

## SERIES: SDI90-U | DESCRIPTION: AC-DC POWER SUPPLY

### FEATURES

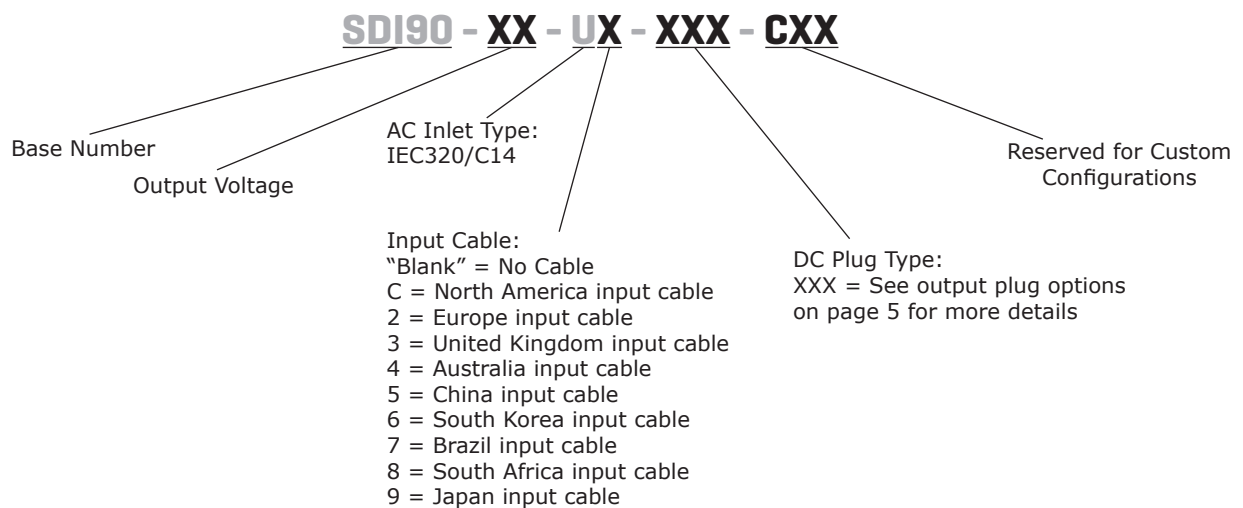
- level VI efficiency
- 90 W power
- universal input (90~264 Vac)
- single regulated outputs
- over voltage and short circuit protections
- UL/cUL, PSE safety approvals
- power factor correction
- custom designs available
- certified to 60950-1 and 62368-1 standards



| MODEL      | output voltage<br>(Vdc) | output current<br>max<br>(A) | output power<br>max<br>(W) | ripple and noise <sup>1</sup><br>max<br>(mVp-p) | efficiency level |
|------------|-------------------------|------------------------------|----------------------------|-------------------------------------------------|------------------|
| SDI90-12-U | 12                      | 7                            | 84                         | 150                                             | VI               |
| SDI90-15-U | 15                      | 6                            | 90                         | 150                                             | VI               |
| SDI90-18-U | 18                      | 5                            | 90                         | 180                                             | VI               |
| SDI90-19-U | 19                      | 4.74                         | 90                         | 190                                             | VI               |
| SDI90-24-U | 24                      | 3.75                         | 90                         | 240                                             | VI               |
| SDI90-48-U | 48                      | 1.88                         | 90                         | 480                                             | VI               |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, each output terminated with 0.1  $\mu$ F multilayer ceramic and 10  $\mu$ F low ESR electrolytic capacitors.

### PART NUMBER KEY



## INPUT

| parameter                 | conditions/description                  | min | typ | max  | units |
|---------------------------|-----------------------------------------|-----|-----|------|-------|
| voltage                   |                                         | 90  |     | 264  | Vac   |
| frequency                 |                                         | 47  |     | 63   | Hz    |
| current                   |                                         |     |     | 1.2  | A     |
| inrush current            | at 230 Vac, full load, 25°C, cold start |     |     | 60   | A     |
| leakage current           |                                         |     |     | 3.5  | mA    |
| power factor correction   | at full load                            | 0.9 |     |      |       |
| no load power consumption | at 230 Vac                              |     |     | 0.21 | W     |

## OUTPUT

| parameter  | conditions/description | min | typ | max | units |
|------------|------------------------|-----|-----|-----|-------|
| regulation |                        |     | ±5  |     | %     |

