

**SERIES:** EMMA 30W | **DESCRIPTION:** MEDICAL AC-DC POWER SUPPLY

**FEATURES**

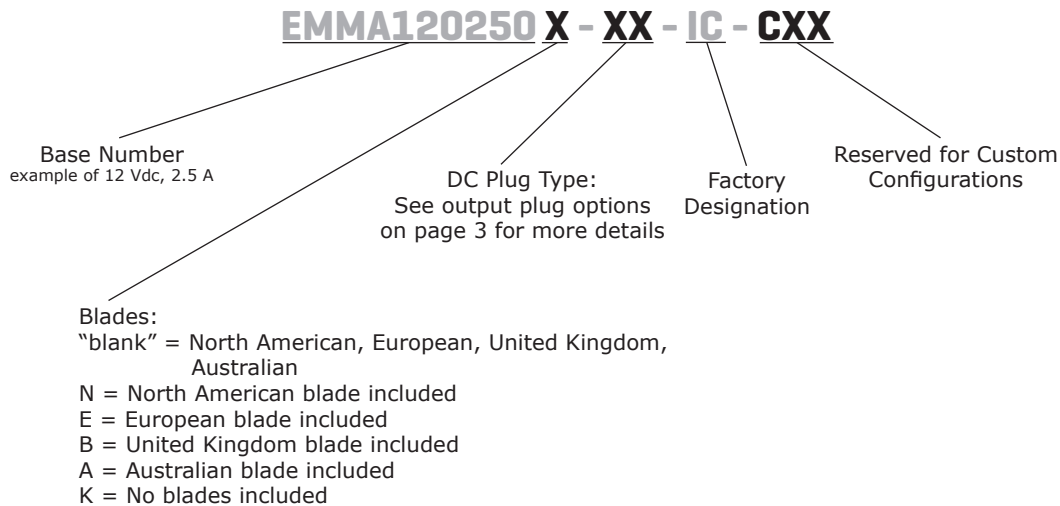
- up to 30 W power
- universal input (90~264 Vac)
- interchangeable AC blades
- single regulated output from 5~24 Vdc
- over voltage and short circuit protections
- medical 60601-1 4th edition safety approvals
- designed for 2 x MOPP applications
- level V efficiency



| MODEL      | output voltage<br>(Vdc) | output current max<br>(A) | output power max<br>(W) | ripple and noise <sup>1</sup> max<br>(mVp-p) | efficiency level |
|------------|-------------------------|---------------------------|-------------------------|--|------------------|
| EMMA050400 | 5                       | 4                         | 20                      | 50   | V                |
| EMMA090300 | 9                       | 3                         | 27                      | 90   | V                |
| EMMA120250 | 12                      | 2.5                       | 30                      | 120  | V                |
| EMMA150200 | 15                      | 2                         | 30                      | 150  | V                |
| EMMA180167 | 18                      | 1.67                      | 30                      | 180  | V                |
| EMMA240125 | 24                      | 1.25                      | 30                      | 240  | V                |

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

**PART NUMBER KEY**



## INPUT

| parameter                 | conditions/description  | min | typ | max | units |
|---------------------------|-------------------------|-----|-----|-----|-------|
| voltage                   |                         | 90  |     | 264 | Vac   |
| frequency                 |                         | 47  |     | 63  | Hz    |
| input current             |                         |     |     | 0.8 | A     |
| inrush current            | at 240 V ac, cold start |     |     | 100 | A     |
| no load power consumption |                         |     |     | 0.3 | W     |

## OUTPUT

| parameter                    | conditions/description | min | typ   | max | units |
|------------------------------|------------------------|-----|-------|-----|-------|
| line regulation <sup>1</sup> |                        |     | ±1    |     | %     |
| load regulation <sup>2</sup> | 5 Vdc output           |     | ±6    |     | %     |
|                              | 9 Vdc output           |     | ±3    |     | %     |
|                              | all other outputs      |     | ±2    |     | %     |
| voltage accuracy             |                        |     | ±2    |     | %     |
| hold-up time                 | at 115 Vac             |     | 10    |     | ms    |
| switching frequency          |                        |     | 70    |     | kHz   |
| temperature coefficient      |                        |     | ±0.05 |     | %/°C  |

Note: 1. measured from 100 ~ 240 Vac, full load  
2. measured from 60% to full load and from 60 ~ 20% load (60% ±40% load)

## PROTECTIONS

| parameter                | conditions/description   |
|--------------------------|--------------------------|
| over voltage protection  | TVS component to clamp   |
| short circuit protection | continuous, auto restart |

## SAFETY & COMPLIANCE

| parameter         | conditions/description  | min     | typ | max   | units |
|-------------------|---|---------|-----|-------|-------|
| isolation voltage | input to output   |         |     | 5,656 | Vdc   |
| safety approvals  | medical IEC 60601-1, EN 60601-1, UL 60601-1 4th edition   |         |     |       |       |
| EMI/EMC           | EN 55011 Class B, FCC CRF47 Part 18 Class B, EN 60601-1-2, EN 61000-3-(2,3), IEC 61000-4-(2,4,5,6,8,11) |         |     |       |       |
| leakage current   |   |         |     | 0.1   | mA    |
| MTBF              | as per MIL-HDBK-217F, 115 Vac, 25 °C  | 200,000 |     |       | hours |
| RoHS              | 2011/65/EU  |         |     |       |       |

