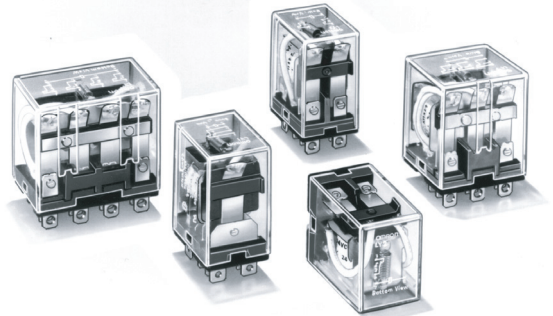


# General-purpose Relay LY

## A Miniature Power Relay

- Equipped with arc barrier.
- Dielectric strength: 2,000 V.
- Built-in diode models added to the LY Series.
- Single-pole and double-pole models are applicable to operating coils with ratings of 100/110 VAC, 110/120 VAC, 200/220 VAC, 220/240 VAC, or 100/110 VDC).
- Three-pole and four-pole models are applicable to operating coils with ratings of 100/110 VAC, 200/220 VAC, or 100/110 VDC).



## Ordering Information

### ■ Open Relays

| Type                          | Contact form      | Plug-in/solder terminals | Plug-in/solder terminals with LED indicator | PCB terminals | Upper-mounting Plug-in/solder terminals |
|-------------------------------|-------------------|--------------------------|---------------------------------------------|---------------|-----------------------------------------|
|                               |                   |                          |                                             |               |                                         |
| Standard                      | SPDT              | LY1                      | LY1N                                        | LY1-0         | LY1F                                    |
|                               | DPDT              | LY2                      | LY2N                                        | LY2-0         | LY2F                                    |
|                               | DPDT (bifurcated) | LY2Z                     | LY2ZN                                       | LY2Z-0        | LY2ZF                                   |
|                               | 3PDT              | LY3                      | LY3N                                        | LY3-0         | LY3F                                    |
|                               | 4PDT              | LY4                      | LY4N                                        | LY4-0         | LY4F                                    |
| With built-in diode (DC only) | SPDT              | LY1-D                    | LY1N-D2                                     | ---           | ---                                     |
|                               | DPDT              | LY2-D                    | LY2N-D2                                     | ---           | ---                                     |
|                               | DPDT (bifurcated) | LY2Z-D                   | LY2ZN-D2                                    | ---           | ---                                     |
|                               | 3PDT              | LY3-D                    | ---                                         | ---           | ---                                     |
|                               | 4PDT              | LY4-D                    | LY4N-D2                                     | ---           | ---                                     |
| With built-in CR (AC only)    | SPDT              | ---                      | ---                                         | ---           | ---                                     |
|                               | DPDT              | LY2-CR                   | LY2N-CR                                     | ---           | ---                                     |
|                               | DPDT (bifurcated) | LY2Z-CR                  | LY2ZN-CR                                    | ---           | ---                                     |

**Note:** 1. When ordering, add the rated coil voltage to the model number. Rated coil voltages are given in the coil ratings table.

Example: LY2, 6 VAC  
Rated coil voltage

2. Relays with #187 quick connect terminals are also available with SPDT and DPDT contact. Ask your OMRON representative for details.
3. SEV models are standard Relays excluding DPDT (bifurcated) models.
4. VDE- or LR- qualifying Relays must be specified when ordering.

## ■ Accessories (Order Separately)

### Sockets

| Poles  | Front-connecting Socket   | Back-connecting Socket   |                    |               |
|--------|---------------------------|--------------------------|--------------------|---------------|
|        | DIN track/screw terminals | Plug-in/solder terminals | Wrapping terminals | PCB terminals |
| 1 or 2 | PTF08A-E, PTF08A          | PT08                     | PT08QN             | PT08-0        |
| 3      | PTF11A                    | PT11                     | PT11QN             | PT11-0        |
| 4      | PTF14A-E, PTF14A          | PT14                     | PT14QN             | PT14-0        |

**Note:** 1. For PTF08-E and PTF14A-E, see "Track Mounted Socket."

2. PTF□A (-E) Sockets have met UL and CSA standards: UL 508/CSA C22.2.

### Mounting Plates for Sockets

| Socket model   | For 1 Socket | For 10 Sockets | For 12 Sockets | For 18 Sockets |
|----------------|--------------|----------------|----------------|----------------|
| PT08<br>PT08QN | PYP-1        | ---            | ---            | PYP-18         |
| PT11<br>PT11QN | PTP-1-3      | ---            | PTP-12         | ---            |
| PT14<br>PT14QN | PTP-1        | PTP-10         | ---            | ---            |

### Socket-Hold-down Clip Pairings

| Relay type                                                        | Poles | Front-connecting Sockets |            | Back-connecting Sockets |            |
|-------------------------------------------------------------------|-------|--------------------------|------------|-------------------------|------------|
|                                                                   |       | Socket model             | Clip model | Socket model            | Clip model |
| Standard, bifurcated contacts operation indicator, built-in diode | 1, 2  | PTF08A-E, PTF08A         | PYC-A1     | PT08(QN), PT08-0        | PYC-P      |
|                                                                   | 3     | PTF11A                   |            | PT11(QN), PT11-0        |            |
|                                                                   | 4     | PTF14A-E, PTF14A         |            | PT14(QN), PT14-0        |            |
| CR circuit                                                        | 2     | PTF08A-E, PTF08A         | Y92H-3     | PT08(QN), PT08-0        | PYC-1      |

