

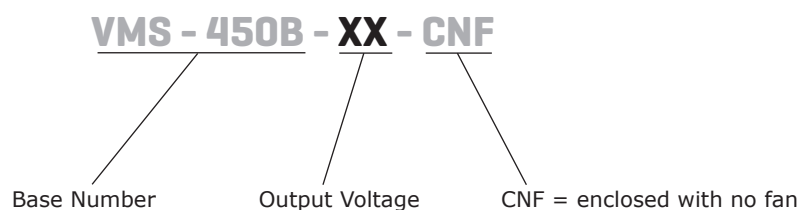
SERIES: VMS-450B-CNF | DESCRIPTION: AC-DC POWER SUPPLY
FEATURES

- up to 450 W continuous power
- universal input voltage range
- power factor correction
- 12 Vdc Fan output
- 5 Vdc AUX output
- certified to IEC/EN/UL 60601-1
- over voltage, over current, over temperature and short circuit protections



| MODEL | output voltage | output current ¹ | output power ¹ | ripple and noise ^{2,3} | efficiency |
|-------------|----------------|-----------------------------|---------------------------|---------------------------------|------------|
| | (Vdc) | max (A) | max (W) | max (mVp-p) | typ (%) |
| VMS-450B-12 | 12 | 37.5 | 450 | 240 | 89 |
| VMS-450B-15 | 15 | 30.0 | 450 | 225 | 89 |
| VMS-450B-19 | 19 | 23.7 | 450 | 190 | 91 |
| VMS-450B-24 | 24 | 18.8 | 450 | 240 | 91 |
| VMS-450B-36 | 36 | 12.5 | 450 | 360 | 90 |
| VMS-450B-48 | 48 | 9.4 | 450 | 480 | 91 |
| VMS-450B-54 | 54 | 8.3 | 450 | 540 | 92 |
| VMS-450B-56 | 56 | 8.0 | 450 | 560 | 92 |

Notes: 1. Maximum power of main output must not exceed 250 W with convection cooling or 450 W with 13.8 CFM forced air.
 2. Ripple and noise is measured with 20 MHz bandwidth with a 0.1 μ F ceramic capacitor and a low ESR 47 μ F electrolytic capacitor at output connector terminals.

PART NUMBER KEY


INPUT

| parameter | conditions/description | min | typ | max | units |
|----------------|--|-----|------------|-----|-------|
| voltage | | 100 | | 240 | Vac |
| frequency | | 47 | | 63 | Hz |
| current | at 115 Vac, full load at 230 Vac, full load | | 5.3 2.2 | | A |
| inrush current | at 230 Vac, cold start at 25 °C, full load | | | 100 | A |
| power factor | at full load | 0.9 | | | |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---------------|--|-----|-----|-----|-------|
| regulation | | | ±5 | | % |
| fan drive | 12 Vdc / 600 mA for external fan | | ±5 | | % |
| aux | 5 Vdc / 1 A Max | | ±5 | | % |
| remote on/off | on: open or short to 5 V off: short to DC RTN | | | | |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|-----------------------------|---|-----|-----|-----|-------|
| over voltage protection | shut down | | | 150 | % |
| over current protection | automatically recovers | | | 130 | % |
| short circuit protection | automatically recovers after short-circuit fault is removed | | | | |
| over temperature protection | shut down | | | | |

