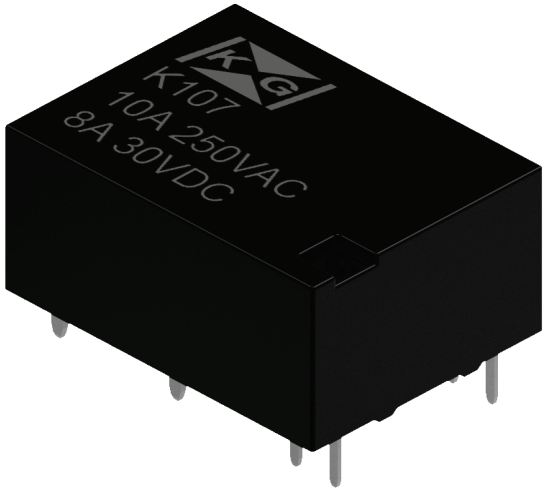
KG Technologies™

K107

SUBMINIATURE INTERMEDIATE POWER RELAY

- High switching capacity
  1A, 1B: 10A / 250Vac / 30Vdc
  2A, 2B, 1X: 8A / 250Vac / 30Vdc
- 4kV dielectric strength (between coil and contacts)
- Latching and non-latching types available
- Suffix (803): TV5 compliant
- Environmental friendly product (RoHS compliant)
- Outline dimensions: (20.0 x 15.0 x 10.2)mm
- RoHS compliant materials and process



Contact Data

Contact Form	1A *, 1B	2A, 2B, 1X
Contact rating	10A / 250Vac 10 x 10^4 cycles (Resistive load)	8A / 250Vac 10 x 10^4 cycles (Resistive load)
Contact resistance †	Gold-plated: ≤30mΩ (1A / 6Vdc) No gold-plating: ≤50mΩ (1A / 6Vdc)	
Contact material	$AgSnO_2$	
Max Switching Voltage	380Vac / 250Vdc	
Max Switching Current	10A	8A
Max Switching Power	2500W	2000W
Set Time	⩽ 6 ms	
Reset Time	⩽ 6 ms	
Electrical Endurance	See endnotes below §	
Mechanical Endurance	10,000,000 cycles	

Characteristics

Insulation resistance	1,000MΩ (at 500 Vdc)
Dielectric strength:	
Coil to contacts	4kVac for 1min
Across open contacts	1kVac for 1min
Ambient temperature	-40°C to +85°C
Ambient humidity	5% - 85% RH
Vibration	1.5mm (DA) 10Hz - 55Hz
Shock resistance:	
Functional ‡	98 m/s^2
Destructive	980 m/s^2
Coil termination	PCB
Unit weight	±6g
Construction	Plastic sealed, Flux proofed

* *TV-5 Compliancy applies to 1 Form A contact only*

† *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*

‡ *Unit may change state but is still functional (Applies to latching versions, K107-S & K107-D, only)*

§ *For contact form 1A, 1B only:*

400W / 220Vac; 30,000 cycles (LED) – (Relay connected to LED driver)

400W / 220Vac; 30,000 cycles (Fluorescent)

Coil Data

	Non-Latching	Single Coil (Latching)	Dual Coil (Latching)
Coil Consumption	280mW	200mW	280mW
Pulse Duration	N/A	⩾50ms	⩾50ms

Coil Resistance – Latching

(Ω±10%) at 23°C

Nominal Coil Voltage	Min Set/Reset Voltage	Single Coil (Latching)	Dual Coil (Latching)
3Vdc	2.4Vdc	45Ω	2 x 32.1Ω
5Vdc	4.0Vdc	125Ω	2 x 89.3Ω
6Vdc	4.8Vdc	180Ω	2 x 129Ω
9Vdc	7.2Vdc	405Ω	2 x 289Ω
12Vdc	9.6Vdc	720Ω	2 x 514Ω
24Vdc	19.2Vdc	2880Ω	2 x 2056Ω

Coil Resistance – Non-Latching

(Ω±10%) at 23°C

Nominal Coil Voltage	Pick-up Voltage min	Drop-Out Voltage max	Coil Resistance
3Vdc	2.4Vdc	0.3Vdc	32.1Ω
5Vdc	4.0Vdc	0.5Vdc	89.3Ω
6Vdc	4.8Vdc	0.6Vdc	129Ω
9Vdc	7.2Vdc	0.9Vdc	289Ω
12Vdc	9.6Vdc	1.2Vdc	514Ω
24Vdc	9.2Vdc	2.4Vdc	2056Ω

