

## 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<br> | Plug-in/solder terminals with LED indicator<br> | PCB terminals<br> | Upper-mounting plug-in/solder terminals<br> |
|-------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 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 Rating

#### Single- and Double-pole Relays

| Rated voltage |           | Rated current |            | Coil Resistance | Coil Induction (reference value) |          | Must operate voltage | Must release voltage | Max. voltage | Power consumption (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      | 180Ω            | 0.69 H                           | 1.30 H   |                      |                      |              |                             |
|               | 50 V      | 25.7 mA       | 22 mA      | 788ΩW           | 3.22 H                           | 5.66 H   |                      |                      |              |                             |
|               | 100/110 V | 11.7/12.9mA   | 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 Induction (reference value) |         | Must operate voltage | Must release voltage | Max. voltage | Power consumption (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 (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 Induction (reference value) |         | Must operate voltage | Must release voltage | Max. voltage | Power consumption (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 (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 temperature 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 Rating

| Relay                                  | Single Contact                          |                                                            |                                         |                                                            | Bifurcated contacts                     |                                                            |
|----------------------------------------|-----------------------------------------|------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------|
|                                        | 1-pole                                  |                                                            | 2-, 3- or 4-pole                        |                                                            | 2-pole                                  |                                                            |
| Load                                   | Resistive load<br>( $\cos\varphi = 1$ ) | Inductive load<br>( $\cos\varphi = 0.4$ ,<br>$L/R = 7$ ms) | Resistive load<br>( $\cos\varphi = 1$ ) | Inductive load<br>( $\cos\varphi = 0.4$ ,<br>$L/R = 7$ ms) | Resistive load<br>( $\cos\varphi = 1$ ) | Inductive load<br>( $\cos\varphi = 0.4$ ,<br>$L/R = 7$ ms) |
| <b>Rated Load</b>                      | 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                                   |
| <b>Rated Carry Current</b>             | 15 A                                    |                                                            | 10 A                                    |                                                            | 7 A                                     |                                                            |
| <b>Max. switching voltage</b>          | 250 VAC<br>125 VDC                      |                                                            | 250 VAC<br>125 VDC                      |                                                            | 250 VAC<br>125 VDC                      |                                                            |
| <b>Max. switching current</b>          | 15 A                                    |                                                            | 10 A                                    |                                                            | 7 A                                     |                                                            |
| <b>Max. switching power</b>            | 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                                            |
| <b>Failure rate (reference value)*</b> | 100 mA, 5 VDC                           |                                                            | 100 mA, 5 VDC                           |                                                            | 100 mA, 5 VDC                           |                                                            |

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

## ■ Characteristics

| Item                            | All except Relays with bifurcated contacts                                                                                                                                                                                                                                                                                            | Relays with bifurcated contacts |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Contact resistance</b>       | 50 mΩ max.                                                                                                                                                                                                                                                                                                                            |                                 |
| <b>Operate time</b>             | 25 ms max.                                                                                                                                                                                                                                                                                                                            |                                 |
| <b>Release time</b>             | 25 ms max.                                                                                                                                                                                                                                                                                                                            |                                 |
| <b>Max. operating frequency</b> | Mechanical: 18,000 operations/hr<br>Electrical: 1,800 operations/hr (under rated load)                                                                                                                                                                                                                                                |                                 |
| <b>Insulation resistance</b>    | 100 MΩ min. (at 500 VDC)                                                                                                                                                                                                                                                                                                              |                                 |
| <b>Dielectric strength</b>      | 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                                                                                                                                                                                               |                                 |
| <b>Vibration resistance</b>     | 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)                                                                                                                                                                |                                 |
| <b>Shock resistance</b>         | Destruction: 1,000 m/s <sup>2</sup><br>Malfunction: 200 m/s <sup>2</sup>                                                                                                                                                                                                                                                              |                                 |
| <b>Endurance</b>                | 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) |                                 |
| <b>Ambient temperature*</b>     | Operating:<br>Single- and double-pole standard, bifurcated-contact Relays: -25°C to 55°C (with no icing) (-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)                                                                           |                                 |
| <b>Ambient humidity</b>         | Operating: 5% to 85%                                                                                                                                                                                                                                                                                                                  |                                 |
| <b>Weight</b>                   | 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 µF) | 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 µF) | 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 µF) | 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<br>TV-3, 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,<br>LY4, 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)   |                       |

