

## SERIES: SDM50-U | DESCRIPTION: AC-DC POWER SUPPLY

### FEATURES

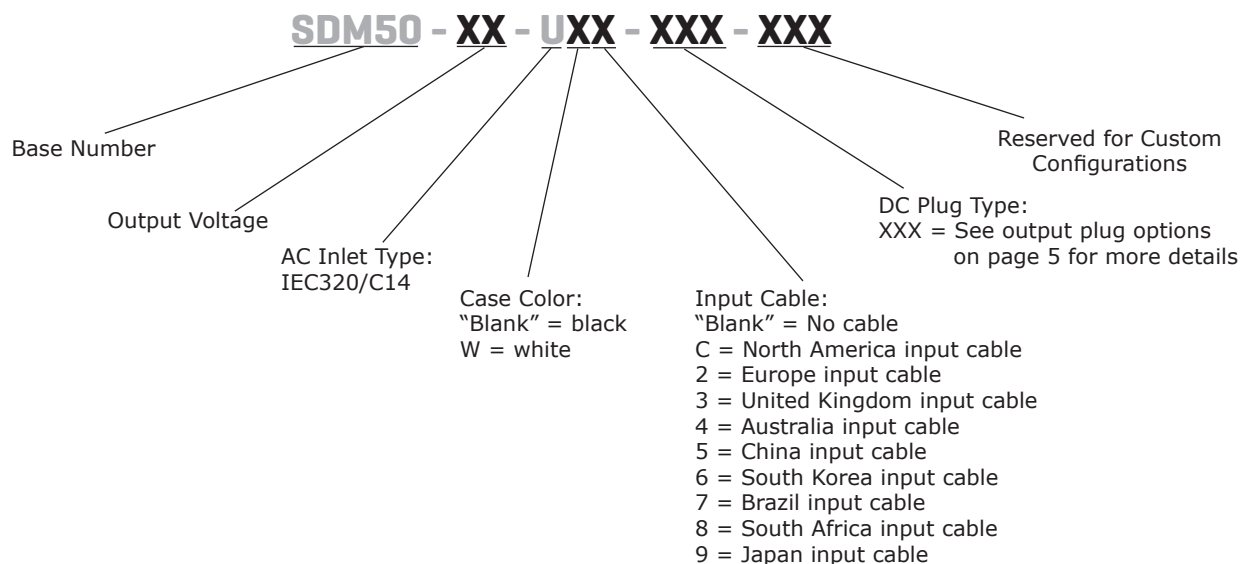
- up to 50 W continuous power
- meets DoE Level VI efficiency
- universal input voltage range
- compact size
- no load power consumption < 0.1 W
- over voltage and short circuit protections
- 2xMOPP compliance
- UL/cUL, TUV (60601-1) safety approvals
- LED indicator
- custom designs available



| 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 |
|------------|-------------------------|------------------------------|----------------------------|-------------------------------------------------|------------------|
| SDM50-5-U  | 5                       | 9.0                          | 45                         | 100                                             | VI               |
| SDM50-12-U | 12                      | 4.16                         | 50                         | 240                                             | VI               |
| SDM50-15-U | 15                      | 3.33                         | 50                         | 225                                             | VI               |
| SDM50-18-U | 18                      | 3.15                         | 57                         | 270                                             | VI               |
| SDM50-24-U | 24                      | 2.08                         | 50                         | 360                                             | VI               |
| SDM50-48-U | 48                      | 1.04                         | 50                         | 720                                             | VI               |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, output terminated with 0.1  $\mu$ F multilayer ceramic and 47  $\mu$ 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                   | at 100 Vac, full load                         |     |     | 2.0  | A     |
| inrush current            | at 230 Vac, full load, cold start             |     |     | 160  | A     |
| leakage current           | at 240 Vac/50 Hz                              |     |     | 0.1  | mA    |
| no load power consumption | at 115 Vac/60 Hz ~ 230 Vac/50 Hz              |     |     | 0.1  | W     |
|                           | 5 Vdc output model<br>all other output models |     |     | 0.21 | W     |

## OUTPUT

| parameter       | conditions/description                         | min       | typ | max | units    |
|-----------------|------------------------------------------------|-----------|-----|-----|----------|
| load regulation |                                                |           | ±5  |     | %        |
| line regulation | at full load                                   |           | ±1  |     | %        |
| start-up time   |                                                |           |     | 3   | s        |
| rise time       | at full load, 10~90% output voltage            |           |     | 50  | ms       |
| hold-up time    | at full load                                   |           |     |     |          |
|                 | 12 Vdc output model<br>all other output models | 10<br>8.3 |     |     | ms<br>ms |

