DC UPS

User Manual

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1. Introduction

1.1 General Introduction

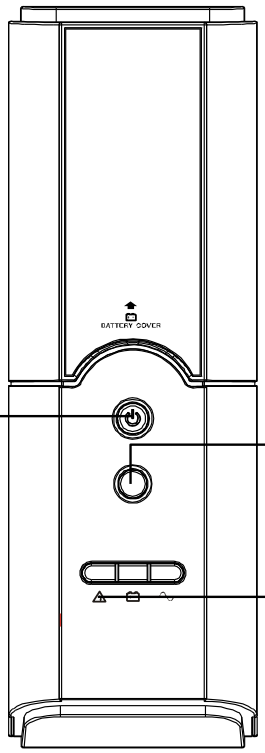
DC UPS is the innovative power protection solution for delicate network devices and telecom equipments. It equips with 12V/30Watts power capacity and internal long 7 amp-hour backup battery. With universal input voltage design, this UPS can be widely applied to the majority power system without AC input voltage transfer. The advantages of DC output are saving the cost and space of the additional power adapter connection. This feature further prevents the power loss while transferring between DC to AC. The thoughtful wall-mount design allows you to install DC UPS to diverse environments for maximizing your precious space. DC UPS can be applied to any other device equipped with a compatible DC input connector.

Features

- Universal input range (80-260VAC) for global applications
- 12VDC (30W max.) output meets the major standard of network devices
- Integrated hot-swappable to easy replacement battery allows battery replacement without power interruption.
- Microprocessor controlled for optimized operation and maximum reliability
- Audible warning alarm with mute switch
- Outputs for remote monitoring; On Battery, Replace Battery, Battery missing and
- Low battery alert
- Wall mountable design for maximized flexibility
- Multiple LED for AC power and battery status indications
- Cold Start function capable

1.2 Panel Introduction

- The front view

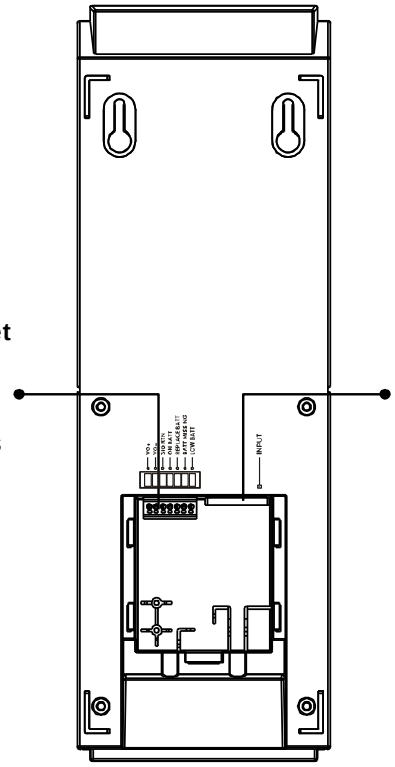


Power on/off
Use power on/off switch to turn the DC UPS on/off. The unit will not supply power to the network devices when power switch is in OFF (Not push down)position.

Mute on/off
Use this switch to turn the mute function on/off. The audible alarms will be silenced when mute switch is in ON (Push down) position.

Status Indicators
There are three LED status lights: red, yellow and green which are from left to right. The status lights indicate specific conditions of the DC UPS. (See page X

- The rear view



DC output socket
The DC output includes 12VDC power, four dry contact signals and common return point for these signals. Please find the defines and wire connections for DC output socket as below table.

AC input socket
The AC input socket is IEC320 C14.

