



## SDU (500 VA AND 850 VA) OFF-LINE DIN RAIL AC UPS – PRODUCT GUIDE

# SDU SERIES, DIN RAIL AC UPS

The SDU DIN Rail UPS combines an industry leading compact design with a wide operation temperature range and unique installation options. The SDU series provides economical protection from damaging impulses and power interruptions. These units include easy to wire screw terminations for critical devices needing battery back up such as computer based control systems.

## APPLICATIONS

- Programmable Logic Controllers
- Factory Automation
- Robotics
- Conveying Equipment
- Computer based Control Systems

## FEATURES

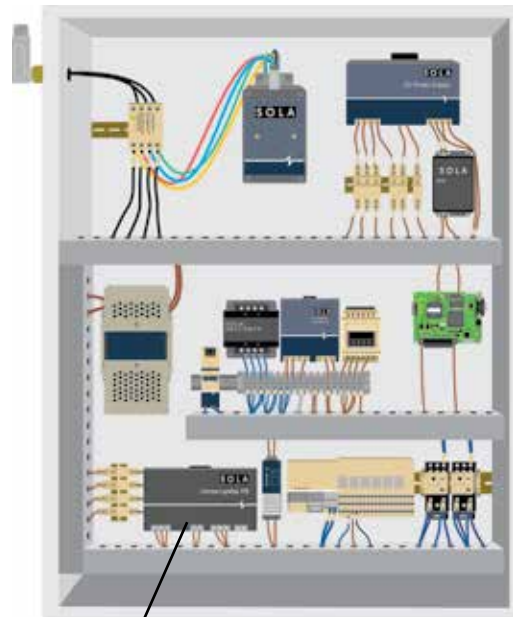
- Lightweight, compact industrial design
- Wide operation temperature range: 0 °C to +50 °C (+32 °F to +122 °F)
- Cold start capability
- Software and cable included for easy installation
- Simulated sinewave output
- RS232 communication port
- USB communication port (optional)
- Form C dry contact relay (optional)
- Panel/wall mounting brackets (optional)
- Remote turn-on and shut-off capabilities
- Two year limited warranty

## CERTIFICATIONS AND COMPLIANCES

- All Models
  - **CE**
  - Low Voltage Directive: EN62040-1: 2008/A1: 2013
  - EMC Directive: EN62040-2: 2006
- SDU 500, SDU 850 Models
  - **cULus** UL Recognized Component, UPS Equipment
  - UL 1778, CSA C22.2 No. 107.3
  - Suitable for UL 508 with no derating and CSA C22.2 No. 107.1 Ind. Control Equipment Applications
  - Overvoltage Cat III, Pollution Degree III

## RELATED PRODUCTS

- Portable MCR Power Conditioners
- STV Surge Protective Devices
- SDN DIN Rail Power Supplies
- STFV Plus Active Tracking® Filters



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

## SECURE MOUNTING

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 series provides reliable and economical power protection to critical loads in locations exposed to power aberrations in the factory floor environment.



*The SDU allows critical equipment to safely shutdown preventing costly disruptions on the factory floor.*

# LIGHTWEIGHT, COMPACT DESIGN



IP20-Rated Input and Output Screw Terminals



V<sub>out</sub>, Remote and Communications Port

## **A** POWER ON/OFF/TEST PUSH BUTTON

- Cold start feature allows UPS to be started even if there is no AC input.
- A simple push of the button initiates UPS self-test.

## **B** DETAILED LEDS

- Clearly indicates UPS operation status and condition

## **C** SCREW TERMINAL CONNECTIONS

- Strong and reliable screw clamp connections
- Accepts 10-24 AWG wire
- Meets IP20 specifications

## **D** INPUT CIRCUIT BREAKER

- Provides protection from AC overload and short circuit

## **E** V<sub>OUT</sub>

- Output terminal providing 12V power source to the optional relay card

## **F** REMOTE

- RS232 Communication port, DB9 connector
- Open collection signal for "AC Failure", "Low Battery" and "UPS Shutdown" (dry contact relay options available)

## **G** COMMUNICATION

- RS232 communication port with USB support (optional accessory available — UPSMONUSB)

