

# Uninterruptible Power Supply



## SDU AC B-Series

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# What's Included

The SDU AC B-Series UPS is shipped with the following items:

- High speed 2.0 Standard Type A-B USB cable, 6 ft. (1.8 m)
- One SDUCOMMCVR communication port cover

# Optional Accessories

- **SDU-PMBRK:** Mounting brackets to secure the UPS to the wall, back of the panel or enclosure. Please contact Tech Support for details.



- **SDUCFRELAYCARD:** Dry contact relay status with LED diagnostics and standby Mode capability (Please refer to SDU B-Series COMM Cards Manual).



- **Active – (Industrial Ethernet) Cards:** Network communication module is a high-performance communication solution for industrial field devices. It is designed for use with high performance networks such as real time Ethernet and synchronized applications such as servo drive systems (Please refer to SDU AC B-Series COMM Cards Manual).



## Comm Card Accessories

Catalog Number	Description	Approx. Ship Weight - kg (lbs)
<b>Active - (Industrial Ethernet)</b>		
<b>SDUNETIPCARD</b>	2 Port EtherNet/IP™ COMM CARD	1.0 (28.4)
<b>SDUECATCARD</b>	2 Port EtherCAT COMM CARD	1.0 (28.4)
<b>SDUMBUSCARD</b>	2 Port Modbus® - COMM CARD	1.0 (28.4)
<b>SDUPNETCARD</b>	2 Port Profinet Industrial Protocol COMM CARD	1.0 (28.4)

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# 1.0 Introduction

Thank you for selecting the SDU AC B-Series Uninterruptible Power System. This manual contains important safety instructions that should be followed during the installation and operation of your UPS.

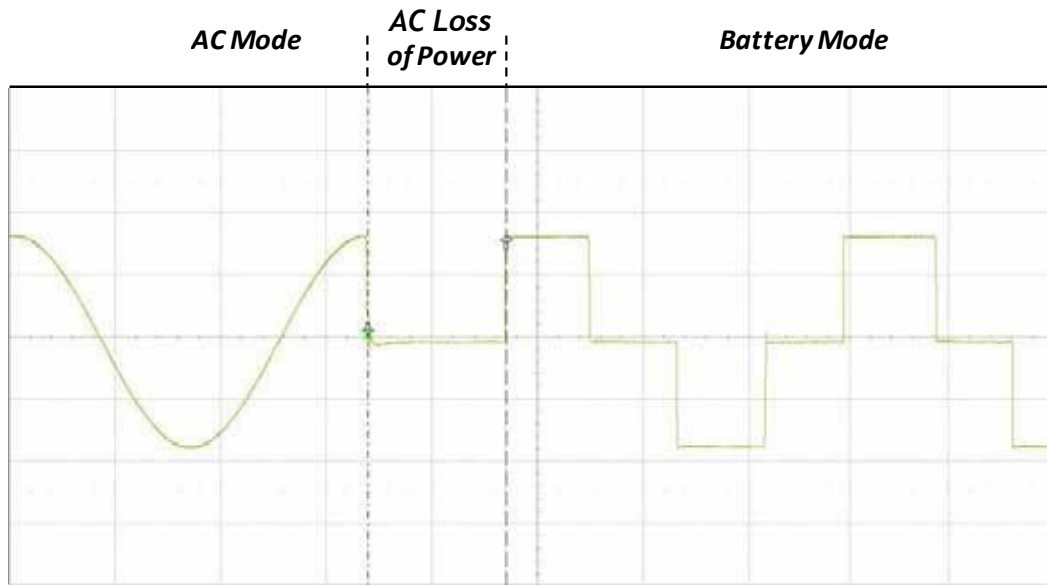
- Please read all safety, installation and operating instructions before attempting to install or operate the UPS.
- Please adhere to all warnings on the unit and in this manual during installation and operation.
- This UPS is designed for industrial use. The UPS features a compact design that fits into a limited-space working environment.

This product features the following:

- User-replaceable battery
- Auto restart during AC recovery
- AC overload protection
- Over temperature thermal protection
- Battery overcharge protection
- Input voltage out-of-range protection
- Remote monitoring and control software via UPSwatch
- Power lock feature, ensuring the UPS must be connected to utility on initial startup after unboxing.
- Pass through feature, where the UPS can power the load with AC in event of battery failure.
- Input and output reverse protection feature
- Network communications capability via Active Comm Cards (EtherNet/IP, EtherCAT, MODBUS, ProfiNET)
- Dry Contact relay I/O communication capability via SDUCFRELAY CARD
- Enable / disable UPS remotely via REMOTE ON/OFF terminal
- Battery life monitoring and routine test for preventive maintenance
- Long design life battery with up to 12 years at 25°C operation
- Hazardous Location T4 temperature code rating

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The SDU AC B-Series is a compact, “Off-Line” DIN rail mountable UPS, which provides conditioned power to sensitive electronic equipment in an industrial environment. It supplies connected equipment with stepped approximation to sinewave input during power outage to simulate the power generated by the utility.



**Figure 1: SDU-B Output Waveform**

Input voltage range is 75% to 120% (ideal protection for the critical connected loads). Battery charging occurs automatically when AC power is applied; no need to switch ON the UPS. The SDU also includes an automatic self-test feature to test the UPS function and battery. UPSwatch will record the event on EVENT LOG. UPS immediately switches to AC Mode to provide load power if AC is available from utility.

This SDU AC B-Series has a communication port that can accommodate an optional communication card.

