



## SERIES: VBM-100 | DESCRIPTION: AC-DC POWER SUPPLY

### FEATURES

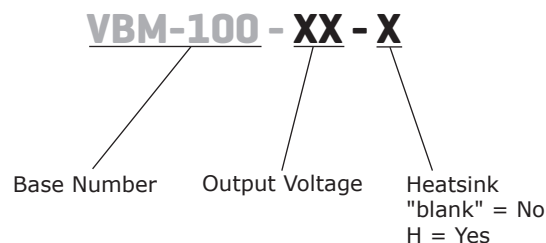
- up to 100 W isolated output
- baseplate cooling
- active PFC meets EN61000-3-2 Class D
- 17mm ultra low profile encapsulated packaging
- universal input (90~264 Vac)
- no load power consumption < 0.5 W
- single output from 12~48 Vdc
- 4,242 Vdc isolation
- wide operating temperature range (-20°C~85°C)
- over temperature, over voltage, and short circuit protections
- high efficiency up to 92%



| 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><br>typ<br>(%) |
|------------|----------------------------|---------------------------------|-------------------------------|----------------------------------------------------|------------------------------|
| VBM-100-12 | 12                         | 8.4                             | 100                           | 120                                                | 90                           |
| VBM-100-24 | 24                         | 4.2                             | 100                           | 240                                                | 91                           |
| VBM-100-28 | 28                         | 3.6                             | 100                           | 280                                                | 91                           |
| VBM-100-36 | 36                         | 2.8                             | 100                           | 360                                                | 91                           |
| VBM-100-48 | 48                         | 2.1                             | 100                           | 480                                                | 92                           |

Notes: 1. ripple and noise are measured at 20 MHz BW with 10μF electrolytic capacitor and 0.1μF ceramic capacitor across output

### PART NUMBER KEY



## INPUT

| parameter                 | conditions/description | min | typ | max | units |
|---------------------------|------------------------|-----|-----|-----|-------|
| voltage                   |                        | 90  |     | 264 | Vac   |
| frequency                 |                        | 47  |     | 63  | Hz    |
| inrush current            | at 240 Vac             |     |     | 100 | A     |
| leakage current           | at 264 Vac             |     |     | 3.5 | mA    |
| no load power consumption |                        |     |     | 0.5 | W     |

## OUTPUT

| parameter               | conditions/description           | min | typ   | max  | units |
|-------------------------|----------------------------------|-----|-------|------|-------|
| line regulation         | high line to low line, full load |     |       | ±0.5 | %     |
| load regulation         | 60% ±40% rated load              |     |       | ±1   | %     |
| voltage accuracy        | set at 60% rated load and 25°C   |     |       | ±1   | %     |
| hold-up time            |                                  |     | 16    |      | ms    |
| switching frequency     |                                  |     | 130   |      | kHz   |
| temperature coefficient |                                  |     | ±0.05 |      | %/°C  |

## PROTECTIONS

| parameter                   | conditions/description              | min | typ | max | units |
|-----------------------------|-------------------------------------|-----|-----|-----|-------|
| over voltage protection     | recycle ac input to restart         |     |     |     |       |
| short circuit protection    | hiccup mode, recovers automatically |     |     |     |       |
| over temperature protection | auto recovery                       |     |     |     |       |

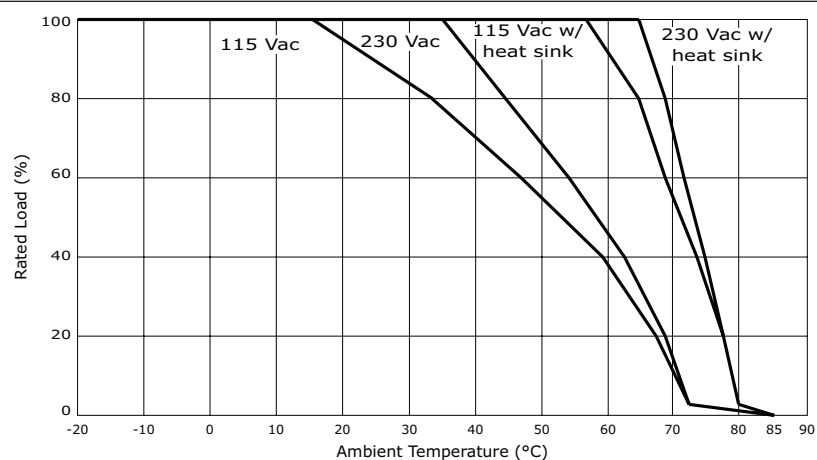
## SAFETY AND COMPLIANCE

| parameter         | conditions/description                                                                          | min   | typ | max | units |
|-------------------|-------------------------------------------------------------------------------------------------|-------|-----|-----|-------|
| isolation voltage | input to output                                                                                 | 4,242 |     |     | Vdc   |
| safety approvals  | IEC 60950-1, EN 60950-1, UL 60950-1                                                             |       |     |     |       |
| EMI/EMC           | EN 55022 Class B, FCC Part 15 Class B, EN 61000-6-(1,3), EN 61000-3-(2,3), EN 55024, EN 61204-3 |       |     |     |       |
| RoHS compliant    | yes                                                                                             |       |     |     |       |

## ENVIRONMENTAL

| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | see derating curves    | -20 |     | 85  | °C    |
| storage temperature   |                        | -40 |     | 100 | °C    |
| humidity              | non-condensing         |     |     | 93  | %     |

