

**SERIES:** PSK-150 | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

**FEATURES**

- EN 60601 3.1 certified
- 4,000 Vac isolation
- 2 MOPP
- adjustable output voltage
- power factor > 90%
- Class I or Class II



| 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-150-12 | 12             | 12.50              | 150              | 120                               | 93.0                        |
| PSK-150-24 | 24             | 6.25               | 150              | 240                               | 93.5                        |
| PSK-150-48 | 48             | 3.12               | 150              | 480                               | 93.5                        |

Note: 1. Ripple and noise are measured at 20 MHz BW with 47 uF aluminum electrolytic capacitor and 0.1 uF ceramic capacitor on the output.  
2. At 230 Vac after 30 minutes of operation.

**PART NUMBER KEY**



## INPUT

| parameter                 | conditions/description   | min | typ | max         | units  |
|---------------------------|--------------------------|-----|-----|-------------|--------|
| voltage                   | (see derating curve)     | 90  |     | 264         | Vac    |
| frequency                 |                          | 47  |     | 63          | Hz     |
| current                   | at 115 Vac<br>at 230 Vac |     |     | 2.5<br>1.25 | A<br>A |
| inrush current            | at 115 Vac<br>at 230 Vac |     |     | 45<br>90    | A<br>A |
| leakage current           | at 264 Vac               |     |     | 0.1         | mA     |
| power factor              | at 230 Vac, full load    | 0.9 |     |             |        |
| no load power consumption |                          |     |     | 0.5         | W      |

## OUTPUT

| parameter                  | conditions/description   | min | typ        | max                   | units                         |
|----------------------------|--|-----|------------|-----------------------|-------------------------------|
| capacitive load            | 12 Vdc output<br>24 Vdc output<br>48 Vdc output  |     |            | 6,000<br>2,000<br>330 | $\mu$ F<br>$\mu$ F<br>$\mu$ F |
| initial set point accuracy | at full load   |     | $\pm 2$    |                       | %                             |
| line regulation            |  |     | $\pm 1$    |                       | %                             |
| load regulation            | 0%~100% load   |     | $\pm 1$    |                       | %                             |
| hold-up time               | at 115 Vac, 90% output   |     | 10         |                       | ms                            |
| temperature coefficient    |  |     | $\pm 0.05$ |                       | %/°C                          |
| adjustability              |  |     | $\pm 5$    |                       | %                             |
| remote ON/OFF              | ON: tie pin 4 (REM) to pin 6 (-Vo) or leave floating<br>OFF: apply +5 Vdc to pin 4 (REM) with respect to pin 6 (-Vo) |     |            |                       |                               |

## PROTECTIONS

| parameter                   | conditions/description  | min | typ | max | units |
|-----------------------------|---|-----|-----|-----|-------|
| over voltage protection     | auto recovery   |     |     |     |       |
| over current protection     | auto recovery, hiccup   |     |     |     |       |
| short circuit protection    | level 1 (nominal): continuous, auto recovery<br>level 2 (instantaneous high current): latch |     |     |     |       |
| over temperature protection | auto recovery   |     |     |     |       |

## SAFETY & COMPLIANCE

| parameter          | conditions/description                      | min            | typ | max | units      |
|--------------------|---|----------------|-----|-----|------------|
| isolation voltage  | input to output                             | 4,000<br>5,656 |     |     | Vac<br>Vdc |
|                    | input to PE ground                          | 2,000<br>2,828 |     |     | Vac<br>Vdc |
|                    | output to PE ground                         | 1,500<br>2,121 |     |     | Vac<br>Vdc |
| safety approvals   | certified to 60601: IEC/EN/UL               |                |     |     |            |
| safety class       | Class I (with PE) and Class II (without PE) |                |     |     |            |
| conducted emission | EN 55011 Class B                            |                |     |     |            |
| radiated emissions | EN 55011 Class I Class B / Class II Class A |                |     |     |            |
| ESD                | IEC/EN61000-4-2                             |                |     |     |            |
| radiated immunity  | IEC/EN61000-4-3                             |                |     |     |            |
| EFT/burst          | IEC/EN61000-4-4                             |                |     |     |            |
| surge              | IEC/EN61000-4-5                             |                |     |     |            |

