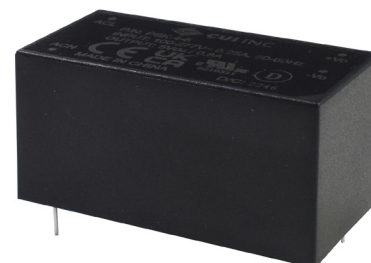


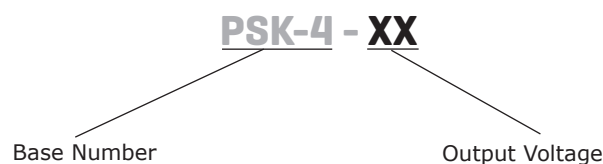
**SERIES:** PSK-4 | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY**FEATURES**

- universal input range from 85~305 Vac, 120~431 Vdc
- high efficiency up to 82%
- no load power <0.075W
- operating altitude up to 5,000m
- meets IEC/EN/UL 62368-1
- over voltage category OVC II and OVC III
- continuous short circuit, over current and over voltage protection
- designed to meet IEC/EN 60335-1
- design meets EN 55032 Class B and CISPR/FCC Class B



| MODEL    | output voltage | output current max | output power max | ripple and noise <sup>1</sup> max | efficiency <sup>2</sup> typ |
|----------|----------------|--------------------|------------------|-----------------------------------|-----------------------------|
|          | (Vdc)          | (A)                | (W)              | (mVp-p)                           | (%)                         |
| PSK-4-3  | 3.3            | 1.2                | 4                | 100                               | 74                          |
| PSK-4-5  | 5              | 0.8                | 4                | 100                               | 77                          |
| PSK-4-12 | 12             | 0.333              | 4                | 120                               | 81                          |
| PSK-4-15 | 15             | 0.266              | 4                | 150                               | 81                          |
| PSK-4-24 | 24             | 0.166              | 4                | 240                               | 82                          |

Note: 1. Ripple and noise are measured at 20 MHz BW with 10 uF aluminum electrolytic capacitor and 0.1 uF ceramic capacitor on the output (For 3.3 Vdc output model 47 uF aluminum electrolytic capacitor and 0.1 uF ceramic capacitor.).  
2. At 230 Vac input and full load, 25°C.

**PART NUMBER KEY**

## INPUT

| parameter                 | conditions/description       | min | typ | max   | units |
|---------------------------|------------------------------|-----|-----|-------|-------|
| input voltage             |                              | 85  |     | 305   | Vac   |
|                           |                              | 120 |     | 431   | Vdc   |
| operating voltage         |                              | 100 |     | 277   | Vac   |
| frequency                 |                              | 50  |     | 60    | Hz    |
| current                   | at 100 Vac, full load        |     |     | 0.25  | A     |
| inrush current            | at 240 Vac, cold start, 25°C |     |     | 70    | A     |
| leakage current           |                              |     |     | 0.1   | mA    |
| no load power consumption |                              |     |     | 0.075 | W     |

## OUTPUT

| parameter                  | conditions/description           | min   | typ | max   | units |
|----------------------------|----------------------------------|-------|-----|-------|-------|
| capacitive load            | 3.3 Vdc output model             |       |     | 1,200 | µF    |
|                            | 5 Vdc output model               |       |     | 800   | µF    |
|                            | 12 Vdc output model              |       |     | 330   | µF    |
|                            | 15 Vdc output model              |       |     | 266   | µF    |
|                            | 24 Vdc output model              |       |     | 166   | µF    |
| initial set point accuracy | at full load                     |       |     |       |       |
|                            | 3.3 Vdc output model             |       | ±5  |       | %     |
|                            | 5 Vdc output model               |       | ±4  |       | %     |
|                            | all other output models          |       | ±3  |       | %     |
| output voltage set point   | at nominal input                 |       |     |       |       |
|                            | 3.3 Vdc output model             | 3.135 | 3.3 | 3.465 | Vdc   |
|                            | 5 Vdc output model               | 4.80  | 5.0 | 5.20  | Vdc   |
|                            | 12 Vdc output model              | 11.64 | 12  | 12.36 | Vdc   |
|                            | 15 Vdc output model              | 14.55 | 15  | 15.45 | Vdc   |
|                            | 24 Vdc output model              | 23.28 | 24  | 24.72 | Vdc   |
| line regulation            | from high to low line, full load |       |     | ±1    | %     |
| load regulation            | 0%~100% load                     |       |     |       |       |
|                            | 3.3 Vdc output model             |       |     | ±5    | %     |
|                            | 5 Vdc output model               |       |     | ±4    | %     |
|                            | all other output models          |       |     | ±3    | %     |
| switching frequency        | max rated power                  |       | 43  |       | kHz   |
| hold-up time               | at 115 Vac                       |       | 16  |       | ms    |

