# Maintenance Bypass Switch Module

# **Quick Guide**

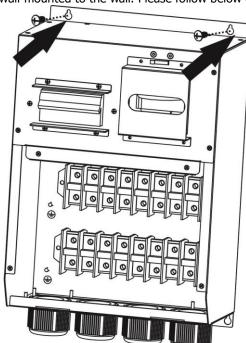
V. 1.1

#### 1. Introduction

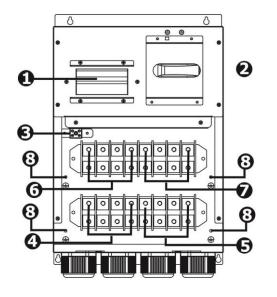
The module is used as an external maintenance bypass switch to provide continuous power without shutting down the connected loads during UPS scheduled maintenance or battery replacement. It's perfect to use in conjunction with 3-phase in/3-phase out 10K-60KVA UPS.

#### **Wall-mounting the Unit**

The module can be wall-mounted to the wall. Please follow below chart for installation.



#### 2. Product Overview



- **1** UPS input breaker
- **2** Maintenance bypass switch
- **3**Control output signal connector
- **4** UPS input terminal
- **6** Utility input terminal
- **6** Output terminal
- **7** UPS output terminal
- **3** Grounding terminal

## 3. Installation and Operation

#### Inspection

Unpack the package and check the package contents. The shipping package contains:

- Maintenance bypass switch module x 1
- Quick guide x 1
- Control signal cable x 1

**NOTE:** Before installation, please inspect the unit. Be sure that nothing inside the package is damaged during transportation. Do not turn on the unit and notify the carrier and dealer immediately if there is any damage or lacking of some parts. Please keep the original package in a safe place for future use.

### **Initial Setup**

The Installation and wiring must be performed in accordance with the local electric laws/regulations and execute the following instructions by professional personnel.

1) Make sure the mains wire and breakers in the building are enough for the rated capacity of UPS to avoid the hazards of electric shock or fire.

**NOTE:** Do not use the wall receptacle as the input power source for the UPS, as its rated current is less than the UPS's maximum input current. Otherwise, the receptacle may be burned and destroyed.

- 2) Switch off the mains switch in the building before installation.
- 3) Turn off and shut down the connected UPS.
- 4) Prepare wires based on the following table:

UPS Model	Wire Spec	UPS Model	Wire Spec	
	(AWG)		(AWG)	
3P/3P 10K/10KL(LV	12	3P/3P 40K/40KL LV	6	
5K/5KL)		20K/20KL)		
3P/3P 20K/20KL(LV	10	3P/3P 50KL( LV 25KL)	6	
10K/10KL)				
3P/3P 30K/30KL(LV	8	3P/3P 60KL( LV 30KL)	4	
15K/15KL)				

**NOTE 1:** The cable for 10K(L) should be able to withstand over 20A current. It is recommended to use 12AWG or thicker wire for safety and efficiency.

**NOTE 2:** The cable for 20K(L) should be able to withstand over 40A current. It is recommended to use 10AWG or thicker wire for safety and efficiency.

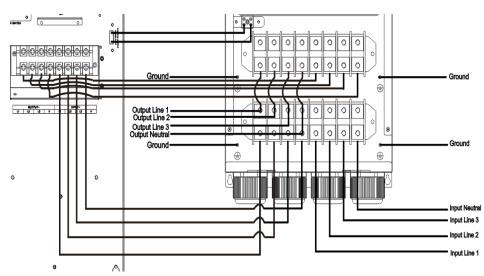
**NOTE 2:** All others are in accordance with the line diameter provided in the table.

**NOTE 3:** The selections for color of wires should be followed by the local electrical laws and regulations.

5) Remove the terminal block cover on the rear panel of the module. Then connect the wires according to the following terminal block diagrams:

#### **Connect UPS and External Maintenance Bypass Switch Module**

Remove the terminal block cover on the rear panel of the module. Then connect output terminals of UPS to output terminals of switch module. Connect utility input terminals of UPS to UPS input terminals of switch module. Connect signal slots of UPS and switch module with control signal cable attached to the package. Refer to blew chart for wiring connection:



**NOTE:** Make sure that the wires are connected tightly with the terminals. Put the terminal block cover back to the rear panel.

#### 4. Operation

#### **Transfer to Maintenance Bypass**

To transfer to maintenance bypass from UPS, follow the below steps:

Step 1: Press "OFF" button of UPS unit to transfer to bypass mode.

Step 2: Open the maintenance switch cover. If step 1 is not executed first, then UPS unit will transfer to bypass mode automatically with control output signal connection when opening the maintenance switch cover.

Step 3: Transfer rotary switch to "BPS" position and switch off UPS input breaker on the module. Then, all devices are directly powered by utility and there is no current through the UPS. The output and input of UPS are isolated from the system. You may now service or maintain the UPS by shutting down the batteries of UPS.

#### **Transfer to UPS Protection**

After maintenance service is done, follow below steps to transfer back to UPS operation.

Step 1: Switch on the input breaker of the module and reconnect UPS battery input breaker. Then UPS will enter to bypass mode.

Step 2: Transfer rotary switch to "UPS" position. Then, all devices are powered by utility through UPS bypass mode.

Step 3: Close back maintenance switch cover and press "ON" button of UPS unit. Then, all devices are protected by the UPS.

**NOTE:** If maintenance will be executed in another place, before removing the UPS and the module, please follow steps of "Transfer to Maintenance Bypass" and then disconnect all wires between UPS and the module for complete isolation.

5. Specification of Critical Components

UPS Power R	Rating	10K/ LV 5K	15K/ 20K/ LV 7.5K/ 10K	30K /LV 15K	40K/ LV 20K	50K/ LV 25K	60K/ LV 30K
Parameter		Max.	Max.	Max.	Max.	Max.	Max.
Input breaker (each pole)	Current	25 A	40A	80 A	100 A	125 A	125 A
	Voltage	400 V/	400 V/	400 V/	400 V/	400 V/	400 V/
		LV 208V	LV 208V	LV 208V	LV 208V	LV 208V	LV 208V
Bypass switch	Current	25 A	40 A	80 A	100 A	125 A	125 A
	Voltage	400 V/	400 V/	400 V/	400 V /	400 V /	400 V/
		LV 208V	LV 208V	LV 208V	LV208V	LV 208V	LV 208V
Input/Output	Current	32 A	40 A	63 A	80 A	125 A	125 A
terminal	Voltage	400 V/	400 V/	400 V/	400 V/	400 V/	400 V/
		LV 208V	LV 208V	LV 208V	LV 208V	LV 208V	LV 208V