## ■ Approved Standards (cont.)

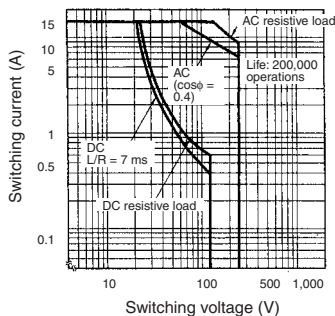
## LR Recognitions (No. 563KOB-204523)

| 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) |

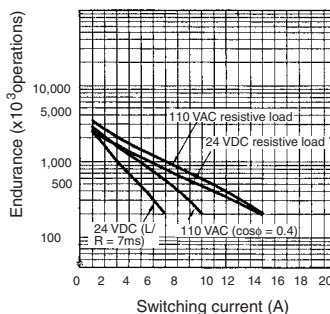
## Engineering Data

## LY1

## Maximum Switching Power

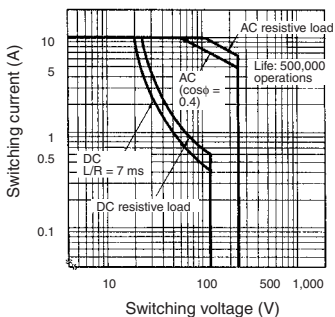


## Endurance

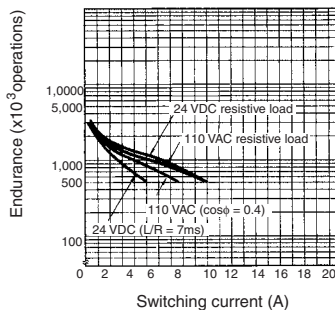


## LY2

## Maximum Switching Power

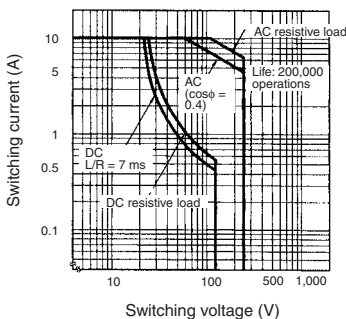


## Endurance

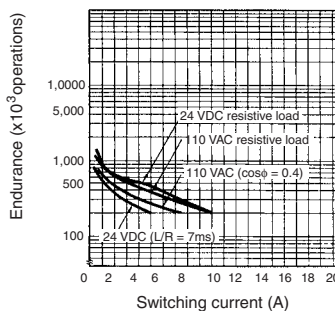


## LY3 and LY4

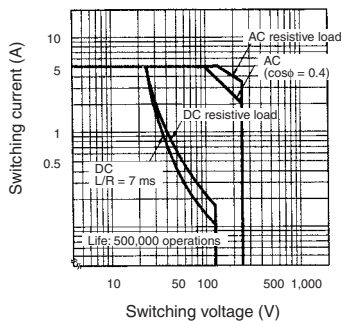
## Maximum Switching Power



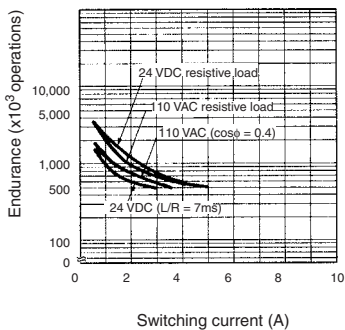
## Endurance



**LY2Z**  
Maximum Switching Power



**LY2Z**  
Endurance

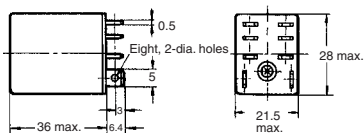


## Dimensions

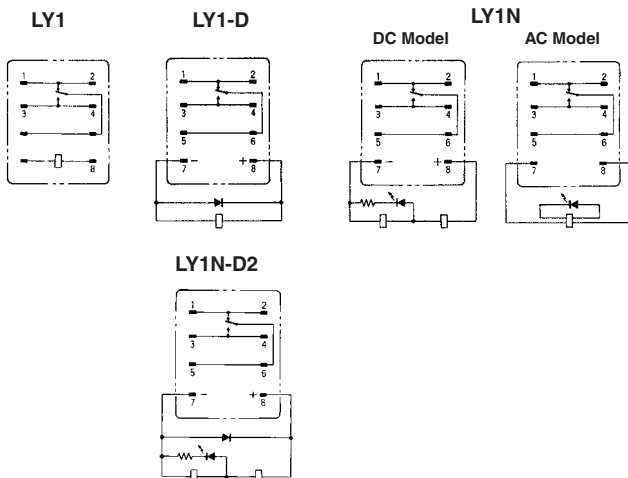
**Note:** All units are in millimetres unless otherwise indicated.