Ordering Information

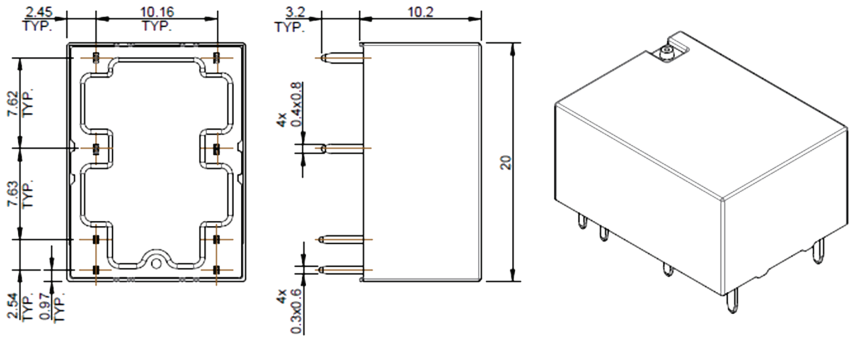
	K107	-■	■	■	-■	T	■	■
Relay Series								
Coil Type:	S: Single Coil, Latching D: Dual Coil, Latching Nil: Non-Latching							
Coil Voltage**:	3, 5, 6, 9, 12, 24Vdc							
Polarity:	P: Positive N: Negative							
Contact Form:	1A: 1 Form A (NO) 2A: 2 Form A (NO) 1B: 1 Form B (Only for latching relay) (NC) 2B: 2 Form B (Only for latching relay) (NC) 1X: 1A + 1B							
Contact Material:	T: $AgSnO_2$							
Contact Plating:	G: Gold Plated Nil: No Gold plating							
Construction:	Y: Sealed IP67 Z: Flux Proofed							

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

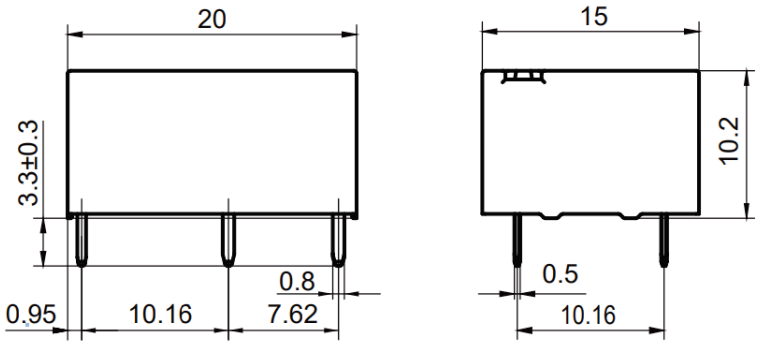
Dimensional Drawings

(Unit: mm)