SAFETY & COMPLIANCE

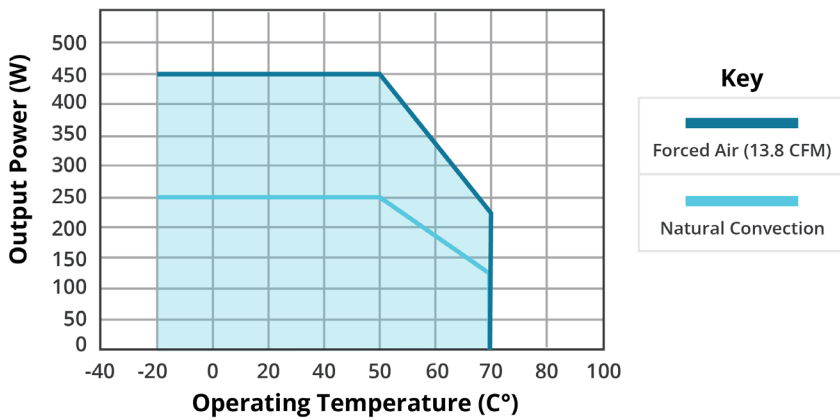
| parameter | conditions/description | min | typ | max | units |
|---------------------------------|---|----------------|---------|-----|------------|
| isolation voltage | input to output, one minute input to ground, one minute | 4,000 1,500 | | | Vac Vac |
| certified to | IEC / EN / UL 60601-1 | | | | |
| safety class | class I | | | | |
| conducted emissions | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0 | | | | |
| radiated emissions | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0 | | | | |
| harmonic current emissions | EN 61000-3-2:2014 | | | | |
| voltage fluctuation and flicker | EN 61000-3-3: 2013 | | | | |
| ESD | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0, IEC 61000-4-2:2008 | | | | |
| radiated immunity | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0, IEC61000-4-3:2006+A1: 2007+A2: 2010 | | | | |
| EFT/Burst | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0, IEC 61000-4-4: 2012 | | | | |
| surge | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0, IEC 61000-4-5:2014+A1: 2017 | | | | |
| conducted immunity | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0, IEC 61000-4-6: 2013 | | | | |
| magnet field measurement | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0, IEC 61000-4-8: 2009 | | | | |
| voltage dips and interruptions | EN 60601-1-2:2015 and IEC 60601-1-2 ed 4.0, IEC 61000-4-11:2004+A1: 2017 | | | | |
| MTBF | Telcordia SR-332, 250 W, 25 °C | | 300,000 | | hrs |
| RoHS | yes | | | | |

ENVIRONMENTAL

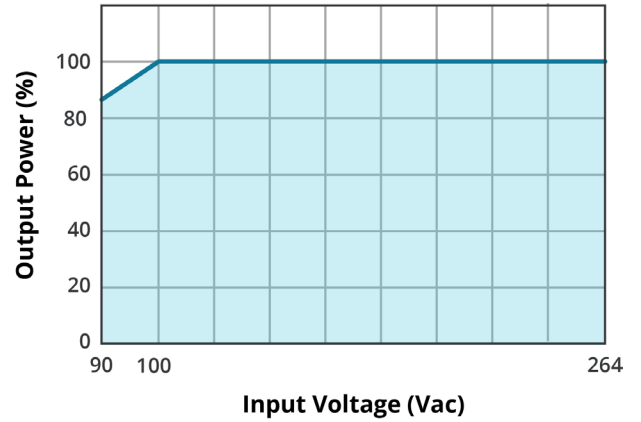
| parameter | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | see derating curve | -20 | | 70 | °C |
| storage temperature | | -20 | | 80 | °C |
| operating humidity | non-condensing | 20 | | 80 | % |
| storage humidity | non-condensing | 10 | | 90 | % |

DERATING CURVE

TEMPERATURE DERATING CURVE



INPUT VOLTAGE DERATING CURVE (25 °C)



MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------|--|-----|-----|-----|-------|
| dimensions | 127 x 86.6 x 50 (5 x 3.41 x 1.97 inch) | | | | mm |
| weight | | | 570 | | g |

MECHANICAL DRAWING (12 ~ 24 V models)