## PROTECTIONS

| parameter                | conditions/description                                | min | typ | max | units |
|--------------------------|-------------------------------------------------------|-----|-----|-----|-------|
| over voltage protection  | output shut down                                      |     |     | 150 | %     |
| over current protection  | output shut down, auto recovery for 12, 24 Vdc models |     |     | 130 | %     |
|                          | output shut down, auto recovery for all other models  |     |     | 150 | %     |
| short circuit protection | output shut down, auto recovery                       |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter            | conditions/description                                  | min     | typ   | max | units |
|----------------------|---------------------------------------------------------|---------|-------|-----|-------|
| isolation voltage    | input to output at 10 mA for 1 minute                   |         | 3,000 |     | Vac   |
|                      | input to frame ground at 10 mA for 1 minute             |         | 1,500 |     | Vac   |
| isolation resistance | input to output at 500 Vdc                              | 10      |       |     | MΩ    |
|                      | input to frame ground at 500 Vdc                        | 10      |       |     | MΩ    |
| safety approvals     | UL/cUL (60950-1, 62368-1), PSE <sup>1</sup> , LPS, UKCA |         |       |     |       |
| EMI/EMC              | FCC Part 15B Class B, CE                                |         |       |     |       |
| MTBF                 | as per Telcordia SR-332, 25°C                           | 300,000 |       |     | hrs   |
| RoHS                 | yes                                                     |         |       |     |       |

Notes: 1. PSE not available on 48 Vdc output model.

## ENVIRONMENTAL

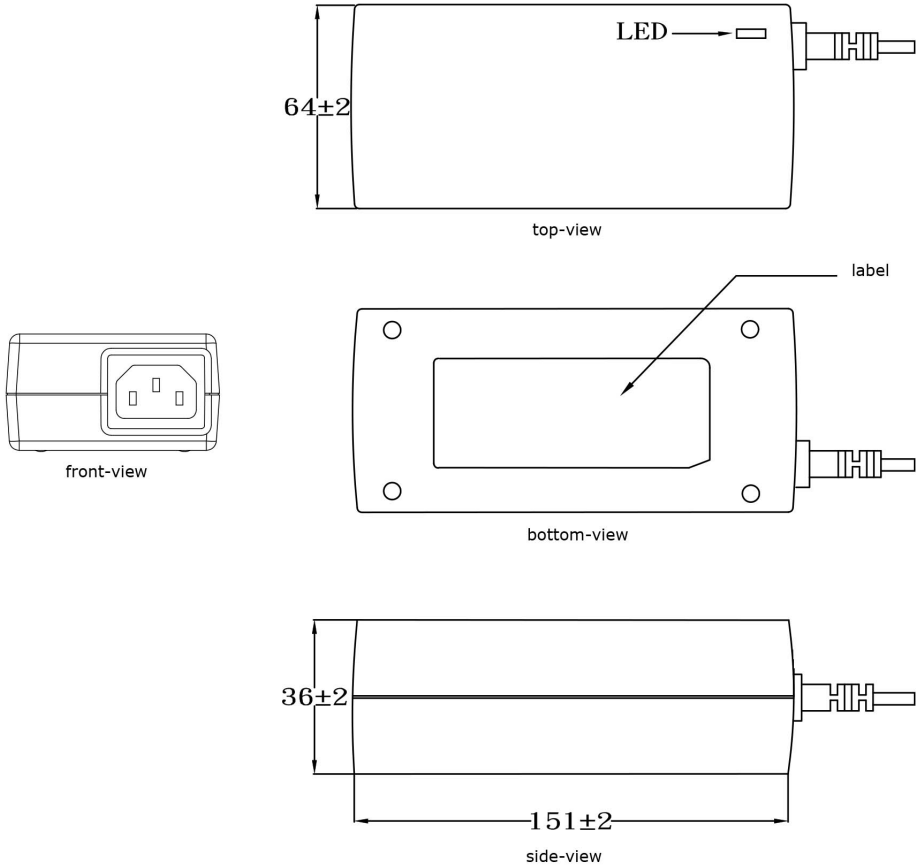
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | 0   |     | 40  | °C    |
| storage temperature   |                        | -20 |     | 80  | °C    |
| operating humidity    | non-condensing         | 20  |     | 80  | %     |
| storage humidity      | non-condensing         | 10  |     | 90  | %     |

MECHANICAL

| parameter  | conditions/description | min | typ | max | units |
|------------|------------------------|-----|-----|-----|-------|
| dimensions | 151 x 64 x 36          |     |     |     | mm    |
| inlet plug | IEC320/C14             |     |     |     |       |
| weight     | without ac cord        |     | 460 |     | g     |

