

**SERIES:** VGS-100C | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

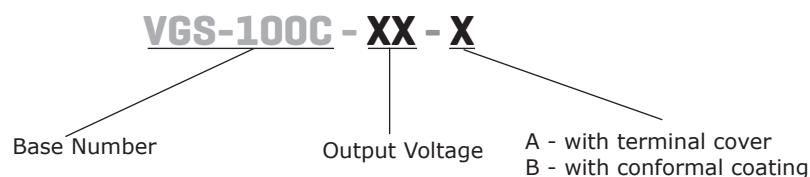
**FEATURES**

- universal input range (85 ~ 264 VAC)
- UL/EN/IEC 62368 certified
- designed to meet IEC/EN 61558, IEC/EN 60335, and GB4943 system requirements
- short-circuit, over-current, over-voltage protections
- CISPR/EN55032 Class B radiated/conducted emissions
- output adjustable via trimpot +/- 10%



| 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-100C-5  | 5              | 18                 | 90.0             | 100                           | 86                      |
| VGS-100C-12 | 12             | 8.5                | 102.0            | 120                           | 88                      |
| VGS-100C-15 | 15             | 7.0                | 105.0            | 120                           | 88                      |
| VGS-100C-24 | 24             | 4.5                | 108.0            | 150                           | 90                      |
| VGS-100C-36 | 36             | 2.8                | 100.8            | 200                           | 90                      |
| VGS-100C-48 | 48             | 2.3                | 110.4            | 200                           | 91                      |

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  |     | 264  | Vac   |
|                           | dc input                     | 120 |     | 373  | Vdc   |
| frequency                 |                              | 47  |     | 63   | Hz    |
| current                   | at 115 Vac                   |     |     | 3    | A     |
|                           | at 230 Vac                   |     |     | 1.5  | A     |
| inrush current            | at 115 Vac, cold start       |     | 35  |      | A     |
|                           | at 230 Vac, cold start       |     | 65  |      | A     |
| leakage current           | at 240 Vac                   |     |     | 0.75 | mA    |
| no load power consumption | 5V, 12V, 15V, 24V at 230 Vac |     |     | 0.3  | W     |
|                           | 36V, 48V at 230 Vac          |     |     | 0.5  | W     |

## OUTPUT

| parameter                  | conditions/description     | min | typ   | max    | units |
|----------------------------|----------------------------|-----|-------|--------|-------|
| capacitive load            | 5 Vdc output               |     |       | 10,000 | μF    |
|                            | 12 Vdc output              |     |       | 6,800  | μF    |
|                            | 15 Vdc output              |     |       | 3,300  | μF    |
|                            | 24 Vdc output              |     |       | 2,200  | μF    |
|                            | 36 Vdc output              |     |       | 1,000  | μF    |
|                            | 48 Vdc output              |     |       | 470    | μF    |
| initial set point accuracy | 5 Vdc output at full load  |     | ±2    |        | %     |
|                            | other outputs at full load |     | ±1    |        | %     |
| line regulation            |                            |     | ±0.5  |        | %     |
| load regulation            | 5 Vdc output 0%~100% load  |     | ±1    |        | %     |
|                            | other outputs 0%~100% load |     | ±0.5  |        | %     |
| adjustability              | built in trim pot          | ±10 |       |        | %     |
| hold-up time               | at 115 Vac                 | 5   |       |        | ms    |
|                            | at 230 Vac                 | 45  |       |        | ms    |
| switching frequency        |                            |     | 65    |        | kHz   |
| temperature coefficient    |                            |     | ±0.03 |        | %/°C  |

## PROTECTIONS

| parameter                | conditions/description                         | min | typ | max  | units |
|--------------------------|------------------------------------------------|-----|-----|------|-------|
| over voltage protection  | 5 Vdc output, output shut-down, auto-recovery  |     |     | 7.5  | Vdc   |
|                          | 12 Vdc output, output shut-down, auto-recovery |     |     | 19.2 | Vdc   |
|                          | 15 Vdc output, output shut-down, auto-recovery |     |     | 24.0 | Vdc   |
|                          | 24 Vdc output, output shut-down, auto-recovery |     |     | 38.4 | Vdc   |
|                          | 36 Vdc output, output shut-down, auto-recovery |     |     | 57.6 | Vdc   |
|                          | 48 Vdc output, output shut-down, auto-recovery |     |     | 60.0 | Vdc   |
| over current protection  | auto-recovery                                  | 110 |     | 160  | %     |
| short circuit protection | hiccup, continuous, auto-recovery              |     |     |      |       |

