

**SERIES:** SDM120-U | **DESCRIPTION:** EXTERNAL AC-DC POWER SUPPLY

**FEATURES**

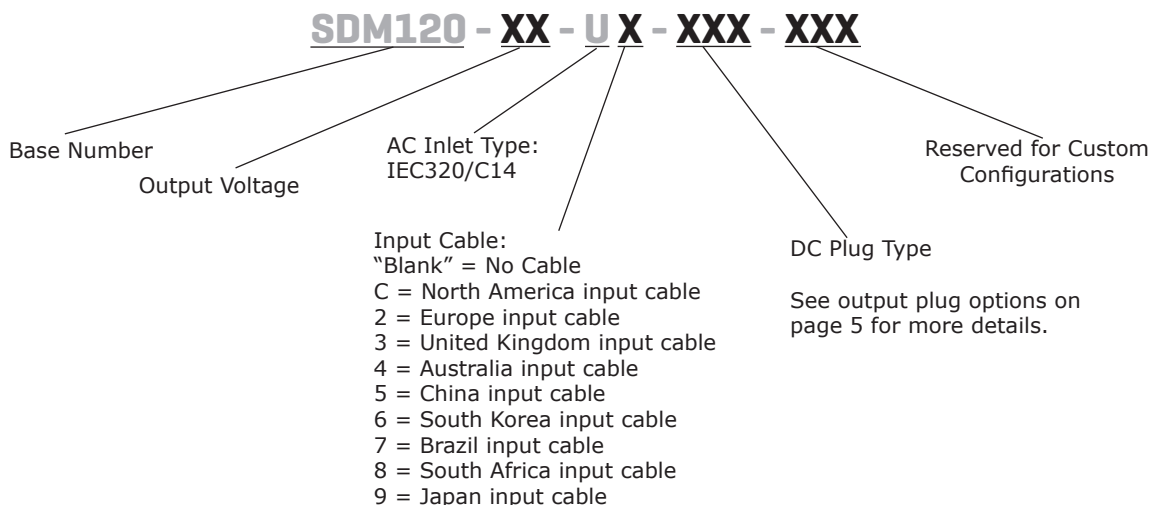
- up to 130W continuous power
- DoE Level VI compliant
- no-load power consumption  $\leq 0.21$  W
- universal input voltage range
- over voltage and short circuit protections
- UL/cUL & TUV safety approvals
- Medical 60601-1 edition 3.1 safety approvals
- LED indicator for power on



| MODEL       | output voltage | output current max | output power max | ripple and noise <sup>1</sup> max | efficiency level |
|-------------|----------------|--------------------|------------------|-----------------------------------|------------------|
|             | (Vdc)          | (A)                | (W)              | (mVp-p)                           |                  |
| SDM120-12-U | 12             | 9.16               | 110              | 240                               | VI               |
| SDM120-16-U | 16             | 7.5                | 120              | 240                               | VI               |
| SDM120-19-U | 19             | 6.31               | 120              | 285                               | VI               |
| SDM120-24-U | 24             | 5.0                | 120              | 360                               | VI               |
| SDM120-48-U | 48             | 2.7                | 130              | 720                               | VI               |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, 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                   | at 100 Vac, full load<br>at 240 Vac, full load                         |     |           | 2.0<br>1.0 | A     |
| inrush current            | at 110 Vac, full load, cold start<br>at 220 Vac, full load, cold start |     | 60<br>120 |            | A     |
| leakage current           | at 240 Vac / 50 Hz                                                     |     | 100       |            | uA    |
| no load power consumption |                                                                        |     |           | 0.21       | W     |

## OUTPUT

| parameter       | conditions/description                             | min | typ | max | units |
|-----------------|----------------------------------------------------|-----|-----|-----|-------|
| line regulation |                                                    |     |     | ±1  | %     |
| load regulation |                                                    |     | ±5  |     | %     |
| rise time       | at 100~240 Vac, full load 10~90% of output voltage |     |     | 50  | ms    |
| hold-up time    | at full load                                       | 10  |     |     | ms    |

## PROTECTIONS

| parameter                | conditions/description                                                                           | min        | typ | max        | units  |
|--------------------------|--------------------------------------------------------------------------------------------------|------------|-----|------------|--------|
| over voltage protection  | output shut-down, latch                                                                          |            |     | 150        | %      |
| over current protection  | 12, 48 Vdc output, continuous, auto recovery<br>16, 19, 24 Vdc output, continuous, auto recovery | 110<br>110 |     | 170<br>150 | %<br>% |
| short-circuit protection | continuous, auto recovery                                                                        |            |     |            |        |