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## 2.0 Important Safety Instructions

### 2.1 Safety Precautions—SAVE THESE INSTRUCTIONS

#### **WARNING**

**Warning — Explosion Hazard — Do not disconnect the equipment while the circuit is live or unless the area is known to be free of ignitable concentrations.**

**Warning — Explosion Hazard — Do not connect or disconnect the battery unless the area is known to be free of ignitable concentrations.**

**Warning — Explosion Hazard — Do not open the unit. Do not substitute components. Do not replace fuse.**

**Warning — Exposure to some chemicals may degrade the sealing properties of materials used in the sealed relay device.**

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

- 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.
- To reduce the risk of electric shock, do not remove the cover, as it has no user-serviceable parts inside. Some components are live, even when ac power is disconnected. The enclosure must only be accessible by use of a tool (incorporated into the IP54 enclosure condition) Although your UPS has been designed and manufactured to assure personal safety, improper use can result in electrical shock or fire.
- The battery may be replaced by service personnel only.

To ensure safety, please observe the following rules:

- Turn OFF UPS and disconnect the AC 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. Do not insert any objects into the ventilation holes or other openings of the UPS. Keep all vents free of dust accumulation that could restrict airflow.
- Do not dispose of batteries in a fire; they may explode. Do not open or damage the battery. Released electrolyte is harmful to the skin and eyes and may be toxic.

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The power supplies should meet the following conditions for safe use when installed in a Class I, Division 2 Groups A B C D and Class I, Zone 2, Groups IIC Hazardous Location:

- (1) The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1. Install in a controlled environment.
- (2) The equipment shall be installed in an enclosure that provides a degree of protection not less than IP54 in accordance with IEC 60079-0 and may only be accessible by use of a tool.
- (3) The operating temperature class (T-code) of this device was determined to be T4.

**If your UPS does not operate properly, turn OFF the UPS, disconnect the AC supply and contact your local distributor, SolaHD representative or SolaHD Technical Support at 1-800-377-4384.**



## 3.0 General Description

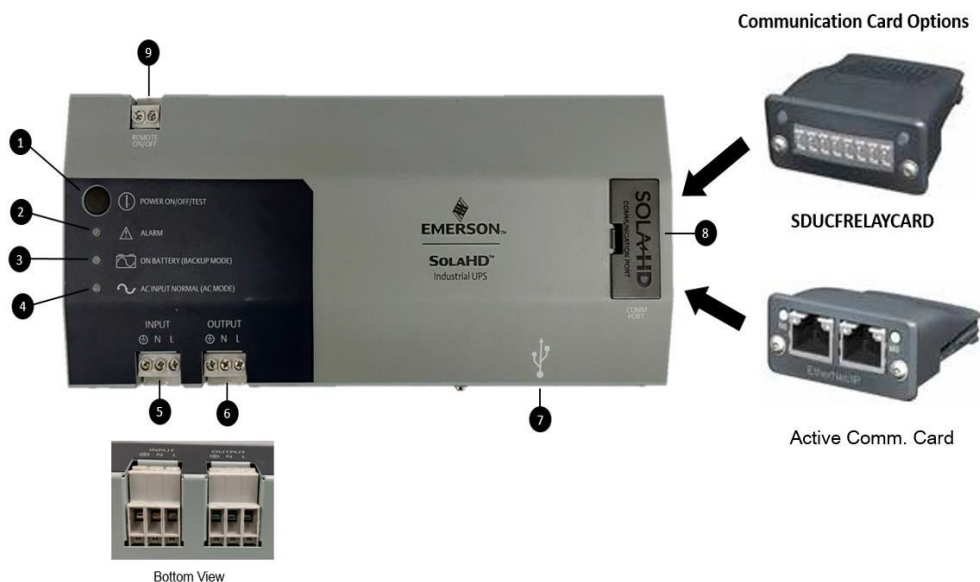


Figure 2: Front Panel

### 1. POWER ON/OFF/TEST:

**NOTE:** The factory ships unit with Power Lock Feature enabled. This is to avoid accidental startup of the UPS during shipping via the push button.

- To DISABLE – end user needs to apply desired AC input on the UPS Input AC connector then press the On/OFF Power button for >3 secs and release to turn on the unit.
- To ENABLE - apply AC input then press the On/OFF Power button for >10secs and release. ON - To turn the UPS ON, press and release the button for more than 3 seconds, UPS turns on and the LEDs light.

OFF - Press button until the audible alarm silences, UPS turns off.

SELF-TEST - Press the button for less than one second to activate the self-testing. After self-test, 24 hours is needed before another self-test can be performed to avoid battery degradation. Monthly automated self-test programmed by default.

### 2. Battery Warning/Overload Indicator (Red LED):

The LED flashes when the battery needs to be recharged and tested.

The LED will illuminate when the unit is subjected to an overload condition.

If the unit shuts down due to overload, the LED and alarm will continue for two minutes.

**3. ON Battery Indicator (Yellow LED):** The LED illuminates when the UPS is supplying battery power to the loads.

**4. AC Input Normal Indicator (Green LED):** The LED illuminates when the line input voltage is normal.

**5. Input:** IP20-rated Input Screw Terminals.

**6. Output:** IP20-rated Output Screw Terminals.

**7. USB Port:** High speed 2.0 Standard USB Type B Peripheral Communication Port used to establish control and monitoring with UPSwatch software.

**8. COMM PORT:** Communication card slot.

COMM CARDS: SDUCFRELAYCARD and Active communication cards can be purchased separately.

The UPS can detect the presence of a COMM CARD and identify what kind of COMM CARD is inserted. USB communication will have precedence over COMM CARDS.

For more details, please reference documents within the SDU AC B-Series webpage within [www.SolaHD.com](http://www.SolaHD.com).

