

SERIES: VBM-70 | DESCRIPTION: AC-DC POWER SUPPLY

FEATURES

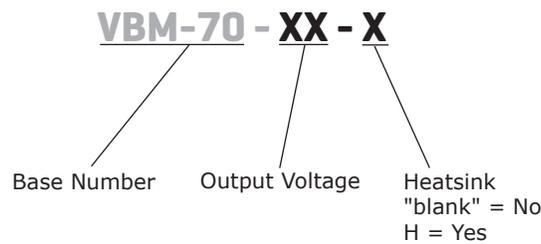
- universal input range (90 ~ 264 Vac)
- wide operating temperature range (-40 to +85 °C)
- ultra-low profile (17 mm)
- Class B emissions; no external components required
- over temperature, over voltage, over current, and short circuit protections
- low no-load power consumption (150 mW)



| MODEL | output voltage | output current max | output power max | ripple and noise ¹ max | efficiency ² typ |
|-----------|----------------|--------------------|------------------|-----------------------------------|-----------------------------|
| | (Vdc) | (A) | (W) | (mVp-p) | (%) |
| VBM-70-12 | 12 | 5.83 | 70.0 | 120 | 88.0 |
| VBM-70-24 | 24 | 2.92 | 70.0 | 240 | 88.5 |
| VBM-70-36 | 36 | 1.94 | 69.8 | 360 | 89.0 |
| VBM-70-48 | 48 | 1.46 | 70.0 | 480 | 89.5 |

Notes: 1. Ripple and noise are measured at 20 MHz BW with 10 uF aluminum electrolytic capacitor and 0.1 uF ceramic capacitor on the output.
 2. Measured at 230 Vac, full load, and 25°C.
 3. All specifications measured at: Ta=25°C, 230 Vac input voltage and 60% rated output load, unless otherwise specified.

PART NUMBER KEY



INPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------------|------------------------|-------|-----|------|-------|
| voltage ⁴ | AC input | 90 | | 264 | Vac |
| | DC input | 127 | | 370 | Vdc |
| frequency | | 47 | | 63 | Hz |
| leakage current | at 264 Vac | | | 3.5 | mA |
| no load power consumption | | | | 0.15 | W |
| isolation voltage | for 1 minute | 3,000 | | | Vac |

Notes: 4. Safety approvals only apply to the AC input.

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------|------------------------|-----|-----|------|-------|
| line regulation | 90~264 Vac, full load | | | ±0.5 | % |
| load regulation | 60% ±40% rated load | | | ±1 | % |
| voltage accuracy | 25°C, full load | | | ±1 | % |
| hold-up time | at 115 Vac | | 6 | | ms |
| switching frequency | | | 65 | | kHz |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|-----------------------------|------------------------|---------------------|-----|-----|-------|
| over current protection | auto recovery, hiccup | 110 | | 150 | % |
| over voltage protection | auto recovery | 12 Vdc output model | | 16 | Vdc |
| | | 24 Vdc output model | | 35 | Vdc |
| | | 36 Vdc output model | | 50 | Vdc |
| | | 48 Vdc output model | | 63 | Vdc |
| short circuit protection | auto recovery | | | | |
| over temperature protection | auto recovery | | | | |

