

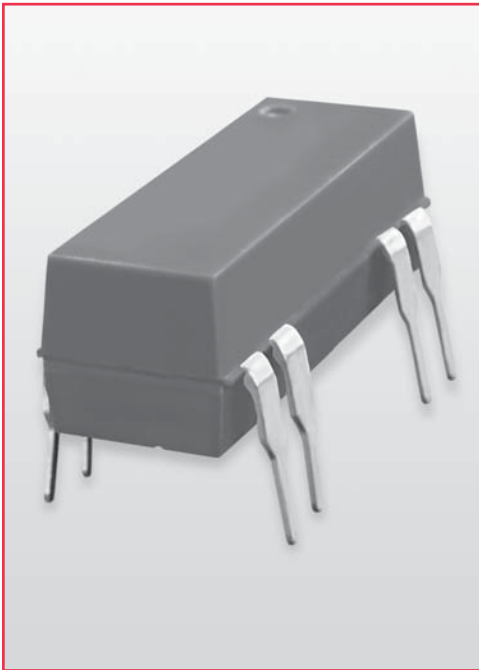
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# 8000 Series/DIP Reed Relays

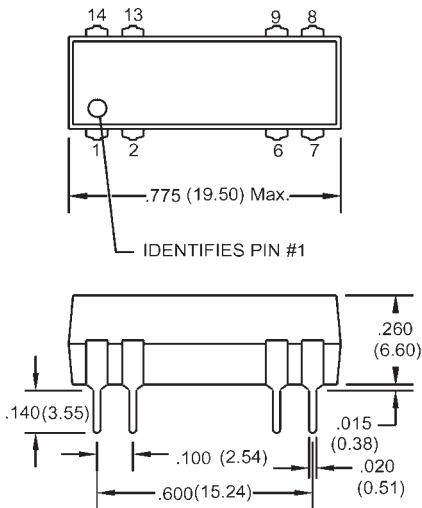


## DIP Reed Relays

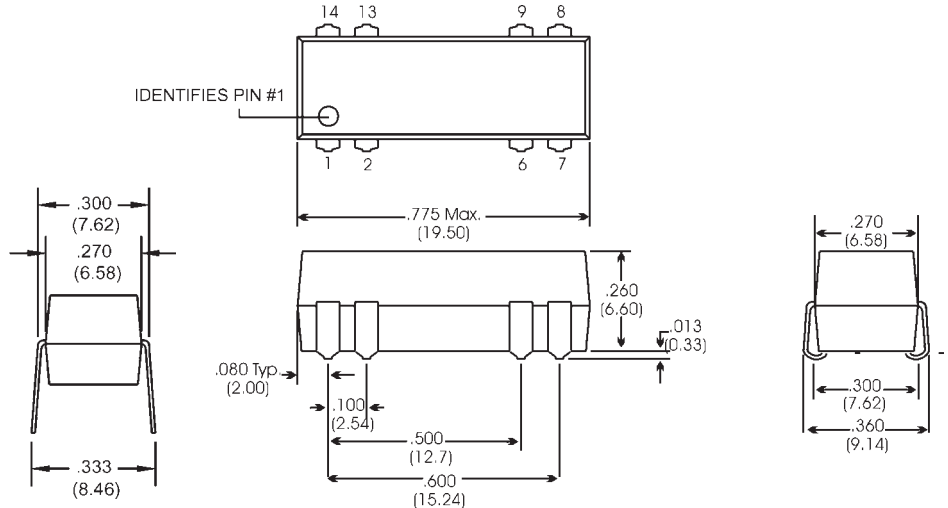
The 8000 Series is ideally suited to the needs of Automated Test Equipment, Instrumentation, Data Acquisition, and Process Control requirements. The specification tables allow you to select the appropriate relay for your particular application. If your requirements differ from the selection options, please consult your local representative or Coto's Factory to discuss a custom reed relay.

