



SERIES: EMSA 40W | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

- up to 40 W power
- interchangeable AC blades
- universal input (90~264 Vac)
- single regulated output from 12~24 V
- over voltage and short circuit protection
- UL/cUL, GS, RCM, CCC, PSE safety approvals
- level V efficiency
- custom designs available



| MODEL | output voltage (Vdc) | output current max (A) | output power max (W) | ripple and noise ¹ max (mVp-p) | efficiency level |
|------------|-------------------------|---------------------------|-------------------------|----------------------------------------------|------------------|
| EMSA120300 | 12 | 3.0 | 36 | 300 | V |
| EMSA200200 | 20 | 2.0 | 40 | 300 | V |
| EMSA240167 | 24 | 1.67 | 40 | 300 | V |

Notes: 1. At full load, 100 ~ 240 Vac input, 20 MHz bandwidth oscilloscope, each output terminated with 10 µF aluminum electrolytic and 0.1 µF ceramic capacitors.

PART NUMBER KEY

EMSA120300 X - XX - SZ - CXX

Base Number
example of 12 Vdc, 3 A

DC Plug Type

Factory Designation

Reserved for Custom Configurations

Blades:

"blank" = North American, European, United Kingdom, Australian, and China blades included

- N = North American blade included
- E = European blade included
- B = United Kingdom blade included
- A = Australian blade included
- C = China blade included
- K = No blades included

INPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------------|------------------------|-----|-----|-----|-------|
| voltage | | 90 | | 264 | Vac |
| frequency | | 47 | | 63 | Hz |
| current | | | | 1.0 | A RMS |
| no load power consumption | | | | 0.3 | W |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|-----------------|------------------------|-----|-----|-----|-------|
| line regulation | | | ±1 | | % |
| load regulation | | | ±5 | | % |

PROTECTIONS

| parameter | conditions/description |
|--------------------------|-----------------------------------------------------|
| over voltage protection | output voltage clamped by internal protection zener |
| short circuit protection | output shut down and auto restart |

SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|----------------|------------|
| isolation voltage | input to output at 10 mA for 1 minute | | | 3,000 4,242 | Vac Vdc |
| isolation resistance | input to output at 500 V dc | 100 | | | MΩ |
| safety approvals | UL 60950-1, EN 60950-1/IEC 60950-1, RCM, CCC, PSE | | | | |
| EMI/EMC | FCC part 15B, CISPR 22 Class B, EN 61204-3, EN 55022 Class B, EN 55024, EN 61000-3-(2, 3), IEC 6100-3-(2, 3), IEC 6100-4-(2, 3, 4, 5, 6, 11), CE | | | | |
| leakage current | | | | 0.25 | mA |
| RoHS compliant | yes | | | | |

