

**AC Switcher**






**PW032-S01**

**User manual**

**IM19H46-E**














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Symbol Definition	
	<b>WARNING:</b> Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	<b>RISK OF ELECTRICAL SHOCK:</b> Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	<b>ESD HAZARD:</b> Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	<b>ATTENTION:</b> Identifies information that requires special consideration.
	<b>TIP:</b> Identifies advice or hints for the user.

## Security& Caution Symbols

The following table lists Security& Caution symbols used on equipments.

No.	Symbol	Description
1		Direct current (DC)
2		Alternating current (AC)
3		Ground (Earth) terminal
4		Protective earth (ground) terminal
5		Reference ground (Earth) terminal
6		Frame or chassis
7		Equipotentiality
8		On (power)
9		Off (power)
10		Caution, risk of electric shock
11		Caution, hot surface
12		Caution, risk of danger
13		Electrostatic sensitive devices (ESD)

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# PW032-S01

## Section 1 Overview

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The AC switcher PW032-S01 is an intelligent switch, which is mainly applied on the front of devices applied AC power (such as operation station or switch) in control system, and judges and switches the 2-channel 110V AC powers intelligently, to guarantee the normal work for the devices required power or the load when one channel power is abnormal.

Operation steps of PW032-S01 are composed of 2 automatic conversion processes:

- If the working power is detected as quality falling and cannot satisfy requirements, convert the load from working power to backup power automatically.
- If the working power restores to normal, return the load to working power automatically.

PW032 chooses the power coming from L1 and N1 as working power preferentially.

## Section 2 Specification

**Table 2-1 Specification of PW032-S01**

Performance	Parameter	Instruction
Electric Performance	Rated Input Voltage	110V AC
	Permitted Input Voltage	$\pm 10\%$ of Rated Voltage (99V~121V)
	Input Frequency	45Hz~65Hz
	Maximum Output Current	3A
	Conversion Time	<25ms
	Insulated Voltage	500V AC (Input/Output-Shell)
	Insulated Resistance	100M $\Omega$ (Input/Output-Shell)
Physical Dimension	Device Dimension	76.3mm $\times$ 95mm $\times$ 63mm (Width $\times$ Height $\times$ Depth)
	Weight	About 500g
Environment Performance	Storage Temperature	-40 $^{\circ}$ C~+70 $^{\circ}$ C
	Working Temperature	-20 $^{\circ}$ C~+70 $^{\circ}$ C
	Storage Humidity	5%RH~95%RH, No Condensation
	Working Humidity	10%RH~90%RH, No Condensation
EMC Performance	Static Discharge Level	Industrial Level 3
	Surge Voltage Level	Industrial Level 3
	Fast Pulse Group Level	Industrial Level 3

## Section 3 Usage

### 3.1 Appearance

The appearance of PW032 is shown in Figure 3-1.

