# SERIES: VGS-200B | 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 (Vdc) | output current max (A) | output power max (W) | ripple and noise[1] max (mVp-p) | efficiency[2] typ (%) |
|---|---|---|---|---|---|
| VGS-200B-12 | 12 | 17 | 204 | 150 | 87.5 |
| VGS-200B-24 | 24 | 8.8 | 211.2 | 150 | 89.5 |
| VGS-200B-48 | 48 | 4.4 | 211.2 | 200 | 90 |

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

VGS-200B - XX

Base Number — Output Voltage

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## INPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| voltage | via input selector switch[1] | 90<br>180 | 115<br>230 | 132<br>264 | Vac<br>Vac |
| frequency | | 47 | | 63 | Hz |
| current | at 115 Vac, full load<br>at 230 Vac, full load | | | 4<br>2.5 | A<br>A |
| inrush current | at 230 Vac, cold start, full load | | | 60 | A |
| leakage current | at 240 Vac | | | 2 | mA |
| no load power consumption | at 230 Vac | | | 0.75 | 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 | | | | ±0.5 | % |
| load regulation | 12 Vdc output model<br>all other models | | | ±1<br>±0.5 | %<br>% |
| adjustability | built in trim pot | | ±10 | | % |
| start-up time | at 115/230 Vac, full load | | | 1.5 | s |
| rise time | at 115/230 Vac, full load | | | 30 | ms |
| hold-up time | at 115 Vac, full load<br>at 230 Vac, full load | 12<br>16 | | | ms<br>ms |
| switching frequency | | | 65 | | kHz |

## PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| over voltage protection | output shutdown, auto recovery | 115 | | 150 | % |
| over current protection | output shutdown, auto recovery | 105 | | 150 | % |
| short circuit protection | output shutdown, auto recovery | | | | |
| over temperture protection | output shutdown, auto recovery | | | | |

## SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| isolation voltage | input to output for 1 minute, 10 mA<br>input to ground for 1 minute, 10 mA<br>output to ground for 1 minute, 10 mA | | 1,500<br>1,500<br>500 | | Vac<br>Vac<br>Vac |
| isolation resistance | input to output at 500 Vdc<br>input to ground at 500 Vdc<br>output to ground 500 Vdc | 100<br>100<br>100 | | | MΩ<br>MΩ<br>MΩ |
| safety approvals | certified to 62368: EN<br>certified to 60950: IEC/UL | | | | |
| safety class | class I | | | | |
| conducted emissions | EN 55032:2015, Class A | | | | |
| radiated emissions | EN 55032:2015, 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;<br>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.



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## SAFETY & COMPLIANCE (CONTINUED)

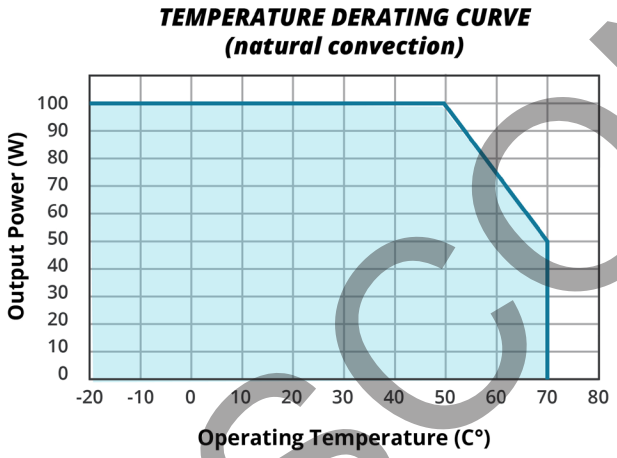
| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| surge immunity | IEC 61000-4-5, input L to input N: 1 kV;<br>input L to FG: 2 kV; input N to FG: 2 kV, Class C | | | | |
| conducted immunity | IEC 61000-4-6, frequency range: 0.15~80 MHz;<br>field strength: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

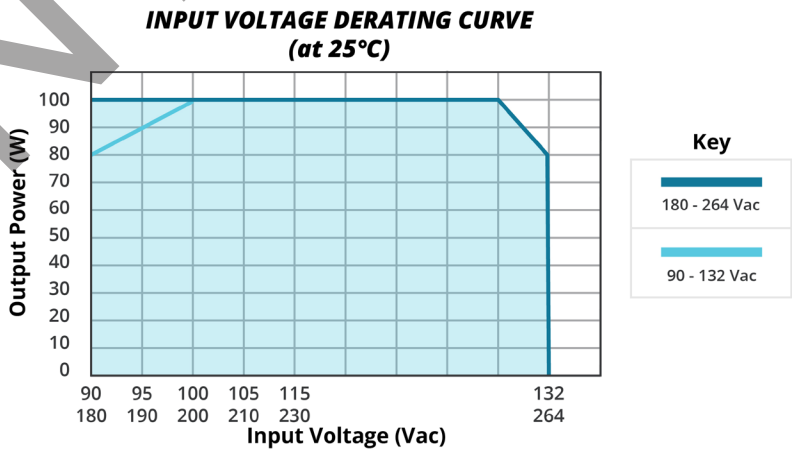
Notes: 1. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