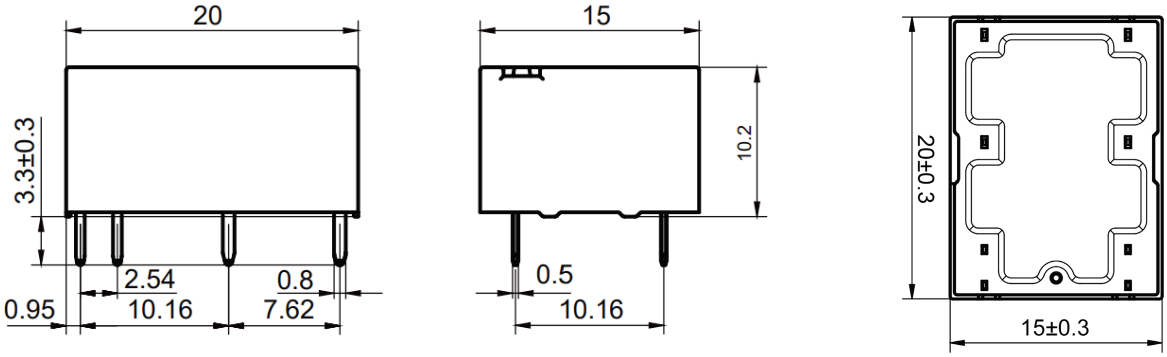
K107 Outline



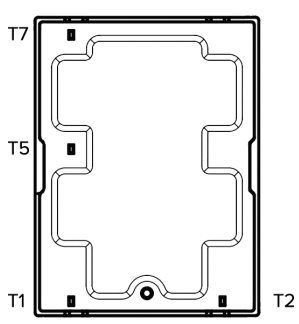
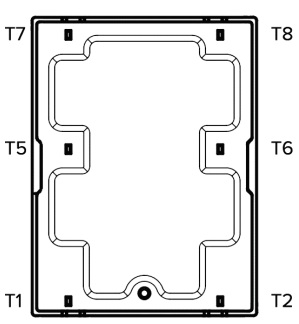
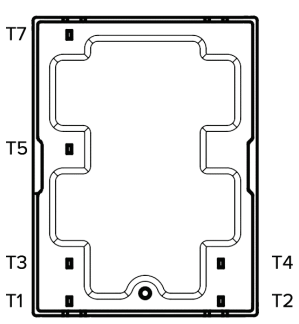
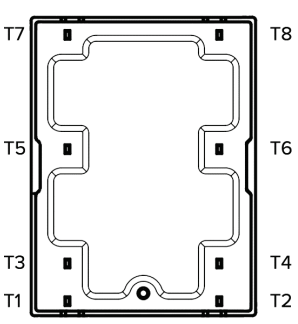
K107 Single coil latching & Single coil non-latching



K107 Dual coil latching

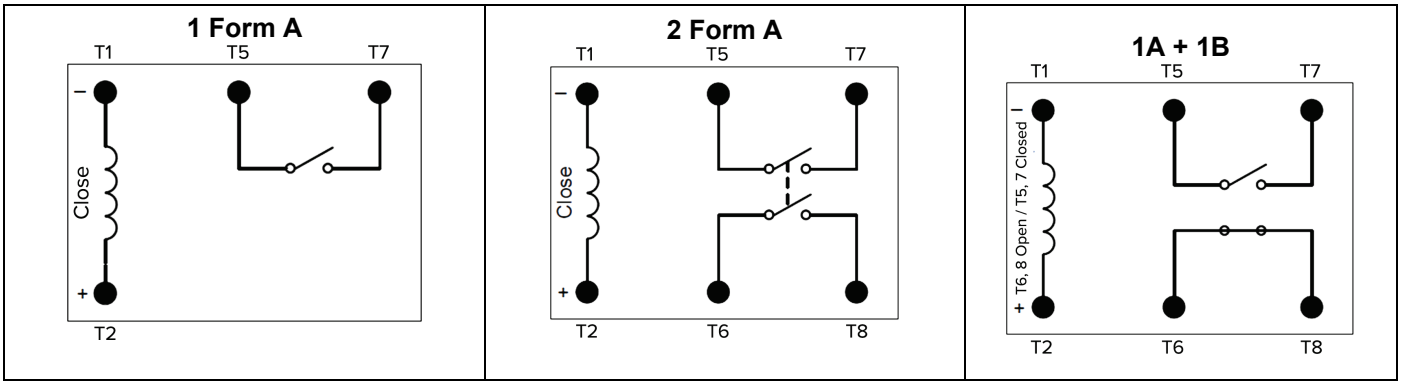


Pin Assignment (Relay Bottom View)