## SAFETY & COMPLIANCE

| parameter            | conditions/description                                                   | min     | typ   | max | units |
|----------------------|--------------------------------------------------------------------------|---------|-------|-----|-------|
| isolation voltage    | 12 Vdc output, input to output at 10mA for 2 seconds                     |         | 4,000 |     | Vac   |
|                      | 16 Vdc output, input to output at 5mA for 2 seconds                      |         | 1,800 |     | Vac   |
|                      | 19 Vdc output, input to output at 5mA for 2 seconds                      |         | 1,800 |     | Vac   |
|                      | 24 Vdc output, input to output at 5mA for 2 seconds                      |         | 1,800 |     | Vac   |
|                      | 48 Vdc output, input to output at 10mA for 2 seconds                     |         | 4,000 |     | Vac   |
| isolation resistance | input to output at 500 Vdc for 3 seconds                                 | 50      |       |     | MΩ    |
| safety approvals     | TUV, UL/cUL & CE                                                         |         |       |     |       |
| EMI/EMC              | FCC PART 15 Class B, EN 55011 Class B                                    |         |       |     |       |
| ESD                  | IEC 61000-4-2 Contact: ± 8KV, Air: ± 15KV                                |         |       |     |       |
| radiated immunity    | IEC 61000-4-3 Frequency: 80~2700MHz, Field Strength: 10V/M, 80% AM(1KHz) |         |       |     |       |
| EFT                  | IEC 61000-4-4 ± 2.0 KV on input AC power ports                           |         |       |     |       |
| surge                | IEC 61000-4-5 Line to Line: ± 1KV (peak), Line to F.G : ± 2KV (peak)     |         |       |     |       |
| MTBF                 | as per MIL-HDBK-217F at 25°C                                             | 100,000 |       |     | hours |
| RoHS                 | yes                                                                      |         |       |     |       |

## ENVIRONMENTAL

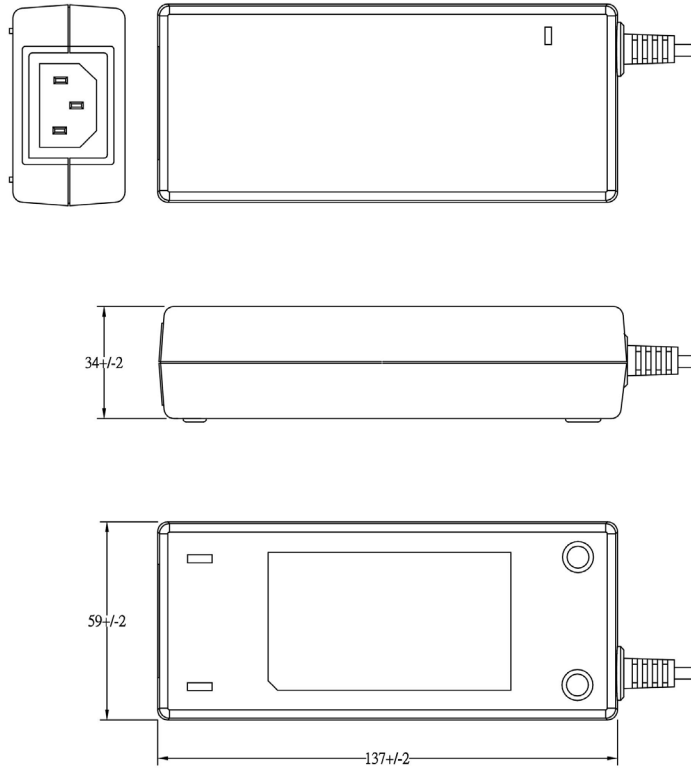
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | 0   |     | 40  | °C    |
| storage temperature   |                        | -20 |     | 85  | °C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

## MECHANICAL

| parameter  | conditions/description      | min | typ | max | units |
|------------|-----------------------------|-----|-----|-----|-------|
| dimensions | 137 (L) x 59 x (W) x 34 (H) |     |     |     | mm    |
| inlet plug | IEC320/C14                  |     |     |     |       |
| weight     |                             |     | 450 |     | g     |

