



## Uninterruptible Power Supplies for Industrial Applications

**SolaHD™ SDU AC - A Series (500 VA and 850 VA)**  
**Din Rail UPS**  
Product Guide



# SDU AC - A Series, Din Rail UPS

The SolaHD™ SDU AC - A Series DIN Rail UPS by Emerson™, combines an industry leading compact design with enhanced communications, a wide operational temperature range and unique installation options. The UPS series is a cost effective solution providing ride through during brief power outages and allows for safe equipment shutdown to prevent data loss, work interruptions and equipment damage during longer outages. These units include easy to wire screw terminations for devices needing battery back-up such as microprocessor-based or computer based control systems.

## Applications

- Programmable Logic Controllers
- Factory Automation
- Robotics
- Conveying Equipment
- Computer-based Control Systems
- Industrial Internet of Things (IIoT) environment



## Standard Features

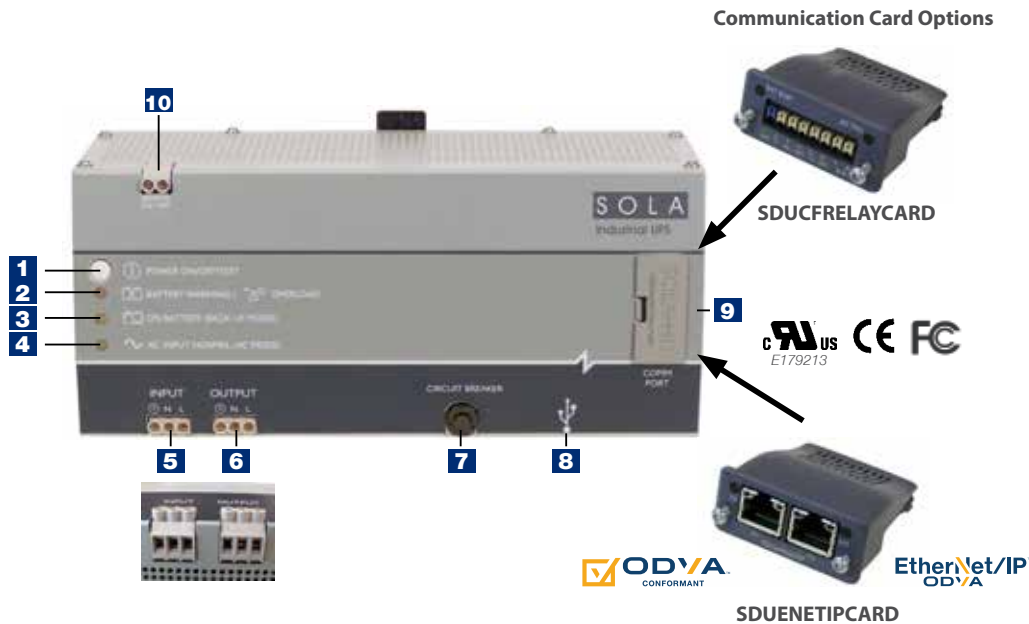
- Lightweight, compact industrial design
- Communications port for optional Industrial Ethernet protocols or discrete communication card
- Wide operation temperature range (0 °C to 50 °C)
- Cold start capability
- Software and cable included for easy installation
- Simulated sinewave output
- USB communication port
- Remote turn-on and shutdown capabilities
- Two year limited warranty
- Panel/wall mounting brackets (optional)

## Certifications and Compliances

- **CE**
  - Low Voltage Directive: EN62040-1
  - EMC Directive: EN62040-2
- Class 1 Division 2 - ANSI ISA 12.12.01/CSA 213
- RoHS Compliant
- **UL** Recognized Component, UPS Equipment
  - UL 1778 5th Ed., CSA C22.2 No. 107.3
  - Suitable for UL 508 at full load output (no derating) and Industrial Control Equipment Applications CSA C22.2 No. 107.1
  - Overvoltage Cat III, Pollution Degree III
- **ODVA CONFORMANT™** EtherNet/IP™ SDUENETIPCARD has been tested and approved for conformance by the ODVA. More information about EtherNet/IP™ and the ODVA can be obtained from the following website: [www.odva.org](http://www.odva.org).

