

## SERIES: VOFM-150E | DESCRIPTION: INTERNAL AC-DC POWER SUPPLY

### FEATURES

- 100 W with natural convection, 150 W with forced air cooling
- 3"x2" compact size, industrial design
- IEC/EN/UL 60601-1 certified
- operating temperature -20°C to 70°C (with derating)
- short-circuit protection, over power protection, overvoltage protection
- 2 x MOPP (BF rated)
- main output power ON LED indicators
- low no load power consumption (<0.150 W)
- chassis mounting

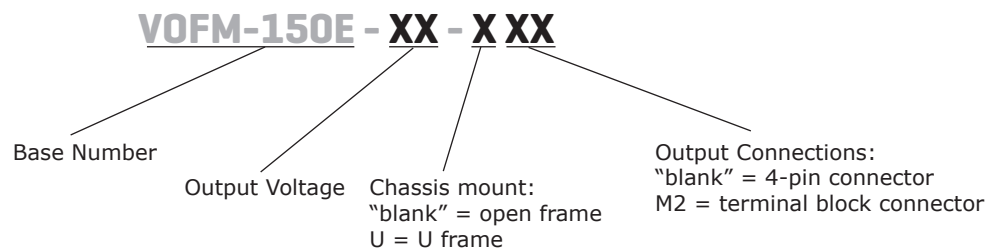


| MODEL        | output voltage<br>(Vdc) | output current <sup>1</sup><br>max<br>(A) | output power <sup>1,2</sup><br>max<br>(W) | ripple and noise <sup>3</sup><br>typ<br>(mVp-p) | efficiency level <sup>4</sup><br>typ<br>(%) |
|--------------|-------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------------|---------------------------------------------|
| VOFM-150E-12 | 12                      | 12.5                                      | 150                                       | 120                                             | 92                                          |
| VOFM-150E-15 | 15                      | 10.0                                      | 150                                       | 150                                             | 92                                          |
| VOFM-150E-18 | 18                      | 8.34                                      | 150                                       | 180                                             | 92                                          |
| VOFM-150E-24 | 24                      | 6.25                                      | 150                                       | 240                                             | 92                                          |
| VOFM-150E-28 | 28                      | 5.36                                      | 150                                       | 280                                             | 92                                          |
| VOFM-150E-36 | 36                      | 4.17                                      | 150                                       | 360                                             | 92                                          |
| VOFM-150E-48 | 48                      | 3.13                                      | 150                                       | 360                                             | 92                                          |
| VOFM-150E-54 | 54                      | 2.78                                      | 150                                       | 360                                             | 92                                          |

Notes:

1. With forced air (10 CFM).
2. Maximum output power is 150 W with 10 CFM forced air cooling, and 100 W with natural convection cooling.
3. Ripple and noise are measured at oscilloscope 20MHz bandwidth by a 10µF electrolytic capacitor and a 0.1µF ceramic capacitor in parallel at output connector.
4. At full load, 230 Vac.

### PART NUMBER KEY



## INPUT

| parameter                 | conditions/description | min                   | typ     | max  | units |
|---------------------------|------------------------|-----------------------|---------|------|-------|
| voltage                   |                        | 90                    | 115~230 | 264  | Vac   |
| frequency                 |                        | 47                    | 50~60   | 63   | Hz    |
| current                   | at 115 Vac/50 Hz       |                       |         | 2    | A     |
| inrush current            | at 230 Vac, cold start |                       |         | 100  | A     |
| leakage current           | earth                  | at 264 Vac (Class I)  |         | 300  | μA    |
|                           | touch                  | at 264 Vac (Class II) |         | 100  | μA    |
| no load power consumption |                        |                       |         | 0.15 | W     |
| power factor              |                        | 0.9                   |         |      |       |

