SOLA HD

Uninterruptible Power Systems

SDU DC Series

Instruction Manual

While every precaution has been taken to ensure accuracy and completeness in this manual, SolaHD assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

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1.0 Important Safety Instructions

This manual contains important safety instructions that should be followed during the installation of the Uninterruptible Power System (UPS). Please read all safety, installation, and operating instructions before attempting to install or operate the UPS. Please adhere to all warnings on the unit and in this manual during installation and operation.

The UPS is designed for Industrial or Commercial use and can be installed and operated by individuals without previous training.

1.1 Safety Precautions—Warnings

- To prevent the risk of fire or electric shock, install the UPS in a temperature and humidity controlled ventilated enclosure, free of conductive contaminants, moisture, flammable liquids, gases, and corrosive substances.

- Operate the UPS only from a properly grounded (earthed) dc supply.
- To reduce the risk of electric shock, do not remove the cover. For service, contact a qualified technician.
- The UPS contains its own energy source (batteries). The output terminals may carry live voltage, even when the UPS is not connected to a dc source.

Although your UPS has been designed and manufactured to assure personal safety, improper use can result in electrical shock or fire. To ensure safety, please observe the following rules:

- Turn OFF the UPS and disconnect the dc supply before cleaning. Do not use liquid or aerosol cleaners. A dry cloth is recommended to remove dust from the surface of your UPS.
- Do not install or operate the UPS in or near water.
- Do not place the UPS on an unstable cart, stand, or table.
- Do not place the UPS under direct sunlight or close to heat-emitting sources.
- To allow proper ventilation of the UPS, do not block or cover the top and bottom sides of the unit.
- Never block or insert any objects into the ventilation holes or other openings of the UPS. Keep all vents free of dust accumulation that could restrict airflow.

- Follow all warnings and instructions marked on the UPS. Do not attempt to service the UPS, as it has no user-serviceable parts inside. Refer all repairs to a qualified technician.
- Do not dispose of batteries in a fire; they may explode.
- Do not open or damage the batteries. Released electrolyte is harmful to the skin and eyes and may be toxic.

If your UPS demonstrates any of the following conditions, turn OFF the UPS, disconnect the dc supply and contact your SolaHD representative or SolaHD Technical Support at 1-800-377-4384.

- Liquid has been spilled on the UPS.
- The UPS does not operate in accordance with the instruction manual.

1.2 Conditions of Use

Your UPS provides conditioned power to connected equipment. The maximum load must not exceed that shown on UPS rating label. If uncertain, contact your SolaHD representative or SolaHD Technical Support at 1-800-377-4384.

2.0 Warnings Defined

Danger: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

Warning: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

Caution: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

3.0 Introduction

Congratulations on your choice of the SDU DC Uninterruptible Power System (UPS). The SDU DC UPS is an advanced 24 V dc Uninterruptible Power System that combines an industry leading design with a wide operational temperature range and unique installation options.

The SDU DC UPS is a powerful microprocessor-controlled UPS which provides protection from power interruptions. With an input voltage range of 22.5 to 30 V dc, the SDU DC UPS is the ideal power backup solution for your critical connected loads.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in an industrial installation. This equipment uses, generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the UPS and the receiver.
- Connect the UPS into a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

4.0 What's Included

- SDU 10-24 or SDU 20-24
- Instruction manual

5.0 Battery Options

Two battery modules* are available:

- **SDU 24-BAT:** 24 V DIN rail/panel mount battery module (cable included)

  NOTE: Up to 4 SDU 24-BAT battery modules can be connected to the UPS
- **SDU 24-BATEM:** 24 V external mount battery module (cable included)

  NOTE: Only 1 SDU 24-BATEM can be connected to the UPS

A combination of both modules ***cannot be used with the UPS*

6.0 Optional Accessories

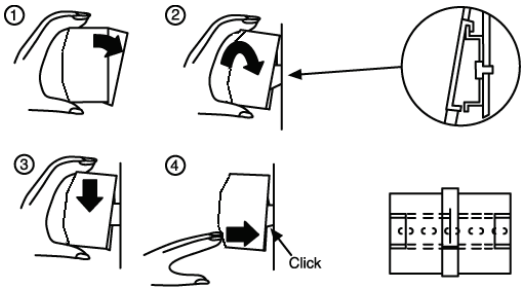
- **SDU 24EXTBC6:** 6 ft. battery module cable
- **SDU 24-DB9:** Interface kit to convert relay contact signals to DB9 signals
- **SDU-PMBRK:** Chassis mounting brackets to secure the UPS to the wall, back of the panel, or enclosure

7.0 Installation Instructions

7.1 Placement

Install the power module and battery module in a protected area with adequate airflow and free of excessive dust. Do not operate the UPS outdoors.

7.2 DIN Rail Mounting



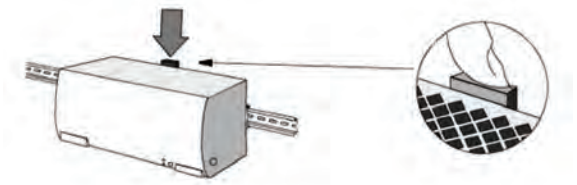
1. Tilt the unit as illustrated above.

