

# **QUALITY PROVEN REED RELAYS**

## **SERIES 4000/4200**

Coto 4000/4200 series reed relays are uniquely designed to provide quality and reliability at a low cost.

Using only high-grade materials, the nylon bobbin and SE-O rated polyester case are engineered for automation. Our quality proven reed switches and NEMA spec'd magnet wire complete this quality product.

Each relay is entirely sealed with epoxy and tested 100% to all parameters. A wide variety of contact types are offered to fit your switching requirements. Standard coil options allow a selection of sensitivities from 83 mA to as little as 4 mA.

4000/4200 relays are available with axial leads or formed on 1" x .100" and 1" x .150" centers. Other special configurations are available on special request.

All relays are available with full magnetic shielding applied internally to maintain a non-shorting exterior design. Highly efficient electrostatic shielding is also available on all models. Most models are recognized by Underwriters' Laboratories and others are now being submitted to UL.

#### **TESTING AND RELIABILITY**

Each relay is tested 100% to the specified parameters. High reliability versions are subjected to an extensive series of cycling and dynamic testing.

#### **PACKAGING**

Outside case material is a flame-retardant polyester. Reed switches are epoxyencapsulated into coil form and outside case to provide a strain relief on the reed switch glass-to-metal seal.

Switch leads are .023" diameter tinned Niron. Coil leads are .025 $\pm$  diameter tinned copper. The encapsulant is a two-part room cure epoxy where volume resistivity is greater than 1 x 10<sup>12</sup> ohms-cm at 25°C.

#### **ENVIRONMENTAL RATINGS**

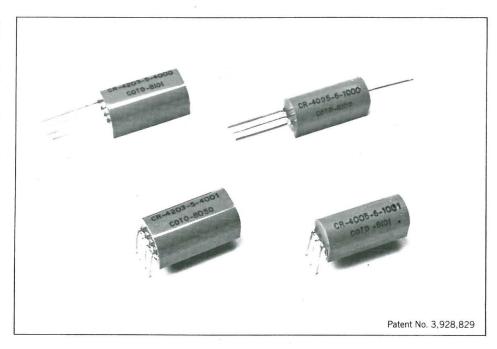
Storage Temperature:

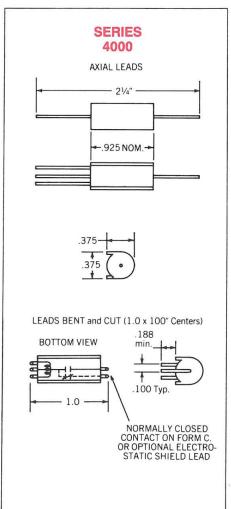
-50 to + 100 degrees COperating Temperature:-20 to + 70 degrees C

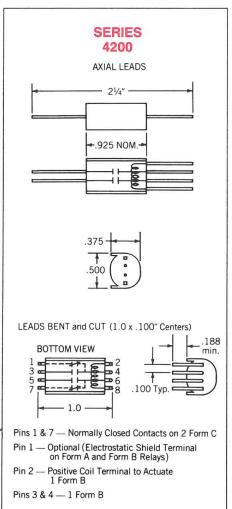
(NOTE: The must-operate and must-release voltages and the coil resistance are specified at 25 degrees C. These values vary by approximately 0.4% per degree C as the ambient temperature varies.)

Vibration: 20 G's to 2,000 Hz.

Shock: 50 G's







## **OPERATING PARAMETERS @ 25°C**

| Parameter                  | 4000 |     |      |      | 4200 |     |      |      |
|----------------------------|------|-----|------|------|------|-----|------|------|
| Nominal Volts              | 5    | 6   | 12   | 24   | 5    | 6   | 12   | 24   |
| Must Operate<br>Volts      | 3.7  | 4.5 | 9.0  | 18.0 | 3.7  | 4.5 | 9.0  | 18.0 |
| Must Release<br>Voits      | 0.4  | 0.5 | 1.0  | 2.0  | 0.4  | 0.5 | 1.0  | 2.0  |
| Coil #0<br>Resistance Ohms | 65   | 105 | 500  | 1800 | 60   | 100 | 400  | 1600 |
| Coil #1                    | 175  | 300 | 1000 | 4000 | 150  | 250 | 1000 | 4000 |
| Coil #2                    | 105  | 175 | 800  | 2700 | 100  | 150 | 600  | 2400 |
| Coil #3                    | 300  | 500 | 1800 | _    | 250  | 400 | 1600 | -    |
| Coil #4                    | 500  | 800 | 2700 | _    | 400  | 600 | 2400 | _    |

## **ORDERING INFORMATION**

To order a COTO relay, assemble a part number from the data below to describe the desired parameters.

| 4XXX — XX — X X X  |
|--|
| Model No.  |
| Coil Voltage   |
| Coil #0, 1, 2, 3, 4                                      |
| "0" = no magnetic shield "1" = magnetic shield           |
| "0" = no electrostatic shield "1" = electrostatic shield |
| "O" = axial leads  |
| "1" = bent and cut leads, .100"                          |
| "2" = bent and cut leads, .150"                          |

## **SPECIFICATIONS**

| Relay<br>Contact<br>Type        |  | Model<br>Number | Initial<br>Contact<br>Resistance<br>Ohms Max. | Contact<br>Rating<br>Watts<br>Max. | Switch<br>Volts<br>DC Max. | Switch<br>Amps Max.<br>Resistive | Breakdown<br>Volts<br>DC Min.            | Options<br>Restrictions          |  |
|---------------------------------|--|-----------------|---|------------------------------------|----------------------------|----------------------------------|--|----------------------------------|--|
| 4000                            | 4200   |                 |   |                                    |                            |                                  |  |                                  |  |
| 1A‡<br>High<br>Reliability      | 2A‡<br>High<br>Reliability   | 4004<br>4204    | .100  | 10                                 | 200                        | .5                               | 300                                      |                                  |  |
| 1A<br>High Power                |  | 4005            | .150  | 50                                 | 150                        | 1.0                              | 200                                      | No E/S<br>No #3 or #4 Coil       |  |
| 1C 2C<br>Standard Standard      | The second secon | 4011            | .150  | 3                                  | 150                        | .250                             | 200                                      | #4 Coil Must Have<br>Mag. Shield |  |
|                                 | 4211   | .150            | 3   | 150                                | 250                        | 200                              | #4 Coil Must Have<br>Mag. Shield, No E/S |                                  |  |
| 1A*<br>Mercury<br>Wet           |  | 4020            | .050  | 50                                 | 500                        | 2.0                              | 1000                                     | No E/S<br>No #3 or #4 Coil       |  |
| 1A<br>High Voltage<br>Low Cost  | 2A<br>High Voltage<br>Low Cost   | 4030<br>4230    | .150  | 10                                 | 300                        | .5                               | 800                                      | No #4 Coil                       |  |
| 1A‡<br>High Voltage<br>Standard | 2A<br>High Voltage<br>Standard   | 4031<br>4231    | .150  | 10                                 | 500                        | .5                               | 1200                                     | No #4 Coil                       |  |
| 1B<br>Standard                  |  | 4240            | .150  | 10                                 | 200                        | .5                               | 300                                      | Must Have Mag.<br>Shield, No E/S |  |

Insulation Resistance 109 Ohms min. @ 100VDC, 25°C, 40% Relative Humidity.

<sup>\*</sup>Standard coil only. Mount Hg Wet relay vertically with coil leads down. ‡Recognized under the component program of Underwriters' Laboratory.