage in Main Circuit 1: Under-Voltage in Main Circuit
BIT: 5	0: No Level 1 Over-Current in Main Circuit 1: Level 1 Over-Current in Main Circuit
BIT: 6	0: No Level 2 Over-Current in Main Circuit 1: Level 2 Over-Current in Main Circuit
BIT: 7	0: No Level 1 Over-Load in Main Circuit 1: Level 1 Over-Load in Main Circuit
BIT: 8	0: No Level 2 Over-Load in Main Circuit 1: Level 2 Over-Load in Main Circuit
BIT: 9	0: No Level 3 Over-Load in Main Circuit 1: Level 3 Over-Load in Main Circuit
BIT: 10	0: Normal Temperature 1: Over-Temperature and Over-Load
BIT: 11	0: No Short Circuit in Main Circuit 1: Short Circuit in Main Circuit
BIT: 12	0: No Hardware Over-Voltage in Main Circuit 1: Main Circuit Hardware Over-Voltage Fault
BIT: 13	0: No Hardware Under-Voltage in Main Circuit 1: Main Circuit Hardware Under-Voltage Fault
BIT: 14	0: Pre-Charge Normal 1: Pre-Charge Fault
BIT: 15	0: PFC Soft Start Normal 1: PFC Soft Start Fault

For more details, contact factory.

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001: 2015 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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