


**SERIES:** ETMA 250W U | **DESCRIPTION:** MEDICAL AC-DC POWER SUPPLY

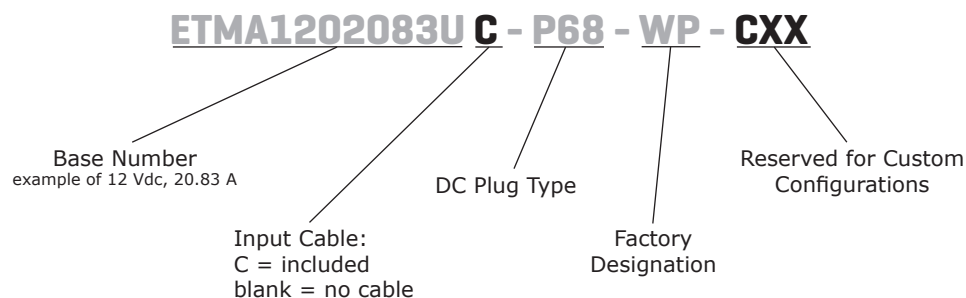
**FEATURES**

- up to 250 W power
- universal input (90~264 Vac)
- single regulated output from 12~48 V
- over voltage, overload and short circuit protections
- medical 60601-1 4th edition safety approvals
- designed for 2 x MOPP applications
- active PFC
- level V efficiency
- custom designs available



| MODEL        | output<br>voltage<br>(Vdc) | output<br>current<br>max<br>(A) | output<br>power<br>max<br>(W) | ripple<br>and noise <sup>1</sup><br>max<br>(mVp-p) | efficiency<br>level |
|--------------|----------------------------|---------------------------------|-------------------------------|----------------------------------------------------|---------------------|
| ETMA1202083U | 12                         | 20.83                           | 250                           | 240                                                | V                   |
| ETMA1601563U | 16                         | 15.63                           | 250                           | 300                                                | V                   |
| ETMA1901316U | 19                         | 13.16                           | 250                           | 300                                                | V                   |
| ETMA2001250U | 20                         | 12.5                            | 250                           | 300                                                | V                   |
| ETMA2401042U | 24                         | 10.42                           | 250                           | 300                                                | V                   |
| ETMA360694U  | 36                         | 6.94                            | 250                           | 300                                                | V                   |
| ETMA480521U  | 48                         | 5.21                            | 250                           | 300                                                | V                   |

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

**PART NUMBER KEY**


## INPUT

| parameter                 | conditions/description | min | typ | max | units |
|---------------------------|------------------------|-----|-----|-----|-------|
| voltage                   |                        | 90  |     | 264 | Vac   |
| frequency                 |                        | 47  |     | 63  | Hz    |
| current                   | at 90 Vac, 60 Hz       |     |     | 3.5 | A     |
| inrush current            | at 230 Vac, cold start |     |     | 150 | A     |
| no load power consumption |                        |     |     | 0.5 | W     |

## OUTPUT

| parameter               | conditions/description | min | typ   | max | units |
|-------------------------|------------------------|-----|-------|-----|-------|
| line regulation         |                        |     | ±1    |     | %     |
| load regulation         |                        |     | ±5    |     | %     |
| hold-up time            | at 115 Vac             | 16  |       |     | ms    |
| temperature coefficient |                        |     | ±0.05 |     | %/°C  |

## PROTECTIONS

| parameter                | conditions/description    | min | typ | max | units |
|--------------------------|---------------------------|-----|-----|-----|-------|
| over voltage protection  | 12 V output               | 110 |     | 133 | %     |
|                          | 16 V output               | 110 |     | 130 | %     |
|                          | 19 V output               | 111 |     | 137 | %     |
|                          | 20 V output               | 118 |     | 130 | %     |
|                          | 24, 36 V outputs          | 110 |     | 125 | %     |
|                          | 48 V output               | 110 |     | 120 | %     |
| overload protection      | shutdown and auto restart | 110 |     | 160 | %     |
| short circuit protection | continuous, auto restart  |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter             | conditions/description                                                | min     | typ | max   | units |
|-----------------------|-----------------------------------------------------------------------|---------|-----|-------|-------|
| isolation voltage     | input to output for 2 seconds                                         |         |     | 4,242 | Vdc   |
|                       | input to frame ground for 2 seconds                                   |         |     | 2,121 | Vdc   |
| insulation resistance | input to output, at 500 Vdc                                           | 20      |     |       | MΩ    |
|                       | input to frame ground, at 500 Vdc                                     | 20      |     |       | MΩ    |
| safety approvals      | medical UL/cUL UL 60601-1, TUV EN 60601-1, CB IEC 60601-1 4th edition |         |     |       |       |
| EMI/EMC               | FCC Part 18 Class B, EN 60601-1, EN 55011                             |         |     |       |       |
| MTBF                  | at 25°C, max. load                                                    | 140,000 |     |       | hours |
| RoHS compliant        | yes                                                                   |         |     |       |       |

