

SERIES: VGS-150B | **DESCRIPTION:** AC-DC POWER SUPPLY

FEATURES

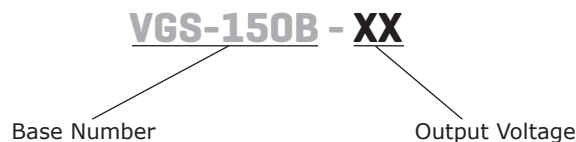
- +70°C operation
- output trim
- current/voltage/temperature protections
- screw terminal interface
- switch-selectable AC input range
- low standby power consumption
- 30 mm height



| MODEL | output voltage | output current | output power | ripple and noise ¹ | efficiency ² |
|-------------|----------------|----------------|--------------|-------------------------------|-------------------------|
| | (Vdc) | max (A) | max (W) | max (mVp-p) | typ (%) |
| VGS-150B-12 | 12 | 12.5 | 150 | 100 | 86 |
| VGS-150B-24 | 24 | 6.5 | 156 | 100 | 88 |
| VGS-150B-48 | 48 | 3.2 | 153.6 | 200 | 88 |

Notes: 1. 20 MHz bandwidth oscilloscope, 12" of twisted load cables paralleled with 0.1 µF ceramic and 47 µF electrolytic capacitors placed across the terminals at the load.
 2. At 230 Vac, 50 Hz, full load.
 3. All specifications are measured at Ta=25°C, nominal input voltage, and rated output load unless otherwise specified.

PART NUMBER KEY



INPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------------|--|-----|-----|-----|-------|
| voltage | via input selector switch ¹ | 88 | 115 | 132 | Vac |
| | | 176 | 230 | 264 | Vac |
| frequency | | 47 | | 63 | Hz |
| current | at 115 Vac, full load | | | 3.0 | A |
| | at 230 Vac, full load | | | 1.7 | A |
| inrush current | at 230 Vac, cold start, full load | | | 40 | A |
| leakage current | | | | 3.5 | mA |
| no load power consumption | at 230 Vac | | | 0.5 | W |

Notes: 1. Input selector must be set to match input voltage or damage could occur.

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------|---------------------------|-----|-----|------|-------|
| line regulation | 48 Vdc output model | | | ±0.5 | % |
| | all other models | | | ±1 | % |
| load regulation | 12 Vdc output model | | | ±2 | % |
| | 24 Vdc output model | | | ±1 | % |
| | 48 Vdc output model | | | ±0.5 | % |
| adjustability | built in trim pot | | ±10 | | % |
| start-up time | at 115/230 Vac, full load | | | 0.5 | s |
| rise time | at 115/230 Vac, full load | | | 80 | ms |
| hold-up time | at 115/230 Vac, full load | 20 | | | ms |
| switching frequency | | | 65 | | kHz |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|--|-----|-----|-----|-------|
| over voltage protection | output shutdown, must recycle power to recover | 110 | | 150 | % |
| over current protection | output shutdown, auto recovery | 110 | | 150 | % |
| short circuit protection | output shutdown, auto recovery | | | | |

SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|------------------------------------|---|-----|-------|-----|-------|
| isolation voltage | input to output for 1 minute, 10 mA | | 1,500 | | Vac |
| | input to ground for 1 minute, 10 mA | | 1,500 | | Vac |
| | output to ground for 1 minute, 10 mA | | 500 | | Vac |
| isolation resistance | input to output at 500 Vdc | 100 | | | MΩ |
| | input to ground at 500 Vdc | 100 | | | MΩ |
| | output to ground 500 Vdc | 100 | | | MΩ |
| safety approvals | IEC/EN 60950-1, UL 60950-1 | | | | |
| safety class | class I | | | | |
| conducted emissions | EN 55032:2015, Class B | | | | |
| radiated emissions | EN 55032:2015, Class B | | | | |
| input current harmonics | EN 61000-3-2:2014, Class A | | | | |
| voltage fluctuation and flicker | EN 61000-3-3:2013, Class A | | | | |
| ESD immunity | IEC 61000-4-2, air: ±8 kV; contact: ±4 kV, Class A | | | | |
| radiated field immunity | IEC 61000-4-3, 3 V/m, Class A | | | | |
| electrical fast transient immunity | IEC 61000-4-4, Ac power port: 1 kV; signal & telecommunication ports: 0.5 kV, Class B | | | | |