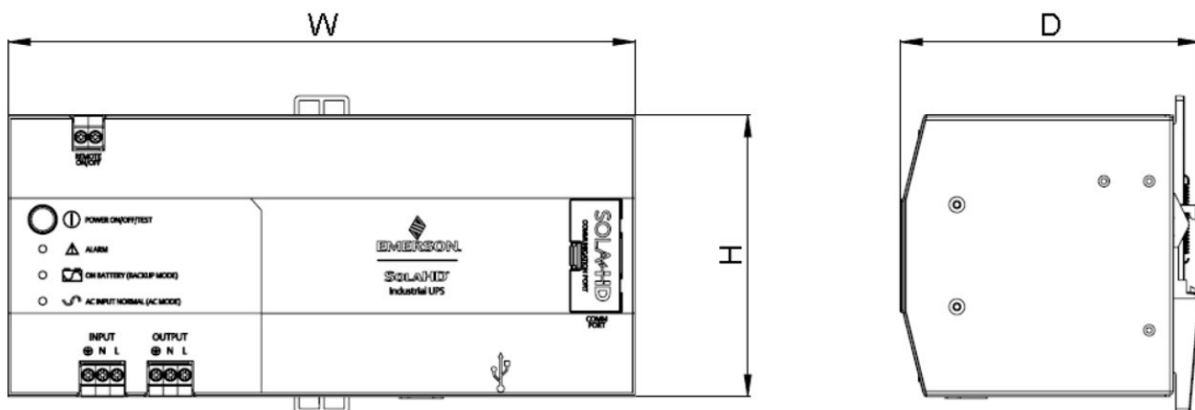
**9. REMOTE ON/OFF TERMINALS:** Use a switch to remotely toggle ON/OFF state. Non-Polarized terminals. No external voltage is required. We recommend using stranded UTP (Unshielded Twisted Pair) wire for connections.

## WARNING

Remote ON/OFF is grounded to the UPS internal signal ground so it should be isolated from the chassis ground to prevent any ground potentials that may cause a unit malfunction or damage. In addition, isolate the Remote ON/OFF wiring away from high current, high voltage, and high frequency components to prevent any magnetically coupled noise on the Remote On/Off connections.

<b>Screw</b>	M3.0; Current rating = 35 A, AC 600 V
<b>Insulation Withstands Volts</b>	A 2000 V min.
<b>Preferred AWG</b>	8–18 AWG
<b>Screw Torque</b>	9 lb-in (101.68 N-cm)

**Screw Terminals Description**



**Figure 3: Product Dimensions**

Catalog Number	Dimensions in Inches (Millimeters)		
	H	W	D
SDU AC B-Series	5.0 (126.7)	11.0 (279.5)	5.3 (135.2)

# 4.0 System Block Diagram

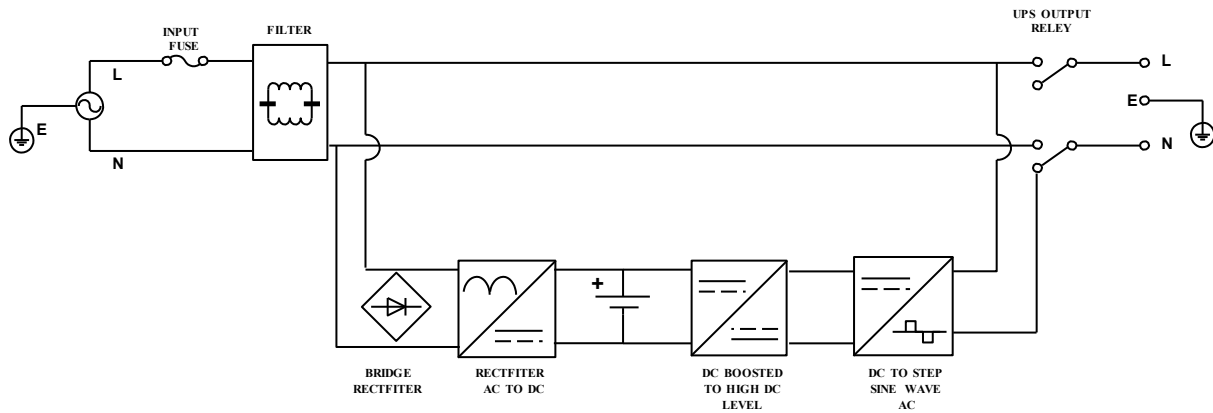


Figure 4: SDU AC B-Series UPS System Block Diagram

## 5.0 Installation Instructions

### WARNING

To reduce risk of fire, connect only to a circuit provided with 20A maximum branch circuit overcurrent protection in accordance with the National Electrical Code® (NEC®) and CEC.