# Lightweight, Compact Design

The SDU AC - A Series communications port is designed for networked Industrial Ethernet (example: EtherNet/IP™) protocols or discrete (passive – dry contact relay) I/O applications. The optional communication cards provide flexibility required while saving valuable DIN rail space. The SDU AC - A Series can be used in a variety of applications and industries that rely heavily upon robotics, factory automation, PLCs, conveying equipment, CNC machinery, and throughout the Industrial Internet of Things (IIoT) environments.



## 1 Power On/Off/Test:

- ON - To turn the UPS ON, press and release the button for more than 2 seconds until you hear “3 quick beeps” and the LEDs light. SELF-TEST - Press the button for less than one second to activate the self-testing.
- OFF - Press for more than five seconds to turn OFF LED , UPS turn on.

## 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 Input Circuit Breaker:

Protection from AC overload and short circuit.

## 8 USB Port:

High speed 2.0 Standard USB Type B Peripheral Communication Port used to establish control and monitoring with UPSMON software.

## 9 Comm Port:

Communication card slot.

- COMM CARD: SDUCFRELAYCARD and SDUENETIPCARD NETWORK COMM CARD 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.

## 10 Remote On/Off Terminals:

Use a switch to remotely toggle ON/OFF state. Non-Polarized terminals.

Selection Table

Catalog Number	Capacity (VA/W)	Volts, Frequency In/Out	Typical Back-Up Time (minutes) At full load/half load.	Input/Output Connections	Approx. Ship Weight kg (lbs)
SDU 500A	500/300	120 Vac, 50/60 Hz	4/18	IP20 touch proof, screw terminals. Wire range: 10 ~ 18 AWG.	10.6 (4.8)
SDU 850A	850/510		2/10		11.5 (5.2)
SDU 500A-5	500/300	230 Vac, 50/60 Hz	4/18		10.6 (4.8)
SDU 850A-5	850/510		2/10		11.5 (5.2)

# Industrial Strength Protection

## Specifications

Catalog Number	SDU 500A	SDU 850A	SDU 500A-5	SDU 850A-5
Capacity (VA/Watts)	500/300	850/510	500/300	850/510
Load Power Factor	0.6			
<b>Dimensions - inches (mm)</b>				
Unit (H x W x D) in. (mm)	4.87 x 11.1 x 4.81 (123.7 x 281.9 x 122.3)			
Weight - lbs (kg)	10.6 (4.8)	11.5 (5.2)	10.6 (4.8)	11.5 (5.2)
<b>Input Parameters</b>				
Voltage	120 V (+10%, -20%)		230 V (+/- 15%)	
Frequency	50 +/- 5 Hz or 60 Hz +/- 6 Hz (auto sensing)			
<b>Output AC Parameters</b>				
Voltage (Battery Mode)	Simulated sinewave +/- 5%			
Frequency (On Battery)	50 or 60 Hz +/- 0.3 Hz			
Overload Protection	UPS automatic shutdown if overload exceeds: 105% of nominal at 20 seconds 120% of nominal at 10 seconds 130% of nominal at 3 seconds			
Short Circuit	UPS shutdown, auto-recovery			
<b>Battery Parameters</b>				
Battery Type	Sealed, non-spillable, maintenance-free lead acid batteries			
Transfer Time	Typical <8 ms			
Back-Up Time (minutes) Full Load/Half Load	4/18	2/10	4/18	2/10
Recharge Time	8 hours to 90% capacity of full discharge			
<b>Environmental</b>				
Operating Temperature	0 °C to 50 °C			
Storage Temperature	-15 °C to 60 °C			
Relative Humidity	0 to 95%, non-condensing			
Ambient Operation	0-95% humidity non-condensing, 0-50 °C up to 6,600 ft. (2000m)			
Audible Noise	< 40dBA (1 meter from surface)			
<b>Standards</b>				
Approvals	UL Recognized Component, UPS Equipment UL 1778 5th Ed., CSA C22.2 No. 107.3, Suitable for UL 508 at full load output (no derating) and Ind. Control Equipment Applications CSA C22.2 No. 107.1, —Class 1 Division 2 - ANSI ISA 12.12.01/CSA 213 (Pending) Overvoltage Cat III, Pollution Degree III ODVA CONFORMANT™, ROHS ,			
EMC	FCC Part 15, Subpart B, Class A Level 4; EMC: EN62040-2; EN55032; CISPR22; EN61000-3-2; IEC61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -2-2			
Elevation	5000 ft. without derating			
Surge Protection	Meets IEEE C62.41, Category A			
Shock	Operating: IEC60068-2-27, Half Sine Wave: 10G for a duration of 11ms, shock for 1 direction (X axis) Non-operating: IEC60068-2-27, Half Sine Wave: 30G for duration of 11ms, 3 shocks for all 3 axes			
Vibration	Operating: IEC60068-2-6, Sine Wave: 10Hz to 500Hz @19.6m/S², displacement of 0.35mm, 60 min per axis for all X, Y, Z direction. Non-operating: IEC60068-2-6, Random : 5hz to 500Hz (2.09Grms); 20 min per axis for all X,Y,Z			
Mounting	To be mounted on DIN TS35/7.5 or TS35/15 rail system. Chassis mounting permissible via optional brackets (SDU-PMBRK).			