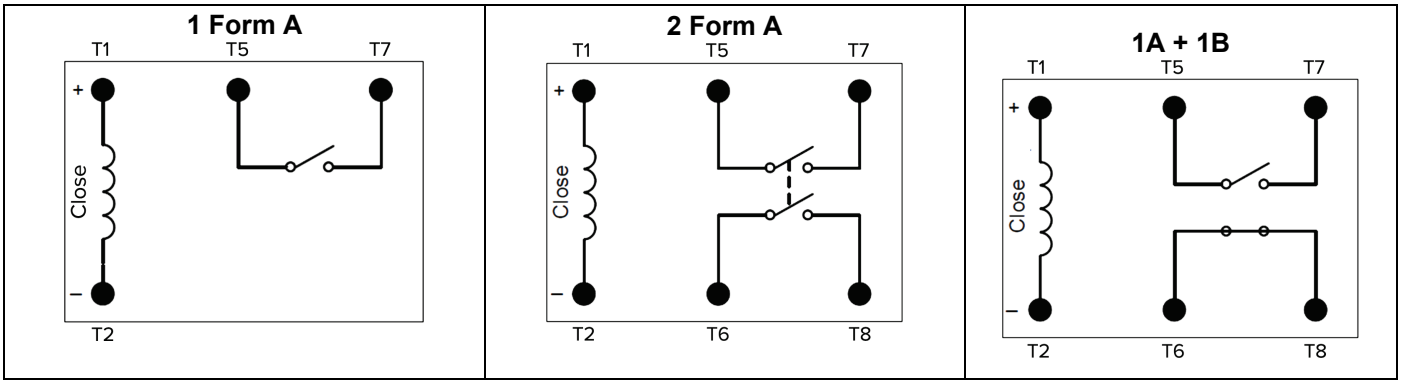
Single Coil latching & Non-latching 1 Form A, 1 Form B	Single Coil latching & Non-latching 2 Form A, 2 Form B, 1A + 1B	Dual Coil 1 Form A, 1 Form B	Dual Coil 2 Form A, 2 Form B, 1A + 1B
			