## 8000 Series Features

- ◆ 14-Pin DIP industry standard package
- ◆ High Insulation Resistance -  $10^{12} \Omega$  offered on most models
- ◆ High reliability, hermetically sealed contacts for long life (proven to 500 million operations)
- ◆ Contact forms; 1A, 2A, 1B and 1C available
- ◆ Surface mount version available
- ◆ Molded thermoset body on integral lead frame design
- ◆ Optional Electrostatic Shield for reducing capacitive coupling
- ◆ Coil suppression diode available
- ◆ High Voltage Breakdown versions available
- ◆ UL File # E67117



(For Model #'s 8001, 8002, 8021 & 8041)



(For Model # 8061)

*Dimensions in Inches (Millimeters)*

## Ordering Information

|                     |                                  |
|---------------------|----------------------------------|
| <b>Part Number</b>  | <b>80XX-XX-XX1</b>               |
| <b>Model Number</b> | <b>Diode Option<sup>3</sup></b>  |
| 8001 8041 8061      | 0=No Diode 1=Diode               |
| <b>Coil Voltage</b> | <b>Shield Option<sup>4</sup></b> |
| 05=5 volts          | 0=No Shield                      |
| 12=12 volts         | 1=Electrostatic Shield           |

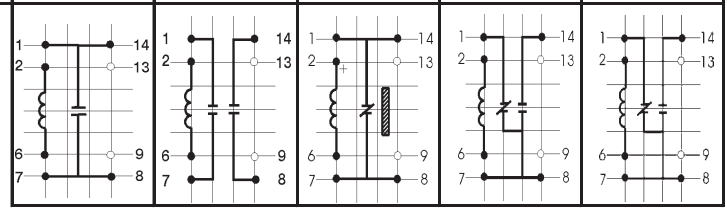
## Ordering Information

|                     |                                  |
|---------------------|----------------------------------|
| <b>Part Number</b>  | <b>80XX-XX-XX</b>                |
| <b>Model Number</b> | <b>Diode Option<sup>3</sup></b>  |
| 8002 8021           | 0=No Diode 1=Diode               |
| <b>Coil Voltage</b> | <b>Shield Option<sup>4</sup></b> |
| 05=5 volts          | 0=No Shield                      |
| 12=12 volts         | 1=Electrostatic Shield           |