## Specifications

### ■ Coil Ratings

#### Single- and Double-pole Relays

| Rated voltage |           | Rated current |            | Coil resistance | Coil inductance (reference value) |          | Must operate voltage | Must release voltage | Max. voltage | Power consum. (approx.) |
|---------------|-----------|---------------|------------|-----------------|-----------------------------------|----------|----------------------|----------------------|--------------|-------------------------|
|               |           | 50 Hz         | 60 Hz      |                 | Arm. OFF                          | Arm. ON  |                      |                      |              |                         |
| AC            | 6 V       | 214.1 mA      | 183 mA     | 12.2 Ω          | 0.04 H                            | 0.08 H   | 80% max.             | 30% min.             | 110%         | 1.0 to 1.2 VA (60 Hz)   |
|               | 12 V      | 106.5 mA      | 91 mA      | 46 Ω            | 0.17 H                            | 0.33 H   |                      |                      |              |                         |
|               | 24 V      | 53.8 mA       | 46 mA      | 180 Ω           | 0.69 H                            | 1.30 H   |                      |                      |              |                         |
|               | 50 V      | 25.7 mA       | 22 mA      | 788 Ω           | 3.22 H                            | 5.66 H   |                      |                      |              |                         |
|               | 100/110 V | 11.7/12.9 mA  | 10/11 mA   | 3,750 Ω         | 14.54 H                           | 24.6 H   |                      |                      |              | 0.9 to 1 VA (60 Hz)     |
|               | 110/120 V | 9.9/10.8 mA   | 8.4/9.2 mA | 4,430 Ω         | 19.20 H                           | 32.1 H   |                      |                      |              |                         |
|               | 200/220 V | 6.2/6.8 mA    | 5.3/5.8 mA | 12,950 Ω        | 54.75 H                           | 94.07 H  |                      |                      |              |                         |
|               | 220/240 V | 4.8/5.3 mA    | 4.2/4.6 mA | 18,790 Ω        | 83.50 H                           | 136.40 H |                      |                      |              |                         |
| DC            | 6 V       | 150 mA        |            | 40 Ω            | 0.16 H                            | 0.33 H   |                      | 10% min.             |              | 0.9 W                   |
|               | 12 V      | 75 mA         |            | 160 Ω           | 0.73 H                            | 1.37 H   |                      |                      |              |                         |
|               | 24 V      | 36.9 mA       |            | 650 Ω           | 3.20 H                            | 5.72 H   |                      |                      |              |                         |
|               | 48 V      | 18.5 mA       |            | 2,600 Ω         | 10.6 H                            | 21.0 H   |                      |                      |              |                         |
|               | 100/110 V | 9.1/10 mA     |            | 11,000 Ω        | 45.6 H                            | 86.2 H   |                      |                      |              |                         |

**Note:** See notes on the bottom of next page.

## Three-pole Relays

| Rated voltage |           | Rated current |              | Coil resistance | Coil inductance<br>(reference value) |         | Must operate voltage | Must release voltage | Max. voltage | Power consum.<br>(approx) |
|---------------|-----------|---------------|--------------|-----------------|--------------------------------------|---------|----------------------|----------------------|--------------|---------------------------|
|               |           | 50 Hz         | 60 Hz        |                 | Arm. OFF                             | Arm. ON |                      |                      |              |                           |
| AC            | 6 V       | 310 mA        | 270 mA       | 6.7 Ω           | 0.03 H                               | 0.05 H  | 80% max.             | 30% min.             | 110%         | 1.6 to 2.0 VA<br>(60 Hz)  |
|               | 12 V      | 159 mA        | 134 mA       | 24 Ω            | 0.12 H                               | 0.21 H  |                      |                      |              |                           |
|               | 24 V      | 80 mA         | 67 mA        | 100 Ω           | 0.44 H                               | 0.79 H  |                      |                      |              |                           |
|               | 50 V      | 38 mA         | 33 mA        | 410 Ω           | 2.24 H                               | 3.87 H  |                      |                      |              |                           |
|               | 100/110 V | 14.1/16 mA    | 12.4/13.7 mA | 2,300 Ω         | 10.5 H                               | 18.5 H  |                      |                      |              |                           |
|               | 200/220 V | 9.0/10.0 mA   | 7.7/8.5 mA   | 8,650 Ω         | 34.8 H                               | 59.5 H  |                      |                      |              |                           |
| DC            | 6 V       | 234 mA        |              | 25.7 Ω          | 0.11 H                               | 0.21 H  | 80% max.             | 10% min.             | 110%         | 1.4 W                     |
|               | 12 V      | 112 mA        |              | 107 Ω           | 0.45 H                               | 0.98 H  |                      |                      |              |                           |
|               | 24 V      | 58.6 mA       |              | 410 Ω           | 1.89 H                               | 3.87 H  |                      |                      |              |                           |
|               | 48 V      | 28.2 mA       |              | 1,700 Ω         | 8.53 H                               | 13.9 H  |                      |                      |              |                           |
|               | 100/110 V | 12.7/13 mA    |              | 8,500 Ω         | 29.6 H                               | 54.3 H  |                      |                      |              |                           |

**Note:** See notes under next table.

## Four-pole Relays

| Rated voltage |           | Rated current |             | Coil resistance | Coil inductance<br>(reference value) |         | Must operate voltage | Must release voltage | Max. voltage | Power consum.<br>(approx) |
|---------------|-----------|---------------|-------------|-----------------|--------------------------------------|---------|----------------------|----------------------|--------------|---------------------------|
|               |           | 50 Hz         | 60 Hz       |                 | Arm. OFF                             | Arm. ON |                      |                      |              |                           |
| AC            | 6 V       | 386 mA        | 330 mA      | 5 Ω             | 0.02 H                               | 0.04 H  | 80% max.             | 30% min.             | 110%         | 1.95 to 2.5 VA<br>(60 Hz) |
|               | 12 V      | 199 mA        | 170 mA      | 20 Ω            | 0.10 H                               | 0.17 H  |                      |                      |              |                           |
|               | 24 V      | 93.6 mA       | 80 mA       | 78 Ω            | 0.38 H                               | 0.67 H  |                      |                      |              |                           |
|               | 50 V      | 46.8 mA       | 40 mA       | 350 Ω           | 1.74 H                               | 2.88 H  |                      |                      |              |                           |
|               | 100/110 V | 22.5/25.5 mA  | 19/21.8 mA  | 1,600 Ω         | 10.5 H                               | 17.3 H  |                      |                      |              |                           |
|               | 200/220 V | 11.5/13.1 mA  | 9.8/11.2 mA | 6,700 Ω         | 33.1 H                               | 57.9 H  |                      |                      |              |                           |
| DC            | 6 V       | 240 mA        |             | 25 Ω            | 0.09 H                               | 0.21 H  | 80% max.             | 10% min.             | 110%         | 1.5 W                     |
|               | 12 V      | 120 mA        |             | 100 Ω           | 0.39 H                               | 0.84 H  |                      |                      |              |                           |
|               | 24 V      | 69 mA         |             | 350 Ω           | 1.41 H                               | 2.91 H  |                      |                      |              |                           |
|               | 48 V      | 30 mA         |             | 1,600 Ω         | 6.39 H                               | 13.6 H  |                      |                      |              |                           |
|               | 100/110 V | 15/15.9 mA    |             | 6,900 Ω         | 32 H                                 | 63.7 H  |                      |                      |              |                           |

**Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/–20% for rated currents and ±15% for DC coil resistance.

2. Performance characteristic data are measured at a coil temperatures of 23°C.

3. AC coil resistance and impedance are provided as reference values (at 60 Hz).

4. Power consumption drop was measured for the above data. When driving transistors, check leakage current and connect a bleeder resistor if required.