1.3 The 7 Pin Terminal Connecters Introduction Table

Terminal Connectors	Function	Suggested Wire Gauge
VO+	Positive(+) Voltage output	At least #18AWG
VO-	Negative(-) Voltage output	At least #18AWG
SIG RTN	Signal return	At least #26AWG
ON BATT	Low when operation from utility line. Open when operating from battery.	At least #26AWG
REPLACE BATT	Low when battery is charged. Open when battery fails the self-test.	At least #26AWG
BATT MISSING	Low when battery is present. Open when battery is missing.	At least #26AWG
LOW BATT	Low when battery is near full charge capacity. Open when operating from a battery with < 20% capacity.	At least #26AWG

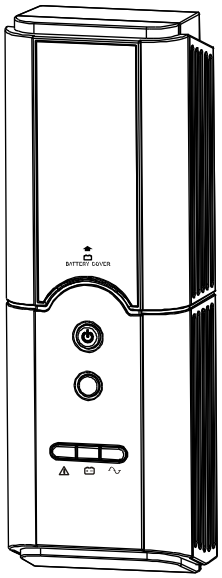
2. Safety Information

- Internal battery voltage is 12V DC.
- Incorrect battery connection or replacement creates risk of explosion. Use only vender approved replacement batteries.
- The DC UPS is intended for installation and operation in a controlled environment (temperature controlled, indoor area free of conductive contaminants). Refer to specifications in this manual.
- No user-serviceable parts exist inside the unit. Refer repair issues only to qualified personnel. Fuses or other parts must be replaced ONLY with parts of identical types and ratings. Substitution of non-identical parts can cause fire and other safety hazards.
- All batteries used are sealed lead batteries. Batteries should be recycled.
- The battery charges when it is connected to the AC power. The battery will fully charge during the first eight hours of normal operation. Do not expect full battery run capability during this initial charge period.
- Connect the DC UPS to utility power for completely charging the internal battery before starting the UPS.

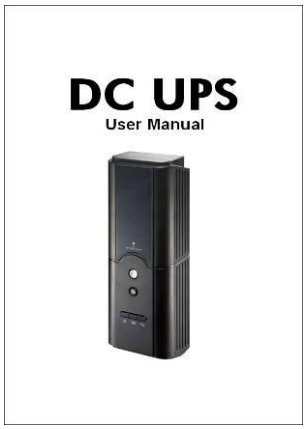
3. Package Contents

The DC UPS package includes the following items. Please inspect if there are any missing parts.

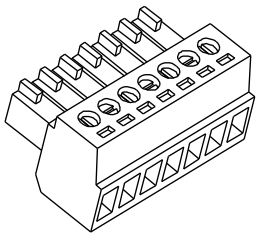
1 x DC UPS Unit with 12V internal battery preinstalled



1 x User Manual



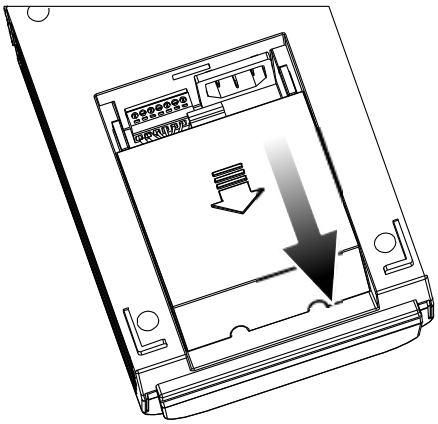
1 x 7-position connector



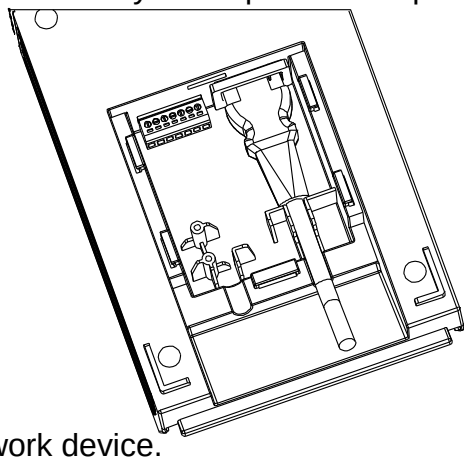
4. Installation

4.1 Wire Connection

1. Remove the wire connection cover in the rear of the DC UPS. Keep the cover will and reinstall the cover after all the wires are well-connected.



2. Plug IEC-LOCAL power cord into the AC input socket on the back of DC UPS. Do not connect the AC power cord to utility outlet prior to this process.