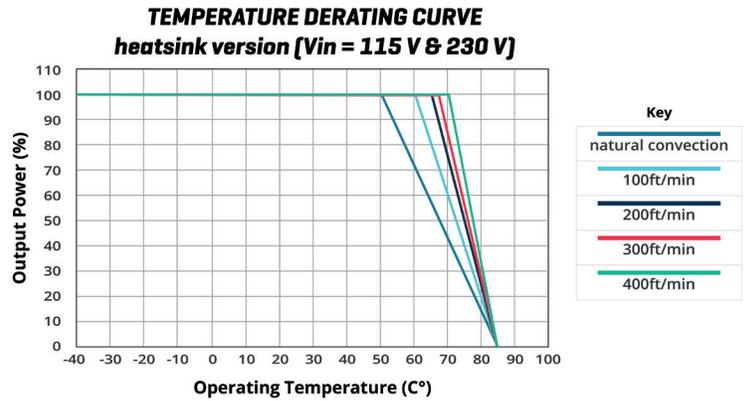
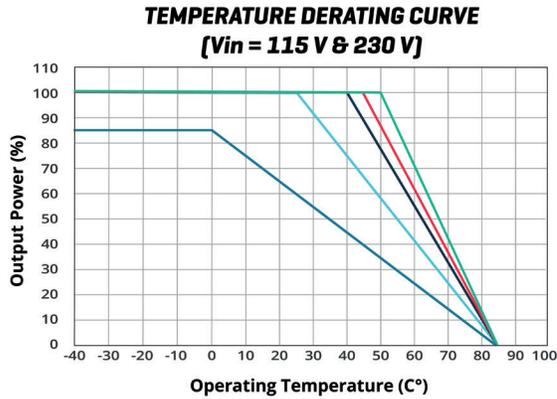
SAFETY AND COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|-------------------------------|---|---------|-----|-----|-------|
| isolation voltage | input to output for 1 minute | 3,000 | | | Vac |
| | input to ground for 1 minute | 1,800 | | | Vac |
| | output to ground for 1 minute | 500 | | | Vac |
| safety approvals | certified to 62368: IEC/UL/EN | | | | |
| conducted emissions | EN 55032: 2015+AC: 2016, EN 61204-3: 2000, EN 61000-6-3: 2007+A1: 2011+AC: 2012, EN 61000-6-4: 2007+A1: 2011, 47 CFR FCC Part 15 Subpart B, Class B | | | | |
| radiated emissions | EN 55032: 2015+AC: 2016, EN 61204-3: 2000, EN 61000-6-3: 2007+A1: 2011+AC: 2012, EN 61000-6-4: 2007+A1: 2011, 47 CFR FCC Part 15 Subpart B, Class B | | | | |
| harmonic current | EN 61000-3-2: 2014 | | | | |
| ESD | IEC 61000-4-2: 2008, Air Discharge: ±8KV, Contact Discharge: ±4KV, perf. Criteria A | | | | |
| radiated immunity | EN 55035:2017, EN 61204-3:2000, EN 61000-6-1:2019, EN 61000-6-2:2019 | | | | |
| EFT/Burst | IEC 61000-4-4: 2012, ±1kv, ±2kv, perf. Criteria A | | | | |
| surge | IEC 61000-4-5: 2014+A1: 2017, perf. Criteria A | | | | |
| | L-N: ±0.5kv, ±1kv, L/N-E(Earth): ±0.5kv, ±1kv, ±2kv, perf. Criteria A | | | | |
| conducted immunity | EN 55035: 2017, EN 61204-3: 2000, EN 61000-6-1: 2019, EN 61000-6-2: 2019 | | | | |
| voltage dips and interruption | IEC 61000-4-11: 2004+A1: 2017, Dip: 30% Reduction, Dip >95% Reduction, perf. Criteria A | | | | |
| MTBF | as per MIL-HDBK-217F at 25°C | 550,000 | | | hours |
| RoHS compliant | yes | | | | |

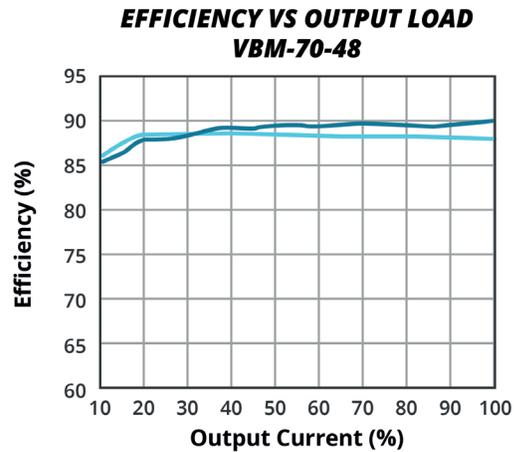
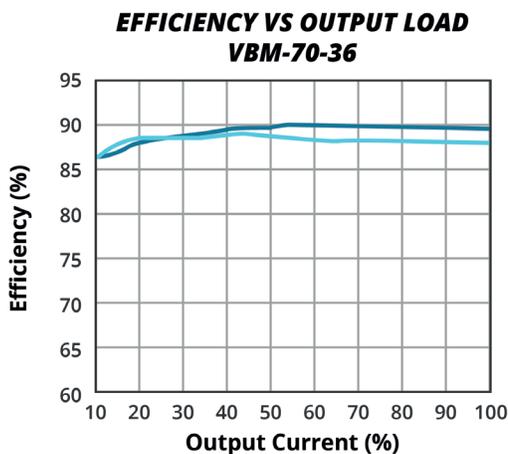
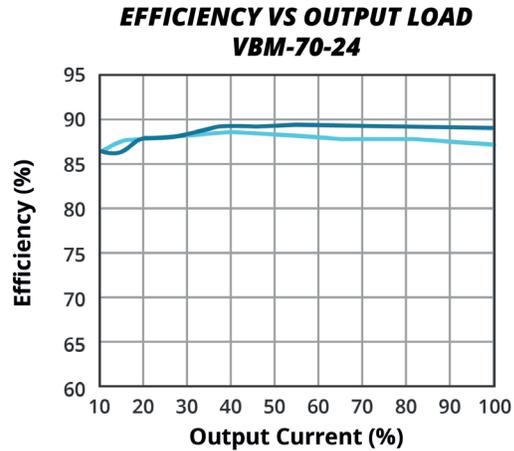
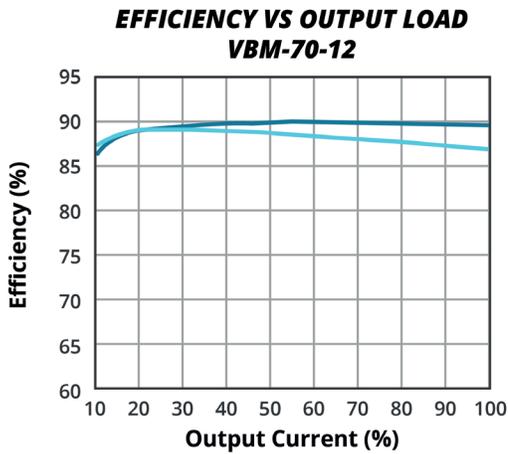
ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|----------------------------|-----------------------------|-----|-----|-------|-------|
| operating temperature | see derating curves | -40 | | 85 | °C |
| storage temperature | | -40 | | 85 | °C |
| humidity | non-condensing | | | 93 | % |
| operating case temperature | at the center of base plate | -40 | | 85 | °C |
| operating altitude | non-condensing | | | 5,000 | m |