2. Put the unit onto the DIN rail.

3. Push the unit downward until it stops.

4. Push at the lower front edge to lock. Gently shake the unit to ensure that the retainer has locked.

7.2.1 Removing the Unit from the DIN Rail



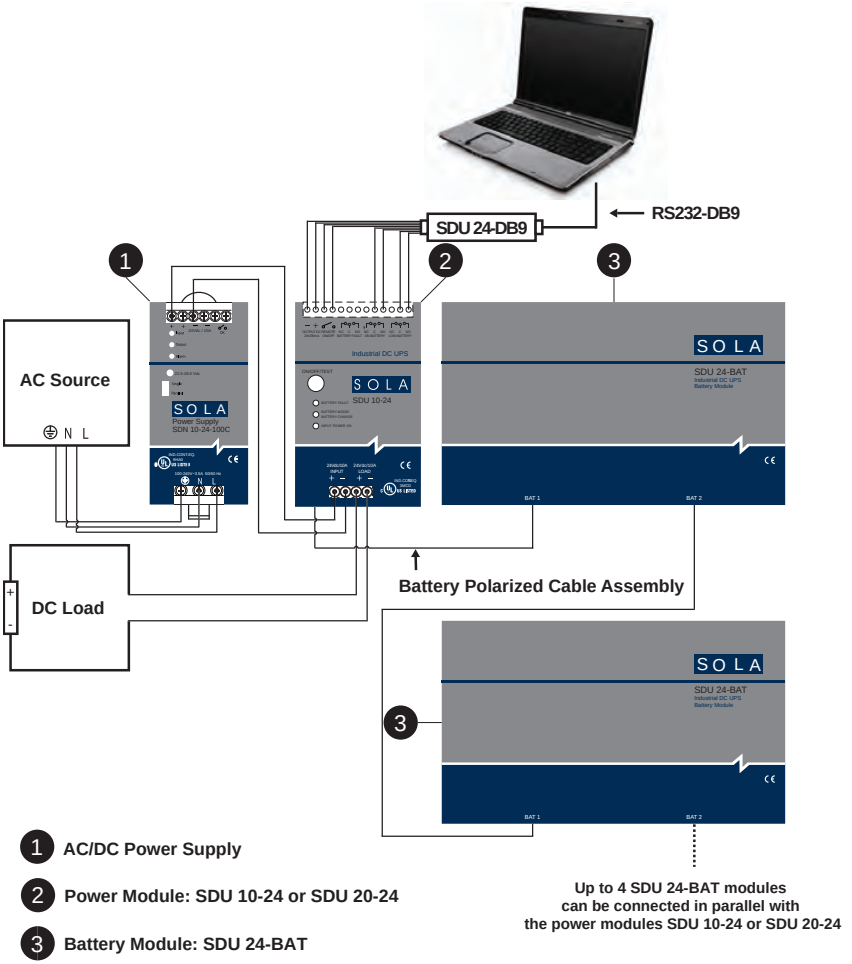
1. Push the button and swing the bottom up and out.

7.3 Chassis Mounting

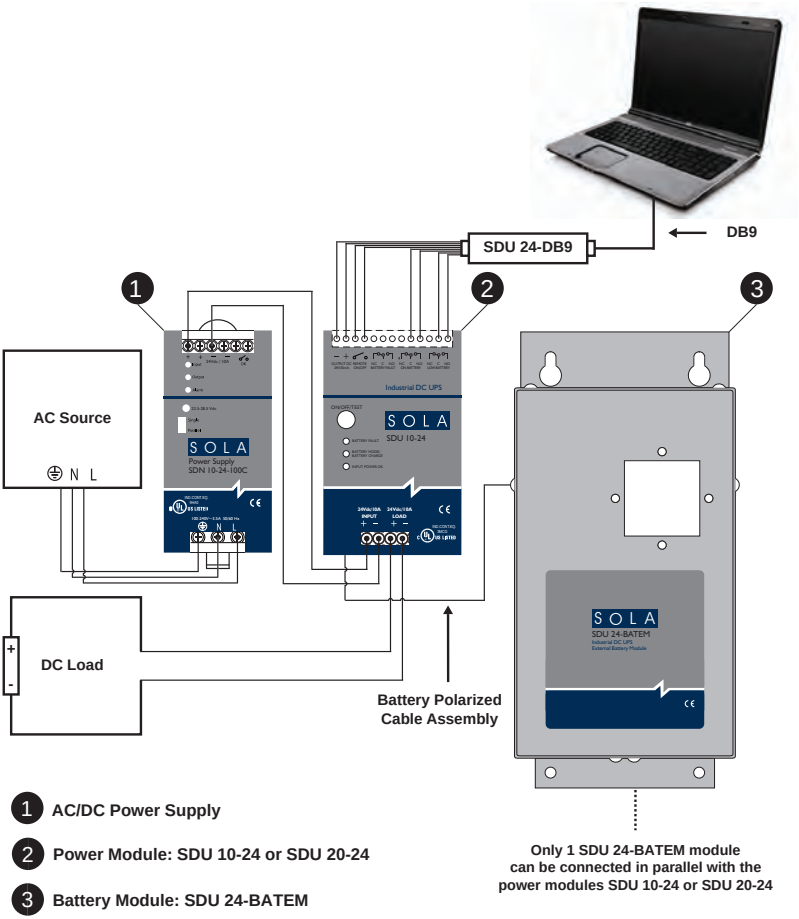
Use the optional chassis mounting brackets (SDU-PMBRK). Please refer to the installation instructions supplied with the chassis mounting brackets.