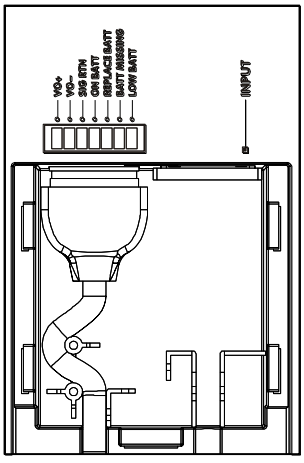


3. Connect DC UPS to network device.

   3.1 If the telemetry cable is enclosed:

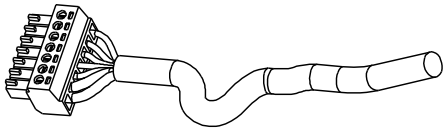
   (1) Plug the telemetry cable into the 7-position connector

   (2) Then place the cable between the two sticks for fixing the cable as the following picture



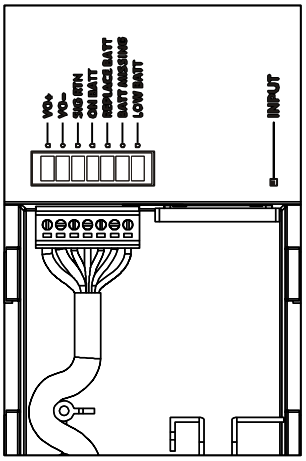
3.2 If the telemetry cable is not enclosed:

(1) Cut and strip the self-prepared cable leads, and then attach the leads to the 7-position connector. Make sure that the correct wire gauges are used for the safety (Please refer to “1.3 The 7 Pin Terminal Connecter Intro Table”)

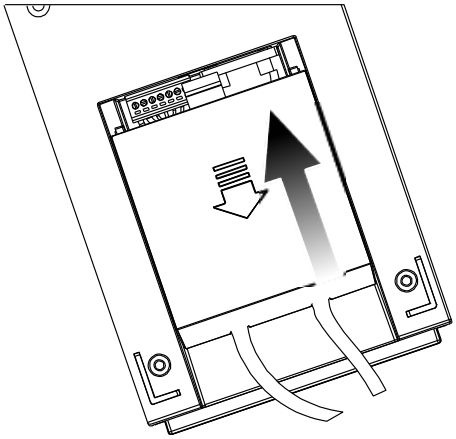


(2) Plug the 7-conductor cable into the outlet of the DC UPS

(3)Then place the cable between the two sticks for fixing the cable as the following picture



4. Close the wire connection cover



5. Connect the other end of the cable to the equipment

4.2 Wall-Mounting Instructions (Optional)

NOTE: Required hardware not included. Refer to the wall-mount instructions for required tools and materials.

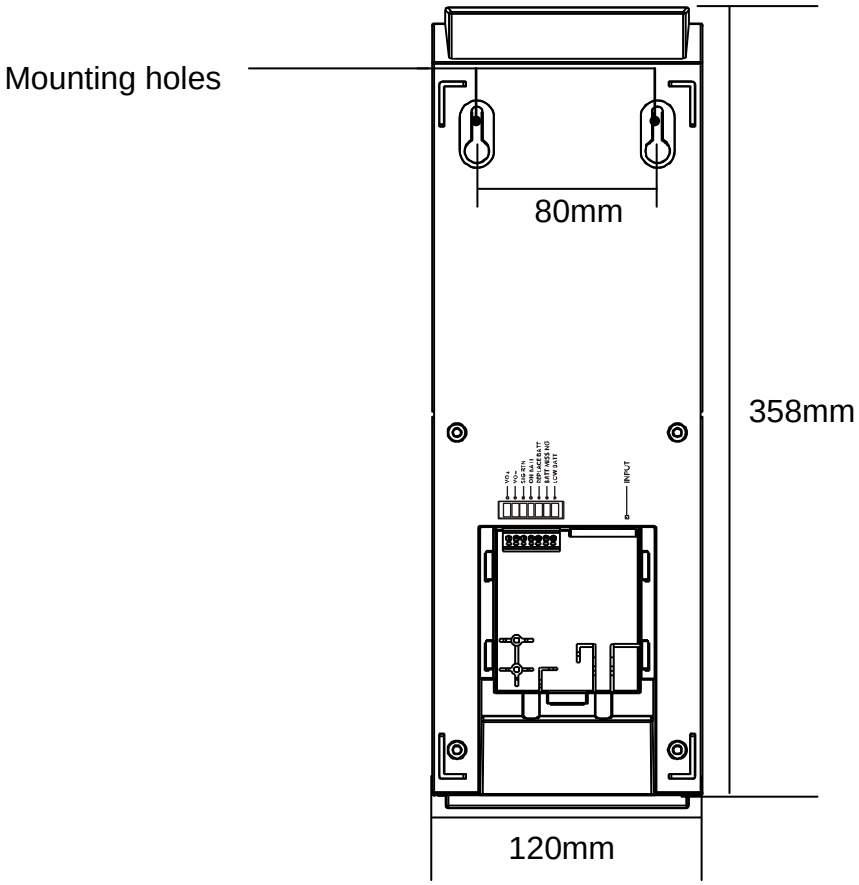
STEP 1: Make a mark on the wall in the 2 screw locations. The distance between the centers of the 2 screws are 80cm.

