

**SERIES:** VGS-75W | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

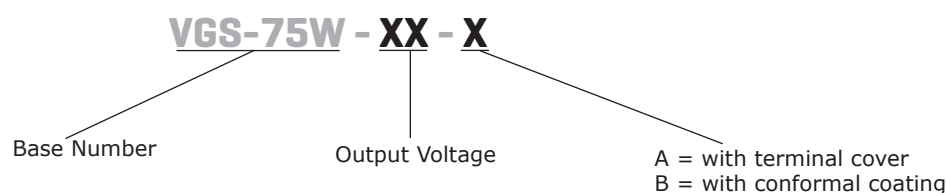
**FEATURES**

- wide input range (85 ~ 305 VAC)
- available with conformal coating or terminal cover options
- UL/EN/IEC 62368 certified
- designed to meet IEC/EN 61558 and IEC/EN 60335 system requirements
- short-circuit, over-current, over-voltage protections
- CISPR/EN55032 Class B radiated/conducted emissions



| MODEL      | output voltage | output current max | output power max | ripple and noise <sup>1</sup> | efficiency <sup>2</sup> |
|------------|----------------|--------------------|------------------|-------------------------------|-------------------------|
|            | (Vdc)          | (A)                | (W)              | typ (mVp-p)                   | typ (%)                 |
| VGS-75W-5  | 5              | 14.0               | 70               | 100                           | 85                      |
| VGS-75W-12 | 12             | 6.0                | 72               | 120                           | 87                      |
| VGS-75W-15 | 15             | 5.0                | 75               | 120                           | 87                      |
| VGS-75W-24 | 24             | 3.2                | 76               | 150                           | 89                      |
| VGS-75W-36 | 36             | 2.1                | 75               | 200                           | 89                      |
| VGS-75W-48 | 48             | 1.6                | 76               | 200                           | 90.5                    |

Notes: 1. Ripple & noise are measured at 20 MHz BW with 47  $\mu$ F aluminum electrolytic capacitor and 0.1  $\mu$ F ceramic capacitor on the output.  
 2. Measured at 230 Vac

**PART NUMBER KEY**


## INPUT

| parameter                 | conditions/description            | min | typ | max  | units |
|---------------------------|-----------------------------------|-----|-----|------|-------|
| voltage                   | ac input                          | 85  |     | 305  | Vac   |
|                           | dc input                          | 120 |     | 430  | Vdc   |
| frequency                 |                                   | 47  |     | 63   | Hz    |
| current                   | at 115 Vac                        |     |     | 2    | A     |
|                           | at 230 Vac                        |     |     | 1    | A     |
| inrush current            | at 115 Vac, full load, cold start |     | 40  |      | A     |
|                           | at 230 Vac, full load, cold start |     | 75  |      | A     |
| leakage current           | at 277 Vac                        |     |     | 0.75 | mA    |
| no load power consumption |                                   |     |     | 0.5  | W     |

## OUTPUT

| parameter                  | conditions/description                   | min | typ   | max    | units |
|----------------------------|------------------------------------------|-----|-------|--------|-------|
| capacitive load            | 5 Vdc output                             |     |       | 10,000 | μF    |
|                            | 12 Vdc output                            |     |       | 6,000  | μF    |
|                            | 15 Vdc output                            |     |       | 5,000  | μF    |
|                            | 24 Vdc output                            |     |       | 1,500  | μF    |
|                            | 36 Vdc output                            |     |       | 1,000  | μF    |
|                            | 48 Vdc output                            |     |       | 680    | μF    |
| line regulation            | rated load                               |     | ±0.5  |        | %     |
| load regulation            | 0% ~ 100%, 5 Vdc output                  |     | ±1    |        | %     |
|                            | 0% ~ 100%, 12, 15, 24, 36, 48 Vdc output |     | ±0.5  |        | %     |
| hold-up time               | at 115 Vac                               | 8   |       |        | ms    |
|                            | at 230 Vac                               | 55  |       |        | ms    |
| switching frequency        |                                          |     | 65    |        | kHz   |
| temperature coefficient    | at 230 Vac, 0°C to 50°C                  |     | ±0.03 |        | %/°C  |
| adjustability              | built in trim pot                        |     | ±10   |        | %     |
| initial set point accuracy | 5 Vdc output                             |     | ±2    |        | %     |
|                            | other outputs                            |     | ±1    |        | %     |

## PROTECTIONS

| parameter                | conditions/description                | min | typ | max   | units |
|--------------------------|---------------------------------------|-----|-----|-------|-------|
| over voltage protection  | 5 Vdc output, clamp, auto recovery    |     |     | 6.3   | Vdc   |
|                          | 12 Vdc output, hiccup, auto recovery  |     |     | 16.2  | Vdc   |
|                          | 15 Vdc output, hiccup, auto recovery  |     |     | 21.75 | Vdc   |
|                          | 24 Vdc output, hiccup, auto recovery  |     |     | 33.6  | Vdc   |
|                          | 36 Vdc output, clamp, auto recovery   |     |     | 50.0  | Vdc   |
|                          | 48 Vdc output, clamp, auto recovery   |     |     | 60.0  | Vdc   |
| over current protection  | at 230 Vac, rated load, auto recovery | 110 |     | 200   | %     |
| short circuit protection | hiccup, continuous, auto recovery     |     |     |       |       |

