# **General Purpose Relay**

- · Arc barrier equipped.
- High dielectric strength (2,000 VAC).
- Long dependable service life assured by Ag-Alloy contacts.
- Choose models with single or bifurcated contacts, LED indicator, diode surge suppression, push-to-test button, or RC circuit.
- UL, CSA, and TUV approvals on all standard LY Relays.
- CE marks included on non-PCB mount versions.







## **Ordering Information**

To Order: Select the part number and add the desired coil voltage rating (e.g., LY1-DC6).

| Туре            | Terminal       | Contact |                                 | Model                        |                                 |                              |  |  |  |  |
|-----------------|----------------|---------|---------------------------------|------------------------------|---------------------------------|------------------------------|--|--|--|--|
|                 |                | form    | Sing                            | e contact                    | Bifurca                         | ited contact                 |  |  |  |  |
|                 |                |         | Standard<br>bracket<br>mounting | Upper<br>mounting<br>bracket | Standard<br>bracket<br>mounting | Upper<br>mounting<br>bracket |  |  |  |  |
| Standard        | Plug-in/solder | SPDT    | LY1                             | LY1F                         | _                               | _                            |  |  |  |  |
|                 |                | DPDT    | LY2                             | LY2F                         | LY2Z                            | LY2ZF                        |  |  |  |  |
|                 |                | 3PDT    | LY3                             | LY3F                         | _                               | _                            |  |  |  |  |
|                 |                | 4PDT    | LY4                             | LY4F                         | _                               | _                            |  |  |  |  |
|                 | PCB            | SPDT    | LY1-0                           | _                            | _                               | _                            |  |  |  |  |
|                 |                | DPDT    | LY2-0                           | _                            | LY2Z-0                          | _                            |  |  |  |  |
|                 |                | 3PDT    | LY3-0                           | _                            | _                               | _                            |  |  |  |  |
|                 |                | 4PDT    | LY4-0                           | _                            | _                               | _                            |  |  |  |  |
| LED indicator   | Plug-in/solder | SPDT    | LY1N                            | _                            | _                               | _                            |  |  |  |  |
|                 |                | DPDT    | LY2N                            | _                            | LY2ZN                           | _                            |  |  |  |  |
|                 |                | 3PDT    | LY3N                            | _                            | _                               | _                            |  |  |  |  |
|                 |                | 4PDT    | LY4N                            | _                            | _                               | _                            |  |  |  |  |
| Diode surge     |                | SPDT    | LY1-D                           | _                            | _                               | _                            |  |  |  |  |
| suppression     |                | DPDT    | LY2-D                           | _                            | LY2Z-D                          | _                            |  |  |  |  |
|                 |                | 3PDT    | LY3-D                           | _                            | _                               | _                            |  |  |  |  |
|                 |                | 4PDT    | LY4-D                           | _                            | _                               | _                            |  |  |  |  |
| LED indicator   |                | SPDT    | LY1N-D2                         | _                            | _                               | _                            |  |  |  |  |
| and diode surge |                | DPDT    | LY2N-D2                         | _                            | LY2ZN-D2                        | _                            |  |  |  |  |
| suppression     |                | 4PDT    | LY4N-D2                         | _                            | _                               | _                            |  |  |  |  |
| RC circuit      |                | SPDT    | LY1-CR                          | _                            | _                               | _                            |  |  |  |  |
|                 |                | DPDT    | LY2-CR                          | _                            | LY2Z-CR                         | _                            |  |  |  |  |
| LED indicator   |                | SPDT    | LY1N-CR                         | _                            | _                               | _                            |  |  |  |  |
| and RC circuit  |                | DPDT    | LY2N-CR                         | _                            | LY2ZN-CR                        | _                            |  |  |  |  |

Note: 1. Types with specifications other than those listed are available. Contact your Omron Sales representative.

- 2. To order connecting sockets and mounting tracks, see "Accessories" section.
- 3. Relays with RC circuit are only available in AC coil voltages of 100 VAC or greater.

| Туре                | Terminal       | Contact |                                 | Mo                           | odel                            |                              |  |
|---------------------|----------------|---------|---------------------------------|------------------------------|---------------------------------|------------------------------|--|
|                     |                | form    | Single                          | contact                      | Bifurcated contact              |                              |  |
|                     |                |         | Standard<br>bracket<br>mounting | Upper<br>mounting<br>bracket | Standard<br>bracket<br>mounting | Upper<br>mounting<br>bracket |  |
| Push-to-test        | Plug-in/solder | SPDT    | LY114                           | _                            | —                               | _                            |  |
| button              |                | DPDT    | LY2I4                           | _                            | LY2ZI2                          | _                            |  |
|                     |                | 3PDT    | LY314                           | _                            | _                               | _                            |  |
|                     |                | 4PDT    | LY414                           | _                            | _                               | _                            |  |
| LED indicator and   | Plug-in/solder | DPDT    | LY2I4N                          | _                            | LY2ZI2N                         | _                            |  |
| push-to-test button |                | 4PDT    | LY4I4N                          | _                            | _                               | _                            |  |

Note: 1. Types with specifications other than those listed are available. Contact your Omron Sales representative.