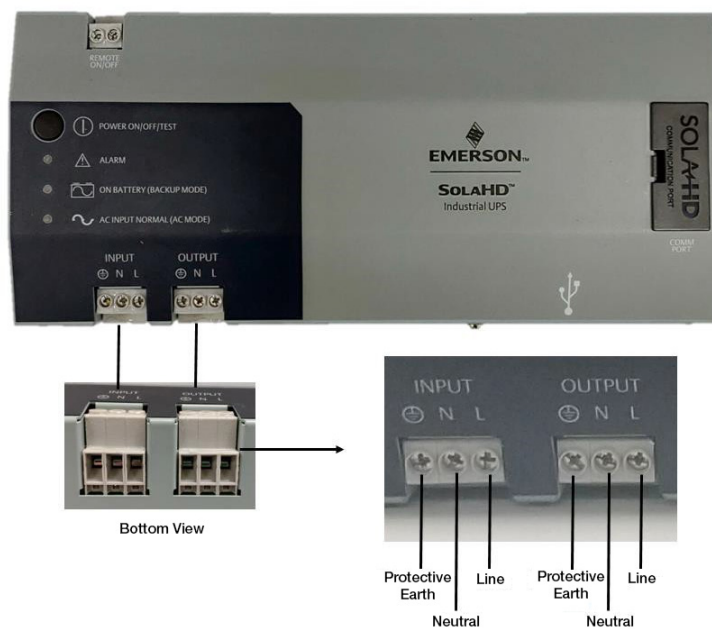


Figure 5: Input/Output Terminals

## INSTALLATION NOTICE

### TO AVOID CRITICAL DAMAGE TO UPS:

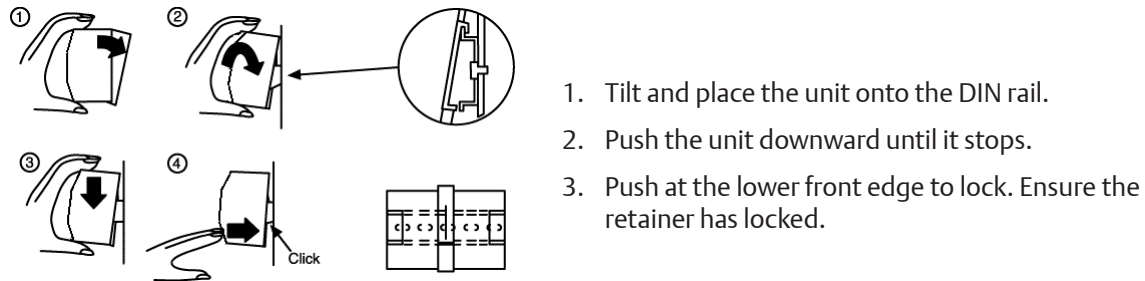
- DO NOT BOND THE INPUT AND OUTPUT NEUTRALS TOGETHER.
- DO NOT CONNECT THE OUTPUT NEUTRAL TO GROUND

- **Placement:** Install the UPS horizontally in a protected area with adequate airflow: 20mm above and below the unit, 10mm in front of the unit. Do not operate the UPS outdoors. It is required that an input breaker is added in front of the UPS.
- **COMM CARD Installation:** To install the optional card, remove the COMM PORT cover and insert the card. Refer to the SDU COMM CARD Manual for more details. (Refer to inside cover for COMM CARD options or contact your SolaHD representative).
- **DIN Rail Mounting:** Follow instructions below.

### Location

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.

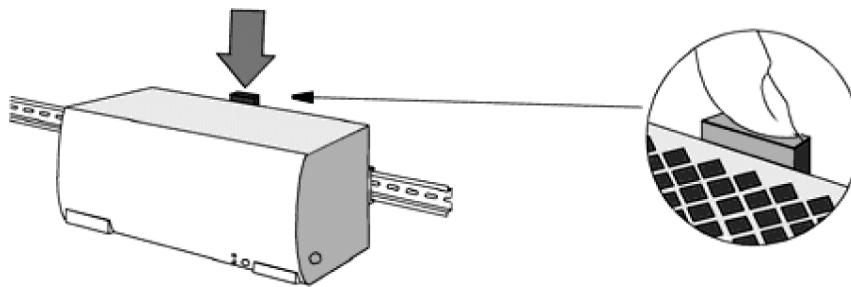
## DIN Rail Mounting



**Figure 6: Mounting the UPS DIN Rail**

## Removing the Unit from the DIN Rail

Push the button and swing the bottom out and up.



**Figure 7: Removing the UPS**

## WARNING

Risk of electric shock, disconnect AC main power source before wiring. Battery Circuit is not isolated from ac input, hazardous voltage may exist between battery terminals and ground - Test before touching.

Ensure proper grounding.

## INSTALLATION NOTICE

Before applying AC power, check impedance between the output neutral terminal on UPS and ground with a multimeter (load connection made, UPS in off state).

The meter must read high impedance (>100 KOhms).

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- **I/O Wiring:** Check that the UPS and the AC Supply is OFF (disconnected) before installation. Wire the UPS terminals with 90°C rated copper wire according to the table below. Connect the AC input ground terminal to the main supply ground. Connect line in neutral supply conductors. Connect the loads to the output hardwire connector. Verify proper wiring connections then apply power to the UPS. See Figure 4.

<b>Wire Gauge</b>	8-18 AWG
<b>Screw Torque</b>	9lb-in. (101.7N-cm)

- **Internal Battery:** Charge the UPS battery for a minimum of 8 hours before initial use. The UPS charges its battery whether the UPS is on or off, when it is connected to AC power.
- **DO NOT** connect output Neutral to Ground.

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## 6.0 Operating Instructions

### TURNING ON THE UPS

#### Initial Power On

The UPS is shipped with PowerLock enabled. PowerLock is a feature designed to prevent accidental turn on of the UPS when in transit. To turn off PowerLock and get the unit ready for first use, Follow the steps below:

**NOTE:** Turn the UPS off and press the power button for 11-12 seconds until audible alarm sounds to enable PowerLock feature if needed.

1. Connect the UPS input to AC (120 or 230 Vac depending on model) with no load connected.
2. Press the power ON/OFF button until audible alarm sounds (typically between 3 to 4 seconds) to disable the power lock feature. Unit is now ON and power lock feature is OFF(unit does a self check and then Green LED will illuminate and remains lit).
3. Turn the UPS unit OFF by pressing the ON/OFF button again until audible alarm silences and then release the button.
4. Leave the unit connected to AC for 4 hours min (8 hours recommended) to re-charge the battery (UPS will charge whether output is ON or OFF).
5. Unit is ready for use.
  - Press the POWER ON/OFF/TEST button for more than 2 seconds and the LEDs will turn ON.

**NOTE:** If utility power is not present, the UPS will be in back-up mode. The load will be powered from the internal batteries until the discharge point is reached.

**NOTE:** The factory ships unit with Power Lock Feature enabled. This is to avoid accidental startup of the UPS during shipping via the push button.

- To DISABLE – End user needs to apply desired AC input on the UPS Input AC connector then press the On/OFF Power button for >10secs and release to turn on the unit.
- To ENABLE - Apply AC input then press the On/OFF Power button for >10secs and release.

### TURNING OFF THE UPS

- Hold the POWER ON/OFF/TEST button until the alarm is silenced.

### ALARM

- Factory default setting is alarm enabled.
- To enable/disable Alarm:
  - When the UPS is in back-up mode, press the POWER ON/OFF/TEST button for at least 1 second to silence the alarm (this function is disabled when the UPS status is either LOW BATTERY or OVERLOAD MODE). To re-enable the alarm, press the POWER ON/OFF/TEST button for at least 1 second. Additionally, you can enable/disable the alarm via UPSwatch Software.

