CUI INC
a bel group



# **SERIES:** SDI12-UD | **DESCRIPTION:** AC-DC POWER SUPPLY

## FEATURES

- up to 12 W continuous power
- DoE Level VI, CoC Tier 2 efficiency
- no load power consumption < 0.075 W
- compact size
- universal input voltage range
- over voltage, over current, and short circuit protections
- UL/cUL, CE safety approvals
- IEC 62368

| MODEL | output voltage (Vdc) | output current max (A) | output power max (W) | ripple and noise[1] max (mVp-p) | efficiency level[2] |
|---|---|---|---|---|---|
| SDI12-5-UD | 5 | 2 | 10 | 100 | VI |
| SDI12-5.9-UD | 5.9 | 2 | 11.8 | 100 | VI |
| SDI12-9-UD | 9 | 1.33 | 12 | 100 | VI |
| SDI12-12-UD | 12 | 1 | 12 | 120 | VI |
| SDI12-15-UD | 15 | 0.8 | 12 | 150 | VI |
| SDI12-18-UD | 18 | 0.67 | 12 | 180 | VI |
| SDI12-24-UD | 24 | 0.5 | 12 | 240 | VI |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, each output terminated with 0.1 µF multilayer ceramic and 47 µF low ESR electrolytic capacitors.
2. CoC Tier 2 compliant

## PART NUMBER KEY

**SDI12 - XX - UD X - XXX - CXX**

- Base Number
- Output Voltage
- AC Inlet Type: IEC320/C8
- Input Cable:
  "Blank" = No Cable
  C = North America input cable
  2 = Europe input cable
  3 = United Kingdom input cable
  4 = Australia input cable
  5 = China input cable
  6 = South Korea input cable
  7 = Brazil input cable
  8 = South Africa input cable
  9 = Japan input cable
- DC Plug Type:
  XXX = See output plug options on page 5 for more details
  ST = Stripped and Tinned
- Reserved for Custom Configurations

## INPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| voltage | | 90 | | 264 | Vac |
| frequency | | 47 | | 63 | Hz |
| current | at full load | | | 0.31 | A |
| inrush current | at 240 Vac, full load, 25°C, cold start | | | 60 | A |
| leakage current | | | | 0.25 | mA |
| no load power consumption | at 115/230 Vac<br>Level VI<br>CoC Tier 2 | | | <br>0.1<br>0.075 | <br>W<br>W |

## OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| regulation | | | ±5 | | % |
| hold-up time | at full load | 10 | | | ms |

## PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| over voltage protection | output shut down<br>5 Vdc output model<br>5.9 Vdc output model<br>9 Vdc output model<br>12 Vdc output model<br>15 Vdc output model<br>18 Vdc output model<br>24 Vdc output model | | | <br>9<br>10.6<br>16.2<br>21.6<br>27<br>32.4<br>45 | <br>Vdc<br>Vdc<br>Vdc<br>Vdc<br>Vdc<br>Vdc<br>Vdc |
| over current protection | output shut down, auto recovery<br>5 Vdc output model<br>5.9 Vdc output model<br>9 Vdc output model<br>12 Vdc output model<br>15 Vdc output model<br>18 Vdc output model<br>24 Vdc output model | | | <br>5<br>5<br>3<br>2.5<br>2<br>2<br>1.5 | <br>A<br>A<br>A<br>A<br>A<br>A<br>A |
| 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 |
| isolation resistance | input to output at 500 Vdc | 10 | | | MΩ |
| safety approvals | 62368: UL/cUL, EN<br>LPS, UKCA | | | | |
| EMI/EMC | FCC Part 15B Class B, CE | | | | |
| MTBF | as per Telcordia SR-332, 25°C | 300,000 | | | hours |
| RoHS | 2011/65/EU | | | | |

