## A Miniature Power Relay

■ Equipped with arc barrier.

- Dielectric strength: 2,000 V.
$\square$ Built-in diode models added to the LY Series.
$\square$ 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 [J | 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
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 $\square A$ (-E) Sockets have met UL and CSA standards: UL 508/CSA C22.2.

Mounting Plates for Sockets

| Socket model | For 1 Socket | For $\mathbf{1 0}$ Sockets | For 12 Sockets | For 18 Sockets |
| :--- | :--- | :--- | :--- | :--- |
| PT08 <br> PT08QN | PYP-1 | - | - | PYP-18 |
| PT11 |  |  |  |  |
| 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 <br> contacts operation <br> 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 |  | $\begin{array}{c\|} \hline \text { Coil } \\ \text { Resistance } \end{array}$ | Coil Induction (reference value) |  | Must operate | Must release | Max. voltage | Power consumption |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 50 Hz | 60 Hz |  | Arm. OFF | Arm. ON | \% of rated voltage |  |  |  |
| AC | 6 V | 214.1 mA | 183 mA | $12.2 \Omega$ | 0.04 H | 0.08 H | 80\% max. | 30\% min. | 110\% | $\begin{aligned} & 1.0 \mathrm{to} \\ & 1.2 \mathrm{VA} \\ & (60 \mathrm{~Hz}) \end{aligned}$ |
|  | 12 V | 106.5 mA | 91 mA | $46 \Omega$ | 0.17 H | 0.33 H |  |  |  |  |
|  | 24 V | 53.8 mA | 46 mA | $180 \Omega$ | 0.69 H | 1.30 H |  |  |  |  |
|  | 50 V | 25.7 mA | 22 mA | 788@W | 3.22 H | 5.66 H |  |  |  |  |
|  | 100/110 V | 11.7/12.9mA | 10/11 mA | 3,750 $\Omega$ | 14.54 H | 24.6 H |  |  |  | $\begin{array}{\|l} 0.9 \text { to } 1 \mathrm{VA} \\ (60 \mathrm{~Hz}) \end{array}$ |
|  | 110/120 V | 9.9/10.8 mA | 8.4/9.2 mA | 4,430 $\Omega$ | 19.20 H | 32.1 H |  |  |  |  |
|  | 200/220 V | 6.2/6.8 mA | $5.3 / 5.8 \mathrm{~mA}$ | 12,950 $\Omega$ | 54.75 H | 94.07 H |  |  |  |  |
|  | 220/240 V | $4.8 / 5.3 \mathrm{~mA}$ | 4.2/4.6 mA | 18,790 $\Omega$ | 83.50 H | 136.40 H |  |  |  |  |
| DC | 6 V | 150 mA |  | $40 \Omega$ | 0.16 H | 0.33 H |  | 10\% min. |  | 0.9 W |
|  | 12 V | 75 mA |  | $160 \Omega$ | 0.73 H | 1.37 H |  |  |  |  |
|  | 24 V | 36.9 mA |  | $650 \Omega$ | 3.20 H | 5.72 H |  |  |  |  |
|  | 48 V | 18.5 mA |  | 2,600 $\Omega$ | 10.6 H | 21.0 H |  |  |  |  |
|  | 100/110 V | 9.1/10 mA |  | 11,000 $\Omega$ | 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 | Must release | Max. voltage | Power consumption |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 50 Hz | 60 Hz |  | Arm. OFF | Arm. ON | \% of rated voltage |  |  |  |
| AC | 6 V | 310 mA | 270 mA | $6.7 \Omega$ | 0.03 H | 0.05 H | 80\% max. | 30\% min. | 110\% | $\begin{aligned} & \hline 1.6 \mathrm{to} \\ & 2.0 \mathrm{VA} \\ & (60 \mathrm{~Hz}) \end{aligned}$ |
|  | 12 V | 159 mA | 134 mA | $24 \Omega$ | 0.12 H | 0.21 H |  |  |  |  |
|  | 24 V | 80 mA | 67 mA | $100 \Omega$ | 0.44 H | 0.79 H |  |  |  |  |
|  | 50 V | 38 mA | 33 mA | $410 \Omega$ | 2.24 H | 3.87 H |  |  |  |  |
|  | 100/110 V | 14.1/16 mA | $12.4 / 13.7 \mathrm{~mA}$ | 2,300 $\Omega$ | 10.5 H | 18.5 H |  |  |  |  |
|  | 200/220 V | 9.0/10.0 mA | 7.7/8.5 mA | 8,650 $\Omega$ | 34.8 H | 59.5 H |  |  |  |  |
| DC | 6 V | 234 mA |  | $25.7 \Omega$ | 0.11 H | 0.21 H |  | 10\% min. |  | 1.4 W |
|  | 12 V | 112 mA |  | $107 \Omega$ | 0.45 H | 0.98 H |  |  |  |  |
|  | 24 V | 58.6 mA |  | $410 \Omega$ | 1.89 H | 3.87 H |  |  |  |  |
|  | 48 V | 28.2 mA |  | 1,700 $\Omega$ | 8.53 H | 13.9 H |  |  |  |  |
|  | 100/110 V | 12.7/13 mA |  | 8,500 $\Omega$ | 29.6 H | 54.3 H |  |  |  |  |