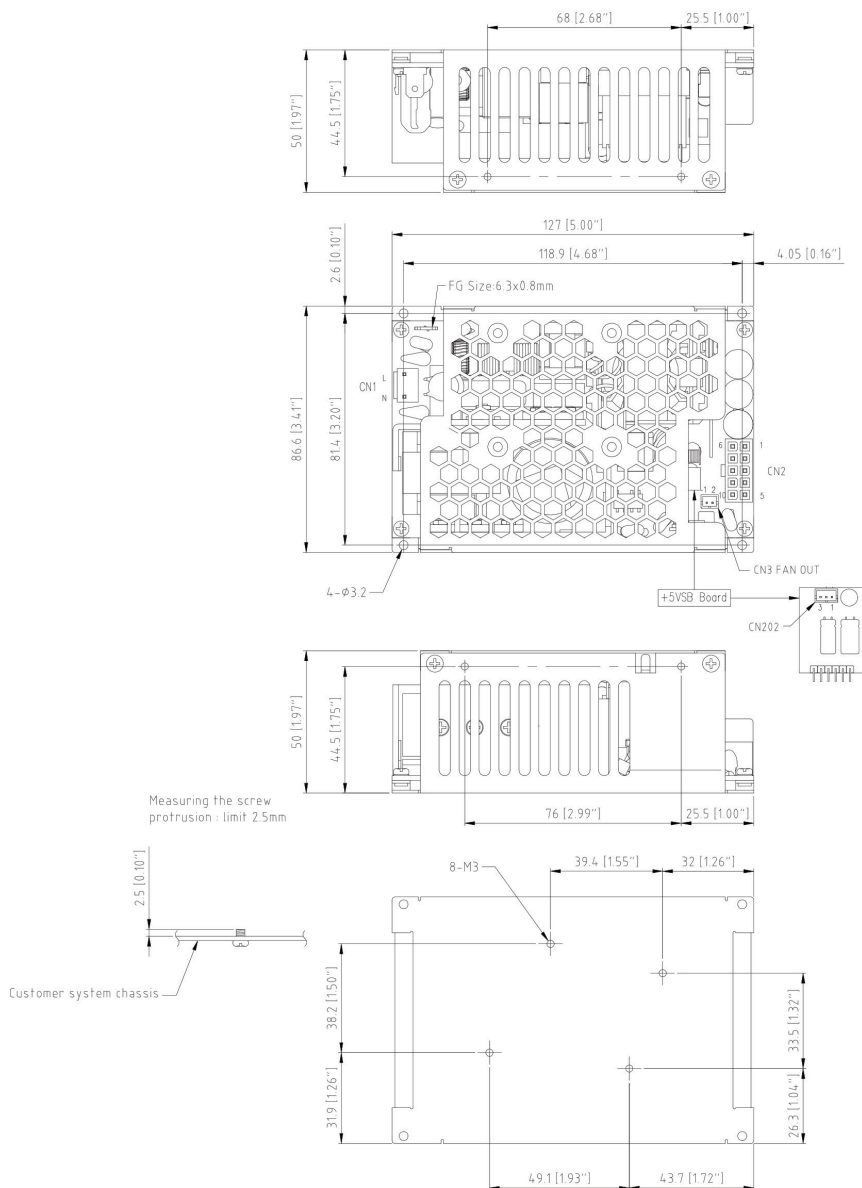
units: mm [inches]

| CN1 | |
|-----|----------|
| PIN | Function |
| 1 | Line |
| 2 | Neutral |

| CN2 | |
|-----|----------|
| PIN | Function |
| 1 | VO+ |
| 2 | VO+ |
| 3 | VO+ |
| 4 | DC RTN |
| 5 | DC RTN |
| 6 | VO+ |
| 7 | VO+ |
| 8 | DC RTN |
| 9 | DC RTN |
| 10 | DC RTN |

| CN3 | |
|-----|--------------|
| PIN | Function |
| 1 | 12 V for Fan |
| 2 | DC RTN |

| CN202 | |
|-------|-----------------|
| PIN | Function |
| 1 | 5 V for standby |
| 2 | DC RTN |
| 3 | Remote on / off |



| | CONNECTOR | MATE |
|---------|---|----------------------------------|
| CN 1: | JST, B2P3-VH, or equivalent | JST, VAR-2, or equivalent |
| CN 2: | Joint Tech, C4255WVA-F2-2X05, or equivalent | Molex, 39-01-2100, or equivalent |
| CN 3: | Cherng Weei, CP-W20-02, or equivalent | JST, PHR-2, or equivalent |
| CN 202: | Cherng Weei, CP-W20-03, or equivalent | JST, PHR-3, or equivalent |

MECHANICAL DRAWING (36 ~ 56 V models)

units: mm [inches]