## **■** Accessories

## **Connecting Sockets**

To Order: Select the appropriate part numbers for sockets, clips, and mounting tracks (if required) from the following charts.

#### **Track Mounted Sockets**

| Relay | Socket*  | Relay hold | d-down clip | Mounting track        |
|-------|----------|------------|-------------|-----------------------|
|       |          | Standard   | RC circuit  | 1                     |
| SPDT  | PTF08A-E | PYC-A1     | Y92H-3      | PFP-100N/PFP-50N &    |
| DPDT  |          |            |             | PFP-M or PFP-100N2    |
| 3PDT  | PTF11A   |            |             | PFP-S (Option spacer) |
| 4PDT  | PTF14A-E |            |             |                       |

<sup>\*</sup> Track mounted socket can be used as a front connecting socket.

## **Back Connecting Sockets**

| Relay | Solder             | Wire wrap          | Relay hold-down clip |              |            |            | Socket Mounting Plate |        |        |        |  |
|-------|--------------------|--------------------|----------------------|--------------|------------|------------|-----------------------|--------|--------|--------|--|
|       | terminal<br>socket | terminal<br>socket | Standard             | Push-to-test | RC circuit | Mtg. plate | 1                     | 10     | 12     | 18     |  |
| SPDT  | PT08               | PT08QN             | PYC-P                | PYC-P2       | PYC-1      | PYC-S      | PYP-1                 | _      | -      | PYP-18 |  |
| DPDT  |                    |                    |                      |              |            |            |                       |        |        |        |  |
| 3PDT  | PT11               | PT11QN             |                      |              |            |            | PTP-1-3               | _      | PTP-12 | _      |  |
| 4PDT  | PT14               | PT14QN             |                      |              |            |            | PTP-1                 | PTP-10 | _      | _      |  |

Note: Types PYP-18, PTP-12 and PTP-10 may be cut to any desired length.

| Relay | PC terminal socket |          | Relay hold-down clip |            |
|-------|--------------------|----------|----------------------|------------|
|       |                    | Standard | Push-to-test         | RC circuit |
| SPDT  | PT08-0             | PYC-P    | PYC-P2               | PYC-1      |
| DPDT  |                    |          |                      |            |
| 3PDT  | PT11-0             |          |                      |            |
| 4PDT  | PT14-0             |          |                      |            |

<sup>2.</sup> To order connecting sockets and mounting tracks, see "Accessories" section.

## **Specifications**

### **■** Contact Data

| Load                   |                           | Single   | contact                      |  | Bifurcate                    | d contact                                      |  |
|------------------------|---------------------------|--|------------------------------|--|------------------------------|--|--|
|                        | SF                        | PDT  | DPDT, 3F                     | PDT, 4PDT                                      | DPDT                         |  |  |
|                        | Resistive load (p.f. = 1) | Inductive load<br>(p.f. = 0.4)<br>(L/R = 7 ms) | Resistive load<br>(p.f. = 1) | Inductive load<br>(p.f. = 0.4)<br>(L/R = 7 ms) | Resistive load<br>(p.f. = 1) | Inductive load<br>(p.f. = 0.4)<br>(L/R = 7 ms) |  |
| Rated load             | 15 A at 110 VAC           | 10 A at 110 VAC                                | 10 A at 110 VAC              | 7.5 A at 110 VAC                               | 5 A at 110 VAC               | 4 A at 110 VAC                                 |  |
|                        | 15 A at 24 VDC            | 7 A at 24 VDC                                  | 10 A at 24 VDC               | 5 A at 24 VDC                                  | 5 A at 24 VDC                | 4 A at 24 VDC                                  |  |
| Contact material       | Ag-Alloy                  |  |                              |  |                              |  |  |
| Carry current          | 15 A                      |  | 10 A                         |  | 7 A                          |  |  |
| Max. operating voltage | 250 VAC<br>125 VDC        |  |                              |  | •                            |  |  |
| Max. operating current | 15 A                      |  | 10 A                         |  | 7 A                          |  |  |
| Max. switching         | 1,700 VA                  | 1,100 VA                                       | 1,100 VA                     | 825 VA   | 550 VA                       | 440 VA   |  |
| capacity               | 360 W                     | 170 W  | 240 W                        | 120 W  | 120 W                        | 100 W  |  |
| Min. permissible load  | 100 mA, 5 VDC             | •  | •                            | •  | 10 mA, 5 VDC                 |  |  |