## PROTECTIONS

| parameter                | conditions/description                               | min | typ | max | units |
|--------------------------|------------------------------------------------------|-----|-----|-----|-------|
| over voltage protection  | 5 Vdc output model, output shut-down with latch      |     |     | 180 | %     |
|                          | 12 Vdc output model, output shut-down                |     |     | 170 | %     |
|                          | 15 Vdc output model, output shut-down                |     |     | 150 | %     |
|                          | 18 Vdc output model, output shut-down, auto recovery |     |     | 170 | %     |
|                          | 24 Vdc output model, output shut-down                |     |     | 150 | %     |
|                          | 48 Vdc output model, output shut-down with latch     |     |     | 150 | %     |
| over current protection  | continuous, auto recovery                            | 110 |     | 200 | %     |
| short circuit protection | continuous, auto recovery                            |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter                                           | conditions/description                | min     | typ   | max | units |
|-----------------------------------------------------|---------------------------------------|---------|-------|-----|-------|
| isolation voltage                                   | 15, 24 Vdc output model               |         |       |     |       |
|                                                     | input to output at 3 mA for 2 seconds |         | 1,800 |     | Vac   |
|                                                     | all other output models               |         |       |     |       |
|                                                     | input to output at 5 mA for 2 seconds |         | 4,000 |     | Vac   |
| live, neutral to frame ground at 5 mA for 2 seconds |                                       |         | 1,800 |     | Vac   |
|                                                     |                                       |         |       |     |       |
| safety approvals                                    | 60601: UL/cUL, TUV                    |         |       |     |       |
| EMI/EMC                                             | EN 55011<br>FCC Part 15 Class B       |         |       |     |       |
| MTBF                                                | as per MIL-HDBK-217F, 25°C            | 100,000 |       |     | hours |
| RoHS                                                | yes                                   |         |       |     |       |

## ENVIRONMENTAL

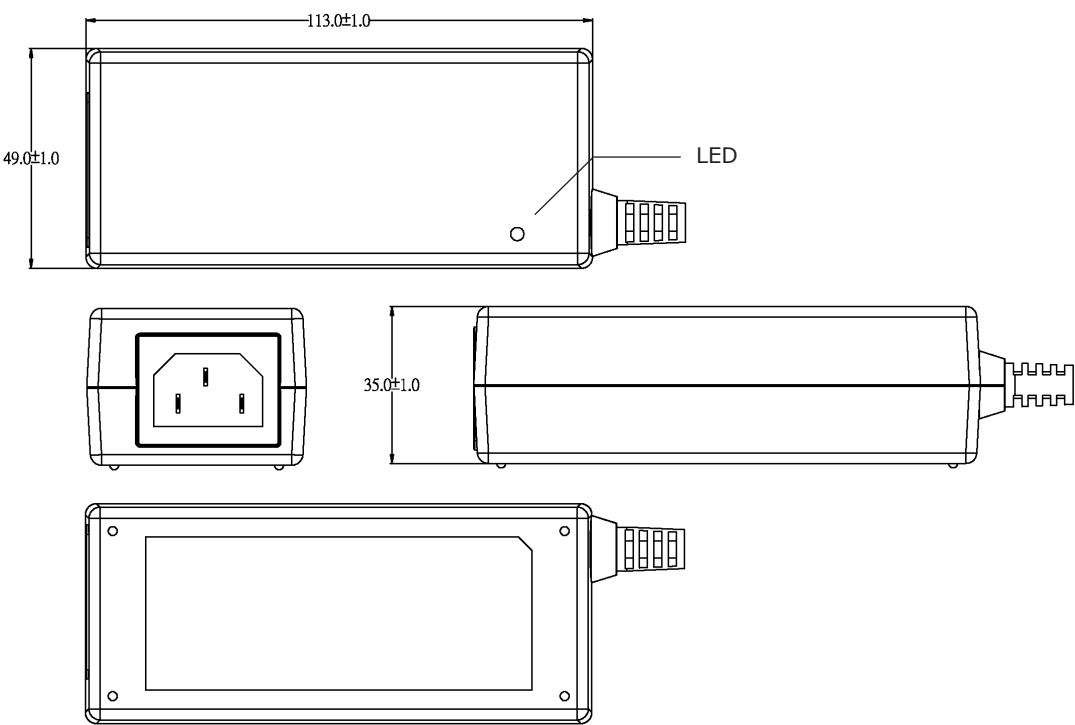
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | 0   |     | 40  | °C    |
| storage temperature   |                        | -20 |     | 85  | °C    |
| operating humidity    | non-condensing         | 10  |     | 90  | %     |
| storage humidity      | non-condensing         | 5   |     | 90  | %     |