## SAFETY & COMPLIANCE (CONTINUED)

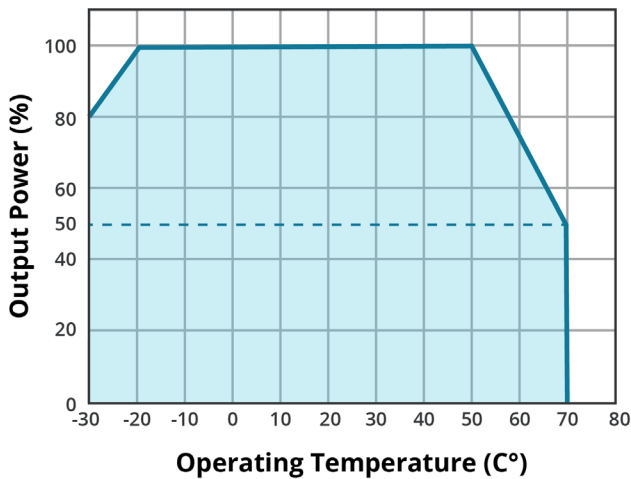
|                               |                            |         |       |
|-------------------------------|----------------------------|---------|-------|
| conducted immunity            | IEC/EN61000-4-6            |         |       |
| voltage dips and interruption | IEC/EN61000-4-11           |         |       |
| MTBF                          | per MIL-HDBK-217F at 25 °C | 250,000 | hours |
| RoHS                          | yes                        |         |       |

## ENVIRONMENTAL

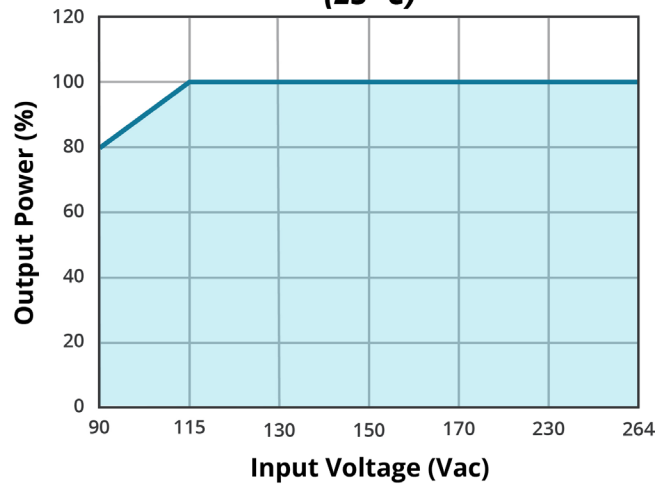
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | (see derating curve)   | -30 |     | 70  | °C    |
| storage temperature   |                        | -30 |     | 85  | °C    |
| storage humidity      |                        | 0   |     | 95  | %     |