## SAFETY & COMPLIANCE

| parameter         | conditions/description                                    | min    | typ       | max | units |
|-------------------|-----------------------------------------------------------|--------|-----------|-----|-------|
| isolation voltage | input to ground                                           | 2,000  |           |     | Vac   |
|                   | input to output                                           | 4,000  |           |     | Vac   |
|                   | output to ground                                          | 1,250  |           |     | Vac   |
| safety approvals  | certified to:                                             | 62368: | IEC/EN/UL |     |       |
|                   | designed to meet:                                         | 60335: | IEC/EN    |     |       |
|                   | designed to meet:                                         | 61558: | IEC/EN    |     |       |
|                   | designed to meet:                                         | 4943:  | GB        |     |       |
| safety class      | Class I                                                   |        |           |     |       |
| EMI/EMC           | CISPR32/EN55032 Class B, IEC/EN61000-3-2 Class A          |        |           |     |       |
| ESD               | IEC/EN 61000-4-2 Contact ±6KV /Air ±8KV, perf. Criteria A |        |           |     |       |

## SAFETY & COMPLIANCE

|                                |                                                                          |         |  |       |
|--------------------------------|--------------------------------------------------------------------------|---------|--|-------|
| radiated immunity              | IEC/EN 61000-4-3 10V/m, perf. Criteria A                                 |         |  |       |
| 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/EN61000-4-6 10 Vr.m.s, perf. Criteria A                              |         |  |       |
| voltage dips and interruptions | IEC/EN61000-4-11 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         | 10  |     | 95  | %     |

## MECHANICAL

| parameter     | conditions/description        | min | typ        | max | units  |
|---------------|-------------------------------|-----|------------|-----|--------|
| dimensions    | 129.00 x 97.00 x 30.00        |     |            |     | mm     |
| weight        | 5 Vdc output<br>other outputs |     | 350<br>305 |     | g<br>g |
| cooling       | natural convection            |     |            |     |        |
| case material | metal (AL1100, SGCC)          |     |            |     |        |

## MECHANICAL DRAWING

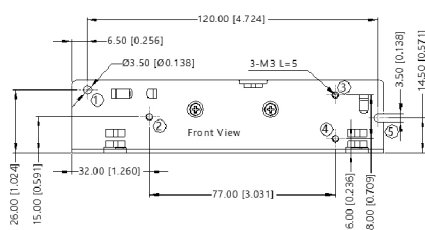
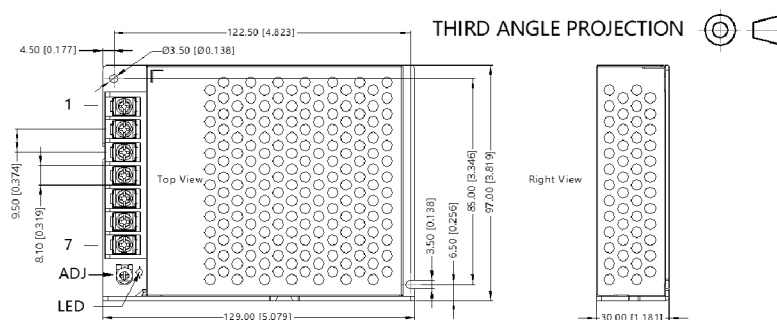
units: mm [inch]

tolerance:  $\pm 1.0$  [ $\pm 0.039$ ]

wire range: 22-12 AWG

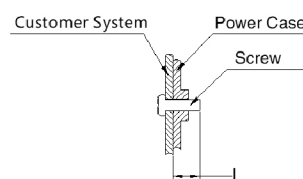
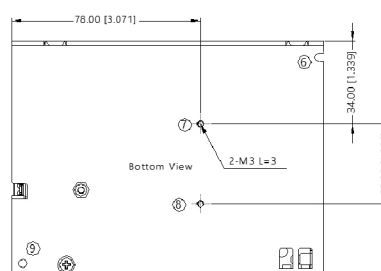
connector tightening torque: M3.5, 0.8 N·m

| PIN CONNECTIONS |                                                                                   |
|-----------------|-----------------------------------------------------------------------------------|
| PIN             | Function                                                                          |
| 1               | AC(L)                                                                             |
| 2               | AC(N)                                                                             |
| 3               |  |
| 4               | -Vo                                                                               |
| 5               | -Vo                                                                               |
| 6               | +Vo                                                                               |
| 7               | +Vo                                                                               |



