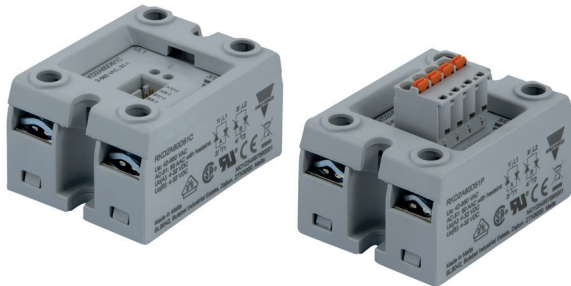


RK



2-pole solid state relays



Description

The RK series consists of 2-pole solid state relays contained in one housing with the possibility to control each pole independently (RKD2.. models) or both poles together (RK2.. models). Ratings for both versions go up to 600 VAC, 75 AAC per pole. The RK..C models have control termination through a 2.54mm pitch connector. Terminated cables to mate with the RK..C are available and have to be ordered separately. The RK..P models have control termination with a 5.08mm pitch plug connector. In this case, the control plug is shipped with the solid state relay.

Benefits

- **Space savings.** The RK series consists of two solid state relays contained in one housing having a product width of 45mm.
- **Fast installation.** The RK solid state relay is ready for mounting to panel chassis or heatsink as the backplate is equipped with a pre-attached thermal interface.
- **Easy wiring.** The RK..P models are equipped with a pluggable spring terminal for easy and fast wiring of control connections.
- **Low equipment downtime.** The output of each pole is protected against over-voltages with an integrated transil.
- **Long lifetime.** Wire bonding technology reduces thermal and mechanical stresses of the output chips allowing a larger number of operational cycles compared to other assembly technologies.
- **User friendly.** LED indication per pole for visual indication of control status.
- **Food & Beverage certification conformance.** The RK is certified for 100,000 cycle endurance test according to UL508.

Applications

Plastic extrusion machines, thermoforming machines, blow moulding machines, coffee machines, electrical ovens, vending machines, soldering ovens, dryers, climatic chambers, air handling units, plastic sealing machines, shrink tunnels, etc.

Main functions

- 2-pole AC solid state relay with either independent control for each pole or common control.
- Zero cross or instant on switching.
- 4-32 VDC control voltage.

References

Order code

 RK 2 D

Enter the code entering the corresponding option instead of

| Code | Option | Description | Notes |
|--------------------------|--------|--|-----------------|
| R | - | | |
| K | - | | |
| <input type="checkbox"/> | D | Dual control (independent control for each pole) Common control for the two poles | |
| 2 | - | | |
| <input type="checkbox"/> | A | Switching mode: zero cross (ZC) | |
| <input type="checkbox"/> | B | Switching mode: instant on (IO) | For RK..60 only |
| <input type="checkbox"/> | 23 | Rated voltage: 230 VAC (24-265 VAC) 50/60 Hz | For RKD2A only |
| <input type="checkbox"/> | 60 | Rated voltage: 600 VAC (42-660 VAC) 50/60 Hz | |
| D | - | | |
| <input type="checkbox"/> | 50 | Rated current / pole (with heatsink): 50 AAC | |
| <input type="checkbox"/> | 51 | Rated current / pole (with heatsink): 50 AAC high I ² t | For RK..A only |
| <input type="checkbox"/> | 75 | Rated current / pole (with heatsink): 75 AAC | For RK..60 only |
| <input type="checkbox"/> | C | Control termination: 2.54 mm pitch connector pins | |
| <input type="checkbox"/> | P | Control termination: 5.08 mm pitch plug connector | |
| <input type="checkbox"/> | X30 | Bulk packaging | Optional |

Selection guide: RKD2

| Rated output voltage, Switching mode | Control voltage | Control termination | Rated operational current (I ² t value) | | |
|--------------------------------------|-----------------|---------------------|--|--------------------------------|--------------------------------|
| | | | 50 AAC (1500 A ² s) | 50 AAC (3000 A ² s) | 75 AAC (9800 A ² s) |
| 230 VAC, ZC | 4-32 VDC | Connector pins | RKD2A23D50C | RKD2A23D51C | - |
| | | Plug | RKD2A23D50P | RKD2A23D51P | - |
| 600 VAC, ZC | 4-32 VDC | Connector pins | RKD2A60D50C | RKD2A60D51C | RKD2A60D75C |
| | | Plug | RKD2A60D50P | RKD2A60D51P | RKD2A60D75P |
| 600 VAC, IO | 4-32 VDC | Connector pins | RKD2B60D50C | - | RKD2B60D75C |
| | | Plug | RKD2B60D50P | - | RKD2B60D75P |

Selection guide: RK2

| Rated output voltage, Switching mode | Control voltage | Control termination | Rated operational current (I ² t value) | | |
|--------------------------------------|-----------------|---------------------|--|--------------------------------|--------------------------------|
| | | | 50 AAC (1500 A ² s) | 50 AAC (3000 A ² s) | 75 AAC (9800 A ² s) |
| 600 VAC, ZC | 4-32 VDC | Connector pins | RK2A60D50C | RK2A60D51C | RK2A60D75C |
| | | Plug | RK2A60D50P | RK2A60D51P | RK2A60D75P |
| 600 VAC, IO | 4-32 VDC | Plug | RK2B60D50P | - | RK2B60D75P |

Selection guide: RKD2... CX30

| Rated output voltage, Switching mode | Control voltage | Control termination | Rated operational current (I ² t value) |
|---|-----------------|---------------------|--|
| | | | 50 AAC (3000 A ² s) |
| 600 VAC, ZC | 4-32 VDC | Connector pins | RKD2A60D50CX30 |