MECHANICAL DRAWING

units: mm  
tolerance: ±2.0 mm



DC CORD

units: mm

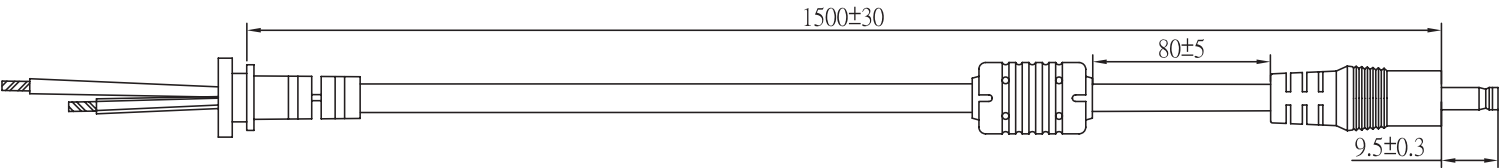


Table 1

| MODEL NO.  | CABLE          | CORD LENGTH  |
|------------|----------------|--------------|
| SDI90-12-U | UL1185, 16 AWG | 1,500 mm ±30 |
| SDI90-15-U | UL1185, 16 AWG | 1,500 mm ±30 |
| SDI90-18-U | UL1185, 16 AWG | 1,500 mm ±30 |
| SDI90-19-U | UL1185, 18 AWG | 1,500 mm ±30 |
| SDI90-24-U | UL1185, 18 AWG | 1,500 mm ±30 |
| SDI90-48-U | UL1185, 20 AWG | 1,500 mm ±30 |