ENVIRONMENTAL

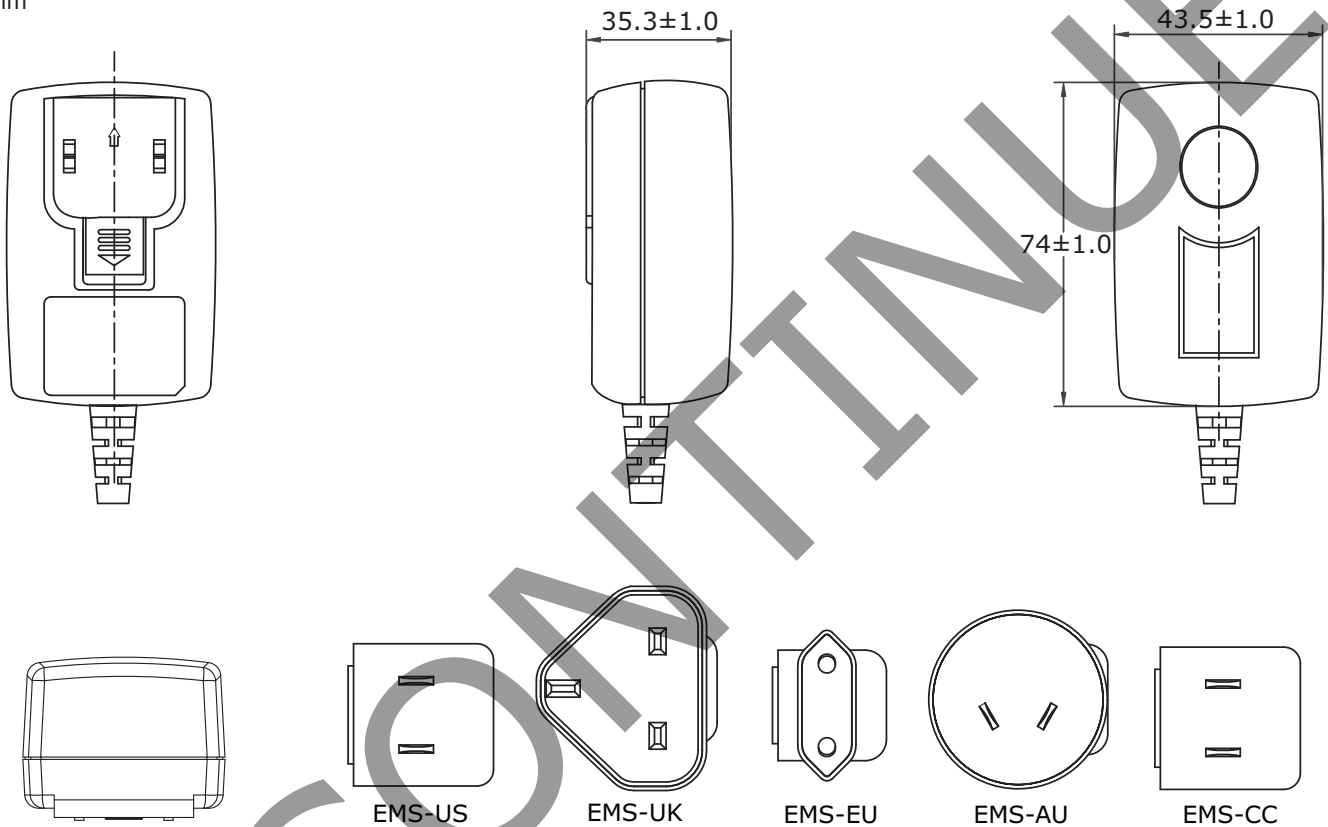
| parameter | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | | 0 | | 40 | °C |
| storage temperature | | -10 | | 70 | °C |
| operating humidity | | 20 | | 80 | % |
| storage humidity | | 10 | | 90 | % |

MECHANICAL

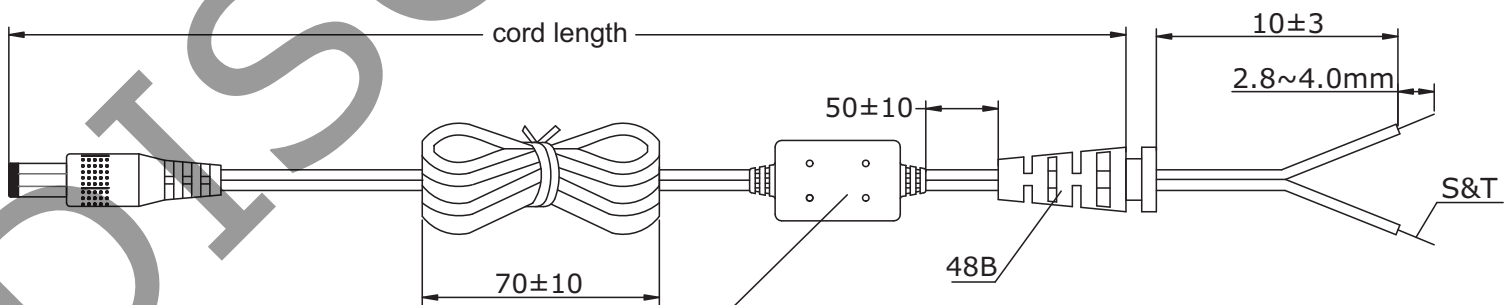
| parameter | conditions/description | min | typ | max | units |
|------------|------------------------------------------------|-----|-----|-----|-------|
| dimensions | 2.913 x 1.713 x 1.390 (74 x 43.5 x 35.3 mm) | | | | inch |
| input plug | multi-blade (US, UK, Europe, Australia, China) | | | | |