NOTE: If you will be shipping the UPS already mounted, we recommend using the chassis mounting brackets (SDU-PMBRK) to secure the UPS.

7.4 SDU DC UPS with SDU 24-BAT Wiring Diagram



7.5 SDU DC UPS with SDU 24-BATEM Wiring Diagram



7.6 Connections

1. Use the polarized cable to connect the power module to the battery module.

2. Connect the power module dc input connector to the 24 V dc input power source.

3. Hardwire the load to the power module output terminal connector.

7.7 Charge the Battery

The UPS charges the battery whenever it is connected to 24 V dc input power. For best results, charge the battery for 4 hours during initial use.

7.8 Turn “ON” the UPS (Normal Mode)

To start the UPS, press and hold the ON/OFF/TEST button until a short “beep” is heard. (This should take less than 3 seconds.) Immediately release the ON/OFF/TEST button; the UPS is now “ON” and the green LED is continuously lit.

Depressing the ON/OFF/TEST button for 5 seconds will turn the UPS OFF.

7.9 Turn “ON” the UPS (Green Mode)

With the UPS OFF, depress the ON/OFF/TEST button until 2 short “beeps” are heard. (This should take about 4 seconds.) Release the ON/OFF/TEST button; the UPS is now “ON” with the Green Mode enabled. The green LED will now double flash for a period of 5 seconds and then remain solid green for 55 seconds. This pattern will be repeated every minute.

To deactivate the Green Mode, the UPS must be turned OFF using the ON/OFF/TEST button and restarted using the Normal Mode sequence (See 7.8).

7.9.1 About the Green Mode

The Green Mode is an energy saving feature that prevents the UPS battery from being deeply discharged in the case of an extended power outage.

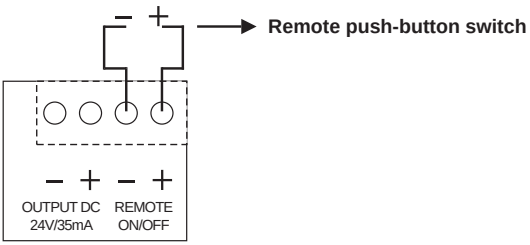
If during a power outage the UPS detects a battery load power of less than 15 watts, the UPS will shut down after 3 minutes of low power operation. The UPS will then beep every 30 seconds indicating that it is now in the power saving mode. When power is restored to the system, the UPS will automatically restart in the Green Mode.

Note that if the power outage lasts longer than 72 hours the UPS will completely turn OFF and will have to be manually restarted in the selected “ON” Mode using the ON/OFF/TEST button.

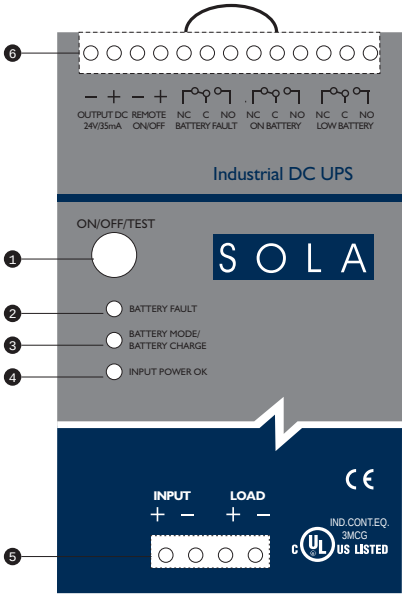
7.10 Remote ON/OFF

To activate the Remote ON/OFF function, connect a remote push-button switch to the ON/OFF terminal as shown below.

The Remote ON/OFF switch provides the same functions as the front panel switch, including the ON/OFF/TEST functions with the Green Mode enabled or disabled. If the Green Mode is not needed, a remote toggle switch can be used.



8.0 Operating Instructions



1. **ON/OFF/TEST:** This button controls output power to the connected load(s) and has 4 functions:

   (1) ON: When the UPS is OFF, press and release the ON/OFF/TEST button to start the UPS (an audible alarm sounds briefly). The UPS is capable of starting on battery (cold start).

   (2) OFF: When the UPS is ON (in either Normal or Battery Mode), press the ON/OFF/Test button for 5 seconds to shut down the output dc power (an audible alarm sounds briefly).

   (3) TEST: In the Normal Mode, press the ON/OFF/TEST button for 1 second to initiate the self-test function. When the unit passes the test, it will return to Normal Mode.

