

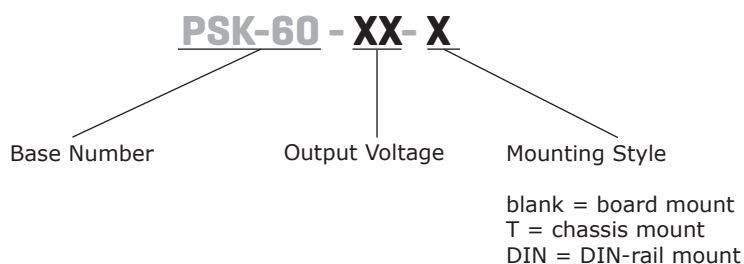
SERIES: PSK-60 | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

FEATURES

- universal input voltage range (85~264 VAC)
- IEC/EN/UL 62368 certified
- meets CISPR32/EN 55032 Class B without external components
- 4,000 VAC isolation rating
- short-circuit, over-current, over-voltage protections



| MODEL | output voltage | output current max | output power max | ripple and noise max | efficiency |
|-----------|----------------|--------------------|------------------|----------------------|------------|
| | (Vdc) | (A) | (W) | (mVp-p) | typ (%) |
| PSK-60-5 | 5 | 10.0 | 50 | 120 | 84 |
| PSK-60-12 | 12 | 5.0 | 60 | 120 | 87 |
| PSK-60-15 | 15 | 4.0 | 60 | 120 | 88 |
| PSK-60-24 | 24 | 2.5 | 60 | 120 | 89 |
| PSK-60-48 | 48 | 1.25 | 60 | 120 | 90 |

PART NUMBER KEY


INPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------------|--------------------------|-----|----------|-----|-------|
| voltage | ac input | 85 | | 264 | Vac |
| | dc input | 100 | | 370 | Vdc |
| frequency | | 47 | | 63 | Hz |
| current | at 115 Vac | | | 1.8 | A |
| | at 230 Vac | | | 1.0 | A |
| inrush current | at 115 Vac at 230 Vac | | 45 90 | | A |
| no load power consumption | at 230 Vac | | | 0.5 | W |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|----------------------------|------------------------|-----|-------|--------|-------|
| capacitive load | 5 Vdc output | | | 20,000 | μF |
| | 12 Vdc output | | | 4,000 | |
| | 15 Vdc output | | | 3,000 | |
| | 24 Vdc output | | | 1,800 | |
| | 48 Vdc output | | | 470 | |
| initial set point accuracy | at full load | | ±2 | | % |
| line regulation | rated load | | ±0.5 | | % |
| load regulation | 0%~100% load | | ±1.0 | | % |
| hold-up time | at 115 Vac | | 8 | | ms |
| | at 230 Vac | | 65 | | |
| temperature coefficient | | | ±0.02 | | %/°C |

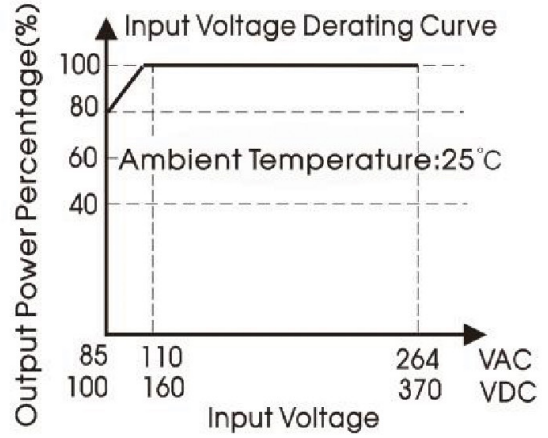
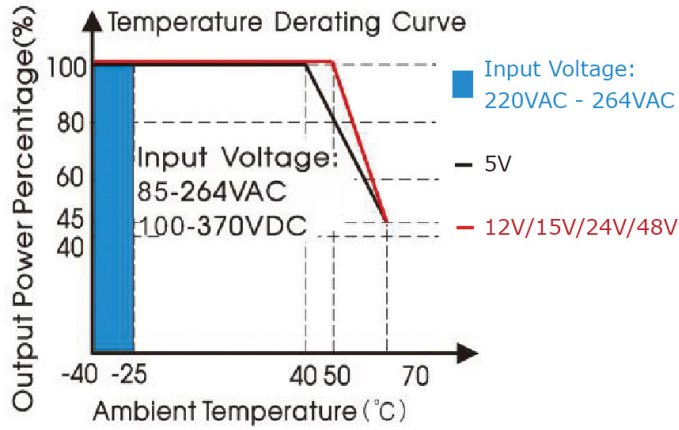
PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|-----------------------------------|-----|-----|-----|-------|
| over voltage protection | 5 Vdc output, clamp or hiccup | | | 9 | Vdc |
| | 12 Vdc output, clamp or hiccup | | | 16 | |
| | 15 Vdc output, clamp or hiccup | | | 25 | |
| | 24 Vdc output, clamp or hiccup | | | 35 | |
| | 48 Vdc output, clamp or hiccup | | | 60 | |
| over current protection | auto recovery | 110 | | | % |
| short circuit protection | hiccup, continuous, auto recovery | | | | |