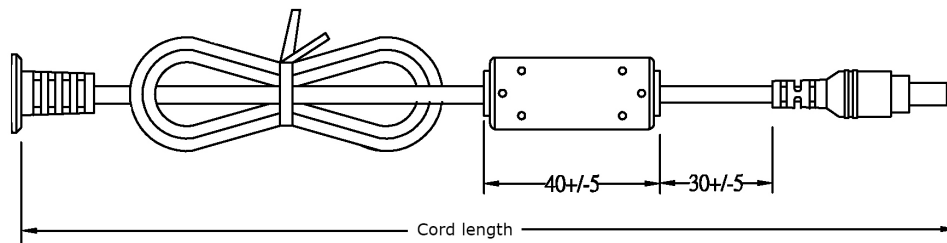
## MECHANICAL DRAWING

units: mm  
tolerance:  $\pm 2.0$



## DC CORD

units: mm



**Table 2**

| MODEL NO.   | CABLE          | CORD LENGTH       |
|-------------|----------------|-------------------|
| SDM120-12-U | UL 1866 AWG 14 | 1,200 mm $\pm 30$ |
| SDM120-16-U | UL 1866 AWG 14 | 1,200 mm $\pm 30$ |
| SDM120-19-U | UL 1185 AWG 16 | 1,200 mm $\pm 30$ |
| SDM120-24-U | UL 1185 AWG 16 | 1,200 mm $\pm 30$ |
| SDM120-48-U | UL 1185 AWG 18 | 1,200 mm $\pm 30$ |

## AC CORDS

units: mm

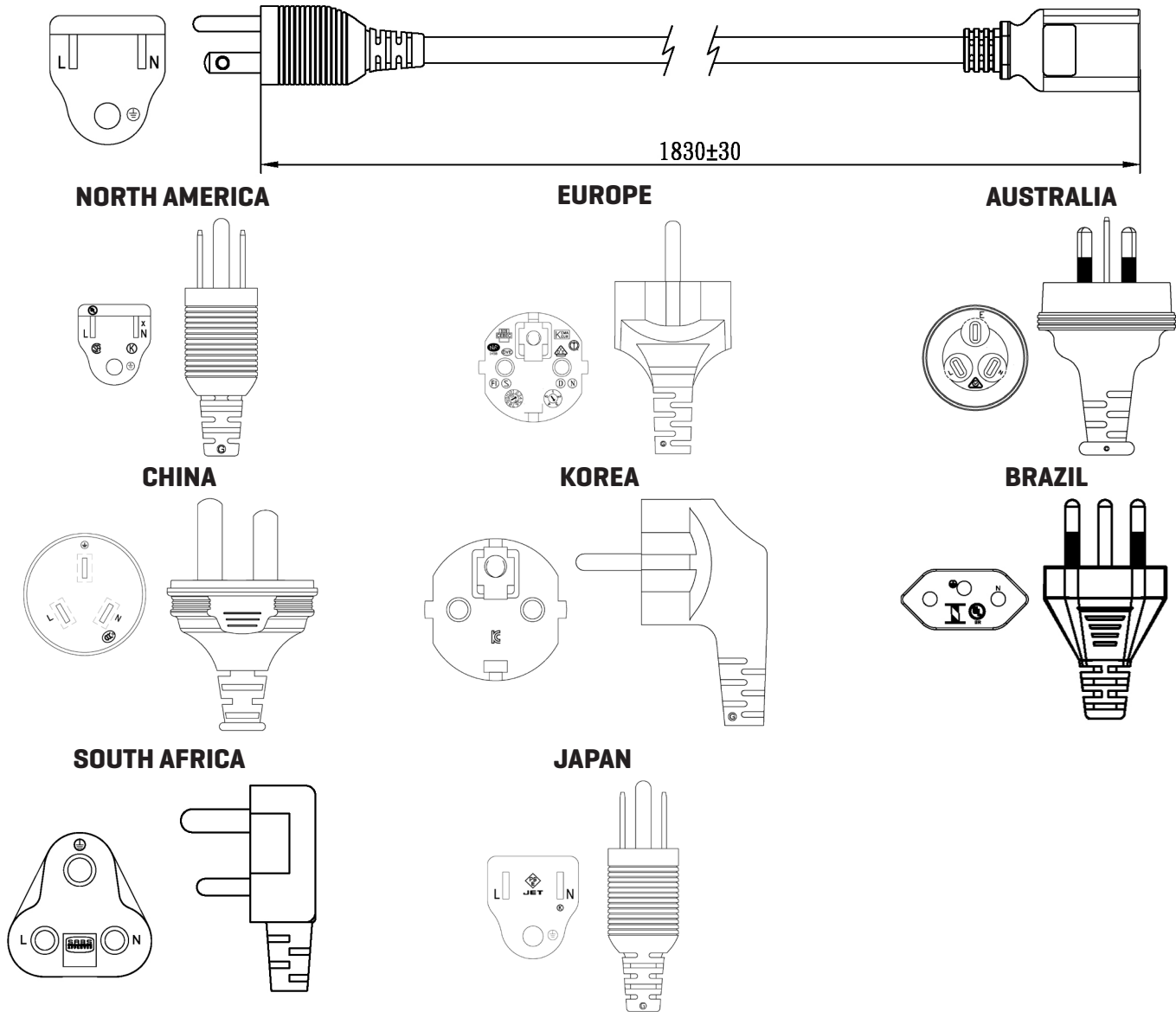
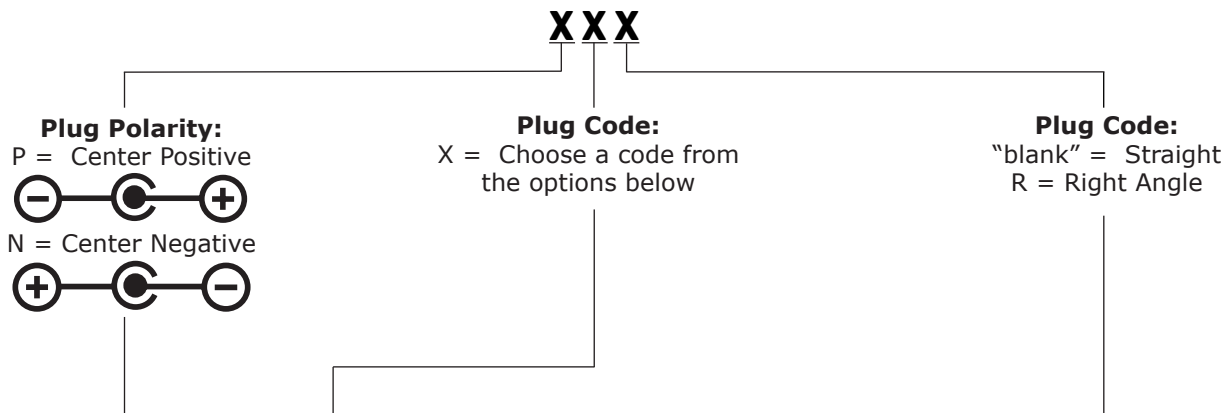