## DERATING CURVES

**TEMPERATURE DERATING CURVE**



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




## MECHANICAL

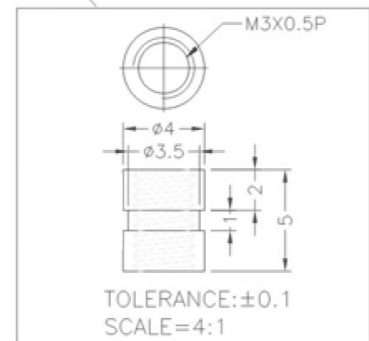
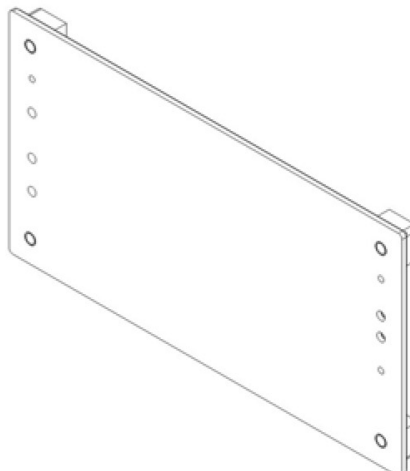
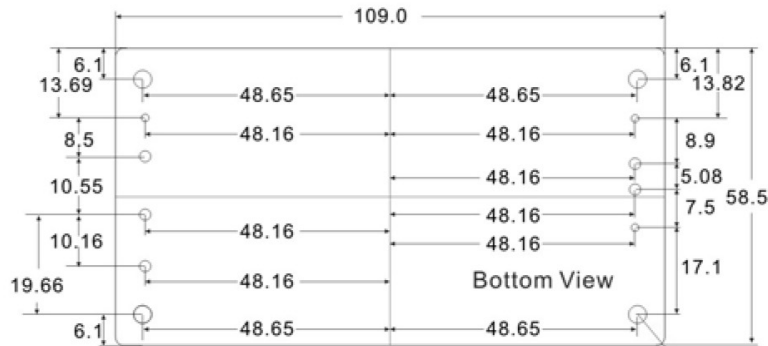
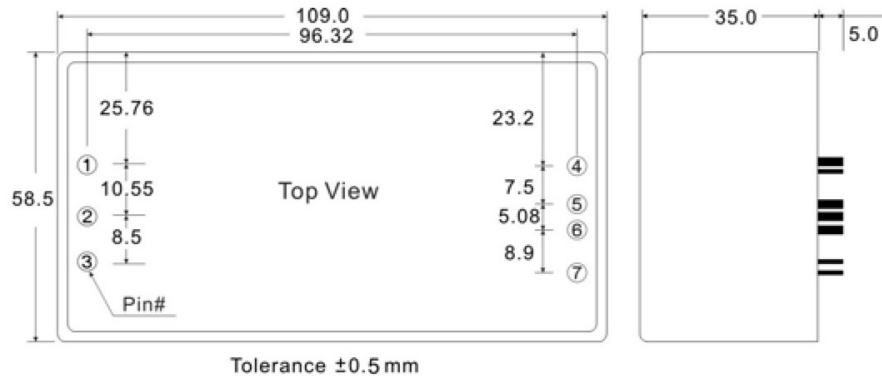
| parameter  | conditions/description | min | typ | max | units |
|------------|------------------------|-----|-----|-----|-------|
| dimensions | 109.0 x 58.5 x 35.0    |     |     |     | mm    |
| weight     |                        |     | 365 |     | g     |
| cooling    | natural convection     |     |     |     |       |