DERATING CURVES



EFFICIENCY CURVES



MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------|------------------------|--|-----|-----|--------|
| dimensions | | 2.28 x 2.40 x 0.67 [57.9 x 61.0 x 17.0 mm] | | | inches |
| | with heatsink | 2.39 x 2.28 x 1.46 [60.7 x 58.0 x 37.0 mm] | | | inches |
| weight | | | 135 | | g |
| | with heatsink | | 260 | | g |

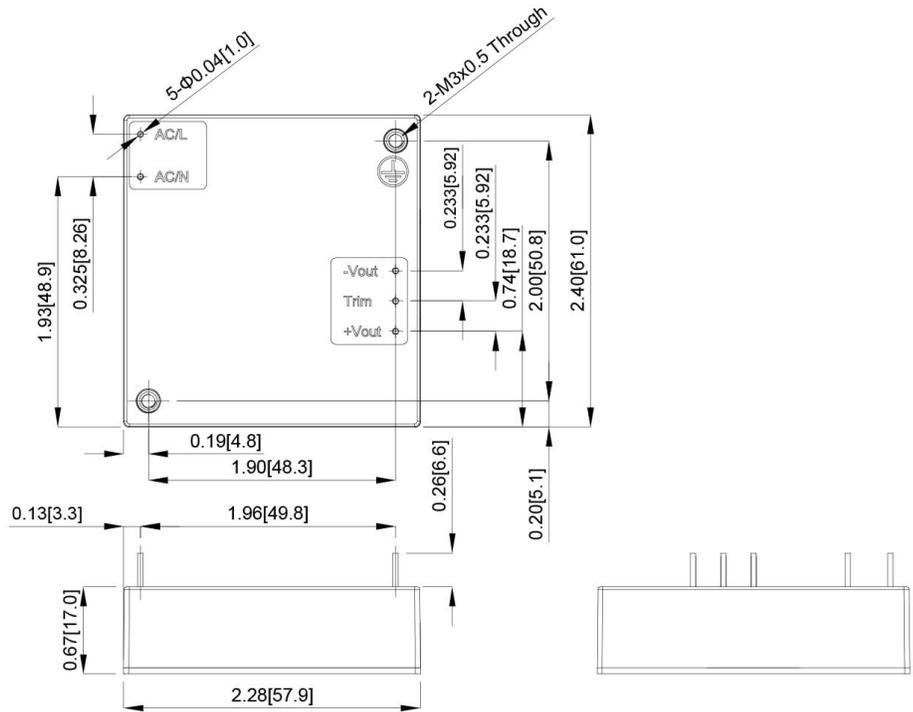
MECHANICAL DRAWING

units: inch [mm]

tolerance: inches: x.xx = ±0.02, x.xxx = ±0.010

mm: x.x = ±0.5, x.xx = ±0.25

| PIN CONNECTIONS | |
|-----------------|----------|
| PIN | FUNCTION |
| 1 | AC (L) |
| 2 | AC (N) |
| 3 | +Vo |
| 4 | Trim |
| 5 | -Vo |



REVISION HISTORY

| rev. | description | date |
|------|---|------------|
| 1.0 | initial release | 12/09/2021 |
| 1.01 | input and environmental section updated | 09/03/2025 |

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



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