Wiring Diagrams

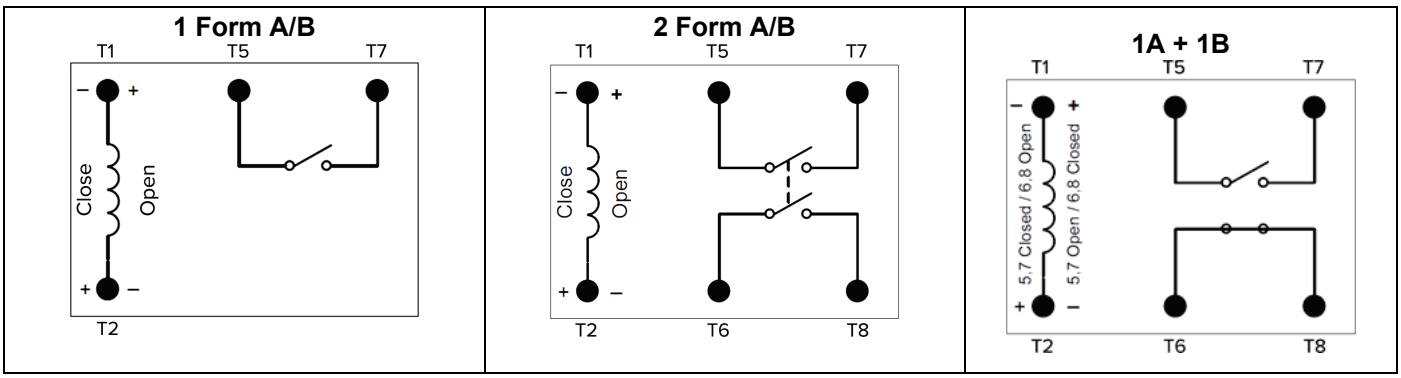
Non Latching – Positive Polarity



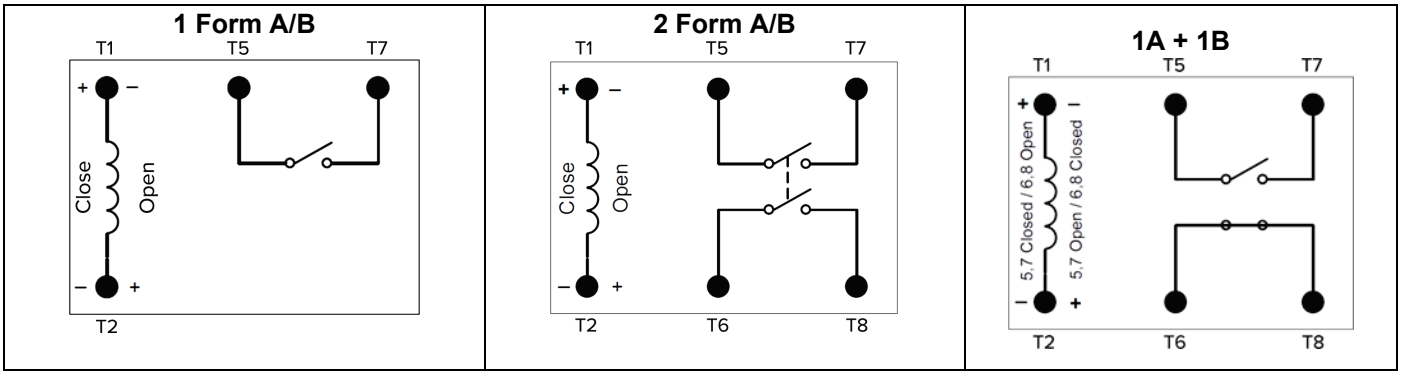
Non Latching – Negative Polarity



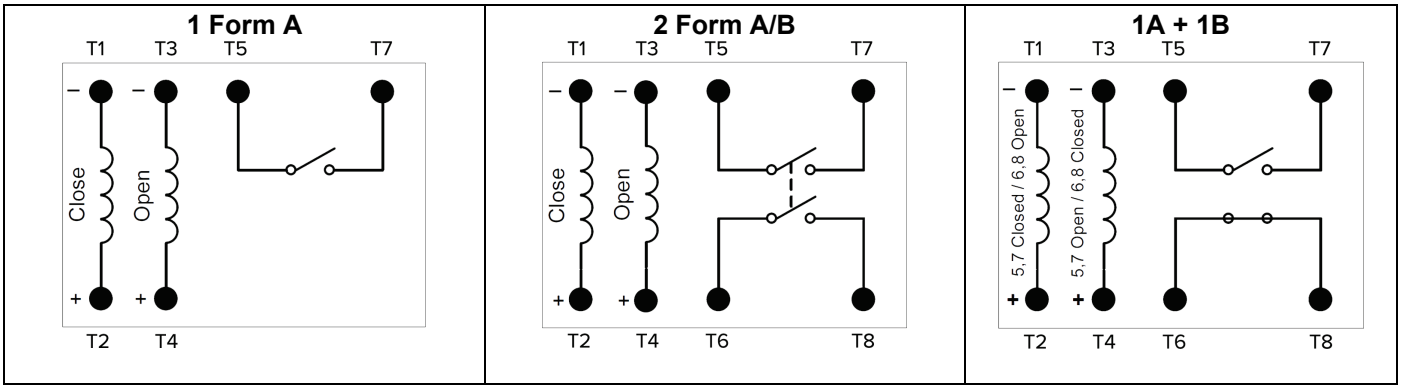
Single coil latching – Positive Polarity



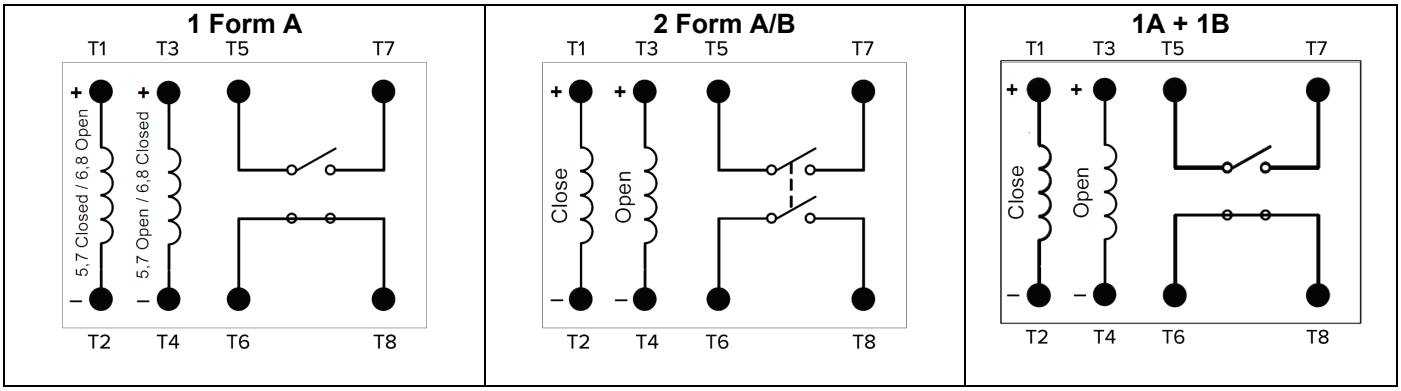
Single coil latching – Negative Polarity



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. For the dual coil version, do not energize both coils of the relay simultaneously.
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 at https://kgtechnologies.net/

KG Technologies™
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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