## ■ Contact Ratings

| Relay                           | Single contact                       |                                                   |                                      |                                                   | Bifurcated contacts                  |                                                   |
|---------------------------------|--------------------------------------|---------------------------------------------------|--------------------------------------|---------------------------------------------------|--------------------------------------|---------------------------------------------------|
|                                 | 1-pole                               |                                                   | 2-, 3- or 4-pole                     |                                                   | 2-pole                               |                                                   |
| Load                            | Resistive load<br>( $\cos\phi = 1$ ) | Inductive load<br>( $\cos\phi=0.4$ ,<br>L/R=7 ms) | Resistive load<br>( $\cos\phi = 1$ ) | Inductive load<br>( $\cos\phi=0.4$ ,<br>L/R=7 ms) | Resistive load<br>( $\cos\phi = 1$ ) | Inductive load<br>( $\cos\phi=0.4$ ,<br>L/R=7 ms) |
| Rated load                      | 110 VAC 15 A<br>24 VDC 15 A          | 110 VAC 10 A<br>24 VDC 7 A                        | 110 VAC 10 A<br>24 VDC 10 A          | 110 VAC 7.5 A<br>24 VDC 5 A                       | 110 VAC 5A<br>24 VDC 5 A             | 110 VAC 4 A<br>24 VDC 4A                          |
| Rated carry current             | 15 A                                 |                                                   | 10 A                                 |                                                   | 7 A                                  |                                                   |
| Max. switching voltage          | 250 VAC<br>125 VDC                   |                                                   | 250 VAC<br>125 VDC                   |                                                   | 250 VAC<br>125 VDC                   |                                                   |
| Max. switching current          | 15 A                                 |                                                   | 10 A                                 |                                                   | 7 A                                  |                                                   |
| Max. switching power            | 1,700 VA<br>360 W                    | 1,100 VA<br>170 W                                 | 1,100 VA<br>240 W                    | 825 VA<br>120 W                                   | 550 VA<br>120 W                      | 440 VA<br>100 W                                   |
| Failure rate (reference value)* | 100 mA, 5 VDC                        |                                                   | 100 mA, 5 VDC                        |                                                   | 10 mA, 5 VDC                         |                                                   |

\*Note: P level:  $\lambda_{60} = 0.1 \times 10^{-6}$ /operation, reference value

## ■ Characteristics

| Item                     | All except Relays with bifurcated contacts                                                                                                                                                                                                                                                                                            | Relays with bifurcated contacts |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Contact resistance       | 50 mΩ max.                                                                                                                                                                                                                                                                                                                            |                                 |
| Operate time             | 25 ms max.                                                                                                                                                                                                                                                                                                                            |                                 |
| Release time             | 25 ms max.                                                                                                                                                                                                                                                                                                                            |                                 |
| Max. operating frequency | Mechanical: 18,000 operations/hr<br>Electrical: 1,800 operations/hr (under rated load)                                                                                                                                                                                                                                                |                                 |
| Insulation resistance    | 100 MΩ min. (at 500 VDC)                                                                                                                                                                                                                                                                                                              |                                 |
| Dielectric strength      | 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity<br>2,000 VAC, 50/60 Hz for 1 min between contacts of different polarity                                                                                                                                                                                               |                                 |
| Vibration resistance     | Destruction: 10 to 55 to 10 Hz, 0.5 mm single amplitude (1.0 mm double amplitude)<br>Malfunction: 10 to 55 to 10 Hz, 0.5 mm single amplitude (1.0 mm double amplitude)                                                                                                                                                                |                                 |
| Shock resistance         | Destruction: 1,000 m/s <sup>2</sup><br>Malfunction: 200 m/s <sup>2</sup>                                                                                                                                                                                                                                                              |                                 |
| Endurance                | Mechanical: AC: 50,000,000 operations min. (at 18,000 operations/hr)<br>DC: 1,00,000,000 operations min. (at 18,000 operations/hr)<br>Electrical: Single-, three-, and four-pole: 200,000 operations min. (at 1,800 operations/hr under rated load)<br>Double-pole: 500,000 operations min. (at 1,800 operations/hr under rated load) |                                 |
| Ambient temperature*     | Operating:<br>Single- and double-pole standard, bifurcated-contact Relays: -25°C to 55°C (with no icing)<br>(-25°C to 70°C if carry current is 4 A or less)<br>All other Relays: -25°C to 40°C (with no icing) (-25°C to 55°C if carry current is 4 A or less)                                                                        |                                 |
| Ambient humidity         | Operating: 5% to 85%                                                                                                                                                                                                                                                                                                                  |                                 |
| Weight                   | Single- and double-pole: approx. 40 g, three-pole: approx. 50 g, four-pole: approx. 70 g                                                                                                                                                                                                                                              |                                 |

Note: 1. The values given above are initial values.

2. The upper limit of 40°C for some Relays is because of the relationship between diode junction temperature and the element used.

## ■ Endurance Under Real Loads (reference only)

### LY1

| Rated voltage | Load type                 | Conditions                                                             | Operating frequency       | Electrical life      |
|---------------|---------------------------|------------------------------------------------------------------------|---------------------------|----------------------|
| 100 VAC       | AC motor                  | 400 W, 100 VAC single-phase with 35-A inrush current, 7-A current flow | ON for 10 s, OFF for 50 s | 50,000 operations    |
|               | AC lamp                   | 300 W, 100 VAC with 51-A inrush current, 3-A current flow              | ON for 5 s, OFF for 55 s  | 100,000 operations   |
|               |                           | 500 W, 100 VAC with 78-A inrush current, 5-A current flow              |                           | 25,000 operations    |
|               | Capacitor (2,000 $\mu$ F) | 24 VDC with 50-A inrush current, 1-A current flow                      | ON for 1 s, OFF for 6 s   | 100,000 operations   |
|               | AC solenoid               | 50 VA with 2.5-A inrush current, 0.25-A current flow                   | ON for 1 s, OFF for 2 s   | 1,500,000 operations |
|               |                           | 100 VA with 5-A inrush current, 0.5-A current flow                     |                           | 800,000 operations   |