   NOTE: The self-test function is disabled when the BATTERY FAULT LED is illuminated.

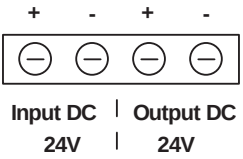
   (4) Alarm Silence: When an alarm is activated, press and release the ON/OFF/TEST button to silence it (whether input dc power is present or not). Once the alarm is silenced, all active alarms, except for low battery, overload, or over-temperature, will remain silenced until a new alarm condition is detected.

2. **BATTERY FAULT (Red LED):** The red LED illuminates when the UPS is experiencing an overload condition. The LED flashes when the battery is no longer useful or not connected.

3. **BATTERY MODE/BATTERY CHARGE (Amber LED):** The amber LED illuminates when the UPS is supplying battery power to the loads. The LED flashes when the battery is charging.

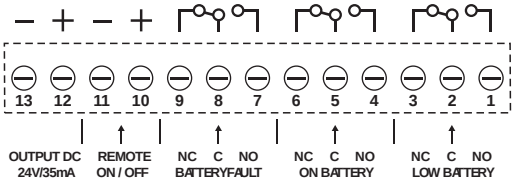
4. **INPUT POWER OK (Green LED):** The green LED will illuminate when the dc input power is normal.

5. **Dc Input/Output Screw Terminal Connections:** IP20 rated input and output screw terminals; acceptable wiring: 16–12 AWG, copper conductor, 90°C.

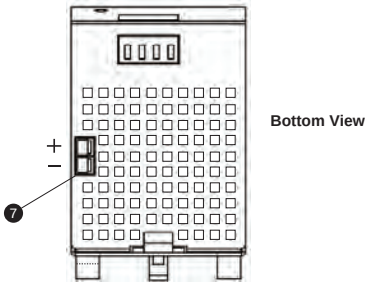


NOTE: The maximum length of the connection between the power module and battery is 6 ft. (1.85 m).

6. **Dry Contact Relay Terminals:** The power module incorporates dry relay contacts for remote signaling of the battery status, terminal connection for remote ON/OFF, and output dc 24 V/35 mA for powering the auxiliary circuit. Acceptable wiring: 16–12 AWG, copper conductor, 90°C.



7. **Polarized Terminal Connections for the Battery (+ red color; - black color):** Composed of two PP 15/45 Anderson contacts and two PP 15/45 Anderson powerpole housings to ensure a keyed connection between the power module and the battery module.



9.0 Alarms

9.1 ON Battery (Slow Beeping)

When in ON Battery Mode, the amber LED illuminates and a slow beep occurs. The alarm is silenced when the UPS returns to Normal Mode.

9.2 Low Battery (Rapid Beeping)

When in Backup Mode, if the battery capacity reaches 20%–30%, the UPS will beep rapidly until it shuts down from battery depletion. When dc input power is restored, the UPS will return to Normal Mode.

NOTE: The alarm will sound every 30 seconds when the battery capacity is low.

9.3 Overload (Continuous Beeping)

When the UPS is subjected to an overload condition, the UPS will continuously beep, the red LED will illuminate, and the UPS will automatically shut down. Restart the UPS by pressing the ON/OFF/TEST button. Reduce the load to eliminate the overload condition.

9.4 Alarm & LED Status Table

Status	Green LED	Amber LED	Red LED	Alarm
Normal Mode	ON	OFF	OFF	OFF
Green Mode	Flash for 5 s Solid for 55 s	OFF	OFF	OFF
Backup Mode	OFF	ON	OFF	ON for 1 s OFF for 2 s
Battery Fault (Normal Mode)	ON	OFF	ON for 1 s OFF for 2 s	OFF
Battery Charging (Normal Mode)	ON	ON for 1 s OFF for 2 s	OFF	OFF
Battery Charging (Power Off)	OFF	ON for 1 s OFF for 2 s	OFF	OFF
Battery Low (Backup Mode)	OFF	ON	OFF	ON for 0.3 s OFF for 0.3 s
Overload	ON (Normal Mode)	ON (Backup Mode)	ON	ON

10.0 Replacing the Battery

10.1 SDU 24-BAT Replacement Batteries

The following battery types can be used as a replacement:

Manufacturer	Type	Rating
CSB	HR1221W	12 V dc, 5.0 Ah
	HR1221WF2	
B & B Battery (USA) Inc.	BP 5-12	
	HR 5.5-12	
Kung Long Batteries Industrial Co. Ltd.	WP1221W	
	WP5-12	
Taiwan Yuasa Battery Co. Ltd.	NP5-12 FR	
	NPH5-12	
Japan Storage Battery	PE12V5	
Toplite	NP5-12	

10.2 SDU 24-BATEM Replacement Batteries

The following battery types can be used as a replacement:

Manufacturer	Type	Rating
CSB	GP1272	12 V dc, 7.2 Ah
	GP1272F2	
	EVX1272F2	
Taiwan Yuasa Battery Co. Ltd.	NP7-12	
Kung Long Batteries Industrial Co. Ltd.	WP7.2-12	
	WP1234W	
First Power	FP1272	
Japan Storage Battery	PXL12072	
Toplite	NP7.2-12	
Shimastu Electronic	NP7.2-12	

10.3 SDU 24-BAT Battery Replacement Instructions

⚠ CAUTION

When removing and installing new batteries, extreme care must be used not to short the metal chassis parts across the battery terminals and not to short the batteries to each other; personal injury may result.