## ENVIRONMENTAL

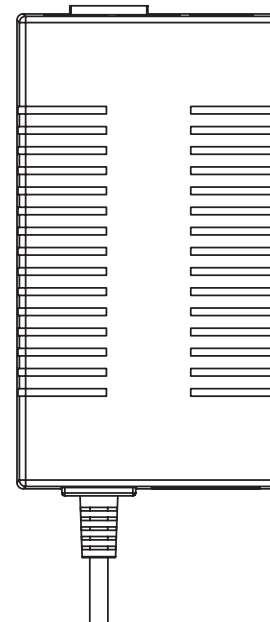
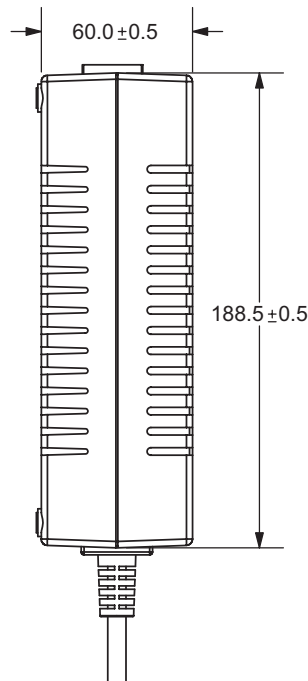
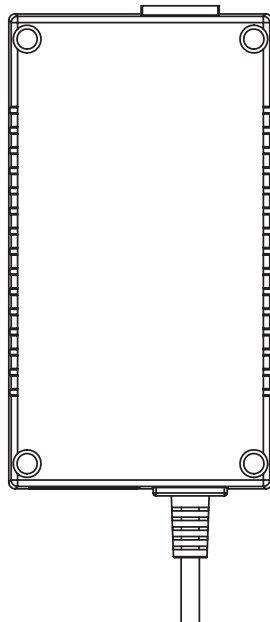
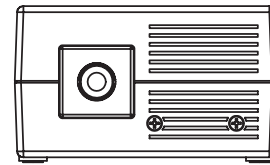
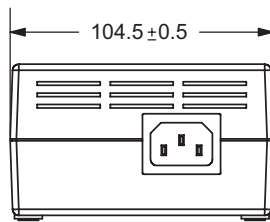
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | 0   |     | 50  | °C    |
| storage temperature   |                        | -10 |     | 70  | °C    |
| humidity              | non-condensing         | 20  |     | 90  | %     |

