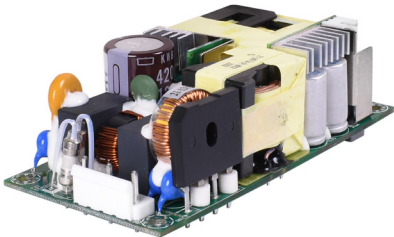


SERIES: VOF-250C

DESCRIPTION: AC-DC POWER SUPPLY

FEATURES

- universal input voltage (85 ~ 264 Vac)
- operating temperature range -40~70 °C with derating
- active power factor correction
- certified to 62368 safety standards
- suitable for safety class I or class II installations
- over voltage, over current, over temperature, and short circuit protections
- 12 V fan output
- operating altitude 5,000 m
- 300 W peak power capability



| MODEL       | output voltage | output current <sup>1</sup> | output power <sup>1</sup> | ripple and noise <sup>2</sup> | efficiency <sup>3</sup> |
|-------------|----------------|-----------------------------|---------------------------|-------------------------------|-------------------------|
|             | (Vdc)          | max (A)                     | max (W)                   | max (mVp-p)                   | typ (%)                 |
| VOF-250C-12 | 12             | 20.8                        | 250                       | 108                           | 91                      |
| VOF-250C-15 | 15             | 16.7                        | 250                       | 135                           | 91                      |
| VOF-250C-19 | 19             | 13.2                        | 250                       | 170                           | 91                      |
| VOF-250C-24 | 24             | 10.4                        | 250                       | 210                           | 92                      |
| VOF-250C-30 | 30             | 8.33                        | 250                       | 270                           | 92                      |
| VOF-250C-36 | 36             | 6.94                        | 250                       | 300                           | 93                      |
| VOF-250C-48 | 48             | 5.21                        | 250                       | 300                           | 93                      |

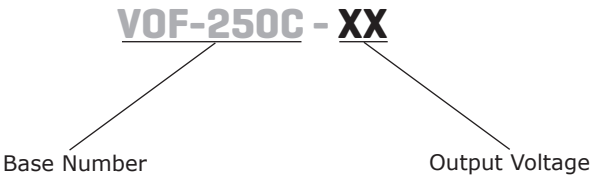
Notes:

1. 8 CFM forced air, 150 W max output power with natural convection.

2. At full load, nominal input, 20 MHz bandwidth oscilloscope, tip & barrel method, output terminated with 47 µF electrolytic and 0.1 µF ceramic capacitors.

3. Efficiency is measured at rated load, and nominal line.

PART NUMBER KEY



## INPUT

| parameter                 | conditions/description                             | min | typ     | max | units |
|---------------------------|----------------------------------------------------|-----|---------|-----|-------|
| voltage                   |                                                    | 85  | 100~240 | 264 | Vac   |
| frequency                 |                                                    | 47  | 50~60   | 63  | Hz    |
| current                   | low line, at 100 Vac, full load                    |     | 3.1     |     | A     |
|                           | high line, at 240 Vac, full load                   |     | 1.3     |     | A     |
| inrush current            | low line, at 100 Vac, full load, cold start, 25°C  |     |         | 20  | A     |
|                           | high line, at 240 Vac, full load, cold start, 25°C |     |         | 40  | A     |
| leakage current           | at 240 Vac, 60 Hz                                  |     | 0.25    |     | mA    |
| power factor correction   | at full load                                       | 0.9 |         | 1   |       |
| no load power consumption |                                                    |     | 0.21    |     | W     |

## OUTPUT

| parameter                       | conditions/description                   | min | typ  | max   | units |
|---------------------------------|------------------------------------------|-----|------|-------|-------|
| line regulation <sup>4</sup>    | at 100~120 Vac or 200~240 Vac, full load |     |      | 1     | %     |
| load regulation <sup>5</sup>    |                                          |     | ±3   |       | %     |
| start-up time                   | at 100~240 Vac, full load                |     | 1    |       | s     |
| hold-up time <sup>6</sup>       | at 110 Vac, full load                    |     |      | 10    | ms    |
| temperature coefficient         |                                          |     |      | ±0.04 | %/°C  |
| fan output voltage <sup>7</sup> |                                          |     | 7~12 |       | Vdc   |
| fan output current              |                                          |     | 0.5  |       | A     |

Notes:

4. Line regulation is defined by changing ±10% of input voltage from nominal line at rated load.
5. Load regulation is defined by changing ±40% of measured output load from 60% rated load.
6. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
7. Temperature controlled fan output voltage: 7V-12V.
8. At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.