# Flexible Communication, Control Options

The SDU AC - A Series UPS is tested and approved for use in industrial control equipment applications under UL 508 and CSA C22.2 No. 107.1 at the full output VA rating. Therefore, no derating is necessary. It's compact and lightweight design mounts directly to the installed DIN rail via the factory provided DIN RAIL clip, requiring no additional hardware. Optional mounting brackets and additional enhanced DIN clips are available when specific applications require an alternate mounting method or additional securing to the DIN RAIL. The SDU AC - A Series UPS allows for ease of installation and flexibility in your control enclosure designs.

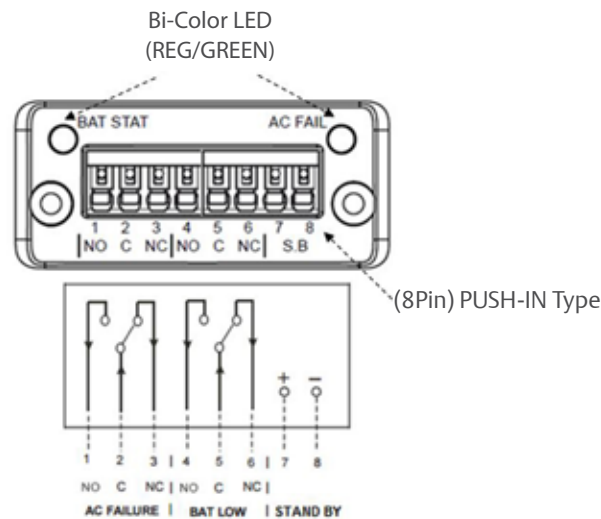
## Comm Card Accessories

Catalog Number	Description	Approx. Ship Weight - kg (lbs)
<b>Active - (Industrial Ethernet)</b>		
SDUENETPCARD	2 Port EtherNet/IP™ COMM CARD	1.0 (28.4)
SDUECATCARD	2 Port EtherCAT COMM CARD	1.0 (28.4)
SDUMBUSCARD	2 Port Modbus® - TCP COMM CARD	1.0 (28.4)
SDUPNETCARD	2 Port Profinet Industrial Protocol COMM CARD	1.0 (28.4)
<b>Passive</b>		
SDUCFRELAYCARD	SDU CF Dry Contact I/O RELAY CARD	1.0 (28.4)

## SDU Accessories

Catalog Number	Description	Approx. Ship Weight - kg (lbs)
SDU-PMBRK	Mounting brackets to secure UPS to wall, back of panel or enclosure.	16.0 (454.0)
SDUEDC	Enhanced DIN Clip to secure UPS to DIN rail	1.6 (45.3)