## ENVIRONMENTAL

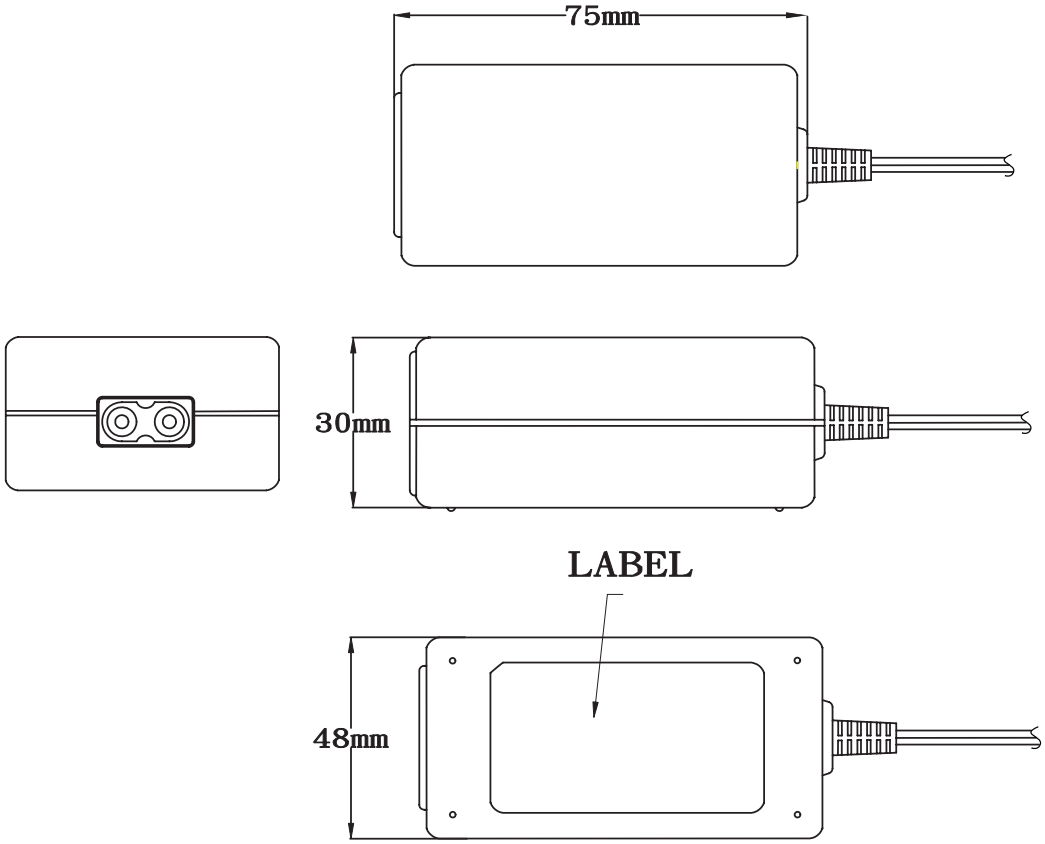
| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| operating temperature | | 0 | | 40 | °C |
| storage temperature | | -20 | | 80 | °C |
| operating humidity | non-condensing | 20 | | 80 | % |
| storage humidity | non-condensing | 10 | | 90 | % |

## MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| dimensions | 75 x 48 x 30 | | | | mm |
| inlet plug | IEC320/C8 | | | | |
| weight | without ac cord | | 126 | | g |

## MECHANICAL DRAWING

units: mm
tolerance: ±0.5 mm




## DC CORD

units: mm

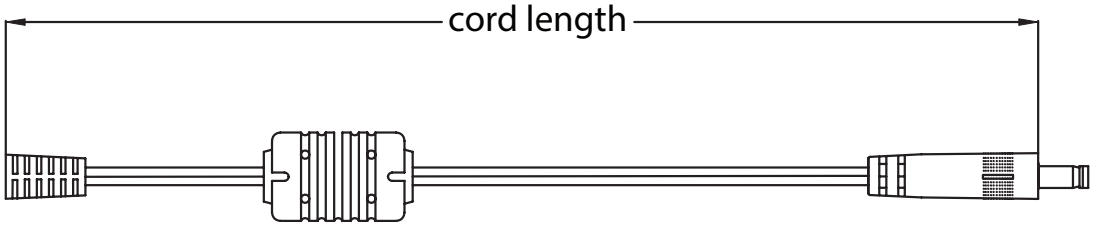
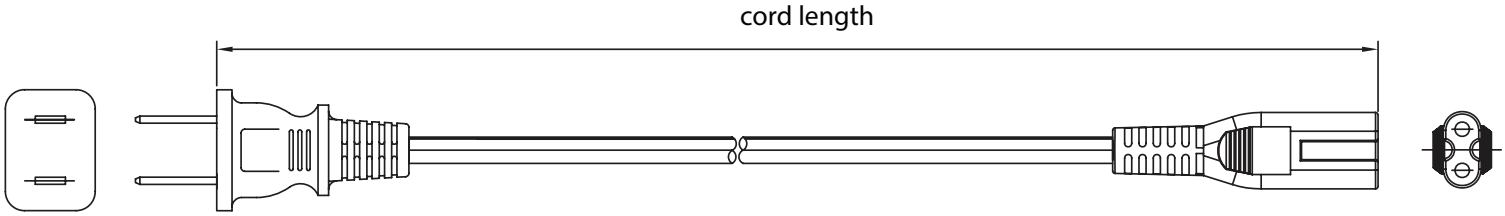