## **H** REMOTE ON/OFF

- Remote on/off IP20 screw terminals provides the same functions as the front panel switch including ON/OFF/Test functions
- Accepts 10-24 AWG wire

# INDUSTRIAL STRENGTH PROTECTION

| Catalog Number             | SDU 500                                                                                                                                                                                                         | SDU 850    | SDU 500-5       | SDU 850-5  |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|------------|
| Capacity (VA/Watts)        | 500/300                                                                                                                                                                                                         | 850/510    | 500/300         | 850/510    |
| Load Power Factor          | 0.6                                                                                                                                                                                                             |            |                 |            |
| Dimensions - mm (in)       |                                                                                                                                                                                                                 |            |                 |            |
| Unit (H x W x D) - mm (in) | 124.0 x 281.0 x 116.0 (4.88 x 11.1 x 4.55)                                                                                                                                                                      |            |                 |            |
| Weight - kg (lbs)          | 4.7 (10.7)                                                                                                                                                                                                      | 5.0 (11.4) | 5.2 (11.5)      | 5.4 (11.9) |
| Input Parameters           |                                                                                                                                                                                                                 |            |                 |            |
| Voltage                    | 120 V (+10%, -20%)                                                                                                                                                                                              |            | 230 V (+/- 20%) |            |
| Frequency                  | 50 +/- 5 Hz or 60 Hz +/- 6 Hz (auto sensing)                                                                                                                                                                    |            |                 |            |
| Output AC Parameters       |                                                                                                                                                                                                                 |            |                 |            |
| Voltage (Battery Mode)     | Step 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% at 10 seconds, 130% at 3 seconds                                                                                                 |            |                 |            |
| Short Circuit              | UPS output cut off immediately                                                                                                                                                                                  |            |                 |            |
| Battery Parameters         |                                                                                                                                                                                                                 |            |                 |            |
| Battery Type               | Sealed, non-spillable, maintenance-free lead acid batteries                                                                                                                                                     |            |                 |            |
| Transfer Time              | 4 - 6 ms typical                                                                                                                                                                                                |            |                 |            |
| Back-up Time * (minutes)   | 4.5/18                                                                                                                                                                                                          | 2.5/10     | 4.5/18          | 2.5/10     |
| Recharge Time              | 8 hours to 90% capacity after full discharge                                                                                                                                                                    |            |                 |            |
| Environmental              |                                                                                                                                                                                                                 |            |                 |            |
| Operating Temperature      | 0 °C to +50 °C (+32 °F to +122 °F)                                                                                                                                                                              |            |                 |            |
| Storage Temperature        | -15 °C to 60 °C (+5 °F to +140 °F)                                                                                                                                                                              |            |                 |            |
| Relative Humidity          | 1% to 95%, non-condensing                                                                                                                                                                                       |            |                 |            |
| Ambient Operation          | 1-95% humidity non-condensing, 0 °C to +50 °C (+32 °F to +122 °F) up to 1524 m (5,000 ft)                                                                                                                       |            |                 |            |
| Audible Noise              | < 40dBA (1 meter from surface)                                                                                                                                                                                  |            |                 |            |
| Standards                  |                                                                                                                                                                                                                 |            |                 |            |
| EMC                        | FCC Part 15, Subpart B, Class A; EMC: EN62040-2; EN55022; CISPR22; EN61000-3-2; IEC61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -2-2                                                                                |            |                 |            |
| Elevation                  | 1524 m (5,000 ft) without derating                                                                                                                                                                              |            |                 |            |
| Shock & Vibration          | According to the International Safe Transit Association standard ISTA 2A.                                                                                                                                       |            |                 |            |
| Mounting                   | To be mounted on DIN TS35/7.5 or TS35/15 rail system. Chassis mounting permissible via optional brackets. Unit handles normal shock and vibration of industrial use and transportation without coming off rail. |            |                 |            |

\* At full load/half load.

# INDUSTRIAL, COMPACT & FLEXIBLE UPS

The SDU AC 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. An optional mounting bracket is available when specific applications require an alternate mounting method. The SDU AC UPS allows for ease of installation and flexibility in your control enclosure designs.