Note: See notes under next table.

## Four-pole Relays

| Rated voltage |  | Rated | current | Coil Resistance | Coil Ind (referenc | duction ee value) | Must operate | Must release | Max. voltage | Powerconsumption(approx.) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 50 Hz | 60 Hz |  | Arm. OFF | Arm. ON | \% of rated voltage |  |  |  |
| AC | 6 V | 386 mA | 330 mA | $5 \Omega$ | 0.02 H | 0.04 H | 80\% max. | 30\% min. | 110\% | $\begin{aligned} & 1.95 \text { to } \\ & 2.5 \mathrm{VA} \\ & (60 \mathrm{~Hz}) \end{aligned}$ |
|  | 12 V | 199 mA | 170 mA | $20 \Omega$ | 0.10 H | 0.17 H |  |  |  |  |
|  | 24 V | 93.6 mA | 80 mA | $78 \Omega$ | 0.38 H | 0.67 H |  |  |  |  |
|  | 50 V | 46.8 mA | 40 mA | $350 \Omega$ | 1.74 H | 2.88 H |  |  |  |  |
|  | 100/110 V | $22.5 / 25.5 \mathrm{~mA}$ | $19 / 21.8 \mathrm{~mA}$ | 1,600 $\Omega$ | 10.5 H | 17.3 H |  |  |  |  |
|  | 200/220 V | 11.5/13.1 mA | $9.8 / 11.2 \mathrm{~mA}$ | 6,700 $\Omega$ | 33.1 H | 57.9 H |  |  |  |  |
| DC | 6 V | 240 mA |  | $25 \Omega$ | 0.09 H | 0.21 H |  | 10\% min. |  | 1.5 W |
|  | 12 V | 120 mA |  | $100 \Omega$ | 0.39 H | 0.84 H |  |  |  |  |
|  | 24 V | 69 mA |  | $350 \Omega$ | 1.41 H | 2.91 H |  |  |  |  |
|  | 48 V | 30 mA |  | 1,600 $\Omega$ | 6.39 H | 13.6 H |  |  |  |  |
|  | 100/110 V | 15/15.9 mA |  | 6,900 $\Omega$ | 32 H | 63.7 H |  |  |  |  |

Note: 1. The rated current and coil resistance are measured at a coil temperature of $23^{\circ} \mathrm{C}$ with tolerances of $+15 \% /-20 \%$ for rated currents and $\pm 15 \%$ for DC coil resistance.
2. Performance characteristic data are measured at a coil temperature of $23^{\circ} \mathrm{C}$.
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

