



DIN RAIL MOUNTED INDUSTRIAL DC UPS – PRODUCT GUIDE

SDU DIN RAIL DC UPS




From the industry leader in power quality solutions comes an uninterruptible power supply that's designed specifically for critical DC-powered equipment. The SolaHD SDU DIN Rail DC UPS keeps computers, manufacturing equipment and other machines running smoothly when the power fails. Data corruption and production losses from interrupted power become a thing of the past. And because it's DC, unnecessary AC/DC energy conversion losses are eliminated.

FEATURES

- Modular, rugged industrial grade design
- All components UL 508
- Microprocessor based controls
- Automatic self-test feature for UPS function and battery management check
- Power module wide operation temperature range (-20 to +50°C)
- Flexible batteries back-up expansion capabilities
- Overload protection in normal and battery modes
- User replaceable batteries
- IP-20 rated input and output screw terminals
- No internal fan, no extra cooling required
- LED Status Indicators for easy visual diagnostics
- Universal Dry Contact Relay terminals provide remote signaling
- Monitoring, diagnostics, and remote shut-off capabilities
- Two year warranty



CERTIFICATIONS AND COMPLIANCES

-  Listed, Ind. Control Equipment, E61379
- UL 508, CSA C22.2 No. 107.1
-  UL Recognized Component, ITE, E137632
- UL 60950-1/CSA C22.2 No. 60950-1
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- IEC/EN60950-1

ADVANTAGES AND APPLICATIONS

The SDU DIN Rail DC UPS takes industry-leading design to create unique installation options. The SDU delivers safety by being the only UPS available with an external battery module. Now you can seal the electronics in the panel while maintaining the battery outside of a non-ventilated enclosure. It's a full-featured 24 Vdc uninterruptible power supply with automatic self-test functionality ensuring that the UPS and battery are ready when needed.

ADVANTAGES

These units include easy to wire screw terminations for critical devices needing battery back-up. The SDU DC UPS includes an automatic self-test feature that checks the UPS and battery functions. Battery charging occurs automatically when input DC power is applied. When power fails, the DC UPS will switch to battery back-up. If the battery is no longer useful, the UPS will sound an alarm and an LED indicator will illuminate.

Back-up power protection in modern industrial applications depend mainly on AC UPS. AC is converted to DC, and converted back to AC in the AC UPS, then converted back to DC in the protected equipment power supply. By applying the new Sola SDU DIN Rail DC UPS, you avoid the inefficiencies of all these conversions. This design maximizes system up-time flexibility, and optimizes reliability assurance, making the SDU DC UPS the definition of DC power quality.

VERSATILE APPLICATIONS

- Industrial/Machine Control
- Automation Process Control
- Computer-based Control Systems
- Conveying Equipment
- Material Handling
- Packaging Machines
- Semiconductor fabrication equipment
- DeviceNet™
- Amusement Park Equipment
- Pharmaceutical Applications
- Control Rooms



SELECTION TABLE

Catalog Number	Description	Approx. Ship Weight lbs (kg)
UPS		
SDU 10-24	240 Va, 24V/10A Din Rail Dc Ups Power Module, Battery Module Is Required	1.7 (0.77)
SDU 20-24	480 Va, 24V/20A Din Rail Dc Ups Power Module, Battery Module Is Required	1.7 (0.77)
Battery		
SDU 24-BAT	24V Din Rail/Panel Mount Battery Module (Cable Included)	12.0 (5.33)
SDU 24-BATEM	24V External Mount Battery Module (Cable Included)	16.0 (7.11)
Accessories		
SDU 24EXTBC6	Optional 6 Ft. Battery Module Cable To 24V Dc Ups	0.5 (0.22)
SDU 24-DB9	Optional Interface Kit To Convert Relay Contacts Signals To Db9 Signals	1.0 (0.45)
SDU-PMBRK	Optional Chassis Mount Brackets To Secure Ups To Wall, Panel, Or Enclosure	0.5 (0.22)

There are three individual hardware products when putting an SDU DC UPS system into operation:

1. 24 Vdc Power Supply (Recommended SolaHD SDN Series)
2. 24 Vdc SDU DC UPS Power Module
3. 24 Vdc SDU DC UPS Battery Module; or
24 Vdc SDU DC UPS External Battery Module

There are two models of the SDU DC UPS Power Module:

1. SDU 10-24, 24 Vdc/10amp (battery modules are required)

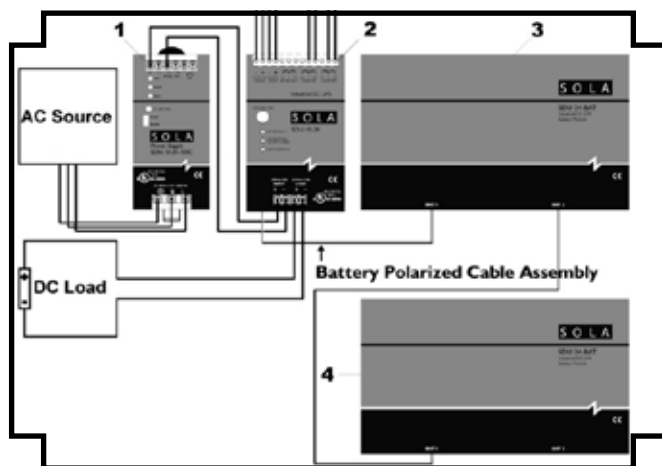
2. SDU 20-24, 24 Vdc/20amp (battery modules are required)

There are two models * of the SDU DC UPS Battery Modules:

1. SDU 24-BAT, DIN Rail/Panel mount for installation in ventilated enclosure, up to 4 battery modules can be connected to the SDU DC UPS.
2. SDU 24-BATEM, Panel mount, alternate battery module for external installation of non-ventilated enclosures, only 1 battery module can be connected to the SDU DC UPS.

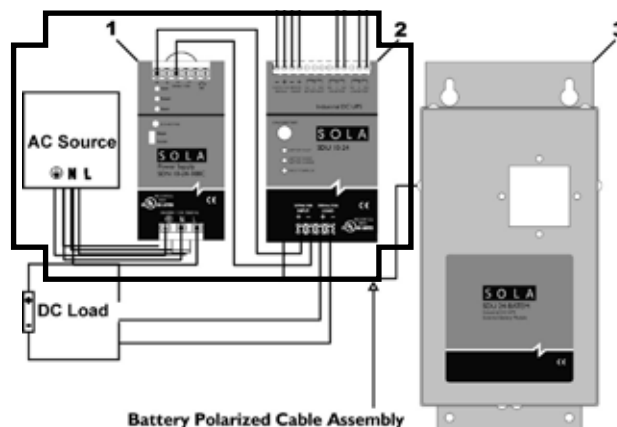
* Can not use a combination of both models of the battery modules, only one model of the battery module can be connected to the SDU DC UPS.

DIN RAIL MOUNTED BATTERY OPTION



- 1) AC/DC Power Supply
- 2) Power Module: SDU 10-24 or SDU 20-24
- 3) Battery Module: SDU 24-BAT
- 4) Optional battery module for extended Back-up.

EXTERNAL BATTERY OPTION



- 1) AC/DC Power Supply
- 2) Power Module: SDU 10-24 or SDU 20-24
- 3) Battery Module: SDU 24-BATEM

WIDE INDUSTRIAL CONTROL APPLICATIONS

Specification	SDU 10-24	SDU 20-24
Input		
Nominal Input Voltage	24 Vdc	
Input Voltage Range	22.5 - 30 Vdc	
Input Fuse	DC Fuse 30A	
Output		
Nominal Output Voltage	24 Vdc	
Output Voltage Range	22.5 - 30 Vdc	
Output Current	10 A	20 A
Current Limit	12 A	22 A
Protection		
Input Protection	Fuse for overload & short circuit protection	
Overload Protection	Electrical Circuit Protection	
Short Circuit	UPS output cut off immediately	
Battery Module		
Type	Sealed, maintenance-free lead acid batteries.	
Charging Current	0.5 A	
Typical Recharge Time (to 90% of full capacity)	8 Hours for 1 Battery Module 24 Hours for 2 Battery Module 12 Hours for each additional Battery Module	
Back-up Time (full load) ¹	14 minutes	4 minutes
Protection	UPS Shutdown when battery voltage drops below 22V, to prevent the complete depletion of the battery, short circuit protection by a 30A fuse.	
Physical		
Net Weight - lbs (kg)	1.7 (0.77)	
Dimensions H x W x D - in. (mm)	4.88 x 3.02 x 4.55 (124.0 x 77.0 x 116.0)	
Alarm		
Battery Low	Rapid Audible Indicator every 1 second	
Overload	Continuous Audible Indicator	
Environment		
Audible Noise	<40 dBA (1 meter from surface)	
Power Module Operating Temperature	-20°C to +50°C	
Storage Temperature	-20°C to +70°C	
Humidity	0-95%	
Max Elevation	3500 meters (11483 feet)	
Shock & Vibration	According to ISTA 2A	
DC UPS System ²		
EMC	FCC Part 15, Subpart B, Class A 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	
General		
MTBF	> 200,000 Hours, MIL-STD 217F	
Installation		
Output	Outputs are capable of providing high currents for short periods of time for inductive load start-up 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-mounted, optional screw mounting set SDU-PMBRK.	
Connections	Input & Output: IP20-rated screw terminals, connector size range: 16-12 AWG (0.5-4 mm ²) for copper conductors rated 90o.	
Relay Contact Terminal Connections	IP20 screw terminals; connector size range: 24-16 AWG (0.34-4mm ²)	
Case	Fully enclosed metal housing with ventilation grid to keep out small particles.	
Free Space	20 mm above and 35 mm below, 20 mm left and right, 10 mm in front	