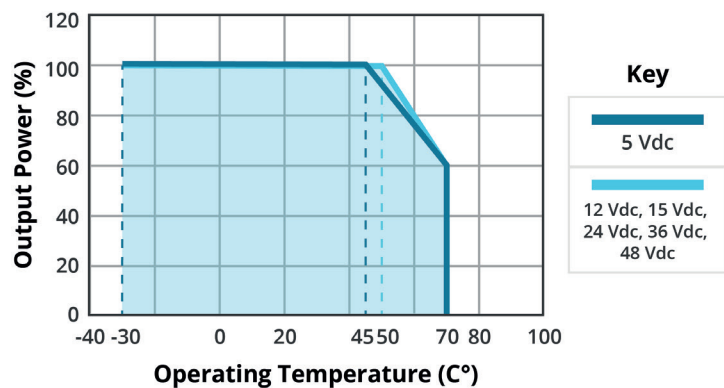
| Position | Screw spec. | L (max) | Torque (max) |
|----------|-------------|---------|--------------|
| ② - ④    | M3          | 5 mm    | 0.4 N·m      |
| ⑦ - ⑧    | M3          | 3 mm    | 0.4 N·m      |

Note: At least one hole position, ①~⑨, must be securely connected to Protective Earth (PE) 

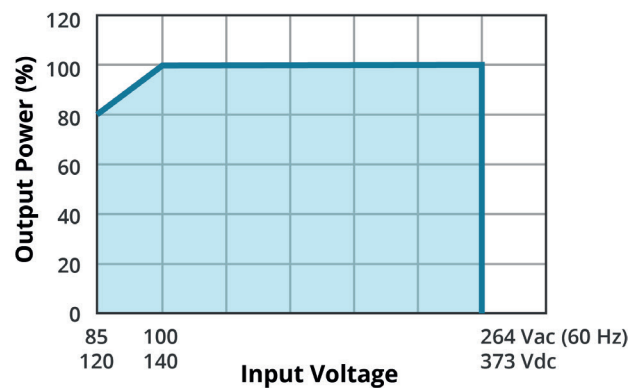


## DERATING CURVE

### TEMPERATURE DERATING CURVE

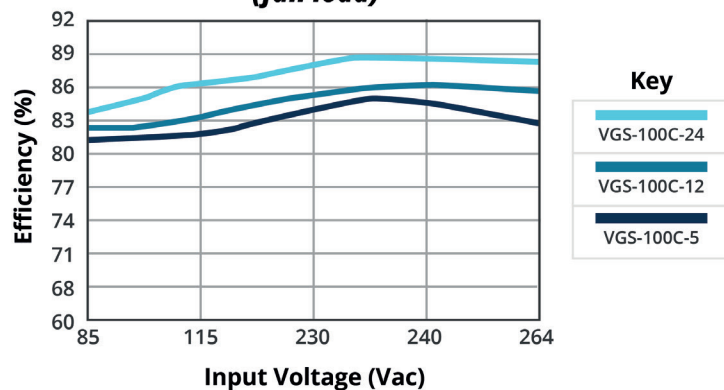


### INPUT VOLTAGE DERATING CURVE (25°C)

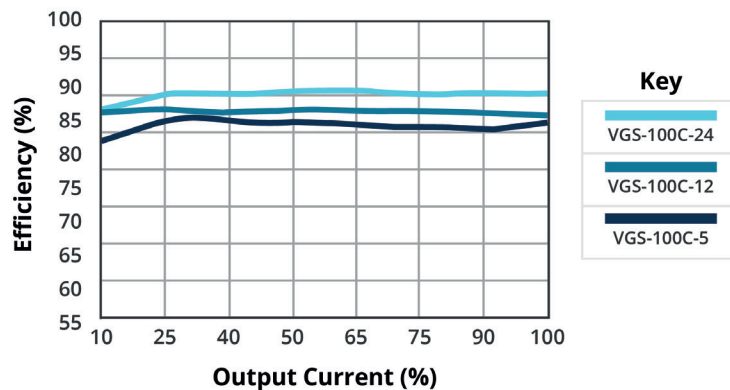


## EFFICIENCY CURVES

### EFFICIENCY VS INPUT VOLTAGE (full load)



### EFFICIENCY VS OUTPUT LOAD



## REVISION HISTORY

| rev. | description                            | date       |
|------|----------------------------------------|------------|
| 1.0  | initial release                        | 09/28/2020 |
| 1.01 | derating and efficiency curves updated | 02/09/2022 |
| 1.02 | UKCA mark added                        | 06/06/2022 |

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



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