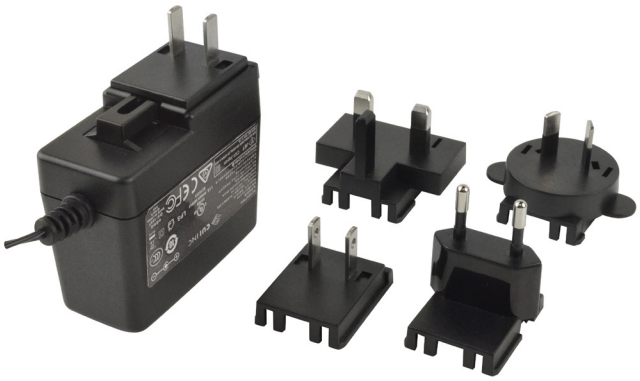
CUI INC®



# **SERIES:** SMI18 | **DESCRIPTION:** AC-DC POWER SUPPLY

## FEATURES

- up to 18 W continuous power
- DOE Level VI, CEC, ErP Stage 2
- no load power consumption < 0.1 W
- universal input voltage range
- interchangeable Ac blades for global use
- over voltage, over current, and short circuit protections
- UL/cUL, RCM, CCC, and PSE safety approvals



| MODEL | output voltage (Vdc) | output current max (A) | output power max (W) | ripple and noise[1] max (mVp-p) | efficiency level |
|---|---|---|---|---|---|
| SMI18-5 | 5 | 3 | 15 | 100 | VI |
| SMI18-5.9 | 5.9 | 3 | 17.7 | 100 | VI |
| SMI18-9 | 9 | 2.2 | 19.8 | 100 | VI |
| SMI18-12 | 12 | 1.6 | 19.2 | 120 | VI |
| SMI18-15 | 15 | 1.3 | 19.5 | 150 | VI |
| SMI18-18 | 18 | 1.1 | 19.8 | 180 | VI |
| SMI18-24 | 24 | 0.8 | 19.2 | 240 | VI |

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

## PART NUMBER KEY

**SMI18 - XX - X - XXX - CXX**

- SMI18 — Base Number
- XX — Output Voltage
- X — Blades:
  - V = North America, Europe, United Kingdom, Australia, and China blade included
  - N = North America blade included
  - E = Europe blade included
  - B = United Kingdom blade included
  - A = Australia blade included
  - C = China blade included
  - K = No blades included
- XXX — DC Plug Type:
  - XXX = See output plug options on page 4 for more details
  - ST = Stripped and Tinned
- CXX — Reserved for Custom Configurations

## INPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| voltage | | 90 | | 264 | Vac |
| frequency | | 47 | | 63 | Hz |
| current | | | | 0.48 | A |
| inrush current | at 100 Vac, full load, 25°C, cold start<br>at 230 Vac, full load, 25°C, cold start | | | 50<br>60 | A<br>A |
| leakage current | | | | 0.25 | mA |
| no load power consumption | at 230 Vac | | | 0.1 | W |

## OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| regulation | 5 Vdc output model<br>all other models | | ±6<br>±5 | | %<br>% |
| 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>12<br>12<br>16<br>22<br>32<br>32<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>7<br>6<br>5<br>5<br>4<br>4<br>2.5 | <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 | UL/cUL, RCM, CCC, PSE | | | | |
| EMI/EMC | FCC Part 15B Class B, CE | | | | |
| MTBF | as per Telcordia SR-332, 25°C | 300,000 | | | hours |
| RoHS | 2011/65/EU | | | | |

## ENVIRONMENTAL

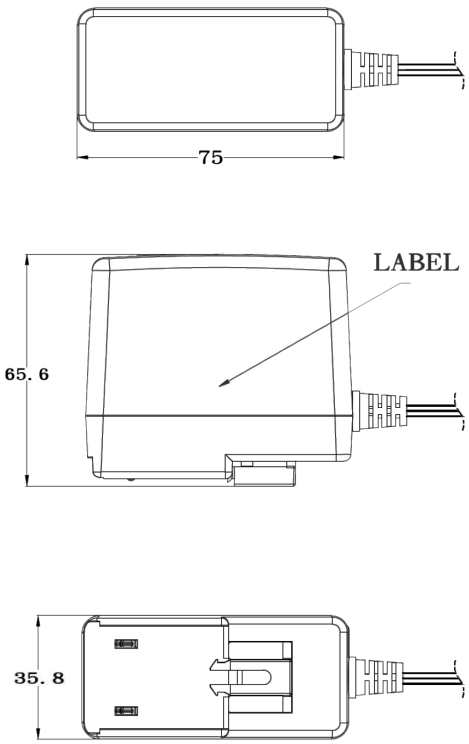
| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| operating temperature | | 0 | | 40 | °C |
| storage temperature | | -20 | | 80 | °C |
| operating humidity | non-condensing | 20 | | 80 | % |
| storage humidity | non-condensing | 10 | | 90 | % |

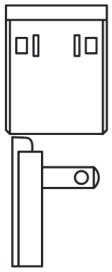
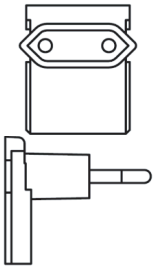
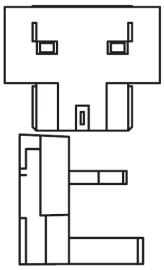
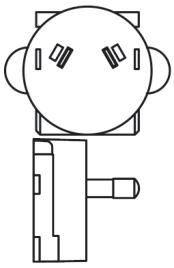
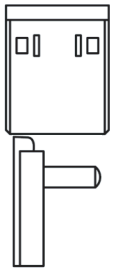
## MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| dimensions | 75 x 35.8 x 65.6 | | | | mm |
| inlet plug | interchangeable blades (North America, Europe, UK, Australia, China) | | | | |
| weight | without blades | | 170 | | g |