## PROTECTIONS

| parameter                   | conditions/description | min | typ | max | units |
|-----------------------------|------------------------|-----|-----|-----|-------|
| over voltage protection     | latching               | 112 |     | 132 | %     |
| over current protection     | auto recovery          | 120 |     | 150 | %     |
| over temperature protection | auto recovery          |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter                 | conditions/description                                                               | min | typ | max   | units |
|---------------------------|--------------------------------------------------------------------------------------|-----|-----|-------|-------|
| isolation voltage         | input to output 10 mA max                                                            |     |     | 4,000 | Vac   |
|                           | input to ground 10 mA max                                                            |     |     | 1,500 | Vac   |
| safety approvals          | certified to 62368: UL, EN, BS EN                                                    |     |     |       |       |
| safety class <sup>9</sup> | class I, II                                                                          |     |     |       |       |
| conducted emissions       | EN 55011, EN55032 Class B                                                            |     |     |       |       |
| radiated emissions        | EN 55011, EN55032 Class B                                                            |     |     |       |       |
| harmonic current          | EN 61000-3-2, Class A, Class D                                                       |     |     |       |       |
| ESD                       | IEC 61000-4-2 15 kV air discharge, 8 kV contact discharge, perf. Criteria A          |     |     |       |       |
| radiated immunity         | IEC 61000-4-3, perf. Criteria A                                                      |     |     |       |       |
| EFT/burst                 | IEC610000-4-4 Power line 2 kV, 5 or 100 kHz, perf. Criteria A                        |     |     |       |       |
| surge                     | IEC 61000-4-5 1 kV line to neutral, 2 kV line to PE, neutral to PE, perf. Criteria A |     |     |       |       |
| conducted immunity        | IEC 61000-4-6 3 Vrms, 6 Vrms, perf. Criteria A                                       |     |     |       |       |
| PFMF                      | IEC 61000-4-8 30 A/m, 50 Hz, perf. Criteria A                                        |     |     |       |       |
| voltage dips              | IEC 61000-4-11 100% reduction for 0.5 cycle at 50 Hz, perf. Criteria A               |     |     |       |       |
|                           | IEC 61000-4-11 100% reduction for 1 cycle at 50 Hz, perf. Criteria A                 |     |     |       |       |
|                           | IEC 61000-4-11 30% reduction for 25/30 cycles at 50/60 Hz, perf. Criteria A          |     |     |       |       |
| voltage interruptions     | IEC 61000-4-11, 100% reduction for 250/300 cycles at 50/60 Hz, perf. Criteria B      |     |     |       |       |

SAFETY & COMPLIANCE (CONTINUED)

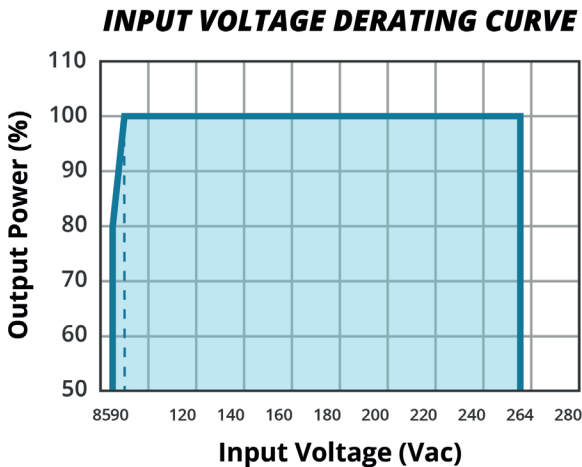
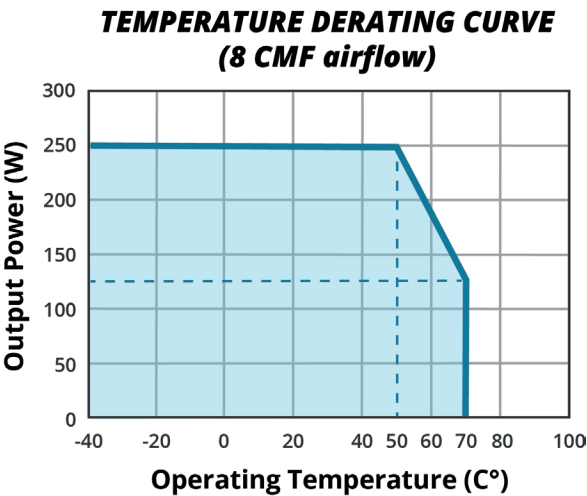
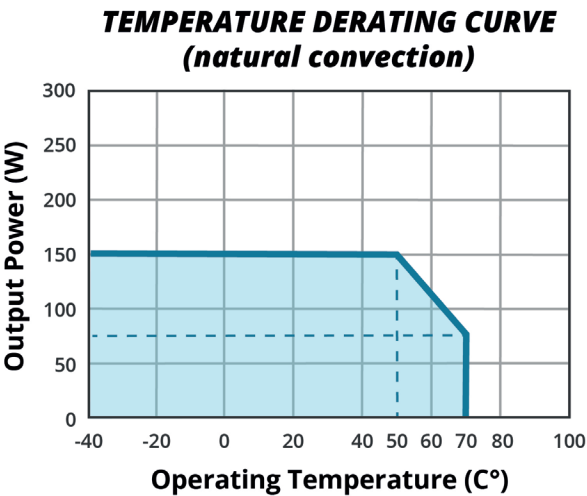
| parameter | conditions/description       | min     | typ | max | units |
|-----------|------------------------------|---------|-----|-----|-------|
| MTBF      | as per MIL-HDBK-217F at 25°C | 300,000 |     |     | hours |
| RoHS      | yes                          |         |     |     |       |