## MECHANICAL DRAWING

units: mm  
 general tolerance:  $\pm 0.5$

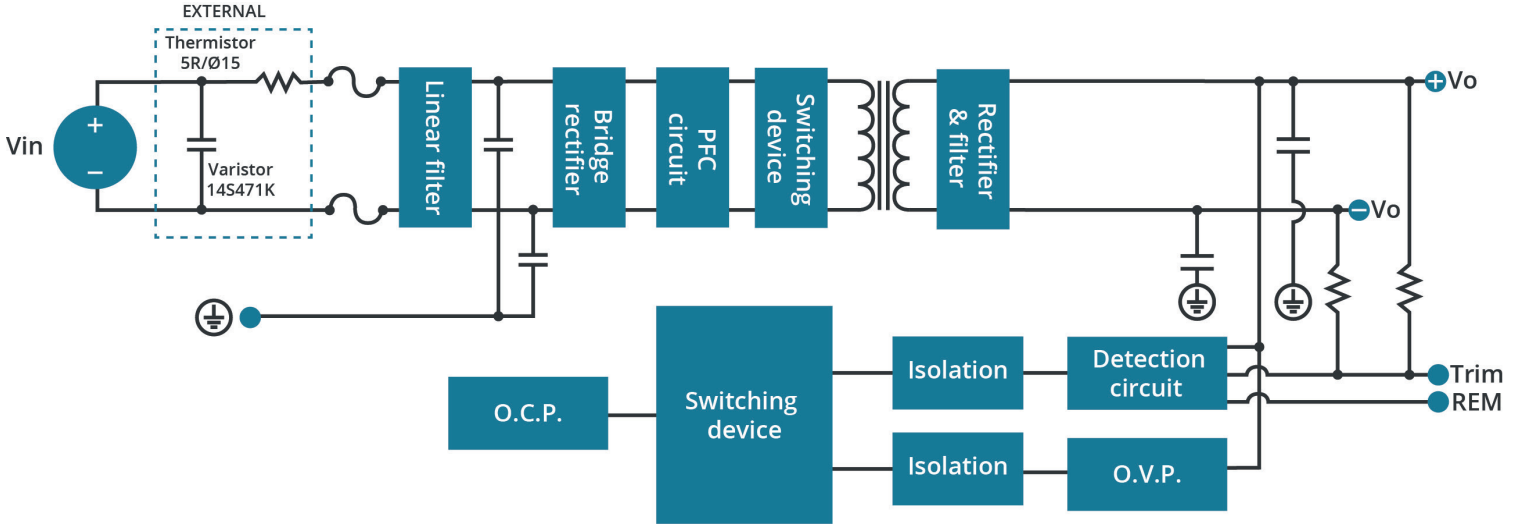
| PIN CONNECTIONS |   |
|-----------------|---|
| PIN             | Function  |
| 1               | AC (N)  |
| 2               | AC (L)  |
| 3               |  |
| 4               | ON/OFF  |
| 5               | +Vo   |
| 6               | -Vo   |
| 7               | Trim  |

Note: If the Remote ON/OFF function (pin 4) is not required, tie directly to -Vo (pin 6) or leave floating/open.



## BLOCK DIAGRAM

Figure 1

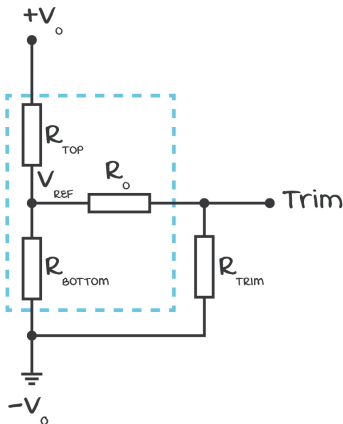


## APPLICATION NOTES

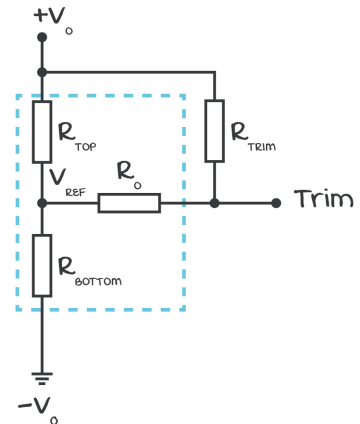
Table 1

| Part no.   | Trim <sup>Up</sup> | -Vo           | Trim <sup>Down</sup> | +Vo          |
|------------|--------------------|---------------|----------------------|--------------|
| PSK-150-12 | 5% / 0%            | 34KΩ ~ 10MΩ   | 0% / -5%             | 10MΩ ~ 106KΩ |
| PSK-150-24 | 5% / 0%            | 37.4KΩ ~ 10MΩ | 0% / -5%             | 10MΩ ~ 270KΩ |
| PSK-150-48 | 5% / 0%            | 38KΩ ~ 10MΩ   | 0% / -5%             | 10MΩ ~ 640KΩ |

Trim up



Trim down



## REVISION HISTORY

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| rev. | description                               | date       |
|------|---|------------|
| 1.0  | initial release                           | 12/17/2021 |
| 1.01 | adjustability updated, medical icon added | 04/07/2022 |
| 1.02 | mechanical drawing updated                | 07/18/2022 |

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



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