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

## FEATURES

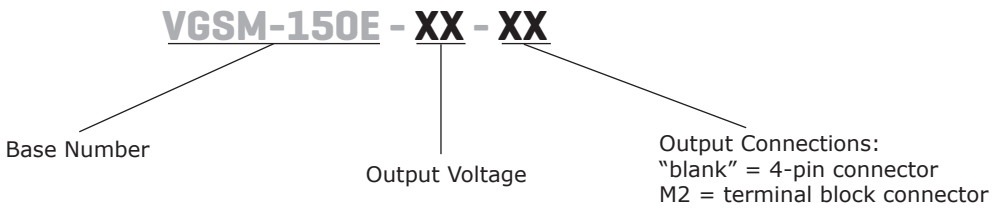
- 100 W with natural convection, 150 W with forced air cooling
- 3”x2” compact size, industrial design
- IEC/EN/UL 60601-1 certified
- operating temperature -20°C to 70°C (with derating)
- short-circuit protection, over power protection, overvoltage protection
- 2 x MOPP (BF rated)
- main output power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

## MODEL

| MODEL | output voltage (Vdc) | output current[1] max (A) | output power[1,2] max (W) | ripple and noise[3] typ (mVp-p) | efficiency level[4] typ (%) |
|---|---|---|---|---|---|
| VGSM-150E-12 | 12 | 12.5 | 150 | 120 | 92 |
| VGSM-150E-15 | 15 | 10.0 | 150 | 150 | 92 |
| VGSM-150E-18 | 18 | 8.34 | 150 | 180 | 92 |
| VGSM-150E-24 | 24 | 6.25 | 150 | 240 | 92 |
| VGSM-150E-28 | 28 | 5.36 | 150 | 280 | 92 |
| VGSM-150E-36 | 36 | 4.17 | 150 | 360 | 92 |
| VGSM-150E-48 | 48 | 3.13 | 150 | 360 | 92 |
| VGSM-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)<br>touch at 264 Vac (Class II) | | | 300<br>100 | μA<br>μA |
| no load power consumption | | | | 0.15 | W |
| power factor | | 0.9 | | | |

## OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| output current (natural convection/forced air[5]) | 12 Vdc output model<br>15 Vdc output model<br>18 Vdc output model<br>24 Vdc output model<br>28 Vdc output model<br>36 Vdc output model<br>48 Vdc output model<br>54 Vdc output model | | | 8.34 / 12.5<br>6.67 / 10.0<br>5.56 / 8.34<br>4.17 / 6.25<br>3.58 / 5.36<br>2.78 / 4.17<br>2.09 / 3.13<br>1.86 / 2.78 | A<br>A<br>A<br>A<br>A<br>A<br>A<br>A |
| load regulation | 12, 15, 18, 24, 28 Vdc output models<br>all other output models | | ±3<br>±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<br>15 Vdc output, output shut-down with latch<br>18 Vdc output, output shut-down with latch<br>24 Vdc output, output shut-down with latch<br>28 Vdc output, output shut-down with latch<br>36 Vdc output, output shut-down with latch<br>48 Vdc output, output shut-down with latch<br>54 Vdc output, output shut-down with latch | 13.2<br>16.5<br>19.8<br>26.4<br>30.8<br>39.6<br>52.8<br>59.4 | | 15.6<br>19.5<br>23.4<br>31.2<br>36.4<br>46.8<br>62.4<br>64.8 | Vdc<br>Vdc<br>Vdc<br>Vdc<br>Vdc<br>Vdc<br>Vdc<br>Vdc |
| over current protection | auto-recovery | 105 | | 160 | % |
| short circuit protection | auto-recovery | | | | |
| over temperature protection | latching type, power recycle | | | | |

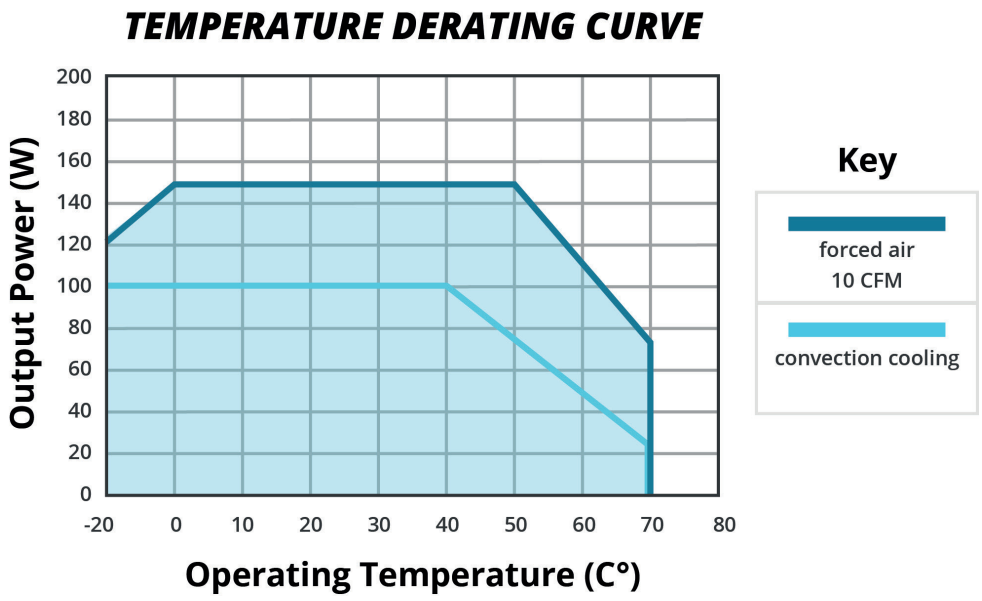
## SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| isolation voltage | input to output, for 4 seconds (Class I & II)<br>input to frame ground, for 4 seconds (Class I)<br>output to frame ground, for 4 seconds (Class I) | 5,656<br>2,121<br>2,121 | | | Vdc<br>Vdc<br>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

