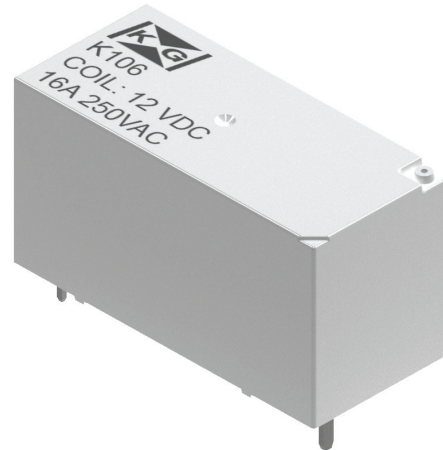


SUBMINIATURE INTERMEDIATE POWER RELAY

- High switching capacity
- High Inrush current capability - 500A *
- Passed TV-8 certification
- 4kV dielectric strength between coil and contacts
- Outline dimensions: (29.0 x 12.7 x 15.7)mm
- RoHS compliant materials and process



Contact Data

| | |
|------------------------|--|
| Contact form | 1A, 1B, 1C |
| Contact resistance † | 20mΩ (at 1A / 24Vdc) |
| Contact material | AgSnO ₂ or W+AgSnO ₂ |
| Contact rating | See endnote ‡ |
| Max. switching voltage | 277Vac |
| Max. switching current | 20A |
| Max. switching power | 4,000VA |
| Set time | ≤ 10 ms |
| Reset time | ≤ 10 ms |
| Electrical endurance | See endnote ‡ |
| Mechanical endurance | 1,000,000 cycles |

Characteristics

| | |
|-----------------------|----------------------------|
| Insulation resistance | 1,000MΩ (at 500 Vdc) |
| Dielectric strength: | |
| Coil to contact | 4kVac for 1 min. |
| Across open contacts | 1kVac for 1min. |
| Creepage distance | 8 mm |
| Ambient temperature | -40°C to +85°C |
| Ambient humidity | 5% - 85% RH |
| Vibration | 1.5 mm (DA) 10 Hz to 55 Hz |
| Shock resistance: | |
| Functional § | 98 m/s ² |
| Destructive | 980 m/s ² |
| Coil termination | PCB |
| Unit weight | ±13g |

* Contact material: W+AgSnO₂: 500A for 2ms; AgSnO₂: 320A for 2ms

† Typical value for Initial Contact Resistance: Using a sample quantity of at least 20 units, take the average value from 5 continuous measurements from each sample

‡ 1A, 1B: 16A / 250Vac; 100,000 cycles (Resistive, at 85°C; Duty Cycle: 1s on, 9s off)

1A, 1B: 20A / 250Vac; 20,000 cycles (Resistive, at 70°C; Duty Cycle: 1s on, 9s off)

1A, 1B: 1.5HP / 250Vac; 6,000 cycles (Motor, at 40°C; Duty Cycle: 0.5s on, 0.5s off)

1A, 1B: 8A / 220Vac, CosØ = 0.4; 100,000 cycles, (Inductive, at 85°C; Duty Cycle: 1s on, 9s off)

1C: 16A / 250Vac; 50,000 cycles (Resistive, at 85°C; Duty Cycle: 1s on, 9s off)

§ Unit may change state but is still functional

Coil Data

| | Single Coil (Latching) | Dual Coil (Latching) |
|------------------|------------------------|----------------------|
| Coil Consumption | 400mW | 600mW |
| Pulse Duration | 50ms | 50ms |