**Table 1**

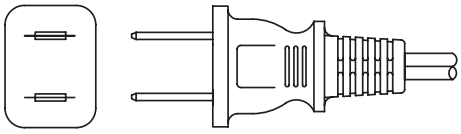
| MODEL NO. | CABLE | CORD LENGTH |
|---|---|---|
| SDI12-5-UD | UL2468, 20 AWG | 1,500 mm ±30 |
| SDI12-5.9-UD | UL2468, 20 AWG | 1,500 mm ±30 |
| SDI12-9-UD | UL2468, 20 AWG | 1,500 mm ±30 |
| SDI12-12-UD | UL2468, 22 AWG | 1,500 mm ±30 |
| SDI12-15-UD | UL2468, 22 AWG | 1,500 mm ±30 |
| SDI12-18-UD | UL2468, 22 AWG | 1,500 mm ±30 |
| SDI12-24-UD | UL2468, 22 AWG | 1,500 mm ±30 |

## AC CORD

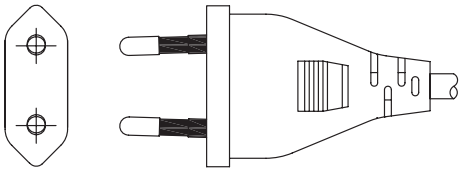
units: mm



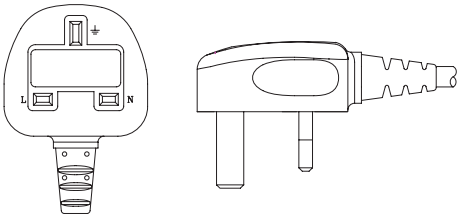

### NORTH AMERICA



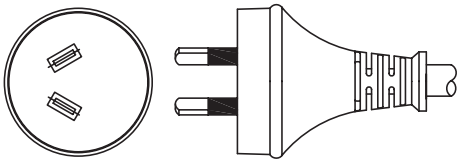
### EUROPE



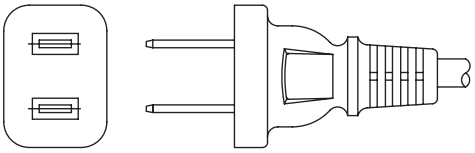
### UNITED KINGDOM



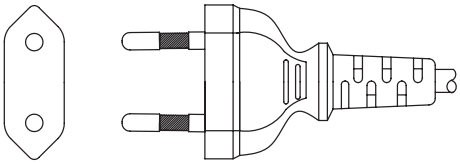

### AUSTRALIA



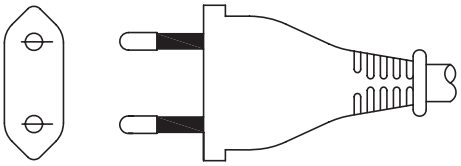
### CHINA



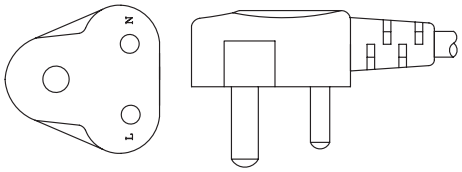
### SOUTH KOREA



### BRAZIL



### SOUTH AFRICA




### JAPAN

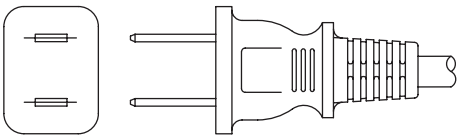
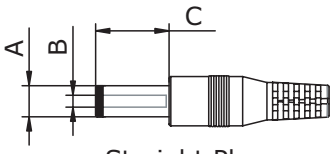


