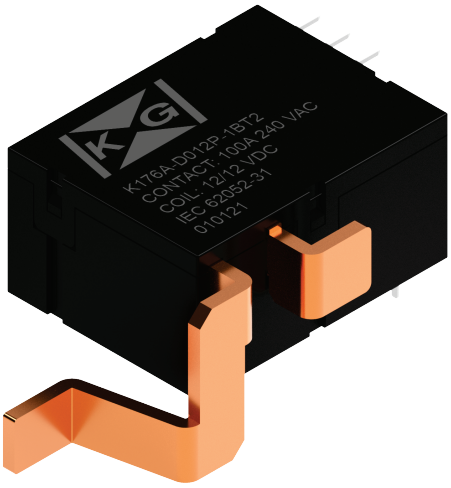
KG Technologies™

K176

HIGH POWER LATCHING RELAY

- 100A Latching Relay
- UC3 capability as per IEC 62052-31:
  Rated Operational Current (Ie) = 100A
  Rated Operational Voltage (Ue) = 240V
- UC3 capability as per IEC 62055-31:
  Rated Breaking Current (Ic) = 90A
  Reference Voltage (Un) = 240V
  Rated Breaking Voltage (Uc) = 276V
- Auxiliary Contact : 1 Form A/B (Contact state is opposite from load contact state)
- 4kV dielectric strength between coil and contacts
- Outline dimensions: (42 x 32 x 20.8)mm
- Custom assemblies available with flex wire and/or copper extensions, and/or with integrated shunt
- RoHS compliant materials and process



Contact Data

Rated Load *	100A @ 240V, 90A @ 276V
Contact form	1A or 1B
Contact material	$AgSnO_2$
Contact resistance †	⩽0.35mΩ (at 100 A)
Max. switching voltage ‡	276 Vac
Max. carrying current	120 A
Max. switching current §	100 A
Rated switching power	24,840 VA
Set time	≤ 20 ms
Reset time	≤ 20 ms
Electrical endurance	10,000 cycles
Mechanical endurance	100,000 cycles

Characteristics

Insulation resistance	1,000MΩ (at 500 Vdc)
Dielectric strength:	
Coil to contact	4kVac for 1 min.
	12kV 1.2us/50us
Across open contacts	2kVac for 1min.
Dielectric creepage	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	70g

* *Load at which the relay can pass UC3 as per IEC 62052-31, IEC 62055-31*

† *Typical value for initial contact resistance per relay pole: Using a sample quantity of at least 20 units, take the average value from 5 continuous measurements from each sample.*

‡ *Voltage at which the relay can pass electrical endurance as per IEC 62055-31*

§ *Current at which the relay can pass UC3 as per IEC 62052-31*

** *Unit may change state but is still functional*

Coil Data

	Single Coil (Latching)	Dual Coil (Latching)
Coil Consumption	3W	6W
Pulse Duration	50ms	50ms

Coil Resistance

(Ω±10%) at 23°C

Nominal Coil Voltage	Min Set/Reset Voltage	Single Coil (Latching)	Dual Coil (Latching)
6Vdc	4.8Vdc	12Ω	2 x 6Ω
9Vdc	7.2Vdc	27Ω	2 x 13.5Ω
12Vdc	9.6Vdc	48Ω	2 x 24Ω
24Vdc	19.2Vdc	192Ω	2 x 96Ω
48Vdc	38.4Vdc	768Ω	2 x 384Ω

Ordering Information

	K176 ■	-■ ■ ■	-■	**T**	**2**	■	**-Cxxxx**
Relay Series							
Terminal Type:	A: See Drawing X: Custom Design ††						
Coil Type:	S: Single Coil D: Dual Coil						
Coil Voltage ‡‡:	6, 9, 12, 24, 48Vdc						
Polarity:	P: Positive N: Negative						
Contact Form:	1A: Form 1A – Normally open (NO) 1B: Form 1B – Normally closed (NC)						
Contact Material:	T: $AgSnO_2$						
Internal Contact Structure:	2: Dual Contacts						
Auxiliary Contact:	A: The auxiliary contact state is the opposite of the main contact state Nil: No auxiliary contact						
Custom Number:	Cxxxx: Where xxxx represents a unique number for custom relay terminal designs						

