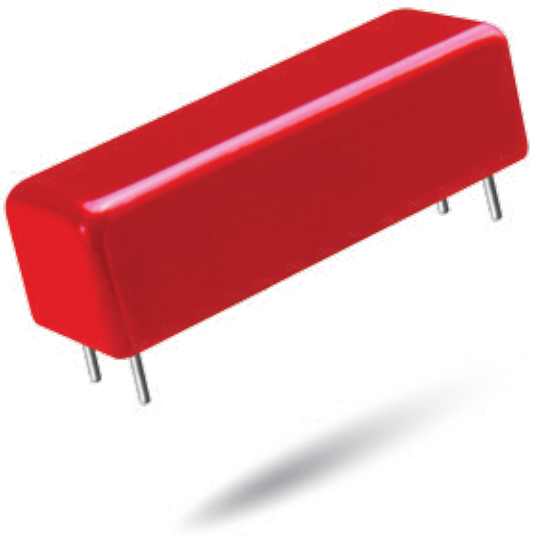
# 7000 SERIES/HIGH RELIABILITY REED RELAYS



## 7000 Series High Reliability Reed Relays

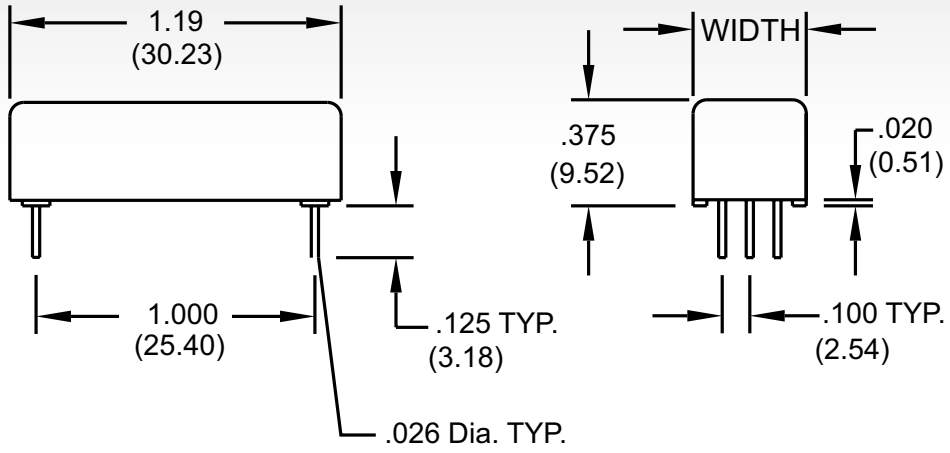
The 7000 Series is ideally suited to the needs of Instrumentation, Data Acquisition, Process Control, Telecommunications and General Purpose requirements. The specification tables allow you to select the appropriate relay for your particular application. These models are specifically designed for high quality and reliability with versatile switching capabilities and contact forms. If your requirements differ, please consult your local representative or Coto's Factory to discuss a custom reed relay.

## 7000 Series Features

- Multi-pole contact forms (Form A, B, and C)
- Wide range of switching capabilities; Low level, High Voltage, Hg wetted
- Hermetically sealed contacts for long life and high reliability
- High speed switching compared to electromechanical relays
- Potted in metal shell - Magnetic Shield
- Optional Electrostatic Shield for reducing capacitive coupling
- PCB mounting versatility - 1.0" x 0.100" grid
- Optional coil suppression diode offered to protect coil drivers
- Custom configurations available - consult factory
- RoHS compliant (N/A 7201, 7202, 7203, 7204)

## DIMENSIONS

*in Inches (Millimeters)*




| WIDTH | A | B | C | D |
|---|---|---|---|---|
| Dimension | .410 (10.41) | .500 (12.70) | .660 (16.76) | .760 (19.30) |