Notes: 2. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

SAFETY & COMPLIANCE (CONTINUED)

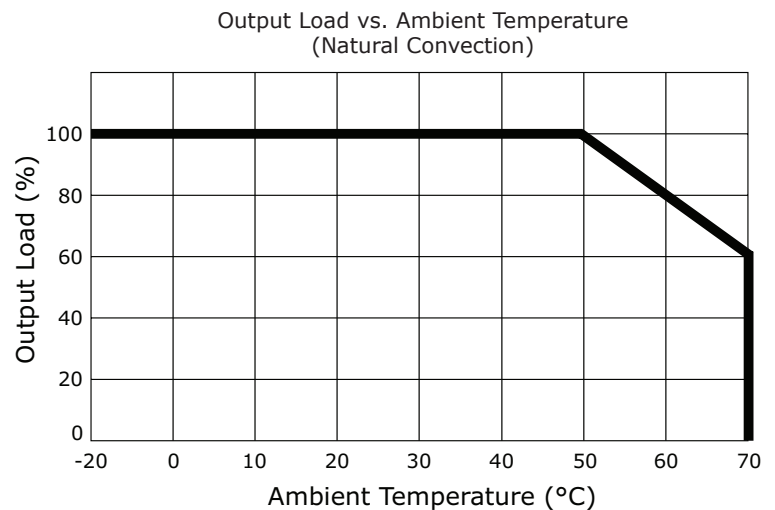
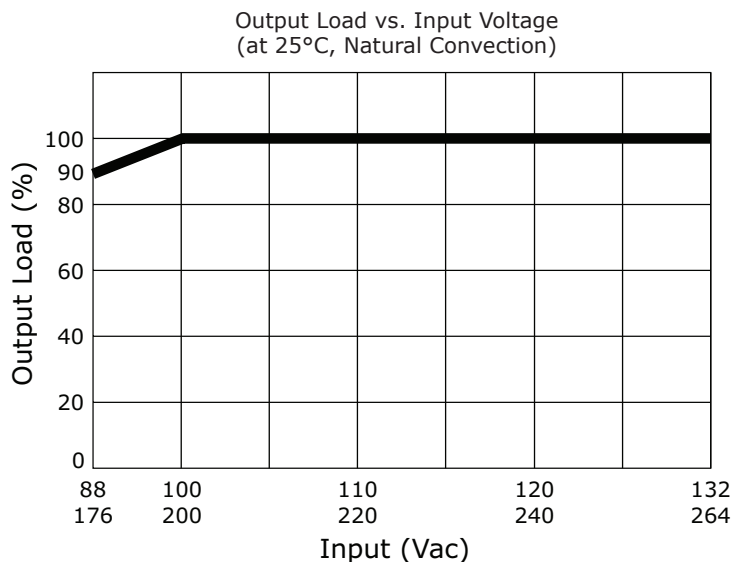
| parameter | conditions/description | min | typ | max | units |
|-----------------------------|---|-----|---------|-----|-------|
| surge immunity | IEC 61000-4-5, input L to input N: 1 kV; input L to FG: 2 kV; input N to FG: 2 kV, Class C | | | | |
| conducted immunity | IEC 61000-4-6, frequency range: 0.15~80 MHz; field strength: 3 Vms, Class A | | | | |
| magnetic field immunity | IEC 61000-4-8, 1 A/m, Class A | | | | |
| voltage dips, interruptions | IEC 61000-4-11: voltage dips >95% reduction, 0.5 period, Class A voltage dips 30% reduction, 25 period, Class B voltage dips >95% reduction, 250 period, Class C | | | | |
| MTBF | as per MIL-HDBK-217F, 25°C | | 200,000 | | hours |
| RoHS | yes | | | | |

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ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | see derating curves | -20 | | 70 | °C |
| storage temperature | | -40 | | 85 | °C |
| operating humidity | non-condensing | 20 | | 90 | % |
| storage humidity | non-condensing | 10 | | 95 | % |

DERATING CURVES



MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------------------|---|-----|-----|-----|-------|
| dimensions | 159 x 97 x 30 | | | | mm |
| weight | | | 500 | | g |
| cooling | natural convection | | | | |
| input/output connector | screw terminals accept 22~12 AWG wire, 1.2 N-m torque | | | | |

