

# Miniature Reed Relays (3)

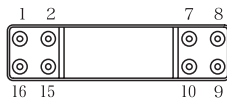
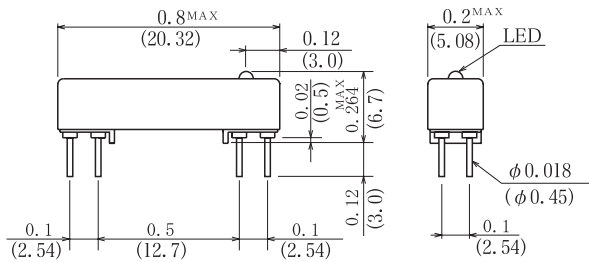


A built-in LED type was added to the 20D, 20W, 20Z and 21D series. Since an LED diode is mounted on the relay, there are even more ways to use relays now that they can be used to shorten troubleshooting time.

## Mechanical Dimensions

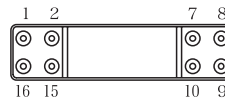
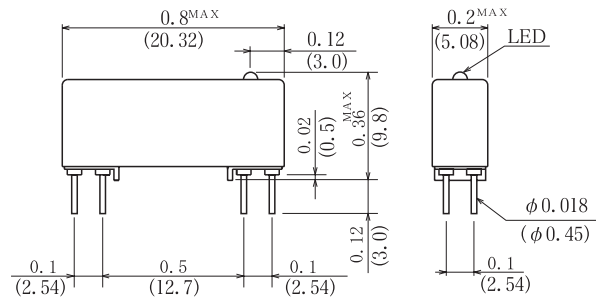
All dimensions are measured in inches (millimeters).

20D-1A□2E1  
 20W-1A□2E0  
 20Z-1A□2E0  
 20D-1C□2E0



UP  
 (20W)

21D-1E□2E0





20□, 21D Series			Model Number	Model Number	Model Number	Model Number	Model Number
			20D-1A□2E1	20W-1A□2E0	20Z-1A□2E0	20D-1C□2E0	21D-1E□2E0
Parameters	Test Condition	Units	1 Form A	1 Form A	1 Form A	1 Form C	1 Form C
<b>Coil Specs</b>							
Nominal coil voltage		VDC	5 12 24	5 12 24	5 12 24	5 12 24	5 12 24
Coil resistance	±10% at 20°C	Ω	160 600 1800	70 330 1200	120 600 1800	90 600 1800	160 600 1800
Operating voltage	15°C~35°C	VDC Max	3.6 9.6 19.2	3.6 9.6 19.2	3.6 9.6 19.2	3.6 9.6 19.2	3.6 9.6 19.2
Operating voltage range	15°C~35°C	VDC	— — —	— — —	— — —	— — —	— — —
Release voltage	15°C~35°C	VDC Min	0.7 1.2 2.4	0.7 1.2 2.4	0.7 1.2 2.4	0.7 1.2 2.4	0.7 1.2 2.4
<b>Contact Ratings</b>							
Switching voltage	Max. DC/Peak AC resistance	Volts	100	500	500	30	100
Switching current	Max. DC/Peak AC resistance	Amps	0.5	1.0	0.5	0.2	0.5
Carry current	Max. DC/Peak AC resistance	Amps	1.0	2.0	2.0	0.5	1.0
Contact rating	Max. DC/Peak AC resistance	Watts	10	50	50	3	10
Life expectancy	1V. 10mA	×10 <sup>6</sup> Cyc	1000	1000	300	50	1000
Contact resistance	Maximum initial	mΩ	150	100	100	150	150
Contact resistance stability	Maximum initial	mΩ	5.0	5.0	5.0	5.0	5.0
<b>Relay Specifications</b>							
Insulation resistance	Between all isolated pins at 100V 20°C 40%RH	Ω	10 <sup>11</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>	10 <sup>10</sup>
Capacitance		pF-Max					
Across open contacts	Shield guarding		0.2	0.1	0.2	0.7	0.5
Contact to shield	Contacts open, :Make-shield :Break-shield shield floating		1.2	2.0	1.2	1.7 3.2	1.8 4.0
Open contact to coil	Shield guarding : Make-Coil :Break-Coil		0.6	0.6	0.6	0.6 1.3	0.8
Dielectric strength	Between contacts Contacts to shield	VDC	200 500	1000 1000	1000 1000	200 500	200 500
Operating time (Including. bounce)	At nominal coil voltage, 100Hz Square wave	msec	0.35	2.5 (No Bounce)	1.2 (No Bounce)	1.5	1.0
Release time	Diode suppression	msec	0.25	2.5	1.2	2.0	1.0
Environmental Ratings		Schematics Top view					
Measurement reference conditions Temp.: 15°C~35°C Humidity: 25%~85%RH Atmospheric pressure: 860~1060hPa Storage temp: -40°C~+80°C :-30°C~+80°C (20W, 20Z) :-10°C~+60°C :-10°C~+60°C (20W, 20Z) The operating and Release Voltage and the coil resistance are specified at 20°C. These values change approximately 0.4%/°C change in the ambient temperature. Vibration: 20Gs to 2000Hz Shock: 50Gs							

**Notes :**

- Values are specified with a resistive load being applied. A contact protective circuit is required for C and L Type loads.
- The values of the operating time and release time however, are when the rated coil voltage is applied and a clamp diode is attached.
- Model 20D-1A□2E1, 20W-1A□2E0 and 20Z-1A□2E0 : Diode is connected to pin 16 (+) and pin 9 (-).  
Model 20D-1C□2E0 and 21D-1E□2E0 : Diode is connected to pin 2 (+) and pin 7 (-). Correct coil polarity must be followed.
- The 20W Series model have Hg wet contacts, are position sensitive, and must be mounted with in 30° of the vertical plan. See the schematic.

**ORDERING CODE**

2 0 □ - 1 □ □ 2 E □  
(1) (2) (3) (4)  
2 1 D - 1 E □ 2 E O  
(3)

Example 20D-1A12E1 Represents Series 20D with 1Form A, Dry Reed (Rhodium), Coil Voltage 5V, Coaxial Shield with Diode and LED.

- |                       |                           |
|-----------------------|---------------------------|
| (1) Reed Switch Type  | (3) Coil Voltage          |
| D-Dry Reed (Rhodium)  | 1-5VDC                    |
| W-Hg Wet              | 2-12VDC                   |
| Z-Hg Wet All Position | 3-24VDC                   |
| (2) Contact Form      | (4) Insulation Resistance |
| A-Form A              | 0-10 <sup>10</sup>        |
| C-Form C              | 1-10 <sup>11</sup>        |