## PROTECTIONS

| parameter                | conditions/description                           | min  | typ | max  | units |
|--------------------------|--------------------------------------------------|------|-----|------|-------|
| over voltage protection  | built-in a TVS component to clamp output voltage |      |     |      |       |
|                          | 3.3 Vdc output model                             | 6.45 |     | 7.14 | Vdc   |
|                          | 5 Vdc output model                               | 6.45 |     | 7.14 | Vdc   |
|                          | 12 Vdc output model                              | 14.3 |     | 15.8 | Vdc   |
|                          | 15 Vdc output model                              | 17.1 |     | 19.5 | Vdc   |
|                          | 24 Vdc output model                              | 28.5 |     | 31.5 | Vdc   |
| over current protection  | auto recovery, hiccup                            | 110  |     | 180  | %     |
| short circuit protection | auto recovery                                    |      |     |      |       |

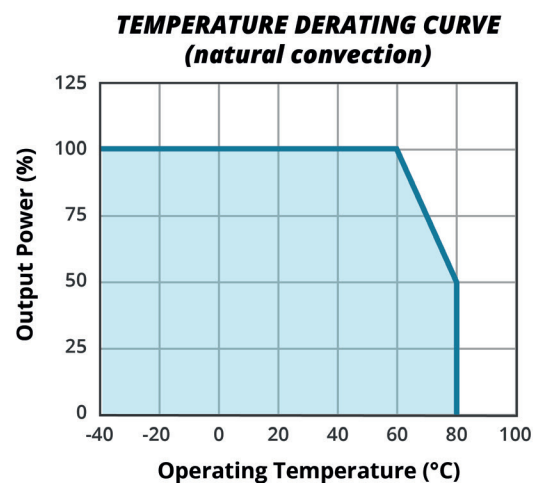
## SAFETY & COMPLIANCE

| parameter            | conditions/description                                                                    | min       | typ | max   | units |
|----------------------|-------------------------------------------------------------------------------------------|-----------|-----|-------|-------|
| isolation voltage    | input to output for 1 minute                                                              |           |     | 3,000 | Vac   |
| safety approvals     | certified to 62368-1: IEC, EN, UL                                                         |           |     |       |       |
| safety class         | Class II                                                                                  |           |     |       |       |
| conducted emission   | EN 61204-3:2018, EN 61000-6-3:2021, EN 61000-6-4:2019, Class B                            |           |     |       |       |
| radiated emissions   | EN 61204-3:2018, EN 61000-6-3:2021, EN 61000-6-4:2019, Class B                            |           |     |       |       |
| ESD                  | IEC 61000-4-2:2008, perf. Criteria A                                                      |           |     |       |       |
| radiated immunity    | IEC 61000-4-3:2020, perf. Criteria A                                                      |           |     |       |       |
| EFT/burst            | IEC 61000-4-4:2012, $\pm 1\text{kV}$ , $\pm 2\text{kV}$ , perf. Criteria A                |           |     |       |       |
| surge                | IEC 61000-4-5:2014+A1:2017, L-N: $\pm 0.5\text{kV}$ , $\pm 1\text{kV}$ , perf. Criteria A |           |     |       |       |
| conducted immunity   | IEC 61000-4-6:2013+COR1:2015, perf. Criteria A                                            |           |     |       |       |
| voltage dips         | IEC 61000-4-11:2020, Dip: 30% Reduction, Dip >95% Reduction, perf. Criteria A             |           |     |       |       |
| voltage interruption | IEC 61000-4-11:2020, >95% Reduction, perf. Criteria B                                     |           |     |       |       |
| MTBF                 | per MIL-HDBK-217F at 25 °C                                                                | 2,200,000 |     |       | hours |
| RoHS                 | yes                                                                                       |           |     |       |       |

