## HIGH POWER LATCHING RELAY

> 90A Latching Relay

> UC2 capability as per IEC 62055-31:

>> Rated Breaking Current (Ic) = 60A

>> Reference Voltage (Un) = 240V

>> Rated Breaking Voltage (Uc) = 276V

> 4kV dielectric strength between coil and contacts.

> Outline dimensions: (39.6 x 30.3 x 16.7)mm.

> Custom assemblies available with flex wire and/or copper extensions, and/or with integrated shunt.

> RoHS compliant materials and process.
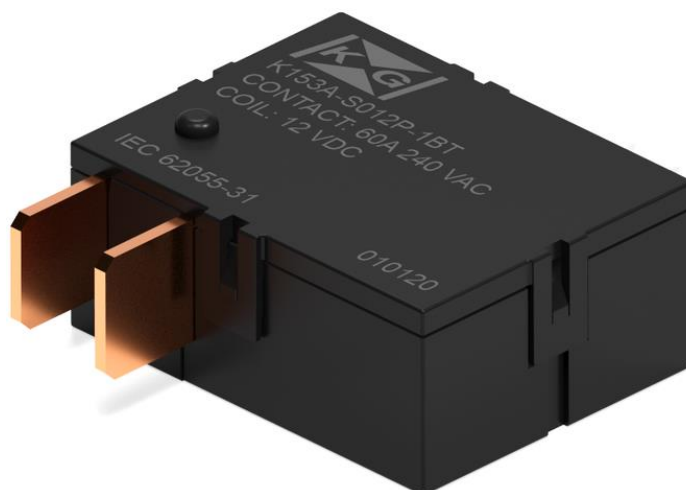
## Contact Data

| | |
|---|---|
| Rated Load* | 60A @ 276V |
| Contact form | 1A or 1B |
| Contact material | $AgSnO_2$ |
| Contact resistance† | 0.7mΩ (at 80 A) |
| Max. switching voltage‡ | 276 Vac |
| Max. carrying current | 90 A |
| Max. switching current§ | 60 A |
| Rated switching power | 16,560 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 | 4kV Vac for 1 min. |
| | 10kV 1.2us/50us |
| Across open contacts | 2kV Vac 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 $m/s^2$ |
| Survival | 980 $m/s^2$ |
| Coil termination | PCB or Wire |
| Unit weight | 50g |

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*\* Load at which the relay can pass UC2 as per IEC 62055-31*

*† 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.*

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

*§ Current at which the relay can pass UC2 as per IEC 62055-31*

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

## Coil Data

| | Single Coil (Latching) | Dual Coil (Latching) |
|---|---|---|
| **Coil Consumption** | 1.5W | 3W |
| **Pulse Duration** | 50ms | 50ms |

## Coil Resistance

(Ω±10%) at 23°C

| Nominal Coil Voltage | Min Set/Reset Voltage | Single Coil (Latching) | Dual Coil (Latching) |
|---|---|---|---|
| 5Vdc | 3.5Vdc | 16Ω | 2 x 8Ω |
| 6Vdc | 4.2Vdc | 24Ω | 2 x 12Ω |
| 9Vdc | 6.3Vdc | 54Ω | 2 x 27Ω |
| 12Vdc | 8.4Vdc | 96Ω | 2 x 48Ω |
| 24Vdc | 16.8Vdc | 384Ω | 2 x 192Ω |
| 48Vdc | 33.6Vdc | 1536Ω | 2 x 768Ω |

## Ordering Information

**K153** ☐ -☐ ☐ ☐ -☐ T -Cxxxx

| | |
|---|---|
| Relay Series | |
| Terminal Type: | A: See Drawing <br> X: Custom Design[††] |
| Coil Type: | S: Single Coil <br> D: Dual Coil |
| Coil Voltage[‡‡]: | 5,6,9,12,24,48 Vdc |
| Polarity: | P: Positive <br> N: Negative |
| Contact Form: | 1A: Form 1A – Normally open (NO) <br> 1B: Form 1B – Normally closed (NC) |
| Contact Material: | T: AgSnO$_2$ |
| 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)*