General Purpose Relay - LY

## ■ Contact Rating

| Relay | Single Contact |  |  |  | Bifurcated contacts |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1-pole |  | 2-, 3- or 4-pole |  | 2-pole |  |
| Load | Resistive load $(\cos \varphi=1)$ | Inductive load $\begin{aligned} & (\cos \varphi=0.4 \\ & L / R=7 \mathrm{~ms}) \end{aligned}$ | Resistive load $(\cos \varphi=1)$ | Inductive load $\begin{aligned} & (\cos \varphi=0.4, \\ & L / R=7 \mathrm{~ms}) \end{aligned}$ | Resistive load $(\cos \varphi=1)$ | Inductive load $\begin{aligned} & (\cos \varphi=0.4, \\ & L / R=7 \mathrm{~ms}) \end{aligned}$ |
| Rated Load | 110 VAC 15 A 24 VDC 15 A | 110 VAC 10 A 24 VDC 7 A | 110 VAC 10 A 24 VDC 10 A | 110 VAC 7.5 A 24 VDC 5 A | 110 VAC 5A 24 VDC 5 A | 110 VAC 4 A 24 VDC 4A |
| Rated Carry Current | 15 A |  | 10 A |  | 7 A |  |
| Max. switching voltage | $\begin{aligned} & 250 \text { VAC } \\ & 125 \text { VDC } \end{aligned}$ |  | $\begin{aligned} & 250 \text { VAC } \\ & 125 \text { VDC } \end{aligned}$ |  | $\begin{aligned} & 250 \text { VAC } \\ & 125 \text { VDC } \end{aligned}$ |  |
| Max. switching current | 15 A |  | 10 A |  | 7 A |  |
| Max. switching power | $\begin{aligned} & 1,700 \mathrm{VA} \\ & 360 \mathrm{~W} \end{aligned}$ | $\begin{aligned} & 1,100 \mathrm{VA} \\ & 170 \mathrm{~W} \end{aligned}$ | $\begin{aligned} & 1,100 \mathrm{VA} \\ & 240 \mathrm{~W} \end{aligned}$ | $\begin{aligned} & 825 \mathrm{VA} \\ & 120 \mathrm{~W} \end{aligned}$ | $\begin{aligned} & 550 \mathrm{VA} \\ & 120 \mathrm{~W} \end{aligned}$ | $\begin{aligned} & \hline 440 \mathrm{VA} \\ & 100 \mathrm{~W} \end{aligned}$ |
| Failure rate (reference value)* | $100 \mathrm{~mA}, 5 \mathrm{VDC}$ |  | $100 \mathrm{~mA}, 5 \mathrm{VDC}$ |  | $100 \mathrm{~mA}, 5 \mathrm{VDC}$ |  |

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

## ■ Characteristics

| Item | All except Relays with bifurcated contacts | Relays with bifurcated contacts |
| :---: | :---: | :---: |
| Contact resistance | $50 \mathrm{~m} \Omega$ max. |  |
| Operate time | 25 ms max. |  |
| Release time | 25 ms max. |  |
| Max. operating frequency | Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load) |  |
| Insulation resistance | $100 \mathrm{M} \Omega$ min. (at 500 VDC$)$ |  |
| Dielectric strength | $1,000 \mathrm{VAC}, 50 / 60 \mathrm{~Hz}$ for 1 min between contacts of same polarity 2,000 VAC, $50 / 60 \mathrm{~Hz}$ for 1 min between contacts of different polarity |  |
| Vibration resistance | Destruction: 10 to 55 to $10 \mathrm{~Hz}, 0.5 \mathrm{~mm}$ single amplitude ( 1.0 mm double amplitude) Malfunction: 10 to 55 to $10 \mathrm{~Hz}, 0.5 \mathrm{~mm}$ single amplitude ( 1.0 mm double amplitude) |  |
| Shock resistance | Destruction: $1,000 \mathrm{~m} / \mathrm{s}^{2}$ <br> Malfunction: $200 \mathrm{~m} / \mathrm{s}^{2}$ |  |
| 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. <br> (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: $-25^{\circ} \mathrm{C}$ to $55^{\circ} \mathrm{C}$ (with no icing) $\left(-25^{\circ} \mathrm{C}\right.$ to $70^{\circ} \mathrm{C}$ if carry current is 4 A or less) All other Relays: $-25^{\circ} \mathrm{C}$ to $40^{\circ} \mathrm{C}$ (with no icing) $\left(-25^{\circ} \mathrm{C}\right.$ to $55^{\circ} \mathrm{C}$ 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 $40^{\circ} \mathrm{C}$ for some Relays is because of the relationship between diode junction temperature and the element used.