### ■ Relays with Solder/Plug-in Terminals

LY1  
LY1N (-D2)  
LY1-D



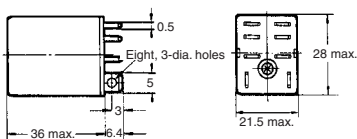
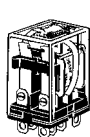
Terminal Arrangement/Internal Connections (Bottom View)



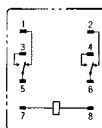
**Note:** The DC models have polarity.

LY2  
LY2-D  
LY2N  
LY2N-D2  
LY2Z  
LY2Z-D  
LY2ZN  
LY2ZN-D2

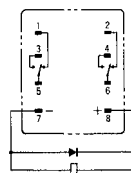
Terminal Arrangement/Internal Connections (Bottom View)



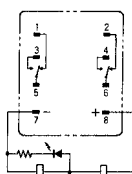
LY2(Z)



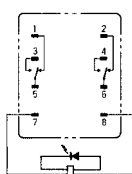
LY2(Z)-D



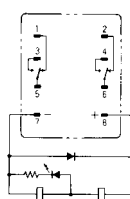
DC Model  
LY2(Z)N



AC Model

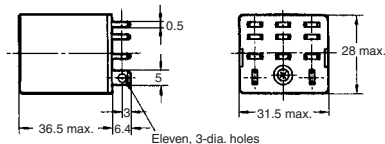
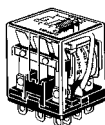


LY2(Z)N-D2



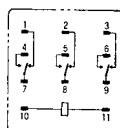
**Note:** The DC models have polarity.

LY3  
LY3N  
LY3-D

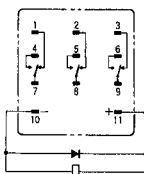


Terminal Arrangement/Internal Connections (Bottom View)

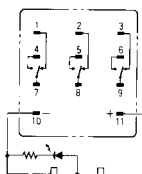
LY3



LY3-D

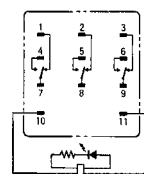


DC Model



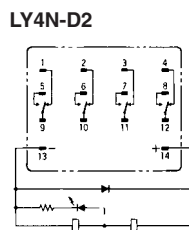
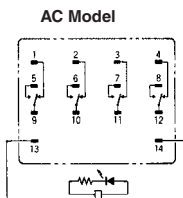
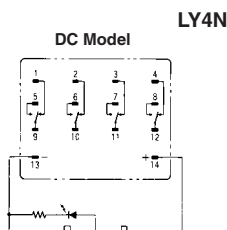
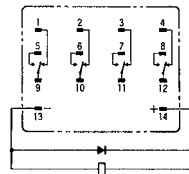
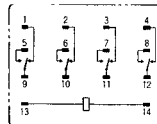
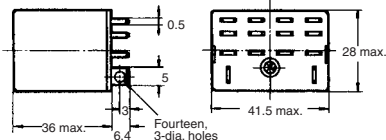
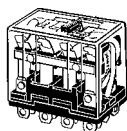
LY3N

AC Model



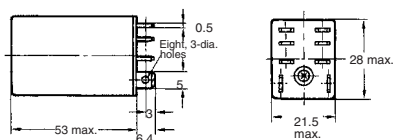
**Note:** The DC models have polarity.

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

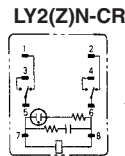
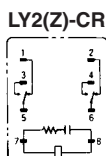


### Terminal Arrangement/Internal Connections (Bottom View)

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

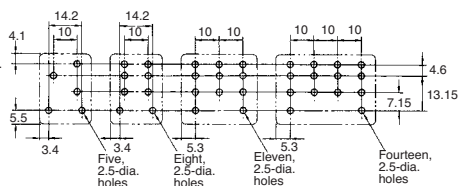
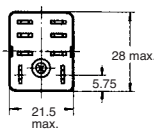
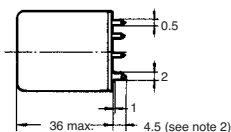


**Model: LY2N-CR**



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

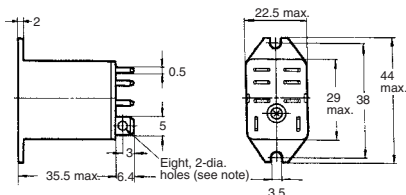
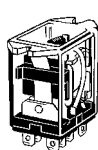
LY1-0 LY3-0  
LY2-0 LY4-0



