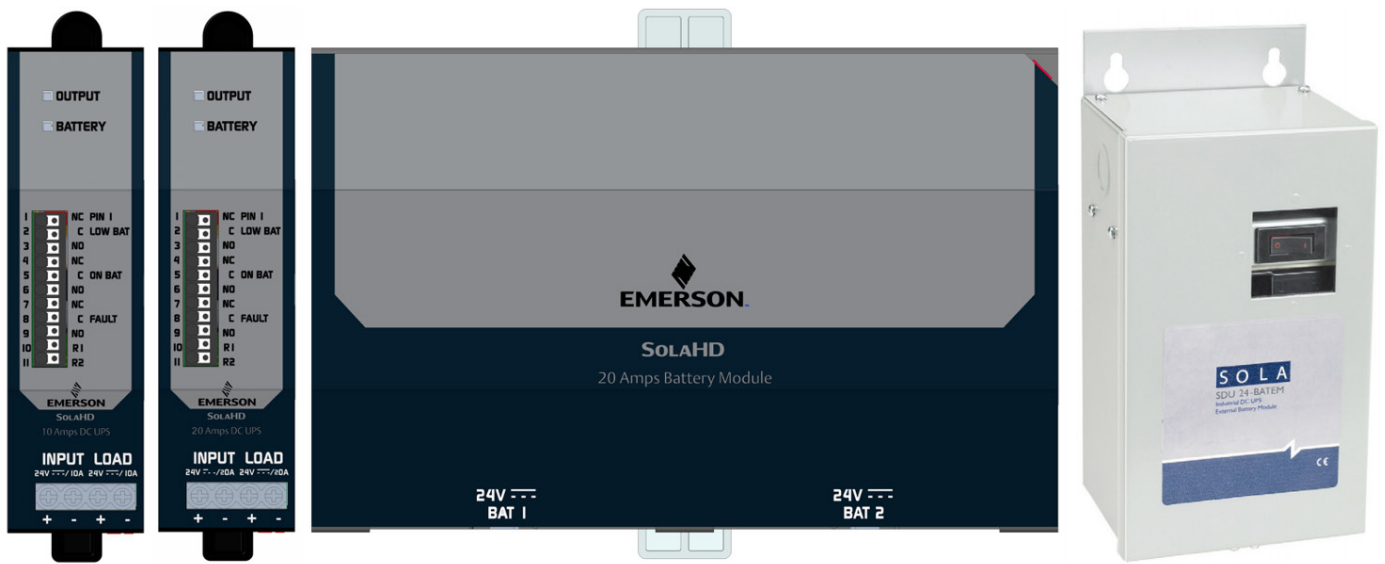


Factory Acceptance Testing and Commissioning

for SolaHD SDU DC B Series UPS Systems



Preface

Factory Acceptance Testing (FAT) ensures that new equipment meets critical specifications which will prevent issues once on-site. Please see the following FAT/Commissioning procedure for Emerson's SolaHD SDU DC B Series UPS systems.

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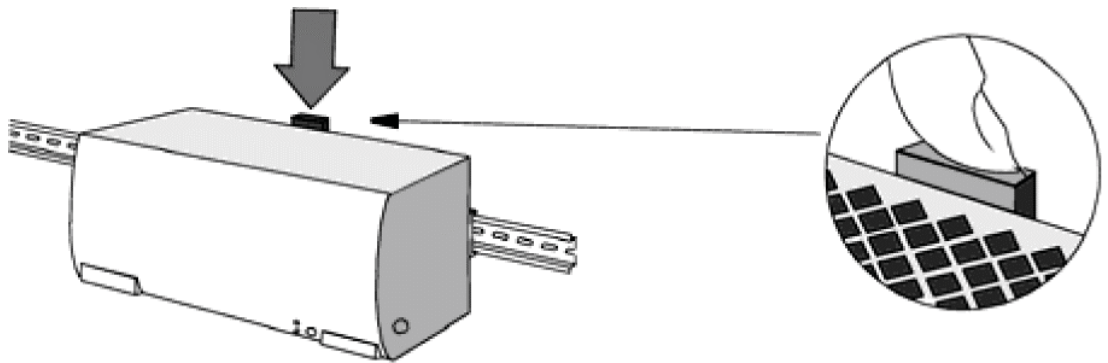
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Product Installtion