### LY2

| Rated voltage | Load type                 | Conditions                                                             | Operating frequency       | Electrical life      |
|---------------|---------------------------|------------------------------------------------------------------------|---------------------------|----------------------|
| 100 VAC       | AC motor                  | 200 W, 100 VAC single-phase with 25-A inrush current, 5-A current flow | ON for 10 s, OFF for 50 s | 200,000 operations   |
|               | AC lamp                   | 300 W, 100 VAC with 51-A inrush current, 3-A current flow              | ON for 5 s, OFF for 55 s  | 80,000 operations    |
|               | Capacitor (2,000 $\mu$ F) | 24 VDC with 50-A inrush current, 1-A current flow                      | ON for 1 s, OFF for 15 s  | 10,000 operations    |
|               |                           | 24 VDC with 20-A inrush current, 1-A current flow                      |                           | 150,000 operations   |
|               | AC solenoid               | 50 VA with 2.5-A inrush current, 0.25-A current flow                   | ON for 1 s, OFF for 2 s   | 1,000,000 operations |
|               |                           | 100 VA with 5-A inrush current, 0.5-A current flow                     |                           | 500,000 operations   |

### LY4

| Rated voltage | Load type                 | Conditions                                                               | Operating frequency       | Electrical life      |
|---------------|---------------------------|--------------------------------------------------------------------------|---------------------------|----------------------|
| 100 VAC       | AC motor                  | 200 W, 200 VAC triple-phase with 5-A inrush current, 1-A current flow    | ON for 10 s, OFF for 50 s | 500,000 operations   |
|               |                           | 750 W, 200 VAC triple-phase with 18-A inrush current, 3.5 A current flow |                           | 70,000 operations    |
|               | AC lamp                   | 300 W, 100 VAC with 51-A inrush current, 3-A current flow                | ON for 5 s, OFF for 55 s  | 50,000 operations    |
|               | Capacitor (2,000 $\mu$ F) | 24 VDC with 50-A inrush current, 1-A current flow                        | ON for 1 s, OFF for 15 s  | 5,000 operations     |
|               |                           | 24 VDC with 20-A inrush current, 1-A current flow                        | ON for 1 s, OFF for 2 s   | 200,000 operations   |
|               | AC solenoid               | 50 VA with 2.5-A inrush current, 0.25-A current flow                     | ON for 1 s, OFF for 2 s   | 1,000,000 operations |
|               |                           | 100 VA with 5-A inrush current, 0.5-A current flow                       |                           | 500,000 operations   |

## ■ Approved Standards

### UL 508 Recognitions (File No. 41643)

| No. of poles | Coil ratings                 | Contact ratings                                                                                         | Operations                                  |
|--------------|------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 1            | 6 to 240 VAC<br>6 to 125 VDC | 15 A, 30 VDC (Resistive)<br>15 A, 240 VAC (General use)<br>TV-5, 120 VAC<br>1/2 HP, 120 VAC             | 6 x 10 <sup>3</sup><br>25 x 10 <sup>3</sup> |
| 2            |                              | 15 A, 28 VDC (Resistive)<br>15 A, 120 VAC (Resistive)<br>12 A, 240 VAC (General use)<br>1/2 HP, 120 VAC | 6 x 10 <sup>3</sup><br>25 x 10 <sup>3</sup> |
| 3 and 4      |                              | 10 A, 30 VDC (Resistive)<br>10 A, 240 VAC (General use)<br>1/3 HP, 240 VAC                              | 6 x 10 <sup>3</sup>                         |

### CSA 22.2 No. 14 Listings (File No. LR31928)

| No. of poles | Coil ratings                 | Contact ratings                                                                             | Operations                                  |
|--------------|------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------|
| 1            | 6 to 240 VAC<br>6 to 125 VDC | 15 A, 30 VDC (Resistive)<br>15 A, 120 VAC (General use)<br>1/2 HP, 120 VAC<br>TV-5, 120 VAC | 6 x 10 <sup>3</sup><br>25 x 10 <sup>3</sup> |
| 2            |                              | 15 A, 30 VDC (Resistive)<br>15 A, 120 VAC (Resistive)<br>1/2 HP, 120 VAC<br>TV-3, 120 VAC   | 6 x 10 <sup>3</sup>                         |
| 3 and 4      |                              | 10 A, 30 VDC (Resistive)<br>10 A, 240 VAC (General use)                                     |                                             |

### SEV Listings (File No. D3,31/137)

| No. of poles | Coil ratings                 | Contact ratings               | Operations          |
|--------------|------------------------------|-------------------------------|---------------------|
| 1            | 6 to 240 VAC<br>6 to 125 VDC | 15 A, 24 VDC<br>15 A, 220 VAC | 6 x 10 <sup>3</sup> |
| 2 to 4       |                              | 10 A, 24 VDC<br>10 A, 220 VAC |                     |

### TÜV (File No. R9251226) (IEC255)

| No. of poles | Coil ratings                 | Contact ratings                                                                                                                                                      | Operations            |
|--------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1 to 4       | 6 to 125 VDC<br>6 to 240 VAC | LY1, LY1-FD<br>15 A, 110 VAC (cosφ=1)<br>10 A, 110 VAC (cosφ=0.4)<br>LY2, LY2-FD, LY3, LY3-FD, LY4,<br>LY4-FD<br>10 A, 110 VAC (cosφ=1)<br>7.5 A, 110 VAC (cosφ=0.4) | 100 x 10 <sup>3</sup> |

### VDE Recognitions (No. 9903UG and 9947UG)

| No. of poles | Coil ratings                                          | Contact ratings                                                                                        | Operations            |
|--------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------|
| 1            | 6, 12, 24, 50, 110, 220 VAC<br>6, 12, 24, 48, 110 VDC | 10 A, 220 VAC (cosφ=1)<br>7 A, 220 VAC (cosφ=0.4)<br>10 A, 28 VDC (L/R=0 ms)<br>7 A, 28 VDC (L/R=7 ms) | 200 x 10 <sup>3</sup> |
| 2            |                                                       | 7 A, 220 VAC (cosφ=1)<br>4 A, 220 VAC (cosφ=0.4)<br>7 A, 28 VDC (L/R=0 ms)<br>4 A, 28 VDC (L/R=7 ms)   |                       |