STEP 2: Use a drill to drill holes where you made the mark on the wall. If you drill into a wall stud, proceed to Step 5. If not, go to Step 4.

STEP 3: Insert anchor(s) into the hole(s).

STEP 4: Screw in the screw, leaving it protruding 1⁄4 inch from the wall.

STEP 5: Mount the DC UPS on the screw heads. Mounting holes



5. Operation

After the installation, you can start to operate the DC UPS and let your device running under uninterruptible power supply environment as the following procedure.

STEP 1: Plug the AC input power cord of the DC UPS into the wall outlet (The utility power outlet)
STEP 2: Push the power on/off switch and you may hear a long beep buzzer alarm for knowing the unit is properly turned on. You may turn the audible alarm off by pushing the mute switch button to ON (Push down) position.

Self-test
Use the self-test to verify both the operation of the DC UPS and the condition of the battery. Turn the mute switch ON then OFF, then ON and OFF again within five seconds. During the Self-test, the DC UPS operates in backup mode.
The DC UPS automatically conducts a Self-test in two conditions. 1) Operate it and then the MCU detects battery voltage is higher than 13V. 2) Every 21 days while operating all the time.

Note: During the self-test, the DC UPS briefly operates on battery-backup power. The green LED will flash for five minutes during the test period. If the DC UPS passes the Self-test, it returns to online operation. If the DC UPS fails the Self-test, it immediately returns to online operation and lights the red LED. The loads are not affected. Recharge the battery overnight and perform the self-test again. If the red LED is still on, the battery needs to be replaced.

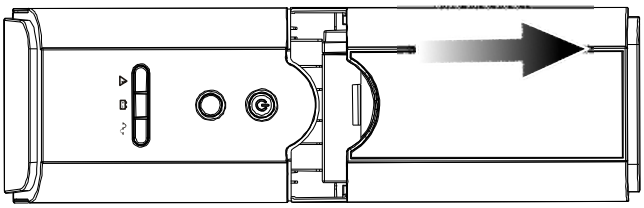
6. Available & Visual Alarms

Front-Panel Label	Visual Indicator	Audible Alarm	Description
ON A/C	Green LED lights	None	The DC UPS is operating on A/C
Testing Battery	Green LED flashes	None	The DC UPS is conducting a self-test. This automatic procedure is normal and will occur when the unit is switched on, and periodically thereafter. This procedure will last approximately 5 minutes.
ON Battery	Yellow LED lights	Tone every 5 seconds	The DC UPS is operating on battery power. The alarm will stop when main power is returned.
Low Battery	Yellow LED flashes	one every 1 seconds	The battery energy is running low. This alarm will continue until the unit performs a forced shutdown when the battery is depleted.
Replace Battery	Red LED flashes	one every 2 seconds	This alarm warns that the battery has reached the end of its useful life. The user must replace the battery as soon as possible to ensure proper operation of the DC UPS.
Fault	Red LED lights	Continuous tone	A fault has occurred. Disconnect equipment from the DC UPS prior to checking equipment.
NOTE: Audible alarm will not sound when mute switch I in ON position.			