**Table #1**

## Ordering Information

**Part Number** XXXX-XX-1XXX

**Model Number**
See Tables (7000 Series)

**Diode Options**
0=No Diode
1=Diode Included

**Coil Voltage**
05=5 volts
12=12 volts
24=24 volts

**Coil Termination**
0=End to End
1=Same End

**Electrostatic Shield Options**
0=No Electrostatic Shield
1=Electrostatic Shield

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# 7000 SERIES

| Parameters | Test Conditions | Units | Form A, B[2] | Form C | Form A[3] Hg Wetted | Form A High Voltage |
|---|---|---|---|---|---|---|
| **CONTACT RATINGS** | | | | | | |
| Switching Voltage | Max DC/Peak AC Resist. | Volts | 200 | 150 | 500 | 500 |
| Switching Current | Max DC/Peak AC Resist. | Amps | 0.5 | 0.25 | 1.0 | 0.5 |
| Carry Current | Max DC/Peak AC Resist. | Amps | 2.0 | 0.5 | 2.0 | 2.0 |
| Contact Rating | Max DC/Peak AC Resist. | Watts | 10 | 3 | 50 | 10 |
| Life Expectancy-Typical[1] | Signal Level 1.0V, 10mA | x $10^6$ Ops. | 1000 | 100 | 1000 | 100 |
| Static Contact Resistance (max. init.) | 50mV, 10mA | Ω | 0.100 | 0.150 | 0.075 | 0.100 |
| Dynamic Contact Resistance (max. init.) | 0.5V, 50mA at 100 Hz, 1.5 msec | Ω | 0.150 | 0.200 | 0.100 | 0.150 |
| **RELAY SPECIFICATIONS** | | | | | | |
| Insulation Resistance (minimum) | Between all Isolated Pins at 100V, 25°C, 40% RH | Ω | $10^{12}$ | $10^{10}$ | $10^{12}$ | $10^{12}$ |
| Capacitance - Typical Across Open Contacts | No Shield<br>Shield Guarding | pF<br>pF | 1.0<br>0.2 | 2.0<br>1.0 | 1.0<br>0.2 | 1.0<br>0.2 |
| Dielectric Strength (minimum) | Between Contacts<br>Contacts to Shield<br>Contacts/Shield to Coil | VDC/peak AC<br>VDC/peak AC<br>VDC/peak AC | 250<br>1000<br>1500 | 200<br>1000<br>1500 | 1000<br>1000<br>1500 | 1200<br>1000<br>1500 |
| Operate Time - including bounce - Typical | At Nominal Coil Voltage, 30 Hz Square Wave | msec. | 1.0 | 2.0 | 2.0 | 1.0 |
| Release Time - Typical | | msec. | 0.1 | 2.5 | 1.0 | 0.1 |

Dot stamped on top of relay refers to pin #1 location

*(See following pages for schematic diagrams and coil data.)*

**Notes:**

[1] Consult factory for life expectancy at other switching loads.
[2] Optional coil suppression diode Pin #1 is +.
[3] Hg Content: Form A, 0.04 grams per capsule; Form C, 0.072 grams per capsule.

**Environmental Ratings:**

*Storage Temp:* -35°C to +100°C; *Operating Temp:* -20°C to +85°C; *Solder Temp:* 270°C max; 10 sec. max
All electrical parameters measured at 25°C unless otherwise specified.
*Vibration:* 20 G's to 2000 Hz; *Shock:* 50 G's

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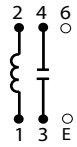
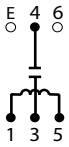
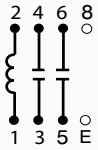
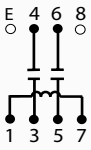
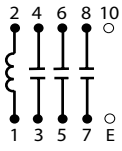
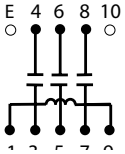
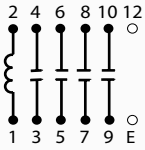
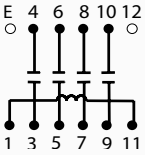
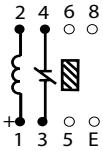
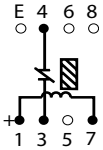
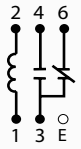
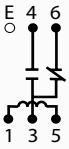
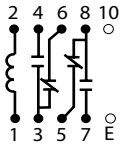
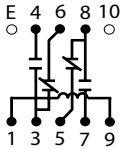
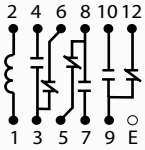
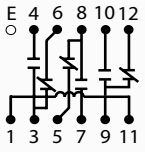
# 7000 SERIES/HIGH RELIABILITY REED RELAYS