Coil Resistance

($\Omega \pm 10\%$) at 23°C

| Nominal Coil Voltage | Min Set/Reset Voltage | Single Coil (Latching) | Dual Coil (Latching) |
|----------------------|-----------------------|------------------------|----------------------|
| 3Vdc | 2.4Vdc | 22.5 Ω | 2 x 15 Ω |
| 5Vdc | 4.0Vdc | 62.5 Ω | 2 x 42 Ω |
| 6Vdc | 4.8Vdc | 90 Ω | 2 x 60 Ω |
| 9Vdc | 7.2Vdc | 202.5 Ω | 2 x 135 Ω |
| 12Vdc | 9.6Vdc | 360 Ω | 2 x 240 Ω |
| 24Vdc | 19.2Vdc | 1440 Ω | 2 x 886 Ω |

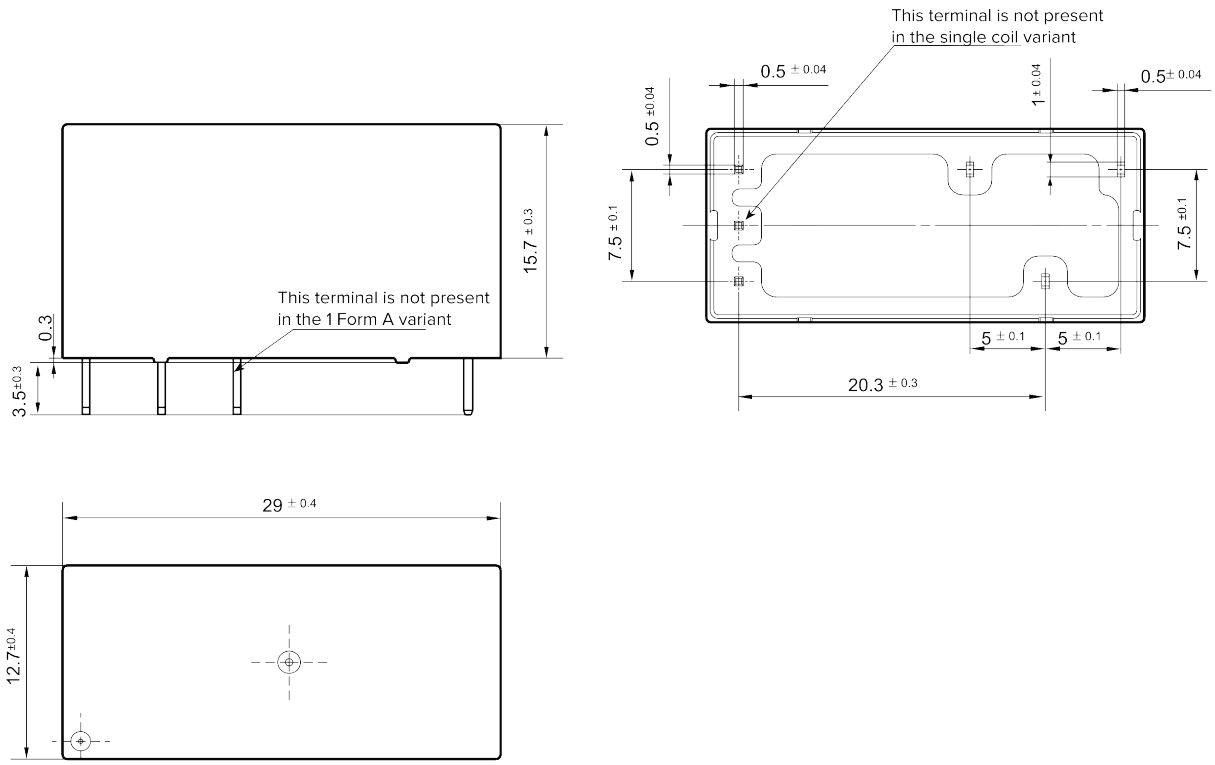
Ordering Information

| K106 - ■ ■ ■ ■ ■ - ■ ■ - ■ | |
|----------------------------|---|
| Relay Series: | |
| Version: | 1: 5mm pin spacing 2: 3.5mm pin spacing 3: 2.5 mm pin spacing |
| Coil Type: | S: Single Coil D: Dual Coil |
| Coil Voltage **: | 3, 5, 6, 9, 12, 24Vdc |
| Polarity: | P: Positive N: Negative |
| Contact Form: | 1A: Form 1A – Normally open (NO) 1B: Form 1B – Normally closed (NC) 1C: Form 1C – Normally open (NO) & Normally closed (NC) |
| Contact Material: | T: AgSnO ₂ D: W + AgSnO ₂ †† |
| Construction: | Y: Sealed IP67 D: Flux proofed |