Type A Contact Terminals

# Wiring Diagrams

**Single Coil**

T1    T3

**Positive Polarity**

+    Close    −

T1 ⌇⌇⌇ T3

−    Open    +

**Negative Polarity**

−    Close    +

T1 ⌇⌇⌇ T3

+    Open    −

**Dual Coil**

T1    T2    T3

**Positive Polarity**

+    Close    Open    +

T1 ⌇⌇⌇ ⌇⌇⌇ T3

−⌐T2

**Negative Polarity**

−    Close    Open    −

T1 ⌇⌇⌇ ⌇⌇⌇ T3

⌐T2
+
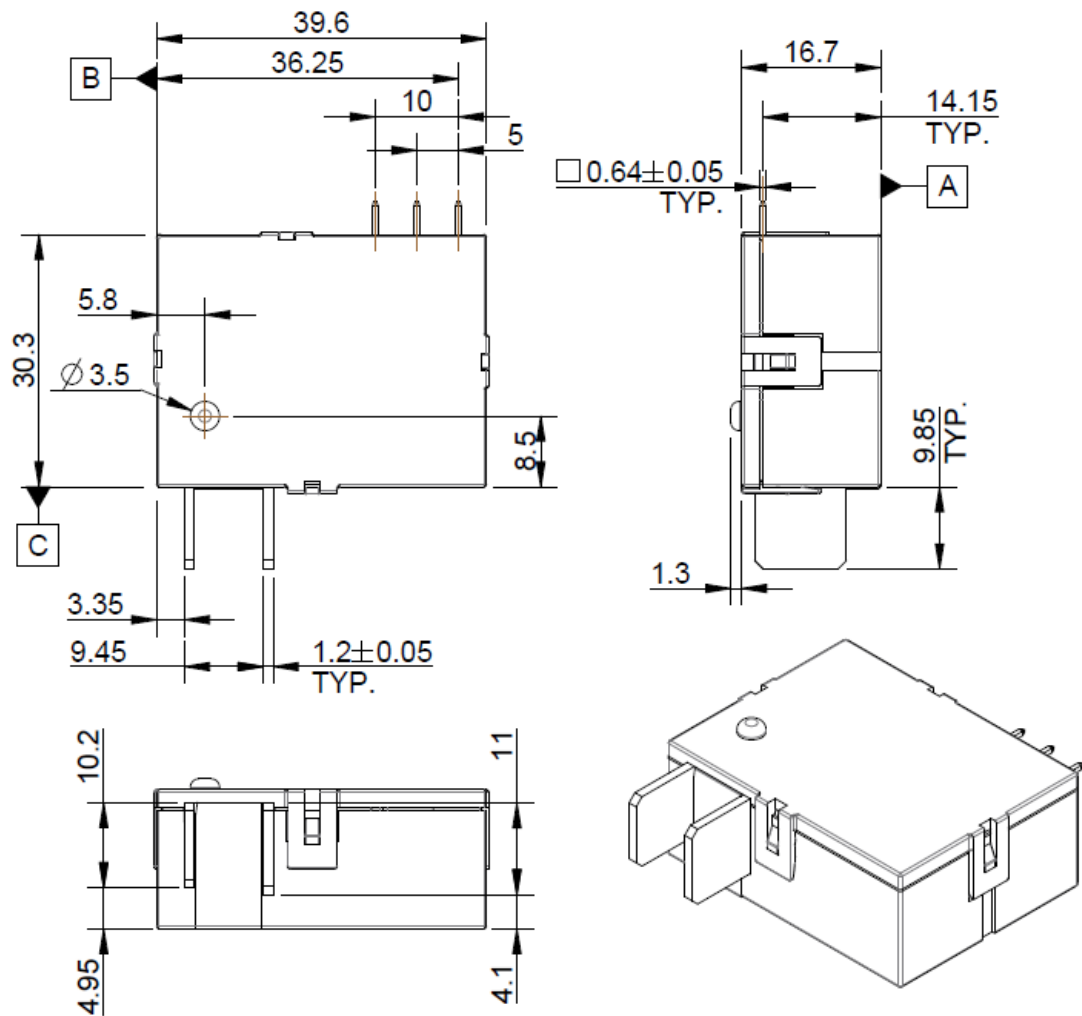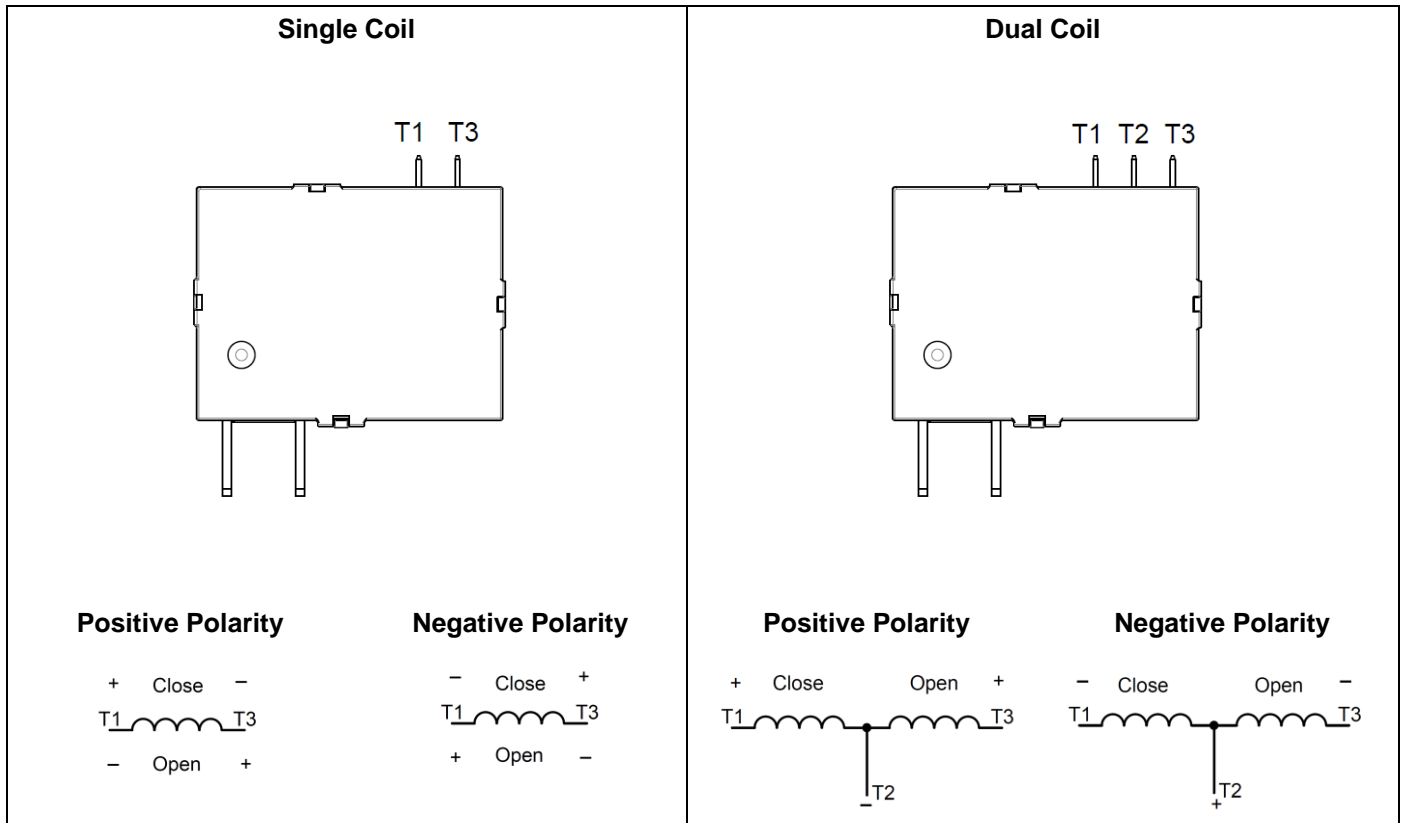
# Application Notes

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.

**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.