General Purpose Relay - LY

## ■ 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 | $300 \mathrm{~W}, 100$ VAC with 51-A inrush current, 3-A current flow | ON for 5 s , OFF for 55 s | 100,000 operations |
|  |  | $500 \mathrm{~W}, 100$ VAC with 78-A inrush current, 5-A current flow |  | 25,000 operations |
|  | Capacitor ( $2,000 \mu \mathrm{~F}$ ) | 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 $(2,000 \mu \mathrm{~F})$ | 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 $(2,000 \mu \mathrm{~F})$ | 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 | $\begin{aligned} & 6 \text { to } 240 \text { VAC } \\ & 6 \text { to } 125 \text { VDC } \end{aligned}$ | $15 \mathrm{~A}, 30 \mathrm{VDC}$ (Resistive) | $6 \times 10^{3}$ |
|  |  | $\begin{aligned} & \text { TV-5, } 120 \text { VAC } \\ & 1 / 2 \text { HP. } 120 \text { VAC } \end{aligned}$ | $25 \times 10^{3}$ |
| 2 |  | $15 \mathrm{~A}, 28 \mathrm{VDC}$ (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 | $6 \times 10^{3}$ |
|  |  |  | $25 \times 10^{3}$ |
| 3 and 4 |  | $10 \mathrm{~A}, 30$ VDC (Resistive) 10 A, 240 VAC (General use) 1/3 HP, 240 VAC | $6 \times 10^{3}$ |

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

| No. of poles | Coil ratings | Contact ratings <br> $15 \mathrm{~A}, 30$ VDC (Resistive) <br> $15 \mathrm{~A}, 120$ VAC (General use) <br> $1 / 2 \mathrm{HP}, 120$ VAC <br> TV-5, 120 VAC | Operations |
| :---: | :---: | :---: | :---: |
| 1 | $\begin{aligned} & 6 \text { to } 240 \text { VAC } \\ & 6 \text { to } 125 \text { VDC } \end{aligned}$ |  | $6 \times 10^{3}$ |
|  |  |  | $25 \times 10^{3}$ |
| 2 |  | $15 \mathrm{~A}, 30$ VDC (Resistive) 15 A, 120 VAC (Resistive) 1/2 HP, 120 VAC TV-3, 120 VAC | $6 \times 10^{3}$ |
| 3 and 4 |  | $10 \mathrm{~A}, 30 \mathrm{VDC}$ (Resistive) <br> $10 \mathrm{~A}, 240$ VAC (General use) |  |

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

| No. of poles | Coil ratings | Contact ratings | Operations |
| :--- | :--- | :--- | :--- |
| 2 to 4 | 6 to 240 VAC <br> 6 to 125 VDC | $15 \mathrm{~A}, 24 \mathrm{VDC}$ <br> $15 \mathrm{~A}, 220 \mathrm{VAC}$ | $6 \times 10^{3}$ |
|  |  | $10 \mathrm{~A}, 24 \mathrm{VDC}$ <br> $10 \mathrm{~A}, 220 \mathrm{VAC}$ |  |