Notes: 9. Safety Class II operation may require external EMI/EMC components.

ENVIRONMENTAL

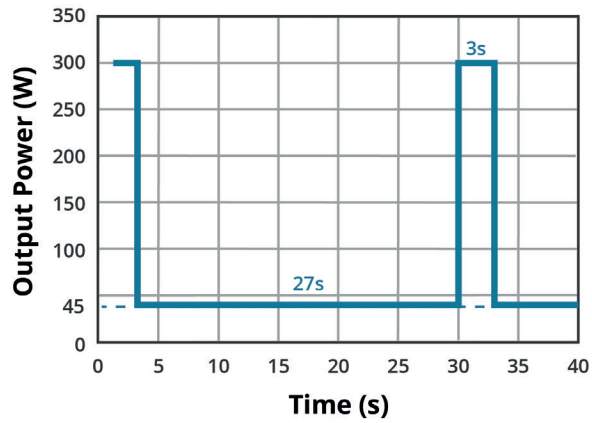
| parameter             | conditions/description                                     | min | typ | max   | units |
|-----------------------|------------------------------------------------------------|-----|-----|-------|-------|
| operating temperature | see derating curves                                        | -40 |     | 70    | °C    |
| storage temperature   | 10~95% RH                                                  | -40 |     | 85    | °C    |
| operating humidity    | non-condensing                                             | 0   |     | 95    | %     |
| storage humidity      | non-condensing                                             | 0   |     | 95    | %     |
| vibration             | 10~500 Hz, 10 min/1 cycle, 60 min. each along X, Y, Z axes |     |     | 5     | g     |
| altitude              |                                                            |     |     | 5,000 | m     |