## SAFETY & COMPLIANCE

| parameter         | conditions/description                                  | min   | typ | max | units |
|-------------------|---------------------------------------------------------|-------|-----|-----|-------|
| isolation voltage | input to ground, 1 min. <10mA                           | 2,000 |     |     | Vac   |
|                   | input to output, 1 min. <10mA                           | 4,000 |     |     | Vac   |
|                   | output to ground, 1 min. <10mA                          | 1,250 |     |     | Vac   |
| safety approvals  | certified to 62368: IEC, EN, UL                         |       |     |     |       |
|                   | designed to meet 60335: IEC, EN                         |       |     |     |       |
|                   | designed to meet 61558: IEC, EN                         |       |     |     |       |
| safety class      | class I                                                 |       |     |     |       |
| EMI/EMC           | CISPR32/EN 55032 class B, IEC 61000-3-2 Class A         |       |     |     |       |
| ESD               | IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV perf. criteria A |       |     |     |       |
| radiated immunity | IEC/EN 61000-4-3 10 V/m perf. criteria A                |       |     |     |       |

## SAFETY & COMPLIANCE

|                               |                                                                         |         |       |
|-------------------------------|-------------------------------------------------------------------------|---------|-------|
| EFT/burst                     | IEC/EN 61000-4-4 ±2KV perf. criteria A                                  |         |       |
| surge                         | IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV perf. criteria A |         |       |
| conducted immunity            | IEC/EN 61000-4-6 10 Vr.m.s perf. criteria A                             |         |       |
| voltage dips and interruption | IEC/EN 61000-4-11 0%, 70% perf. criteria B                              |         |       |
| MTBF                          | as per MIL-HDBK-217F at 25°C                                            | 300,000 | hours |
| RoHS                          | yes                                                                     |         |       |

## ENVIRONMENTAL

| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature |                        | -30 |     | 70  | °C    |
| storage temperature   |                        | -40 |     | 85  | °C    |
| operating humidity    | non-condensing         | 20  |     | 90  | %     |
| storage humidity      | non-condensing         | 0   |     | 95  | %     |

## MECHANICAL

| parameter     | conditions/description   | min | typ | max | units |
|---------------|--------------------------|-----|-----|-----|-------|
| dimensions    | 99.00 x 97.00 x 30.00 mm |     |     |     | mm    |
| weight        |                          |     | 220 |     | g     |
| cooling       | free air convection      |     |     |     |       |
| case material | metal (AL1100, SGCC)     |     |     |     |       |

## MECHANICAL DRAWING

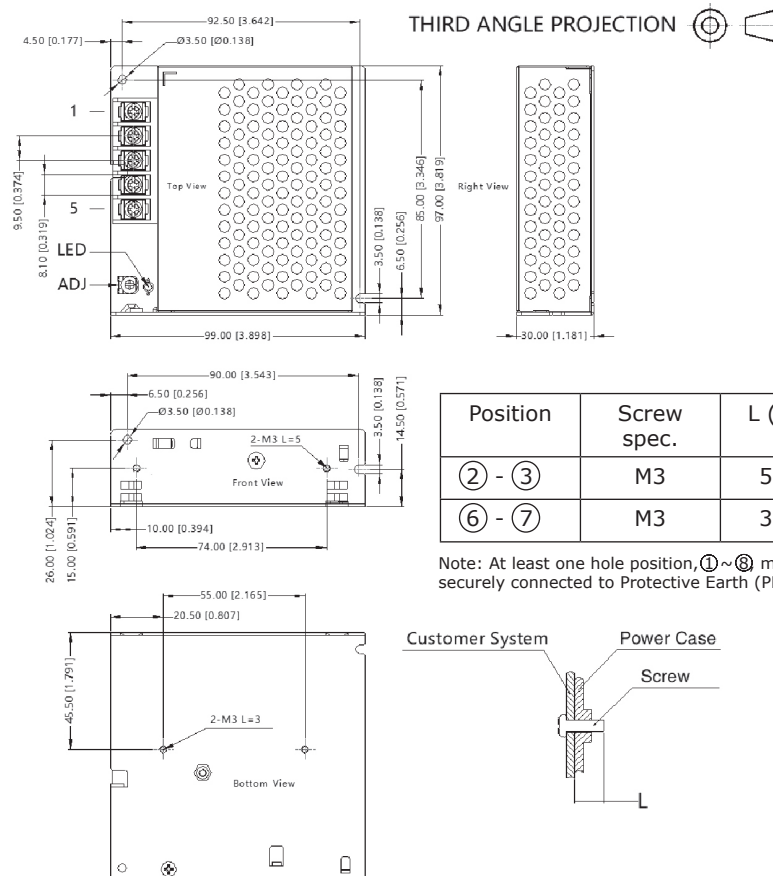
units: mm

tolerance: ±1 [±0.039]

| PIN CONNECTIONS |          |
|-----------------|----------|
| PIN             | Function |
| 1               | AC(L)    |
| 2               | AC(N)    |
| 3               | ⊕        |
| 4               | -Vo      |
| 5               | +Vo      |