### SELF TEST

- This UPS has a self-diagnostic feature that verifies both the operation of the UPS and the condition of the battery.

- In AC mode, press and release the POWER ON/OFF/TEST button for 1 second to perform a self- test. During the self-test, the UPS momentarily operates in back-up mode (YELLOW LED will illuminate for 10 seconds then will change back to GREEN). If the UPS passes the self-test, it returns to AC mode.
- In AC mode for 30 Days, the UPS will auto perform a self- test. During the self-test, the UPS momentarily operates in back-up mode (YELLOW LED will illuminate for 10 seconds then will change back to GREEN). If the UPS passes the self-test, it returns to AC mode.
- Additionally, a self-test can be initiated via UPSwatch software or Active Comm Card. Contact Tech Support for details.

**NOTE:** The UPS needs to be continuously charged for more than 24 hours, otherwise the battery test will not be done.

If the self-test results in a failure, the UPS will change to AC mode. The UPS will pass through the input to the load. The red and yellow led will start flashing in an alternating pattern to inform user the battery needs to be replaced.

### STANDBY MODE

This feature is only available during back-up mode. Standby mode can be executed remotely using the COMM CARDS. This feature puts the UPS on standby after a maximum of 3 minutes (unless runtime is less than 3 minutes) and auto-recovers once AC power returns. This 3-minute window (or maximum run time depending on loading) allows the user to shut down their load or place equipment into safe mode.

### GREEN MODE

The Green mode is for 230V models only. By default, Green Mode is enabled. If the load level is less than approximately 8% ~ 12%, the UPS will shut down to save battery in 3 minutes. If power is restored within 3 minutes, the UPS will return to AC mode. Green Mode can be ENABLED or DISABLED by pressing the POWER ON/OFF at start-up shown on below table.

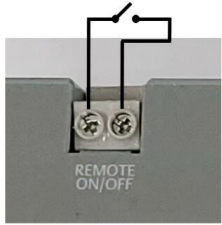
Green Mode	Alarm Signal
Enabled	Press Power ON/OFF button and release until "3 beeps"
Disabled	Press Power ON/OFF button and release until "2 beeps"

### REMOTE ON/OFF

- Allows the user to perform remote power ON/OFF functions using a switch on terminals (non-polarized) to toggle ON/OFF state.
- To Enable the UPS, close the switch that is connected to the terminals.
- To Disable the UPS, open the switch that is connected to the terminals.



## REMOTE ENABLE/DISABLE OF UPS



SDU-B Remote ON/OFF Switch Wired	UPS Condition/State	Switch or Terminal Condition
UPS-B	ON	
UPS-B	OFF	

*Remote ON/OFF Terminals: Shorted (closed) for ON, Open for OFF Non-Polarized terminals.  
No external voltage is required. We recommend using stranded UTP (Unshielded Twisted Pair) wire for connections.*

## 7.0 LED Diagnostics

Condition	Description	LED	Alarm
<b>BACK-UP MODE</b>	UPS is in back-up mode due to AC loss	YELLOW	Slow beeping. UPS sounds until AC utility power recovers.
<b>AC MODE</b>	Normal condition source supplied by AC Mains	GREEN	No Alarm
<b>AC MODE OVERLOAD</b>	Load around 105% of rated capacity	GREEN/RED	Alarm is ON during overload (if overload exceeds 105% of nominal at 5 mins, 120% at 10s, and 130% at 3s) and enters retry mode every 10 mins, until load is removed. UPS will not shut down.
	Load > 120% of rated capacity	GREEN/RED	
	Load > 130% of rated capacity	GREEN/RED	
<b>BACK-UP MODE OVERLOAD</b>	Load around 105% of rated capacity	YELLOW/RED	Alarm is ON during overload (if overload exceeds 105% of nominal at 20s, 120% at 10s, and 130% at 3s) and enters retry mode every 10 mins, until load is removed. UPS will not shut down.
	Load > 120% of rated capacity	YELLOW/RED	
	Load > 130% of rated capacity	YELLOW/RED	
<b>LOW BATTERY</b>	Low battery charge	YELLOW	During back-up mode when the battery charge runs low, the UPS beeps rapidly (ON 0.5 seconds, OFF 0.5 seconds) until the UPS shuts down or returns to AC Mode.

**Table 1: Diagnostics LED/Alarms**

# 8.0 Battery Replacement

## **⚠ WARNING**

The battery may be replaced by service personnel only.

When the UPS is installed in a Class I, Division 2 Groups A B C D or Class I Zone 2 II C hazardous location, adhere to the following:

Warning — Explosion Hazard – Do not connect or disconnect the battery unless the area is known to be free of ignitable concentrations.

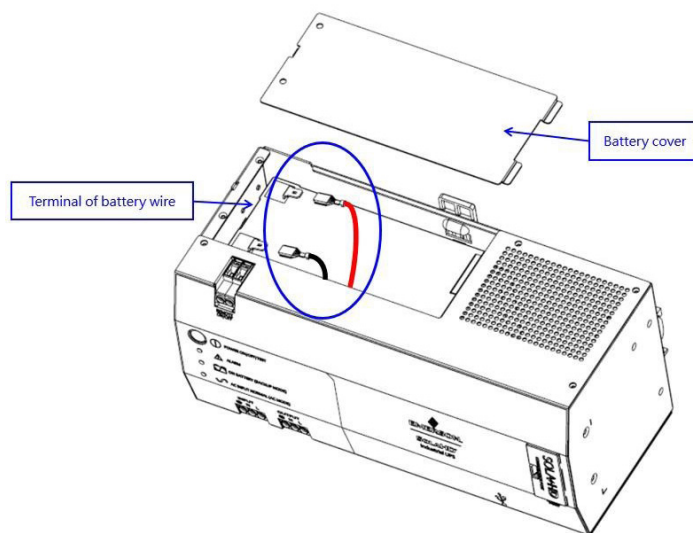
**NOTE:** Replace only with the battery manufacturer and type shown below.

