



SDU™ DIN RAIL DC UPS

The compact uninterruptible DC power supply that protects sensitive DC equipment from power failure losses.

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

VERSATILE APPLICATIONS

The SDU DC UPS protects the increasing number of microprocessor-based technologies common in the industrial environment from voltage fluctuations and power failures on the factory floor. Back up DC power during power disturbances reduces production losses and helps maintain high efficiency levels. A few example applications include:

- Industrial/Machine Control
- Automation Process Control
- Computer-based Control Systems
- Conveying Equipment
- Material Handling
- Packaging Machines

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.



SELECTION PROCESS

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

1. 24 Vdc Power Supply (Recommended Sola SDN Series)
2. 24 Vdc SDU DC UPS Power Module
3. 24 Vdc SDU DC UPS Battery Module
4. 24 Vdc SDU DC UPS External Battery Module

There are two models of the Power Module:

SDU 10-24, 24 Vdc/10 amp (battery modules are required)
SDU20-24, 24 Vdc/20 amp (battery modules are required)

There are two models* of the Battery Modules:

- **DIN Rail Mounted Battery Option:** 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.
- **External Battery Option:** SDU 24-BATEM, Panel mount, alternate battery module for external installation of non-ventilated enclosures. One battery module can be connected to the SDU DC UPS.



Back-up Times (Typical)

SDU10-24 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
SDU10-24 with SDU 24-BATEM					
1 EBP	200	82	44	30	21
SDU20-24 with SDU24-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	84	30	16	11	7

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 x 210 x 116)	11.5 x 5.57 x 4.57 (292 x 142 x 116)
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	
Charge Temperature	0° to +40°C	
Storage Temperature	-20° to +40°C	
Humidity	95% no condensation	
Safety Standard For DC UPS System*	UL60950-1, IEC 60950-1, UL508, CE CAN/CSA C22.2 No 107.1-01 CAN/CSA C22.2 No 60950-1	
Weight - lbs (kg)	12 (5.33)	16 (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

Selection Table

CATALOG NUMBER	DESCRIPTION	APPROX. SHIP WEIGHT lbs (kg)
SDU 10-24	240 VA, 24V/10A DIN Rail DC UPS power module, battery module is required	1.65 (0.65)
SDU 20-24	480 VA, 24V/20A DIN Rail DC UPS power module, battery module is required	1.65 (0.65)
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)
SDU 24EXTBC6	Optional 6ft Battery Module Cable to 24V DC UPS	.5 (.22)
SDU 24-DB9	Optional interface kit to convert relay contacts signals to RS232/DB9 signals	1 (.45)
SDU-PMBRK	Optional chassis mount brackets to secure UPS to wall, panel, or enclosure	.5 (.22)

* 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.

For a full listing of Sola/Hevi-Duty's DIN Rail Power Supply and Power Quality products, visit our website at www.solaheviduty.com or consult our full line catalog.

Power Modules Specifications

SPECIFICATION	CATALOG NUMBER	
	SDU10-24	SDU20-24
	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	10A	20A
Current Limit	12A	22A
	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)	1.65 (0.75)	
Dimensions H x W x D (mm)	4.88 x 3.02 x 4.55 (124 x 81 x 116)	
	ALARM	
Battery Low	Rapid Audible Indicator every 1 second	
Overload	Continuous Audible Indicator	
	ENVIRONMENT	
Audible Noise	<40dBA (1 meter from surface)	
Power Module Operating Temperature	-20°C to +50°C	
Storage Temperature	-20°C to +70°C	
Humidity	0-95%	
Pollution	Degree 2	
Max Elevation	3500 meters (11,483 feet)	
Shock & Vibration	According to ISTA 2A	
	DC UPS SYSTEM² SAFETY	
US Standard	UL 60950-1, UL508, FCC part A	
Canadian Standard	CAN/CSA C22.2 No 107.1-01, CAN/CSA C22.2 No. 60950-1	
CE	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 61000-4-4, 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 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-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 90°.	
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	