⚠ CAUTION

Caution should be exercised when replacing the batteries, as the load is unprotected from disturbances and power outages during this procedure.

⚠ CAUTION

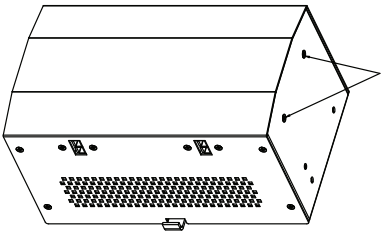
The battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries:

- **Remove watches, rings, and other metal objects.**
- **Use tools with insulated handles.**
- **Do not lay tools or other metal objects on top of the batteries.**
- **If the battery replacement kit is damaged in any way or shows signs of leakage, contact your SolaHD representative immediately.**
- **Do not dispose of batteries in a fire; they may explode.**
- **Dispose of old batteries according to local codes.**

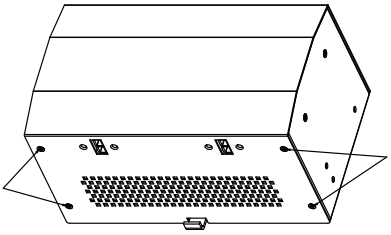
⚠ CAUTION

Electrical safety precautions must be followed when installing or servicing this equipment. To prevent risk of electrical shock, turn off and lock out all power sources to the unit before making electrical connections or servicing.

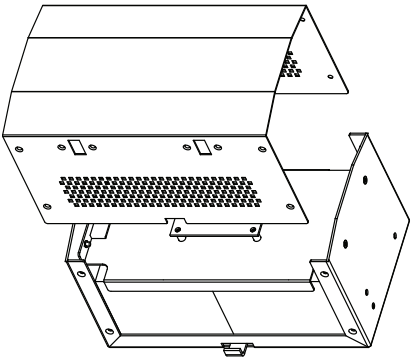
1. Remove four screws from the right and left sides of the enclosure.



2. Remove eight screws from the top and bottom sides of the enclosure.



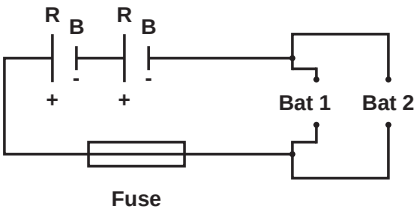
3. Carefully slide the front cover forward and off the enclosure. Do not disconnect the wires from the polarized terminals.



4. Remove the wires from the battery posts.

5. Remove the failed battery/batteries. Insert the new battery/batteries.

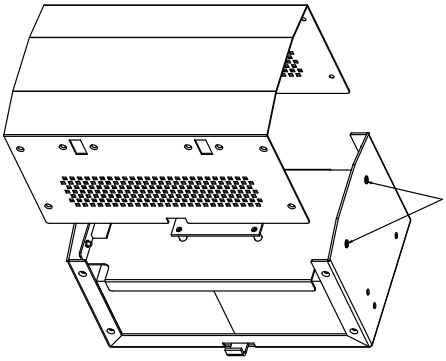
6. Use the following connection diagram to ensure a proper connection to the fuse protection board and polarized terminals.



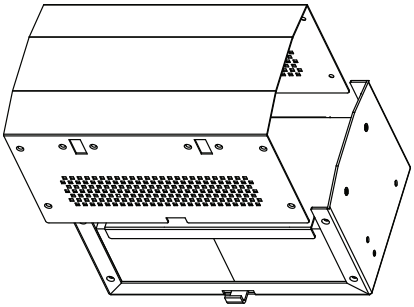
Bat 1 = Polarized terminal 1
Bat 2 = Polarized terminal 2
R = Red terminal
B = Black terminal

7. Slide the battery/batteries into their respective positions.

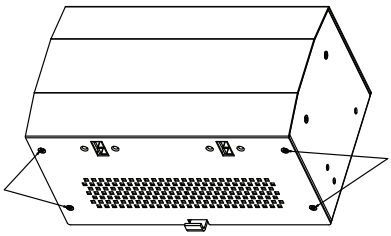
8. Using four screws, secure the protection fuse board.



9. Slide the front cover onto the enclosure.



10. Secure the assembly with eight screws.



10.4 SDU 24-BATEM Battery Replacement Instructions

⚠ CAUTION

When removing and installing new batteries, extreme care must be used not to short the metal chassis parts across the battery terminals and not to short the batteries to each other; personal injury may result.

⚠ CAUTION

Caution should be exercised when replacing the battery, as the load is unprotected from disturbances and power outages during this procedure.