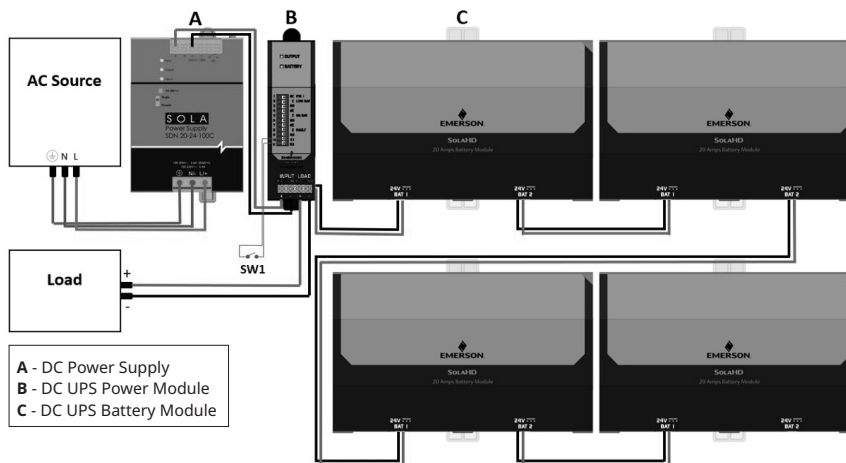
1. Place SDU DC B Series Control Module (SDU1024B or SDU2024B) and battery (SDU24BATB) in a protected area with adequate airflow and free of excessive dust.
2. Mount the control module and battery on the DIN Rail.
 - a. Tilt and place the unit on the DIN Rail.
 - b. Push the unit downward until it stops.
 - c. Push at the lower front edge to lock. Ensure the retainer has locked.

Figure 1 DIN Rail Installation



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3. Use the polarized cable (SDU24EXTBC1B/6B) included with the battery to connect the power module to the battery module.
 4. Connect the power module dc input connector to the 24 Vdc input power source.
 5. Hardwire the load to the power module output terminal connector.

Figure 2 SDU DC UPS B Wiring Installation



Wiring/Torque Specification

Important

Use only 90°C rated copper wire.

Table A: Wiring / Torque Specifications

Terminals	Gauge Size	Torque
Input/Output	10-14 AWG (5.3-2.1mm ²) for solid and stranded conductors	4.4-6.5 lb-inch (50-73 N-cm)
Contact Terminal Connections (1-9)	16-24 AWG (1.3-0.2mm ²) for solid and stranded conductors. 18-24 AWG (0.75-0.2mm ²) wire gauge for conductors with ferrule	N/A
Contact Terminal Connections (10-11)	Use attached R1/R2 jumper. In lieu of jumper, use 16-24 AWG (1.3-0.2mm ²) for solid and stranded conductors. 18-24 AWG (0.75-0.2mm ²) wire gauge for conductors with ferrule	N/A

Note: Use a Phillips head screwdriver to release the wire from the terminal. Other tools may damage the push terminal.

Operation Instructions

1. Ensure the DC input supply is de-energized prior to wiring the DC UPS System.
2. Ensure the Battery Module meets the charge schedule.
3. Battery should be fully charged for initial testing. The battery charge cycle is roughly 3 hours from empty to full.
4. Ensure the remote ON/OFF toggle switch for R1 and R2 is open (If using Remote On/Off bypass jumper, make sure it is disconnected).
5. Connect the DC input to the DC UPS module, connect the Battery Module to the UPS module, then connect the load to the UPS module.
6. Energize the DC input supply.

7. Enable the DC UPS by shorting R1 and R2 through the Remote On/OFF toggle switch (if not using a toggle switch, insert the Remote On/Off Bypass jumper).
8. This will start the UPS in Normal Mode.

Note: If the DC input supply is not present, the DC UPS will enable Battery Mode. The load will be powered by the battery module until the battery reaches the cutoff voltage (21.6V). Please ensure the UPS is off when the UPS is not in use to prevent draining of the battery.

Battery Test

1. Remove DC Input Supply.
2. Verify the Output LED begins flashing GREEN and the battery LED goes OFF. This means the UPS is in the Battery Mode.
3. Conduct a time study to verify backup time meets product and application specification based on loading.
4. Energize the DC Input to charge battery back to full charge (this should take 3 hours).
 - a. Verify the battery is at full charge once the battery LED is steady GREEN.

