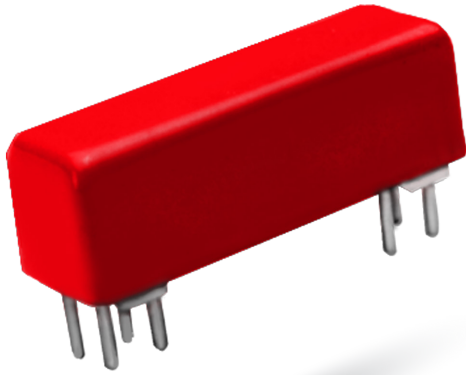


# 2900 SERIES REED RELAYS



## 2900 Series Reed Relays

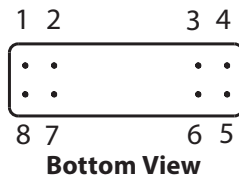
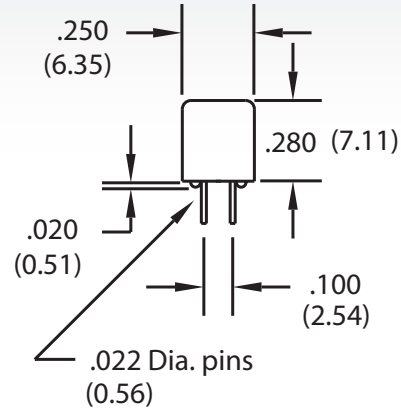
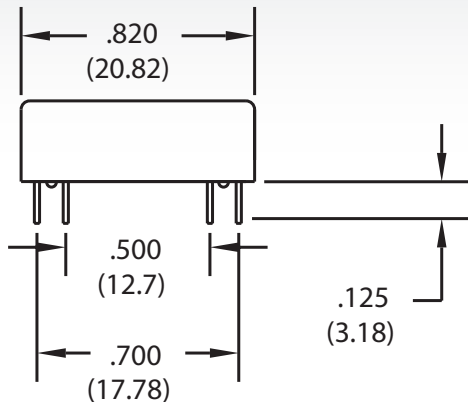
Ideally suited to the needs of Automated Test Equipment and RF requirements. The specification tables allow you to select the appropriate relay for your particular application. Slightly larger than the 2200 Series; these relays provide maximum versatility with options such as a Form C with electrostatic or co-axial shielding. If your requirements differ, please consult your local representative or Coto's Factory.

## 2900 Series Features

- ▶ Very small (0.20 in<sup>2</sup>), high reliability reed relays
- ▶ High Insulation Resistance -  $10^{12}\Omega$  offered on 2904
- ▶ High speed switching compared to electromechanical relays
- ▶ Hermetically sealed contacts for long life
- ▶ Epoxy coated steel shell provides magnetic shielding
- ▶ Optional Electrostatic Shield for reducing capacitive coupling
- ▶ Optional Coaxial Shield for 50 $\Omega$  impedance and switching of fast rise time digital pulses
- ▶ RoHS compliant (except for 2920)

## DIMENSIONS

*in Inches (Millimeters)*



**Bottom View**

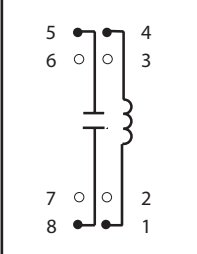
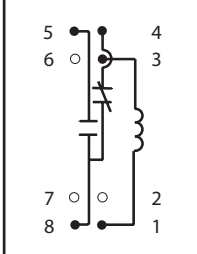
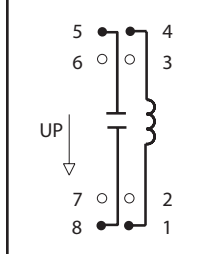
## Ordering Information

| Part Number                                                                 |              | 29XX-XX-XX1 | Shielding Options <sup>2</sup> |
|-----------------------------------------------------------------------------|--------------|-------------|--------------------------------|
| Model Number                                                                | Coil Voltage |             |                                |
| 2904                                                                        | 05=5 volts   |             | 0=No Shield                    |
| 2911                                                                        | 12=12 volts  |             | 1=Electrostatic Shield         |
| 2920                                                                        |              |             | 2=Co-axial Shield              |
| Coil Options                                                                |              |             |                                |
| 1=Use for Model #2920 (5 & 12 volt coil)                                    |              |             |                                |
| 3=Use for Model #2904 (12 volt coil) and for Model #2911 (5 & 12 volt coil) |              |             |                                |
| 4=Use for Model #2904 (5 volt coil)                                         |              |             |                                |