Models	SDU 500B, SDU 500B-5		SDU 850B, SDU 850B-5	
VA/Watts	500/300		850/510	
Battery	CSB type XTV 1272F2FR	Yuasa type REW7-12FR	CSB type XTV1285F2FR	Yuasa REW45-12FR

### Steps to Replace Batteries

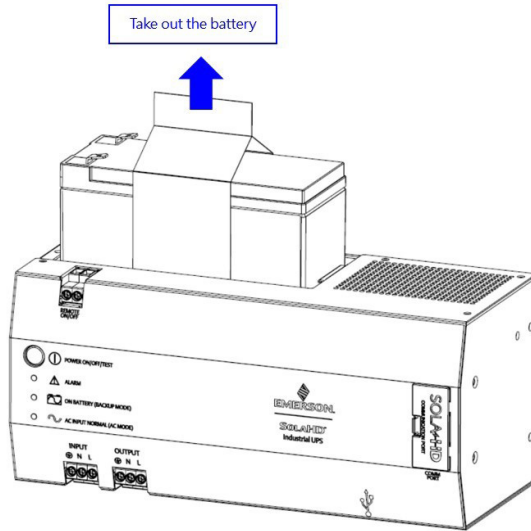
Step 1: Remove battery cover.

Step 2: Disconnect the terminal of battery wire.



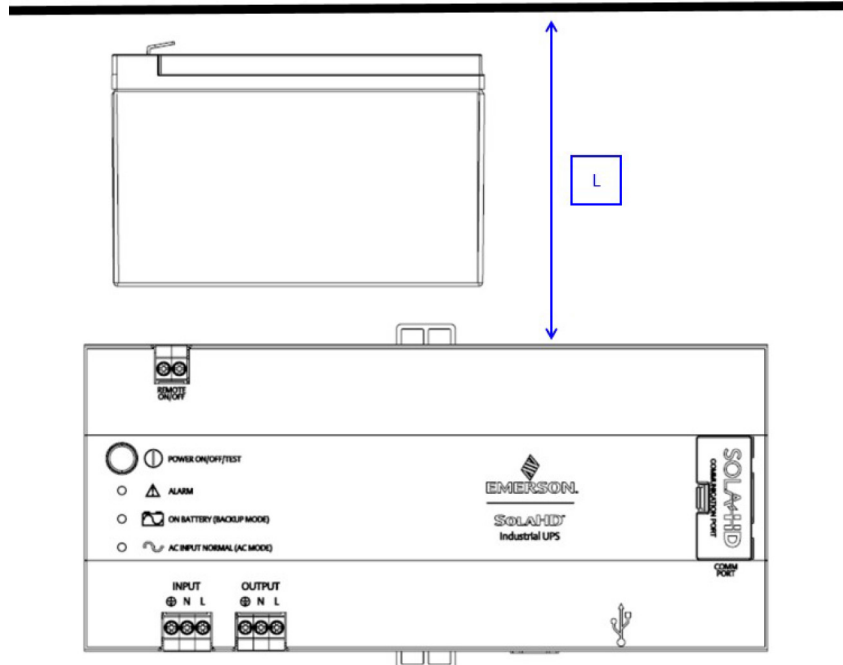
**Figure 8: Disconnect the Battery Wire and Remove Cover**

Step 3: Take out the battery



**Figure 9: Take Out the Battery**

**Notice:** Battery replacement distance required:  $L \geq 250\text{mm}$



**Figure 10: Battery Replacement Space**

## 9.0 Troubleshooting

### **WARNING**

When the UPS is installed in a Class I, Division 2 Groups A B C D or Class I Zone 2 II C hazardous location, adhere to the following:

**Warning — Explosion Hazard — Do not disconnect the equipment while the circuit is live or unless the area is known to be free of ignitable concentrations.**






**Warning — Explosion Hazard — Do not connect or disconnect the battery unless the area is known to be free of ignitable concentrations.**

**Warning — Explosion Hazard — Do not open the unit. Do not substitute components. Do not replace fuse.**

Problem	Possible Cause	Solution
<b>UPS nonresponsive (No alarm and no light)</b>	UPS is powered off	Press ON/OFF button for TWO (2) seconds. Ensure the Power Lock feature is disabled.
	Battery is defective	Replace the battery.
	UPS fault	Contact Tech support.
<b>The UPS is always on battery mode</b>	Input may not be properly connected.	Check the input connection.
	Input fuse is open	Before reconnecting equipment, please verify the load matches the UPS capability specified and output has short circuit protection. Contact Tech support.
<b>Actual backup time cannot be achieved</b>	Battery voltage is too low	Charge the battery at least eight (8) hours.
	Overload	Remove some unnecessary loads. Before reconnecting equipment, please verify the load matches the UPS capability specified in spec.
	Battery defect	Replace the battery.
	UPS fault or charger failure	Contact Tech support.
<b>Fault code displayed</b>	Overload	Remove some unnecessary loads. Before reconnecting equipment, please verify the load matches the UPS capability specified in spec.
	UPS short-circuit	Contact Tech support.