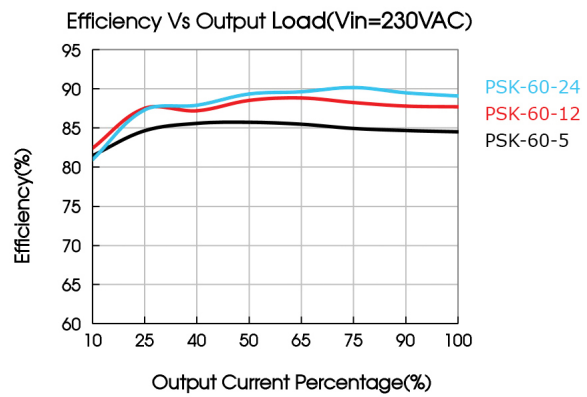
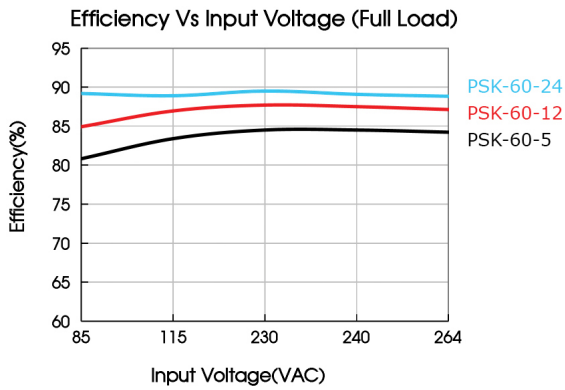
SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|-------------------------------|--|---------|-----|-----|-------|
| isolation voltage | input to output | 4,000 | | | Vac |
| safety approvals | UL/cUL, EN, IEC 62368 | | | | |
| safety class | Class II | | | | |
| EMI/EMC | CISPR 32/EN 55032 Class B | | | | |
| ESD | IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV, perf. Criteria B | | | | |
| radiated immunity | IEC/EN 61000-4-3 10 V/m, perf. Criteria A | | | | |
| EFT/burst | IEC/EN 61000-4-4 ±4KV, perf. Criteria B | | | | |
| surge | IEC/EN 61000-4-5 line to line ±2KV/line to ground ±4KV, perf. Criteria B (see recommended EMC circuit) | | | | |
| | IEC/EN 61000-4-5 ±1KV line to line, perf. Criteria B | | | | |
| 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. Criterial B | | | | |
| MTBF | per MIL-HDBK-217F at 25 °C | 300,000 | | | hours |
| RoHS | yes | | | | |

DERATING CURVES



EFFICIENCY CURVES



ENVIRONMENTAL

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

SOLDERABILITY

| parameter | conditions/description | min | typ | max | units |
|----------------|----------------------------|-----|-----|-----|-------|
| wave soldering | 5~10 seconds (± 5 °C) | | | 260 | °C |
| manual welding | 3~5 seconds (± 10 °C) | | | 360 | °C |