MECHANICAL

| parameter  | conditions/description          | min | typ | max | units |
|------------|---------------------------------|-----|-----|-----|-------|
| dimensions | 113 (L) x 49 (W) x 35 (H)       |     |     |     | mm    |
| inlet plug | IEC320/C14                      |     |     |     |       |
| weight     | 5, 15, 18, 48 Vdc output models |     | 300 |     | g     |
|            | 12 Vdc output model             |     | 450 |     | g     |
|            | 24 Vdc output model             |     | 260 |     | g     |

MECHANICAL DRAWING

units: mm  
tolerance: ±1.0 mm



DC CORD

units: mm

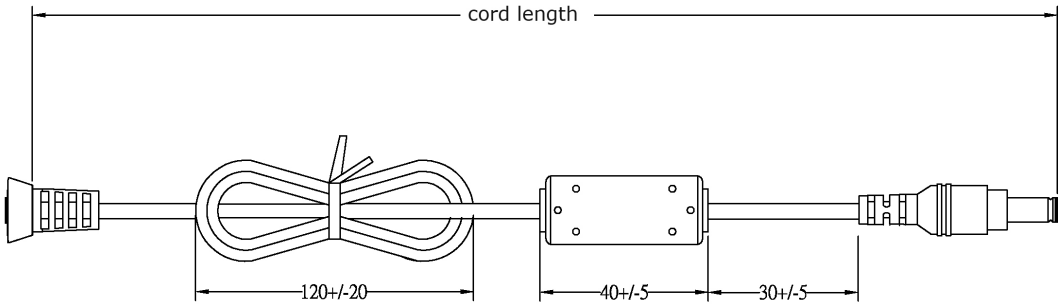


Table 1

| MODEL NO.  | CABLE          | CORD LENGTH  |
|------------|----------------|--------------|
| SDM50-5-U  | UL1185, 14 AWG | 1,200 mm ±30 |
| SDM50-12-U | UL1185, 16 AWG | 1,200 mm ±30 |
| SDM50-15-U | UL1185, 16 AWG | 1,200 mm ±30 |
| SDM50-18-U | UL1185, 18 AWG | 1,200 mm ±30 |
| SDM50-24-U | UL1185, 18 AWG | 1,200 mm ±30 |
| SDM50-48-U | UL1185, 18 AWG | 1,200 mm ±30 |

AC CORDS

units: mm

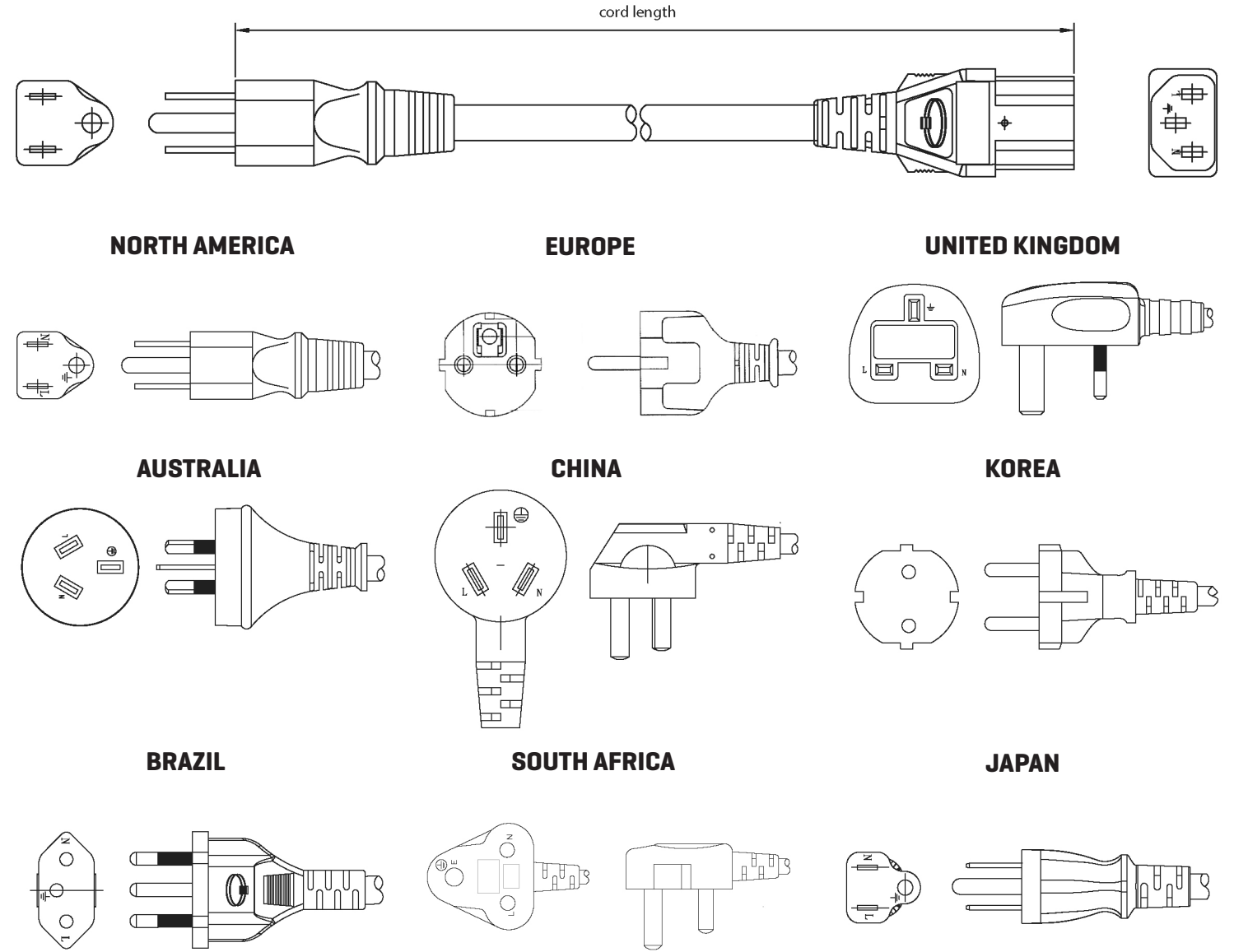
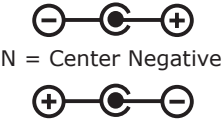