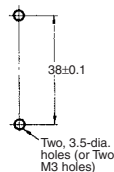
**Note:**

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

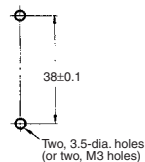
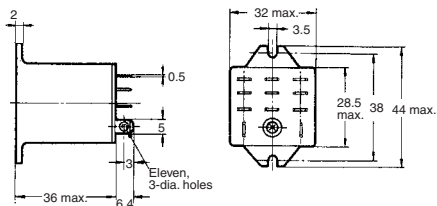
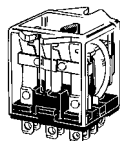
LY1F  
LY2F

## Mounting Holes

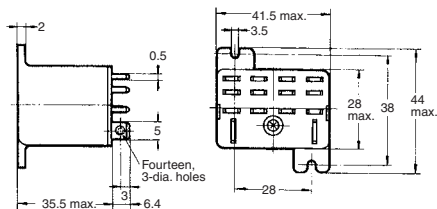
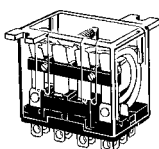


**Note:** 1. Eight 3-dia. holes should apply to the LY2F model.

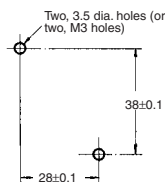
## LY3F



## LY4F



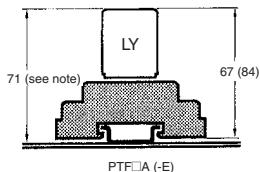
## Mounting holes



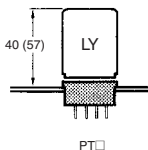
## ■ Mounting Height with Socket

The following Socket heights should be maintained.

### Front-connecting



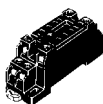
### Back-connecting



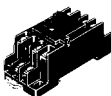
- Note:** 1. The PTF□A (-E) can be track-mounted or screw-mounted.  
2. For the LY□-CR (CR circuit built-in type) model, this figure should be 88.

## ■ Sockets

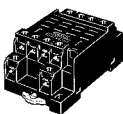
PTF08A-E



PTF11A



PTF14A-E



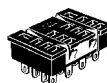
PT08



PT11



PT14



PT08QN



PT11QN



PT14QN



PT08-0



PT11-0

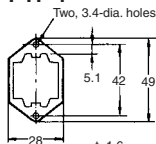


PT14-0

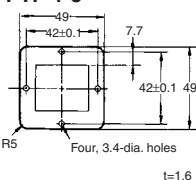


## Mounting Plates for Back-connecting

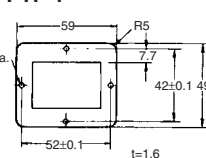
PYP-1



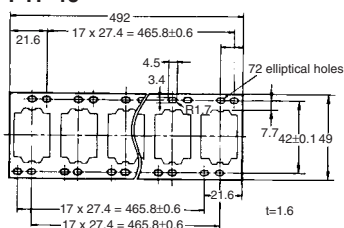
PTP-1-3



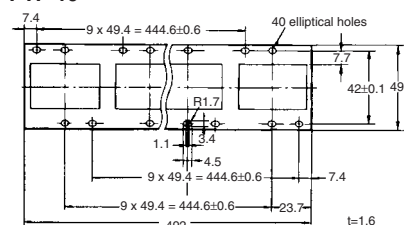
PTP-1



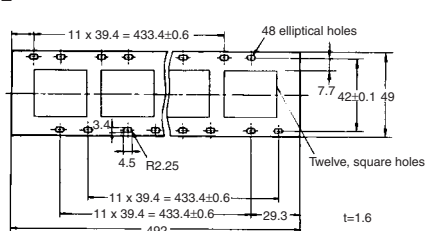
PYP-18



PTP-10

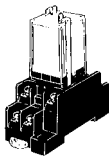
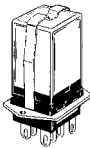
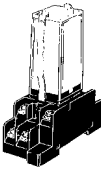


PTP-12



■ 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

■ Connections

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

ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.  
To convert millimetres into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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[AC24](#) [LY3-AC100/110](#) [LY3N-AC100/110](#) [LY3-AC200/220](#) [LY3-0-AC200/220](#) [LY3F-AC200/220](#) [LY3-0-DC6](#) [LY3-0-](#)  
[DC12](#) [LY3N-DC12](#) [LY3-0-DC24](#) [LY3N-DC24](#) [LY3-D-DC24](#) [LY3-0-DC48](#) [LY3-DC100/110](#) [LY3-0-DC100/110](#) [LY4-](#)  
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## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9