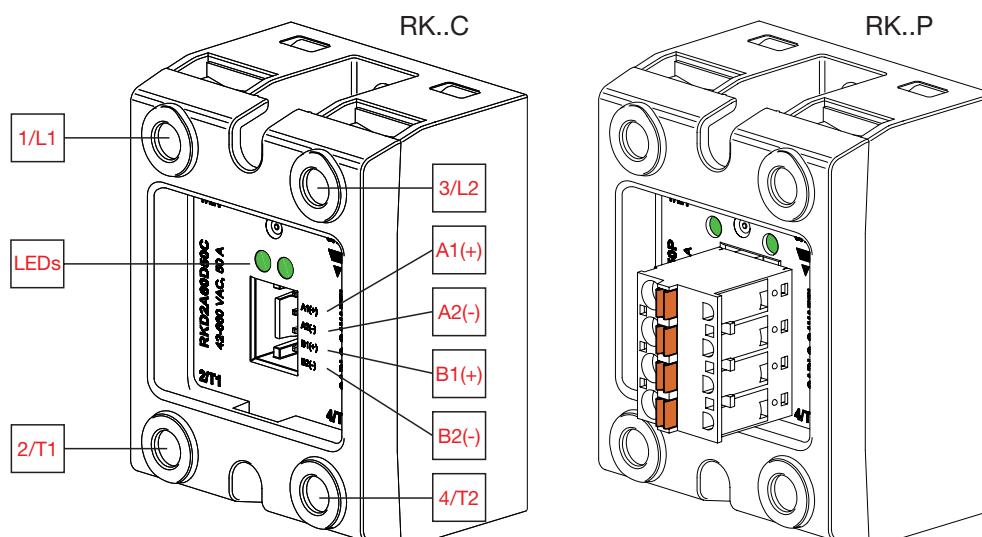
CARLO GAVAZZI compatible components

| Purpose | Component name/code | Notes |
|------------------------------|-----------------------|---|
| Control plugs | RK4MT, RK2MT | Spring plugs for RK..P, packing qty.: 10 pcs. |
| Cables | RCK4-100-1 RCK2-100-1 | Cable accessory for RK..C |
| Heatsinks | RHS | Heatsinks and fans |
| Screws kits for SSR mounting | SRWKITM5X10MM | Packing qty.: 20 pcs. |
| Fork terminals | RM635FK, RM635FKP | Packing qty.: 10 pcs. |
| Touch protection covers | RKIP20 | Packing qty.: 10 pcs. |

Further reading

| Information | Where to find it |
|-------------------------------|---|
| Online heatsink selector tool | https://gavazziautomation.com/nsc/HQ/EN/solid_state_relays |

Structure



| Element | Component | Function | |
|---------|--------------------|--------------------------------------|-------------------------------|
| | | RKD2 | RK2 |
| 1/L1 | Power connection | Mains connection for Pole A | |
| 2/T1 | Power connection | Load connection for Pole A | |
| 3/L2 | Power connection | Mains connection for Pole B | |
| 4/T2 | Power connection | Load connection for Pole B | |
| A1(+) | Control connection | Control signal for Pole A | Control signal for Pole A & B |
| A2(-) | Control connection | Ground for Pole A | Ground for Pole A & B |
| B1(+) | Control connection | Control signal for Pole B | - |
| B2(-) | Control connection | Ground for Pole B | - |
| LEDs | LEDs indicators | LED ON when control input is applied | |

Features

▶ General

| | |
|-----------------------------|---|
| Material | PA66, RAL7035 |
| Weight | RK..C: approx. 101 g RKD2..P: approx. 106 g RK2..P: approx. 102 g |
| Touch protection | IP 20 |
| Overvoltage category | III, 6 kV (1.2/50µs) rated impulse withstand voltage |
| Isolation | Input to output: 4000 Vrms Input and output to case: 4000 Vrms |
| LED indication | Continuously ON Green LED when control input is applied |

Note: in the case of the RKD2 models, the two LED indications represent the control status of each independent control. In the case of the RK2 models, the two LEDs represent the status of the common control input and hence both LEDs are ON when the control input is applied to the RK2 and both LEDs are OFF when the control input is removed.