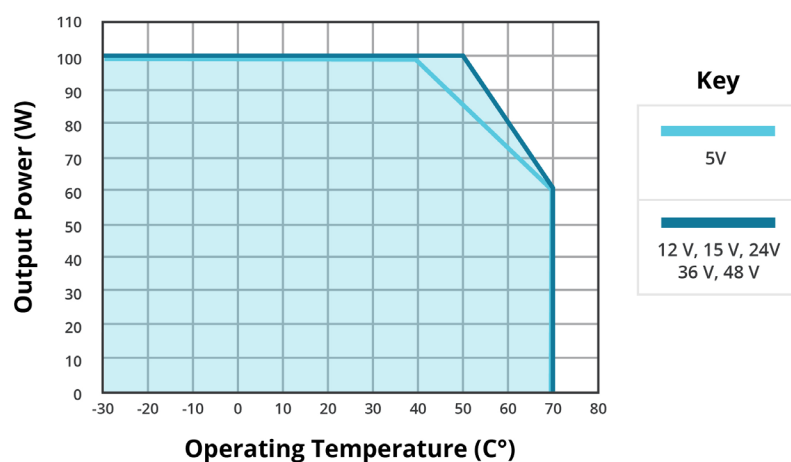
wire range: 22-12 AWG

connector tightening torque: M3.5, 0.8 N·m

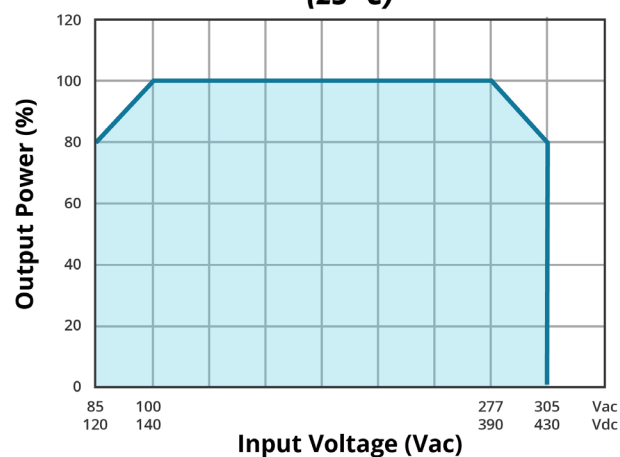


## DERATING CURVE

### TEMPERATURE DERATING CURVE

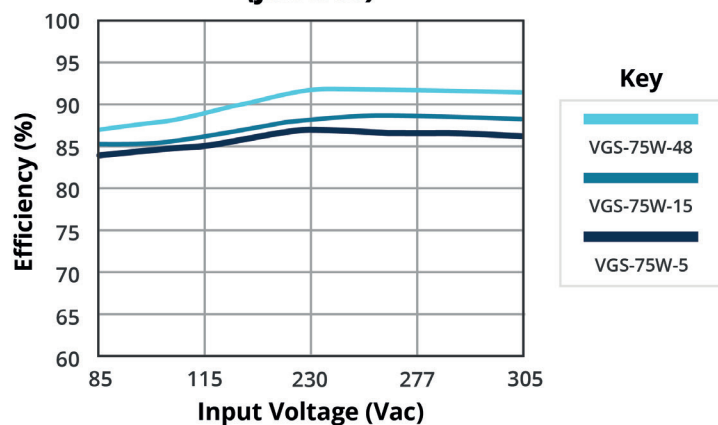


### INPUT VOLTAGE DERATING CURVE (25 °C)

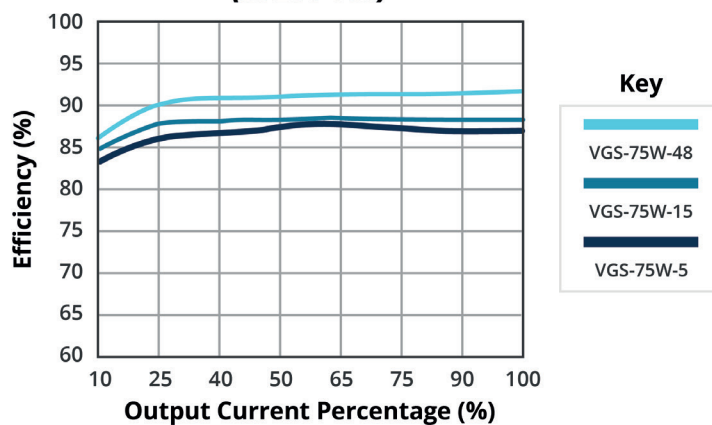


## EFFICIENCY CURVES

### EFFICIENCY VS INPUT LOAD (full load)



### EFFICIENCY VS OUTPUT LOAD (at 230 Vac)



## REVISION HISTORY

| rev. | description                            | date       |
|------|----------------------------------------|------------|
| 1.0  | initial release                        | 09/02/2020 |
| 1.01 | derating and efficiency curves updated | 06/04/2021 |

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



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