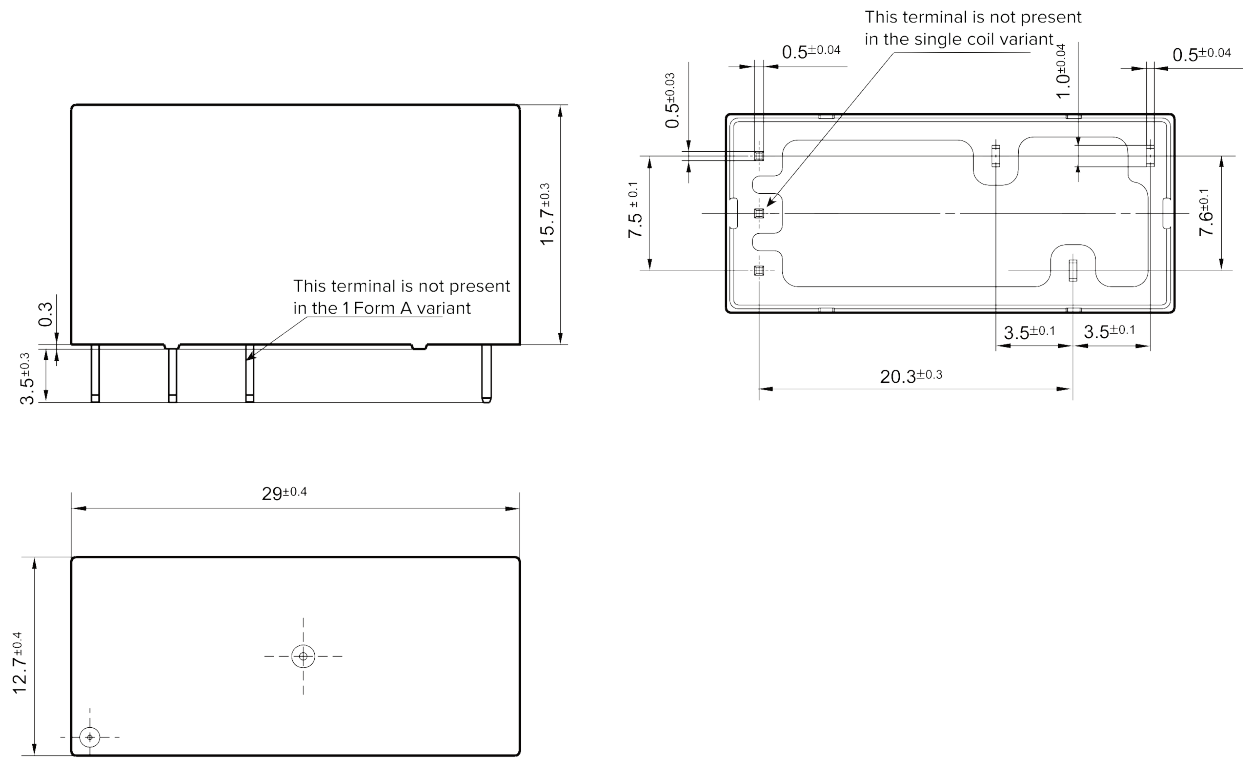
** Coil voltage should be indicated in three-digit format (6Vdc = 006)