Dimensions

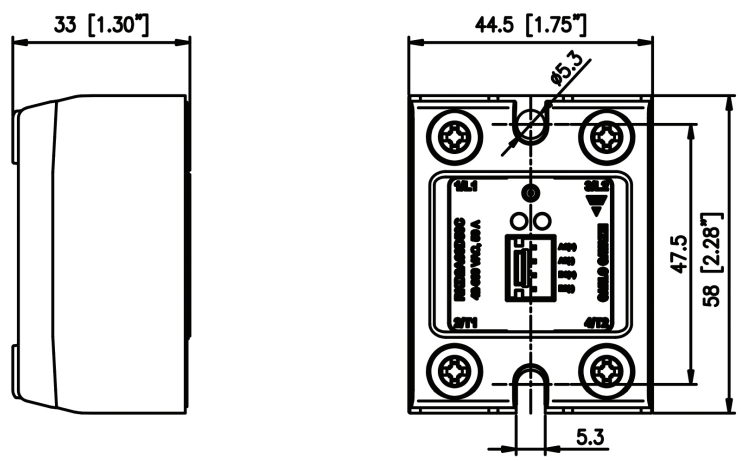


Fig. 1 RKD2..C

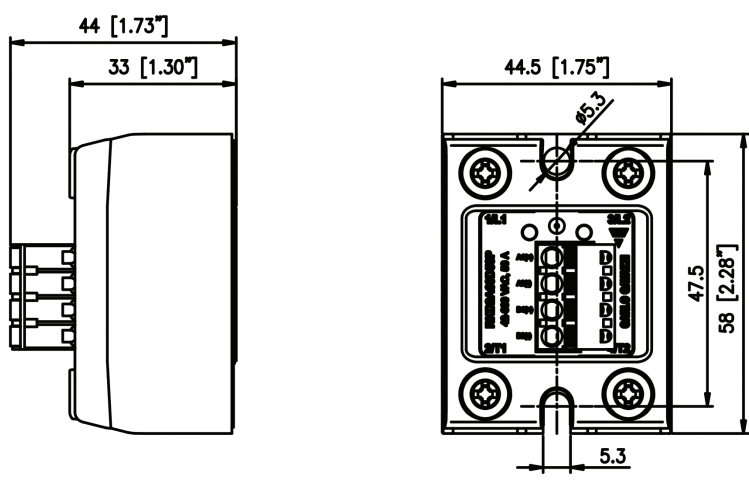


Fig. 2 RKD2..P

Performance

Outputs

| | RK..23..50 | RK..60..50 | RK..23..51 | RK..60..51 | RK..23..75 | RK..60..75 |
|--|-----------------------|-----------------|-----------------------|-----------------|-----------------------|-----------------|
| Operational voltage range, Ue | 24 - 265 VAC | 42 - 660 VAC | 24 - 265 VAC | 42 - 660 VAC | 24 - 265 VAC | 42 - 660 VAC |
| Max. operational current per pole ¹ : AC-51 rating | 50 AAC | | | | 75 AAC | |
| Max. operational current per pole ¹ : AC-53a rating | 12 AAC | | | | | |
| Operational frequency range | 45 - 65 Hz | | | | | |
| Blocking voltage | 600 Vp | 1200 Vp | 600 Vp | 1200 Vp | 600 Vp | 1200 Vp |
| Output protection | Integrated transil | | | | | |
| Latching voltage (across L-T) | ≤ 20V | | | | | |
| Leakage current @ rated voltage | ≤ 3 mAAC | | | | | |
| Minimum operational current | 250 mAAC | | 400 mAAC | | | |
| Repetitive overload current (t=1s) | < 125 AAC | | < 130 AAC | | < 150 AAC | |
| Non-repetitive surge current (t=10ms) | 550 Ap | | 775 Ap | | 1400 Ap | |
| I ² t for fusing (t=10ms), Minimum | 1500 A ² s | | 3000 A ² s | | 9800 A ² s | |
| Power factor ² | > 0.5 @ rated voltage | | | | | |
| Critical dV/dt (@ Tj init = 40°C) | 1000 V/μs | | | | | |
| Endurance testing acc. to UL508 | 100,000 cycles | | | | | |

Notes:

1. Max. rated current with suitable heatsink. Refer to heatsink selection tables.
2. Transient voltages exceeding the SSR rated blocking voltage will cause the SSR output to switch ON even if control signal is OFF. This occurrence will last as long as the transient voltage level is higher than the specified blocking voltage of the SSR.

Inputs

| | RKD2 | RK2 |
|-------------------------------------|-----------------------------------|---------|
| Control voltage range: A1-A2, B1-B2 | 4 - 32 VDC | |
| Pick-up voltage | 3.8 VDC | |
| Drop-out voltage | 1.0 VDC | |
| Maximum reverse voltage | 32 VDC | |
| Max. response time pick-up | 1/2 cycle (RK A) 0.1 ms (RK B) | |
| Response time drop-out | 1/2 cycle | |
| Maximum input current | < 12 mA per pole | < 24 mA |