| Contact Form | Model Number | Nominal Coil Voltage VDC | Must Operate Voltage VDC max. | Must Release Voltage VDC min. | Coil Resistance ±10% @25°C | Width (See Table #1) | Schematic Top View[2,5] End to End Coil | Same End Coil |
|---|---|---|---|---|---|---|---|---|
| 1A | 7101 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 300<br>1600<br>4200 | A |  |  |
| 2A | 7102 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 150<br>1000<br>3500 | B |  |  |
| 3A | 7103 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 100<br>800<br>2400 | C |  |  |
| 4A | 7104 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 80<br>550<br>2000 | D |  |  |
| 1B[4] | 7121 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 150<br>1000<br>3500 | B |  |  |
| 1C | 7141 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 175<br>1100<br>4200 | A |  |  |
| 2C | 7142 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 65<br>490<br>1550 | C |  |  |
| 3C | 7143 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 55<br>300<br>1350 | D |  |  |

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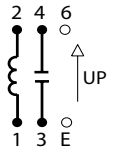
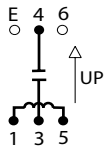
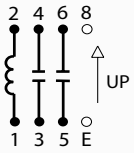
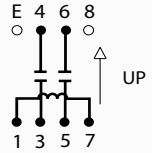
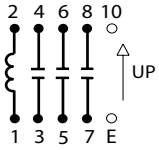
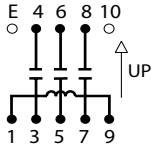
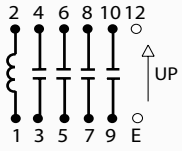
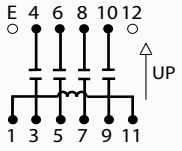
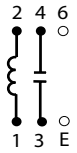
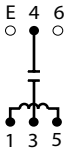
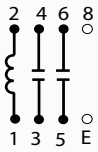
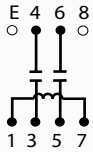
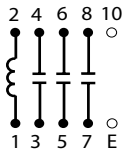
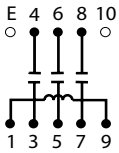
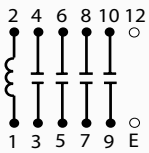
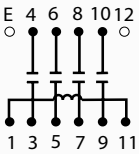
| Contact Form | Model Number | Nominal Coil Voltage VDC | Must Operate Voltage VDC max. | Must Release Voltage VDC min. | Coil Resistance ±10% @25°C | Width (See Table #1) | Schematic Top View[2,5] End to End Coil | Same End Coil |
|---|---|---|---|---|---|---|---|---|
| 1A Hg wetted[5] | 7201 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 70<br>450<br>1785 | A |  |  |
| 2A Hg wetted[5] | 7202 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 60<br>340<br>1330 | B |  |  |
| 3A Hg wetted[5] | 7203 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 50<br>300<br>1200 | C |  |  |
| 4A Hg wetted[5] | 7204 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 40<br>250<br>960 | D |  |  |
| 1A High Voltage | 7301 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 175<br>1100<br>4200 | A |  |  |
| 2A High Voltage | 7302 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 100<br>640<br>2450 | B |  |  |
| 3A High Voltage | 7303 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 65<br>490<br>1550 | C |  |  |
| 4A High Voltage | 7304 | 5<br>12<br>24 | 3.75<br>9.0<br>18.0 | 0.4<br>1.0<br>2.0 | 55<br>300<br>1350 | D |  |  |

**Notes:**

[4] These relays contain bias magnets. Correct coil polarity must be observed.

[5] Dot stamped on top of relay refers to pin #1 location. E-pin indicates Electrostatic shield pin. Unused pins omitted. Pin numbers for reference only.

[6] All models with Hg wetted contacts are position sensitive, must be mounted within 30° of vertical plane. See schematic.

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