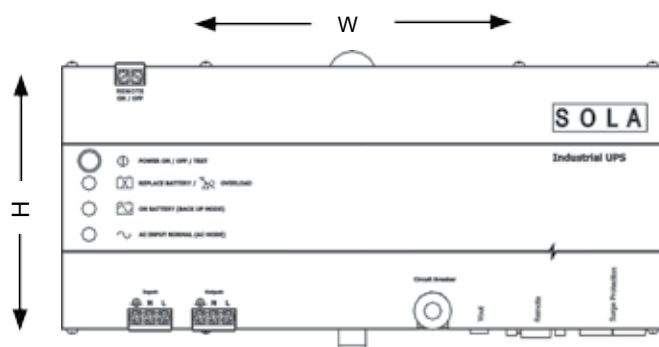
**Selection Table**

| Capacity (VA/W) | Catalog Number   | Volts, Frequency In/Out | Typical Back-up Time (minutes) * | Input/Output Connections                                    | Approx. Ship Weight - kg (lbs) |
|-----------------|------------------|-------------------------|----------------------------------|-------------------------------------------------------------|--------------------------------|
| 500/300         | <b>SDU 500</b>   | 120 Vac, 50/60 Hz       | 4/18                             | IP20 touch proof screw terminals.<br>Wire range: 10-24 AWG. | 4.7 (10.7)                     |
| 850/510         | <b>SDU 850</b>   |                         | 2/10                             |                                                             | 5.0 (11.4)                     |
| 500/300         | <b>SDU 500-5</b> | 230 Vac, 50/60 Hz       | 4/18                             |                                                             | 5.2 (11.5)                     |
| 850/510         | <b>SDU 850-5</b> |                         | 2/10                             |                                                             | 5.4 (11.9)                     |

\* At full load/half load.

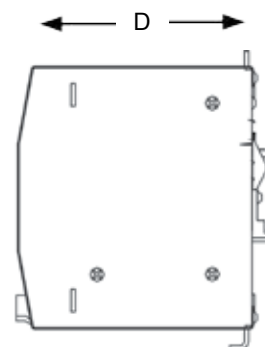
**SDU Accessories**

| Catalog Number       | Description                                                                                                                                                                                              | Approx. Ship Weight - kg (lbs) |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>RELAYCARD-SDU</b> | Dry contact I/O relay box, IP20 touch proof screw terminals, wire size range 12-22 AWG (IEC 2.5mm); N.O./N.C. form "C" contact. Relay contact signal for "On Battery", "Low Battery" and "UPS Shutdown". | 1.0 (0.45)                     |
| <b>UPSMON-USB</b>    | RS232 to USB adapter cable                                                                                                                                                                               | 1.0 (0.45)                     |
| <b>SDU-PMBRK</b>     | Mounting brackets to secure UPS to wall, back of panel or enclosure.                                                                                                                                     | 1.0 (0.45)                     |
| Dimensions mm (in)   |                                                                                                                                                                                                          |                                |
| Width                | 282 (11.1)                                                                                                                                                                                               |                                |
| Depth                | 116 (4.55)                                                                                                                                                                                               |                                |
| Height               | 124 (4.88)                                                                                                                                                                                               |                                |



Enclosure should be properly ventilated during normal use and storage, not sealed or unventilated.

Contains Valve Regulated Lead Acid (VRLA), non-spillable type battery cells



**Warning**



SolaHD is our premium line of power conversion and power quality products under Appleton Group, a business unit of Emerson Industrial Automation. SolaHD offers industrial grade products that help increase machine availability and ensure data reliability while bringing greater flexibility to the design of your machines and production line. SolaHD products improve efficiency, productivity and longevity in the most demanding industrial environments.

Emerson Industrial Automation 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.

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 Industrial Automation brands to make electrical installations safer, more productive and more reliable.

Appleton Group is organized into three focused businesses that provide distributors and end users expert knowledge and excellent service.

#### ELECTRICAL CONSTRUCTION MATERIALS

This group is made up of the Appleton, Nutsteel and O-Z/Gedney brands, offering 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, offering a broad range of electrical heating cable products for residential, commercial and industrial applications.

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