TÜV (File No. R9251226) (IEC255)

| No. of poles | Coil ratings | Contact ratings | Operations |
| :--- | :--- | :--- | :--- |
| 1 to 4 | 6 to 125 VDC | LY1, LY1-FD | $100 \times 10^{3}$ |
|  | 6 to 240 VAC | $15 \mathrm{~A}, 110$ VAC $(\cos \varphi=1)$ |  |
|  |  |  | $10 \mathrm{~A}, 110$ VAC $(\cos \varphi=0.4)$ |
|  |  | LY2, LY2-FD, LY3, LY3-FD, |  |
|  |  | LY4, LY4-FD |  |
|  |  | $10 \mathrm{~A}, 110$ VAC $(\cos \varphi=1)$ |  |
|  |  | $7.5 \mathrm{~A}, 110 \mathrm{VAC}(\cos \varphi=0.4)$ |  |

VDE Recognitions (No. 9903UG and 9947UG)

| No. of poles | Coil ratings | Contact ratings | Operations |
| :---: | :---: | :---: | :---: |
| 1 | $\begin{aligned} & 6,12,24,50,110,220 \text { VAC } \\ & 6,12,24,48,110 \text { VDC } \end{aligned}$ | $\begin{aligned} & 10 \mathrm{~A}, 220 \mathrm{VAC}(\cos \varphi=1) \\ & 7 \mathrm{~A}, 220 \mathrm{VAC}(\cos \varphi=0.4) \\ & 10 \mathrm{~A}, 28 \mathrm{VDC}(\mathrm{~L} / \mathrm{R}=0 \mathrm{~ms}) \\ & 7 \mathrm{~A}, 28 \mathrm{VDC}(\mathrm{~L} / \mathrm{R}=7 \mathrm{~ms}) \end{aligned}$ | $200 \times 10^{3}$ |
| 2 |  | $7 \mathrm{~A}, 220 \operatorname{VAC}(\cos \varphi=1)$ <br> $4 \mathrm{~A}, 220 \operatorname{VAC}(\cos \varphi=0.4)$ <br> $7 \mathrm{~A}, 28 \mathrm{VDC}(\mathrm{L} / \mathrm{R}=0 \mathrm{~ms})$ <br> $4 \mathrm{~A}, 28 \mathrm{VDC}(\mathrm{L} / \mathrm{R}=7 \mathrm{~ms})$ |  |

■ Approved Standards (cont.)
LR Recognitions (No. 563KOB-204523)

| No. of poles | Coil ratings | Contact ratings |
| :---: | :--- | :--- |
| 2,4 | 6 to 240 VAC |  |
| 6 to 110 VDC | $7.5 \mathrm{~A}, 230 \mathrm{VAC}(\mathrm{PFO} 0.4)$ |  |
|  | $5 \mathrm{~F}, 24 \mathrm{VDC}(\mathrm{L} R=7 \mathrm{~ms})$ |  |

## Engineering Data



LY2
Maximum Switching Power


LY3 and LY4
Maximum Switching Power


Endurance


Endurance


Endurance



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
$\begin{array}{ll}\text { LY2 } & \text { LY2Z } \\ \text { LY2-D } & \text { LY2Z-D } \\ \text { LY2N } & \text { LY2ZN }\end{array}$ LY2N-D2 LY2ZN-D2

$\mathrm{Lr}_{3}$
$\underset{\text { LY3 }}{\text { LYN }}$


Terminal Arrangement/Internal Connections (Bottom View)


Note: The DC models have polarity

Terminal Arrangement/Internal Connections (Bottom View)


LY4N


LY4N-D2


Note: The DC models have polarity.

LY2ZN-CR
Terminal Arrangement//Internal Connections (Bottom View)


## ■ Relays with PCB Terminals



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



■ Mounting Height with Socket
The following Socket heights should be maintained.

## Front-connecting Back-connecting



PTF $\square$ ( -E )


PT■

Note: 1. The PTF $\square \mathrm{A}(-\mathrm{E})$ can be track-mounted or screw-mounted.
2. For the LY $\square$-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 <br> mounting plate | For CR circuit built-in Relay |  |
| :--- | :--- | :--- | :--- | :--- |
| PYC-A1 | PYC-P | PYC-S | Y92H-3 | PYC-1 |

## Precautions

## $\square$ Connections

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

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