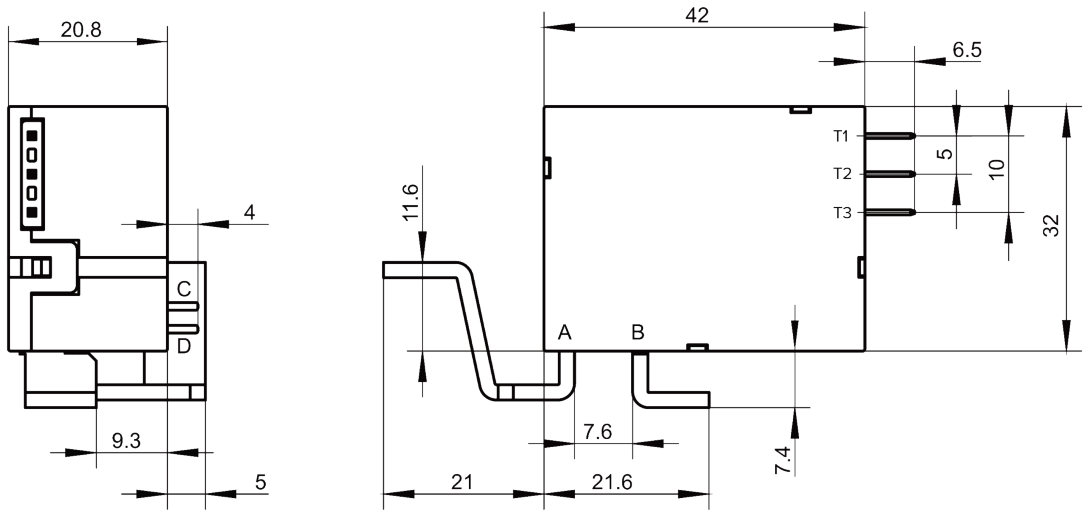
†† For custom designs, please contact KG Technologies. Integrated shunts, flex-wire, copper extension and brass terminals available

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

Dimensional Drawings

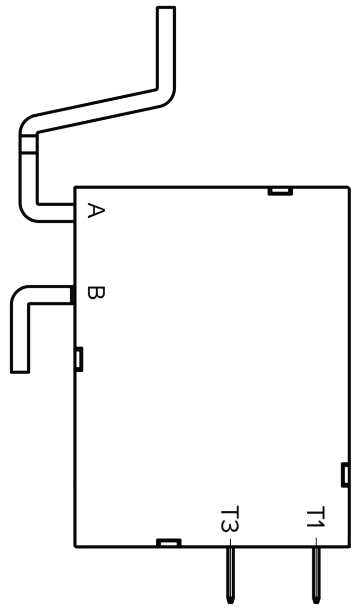
(Unit: mm)

TYPE A CONTACT TERMINALS

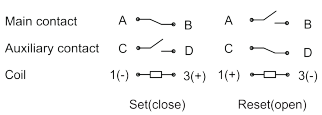


Wiring Diagrams

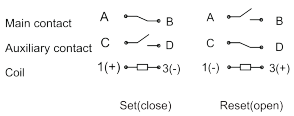
Single Coil



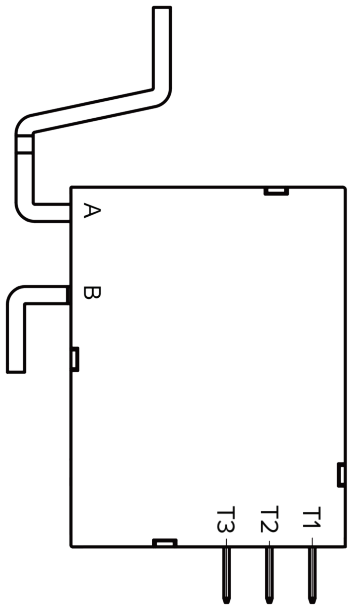
Positive Polarity



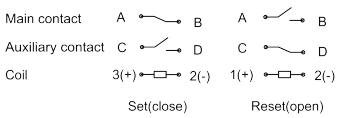
Negative Polarity



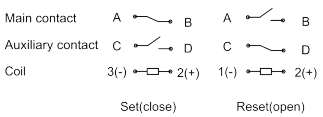
Dual Coil



Positive Polarity

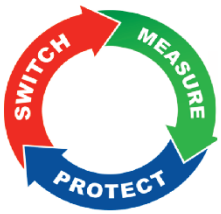


Negative Polarity



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 T3 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 at www.kgtechnologies.net.



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Scan here for 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.