MECHANICAL DRAWING

units: mm



DC CORD



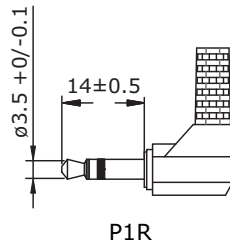
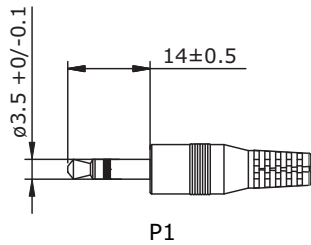
Black wire, white stripe: Positive

Ferrite core with one turns wire
12x20x7.3(018)

| MODEL NO. | CABLE GAUGE | CORD LENGTH |
|------------|-------------|-------------|
| EMSA120300 | 18 AWG | 1530 ± 100 |
| EMSA200200 | 20 AWG | 1530 ± 100 |
| EMSA240167 | 20 AWG | 1530 ± 100 |

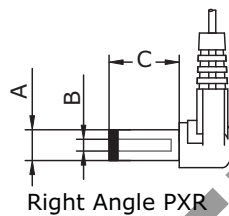
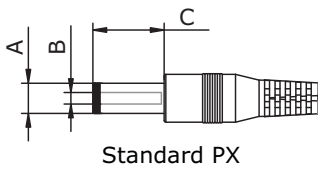
OUTPUT PLUG OPTIONS

3.5 mm Phono Plug



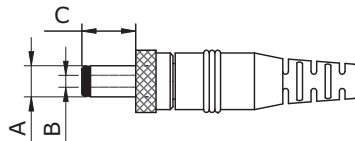
*Tip positive

Standard DC Plug



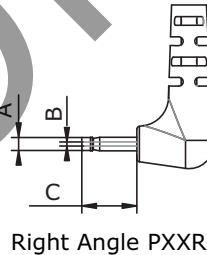
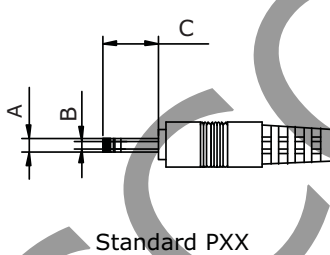
| | A | B | C | Unit |
|--------|-----|------|-----|------|
| P5/P5R | 5.5 | 2.1 | 9.5 | mm |
| P6/P6R | 5.5 | 2.5 | 9.5 | mm |
| P7/P7R | 3.5 | 1.35 | 9.5 | mm |
| P8/P8R | 3.8 | 1.35 | 9.5 | mm |
| P9/P9R | 3.8 | 1.05 | 9.5 | mm |

Locking DC Plug

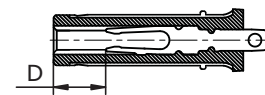


| | A | B | C | Unit |
|-----|-----|-----|-----|------|
| P10 | 5.5 | 2.1 | 9.5 | mm |
| P11 | 5.5 | 2.5 | 9.5 | mm |

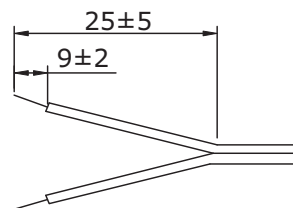
EIAJ Plugs



| | EIAJ | A | B | C | D | Unit |
|----------|--------|------|-----|-----|-----|------|
| P12/P12R | EIAJ-1 | 2.35 | 0.7 | 9.5 | NA | mm |
| P13/P13R | EIAJ-2 | 4.0 | 1.7 | 9.5 | 5.0 | mm |
| P14/P14R | EIAJ-3 | 4.75 | 1.7 | 9.5 | 5.0 | mm |



Stripped and Tinned



DC PLUG TYPE

ST
Stripped and Tinned

PXXX

Plug Type Plug Angle:
"Blank" = Standard
R = Right Angle Plug Polarity:
"Blank" = N/A
P = Center Positive
N = Center Negative

*Contact CUI for additional output plug options.

REVISION HISTORY

| rev. | description | date |
|------|--------------------------------------------------------------|------------|
| 1.0 | initial release | 06/21/2010 |
| 1.01 | new template applied | 08/08/2011 |
| 1.02 | PSE safety approval added | 09/07/2011 |
| 1.03 | updated P7/P7R B dimension | 03/23/2012 |
| 1.04 | V-Infinity branding removed, safety and EMI/EMC data updated | 08/21/2012 |

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.