†† Only available for K106 1-X X X-1A X-X as per UL Certification

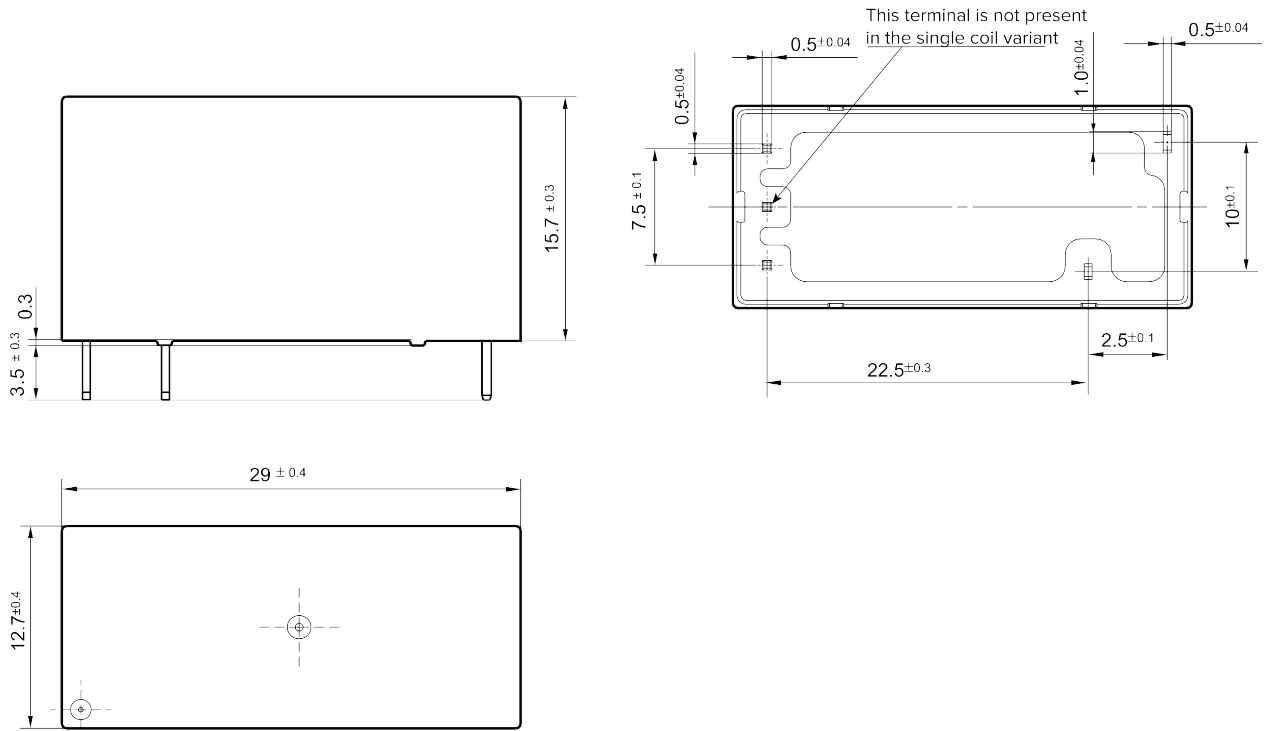
K106 - 1 VERSION



K106 - 2 VERSION



K106 - 3 VERSION

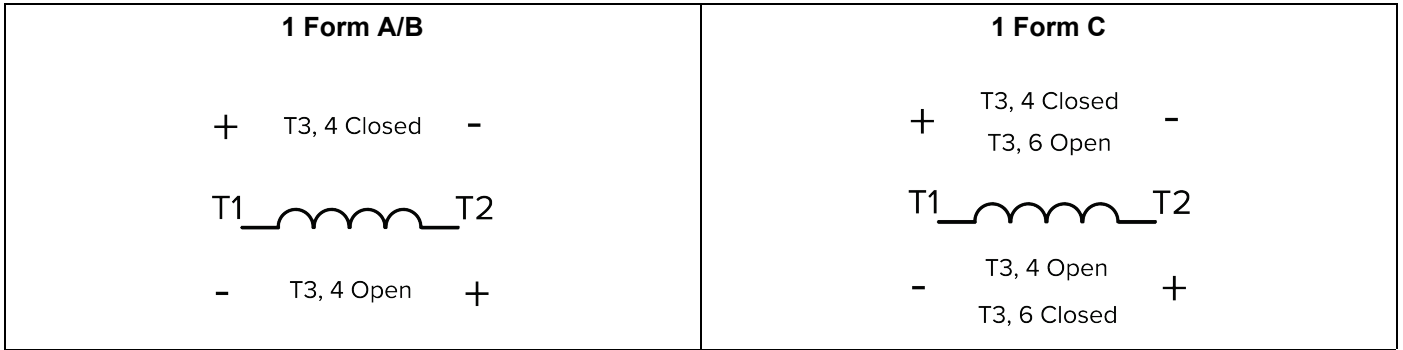


Pin Layout & Numbering (Bottom view)

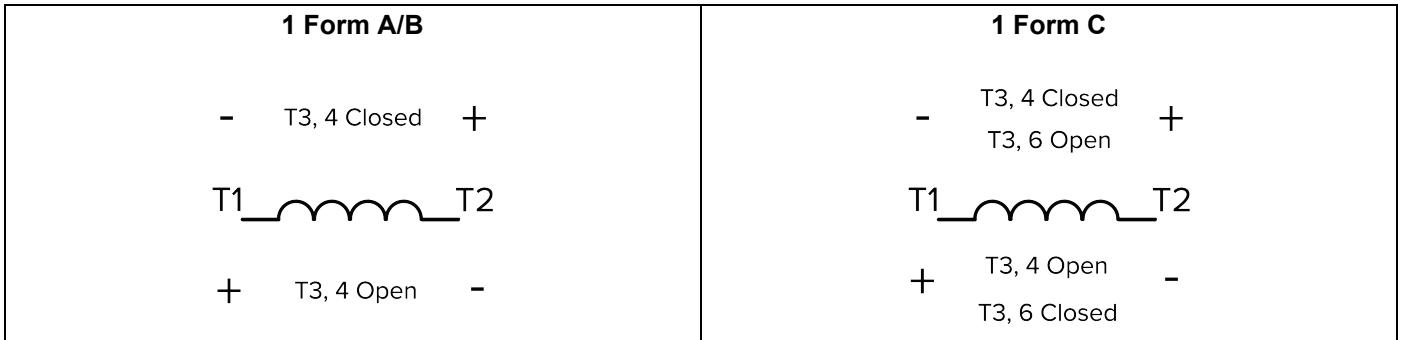