## OUTPUT

| parameter                                                       | conditions/description                                                                   | min | typ | max         | units |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------|-----|-----|-------------|-------|
| output current<br>(natural convection/forced air <sup>5</sup> ) | 12 Vdc output model                                                                      |     |     | 8.34 / 12.5 | A     |
|                                                                 | 15 Vdc output model                                                                      |     |     | 6.67 / 10.0 | A     |
|                                                                 | 18 Vdc output model                                                                      |     |     | 5.56 / 8.34 | A     |
|                                                                 | 24 Vdc output model                                                                      |     |     | 4.17 / 6.25 | A     |
|                                                                 | 28 Vdc output model                                                                      |     |     | 3.58 / 5.36 | A     |
|                                                                 | 36 Vdc output model                                                                      |     |     | 2.78 / 4.17 | A     |
|                                                                 | 48 Vdc output model                                                                      |     |     | 2.09 / 3.13 | A     |
|                                                                 | 54 Vdc output model                                                                      |     |     | 1.86 / 2.78 | A     |
| load regulation                                                 | 12, 15, 18, 24, 28 Vdc output models                                                     |     | ±3  |             | %     |
|                                                                 | all other output models                                                                  |     | ±2  |             |       |
| hold-up time                                                    |                                                                                          | 10  |     |             | ms    |
| transient response                                              | 10% to full load deviation recovery time <20mS 10% max                                   |     |     |             |       |
| overshoot                                                       | turn-on and turn-off overshoot shall not exceed ±10% of the voltage regulation tolerance |     |     |             |       |
| switching frequency                                             | at full load                                                                             | 75  |     | 90          | kHz   |

Notes: 5. With forced air 10 CFM.

## PROTECTIONS

| parameter                   | conditions/description                     | min  | typ | max  | units |
|-----------------------------|--------------------------------------------|------|-----|------|-------|
| over voltage protection     | 12 Vdc output, output shut-down with latch | 13.2 |     | 15.6 | Vdc   |
|                             | 15 Vdc output, output shut-down with latch | 16.5 |     | 19.5 | Vdc   |
|                             | 18 Vdc output, output shut-down with latch | 19.8 |     | 23.4 | Vdc   |
|                             | 24 Vdc output, output shut-down with latch | 26.4 |     | 31.2 | Vdc   |
|                             | 28 Vdc output, output shut-down with latch | 30.8 |     | 36.4 | Vdc   |
|                             | 36 Vdc output, output shut-down with latch | 39.6 |     | 46.8 | Vdc   |
|                             | 48 Vdc output, output shut-down with latch | 52.8 |     | 62.4 | Vdc   |
|                             | 54 Vdc output, output shut-down with latch | 59.4 |     | 64.8 | Vdc   |
| over current protection     | auto-recovery                              | 105  |     | 160  | %     |
| short circuit protection    | auto-recovery                              |      |     |      |       |
| over temperature protection | latching type, power recycle               |      |     |      |       |