Note: control range below -25°C is 5.5 - 32 VDC

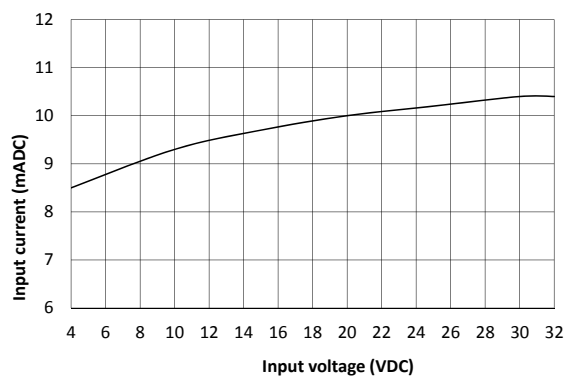


Fig. 3 RKD2 input current vs. input voltage

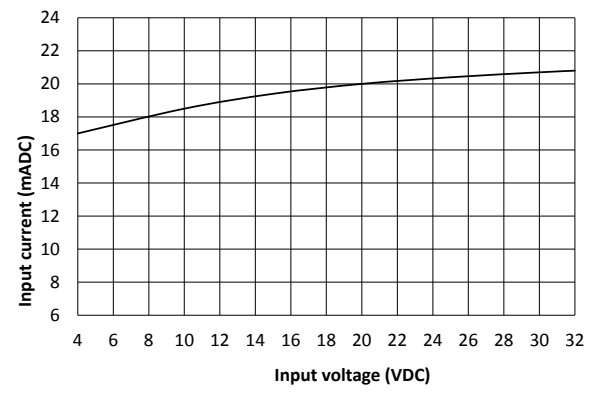
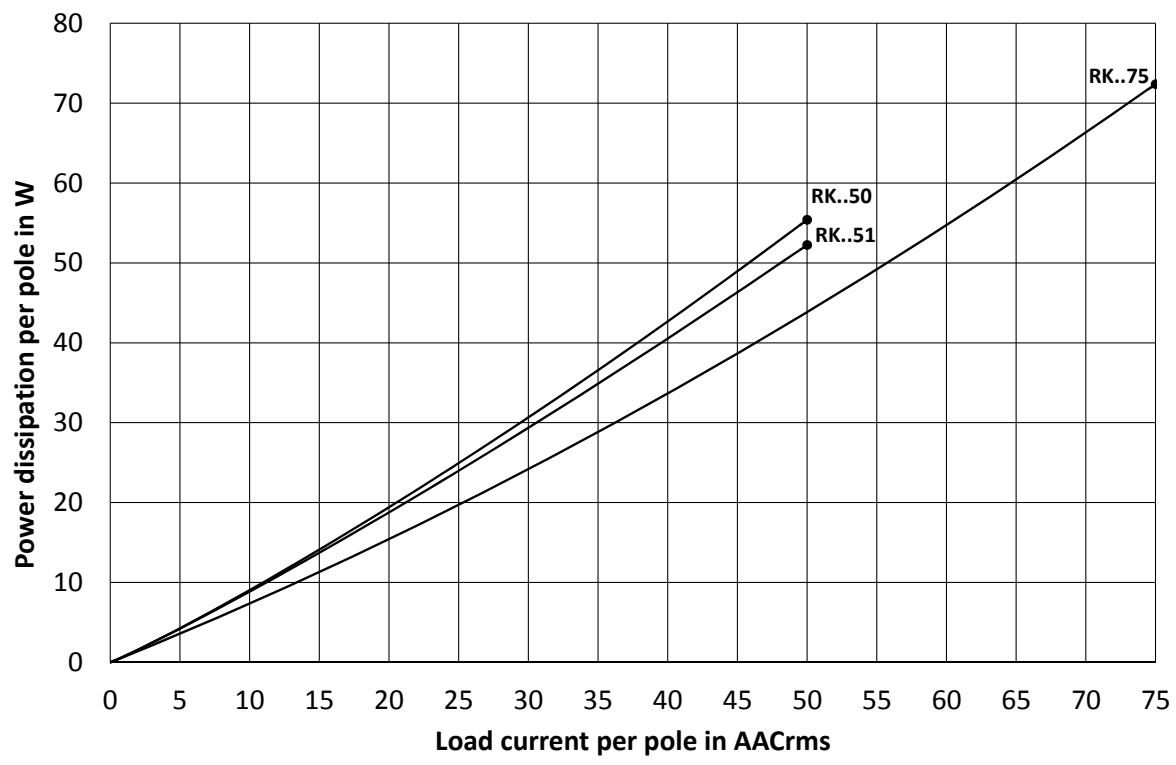


Fig. 4 RK2 input current vs. input voltage

Output power dissipation



Heatsink selection

Thermal resistance [°C/W] of RK..50..

| Load current per pole AC-51, [A] | Ambient temp. [°C] | | | | | | |
|----------------------------------|--------------------|------|------|------|------|------|------|
| | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 50 | 0.72 | 0.61 | 0.50 | 0.39 | 0.28 | 0.18 | - |
| 45 | 0.87 | 0.74 | 0.61 | 0.48 | 0.36 | 0.25 | 0.13 |
| 40 | 1.0 | 0.91 | 0.75 | 0.61 | 0.47 | 0.33 | 0.19 |
| 35 | 1.3 | 1.1 | 0.95 | 0.77 | 0.60 | 0.44 | 0.27 |
| 30 | 1.7 | 1.4 | 1.2 | 1.0 | 0.7 | 0.58 | 0.39 |
| 25 | 2.2 | 1.9 | 1.6 | 1.3 | 1.0 | 0.80 | 0.55 |
| 20 | 3.2 | 2.7 | 2.3 | 1.9 | 1.5 | 1.1 | 0.81 |
| 15 | 5.3 | 4.4 | 3.6 | 2.9 | 2.3 | 1.7 | 1.2 |
| 10 | 12.4 | 9.6 | 7.5 | 5.8 | 4.4 | 3.3 | 2.3 |
| 5 | nh | nh | nh | nh | 17.8 | 11.0 | 6.9 |

Thermal resistance [°C/W] of RK..51..

| Load current per pole AC-51, [A] | Ambient temp. [°C] | | | | | | |
|----------------------------------|--------------------|------|------|------|------|------|------|
| | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 50 | 0.85 | 0.73 | 0.61 | 0.49 | 0.38 | 0.27 | 0.16 |
| 45 | 1.0 | 0.87 | 0.73 | 0.59 | 0.46 | 0.34 | 0.21 |
| 40 | 1.2 | 1.0 | 0.88 | 0.72 | 0.57 | 0.42 | 0.28 |
| 35 | 1.5 | 1.2 | 1.0 | 0.90 | 0.71 | 0.53 | 0.36 |
| 30 | 1.9 | 1.6 | 1.3 | 1.1 | 0.91 | 0.69 | 0.48 |
| 25 | 2.5 | 2.1 | 1.8 | 1.5 | 1.2 | 0.92 | 0.65 |
| 20 | 3.5 | 3.0 | 2.5 | 2.0 | 1.6 | 1.2 | 0.92 |
| 15 | 5.7 | 4.8 | 3.9 | 3.2 | 2.5 | 1.9 | 1.4 |
| 10 | 13.4 | 10.3 | 8.0 | 6.1 | 4.7 | 3.5 | 2.4 |
| 5 | nh | nh | nh | nh | 18.7 | 11.4 | 7.1 |

Thermal resistance [°C/W] of RK..75..

| Load current per pole AC-51, [A] | Ambient temp. [°C] | | | | | | |
|----------------------------------|--------------------|------|------|------|------|------|------|
| | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 75 | 0.53 | 0.45 | 0.38 | 0.30 | 0.23 | 0.15 | - |
| 67.5 | 0.64 | 0.55 | 0.46 | 0.37 | 0.28 | 0.20 | 0.12 |
| 60 | 0.78 | 0.67 | 0.56 | 0.46 | 0.36 | 0.26 | 0.16 |
| 52.5 | 0.96 | 0.83 | 0.70 | 0.58 | 0.45 | 0.34 | 0.22 |
| 45 | 1.2 | 1.0 | 0.89 | 0.74 | 0.59 | 0.44 | 0.30 |
| 37.5 | 1.5 | 1.3 | 1.1 | 0.97 | 0.78 | 0.60 | 0.42 |
| 30 | 2.2 | 1.9 | 1.6 | 1.3 | 1.0 | 0.83 | 0.60 |
| 22.5 | 3.4 | 2.9 | 2.4 | 2.0 | 1.6 | 1.2 | 0.91 |
| 15 | 6.5 | 5.4 | 4.4 | 3.5 | 2.8 | 2.1 | 1.5 |
| 7.5 | nh | nh | 16.0 | 11.3 | 8.1 | 5.7 | 3.9 |

Notes:

- The indicated thermal resistance values are applicable only for the RK with the pre-attached thermal interface.
- 'nh' means no heatsink necessary. The SSR should still be tightened to a surface to ensure optimal thermal dissipation.