## DERATING CURVES

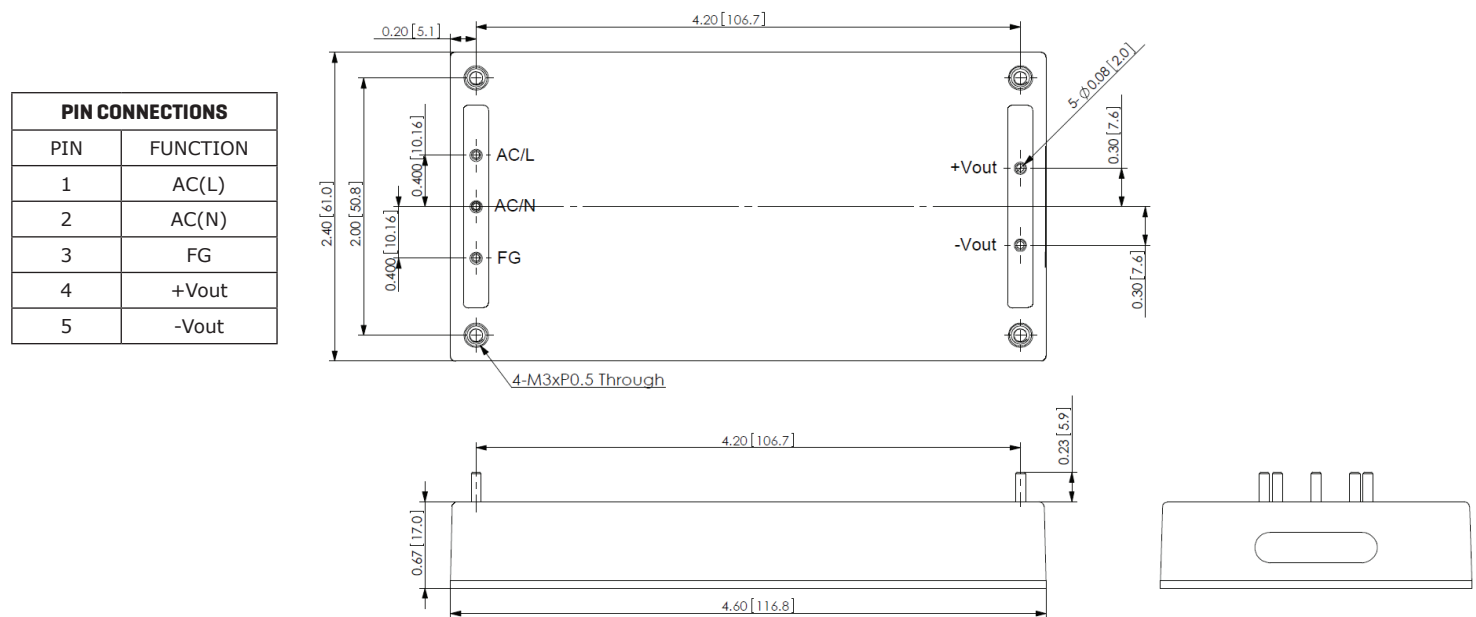


## MECHANICAL

| parameter  | conditions/description                            | min | typ        | max | units    |
|------------|---------------------------------------------------|-----|------------|-----|----------|
| dimensions | 4.598 x 2.402 x 0.669 (116.80 x 61.00 x 17.00 mm) |     |            |     | inch     |
| weight     | without heatsink                                  |     | 220<br>0.5 |     | g<br>lbs |

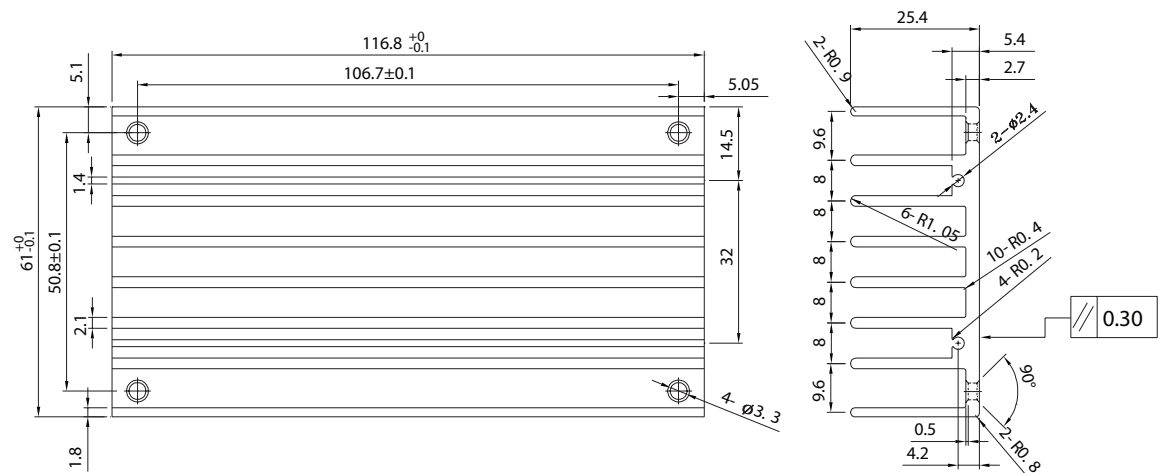
## MECHANICAL DRAWING

units: inch[mm]

tolerance: inches: x.xx =  $\pm 0.02$ , x.xxx =  $\pm 0.010$ mm: x.x =  $\pm 0.5$ , x.xx =  $\pm 0.25$ 

## HEATSINK

units: mm



All specifications measured at: Ta=25°C, 230 Vac input voltage and 60% rated output load, unless otherwise specified.

## REVISION HISTORY

| rev. | description             | date       |
|------|-------------------------|------------|
| 1.0  | initial release         | 06/10/2013 |
| 1.01 | updated derating curves | 07/08/2013 |
| 1.02 | added features          | 07/17/2013 |

The revision history provided is for informational purposes only and is believed to be accurate.



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