MECHANICAL

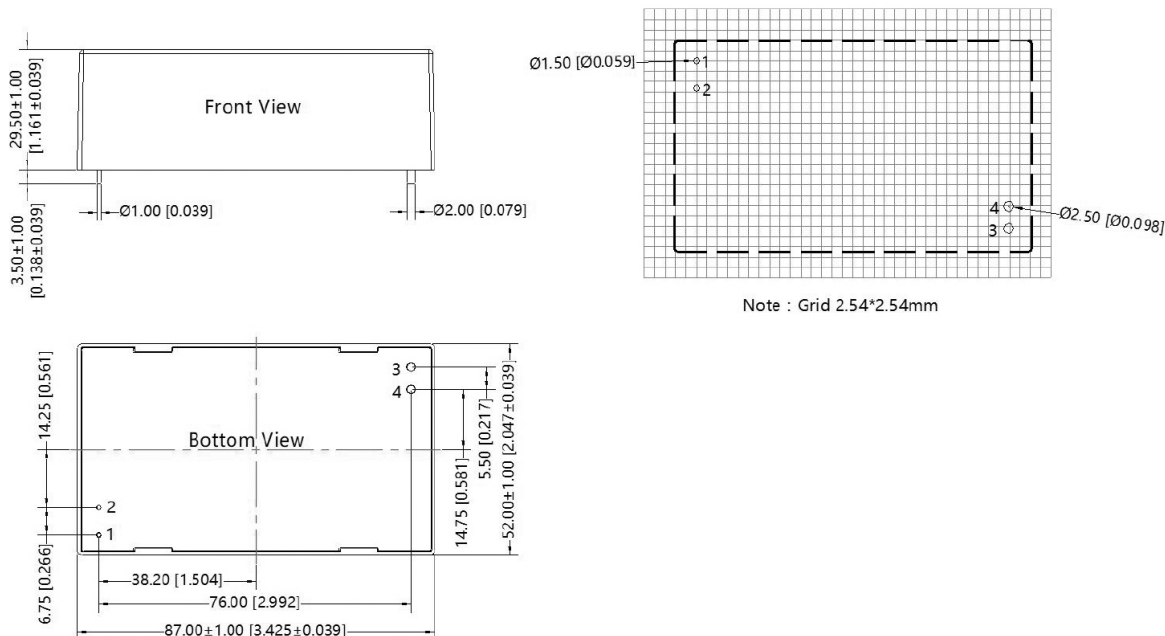
| parameter | conditions/description | min | typ | max | units |
|---------------|---|-----|-----|-----|-------|
| dimensions | 87.00 x 52.00 x 29.50 (board mount) | | | | mm |
| | 135.00 x 70.00 x 37.90 (chassis mount) | | | | mm |
| | 137.00 x 70.00 x 42.40 (DIN-rail) | | | | mm |
| weight | board mount | | 210 | | g |
| | chassis mount | | 290 | | g |
| | DIN-rail | | 360 | | g |
| cooling | free air convection | | | | |
| case material | black plastic, flame-retardant and heat-resistant (UL94V-0) | | | | |

MECHANICAL DRAWING (BOARD MOUNT)

units: mm [inch]

pin diameter tolerance: ± 0.1 [± 0.004]

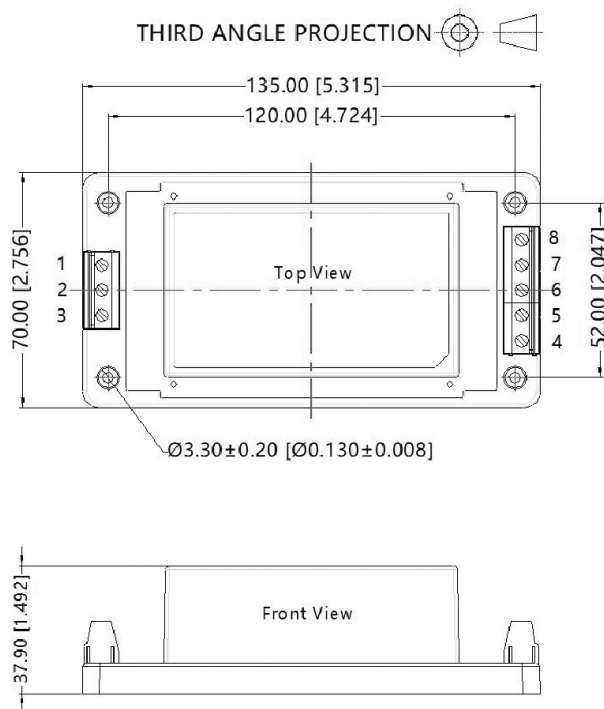
| PIN CONNECTIONS | |
|-----------------|----------|
| PIN | Function |
| 1 | AC(L) |
| 2 | AC(N) |
| 3 | +Vo |
| 4 | -Vo |



MECHANICAL DRAWING (CHASSIS MOUNT)

units: mm [inch]
 tolerance: ± 1.00 [± 0.040]
 wire range: 24 - 12 AWG
 tightening torque: 0.4 N·m