## ENVIRONMENTAL

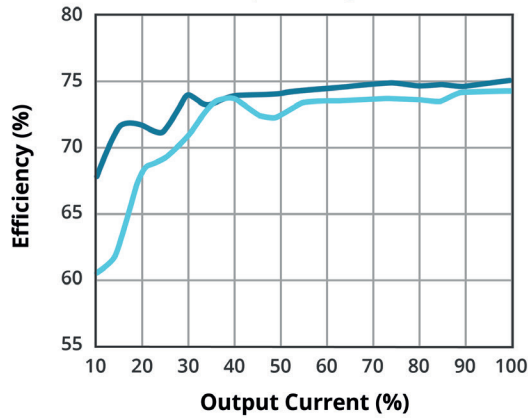
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | (see derating curve)   | -40 |     | 80  | °C    |
| storage temperature   |                        | -40 |     | 85  | °C    |
| storage humidity      |                        | 0   |     | 95  | %     |

## DERATING CURVES



## EFFICIENCY CURVES

**EFFICIENCY VS OUTPUT LOAD  
(PSK-4-3)**

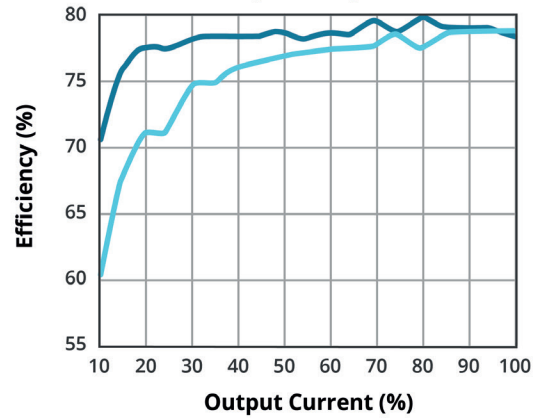


Key

115 V

230 V

**EFFICIENCY VS OUTPUT LOAD  
(PSK-4-5)**

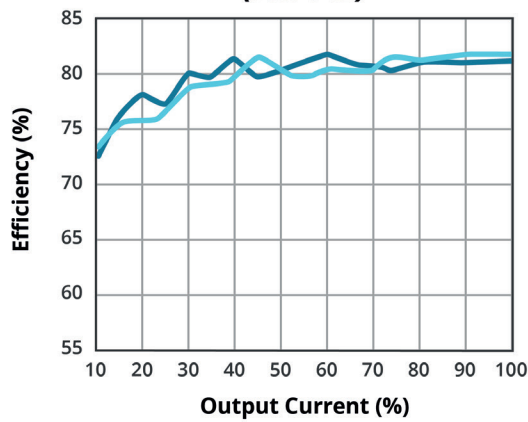


Key

115 V

230 V

**EFFICIENCY VS OUTPUT LOAD  
(PSK-4-12)**

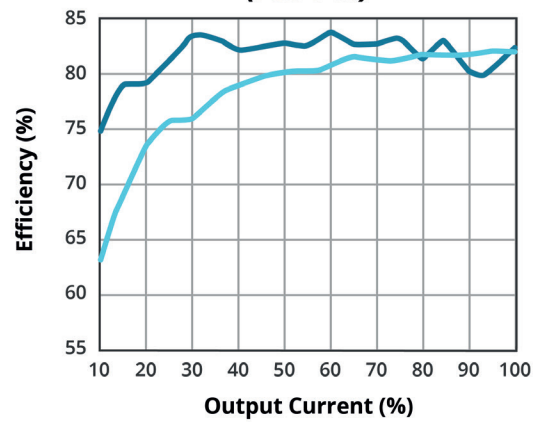


Key

115 V

230 V

**EFFICIENCY VS OUTPUT LOAD  
(PSK-4-15)**

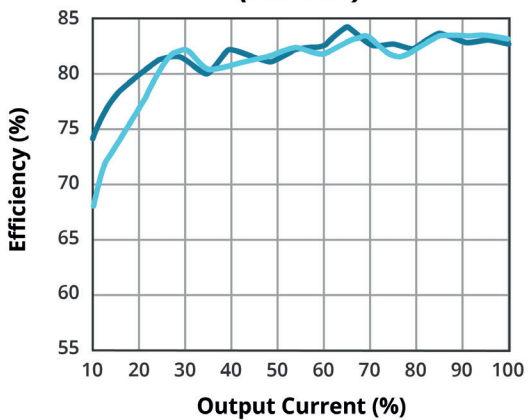


Key

115 V

230 V

**EFFICIENCY VS OUTPUT LOAD  
(PSK-4-24)**



Key

115 V

230 V

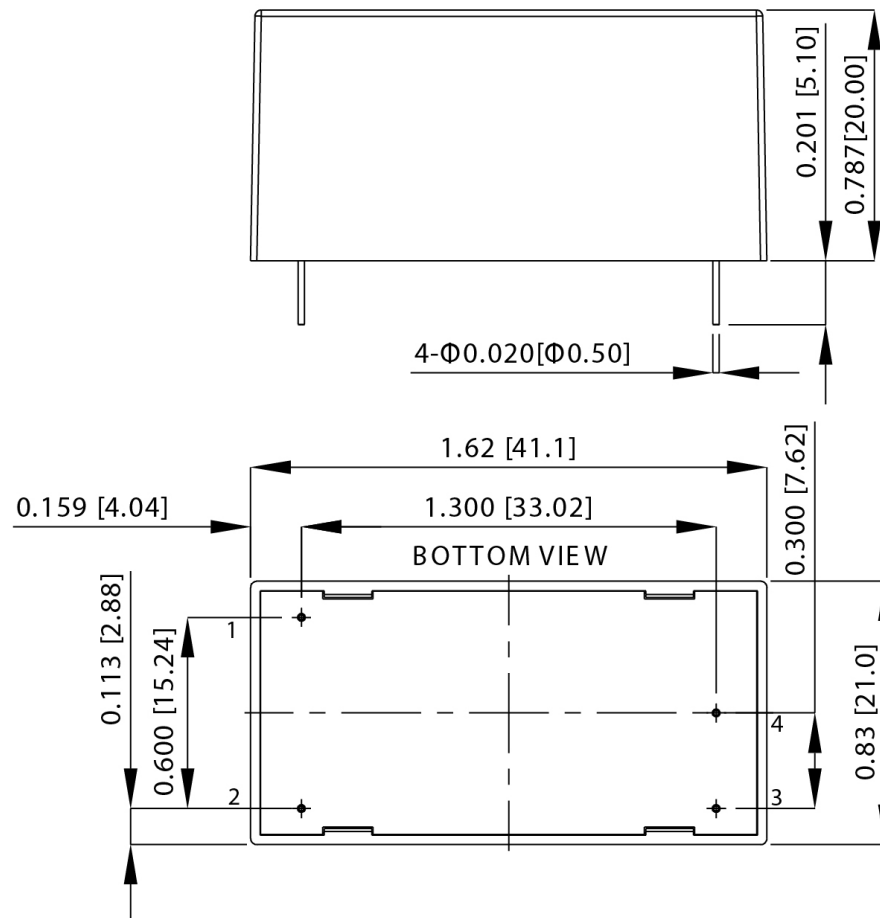
## MECHANICAL

| parameter  | conditions/description                                                                                       | min | typ | max | units |
|------------|--------------------------------------------------------------------------------------------------------------|-----|-----|-----|-------|
| dimensions | 1.62 x 0.83 x 0.787 [41.1 x 21.0 x 20.00 mm]                                                                 |     |     |     | inch  |
| weight     |                                                                                                              |     | 30  |     | g     |
| shock      | Meet MIL-STD-810F table 516.5, table 516.5-1 10ms, each axis 3 times ( $\pm X \cdot \pm Y \cdot \pm Z$ axis) |     | 75  |     | g     |
| vibration  | Meet MIL-STD-810F table 514.5CVIII, 15~2000Hz, X·Y·Z axis, 1 hour (each axis), total 3 hrs                   |     | 4   |     | g     |

## MECHANICAL DRAWING

units: inches: x.xx =  $\pm 0.03$ , x.xxx =  $\pm 0.020$   
mm: x.x =  $\pm 0.7$ , x.xx =  $\pm 0.50$

| PIN CONNECTIONS |          |
|-----------------|----------|
| PIN             | Function |
| 1               | AC (N)   |
| 2               | AC (L)   |
| 3               | +Vout    |
| 4               | -Vout    |



## REVISION HISTORY

| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 02/08/2023 |

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



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