AC CORD

units: mm

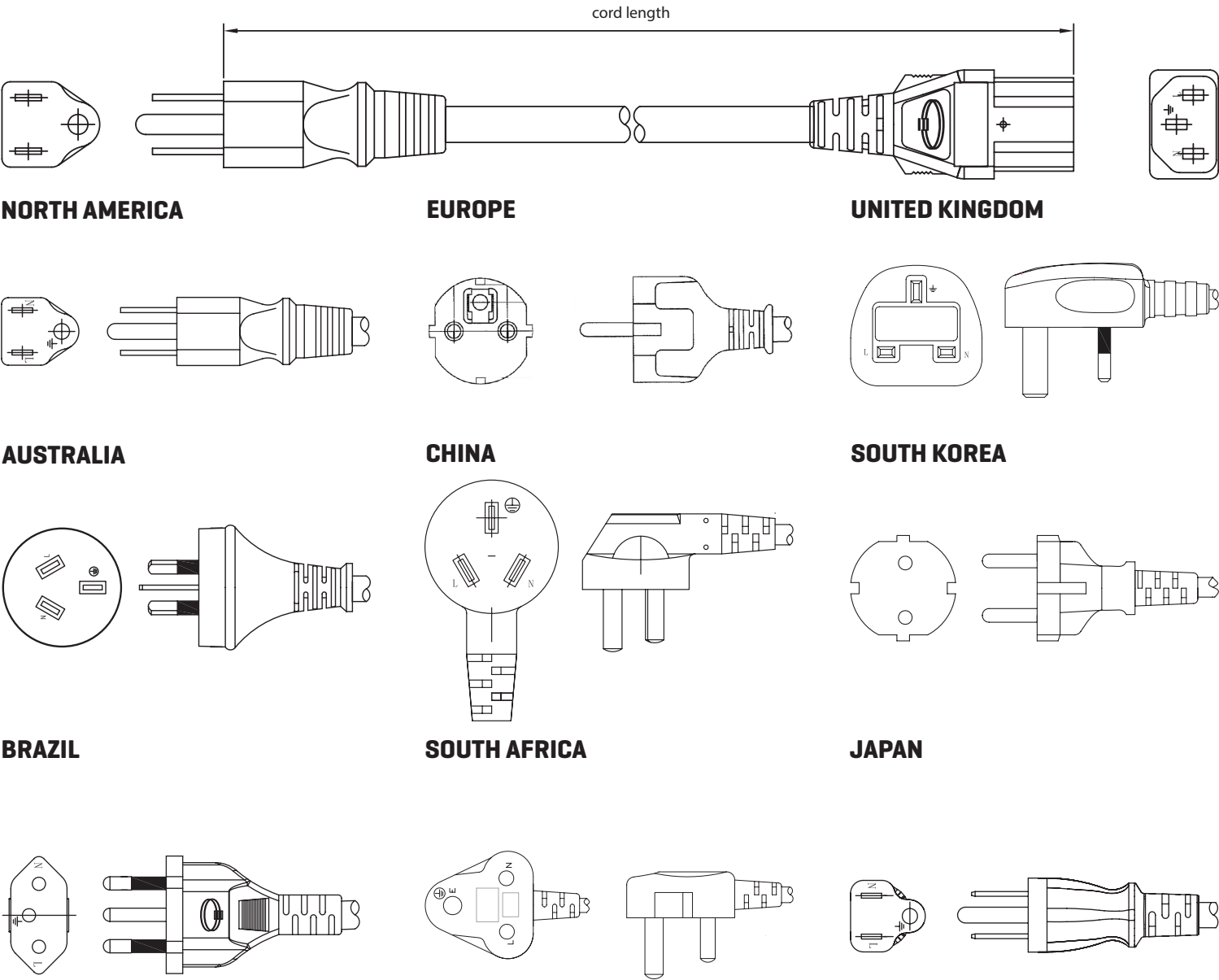


Table 2

| AC INPUT       | CORD LENGTH  |
|----------------|--------------|
| North America  | 1,830 mm ±30 |
| Europe         | 1,830 mm ±30 |
| United Kingdom | 1,830 mm ±30 |
| Australia      | 1,830 mm ±30 |
| China          | 1,830 mm ±30 |
| South Korea    | 1,830 mm ±50 |
| Brazil         | 1,830 mm ±30 |
| South Africa   | 1,830 mm ±50 |
| Japan          | 1,830 mm ±30 |

DC PLUG TYPE PART NUMBER KEY

**XXX**

**Plug Polarity:**  
P = Center Positive  
  
N = Center Negative  


**Plug Code:**  
X = Choose a code from the options below

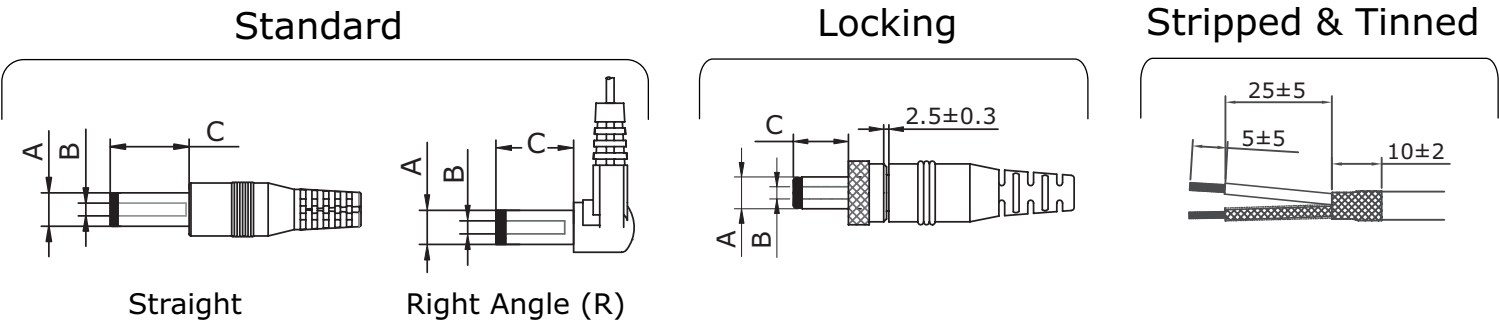
**Plug Angle:**  
"blank" = Straight  
R = Right Angle

| Plug Polarity |             | Code   |                      | Dimensions (mm) |     |     | Plug Angle |       |
|---------------|-------------|--------|----------------------|-----------------|-----|-----|------------|-------|
| Center Pos.   | Center Neg. | Option | Type                 | A               | B   | C   | Straight   | Right |
| •             | •           | 5      | Standard             | 5.5             | 2.1 | 9.5 | •          | •     |
| •             | •           | 6      | Standard             | 5.5             | 2.5 | 9.5 | •          | •     |
| •             | •           | 10     | Locking <sup>2</sup> | 5.5             | 2.1 | 9.5 | •          | N/A   |
| •             | •           | 11     | Locking <sup>2</sup> | 5.5             | 2.5 | 9.5 | •          | N/A   |
| N/A           | N/A         | ST     | Stripped & Tinned    |                 |     |     | N/A        | N/A   |

Note:

1. Contact CUI for additional plug options

2. Maximum insertion depth is 10mm



## REVISION HISTORY

| rev. | description                             | date       |
|------|-----------------------------------------|------------|
| 1.0  | initial release                         | 03/18/2015 |
| 1.01 | updated datasheet                       | 04/15/2015 |
| 1.02 | added 62368-1 standard                  | 08/31/2018 |
| 1.03 | removed GS mark as of 5/31/2019         | 04/10/2019 |
| 1.04 | removed GS in features list             | 12/05/2019 |
| 1.05 | company logo updated                    | 07/23/2020 |
| 1.06 | UKCA added to specification             | 08/11/2021 |
| 1.07 | plug polarity symbols updated           | 09/16/2021 |
| 1.08 | tolerance updated on mechanical drawing | 02/18/2022 |
| 1.09 | dc plugs updated                        | 05/23/2022 |

The revision history provided is for informational purposes only and is believed to be accurate.



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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

CUI offers a one (1) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.