Table 2

| AC Input      | Cord Length       |
|---------------|-------------------|
| North America | 1,830 mm $\pm$ 30 |
| Europe        | 1,800 mm $\pm$ 50 |
| Australia     | 1,830 mm $\pm$ 50 |
| China         | 1,800 mm $\pm$ 50 |
| South Korea   | 1,830 mm $\pm$ 50 |
| Brazil        | 1,800 mm $\pm$ 50 |
| South Africa  | 1,830 mm $\pm$ 50 |
| Japan         | 1,830 mm $\pm$ 50 |

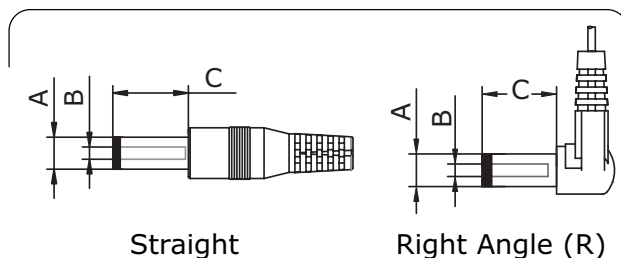
## DC PLUG TYPE PART NUMBER KEY



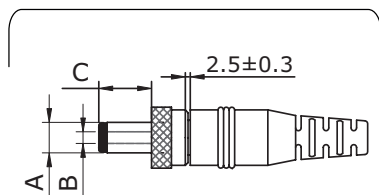
| Plug Polarity |             | Code   |                      | Dimensions (mm) |     |     | Plug Angle |       |
|---------------|-------------|--------|----------------------|-----------------|-----|-----|------------|-------|
| Center Pos.   | Center Neg. | Option | Type                 | A               | 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

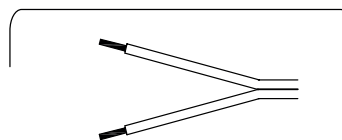
### Standard



### Locking



### Stripped & Tinned



## REVISION HISTORY

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| rev. | description                                        | date       |
|------|----------------------------------------------------|------------|
| 1.0  | initial release                                    | 08/10/2020 |
| 1.01 | dc cord length updated, mechanical drawing updated | 01/10/2022 |
| 1.02 | 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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