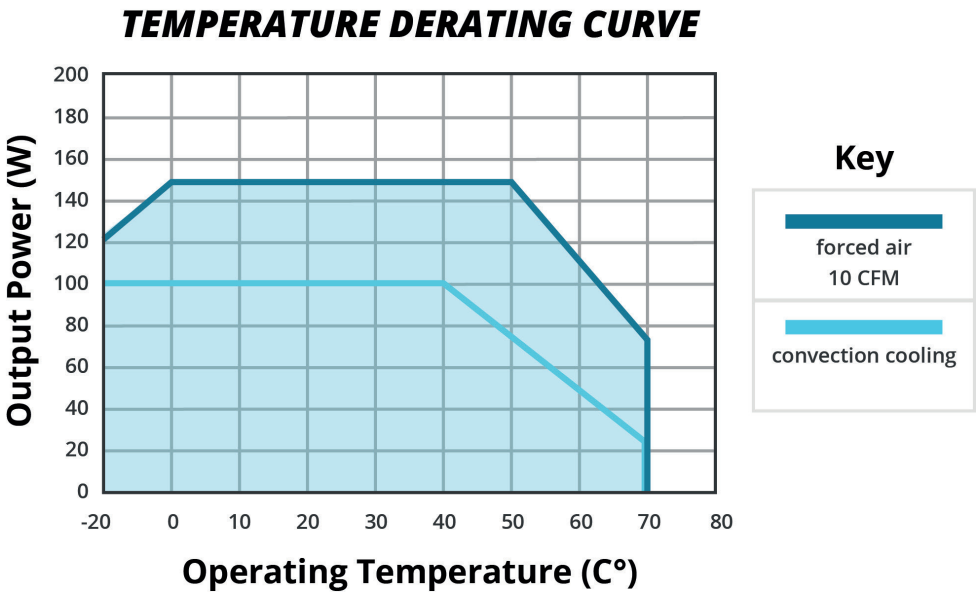
SAFETY & COMPLIANCE

| parameter         | conditions/description                               | min     | typ | max | units |
|-------------------|------------------------------------------------------|---------|-----|-----|-------|
| isolation voltage | input to output, for 4 seconds (Class I & II)        | 5,656   |     |     | Vdc   |
|                   | input to frame ground, for 4 seconds (Class I)       | 2,121   |     |     | Vdc   |
|                   | output to frame ground, for 4 seconds (Class I)      | 2,121   |     |     | Vdc   |
| safety approvals  | certified to 60601-1: IEC/EN/UL                      |         |     |     |       |
| safety class      | Class I, Class II                                    |         |     |     |       |
| EMI/EMC           | EN55011 Class B & EN60601-1-2<br>FCC Part 18 Class B |         |     |     |       |
| MTBF              | as per Telcordia (Bellcore TR-332) at 25°C           | 400,000 |     |     | hours |
| RoHS              | yes                                                  |         |     |     |       |

ENVIRONMENTAL

| parameter             | conditions/description | min | typ | max   | units |
|-----------------------|------------------------|-----|-----|-------|-------|
| operating temperature |                        | -20 |     | 70    | °C    |
| storage temperature   |                        | -20 |     | 85    | °C    |
| operating humidity    | non-condensing         | 10  |     | 95    | %     |
| storage humidity      | non-condensing         | 0   |     | 95    | %     |
| altitude              |                        |     |     | 5,000 | m     |