DERATING CURVES

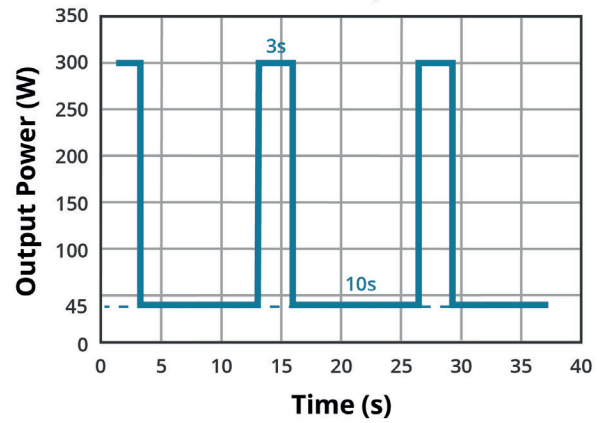


## DERATING CURVES (CONTINUED)

**PEAK CYCLE DIAGRAM**  
**(natural convection)**



**PEAK CYCLE DIAGRAM**  
**(8 CFM airflow)**



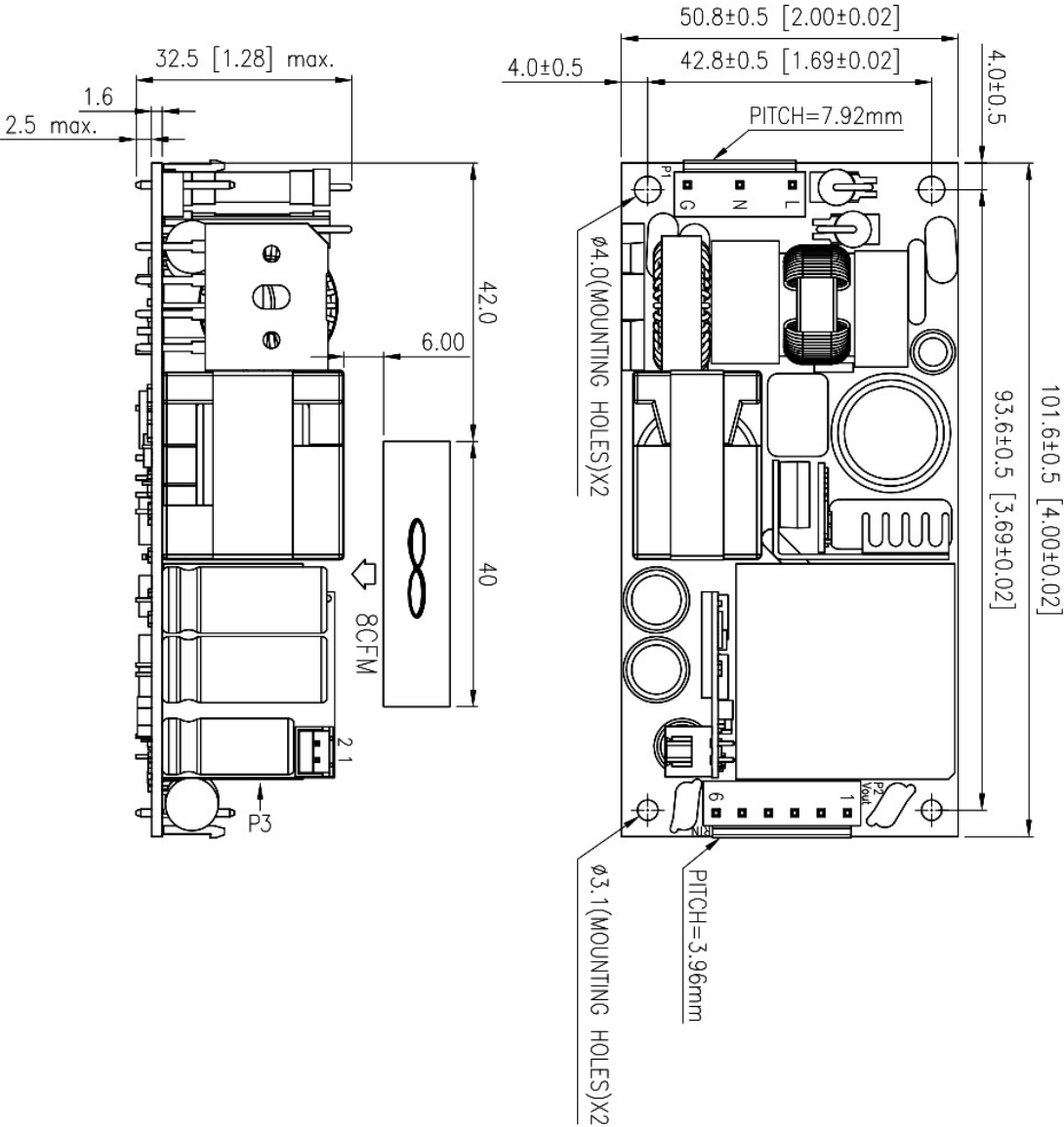
MECHANICAL

| parameter  | conditions/description                        | min | typ | max | units |
|------------|-----------------------------------------------|-----|-----|-----|-------|
| dimensions | 50.8 × 101.6 × 32.5 [2.00 × 4.00 × 1.28 inch] |     |     |     | mm    |
| weight     |                                               |     | 200 |     | g     |
| cooling    | natural convection or 8 CFM forced air        |     |     |     |       |

MECHANICAL DRAWING

units: mm [inch]  
screw size diameter: 2.9 mm (min)

| PIN CONNECTIONS |     |              |
|-----------------|-----|--------------|
| Connector       | PIN | Function     |
| P1              | L   | Line         |
| P1              | N   | Neutral      |
| P1              | G   | Ground or PE |
| P2              | 1   | +Vout        |
| P2              | 2   | +Vout        |
| P2              | 3   | +Vout        |
| P2              | 4   | -Vout        |
| P2              | 5   | -Vout        |
| P2              | 6   | -Vout        |
| P3              | 1   | Vfan         |
| P3              | 2   | RTN          |



## REVISION HISTORY

| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 07/11/2024 |

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



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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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