Applications

Thermal stress will reduce the lifetime of the solid state relay. It is hence necessary to select an appropriate heatsink to ensure that the maximum junction temperature of the solid state relay is not exceeded. Surrounding temperature, load current and duty cycle have to be taken into account. The Heatsink Selection tables as well as the Online Heatsink Selector tool on <http://productselection.net/heatsink/heatsinkselector.php?LANG=UK> provide indications of the heatsink size necessary to avoid thermal overload.

Further checks can be done in the application by verification of the heatsink temperature. The maximum allowed heatsink temperature can be calculated as follows:

$$T_h = T_j - (2 * P_d * R_{thjs\ 2-poles}) \text{ or } T_h = T_j - (P_d * R_{thjs\ 1-pole})$$

Where,

T_h = max. heatsink temperature

T_j = max. junction temperature

P_d = output power dissipation per pole

R_{thjs} = thermal resistance junction to heatsink (including thermal interface), $R_{thjs\ 1-pole} = 2 * R_{thjs\ 2-poles}$

Example 1: load current through the two poles is identical.

SSR utilised is the RKD2A60D50P with a load current of 40Arms per pole. The maximum heatsink temperature shall not exceed:

$$T_h = T_j - (2 * P_d * R_{thjs\ 2-poles})$$

$$T_h = 120^\circ\text{C} - (2 * 43\text{W} * 0.25^\circ\text{C/W})$$

$$T_h = 98.5^\circ\text{C}$$

Example 2: load current through the two poles is different.

SSR utilised is the RKD2A60D50P with a load current of 40Arms through pole 1 and 10Arms through pole 2. In this case, since the load current through the two poles differ, each pole has to be calculated separately ($R_{thjs\ 2-poles}$ cannot be utilised). The max. heatsink temperature is the lower heatsink temperature obtained when the calculation is done for each pole independently.

$$T_h = T_j - (P_d * R_{thjs\ 1-pole})$$

$$T_{hpole1} = 120^\circ\text{C} - (43\text{W} * 0.5^\circ\text{C/W}) = 98.5^\circ\text{C}$$

$$T_h = T_j - (P_d * R_{thjs\ 1-pole})$$

$$T_{hpole2} = 120^\circ\text{C} - (9\text{W} * 0.5^\circ\text{C/W}) = 115.5^\circ\text{C}$$

Hence, in this case the max. heatsink temperature shall not exceed 98.5°C.

Thermal data

| | RK..50 | RK..51 | RK..75 |
|--|--|---------------------------------------|---|
| Operating temperature | -40°C to 80°C (-40°F to 176°F) | | |
| Storage temperature | -40°C to 100°C (-40°F to 212°F) | | |
| Max. junction temperature | < 120°C (248°F) | | < 115°C (239°F) |
| Junction to heatsink thermal resistance, R_{thjs} (including pre-attached thermal interface) | 2-poles: 0.25 °C/W 1-pole: 0.5 °C/W | 2-poles: 0.2 °C/W 1-pole: 0.4 °C/W | 2-poles: 0.16 °C/W 1-pole: 0.32 °C/W |

Note: the indicated thermal resistance R_{thjs} (2-poles) is applicable when both poles are utilised. If only one of the poles is used, the applicable R_{thjs} is the R_{thjs} indicated for 1-pole.

Compatibility and conformity

| | |
|---------------------|---|
| Standard compliance | EN/IEC 60947-4-3 |
| Approvals |  |

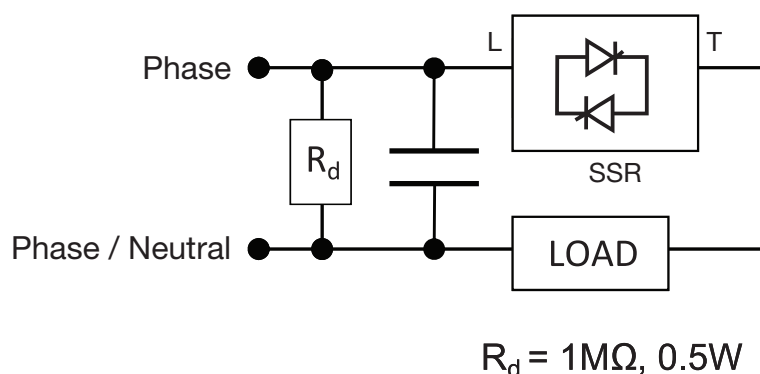
| Electromagnetic compatibility (EMC) - immunity | |
|--|--|
| Electrostatic discharge (ESD) | EN/IEC 61000-4-2 8 kV air discharge, 4 kV contact (PC1) |
| Radiated radio frequency | EN/IEC 61000-4-3 10 V/m, from 80 MHz to 1 GHz (PC1) 10 V/m, from 1.4 to 2 GHz (PC1) 3 V/m, from 2 to 2.7 GHz (PC1) |
| Electrical fast transient (burst) | EN/IEC 61000-4-4 Output: 2 kV, 5 kHz (PC2) Input: 1 kV, 5 kHz (PC2) |
| Conducted radio frequency | EN/IEC 61000-4-6 10V/m, from 0.15 to 80 MHz (PC1) |
| Electrical surge | EN/IEC 61000-4-5 Output, line to line: 1 kV (PC2) Output, line to earth: 2 kV (PC2) Input, line to line: 500 V (PC2) Input, line to earth: 500 V (PC2) |
| Voltage dips | EN/IEC 61000-4-11 0% for 0.5, 1 cycle (PC2) 40% for 10 cycles (PC2) 70% for 25 cycles (PC2) 80% for 250 cycles (PC2) |
| Voltage Interruptions | EN/IEC 61000-4-11 0% for 5000ms (PC2) |

| Electromagnetic compatibility (EMC) - emissions | |
|--|--|
| Radio interference field emission (radiated) | EN/IEC 55011 Class A: from 30 to 1000 MHz |
| Radio interference voltage emissions (conducted) | EN/IEC 55011 Class A: from 0.15 to 30 MHz (External filter may be required - refer to Filtering section) |