Notes:

1. See Battery Back-up Times on next page.
2. DC UPS System includes one power module (SDU 10-24 or SDU 20-24) and one or more battery modules (SDU 24-BAT or SDU 24BATEM)

SDU DC UPS BATTERY MODULE SPECIFICATIONS

Parameter	SDU 24-BAT	SDU 24-BATEM
Nominal Voltage	24 VDC	
Protection	Fuse: 30A	Circuit Breaker: 24V, 25A
Charging Current	0.5A	0.8A
Enclosure Dimension in. (mm)	4.88 X 8.27 X 4.55 (124.0 X 210.0 X 116.0)	11.5 X 5.57 X 4.57 (292.0 X 142.0 X 116.0)
Enclosure Type	IP20	NEMA 1
Terminal Connector Type	Polarized Powerpole Connectors	
Batteries	Replaceable Batteries	
Accessories	1 ft. polarized battery cable	6 ft. polarized battery cable
Operating Temperature	-20° TO +50°C	
Storage Temperature	-20° TO +40°C	
Humidity	95% no condensation	
Weight - lbs (kg)	12.0 (5.33)	16.0 (7.11)
Mounting	Simple snap-on system for DIN Rail TS35/7.5 or TS35/15 or chassis-mounted, optional screw mounting set SDU-PMBRK.	Wall/Chassis Mounting

SDU DC UPS BACK-UP TIMES (TYPICAL)

SDU 10-24 with SDU 24-BAT					
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
SDU 10-24 with SDU 24-BATEM					
1 EBP	135	52	28	19	14
SDU 20-24 with SDU 24-BAT					
Load	20% (4A)	40% (8A)	60% (12A)	80% (16A)	100% (20A)
1 Unit	46	21	10	06	04
2 Units	116	50	28	17	10
3 Units	178	80	46	31	20
4 Units	237	113	65	43	31
SDU 20-24 with SDU 24-BATEM					
1 EBP	48	17	9	6	4

Emerson brings integrated manufacturing solutions to diverse industries worldwide. Our comprehensive product line, extensive experience, world-class engineering and global presence enable us to implement solutions that give our customers the competitive edge. SolaHD is our premium line of power-conversion and power quality solutions products.

For over 150 years, our electrical product brands have been providing a rich tradition of long-term, practical, high quality solutions with applications ranging from the construction and safe operation of petrochemical and process plants to providing quality power that precisely controls automotive robotic production.

Engineers, distributors, contractors, electricians and site maintenance professionals around the world trust Emerson brands to make electrical installations safer, more productive and more reliable.

The Appleton Group business unit of Emerson is organized into three focused groups that provide distributors and end users expert knowledge and excellent service.

Electrical Construction Materials

This group is made up of the Appleton and O-Z/Gedney brands. They manufacture a broad range of electrical products including conduit and cable fittings, plugs and receptacles, enclosures and controls, conduit bodies and industrial and hazardous lighting. Whether the application is hazardous location, industrial or commercial, the electrical construction materials group has the products to meet your needs.

Power Quality Solutions

The SolaHD brand offers the broadest power quality line, including uninterruptible power supplies, power conditioners, voltage regulators, shielded transformers, surge protection devices and power supplies.

Heating Cable Systems

This group is made up of the EasyHeat and Nelson brands. They offer a broad range of electrical heating cable products for residential, commercial and industrial applications.

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