⚠ CAUTION

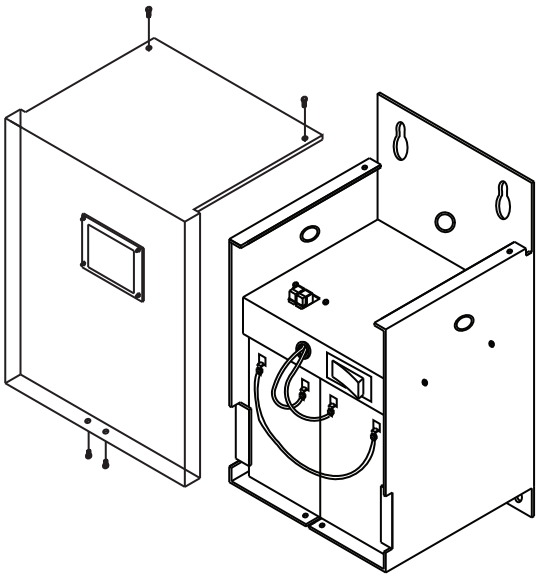
The battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries:

- **Remove watches, rings, and other metal objects.**
- **Use tools with insulated handles.**
- **Do not lay tools or other metal objects on top of the batteries.**
- **If the battery replacement kit is damaged in any way or shows signs of leakage, contact your SolaHD representative immediately.**
- **Do not dispose of batteries in a fire; they may explode.**
- **Dispose of old batteries according to local codes.**

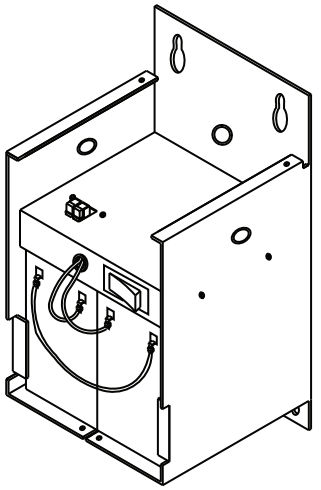
⚠ CAUTION

Electrical safety precautions must be followed when installing or servicing this equipment. To prevent risk of electrical shock, turn off and lock out all power sources to the unit before making electrical connections or servicing.

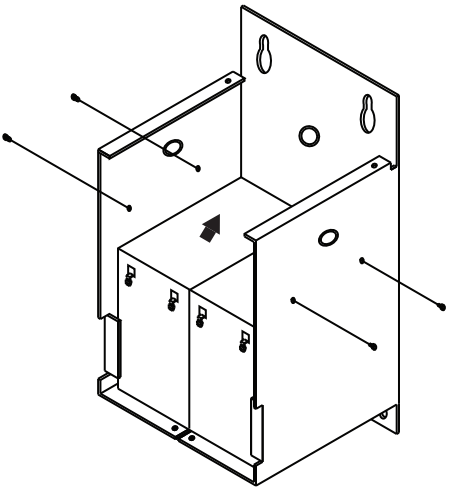
1. Remove four screws from the cover. Slide the cover forward and off the enclosure.



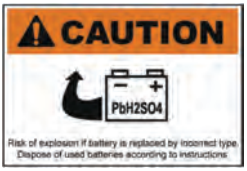
2. Remove the wires from the battery posts.



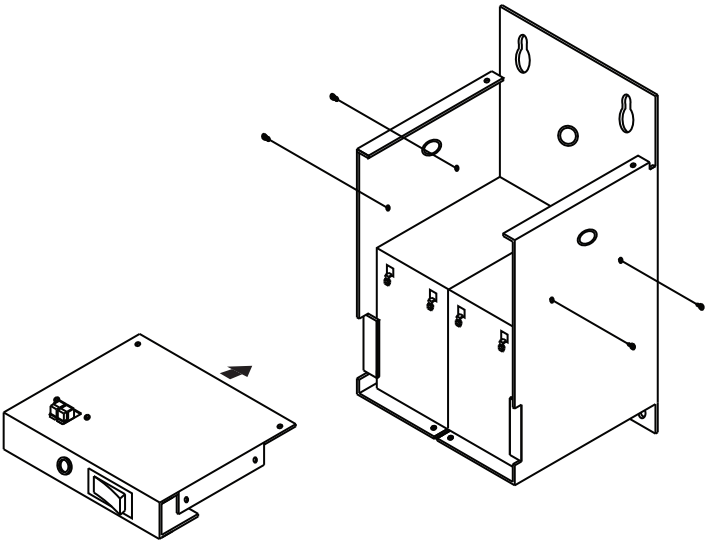
3. Secure the bracket in place. Remove four screws from the enclosure. Slide the bracket forward and off the enclosure.



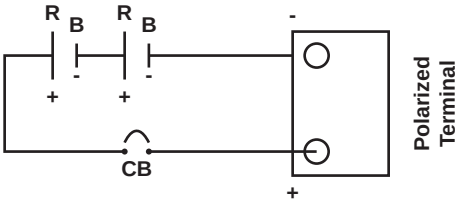
4. Remove the failed battery and insert the new battery.