Note:

- Performance Criteria 1 (PC1): no degradation of performance or loss of function is allowed when the product is operated as intended.
- Performance Criteria 2 (PC2): during the test, degradation of performance or partial loss of function is allowed. However when the test is complete the product should return operating as intended by itself.
- Performance Criteria 3 (PC3): temporary loss of function is allowed, provided the function can be restored by manual operation of the controls.
- Control input lines must be installed together to maintain products' susceptibility to Radio Frequency interference.
- Use of AC solid state relays may, according to the application and the load current, cause conducted radio interferences. Use of mains filters may be necessary for cases where the user must meet E.M.C requirements. The capacitor values given inside the filtering specification tables should be taken only as indications, the filter attenuation will depend on the final application.

Filter connection diagram (per pole)




Filtering

| Part number | Suggested filter for EN 55011 Class A compliance (per pole) | Maximum heater current [AAC] |
|--------------|---|------------------------------|
| RK(D)2A23D50 | no filter needed | 9 |
| | 150nF / 275V / X1 | 25 |
| | 330nF / 275V / X1 | 50 |
| RK(D)2A23D51 | no filter needed | 10 |
| | 150nF / 275V / X1 | 25 |
| | 330nF / 275V / X1 | 50 |
| RK(D)2A60D50 | no filter needed | 7.5 |
| | 150nF / 760V / X1 | 25 |
| | 330nF / 760V / X1 | 40 |
| RK(D)2A60D51 | no filter needed | 5 |
| | 220nF / 760V / X1 | 30 |
| | 220nF / 760V / X1 | 40 |
| RK(D)2A60D75 | no filter needed | 5 |
| | 330nF / 760V / X1 | 25 |
| | 470nF / 760V / X1 | 40 |
| RK(D)2B60D50 | 220nF / 760V / X1 | 25 |
| | 330nF / 760V / X1 | 40 |
| RK(D)2B60D75 | 330nF / 760V / X1 | 25 |
| | 470nF / 760V / X1 | 40 |

For class B compliance contact your Carlo Gavazzi representative.

Environmental specifications

| | |
|---|---|
| Relative humidity | 95% non-condensing @ 40°C |
| Pollution degree | 2 (non-conductive pollution with possibilities of condensation) |
| Installation altitude | 0-1000m. Above 1000m derate linearly by 1% of FLC per 100m up to a maximum of 2000m |
| Vibration resistance | 5g / axis (2-100Hz, IEC60068-2-6, EN 50155, EN 61373) |
| Impact resistance | 15/11 g/ms (EN 50155, EN 61373) |
| EU RoHS compliant | Yes |
| China RoHS |  |
| UL flammability rating (housing) | UL 94 V0 |
| Glow wire ignition temperature, Glow wire flammability index | Conforms to EN 60335-1 requirements |

The declaration in this section is prepared in compliance with People's Republic of China Electronic Industry Standard SJ/T11364-2014: Marking for the Restricted Use of Hazardous Substances in Electronic and Electrical Products.

| Part Name | Toxic or Harardous Substances and Elements | | | | | |
|--|--|--------------|--------------|------------------------------|--------------------------------|---------------------------------------|
| | Lead (Pb) | Mercury (Hg) | Cadmium (Cd) | Hexavalent Chromium (Cr(VI)) | Polybrominated biphenyls (PBB) | Polybrominated diphenyl ethers (PBDE) |
| Power Unit Assembly | x | 0 | 0 | 0 | 0 | 0 |
| <p>O: Indicates that said hazardous substance contained in homogeneous materials for this part are below the limit requirement of GB/T 26572.</p> <p>X: Indicates that said hazardous substance contained in one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.</p> | | | | | | |

这份申明根据中华人民共和国电子工业标准 SJ/T11364-2014：标注在电子电气产品中限定使用的有害物质

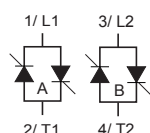
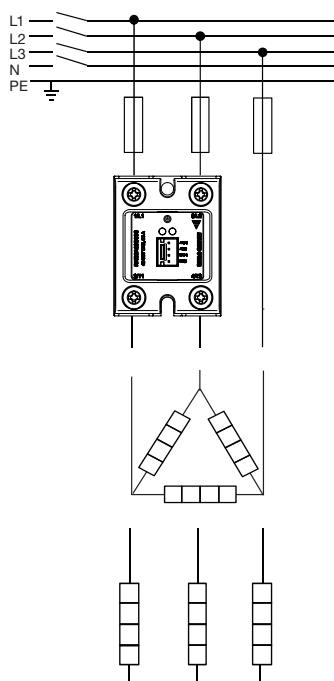
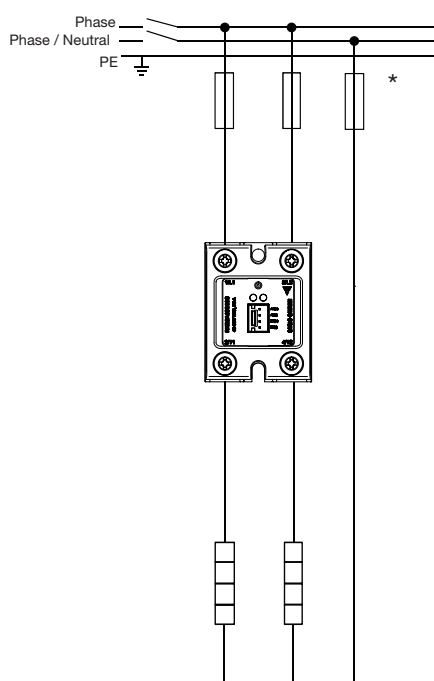
| 零件名称 | 有毒或有害物质与元素 | | | | | |
|--|------------|--------|--------|--------------|-------------|--------------|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr(VI)) | 多溴化联苯 (PBB) | 多溴联苯醚 (PBDE) |
| 功率单元 | x | 0 | 0 | 0 | 0 | 0 |
| <p>O:此零件所有材料中含有的该有害物低于GB/T 26572的限定。</p> <p>X: 此零件某种材料中含有的该有害物高于GB/T 26572的限定。</p> | | | | | | |