## ENVIRONMENTAL

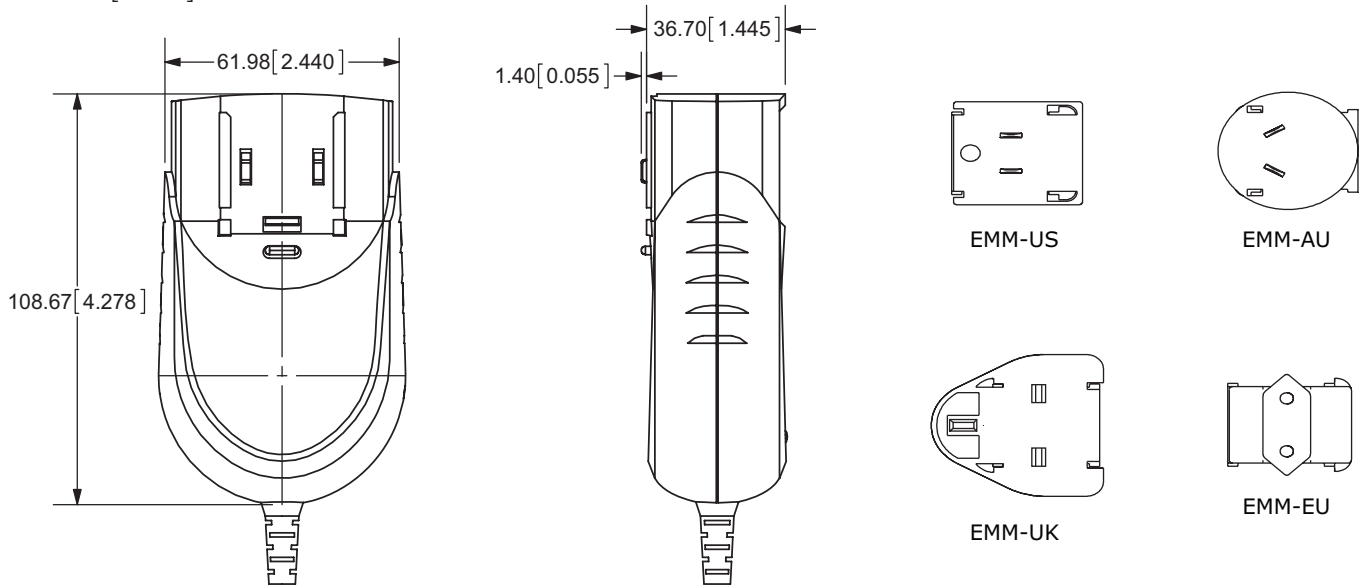
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | 0   |     | 40  | °C    |
| storage temperature   |                        | -20 |     | 85  | °C    |
| humidity              | non-condensing         |     |     | 93  | %     |

## MECHANICAL

| parameter  | conditions/description                              | min | typ | max | units |
|------------|---|-----|-----|-----|-------|
| dimensions | 108.67 x 61.98 x 36.70 (4.278 x 2.440 x 1.445 inch) |     |     |     | mm    |
| input plug | interchangeable blades (US, Europe, UK, Australia)  |     |     |     |       |
| weight     |   |     | 300 |     | g     |

## MECHANICAL DRAWING

units: mm [inches]  
tolerance: ±0.5 [±0.02]



## DC OUTPUT PLUG OPTIONS / DC CORD



|        | A   | B   | C   | Unit |
|--------|-----|-----|-----|------|
| P5/P5R | 5.5 | 2.1 | 9.5 | mm   |
| P6/P6R | 5.5 | 2.5 | 9.5 | mm   |



| MODEL NO.  | CABLE GAUGE | CORD LENGTH  |
|------------|-------------|--------------|
| EMMA050040 | 18 AWG      | 1,220 mm ±50 |
| EMMA090300 | 18 AWG      | 1,220 mm ±50 |
| EMMA120250 | 18 AWG      | 1,800 mm ±50 |
| EMMA150200 | 18 AWG      | 1,800 mm ±50 |
| EMMA180167 | 18 AWG      | 1,800 mm ±50 |
| EMMA240125 | 18 AWG      | 1,800 mm ±50 |



## REVISION HISTORY

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| rev. | description                            | date       |
|------|--|------------|
| 1.0  | initial release                        | 12/16/2011 |
| 1.01 | updated P7/P7R B dimension             | 03/23/2012 |
| 1.02 | V-Infinity branding removed            | 08/21/2012 |
| 1.03 | updated datasheet                      | 07/10/2015 |
| 1.04 | updated to medical 60601-1 4th edition | 06/20/2017 |

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.

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