## **■** Coil Data

## 1- and 2-pole Types - AC

| Rated voltage (V) | Rated cu    | Rated current (mA) |        | resistance (ref. value) (H) |                |                      | Pick-up<br>voltage | Dropout voltage | Maximum voltage | Power consumption |
|-------------------|-------------|--------------------|--------|-----------------------------|----------------|----------------------|--------------------|-----------------|-----------------|-------------------|
|                   | 50 Hz       | 60 Hz              | (Ω)    | Armature<br>OFF             | Armature<br>ON | (% of rated voltage) |                    |                 | (VA, Ŵ)         |                   |
| 6                 | 214.10      | 183                | 12.20  | 0.04                        | 0.08           | 80% max.             | 30% min.           | 110%            | Approx.         |                   |
| 12                | 106.50      | 91                 | 46     | 0.17                        | 0.33           |                      |                    |                 | 1.00 to 1.20    |                   |
| 24                | 53.80       | 46                 | 180    | 0.69                        | 1.30           |                      |                    |                 | (60 Hz)         |                   |
| 50                | 25.70       | 22                 | 788    | 3.22                        | 5.66           |                      |                    |                 |                 |                   |
| 100/110           | 11.70/12.90 | 10/11              | 3,750  | 14.54                       | 24.60          |                      |                    |                 | Approx.         |                   |
| 110/120           | 9.90/10.80  | 8.40/9.20          | 4,430  | 19.20                       | 32.10          |                      |                    |                 | 0.90 to 1.10    |                   |
| 200/220           | 6.20/6.80   | 5.30/5.80          | 12,950 | 54.75                       | 94.07          |                      |                    |                 | (60 Hz)         |                   |
| 220/240           | 4.80/5.30   | 4.20/4.60          | 18,790 | 83.50                       | 136.40         | 1                    |                    |                 |                 |                   |

## 1- and 2-pole Types - DC

| Rated voltage (V) | Rated current (mA) | Coil resistance | Coil inductance (ref. value) (H) |                | Pick-up<br>voltage   | Dropout voltage | Maximum voltage | Power consumption |
|-------------------|--------------------|-----------------|----------------------------------|----------------|----------------------|-----------------|-----------------|-------------------|
|                   |                    | (Ω)             | Armature<br>OFF                  | Armature<br>ON | (% of rated voltage) |                 | (VA, W)         |                   |
| 6                 | 150                | 40              | 0.16                             | 0.33           | 80% max.             | 10% min.        | 110%            | Approx.           |
| 12                | 75                 | 160             | 0.73                             | 1.37           |                      |                 |                 | 0.90              |
| 24                | 36.90              | 650             | 3.20                             | 5.72           |                      |                 |                 |                   |
| 48                | 18.50              | 2,600           | 10.60                            | 21             |                      |                 |                 |                   |
| 100/110           | 9.10/10            | 11,000          | 45.60                            | 86.20          |                      |                 |                 |                   |

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with tolerances of +15%, -20% for AC rated current, and ±15% for DC rated coil resistance.

- 2. The AC coil resistance and inductance are reference values at 60 Hz.
- **3.** The performance characteristics are measured at a coil temperature of 23°C (73°F).
- 4. Class B coil insulation is available.

## 3-pole Type – AC

| Rated voltage (V) |             |             |        |                 | uctance<br>lue) (H) | Pick-up<br>voltage   | Dropout<br>voltage | Maximum<br>voltage | Power consumption (VA, W) |
|-------------------|-------------|-------------|--------|-----------------|---------------------|----------------------|--------------------|--------------------|---------------------------|
|                   | 50 Hz       | 60 Hz       |        | Armature<br>OFF | Armature<br>ON      | (% of rated voltage) |                    |                    |                           |
| 6                 | 310         | 270         | 6.70   | 0.03            | 0.05                | 80% max.             | 30% min.           | 110%               | Approx.                   |
| 12                | 159         | 134         | 24     | 0.12            | 0.21                | ]                    |                    |                    | 1.60 to 2.00<br>(60 Hz)   |
| 24                | 80          | 67          | 100    | 0.44            | 0.79                | ]                    |                    |                    | (60 HZ)                   |
| 50                | 38          | 33          | 410    | 2.24            | 3.87                | ]                    |                    |                    |                           |
| 100/110           | 15.90/18.30 | 13.60/15.60 | 2,300  | 10.50           | 18.50               | ]                    |                    |                    |                           |
| 120               | 17.30       | 14.8        | 2,450  | 11.50           | 20.60               | ]                    |                    |                    |                           |
| 200/220           | 10.50/11.60 | 9.00/9.90   | 8,650  | 34.80           | 59.50               | 1                    |                    |                    |                           |
| 240               | 9.40        | 8           | 10,400 | 38.60           | 74.60               |                      |                    |                    |                           |