Short circuit protection, co-ordination type 2 (per pole)

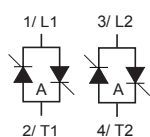
| Part No. | Prospective short circuit current [kArms] | (Mersen) Ferraz Shawmut | | Siba | | Voltage [VAC] |
|----------|---|-------------------------|---|-------------------|---------------------------------------|---------------|
| | | Max fuse size [A] | Part number | Max fuse size [A] | Part number | |
| RK..50 | 10 | 50 | gR (GRC) 22x58 FR22UD69V50T Holder: CMS22xl | 50 | 50 142 06.50 Holder: 51 060 05.xS | 600 |
| RK..51 | 10 | 63 | gR (GRC) 22x58 FR22UD69V63T Holder: CMS22xl | 63 | 50 142 06.63 Holder: 51 060 05.xS | 600 |
| RK..75 | 10 | 80 | gR (GRC) 22x58 FR22GR69V80T Holder: CMS22xl | 100 | 50 142 06.100 Holder: 51 060 05.xS | 600 |

Where 'x' in Holder reference signifies the no. of poles

Connection Diagrams



Control input A (A1-A2) activates pole L1-T1 and control input B (B1-B2) activates pole L2-T2 for the RKD2..



Control input A (A1-A2) activates both pole L1-T1 and pole L2-T2 for the RK2..

*depends on system requirements

Functional diagram

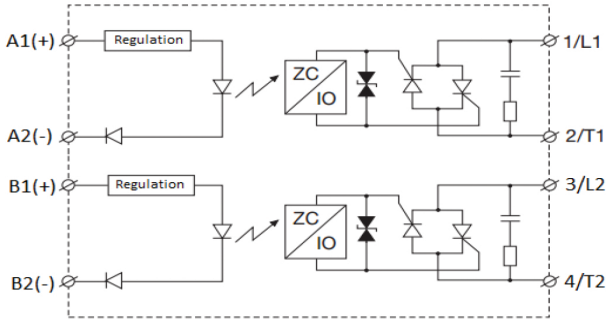


Fig. 5 RKD2

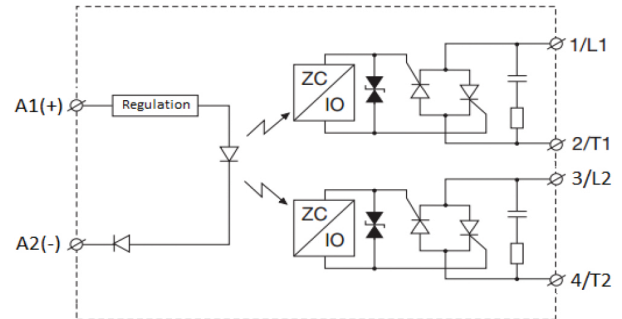


Fig. 6 RK2

Installation

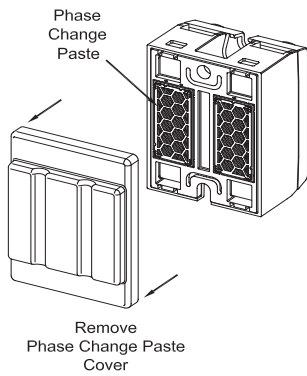


Fig. 7 Remove cover before mounting on the panel chassis or heatsink.

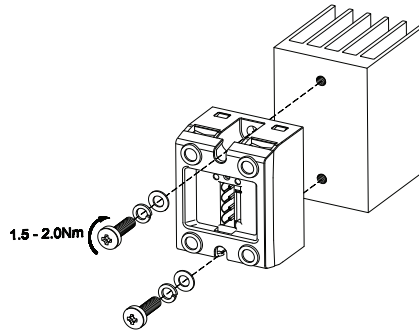


Fig. 8 Tighten screws alternately to max. 0.5 Nm and then continue to max. 2.0 Nm.

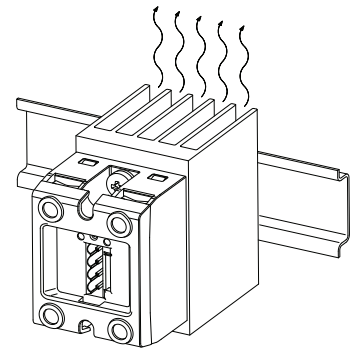
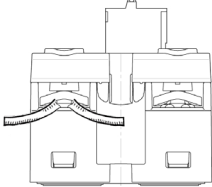
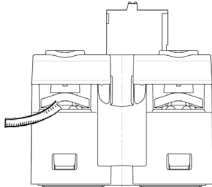
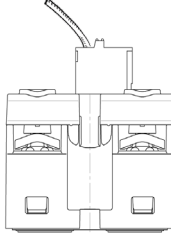


Fig. 9 Mount heatsink with fins in the vertical orientation to guarantee the best possible airflow through the heatsink.