DERATING CURVE

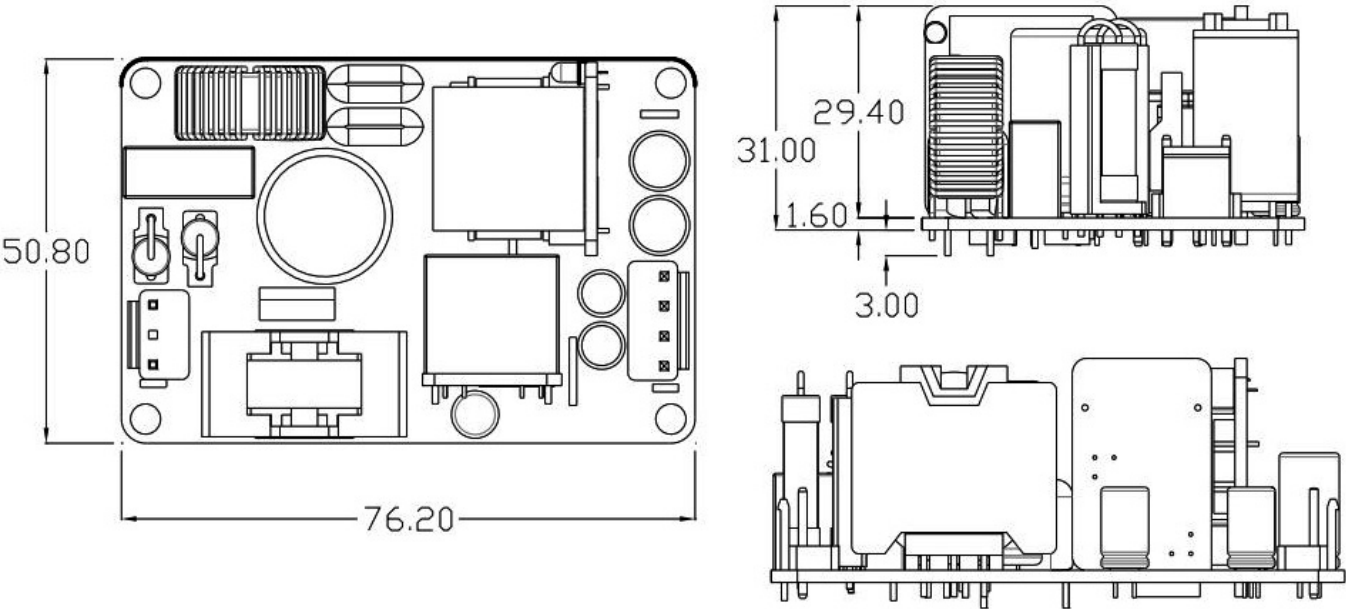


MECHANICAL

| parameter  | conditions/description                                   | min | typ | max | units |
|------------|----------------------------------------------------------|-----|-----|-----|-------|
| dimensions | open frame: 76.2 x 50.8 x 31.0 [3.00 x 2.00 x 1.22 inch] |     |     |     | mm    |
|            | U-frame: 90.6 x 64.0 x 38.0 [3.57 x 2.52 x 1.50 inch]    |     |     |     | mm    |
| weight     | open frame:                                              |     | 150 |     | g     |
|            | U-frame:                                                 |     | 200 |     | g     |
| cooling    | forced air 10 CFM                                        |     |     |     |       |

MECHANICAL DRAWING

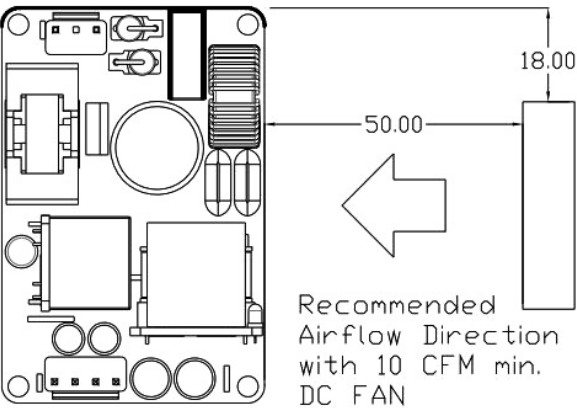
Open frame  
units: mm [inch]



| <b>CN1:</b> Input Connector (pitch: 3.96mm)<br>JST B3P-VH-B or equivalent<br>Mates with JST VHR-3N or equivalent |          |
|------------------------------------------------------------------------------------------------------------------|----------|
| PIN                                                                                                              | Function |
| 1                                                                                                                | AC(L)    |
| 2                                                                                                                | AC(N)    |