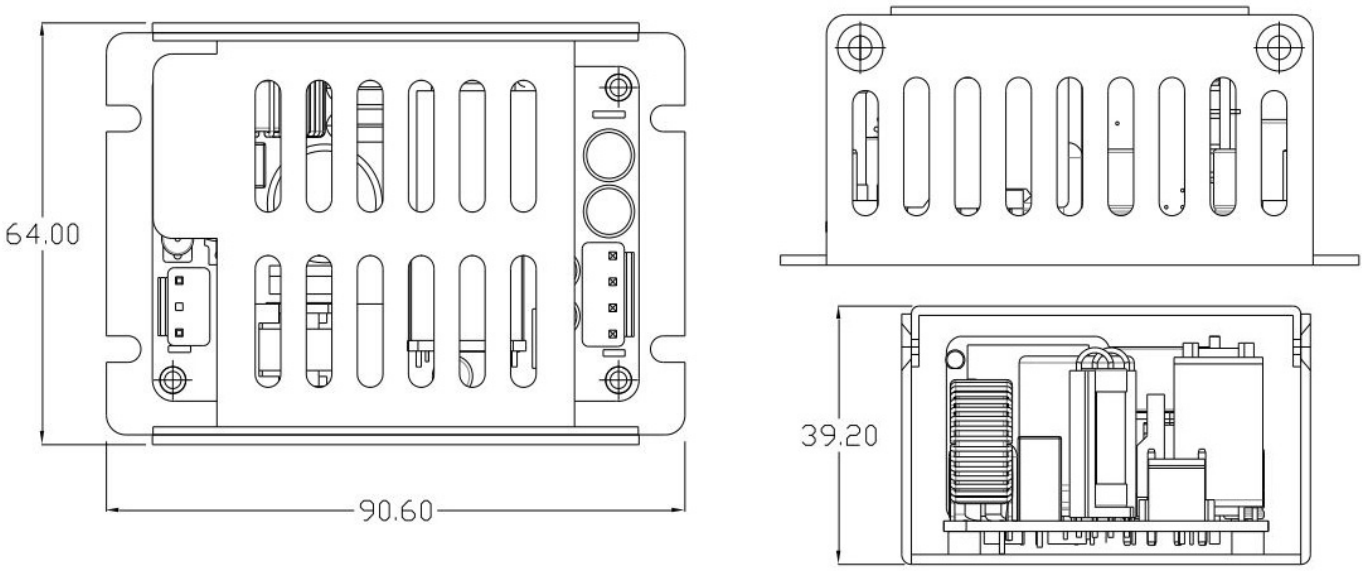


## MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| dimensions | 90.6 x 64.0 x 39.2 [3.57 x 2.52 x 1.55 inch] | | | | mm |
| weight | | | 210 | | g |
| cooling | forced air 10 CFM | | | | |

## MECHANICAL DRAWING

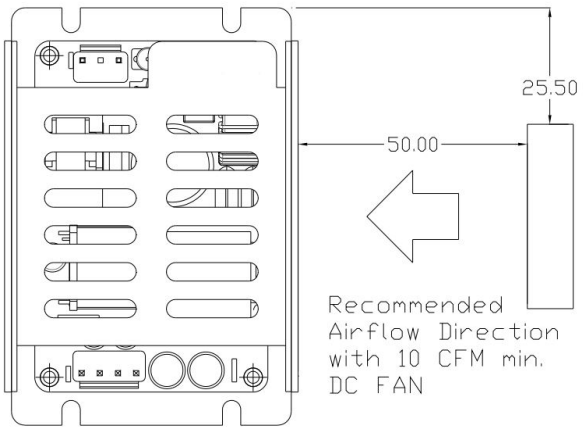
units: mm [inch]




| **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 (1.5mm2) 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 | 06/18/2025 |

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

CUI INC
a bel group

15575 SW Sequoia Pkwy #100
Portland, OR 97224
800.275.4899

Fax 503.612.2383
Belfuse.com
powersupport@belf.com