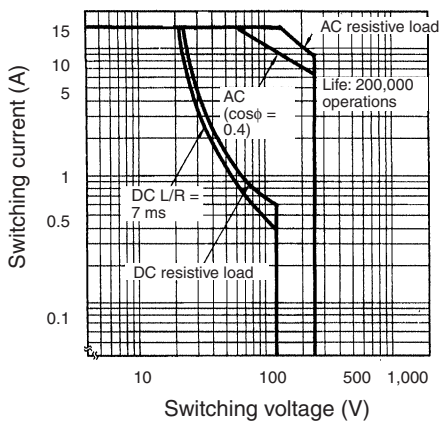
### LR Recognitions (No. 563KOB-204523)

| No. of poles | Coil ratings                 | Contact ratings                                  |
|--------------|------------------------------|--------------------------------------------------|
| 2, 4         | 6 to 240 VAC<br>6 to 110 VDC | 7.5 A, 230 VAC (PF0.4)<br>5 A, 24 VDC (L/R=7 ms) |

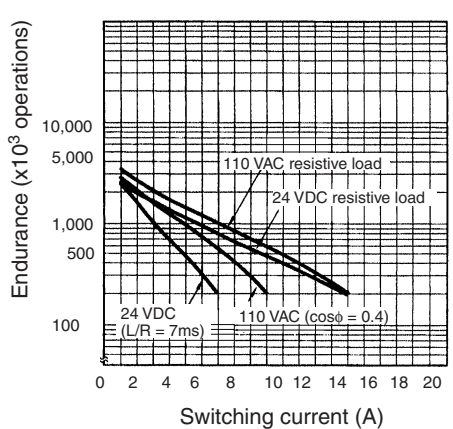
# Engineering Data

## LY1

Maximum Switching Power

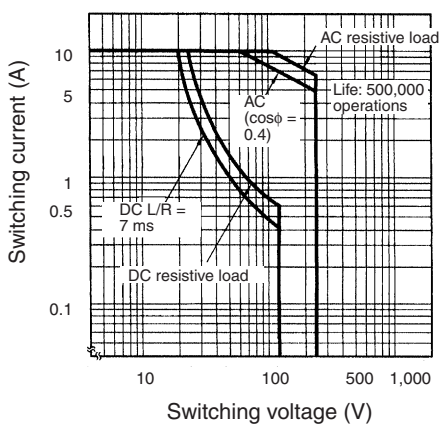


Endurance

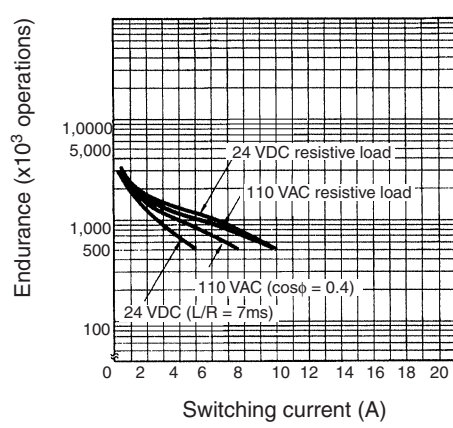


## LY2

Maximum Switching Power

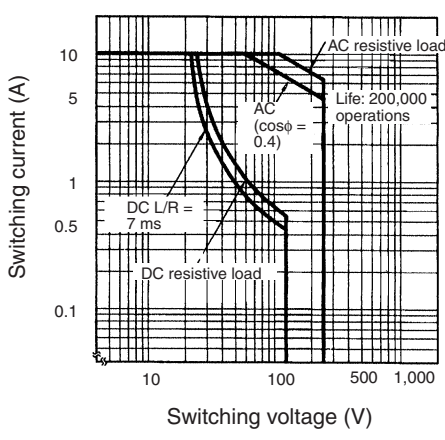


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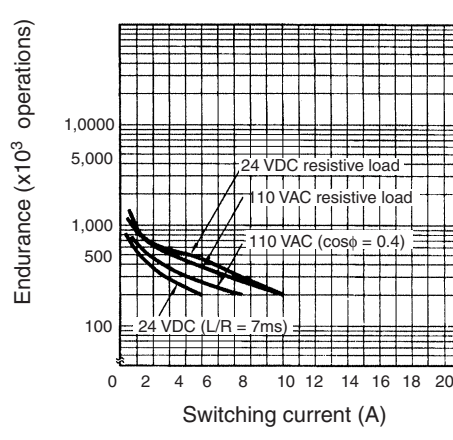


## LY3 and LY4

Maximum Switching Power

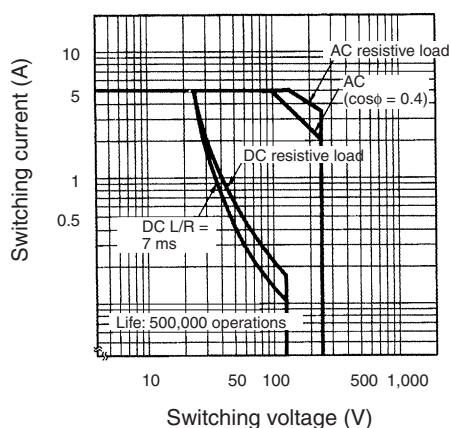


Endurance

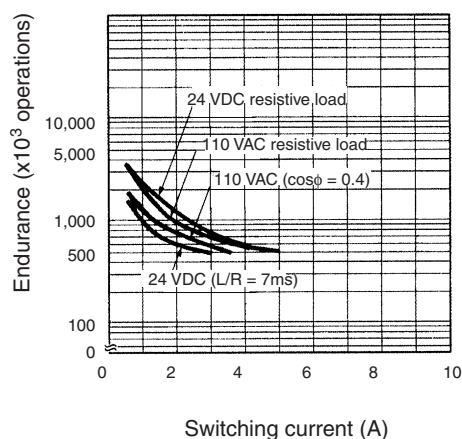


## LY2Z

### Maximum Switching Power



### Endurance

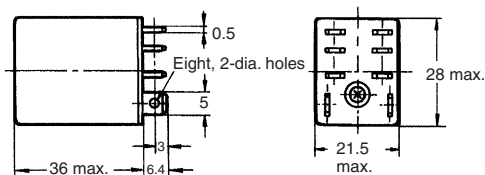
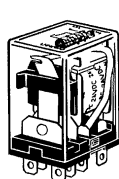