| Single Coil 1 Form A/B | Single Coil 1 Form C | Dual Coil 1 Form A/B | Dual Coil 1 Form C |
|------------------------|----------------------|----------------------|--------------------|
| | | | |

Wiring Diagrams

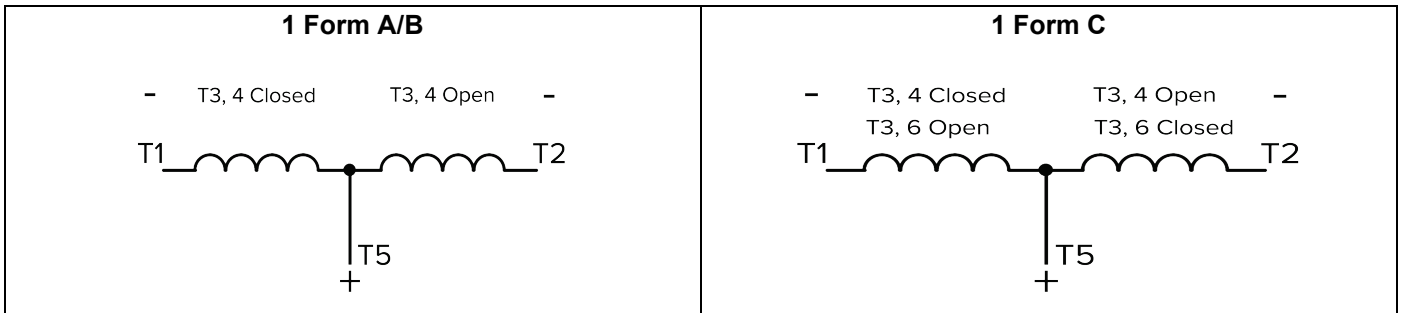
Single coil latching – Positive Polarity