## MECHANICAL DRAWING

units: mm
tolerance: ±0.5 mm




| INTERCHANGEABLE BLADES | | | | | |
|---|---|---|---|---|---|
| BLADE DESIGNATOR | N | E | B | A | C |
| REGION | North America | Europe | UK | Australia | China |
| BLADE ACCESSORY | SMI-US-2 | SMI-EU-2 | SMI-UK-2 | SMI-AU-2 | SMI-CN-2 |
| BLADE |  |  |  |  |  |

## DC CORD

units: mm

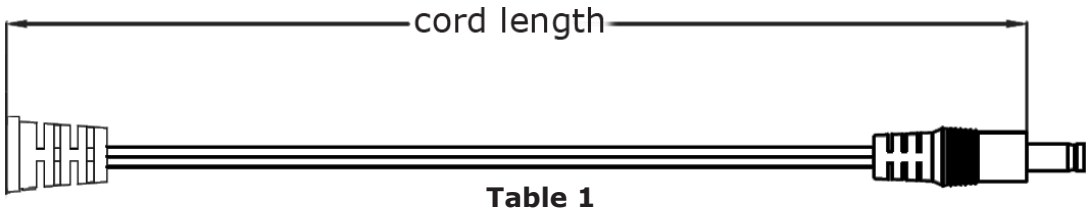
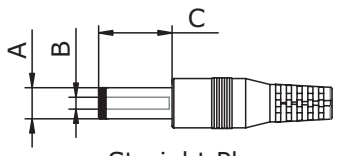



**Table 1**

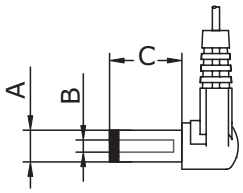
| MODEL NO. | CABLE | CORD LENGTH |
|---|---|---|
| SMI18-5 | UL2468, 18 AWG | 1,500 mm ±30 |
| SMI18-5.9 | UL2468, 18 AWG | 1,200 mm ±30 |
| SMI18-9 | UL2468, 18 AWG | 1,500 mm ±30 |
| SMI18-12 | UL2468, 20 AWG | 1,500 mm ±30 |
| SMI18-15 | UL2468, 22 AWG | 1,500 mm ±30 |
| SMI18-18 | UL2468, 22 AWG | 1,500 mm ±30 |
| SMI18-24 | UL2468, 22 AWG | 1,500 mm ±30 |

# OUTPUT PLUG OPTIONS

## Standard DC Plug



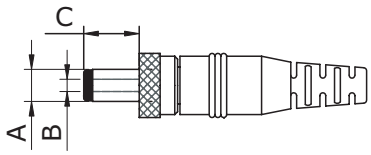
Straight Plug



Right Angle Plug

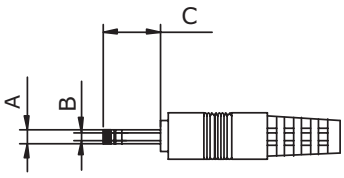
| Size | A | B | C | Unit |
|---|---|---|---|---|
| 5 | 5.5 | 2.1 | 9.5 | mm |
| 6 | 5.5 | 2.5 | 9.5 | mm |
| 7 | 3.5 | 1.35 | 9.5 | mm |
| 8 | 3.8 | 1.35 | 9.5 | mm |
| 9 | 3.8 | 1.05 | 9.5 | mm |

## Locking DC Plug

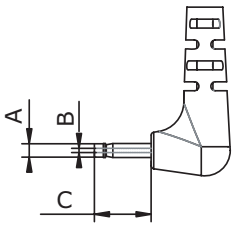



| Size | A | B | C | Unit |
|---|---|---|---|---|
| 10 | 5.5 | 2.1 | 9.5 | mm |
| 11 | 5.5 | 2.5 | 9.5 | mm |

## EIAJ DC Plug



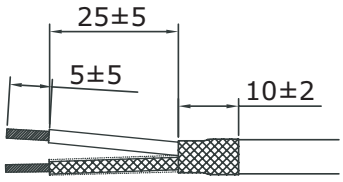
Straight Plug



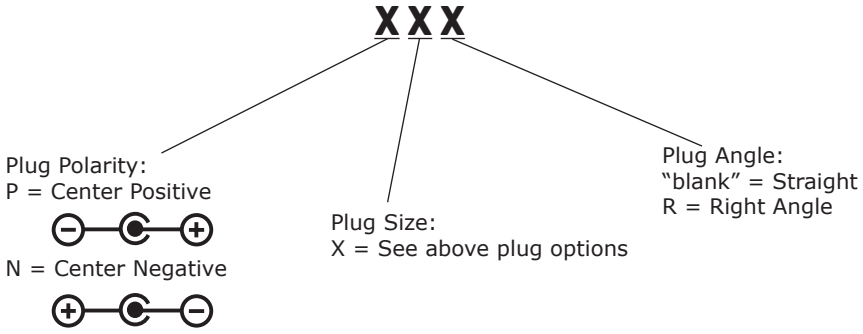
Right Angle Plug

| 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 | 08/07/2015 |
| 1.01 | added 5.9 Vdc output model | 09/01/2015 |
| 1.02 | updated datasheet | 11/04/2015 |
| 1.03 | housing width changed to 35.8 mm | 01/27/2016 |

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.