## SDU CF Relay Card Connection Diagram

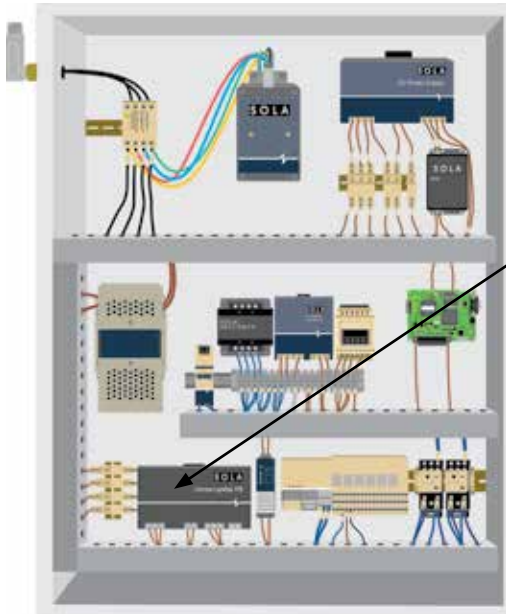


# Protecting Your Investment

Description	Catalog Number	
	SDUCFRELAYCARD	Active Cards (Example: SDUENETIPCARD) ①
<b>Input</b>		
Nominal Voltage	+3.3 V ±5 %	
Standby signal	Active Low Via Normally Open Momentary Switch	
Frequency	50/60 HZ	
<b>Output</b>		
LED Diagnostics	Refer to Diagram	Refer to Diagram NS = Network Status, MS=Module Status
Relay Logic Signals	Refer to Diagram	—
Relay Contact Ratings	60V Peak, 1A	—
Case/Enclosure Material	Housing: LCP (Liquid Crystal Polymer) Color: Natural, Thermoplastic,UL 94 V-0	
<b>Weight and Dimensions</b>		
H x W x D, in. (mm)	0.91 x 2.0 x 2.2 (23 x 50 x 55) approximate	
Net Weight, oz. (g)	1.0 (28.4) approximate	
<b>Standards</b>		
Immunity/Emissions	Emission EN 61000-6-4 EN55016-2-3 Radiated Emission EN55022 Conducted Emission Immunity EN 61000-6-2 EN61000-4-2 Electrostatic Discharge, EN61000-4-3 Radiated Immunity. EN61000-4-4 FAST Transients/Burst, EN61000-4-6 Conducted Immunity	
Approvals ①	EN/IEC 60950-1 ; UL/CSA 60950-1 Pollution Degree 3; UL 508 Pollution Degree 3 CSA 107.1; EU ROHS2,China ROHS2	
Temperature °F (°C)	Storage: -40 to +185 (-40 to +85) Operating: -40 to +158 (-40 to +70) Convection Cooling; No Forced Air Required.	
Vibration	Operating: IEC60068-2-6, Sine Wave: 10HZ to 500HZ @19.6M/S <sup>2</sup> , displacement of 0.35mm, 60 min per axis for all X, Y, Z direction. Non-Operating: IEC60068-2-6, Random : 5HZ TO 500HZ (2.09GRMS); 20 min per axis for all X,Y,Z direction.	
Shock	Operating: IEC60068-2-27, Half Sine Wave: 10G for a duration of 11MS, shock for 1 direction (X AXIS). Non-Operating: IEC60068-2-27, Half Sine Wave : 50G for duration OF 11MS, 3 shocks for each 3 directions.	
Humidity	0% TO 90% RH, Non-Condensing; IEC 68-2-2, 68-2-3	
Warranty	2 Years	
MTBF (bellcore)	1,968,800 Hours	
General Protection/Safety	Protected Against Continuous Short -Circuit, Continuous Overload, Continuous Open Circuit. Galvanic Isolation: I/P TO O/P: 3KVAC, I/P TO GND: 1.5KVAC, O/P TO GND: 0.5KVAC Protection Class 1 (IEC536), Degree of Protection IP20 (IEC 529) Safe Low Voltage: SELV (ACC. EN60950); ROHS	

① Approvals apply for ActiveCards. Contact Technical support for Passive Cards.

# Protecting Critical Loads, Maintaining Reliability



*The SDU AC - A Series provides back-up protection for sensitive equipment in a control panel.*



## Connection Diagram

This Off-Line UPS is designed to allow safe and secure mounting on a DIN Rail, in a control panel or as an integrated part of an enclosure or machine. Boasting a compact design and weight of approximately 5 kg (11 lbs), the SDU-A Series provides reliable and economical power protection to critical loads in locations exposed to power aberrations in the factory floor environment.



*The SDU AC - A Series allows critical equipment to safely shutdown and for an orderly and quick restart preventing costly disruptions on the factory floor or within your facility maintaining your profit.*

# Effective solutions in critical equipment protection within harsh industrial environments



SolaHD™ is the cornerstone brands of Emerson's Electrical Apparatus and Lighting business; trusted worldwide to power your process control applications in the most demanding applications worldwide.

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