## Dimensions

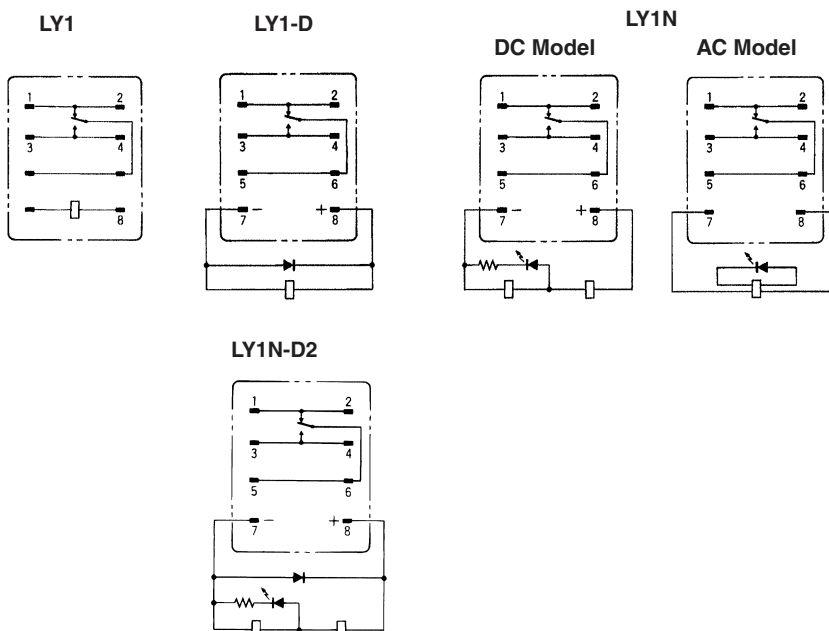
**Note:** All units are in millimeters unless otherwise indicated.

### Relays with Solder/Plug-in Terminals

LY1  
LY1N (-D2)  
LY1-D



### Terminal Arrangement/Internal Connections (Bottom View)

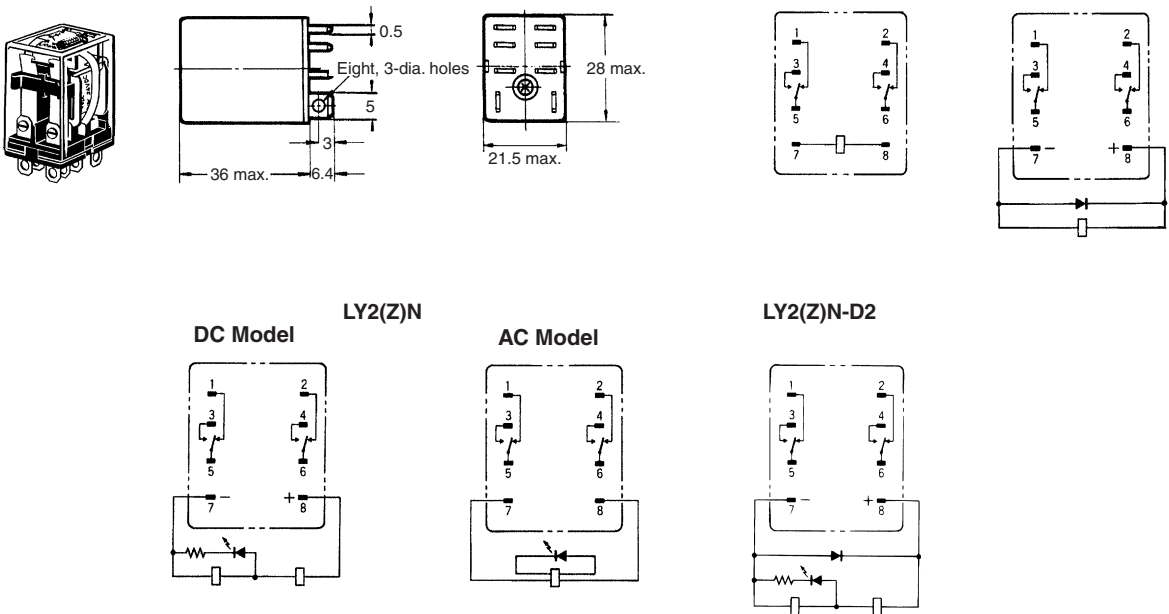


**Note:** The DC models have polarity.

LY2  
LY2-D  
LY2N  
LY2N-D2

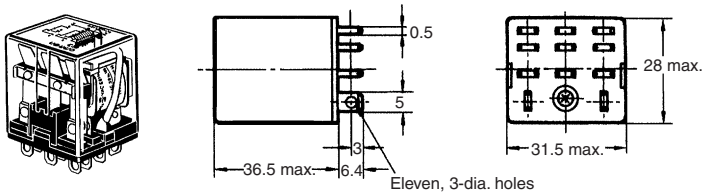
LY2Z  
LY2Z-D  
LY2ZN  
LY2ZN-D2

Terminal Arrangement/Internal  
Connections (Bottom View)