MECHANICAL DRAWING

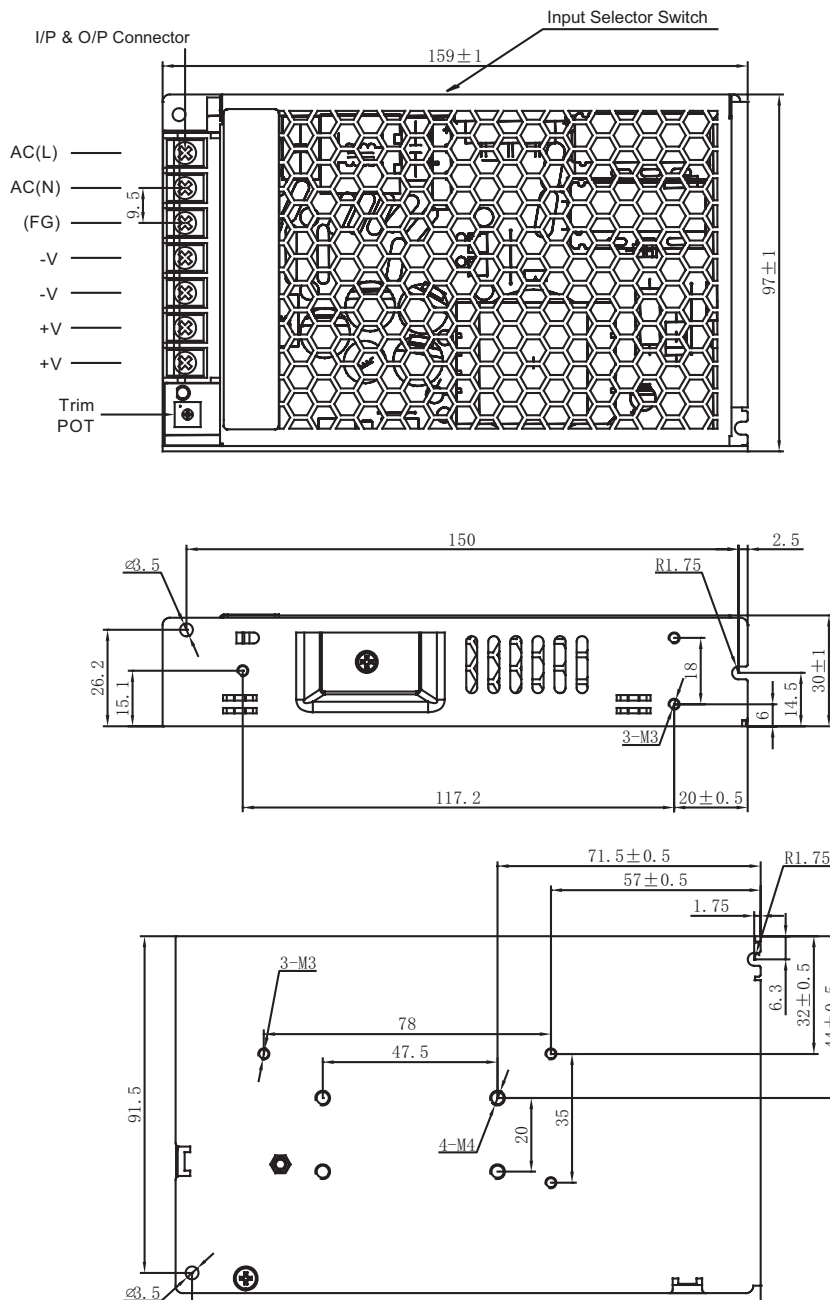
units: mm
tolerance: ±0.3 mm

| Input/Output Connector | |
|------------------------|----------|
| PIN | Function |
| 1 | AC(L) |
| 2 | AC(N) |
| 3 | FG |
| 4 | -V |
| 5 | -V |
| 6 | +V |
| 7 | +V |

| MOUNTING SCREWS | | |
|-----------------|-----------|-----------|
| Screw Size | Max Depth | Torque |
| M3X0.5 | 4 mm | <0.75 N-m |
| M4X0.7 | 4 mm | <0.8 N-m |

| MOUNTING ORIENTATION | |
|----------------------|--|
| | |

Note: 1. Parts should not be mounted in an upside down orientation.



REVISION HISTORY

| rev. | description | date |
|-------------|--------------------|-------------|
| 1.0 | initial release | 06/20/2018 |

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



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