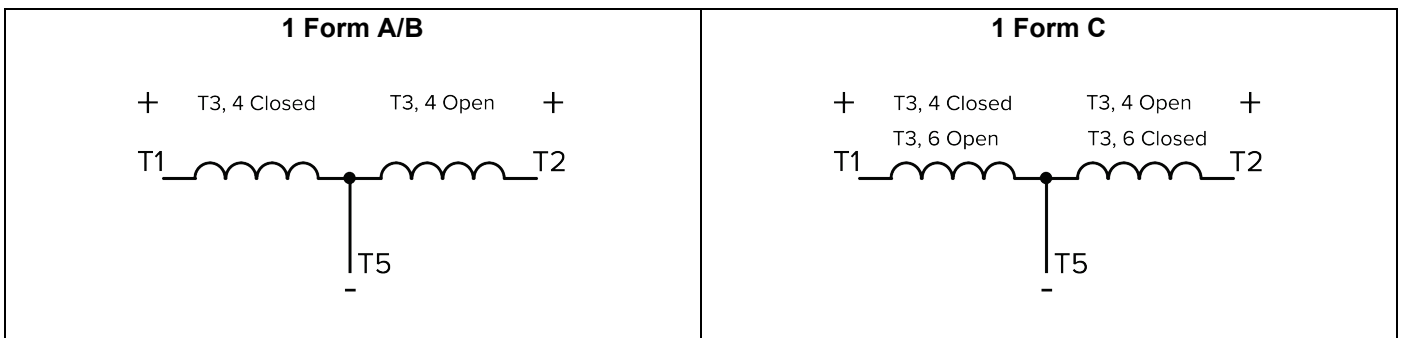
Single coil latching – Negative Polarity



Dual coil latching – Positive Polarity

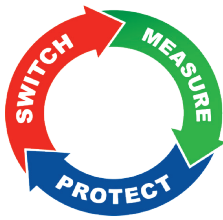


Dual coil latching – Negative Polarity



Application Notes

1. It is possible that during transit or final assembly the relay could change state. Therefore, it is recommended that all relays be set to the desired state via a power supply.
2. In order to maintain an “Open” or “Closed” state of the relay, the coil voltage should reach the rated voltage. The pulse width should be 50ms minimum to ensure a proper change of state. DO NOT energize both T1 and T2 at the same time on a Dual Coil or energize the coil for longer than 1 minute (damage to the coil could occur).
3. Applying excessive heat to the relay terminals (soldering or welding) can cause damage to the internal structure of the relay and should be avoided.
4. Moving or bending the terminals can cause damage to the internal structure of the relay and should be avoided.
5. For definitions of terms used in this data sheet, see [glossary](https://kgtechnologies.net/glossary) at <https://kgtechnologies.net/>



6028 State Farm Drive, Rohnert Park, CA 94928
Tel: +1.888.513.1874 Fax: +1.707.665.5966
Email: techinfo@kgtechnologies.net
www.kgtechnologies.net



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more information

Disclaimer: This datasheet is for reference only. All specifications are subject to change without prior notice. KG Technologies, Inc. cannot predict every possible application for our relays. While we do our best to make our relays as versatile as possible, we highly recommend contacting our engineering team if you have any questions. KG Technologies, Inc. is not responsible for malfunctioning relays when operated outside the specified parameters given in this datasheet.