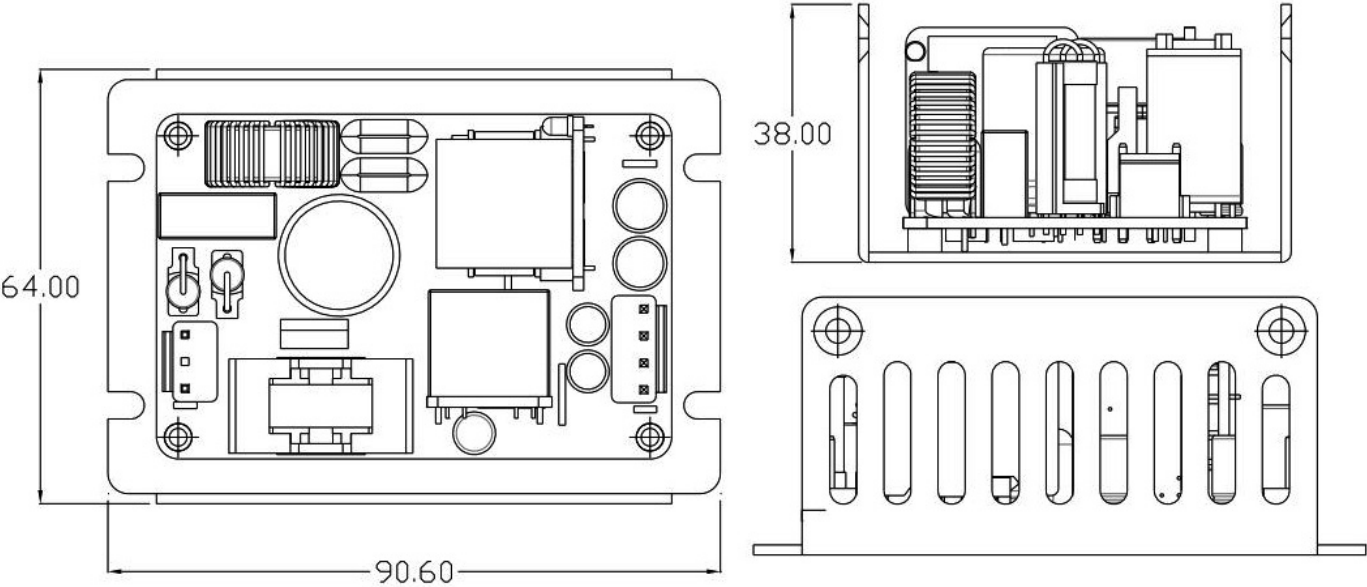
| <b>CN2:</b> Main Output Connector<br>(pitch: 3.96mm / 3.50mm)     |          |                                                                                      |
|-------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|
| JST B4P-VH-B or equivalent<br>Mates with JST VHR-4N or equivalent |          | Eurostyle P.C.B. 3.50mm Terminal Block<br>16-24 AWG (1.5mm <sup>2</sup> ) Wire range |
| PIN                                                               | Function | Function                                                                             |
| 1                                                                 | GND      | GND                                                                                  |
| 2                                                                 | GND      | GND                                                                                  |
| 3                                                                 | +Vout    | +Vout                                                                                |
| 4                                                                 | +Vout    | +Vout                                                                                |

DC FAN Recommended Direction



MECHANICAL DRAWING

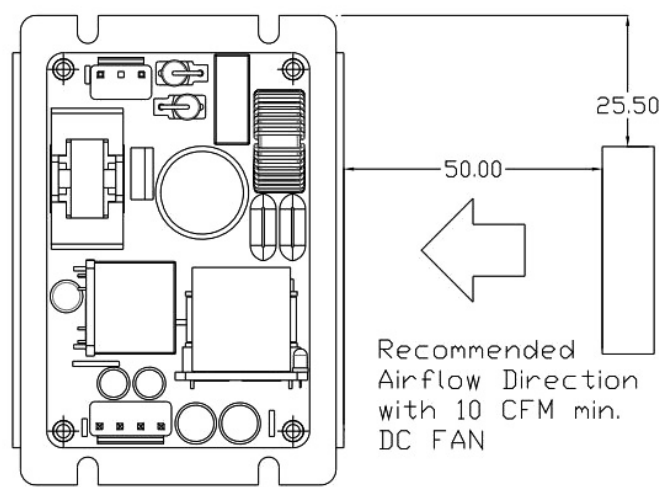
U-frame frame  
units: mm [inch]



| CN1: Input Connector (pitch: 3.96mm)<br>JST B3P-VH-B or equivalent<br>Mates with JST VHR-3N or equivalent |          |
|-----------------------------------------------------------------------------------------------------------|----------|
| PIN                                                                                                       | Function |
| 1                                                                                                         | AC(L)    |
| 2                                                                                                         | AC(N)    |

| CN2: Main Output Connector<br>(pitch: 3.96mm / 3.50mm)            |          |                                                                                      |
|-------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|
| JST B4P-VH-B or equivalent<br>Mates with JST VHR-4N or equivalent |          | Eurostyle P.C.B. 3.50mm Terminal Block<br>16-24 AWG (1.5mm <sup>2</sup> ) Wire range |
| PIN                                                               | Function | Function                                                                             |
| 1                                                                 | GND      | GND                                                                                  |
| 2                                                                 | GND      | GND                                                                                  |
| 3                                                                 | +Vout    | +Vout                                                                                |
| 4                                                                 | +Vout    | +Vout                                                                                |

DC FAN Recommended Direction



## REVISION HISTORY

| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 06/16/2025 |

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



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