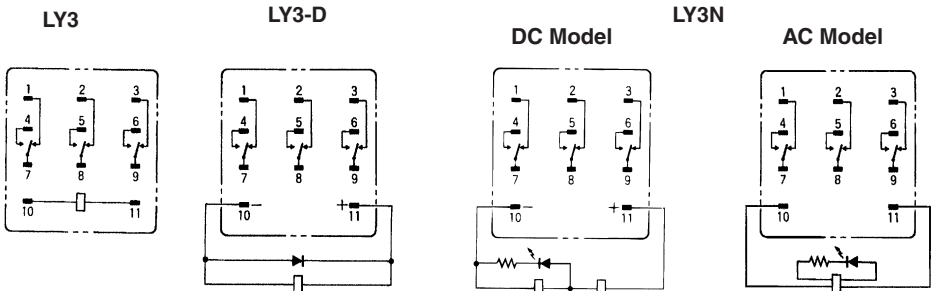


**Note:** The DC models have polarity.

LY3Z  
LY3N  
LY3-D



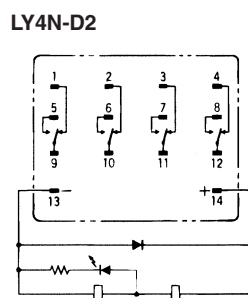
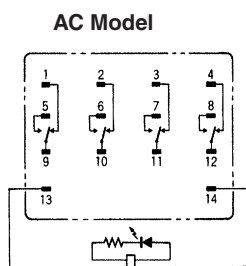
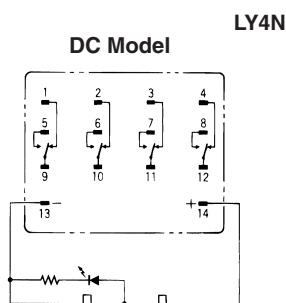
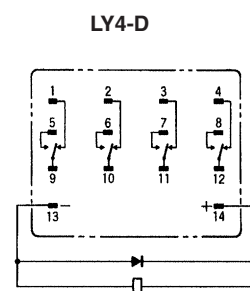
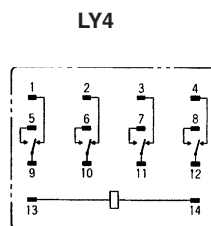
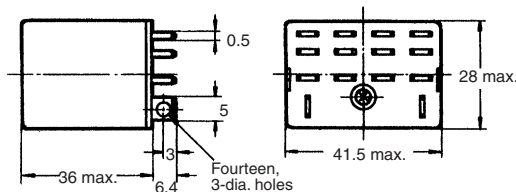
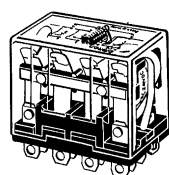
Terminal Arrangement/Internal Connections (Bottom View)



**Note:** The DC models have polarity.

| LY4   | LY4N    |
|-------|---------|
| LY4-D | LY4N-D2 |

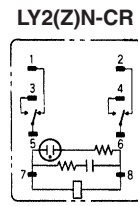
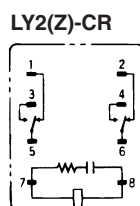
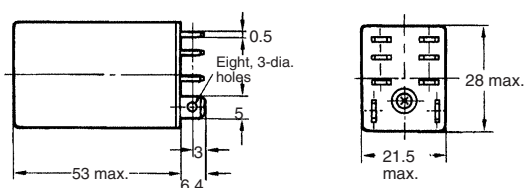
### Terminal Arrangement/Internal Connections (Bottom View)



**Note:** The DC models have polarity.

LY2-CR  
LY2Z-CR  
LY2N-CR  
LY2ZN-CR

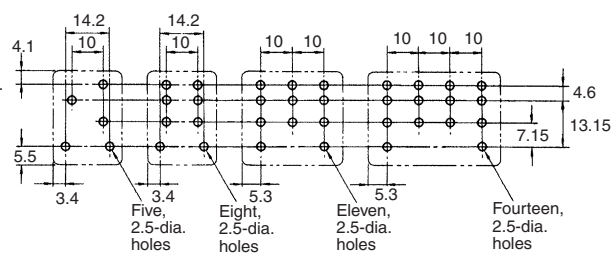
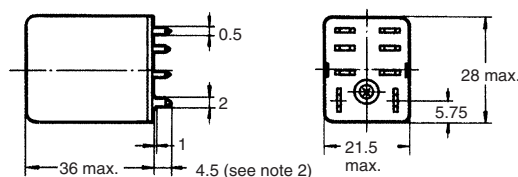
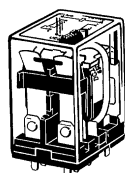
### Terminal Arrangement/Internal Connections (Bottom View)



**CR Element**  
C: 0.033  $\mu$ F  
R: 120  $\Omega$

## Relays with PCB Terminals

LY1-0 LY3-0  
LY2-0 LY4-0



**Note:**

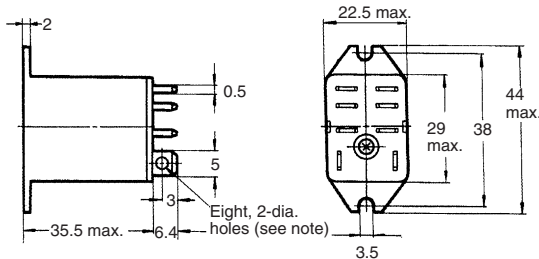
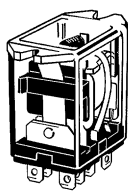
1. The above model is the LY2-0.
2. This figure is 6.4 for the LY1-0

**Note:**

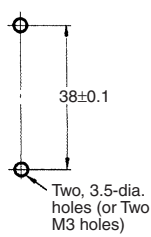
1. The tolerance for the above figures is 0.1 mm.
2. Besides the terminals, some part of the LY1-0 carries current. Due attention should be paid when mounting the LY1-0 to a double-sided PC board.

Upper-mounting Relays

LY1F  
LY2F

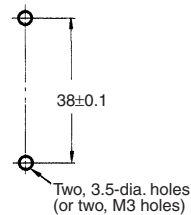
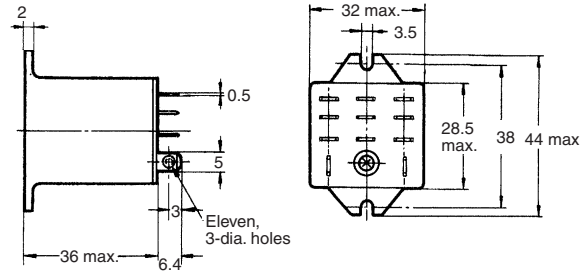
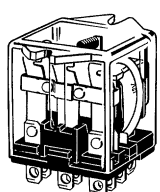


Mounting Holes

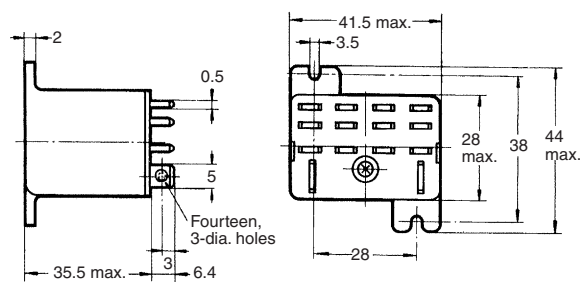
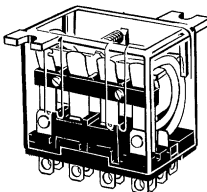