# 10.0 Technical Specifications

Description	Catalog Number			
	SDU 500B	SDU 850B	SDU 500B-5	SDU 850B-5
<b>INPUT</b>				
Capacity VA/Watts	500/300	850/510	500/300	850/510
Nominal Voltage	120 Vac		230 Vac	
Frequency	50 or 60 Hz			
Harmonic	Total Harmonic Distortion, value 38.1% Maximum Single Harmonic Distortion, value 31.3%			
Power Factor	0.6			
<b>OUTPUT (Back-Up Mode)</b>				
Voltage Vac	Simulated sinewave			
	120 V		230 V	
Frequency	50 or 60Hz			
Transfer Time	Typical<8ms			
<b>PROTECTION</b>				
Input (internal)	10A	8A	6.3A	
Overload Protection	UPS shutdown if overload exceeds 105% of nominal at 20s, 120% at 10s, 130% at 3s; auto-recovery			
Short Circuit (utility mode)	In the event of dead short on the outputs of the UPS, input fuse will break. Once the fuse opens, UPS goes to battery Mode and goes on Battery Mode Short Circuit protection until OSCP is removed.			
Short Circuit (battery mode)	Retry until the short circuit is removed or battery defect.			
<b>BATTERY</b>				
Type	Sealed, maintenance-free, lead acid batteries			
Typical Recharge Time	8 hours			
Typical Back-Up Time (at full load)	4:20min.	1:30min.	4:20min.	1:30min.
<b>ALARM</b>				
ON Battery	Slow beeping every 10 seconds			
Battery Low	Rapid beeping every second			
Overload	Continuous beeping sound			

Description	Catalog Number			
	SDU 500B	SDU 850B	SDU 500B-5	SDU 850B-5
<b>ENVIRONMENT</b>				
<b>Ambient Operation</b>	0–95% humidity, non-condensing. Ordinary Location: 0 - 50 °C up to 3000m/ Hazardous Location: 0 - 40 °C up to 2000m			
<b>Audible Noise</b>	<40 dBA (1 m from surface)			
<b>Vibration</b>	<b>Operating</b> - IEC60068-2-6, Sine Wave: 10Hz to 60 Hz displacement of 0.35mm, 60Hz to 500Hz@5G; 60 min per axis for all X, Y, Z direction.			
	<b>Non-operating</b> - IEC60068-2-6, Random :5Hz to 500Hz@2Grms; 20min per axis for all X, Y, Z			
<b>Shock</b>	<b>Operating</b> - IEC60068-2-27, Half Sine Wave: 10G for a duration of 10g for a duration of 10ms, 3 shocks each in 3 axes in positive and negative direction.			
	Non-operating - IEC60068-2-27, Half Sine Wave: 20g for duration of 10ms, 3 shocks in 3 axes in positive and negative direction.			
<b>WEIGHT &amp; DIMENSIONS</b>				
<b>Net Weight</b>	10.8 lb. (4.9kg)	11.5 lb. (5.2kg)	10.8 lb. (4.9kg)	11.5 lb. (5.2kg)
<b>H x W x D</b>	4.89 x 10.91 x 5.22in (124.2 x 277.0 x 132.7 mm)			
<b>CERTIFICATIONS</b>				
<b>Safety</b>	 UL 1778, 5th Ed./CSA 107.3 overvoltage category II, pollution degree 2, evaluated for use in UL 508 industrial control applications overvoltage category III, pollution degree 3 with no output derating			
	 UL121201/CSA 213 Class I, Division 2 Groups A B C D T4  EN IEC 60079-0, EN IEC 60079-7, EN IEC 60079-15 II 3 G Ex ec nC IIC T4 Gc, UL 20 ATEX 2442X, UL21UKEX2170X  LVD EN 62040-1 ODVA Compliant			
<b>EMC</b>	 FCC Part 15, Subpart B, Class A Level 4  EMC Directive – EN62040-2; EN55032; EN 55011, EN 55024, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61326-1, EN61000-3-2, EN 61000-3-3, IEC/EN 61000-4 Series (Level 4, Criterion A), IEC/EN 61000-4-3 (Level 3, Criterion A)			

## 10.1 UPS Battery

The UPS has an internal 12V sealed Valve Regulated Lead Acid (VRLA) rechargeable battery.

Models	SDU 500B, SDU 500B-5		SDU 850B, SDU 850B-5	
VA/Watts	500/300		850/510	
Battery	CSB XTV 1272F2FR	Yuasa REW7-12FR	CSB XTV1285F2FR	Yuasa REW45-12FR
Load Level	Approximate Back-Up Time (Minutes)		Approximate Back-Up Time (Minutes)	
10%	75:30	75:30	46:00	46:00
20%	45:30	45:30	28:30	28:30
30%	27:30	27:30	16:30	16:30
40%	19:30	19:30	11:00	11:00
50%	14:30	14:30	7:00	7:00
60%	11:30	11:30	5:30	5:30
70%	9:00	9:00	4:00	4:00
80%	7:30	7:30	2:30	2:30
90%	6:00	6:00	2:00	2:00
100%	4:20	4:20	1:30	1:30

**Table 2: Battery Back-Up Time Chart**

**NOTE:** Run times in this table are approximate. They are based upon new, fully charged standard battery modules at a temperature of 25°C (77°F) with 100% resistive UPS loading. Run times listed above can vary due to manufacturing variances of the individual batteries.

### **WARNING**

- Call SolaHD Technical Support for further instructions.
- Do not mount the UPS in an upside-down orientation.

## 10.2 Storage

Ambient temperature range is -15 °C to +60 °C (5 °F to 140 °F). It is recommended to charge the UPS for at least 8 hours then store the UPS covered and upright in a cool, dry location. Remove accessories and disconnect cables connected to the UPS to avoid unnecessary draining of the battery.

### Recharging the Battery (When UPS is Not in Use)

- Locate the recharge label on the box containing the product. The label will indicate the last recharge date.
- Please refer to the label for the next recharge due date.
- If the product is due for recharge, please connect 120VAC to the input terminals (Figure 5) to recharge the SDU 24-BATB.
- Please allow 8 hours to fully recharge a battery.
- Once the battery is recharged, please create a LOG and track the due dates to properly maintain the charge.