Table B: Battery Backup Times for SDU10-24B and SDU20-24B

SDU10-24B with SDU24-BATB (in minutes)					
Load	20% (2A)	40% (4A)	60% (6A)	80% (8A)	100% (10A)
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

SDU20-24B with SDU24-BATB (in minutes)					
Load	20% (4A)	40% (8A)	60% (12A)	80% (16A)	100% (20A)
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

Post Acceptance Test Instructions

Once satisfactory testing of the UPS system has been carried out and the battery is fully charged, the UPS is ready for use. **If the UPS is scheduled for use later than 8 hours from the completion of testing, please follow the steps below to ensure battery viability.**

1. Power Off the UPS by removing the R1/R2 jumper or opening the switch that is remotely connected to the R1/R2 terminals.
2. Disconnect the battery cable from the battery.

Figure 3 Battery Cable Installation

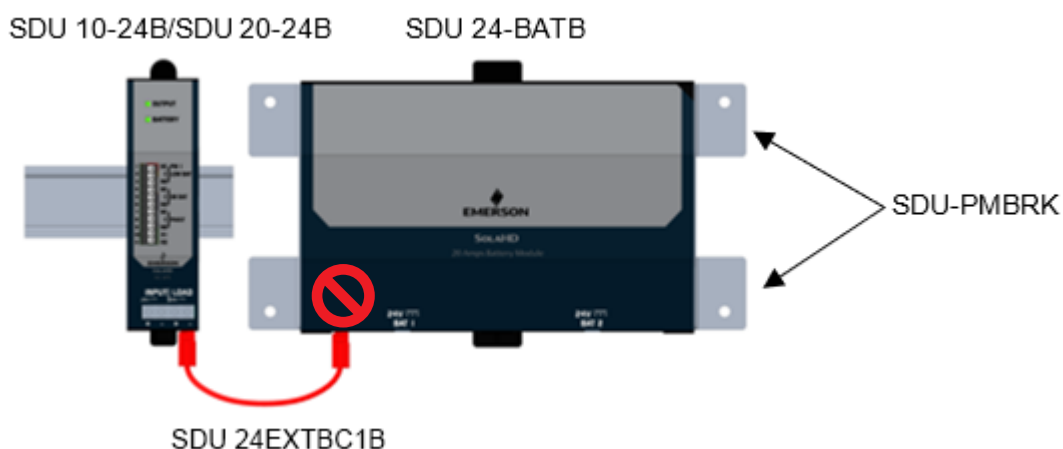
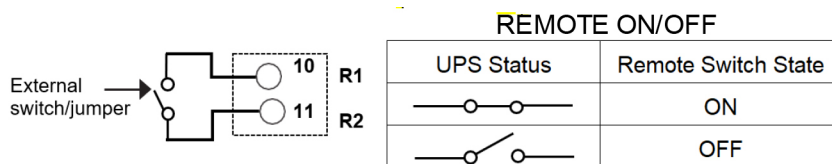


Figure 4 Remote On/Off Connection



Notes:

- This product uses a Valve Regulated Lead Acid (VRLA) battery which is susceptible to a reduction in performance if it over discharges. Over-discharge results in a failure to recover to normal capacity, operate on a reduced capacity, and maintain a shortened service life.
- Following the Post Acceptance Test Instructions (turing UPS Off and removing the battery cable from the control module) will significantly enhance the time to over discharge, thus maintaining the battery life for longer periods before the final startup. This duration is typically 2-3 months depending on various factors such as ambient temperature, age of battery, and prior charge-discharge cycles.
- If the battery reaches a deep discharge status, it will no longer be able to meet the specification of the UPS, no longer hold a charge, and must be re-

placed. The SDU24-BATB has a deep discharge threshold of 10V. Therefore, if the battery discharges below that level it will no longer be usable and must be replaced. If the battery drops below the 10V threshold, the Battery LED will turn solid RED when the UPS system is turned on for use.

If the UPS system schedule for service (power on) is > 2-3 months after FAT, the battery must be charged per charge schedule prior to use.

Table C: Battery Recharge Schedule

Typical Recharge Time (to 90% of Full Capacity)	SDU24-BATB: 3 hours for 1 battery module, 3 hours for each additional battery module
	SDU24-BATEM: 8 hours for 1 battery module
Extended Storage Recharge Schedule	During extended storage in environments where the ambient temperature is -15°C to 30°C, charge the UPS battery every 4 months
	During extended storage in environments where the ambient temperature is 30C to 40C, charge the UPS battery every 3 months

Technical Support

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