**Note:** 1. Eight 3-dia. holes should apply to the LY2F model.

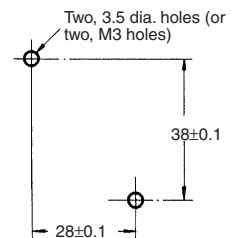
LY3F



LY4F

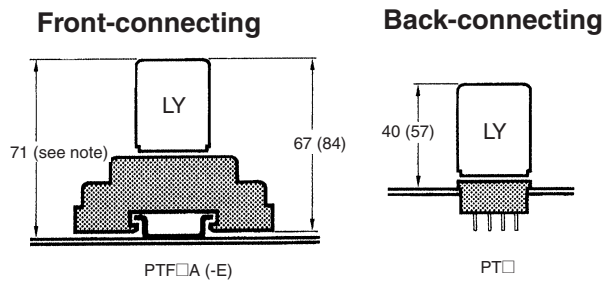


Mounting holes



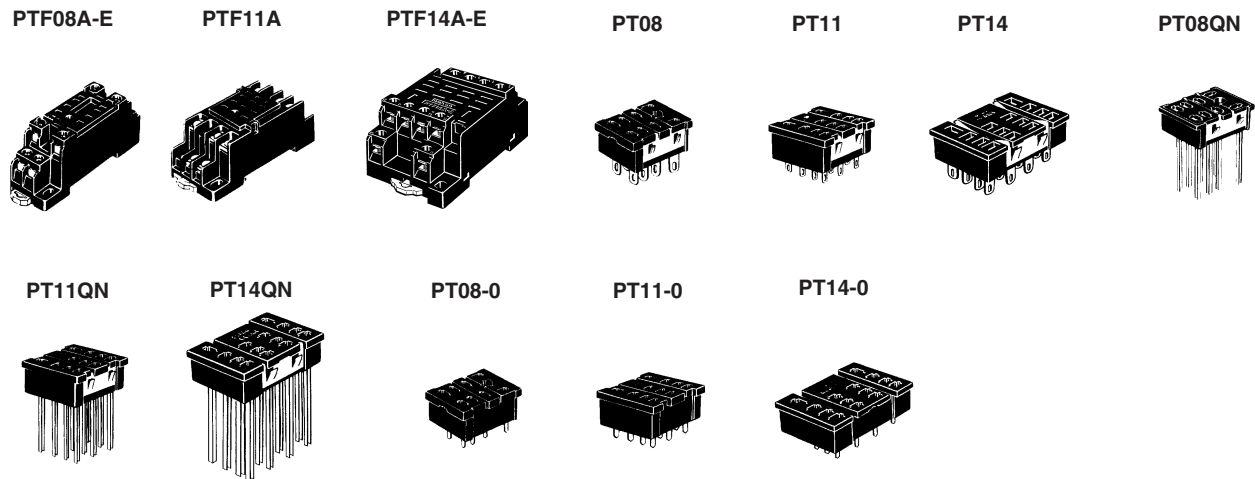
## Mounting Height with Socket

The following Socket heights should be maintained.

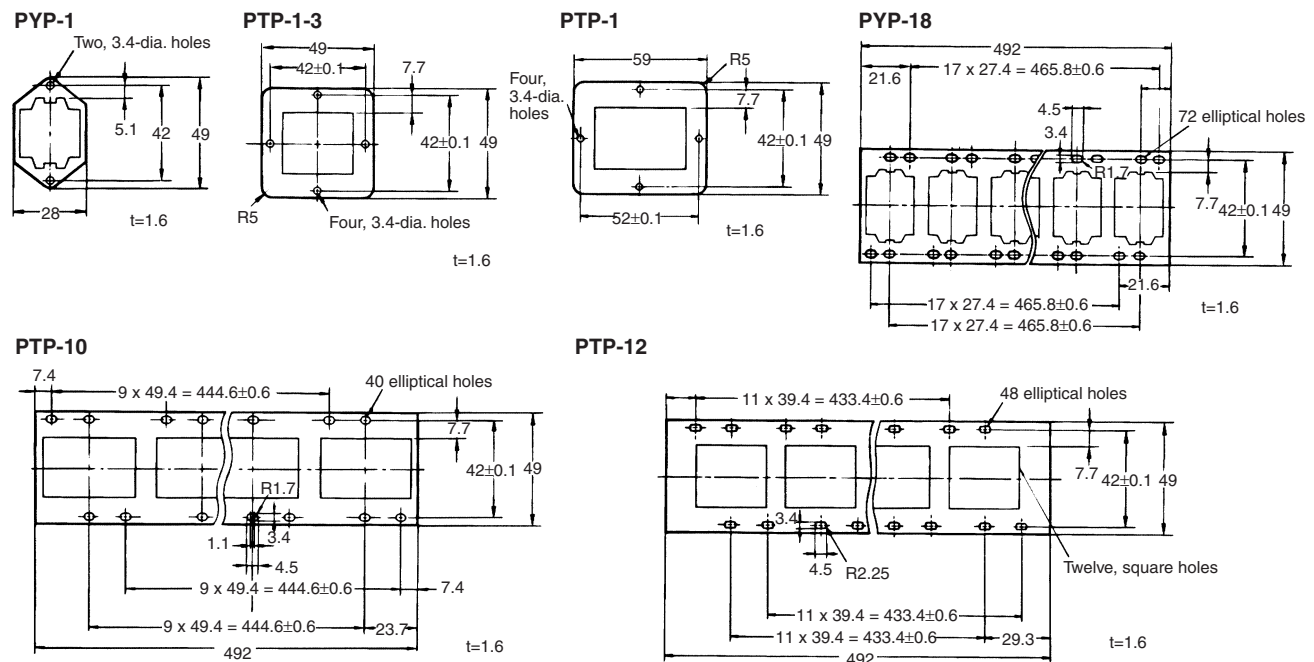


- Note:**
1. The PTF□A (-E) can be track-mounted or screw-mounted.
  2. For the LY□-CR (CR circuit built-in type) model, this figure should be 88.

## Sockets

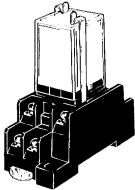
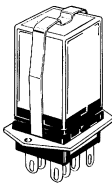
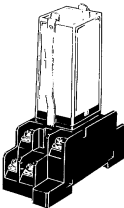


## Mounting Plates for Back-connecting



■ Hold-down Clips

Hold-down clips are used to hold Relays to Sockets and prevent them from coming loose due to vibration or shock.

| Used with Socket                                                                  |                                                                                   | Used with Socket mounting plate                                                   | For CR circuit built-in Relay                                                       |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| PYC-A1                                                                            | PYC-P                                                                             | PYC-S                                                                             | Y92H-3                                                                              | PYC-1                                                                               |
|  |  |  |  |  |

Precautions

Refer to page A-72 for general precautions.

■ Connections

Do not reverse polarity when connecting DC-operated Relays with built-in diodes or indicators.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. J002-E1-10

In the interest of product improvement, specifications are subject to change without notice.