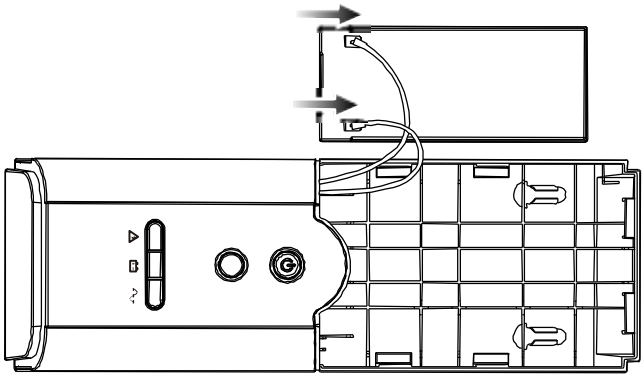
7. Battery Replacement Procedure

The DC UPS is designed with an easy-access battery cover.

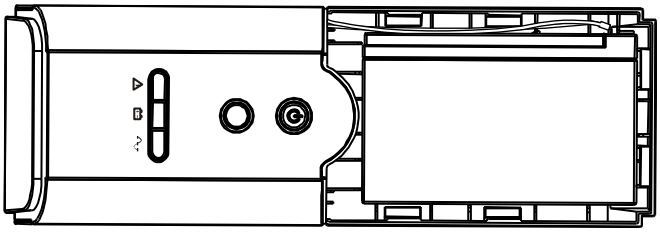
STEP 1 Turn off power switch. Disconnect the DC UPS from power and any connected devices. Remove the battery door on the front of the DC UPS by pulling up the battery door.



STEP 2 Remove the battery from enclosure; remove the wire connections from the battery.



STEP 3 Connect the new battery (black-to-black, red-to-red); place the battery into the enclosure, and then put the wires next by the battery inside of the closure as shown bellow.



WARNING: Connect the correct color wires carefully to the corresponding terminals. The battery has two color-coded terminals (red = +, black = -) as well as the two colors of the wires. Misconnect the two wires to wrong terminals might cause battery explosion.

8. Specifications

Model Name		DC UPS
INPUT	Nominal input voltage	230Vac
	Acceptable Input Voltage	80~260Vac
	Acceptable Input frequency	45Hz~65Hz
OUTPUT	Output power (max)	30W
	Normal Voltage	12Vdc
	Output Voltage Range	10.5V~13.8V
	Line Mode Efficiency	> 80%
BATTERY	Type/Rating	12V/7Ah x 1pc
	Discharge Prevention	10.5V ± 0.5V
	Backup Time (With 1A Discharging)	Typical 340mins
	Rated Charging Voltage	13.7V ± 0.25V
	Recharge Time (internal	4 hours to 90% without load after
	Charge Current	2.5A Maximum
	Hot Swappable Battery	Yes
INDICATOR	AC mode	Green LED Lighting
	Backup mode	Yellow LED Lighting
	Battery low	Yellow LED Flashing
	Battery replace	Red LED Flashing
	Battery missing	Red LED Lighting
	Fault	Red LED Lighting
	Battery self-test	Green LED flashing
AUDIBLE ALARM	Backup mode	Sounding every 5 seconds
	Battery low	Sounding every 1 second
	Battery replace	Sounding every 2 seconds
	Battery missing	Continuous sounding
	Fault	Continuous sounding
MUTE FUNCTION	Switch on	Buzzer disable
	Switch off	Buzzer enable
OPERATING ENVIRONMENT	Operating temperature	0℃ to 40℃
	Operating humidity	0% to 90%
	Operating Elevation	0 to 3000m
PHYSICAL	Weight	3.5 kgs
	Dimension (W x H x D)	120mm(W) x 358mm(H) x 86.5mm(D)
INPUT TYPE	IEC inlet	
OUTPUT TYPE	7pin terminal (2 pins for DC output, 5 pins for dry contact signal output)	