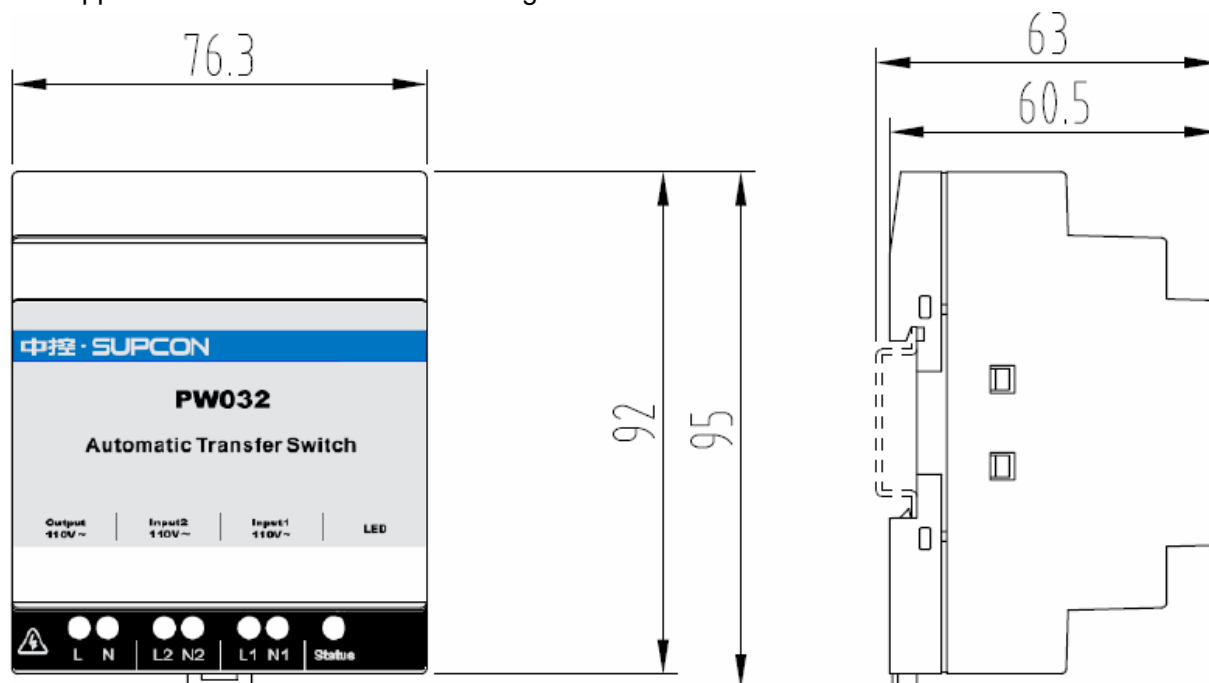


Figure 3-1 Appearance of PW032

In Figure 3-1, PW032 is composed of input terminal, output terminal and LED indicator.

### 3.2 LED Indicator

The panel of PW032 is shown in Figure 3-2.

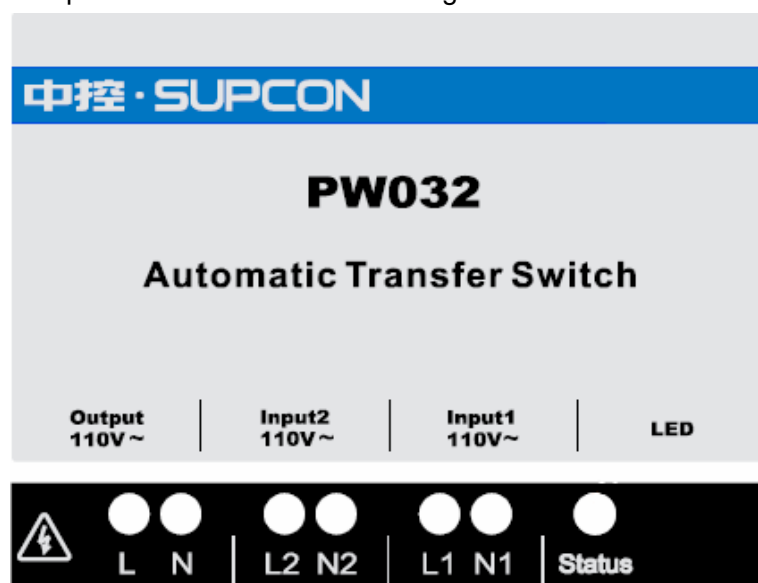


Figure 3-2 Panel of PW032

Function and status instructions of LED indicator on PW032 are shown in Table 3-1.

**Table 3-1 Instruction of LED indicator**

LED Indicator	Status	Instruction
Status	ON	Normal Work
	OFF	Redundancy fails (See 4.1 Troubleshooting)
	Flash	Module fails, and you need replace or fix it.

### 3.3 Wiring Illustrations for Terminals

Input terminals of PW032 are shown in Figure 3-2, and their instruction is shown in Table 3-2.

**Table 3-2 Instruction of input terminals**

Name/Icon	Instruction	Power
L1	Terminal 1 of AC power, which is used for connecting live wire.	Working Power
N1	Terminal 1 of AC power, which is used for connecting neutral wire.	
L2	Terminal 2 of AC power, which is used for connecting live wire.	Backup Power
N2	Terminal 2 of AC power, which is used for connecting neutral wire.	

Output terminals of PW032 are shown in Figure 3-2, and their instruction is shown in Table 3-3.

**Table 3-3 Instruction of output terminals**

Name/Icon	Instruction
L	Terminal of AC power, which is used for connecting live wire.
N	Terminal of AC power, which is used for connecting neutral wire.

### 3.4 Switch Conditions

**Table 3-4 Switch conditions**

Input Voltage of Working Power	Input Voltage of Backup Power	AC Switcher Output
>95V	Any Status	Working Power
<85V	>95V	Backup Power
Any Status	<85V	Working Power

- When the input voltage of working power  $\geq 85V$ , output the working power first.
- To avoid frequent switching for relay, it cannot be switched twice in 2s.
- If system power is failed, AC switcher will switch to the working power automatically.