## MECHANICAL

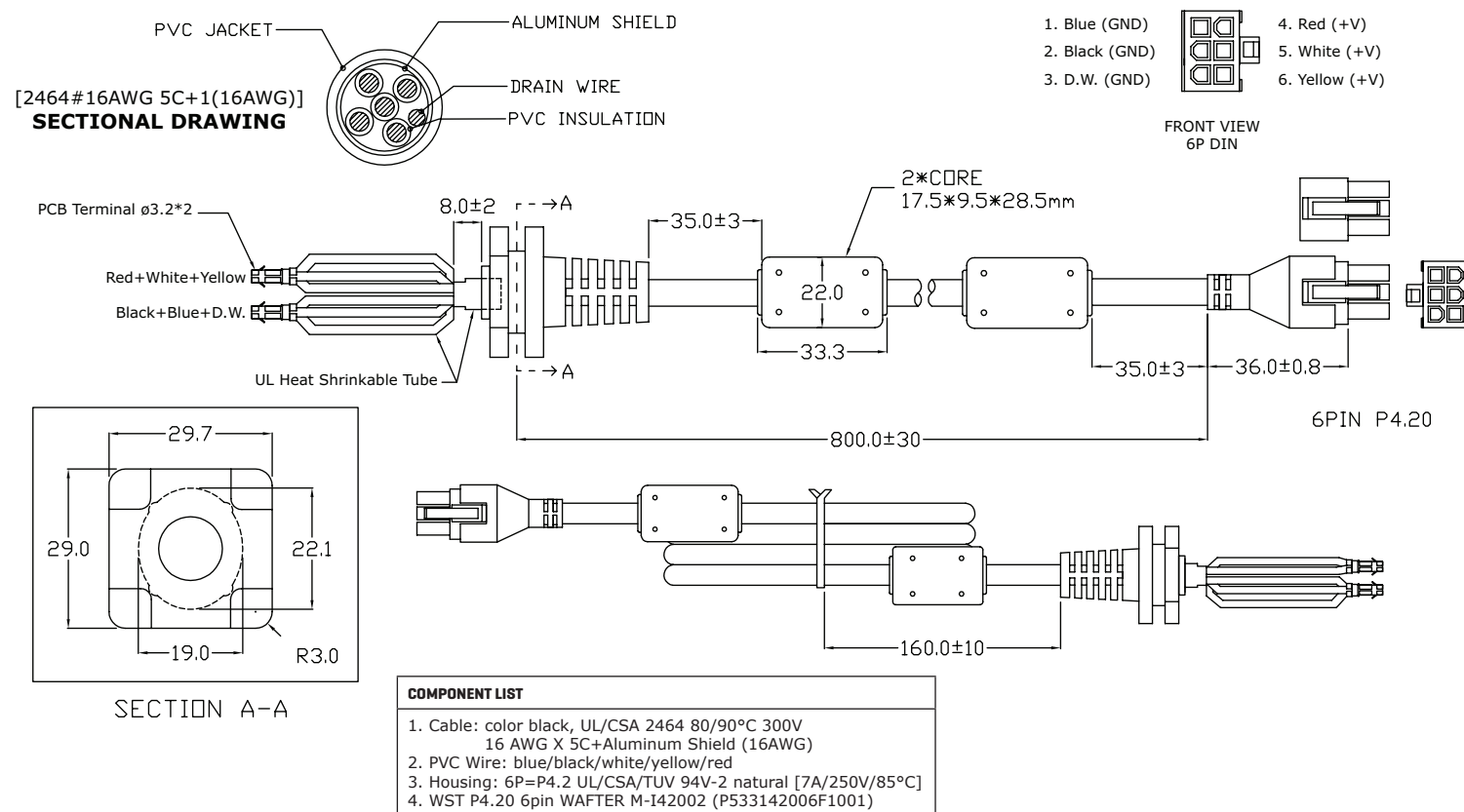
| parameter  | conditions/description                     | min | typ  | max | units |
|------------|--------------------------------------------|-----|------|-----|-------|
| dimensions | 7.42 x 4.11 x 2.36 (188.5 x 104.5 x 60 mm) |     |      |     | inch  |
| weight     |                                            |     | 1.06 |     | kg    |
| input plug | IEC320 / C14                               |     |      |     |       |

## MECHANICAL DRAWING

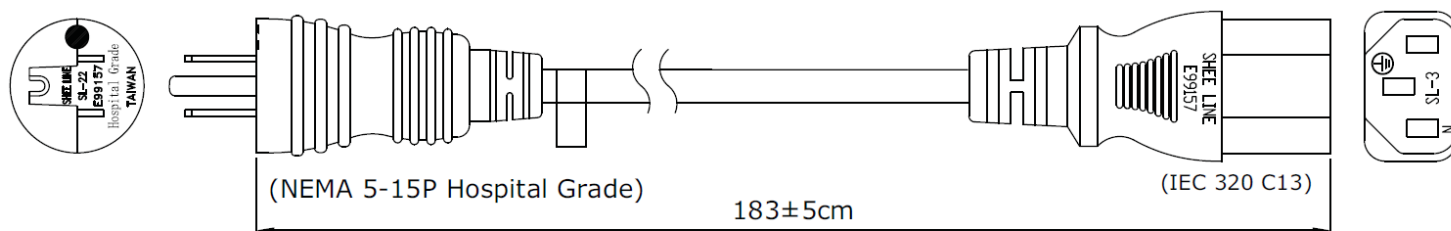
units: mm



## DC CORD

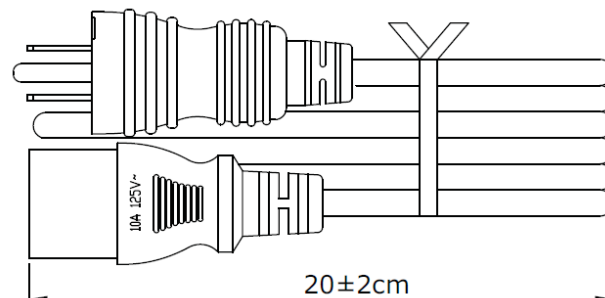


## AC CORD



### SPECIFICATION:

- 1) Length: 1.83m
- 2) Color: black
- 3) Plug: SL-22 (A)10 (V)125 Approval: UL/cUL
- 4) Connector: SL-3(A)10 (V)125 Approval: UL/cUL
- 5) Cable: SJT 18AWG/3C Approval: UL/CSA



## REVISION HISTORY

| rev. | description                            | date       |
|------|----------------------------------------|------------|
| 1.0  | initial release                        | 03/05/2012 |
| 1.01 | updated dc cord drawing                | 06/05/2012 |
| 1.02 | description and warranty updated       | 08/21/2012 |
| 1.03 | replaced TUV approval with Nemko       | 09/04/2013 |
| 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 two (2) year limited warranty. Complete warranty information is listed on our website.

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