Table 2

| AC Input       | Cord Length  |
|----------------|--------------|
| North America  | 1,830 mm ±50 |
| Europe         | 1,830 mm ±50 |
| United Kingdom | 1,830 mm ±50 |
| Australia      | 1,830 mm ±50 |
| China          | 1,830 mm ±50 |
| South Korea    | 1,830 mm ±50 |
| Brazil         | 1,800 mm ±50 |
| South Africa   | 1,800 mm ±50 |
| Japan          | 1,800 mm ±50 |

DC PLUG TYPE PART NUMBER KEY

**XXX**

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

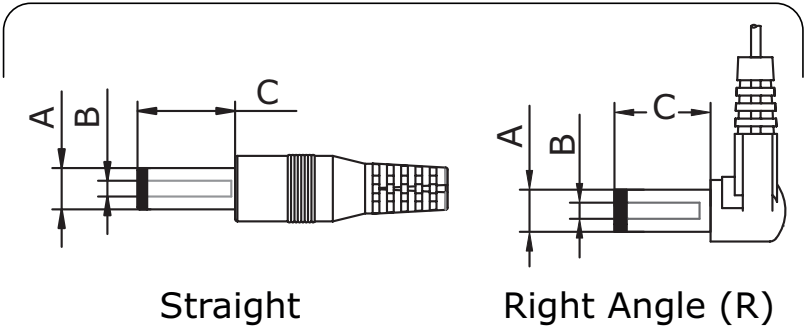
**Plug Code:**  
X = Choose a code from the options below

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

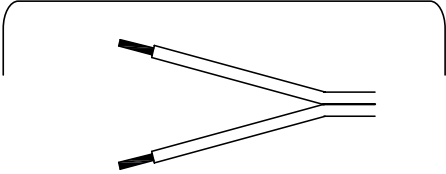
| Plug Polarity |             | Code   |                   | Dimensions (mm) |      |     | Plug Angle |       |
|---------------|-------------|--------|-------------------|-----------------|------|-----|------------|-------|
| Center Pos.   | Center Neg. | Option | Type              | A               | B    | C   | Straight   | Right |
| •             | •           | 5      | Standard          | 5.5             | 2.1  | 9.5 | •          | •     |
| •             | •           | 6      | Standard          | 5.5             | 2.5  | 9.5 | •          | •     |
| •             | •           | 7      | Standard          | 3.5             | 1.35 | 9.5 | •          | •     |
| •             | •           | 8      | Standard          | 3.8             | 1.35 | 9.5 | •          | •     |
| •             | •           | 9      | Standard          | 3.8             | 1.05 | 9.5 | •          | •     |
| N/A           | N/A         | ST     | Stripped & Tinned |                 |      |     | N/A        | N/A   |

Note: 1. Contact CUI for additional plug options

Standard



Stripped & Tinned



## REVISION HISTORY

| rev. | description                        | date       |
|------|------------------------------------|------------|
| 1.0  | initial release                    | 06/18/2021 |
| 1.01 | PSE and UKCA removed from safeties | 08/27/2021 |
| 1.02 | medical icon added                 | 05/03/2023 |

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



**CUI INC**  
a bel group

**Headquarters**  
20050 SW 112th Ave.  
Tualatin, OR 97062  
**800.275.4899**

Fax 503.612.2383  
**cui.com**  
techsupport@cui.com

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.