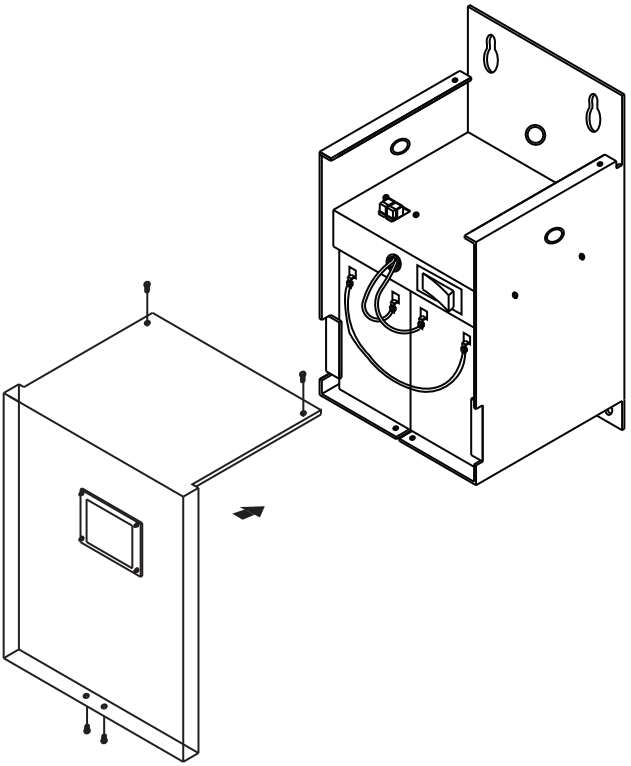
5. Slide the bracket forward inside the enclosure. Secure the bracket in place. Use four screws to mount the bracket onto the enclosure.



6. Use the following connection diagram to ensure a proper connection to the circuit breaker and polarized terminals.



7. Slide the cover onto the enclosure. Secure the cover with four screws.



11.0 Battery Backup Times (in minutes vs. load percentage)

NOTE: Resistive loads were used to measure the battery run times. Using other types of loads may result in different battery run times.

11.1 SDU 10-24 with SDU 24-BAT

Load	20% (2 A)	40% (4 A)	60% (6 A)	80% (8 A)	100% (10 A)
1 unit	113	45	30	21	14
2 units	247	114	74	48	38
3 units	396	178	117	80	58
4 units	531	233	148	111	81

11.2 SDU 20-24 with SDU 24-BAT

Load	20% (4 A)	40% (8 A)	60% (12 A)	80% (16 A)	100% (20 A)
1 unit	46	21	10	6	4
2 units	116	50	28	17	10
3 units	178	80	46	31	20
4 units	237	113	65	43	31

11.3 SDU 10-24 with SDU 24-BATEM

Load	20% (2 A)	40% (4 A)	60% (6 A)	80% (8 A)	100% (10 A)
1 unit	135	52	28	19	14

11.4 SDU 20-24 with SDU 24-BATEM

Load	20% (4 A)	40% (8 A)	60% (12 A)	80% (16 A)	100% (20 A)
1 unit	48	17	9	6	4

12.0 Power Module Specifications

Parameter	Catalog Number	
	SDU 10-24	SDU 20-24
INPUT		
Nominal Input Voltage	24 V dc	
Input Voltage Range	22.5 – 30 V dc	
Input Fuse	Dc fuse 30 A	
OUTPUT		
Nominal Output Voltage	24 V dc	
Output Voltage Range	22.5 – 30 V dc	
Output Current	10 A	20 A
Current Limit	12 A	22 A
PROTECTION		
Input Protection	Fuse for overload and short circuit protection	
Overload Protection	Electrical circuit protection	
Short Circuit	UPS output cuts off immediately	
ENVIRONMENT		
Audible Noise	<40 dBA (1 m from surface)	
Operating Temperature	-20°C to +50°C	
Storage Temperature	-20°C to +70°C	
Humidity	0 to 95%, non-condensing	
Pollution	Degree 2	
Maximum Elevation	3500 m (11,483 ft.)	
Shock & Vibration	According to ISTA 2A	
INSTALLATION		
MTBF	> 200,000 hours	
Output	Outputs are capable of providing high currents for short periods of time for inductive load startup or switching. Fusing may be required for wire/loads if 2x nominal O/P current rating cannot be tolerated. Continuous current overload allows for reliable fuse tripping.	
Mounting	Simple snap-on system for DIN rail TS35/7.5 or TS35/15; or Chassis mounting brackets (SDU-PMBRK)	
Connections	Input & Output: IP20-rated screw terminals; connector size range: 16 – 12 AWG (0.5 – 4 mm^2) for copper conductors rated 90°C	
Relay Contact Terminal Connections	IP20 screw terminals; connector size range: 24 – 16 AWG (0.34 – 4 mm^2)	
Case	Fully enclosed metal housing with fine ventilation grid to keep out small particles	
Free Space	20 mm above, 35 mm below, 20 mm left and right, 10 mm in front	