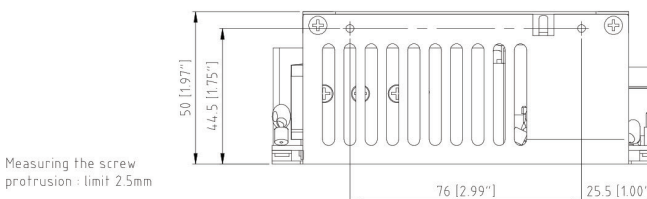
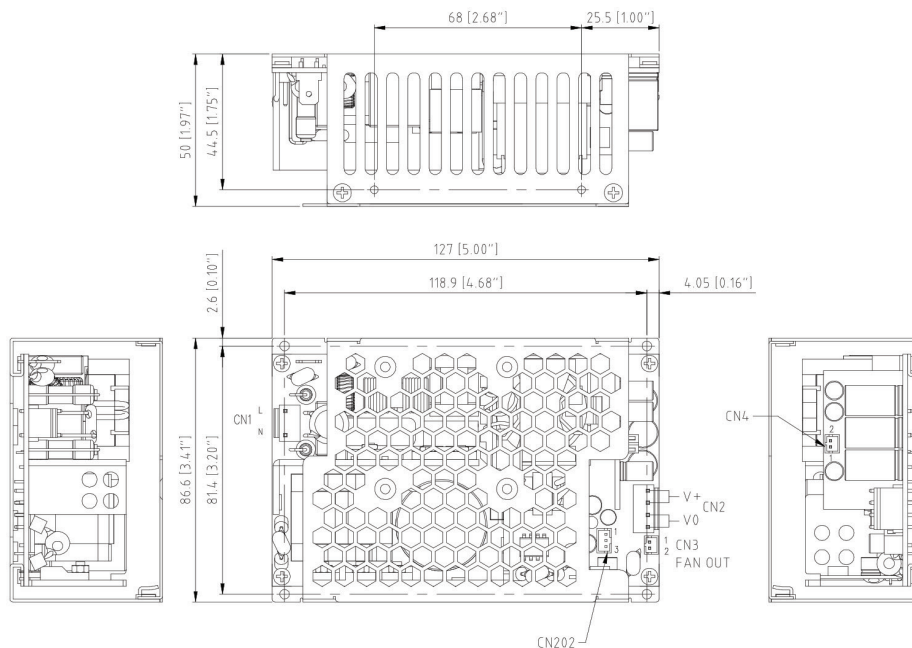
| CN1 | |
|-----|----------|
| PIN | Function |
| 1 | Line |
| 2 | Neutral |

| CN2 | |
|-----|----------|
| PIN | Function |
| 1 | VO+ |
| 2 | VO+ |
| 3 | DC RTN |
| 4 | DC RTN |

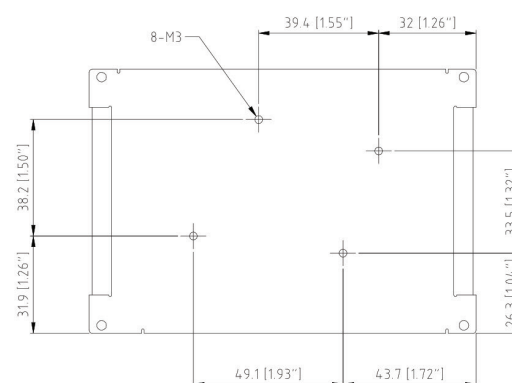
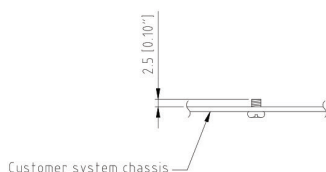
| CN3 | |
|-----|--------------|
| PIN | Function |
| 1 | 12 V for Fan |
| 2 | DC RTN |

| CN202 | |
|-------|-----------------|
| PIN | Function |
| 1 | 5 V for standby |
| 2 | DC RTN |
| 3 | Remote on / off |

| CN4 | |
|-----|-----------------|
| PIN | Function |
| 1 | sense+ |
| 2 | sense- (DC RTN) |



Measuring the screw protrusion : limit 2.5mm



| | CONNECTOR | MATE |
|---------|---|----------------------------|
| CN 1: | JST, B2P3-VH, or equivalent | JST, VAR-2, or equivalent |
| CN 2: | Cherng Weei, CV-W3961-04, or equivalent | JST, VHR-4N, or equivalent |
| CN 3: | Cherng Weei, CP-W20-02, or equivalent | JST, PHR-2, or equivalent |
| CN 202: | Cherng Weei, CP-W20-03, or equivalent | JST, PHR-3, or equivalent |
| CN 4: | Cherng Weei, CP-W20-02, or equivalent | JST, PHR-2, or equivalent |

REVISION HISTORY

| rev. | description | date |
|------|-------------------------|------------|
| 1.0 | initial release | 02/14/2020 |
| 1.01 | added FCC mark | 07/08/2020 |
| 1.02 | derating curves updated | 04/20/2021 |

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



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