# 8000 Series/DIP Reed Relays

| Model Number                               |   |                        | 8001 <sup>2,3,4</sup> | 8002 <sup>2,3,4</sup> | 8021 <sup>2,3,4</sup> | 8041 <sup>2,3,4</sup> | 8061 <sup>2,3,4,5</sup> |
|--|---|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|
| Parameters                                 | Test Conditions                                 | Units                  | 1 Form A              | 2 Form A              | 1 Form B              | 1 Form C              | 1 Form C SMD            |
| <b>COIL SPECS.</b>                         |   |                        |                       |                       |                       |                       |                         |
| Nom. Coil Voltage                          |   | VDC                    | 5 12                  | 5 12                  | 5 12                  | 5 12                  | 5 12                    |
| Max. Coil Voltage                          |   | VDC                    | 6.5 15                | 6.5 15                | 6.5 15                | 6.5 15                | 6.5 15                  |
| Coil Resistance                            | +/- 10%, 25° C                                  | Ω                      | 500 500               | 200 500               | 200 500               | 200 500               | 200 500                 |
| Operate Voltage                            | Must Operate by                                 | VDC - Max.             | 3.8 9.6               | 3.8 9.6               | 3.8 9.6               | 3.8 9.6               | 3.8 9.6                 |
| Release Voltage                            | Must Release by                                 | VDC - Min.             | 0.5 1.0               | 0.5 1.0               | 0.5 1.0               | 0.5 1.0               | 0.5 1.0                 |
| <b>CONTACT RATINGS</b>                     |   |                        |                       |                       |                       |                       |                         |
| Switching Voltage                          | Max DC/Peak AC Resist.                          | Volts                  | 200                   | 200                   | 200                   | 100                   | 100                     |
| Switching Current                          | Max DC/Peak AC Resist.                          | Amps                   | 0.5                   | 0.5                   | 0.5                   | 0.25                  | 0.25                    |
| Carry Current                              | Max DC/Peak AC Resist.                          | Amps                   | 1.0                   | 1.0                   | 1.0                   | 0.5                   | 0.5                     |
| Contact Rating                             | Max DC/Peak AC Resist.                          | Watts                  | 10                    | 10                    | 10                    | 3                     | 3                       |
| Life Expectancy-Typical <sup>1</sup>       | Signal Level 1.0V,10mA                          | x 10 <sup>6</sup> Ops. | 500                   | 500                   | 500                   | 100                   | 100                     |
| Static Contact Resistance (max. init.)     | 50mV, 10mA                                      | Ω                      | 0.150                 | 0.150                 | 0.150                 | 0.200                 | 0.200                   |
| Dynamic Contact Resistance (max. init.)    | 0.5V, 50mA at 100 Hz, 1.5 msec                  | Ω                      | 0.200                 | 0.200                 | 0.200                 | 0.250                 | 0.250                   |
| <b>RELAY SPECIFICATIONS</b>                |   |                        |                       |                       |                       |                       |                         |
| Insulation Resistance (minimum)            | Between all Isolated Pins at 100V, 25°C, 40% RH | Ω                      | 10 <sup>12</sup>      | 10 <sup>12</sup>      | 10 <sup>12</sup>      | 10 <sup>10</sup>      | 10 <sup>10</sup>        |
| Capacitance - Typical Across Open Contacts | No Shield                                       | pF                     | 0.5                   | 0.5                   | 0.5                   | 1.5                   | 1.5                     |
|  | Shield Floating                                 | pF                     | 1.0                   | 0.5                   | 0.5                   | 1.5                   | 1.5                     |
|  | Shield Guarding                                 | pF                     | 0.5                   | 0.2                   | 0.2                   | 1.0                   | 1.0                     |
| Open Contact to Coil                       | No Shield                                       | pF                     | 1.5                   | 1.5                   | 2.5                   | 1.5                   | 1.5                     |
|  | Shield Floating                                 | pF                     | 2.0                   | 2.0                   | 2.0                   | 2.0                   | 2.0                     |
|  | Shield Guarding                                 | pF                     | 0.5                   | 0.5                   | 1.5                   | 0.5                   | 0.5                     |
| Contact to Shield                          | Contacts Open, Shield Floating                  | pF                     | 2.0                   | 1.5                   | 2.0                   | 2.0                   | 2.0                     |
|  | Between Contacts                                | VDC/peak AC            | 300                   | 300                   | 300                   | 200                   | 200                     |
| Dielectric Strength (minimum)              | Contacts to Shield                              | VDC/peak AC            | 1500                  | 1500                  | 1500                  | 1500                  | 1500                    |
|  | Contacts/Shield to Coil                         | VDC/peak AC            | 1500                  | 1500                  | 1500                  | 1500                  | 1500                    |
|  | At Nominal Coil Voltage, 30 Hz Square Wave      | msec.                  | 0.5                   | 0.5                   | 0.5                   | 1.0                   | 1.0                     |
| Operate Time - including bounce - Typical  |   |                        |                       |                       |                       |                       |                         |
| Release Time - Typical                     | Diode Suppression <sup>6</sup>                  | msec.                  | 1.0                   | 1.0                   | 1.0                   | 1.5                   | 1.5                     |
|  | No Suppression                                  | msec.                  | 0.5                   | 0.5                   | 0.5                   | 1.0                   | 1.0                     |

Top View:  
Dot stamped on top of relay refers to pin #1 location  
Grid = .1"x.1" (2.54mm x 2.54mm)



**Notes:**

- <sup>1</sup> Consult factory for life expectancy at other switching loads.
- <sup>2</sup> Molded depression on top of relay refers to pin #1 location.
- <sup>3</sup> Optional coil suppression diode across pins 2(+) and 6(-).
- <sup>4</sup> Optional ES Shield is tied to pin 9.
- <sup>5</sup> Surface mount processing temperature: 260°C max for 1 minute dwell time. Temperature measured on leads where lead exits molded package.
- <sup>6</sup> Consists of 56V Zener diode and 1N4148 diode in series, connected in parallel with coil.

**Environmental Ratings**

Storage Temp: -35°C to +100°C;  
 Operating Temp: -20°C to +85°C  
 Solder Temp: 270°C max; 10 sec. max  
 The operate and release voltage and the coil resistance are specified at 25°C.  
 These values vary by approximately 0.4% / °C as the ambient temperature varies.  
 Vibration: 20 G's to 2000 Hz; Shock: 50 G's