Connection specifications

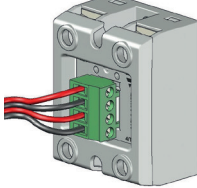
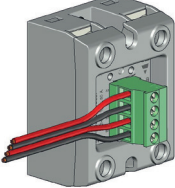
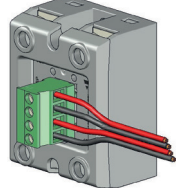
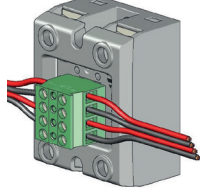
| | 1/L1, 2/T1, 3/L2, 4/T2 (RK..C, RK..P) | | A1, A2, B1, B2 (RK..P) |
|---|--|--|---|
| |  |  |  |
| Mounting screws (SSR to heatsink) | M5, not provided with SSR (refer to SRWKITM5X10MM in the References section) | | |
| Mounting torque (SSR to heatsink) | 1.5 - 2.0 Nm (13.3 - 17.7 lb-in) | | |
| Conductors | Use 75°C copper (Cu) conductors | | Use 60/75°C copper (Cu) conductors |
| Stripping length | 12 mm | | 8-9 mm |
| Connection type | M4 screw with captivated washer | | Spring |
| No. of positions | - | | 4 (RKD2..) 2 (RK2..) |
| Wire entry | - | | Top |
| Rigid (solid & stranded) UR/CSA rated data | 2 x 2.5.. 6.0 mm ² 2 x 14.. 10 AWG | 1 x 2.5.. 6.0 mm ² 1 x 14.. 10 AWG | 0.5.. 2.5 mm ² 26.. 12 AWG |
| Flexible with or without end sleeve | 2 x 1.0.. 2.5 mm ² 2 x 2.5.. 6.0 mm ² 2 x 18.. 14 AWG 2 x 14.. 10 AWG | 1 x 1.0.. 6.0 mm ² 1 x 14.. 10 AWG | 0.5.. 2.5 mm ² 26.. 12 AWG |
| Flexible with end sleeve using TWIN ferrules | - | | 0.5.. 1.0 mm ² |
| Torque specifications | PoziDrive bit 2 (PZ2) UL: 2.0 Nm (17.7 lb-in) IEC: 1.5 - 2.0 Nm (13.3 - 17.7 lb-in) | | - |
| Aperture for termination lug | 12.5 mm, lug thickness shall not exceed 4 mm | | - |

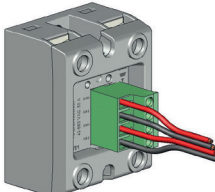
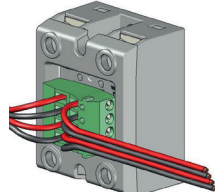
Control termination

| RK..C | RKD2 | RK2 |
|------------------------|--|--|
| Connection type | 4 pins, pitch 2.54mm square pin 0.64' with integrated lockable connector | 2 pins, pitch 2.54mm square pin 0.64' with integrated lockable connector |
| Mating options | 3-640441-2 with connector strain relief cover 643075-2, from TE Connectivity 3-640441-4 with connector strain relief cover 643075-4, from TE Connectivity | |
| Accessories | RCK4-100-1, RCK2-100-1 terminated cable | |

| RK..P | RKD2 | RK2 |
|------------------------|--|--|
| Connection type | 4-way, 4-positions, pitch 5.08mm for plug-gable terminal | 4-way, 2-positions, pitch 5.08mm for plug-gable terminal |
| Mating options | Plug provided with SSR; Other options noted in section Screw plugs, Spring plugs | |
| Accessories | Plugs also available as Accessories: RK4MT for RKD2.., RK2MT for RK2.. | |

Screw plugs

| Cable entry | Top | Left | Right | Twin, sides |
|---|---|---|--|---|
| |  |  |  |  |
| Manufacturer | Phoenix Contact | | | |
| Model | 4 positions: MSTBT 2,5/ 4-ST-5,08 | 4 positions: MVSTBW 2,5/ 4-ST-5,08 | 4 positions: MVSTBR 2,5/ 4-ST-5,08 | 4 positions: TVMSTB 2,5/ 4-ST-5,08 |
| | 2 positions: MSTBT 2,5/ 2-ST-5,08 | 2 positions: MVSTBW 2,5/ 2-ST-5,08 | 2 positions: MVSTBR 2,5/ 2-ST-5,08 | 2 positions: TVMSTB 2,5/ 2-ST-5,08 |
| Reference | 4 positions: 1780002 | 4 positions: 1792773 | 4 positions: 1792265 | 4 positions: 1719024 |
| | 2 positions: 1779987 | 2 positions: 1792757 | 2 positions: 1792249 | 2 positions: 1719008 |
| Wire range | 0.25 - 2.5 mm ² | | | |
| Screw | M3 | | | |
| Stripping length | 7 mm | | | |
| Tightening torque | 0.5 - 0.6 Nm | | | |
| Product depth with mounted connector | 37.2 mm | 45.0 mm | | 44.7 mm |

| Cable entry | Top | Twin, top |
|---|---|---|
| |  |  |
| Manufacturer | Phoenix Contact | |
| Model | 4 positions: FRONT-MSTB 2,5/ 4-ST-5,08 | 4 positions: TMSTBP 2,5/ 4-ST-5,08 |
| | 2 positions: FRONT-MSTB 2,5/ 2-ST-5,08 | 2 positions: TMSTBP 2,5/ 2-ST-5,08 |
| Reference | 4 positions: 1777303 | 4 positions: 1853036 |
| | 2 positions: 17773280 | 2 positions: 1853010 |
| Wire range | 0.25 - 2.5 mm ² | |
| Screw | M2.5 | M3 |
| Stripping length | 10 mm | 7 mm |
| Tightening torque | 0.5 - 0.6 Nm | |
| Product depth with mounted connector | 46.5 mm | 40.5 mm |