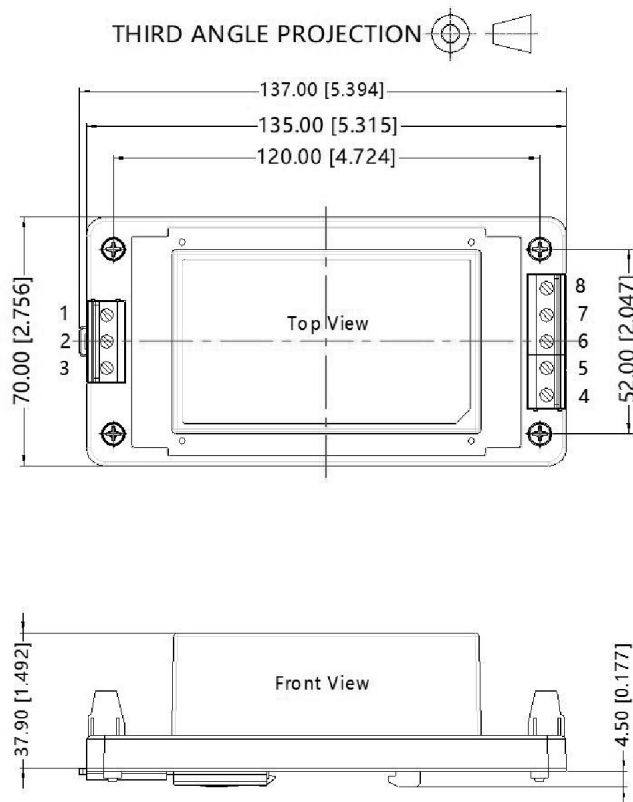
| PIN CONNECTIONS | |
|-----------------|----------|
| PIN | Function |
| 1 | AC(L) |
| 2 | NC |
| 3 | AC(N) |
| 4 | +Vo |
| 5 | -Vo |
| 6 | NC |
| 7 | NC |
| 8 | NC |



MECHANICAL DRAWING (DIN-RAIL MOUNT)

units: mm [inch]
 tolerance: ± 1.00 [± 0.040]
 wire range: 24 - 12 AWG
 tightening torque: 0.4 N·m
 installed on DIN-RAIL TS35

| PIN CONNECTIONS | |
|-----------------|----------|
| PIN | Function |
| 1 | AC(L) |
| 2 | NC |
| 3 | AC(N) |
| 4 | +Vo |
| 5 | -Vo |
| 6 | NC |
| 7 | NC |
| 8 | NC |



APPLICATION CIRCUIT

Figure 1

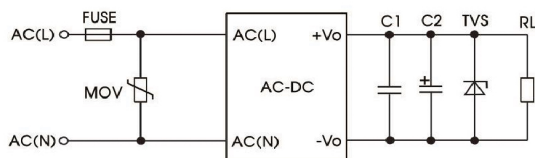


Table 1

| Recommended External Circuit Components | | | | | |
|---|-----------|-------------|-----------------------|---------|----------|
| Part no. | C1 | C2 | FUSE | MOV | TVS |
| PSK-60-5 | 1 μ F | 680 μ F | 3.15A/250V, slow-blow | S10K300 | SMBJ7.0A |
| PSK-60-12 | | 330 μ F | | | SMBJ20A |
| PSK-60-15 | | 330 μ F | | | SMBJ20A |
| PSK-60-24 | | 200 μ F | | | SMBJ30A |
| PSK-60-48 | | 100 μ F | | | SMBJ64A |

EMC RECOMMENDED CIRCUIT

Figure 2

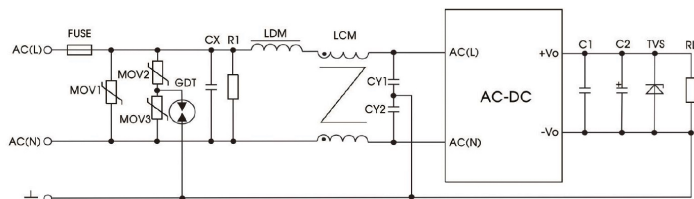


Table 2

| Component | Reccomended value |
|-----------|---------------------------------|
| FUSE | 3.15A/250V, slow-blow, required |
| MOV1 | S20K300 |
| MOV2/MOV3 | S10K300 |
| GDT | EM3600XS |
| CX | 0.22 μ F / 275 Vac |
| CY1, CY2 | 1 nF / 400 Vac |
| R1 | 1 M Ω / 2 W |
| LDM | 4.7 μ H |
| LCM | 2 mH |

REVISION HISTORY

| rev. | description | date |
|------|-----------------|------------|
| 1.0 | initial release | 07/14/2020 |

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



Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cuicom
techsupport@cuicom

CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.