**Table 2**

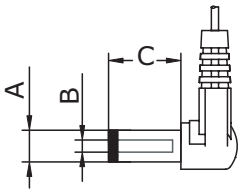
| AC INPUT | CORD LENGTH |
|---|---|
| North America | 1,830 mm ±50 |
| Europe | 1,830 mm ±50 |
| United Kingdom | 1,830 mm ±30 |
| Australia | 1,830 mm ±30 |
| China | 1,830 mm ±30 |
| South Korea | 1,830 mm ±50 |
| Brazil | 1,830 mm ±30 |
| South Africa | 1,830 mm ±50 |
| Japan | 1,830 mm ±50 |

# OUTPUT PLUG OPTIONS

## Standard DC Plug



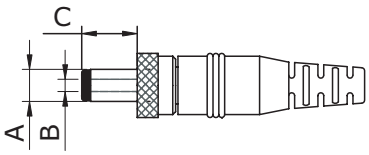

Straight Plug




Right Angle Plug

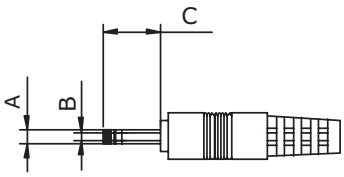
| Size | A | B | C | Unit |
|---|---|---|---|---|
| 5 | 5.5 | 2.1 | 9.5 | mm |
| 6 | 5.5 | 2.5 | 9.5 | mm |
| 7 | 3.5 | 1.35 | 9.5 | mm |
| 8 | 3.8 | 1.35 | 9.5 | mm |
| 9 | 3.8 | 1.05 | 9.5 | mm |

## Locking DC Plug

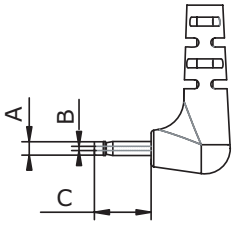



| Size | A | B | C | Unit |
|---|---|---|---|---|
| 10 | 5.5 | 2.1 | 9.5 | mm |
| 11 | 5.5 | 2.5 | 9.5 | mm |

## EIAJ DC Plug



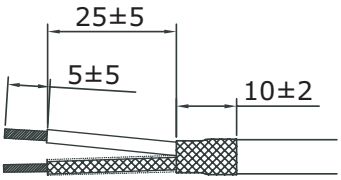

Straight Plug



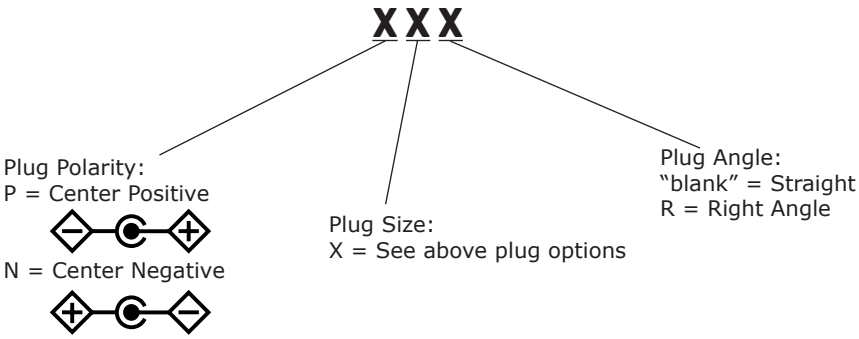

Right Angle Plug

| Size | EIAJ | A | B | C | Unit |
|---|---|---|---|---|---|
| 12 | EIAJ-1 | 2.35 | 0.7 | 9.5 | mm |
| 13 | EIAJ-2 | 4.0 | 1.7 | 9.5 | mm |
| 14 | EIAJ-3 | 4.75 | 1.7 | 9.5 | mm |

## Stripped and Tinned




## DC Plug Type




*Contact CUI for additional plug options

## REVISION HISTORY

| rev. | description | date |
|---|---|---|
| 1.0 | initial release | 08/21/2015 |
| 1.01 | updated datasheet | 05/18/2016 |
| 1.02 | updated datasheet | 09/15/2016 |
| 1.03 | removed GS mark as of 5/31/2019 | 04/10/2019 |
| 1.04 | company logo updated | 06/24/2020 |
| 1.05 | PSE removed, 62368 added to safety line | 07/16/2021 |
| 1.06 | UKCA added to specification | 09/09/2021 |
| 1.07 | plug polarity symbols updated | 09/16/2021 |

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.