WEIGHT & DIMENSIONS	
Net Weight, lb. (kg)	1.65 (0.75)
H x W x D, in. (mm)	4.88 x 3.02 x 4.55 (124 x 76.7 x 116)
SAFETY/APPROVALS	
SDU DC UPS System*	UL60950-1, UL508, FCC Class A; CAN/CSA C22.2 No. 107.1-01, CAN/CSA C22.2 No. 60950-1; Low voltage directive: IEC 60950-1 (CB Scheme); Directive 2004/108/EC: EN 62040-2 Category C2, EN 55022 Class A + A1 + A2, CISPR 22 Class A (2005), IEC 61000-3-2, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6 + A1, IEC 61000-4-8, IEC 61000-2-2

*The SDU DC UPS system includes a power module (SDU 10-24 or SDU 20-24) and a battery module (SDU 24-BAT or SDU 24-BATEM).

13.0 Battery Module Specifications

Parameter	Catalog Number	
	SDU 24-BAT	SDU 24-BATEM
Nominal Voltage	24 V dc	
Protection	Fuse: 30 A	Circuit Breaker: 24 V, 25 A
Charging Current	0.5 A	0.8 A
Battery Type	Sealed, maintenance-free lead acid batteries	
Enclosure Type	IP20	NEMA 1
Terminal Connector Type	Polarized powerpole connectors	
Operating Temperature	-20°C to +50°C	
Charge Temperature	0°C to +40°C	
Storage Temperature	-20°C to +40°C	
Humidity	95%, non-condensing	
Typical Recharge Time (to 90% of full capacity)	8 hours for 1 battery module; 24 hours for 2 battery modules; 12 hours for each additional battery module	
Backup Times	Refer to tables on page 23	
Weight, lbs. (kg)	12 (5.33)	16 (7.26)
Enclosure Dimensions, in. (mm)	4.88 x 8.31 x 4.55 (124 x 211 x 116)	11.5 x 5.57 x 4.57 (292 x 142 x 116)
Mounting	Simple snap-on system for DIN rail TS35/7.5 or TS35/15; or Chassis mounting brackets (SDU-PMBRK)	Chassis mounting brackets (SDU-PMBRK)
Accessories	1 ft. polarized battery cable	6 ft. polarized battery cable
Safety Standard for SDU DC UPS System*	UL60950-1, UL508, IEC 60950-1, CAN/CSA C22.2 No. 107-1-01, CAN/CSA C22.2 No. 60950-1	

*The SDU DC UPS system includes a power module (SDU 10-24 or SDU 20-24) and a battery module (SDU 24-BAT or SDU 24-BATEM).

14.0 Troubleshooting

Problem	Probable Cause	Required Action
UPS is not ON; LED will not light	UPS is OFF or the ON/OFF/Test button was not pushed for 1+ seconds	Press the ON/OFF/Test button for more than 2 seconds
	Battery voltage is less than 22 V	Recharge the UPS for at least 8 hours. If the unit still does not start, check the input fuse.
	Load is less than 1.4 A in Backup Mode	Normal condition; disable Green Mode
	Other failure	Call SolaHD Technical Support
UPS in Backup Mode and will not switch to dc input	Loose dc input power connection	Tighten the dc input power connection
	Input voltage is too high, too low, or exceeds the specifications	Adjust dc input voltage to an appropriate level
	Other failure	Call SolaHD Technical Support
Backup time is too short	Battery is not fully charged	Recharge the UPS for at least 8 hours
	Other failure	Call SolaHD Technical Support
Continuous beep & LED overload indication	Overload condition	Remove the overload. Refer to the output specifications.
Red LED is flashing	Battery discharged	Recharge the battery for at least 8 hours. Perform UPS self-test.
	Battery disconnected	Check battery connections
	Battery failure	Replace the battery
UPS turns off after 5 transfer-to-battery cycles	Load short-circuited	Remove short-circuited load
For further assistance, please contact SolaHD Technical Support at: (800) 377-4384 U.S. (847) 268-6651 International E-mail: tech@solahd.com		

15.0 Storage

15.1 Storage Conditions

- Before storing, charge the UPS for at least 4 hours.
- Store the UPS covered and upright in a cool, dry location, with the battery fully charged.
- Remove any accessories in the accessory slot and disconnect any cables connected to the computer interface port to avoid unnecessary draining of the battery.

15.2 Extended Storage

During extended storage in environments where the ambient temperature is -20°C to +30°C (+5°F to +86°F), charge the UPS battery every 6 months.

During extended storage in environments where the ambient temperature is +30°C to +45°C (+86°F to +113°F), charge the UPS battery every 3 months.

16.0 Product Registration & Warranty

16.1 Product Registration

To register your product for updates and information on service and support:

- Visit the Technical Support section of our Web site at: http://www.solahd.com/support/registration.htm
- Click on the Product Registration link and fill in the form. This will register your product with SolaHD.

16.2 Warranty Information

Please see “Terms & Conditions of Sale”.

SOLAHD

Technical Support
U.S.: (800) 377-4384
International: (847) 268-6651
E-mail: www.solahd.com

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Industrial Automation

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