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| MODEL NUMBER                                  |                                                    |                        | 2904 <sup>2</sup> | 2911 <sup>2</sup> | 2920 <sup>2,3</sup> |
|-----------------------------------------------|----------------------------------------------------|------------------------|-------------------|-------------------|---------------------|
| Parameters                                    | Test Conditions                                    | Units                  | 1 Form A          | 1 Form C          | 1Form A Hg Wetted   |
| <b>COIL SPECS.</b>                            |                                                    |                        |                   |                   |                     |
| Nom. Coil Voltage                             |                                                    | VDC                    | 5 12              | 5 12              | 5 12                |
| Coil Resistance                               | +/- 10%, 25° C                                     | Ω                      | 370 1500          | 230 1500          | 75 425              |
| Operate Voltage                               | Must Operate by                                    | VDC - Max.             | 3.8 9.0           | 3.8 9.0           | 3.8 9.0             |
| Release Voltage                               | Must Release by                                    | VDC - Min.             | 0.4 1.0           | 0.4 1.0           | 0.4 1.0             |
| <b>CONTACT RATINGS</b>                        |                                                    |                        |                   |                   |                     |
| Switching Voltage                             | Max DC/Peak AC Resist.                             | Volts                  | 200               | 150               | 500                 |
| Switching Current                             | Max DC/Peak AC Resist.                             | Amps                   | 0.5               | 0.25              | 1.0                 |
| Carry Current                                 | Max DC/Peak AC Resist.                             | Amps                   | 1.5               | 1.0               | 2.0                 |
| Contact Rating                                | Max DC/Peak AC Resist.                             | Watts                  | 10                | 3                 | 50                  |
| Life Expectancy-Typical <sup>1</sup>          | Signal Level 1.0V, 10mA                            | x 10 <sup>6</sup> Ops. | 500               | 100               | 1000                |
| Static Contact Resistance (max. init.)        | 50mV, 10mA                                         | Ω                      | 0.100             | 0.150             | 0.075               |
| Dynamic Contact Resistance (max. init.)       | 0.5V, 50mA<br>at 100 Hz, 1.5 msec                  | Ω                      | 0.200             | 0.200             | 0.100               |
| <b>RELAY SPECIFICATIONS</b>                   |                                                    |                        |                   |                   |                     |
| Insulation Resistance (minimum)               | Between all Isolated Pins<br>at 100V, 25°C, 40% RH | Ω                      | 10 <sup>12</sup>  | 10 <sup>11</sup>  | 10 <sup>10</sup>    |
| Capacitance - Typical<br>Across Open Contacts | Shield Floating                                    | pF                     | 1.0               | 2.0               | 1.4                 |
|                                               | Shield Guarding                                    | pF                     | 0.3               | 1.0               | 0.2                 |
| Dielectric Strength (minimum)                 | Between Contacts                                   | VDC/peak AC            | 350               | 200               | 1000                |
|                                               | Contacts to Coil                                   | VDC/peak AC            | 350               | 200               | 1000                |
|                                               | Contacts/Shield to Coil                            | VDC/peak AC            | 1500              | 1500              | 1500                |
| Operate Time - including bounce - Typical     | At Nominal Coil Voltage,<br>30 Hz Square Wave      | msec.                  | 0.5               | 1.0               | 1.5                 |
| Release Time - Typical                        |                                                    | msec.                  | 0.1               | 2.0               | 1.0                 |

Top View:  
 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> Model 2904, 2911 and 2920, pin #7 is tied to optional electrostatic shield, pins #6 & #7 are tied to optional coaxial shield.

<sup>3</sup> Model 2920 has Hg wetted contacts - position sensitive, must be mounted within 30° of vertical plane. See schematic.

Hg Content per capsule: Form A, 0.04 grams.

#### 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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