## 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

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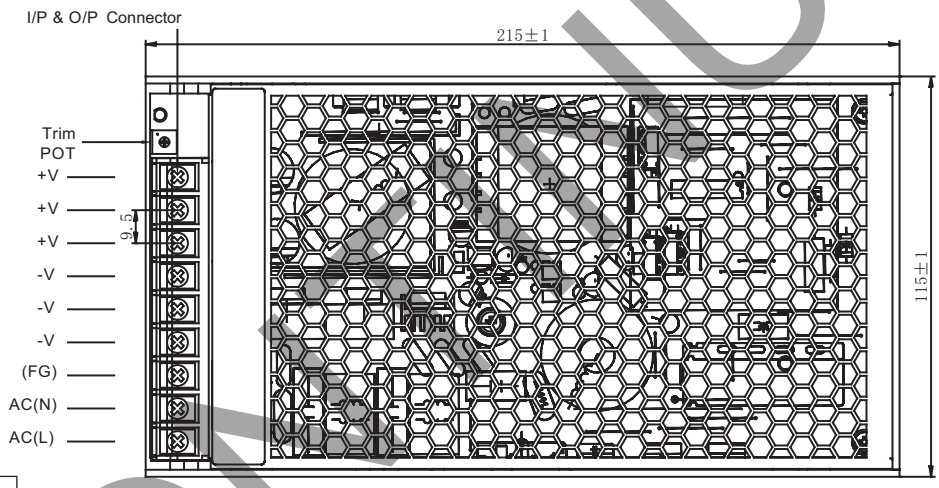
## MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|---|---|---|---|---|---|
| dimensions | 215 x 115 x 30 | | | | mm |
| weight | | | 1000 | | g |
| cooling | natural convection | | | | |
| input/output connector | screw terminals accept 22~12 AWG wire, 1.2 N-m torque | | | | |

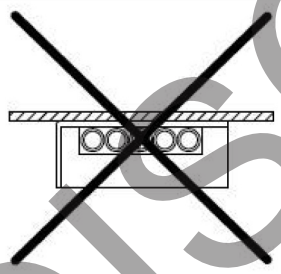
## MECHANICAL DRAWING

units: mm
tolerance: ±0.3 mm

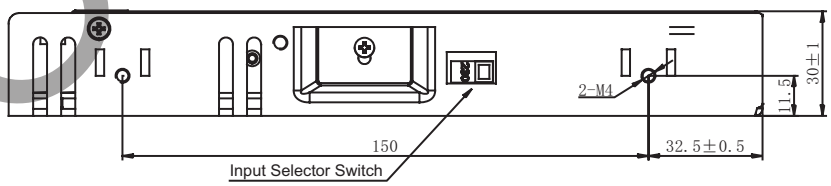
| Input/Output Connector | |
|---|---|
| PIN | Function |
| 1 | +V |
| 2 | +V |
| 3 | +V |
| 4 | -V |
| 5 | -V |
| 6 | -V |
| 7 | FG |
| 8 | AC(N) |
| 9 | AC(L) |

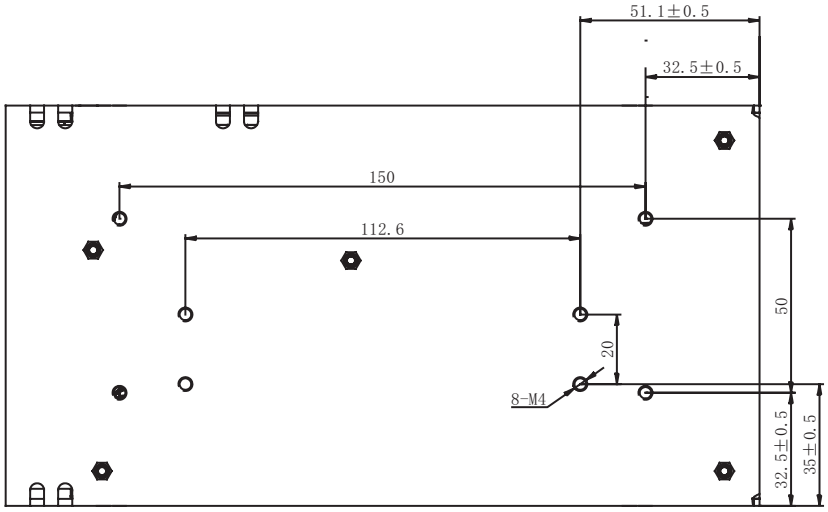



| MOUNTING SCREWS | | |
|---|---|---|
| Screw Size | Max Depth | Torque |
| M3X0.5 | 4 mm | <0.75 N-m |
| M4X0.7 | 4 mm | <0.8 N-m |
| MOUNTING ORIENTATION | | |



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

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## REVISION HISTORY

| rev. | description | date |
|---|---|---|
| 1.0 | initial release | 06/20/2018 |
| 1.01 | updated terminal function detail | 06/14/2019 |
| 1.02 | company logo updated | 12/22/2020 |
| 1.03 | safeties updated | 01/25/2021 |
| 1.04 | derating curves updated | 06/10/2021 |

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

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