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### **Extended Storage**

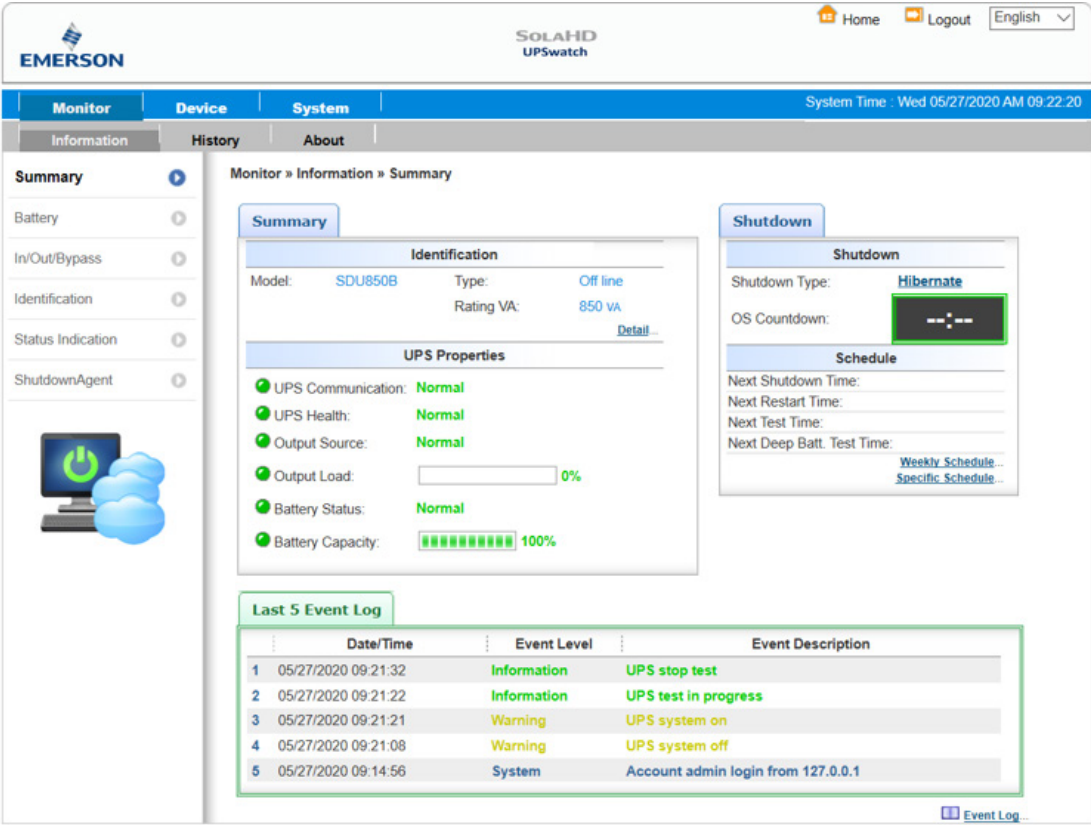
- During extended storage in environments where the ambient temperature is -15 °C to +30 °C (+5 °F to +86 °F), charge the UPS battery every six months.
- During extended storage in environments where the ambient temperature is +30 °C to +45 °C (+86 °F to +113 °F), charge the UPS battery every three months.

# 11.0 Software and Interface

## Power Monitoring Software (UPSwatch)

**NOTE:** UPSwatch - Monitoring/diagnostic Software is available for download at [www.solahd.com](http://www.solahd.com)

The software is compatible with: Windows 7, 8, 10, Windows 2003, 2008, 2012, 2016, Windows 2008/2012 Server Core, Hyper-V 2008/2012, Oracle Linux 7.1, Linux OpenSUSE 11.4, Linux Ubuntu 10.04, Linux Fedora 3.1.9, CentOS 5.8, Citrix XenServer 6.0.0, and Linux KVM.



**Figure 11: UPSwatch Control Panel Monitoring System**

With the UPSwatch software, users can perform monitoring functions and an orderly shutdown of protected equipment in the event of power failure. UPSwatch displays diagnostic information such as: voltage, frequency and battery levels. UPSwatch Software screen is shown in Figure 11.

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The information in this manual is provided as a guide for installation, operation, and maintenance. It does not affect or exceed our obligations under the Terms and Conditions of Sale.

Note that unit specifications are subject to change without notice.

## Technical Support

Website: [www.solahd.com](http://www.solahd.com)

Technical Support E-Mail: [solahd.technicalservices@emerson.com](mailto:solahd.technicalservices@emerson.com)

Toll-Free: (800) 377-4384

USA: (847) 268-6651

When contacting SolaHD, please have the following information available:

1. Unit identification number.
2. The nature of problem, including status of all indicators and alarms.

## Warranty

Please see the “Terms & Conditions of Sale” document within the UPS packaging.

While every precaution has been taken to ensure accuracy and completeness in this manual, Appleton Grp LLC d/b/a Appleton Group assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

## SDU AC B-Series

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### United States (Headquarters)

Appleton Grp LLC  
9377 W. Higgins Road  
Rosemont, IL 60018  
United States  
T +1 800 621 1506

### Australia Sales Office

Bayswater, Victoria  
T +61 3 9721 0387

### Korea Sales Office

Seoul  
T +82 2 3483 1555

### Europe

ATX SAS  
Espace Industriel Nord  
35, rue André Durouchez,  
CS 98017  
80084 Amiens Cedex 2  
France  
T +33 3 2254 1390

### China Sales Office

Shanghai  
T +86 21 3338 7000

### Canada

EGS Electrical Group Canada  
Ltd.  
99 Union Street  
Elmira ON, N3B 3L7  
Canada  
T +1 888 765 2226

### Middle East Sales Office

Dammam, Saudi Arabia  
T +966 13 510 3702

### Asia Pacific

EGS Private Ltd.  
Block 4008, Ang Mo Kio  
Ave 10,  
#04-16 TechPlace 1,  
Singapore 569625  
T +65 6556 1100

### Chile Sales Office

Las Condes  
T +56 2928 4819

### Latin America

EGS Comercializadora  
Mexico S de RL de CV  
Calle 10 N°145 Piso 3  
Col. San Pedro de los Pinos  
Del. Álvaro Obregon  
Ciudad de México. 01180  
T +52 55 5809 5049

### India Sales Office

Chennai  
T +91 44 3919 7300

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