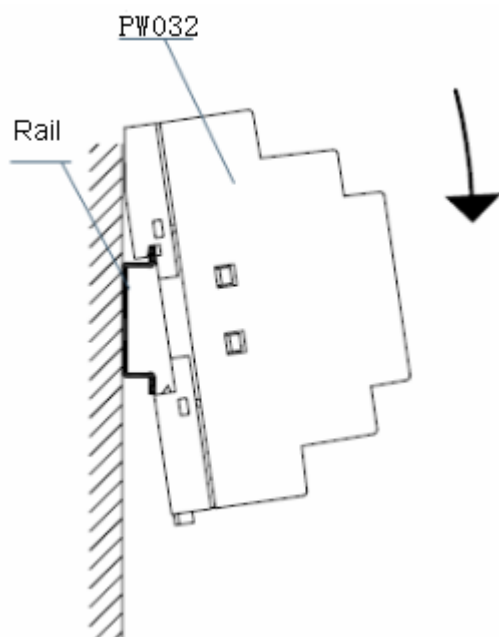
### 3.5 Installation and Uninstallation

PW032 is installed in rail, so please pay attention to the electrical safety when installing or uninstalling the module.

#### 3.5.1 Installation

The installation of PW032 to rail is shown in Figure 3-3. Plug the side without buckle on module into rail, and rotate the module to plug another side into rail to finish the installation.

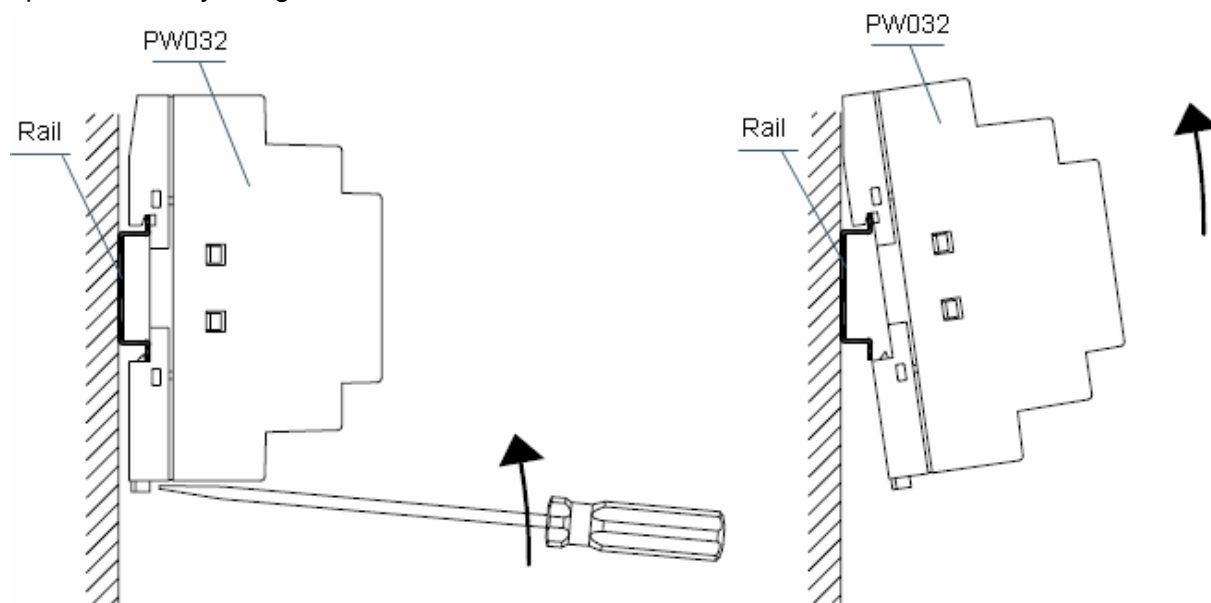




**Figure 3-3 Install PW032**

### 3.5.2 Uninstallation

The uninstalling of PW032 to rail is shown in Figure 3-4. After removing the wires on module, pry up the buckle by straight screwdriver, and rotate the module to remove it from rail.



**Figure 3-4 Uninstall PW032**

## Section 4 Troubleshooting and Notice

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### 4.1 Troubleshooting

Generally, the LED indicator Status is always ON. If it is OFF, may be caused by following reasons:

- The working power fails or its quality is poor (<85V, and frequency isn't within 47-63Hz).
- The backup power fails or its quality is poor (<85V, and frequency isn't within 47-63Hz).

If the abnormality is caused by the poor power quality, after the problem is solved, the module will restore to normal.

When Status indicator flashes, it means the inside module fails, please replace the AC switcher.

When Status indicator is always ON and without output voltage, the inside fuse may be melt due to overload, please replace AC switcher.

### 4.2 Notice

- PW032 is an AC switch. The external protection devices for over-current and short-circuit are recommended.
- PW032 is an AC switch and cannot be applied in DC occasion.
- PW032 cannot be set as parallel directly.
- PW032 is supplied by the backup power. After being powered, the switcher will be initialized in 2s. During this process, Status is OFF and no switch will be performed.

## Section 5 Revision

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*Table 5-1 Retrofit list of the version*

Document Version	Applicable Product Version	Remarks
V1.0 (20191023)	PW032-S01 V10.10.00	The first Edition.
V1.1 (20221013)	PW032-S01 V10.10.00	