## 3-pole Type – DC

| Rated voltage | Rated current (mA) | Coil resistance |                 | uctance<br>lue) (H) | Pick-up Dropout voltage |          | Maximum<br>voltage | Power consumption |
|---------------|--------------------|-----------------|-----------------|---------------------|-------------------------|----------|--------------------|-------------------|
| (V)           |                    | (Ω)             | Armature<br>OFF | Armature<br>ON      | (%                      | je)      | (VA, Ŵ)            |                   |
| 6             | 234                | 25.70           | 0.11            | 0.21                | 80% max.                | 10% min. | 110%               | Approx.           |
| 12            | 112                | 107             | 0.45            | 0.98                |                         |          |                    | 1.40              |
| 24            | 58.60              | 410             | 1.89            | 3.87                |                         |          |                    |                   |
| 48            | 28.20              | 1,700           | 8.53            | 13.90               |                         |          |                    |                   |
| 100/110       | 12.70/13           | 8,500           | 29.60           | 54.30               |                         |          |                    |                   |

## 4-pole Type – AC

| Rated voltage (V) | Rated cui   | rrent (mA) | Coil resistance |                 | uctance<br>lue) (H) | Pick-up<br>voltage   | Dropout<br>voltage | Maximum<br>voltage | Power consumption |
|-------------------|-------------|------------|-----------------|-----------------|---------------------|----------------------|--------------------|--------------------|-------------------|
|                   | 50 Hz       | 60 Hz      | (Ω)             | Armature<br>OFF | Armature<br>ON      | (% of rated voltage) |                    |                    | (VA, W)           |
| 6                 | 386         | 330        | 5               | 0.02            | 0.04                | 80% max.             | 30% min.           | 110%               | Approx.           |
| 12                | 199         | 170        | 20              | 0.10            | 0.17                | 1                    |                    |                    | 1.95 to 2.50      |
| 24                | 93.60       | 80         | 78              | 0.38            | 0.67                | 1                    |                    |                    | (60 Hz)           |
| 50                | 46.80       | 40         | 350             | 1.74            | 2.88                | 1                    |                    |                    |                   |
| 100/110           | 22.50/25.50 | 19/21.80   | 1,800           | 10.50           | 17.30               | 1                    |                    |                    |                   |
| 120               | 19.00       | 16.40      | 2,200           | 9.30            | 19                  | 1                    |                    |                    |                   |
| 200/220           | 11.50/13.10 | 9.80/11.20 | 6,700           | 33.10           | 57.90               | ]                    |                    |                    |                   |
| 240               | 11.00       | 9.50       | 9,000           | 33.20           | 63.40               |                      |                    |                    |                   |

## 4-pole Type – DC

| Rated voltage (V) | Rated current (mA) | Coil resistance | sistance (ref. value) (H) |                | Pick-up<br>voltage   | Dropout voltage | Maximum voltage | Power consumption |  |
|-------------------|--------------------|-----------------|---------------------------|----------------|----------------------|-----------------|-----------------|-------------------|--|
|                   |                    | (Ω)             | Armature<br>OFF           | Armature<br>ON | (% of rated voltage) |                 |                 | (VA, Ŵ)           |  |
| 6                 | 240                | 25              | 0.09                      | 0.21           | 80% max.             | 10% min.        | 110%            | Approx.           |  |
| 12                | 120                | 100             | 0.39                      | 0.84           |                      |                 |                 | 1.50              |  |
| 24                | 69                 | 350             | 1.41                      | 2.91           | 1                    |                 |                 |                   |  |
| 48                | 30                 | 1,600           | 6.39                      | 13.60          | 1                    |                 |                 |                   |  |
| 100/110           | 15/15.90           | 6,900           | 32                        | 63.70          |                      |                 |                 |                   |  |

- Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with tolerances of +15%, -20% for AC rated current, and  $\pm 15\%$  for DC rated coil resistance.
  - 2. The AC coil resistance and inductance are reference values at 60 Hz.
  - 3. The performance characteristics are measured at a coil temperature of 23°C (73°F).
  - 4. Class B coil insulation is available.

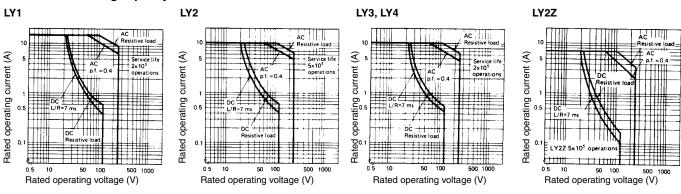
## **■** Characteristics

| Contact resistance                                  |  | 50 mΩ max.   |  |  |
|---|--|--|--|--|
| Operate time  |  | 25 ms max.   |  |  |
| Release time  |  | 25 ms max.   |  |  |
| Operating frequency Mechanically                    |  | 18,000 operations/hour   |  |  |
|   | Under rated load   | 1,800 operations/hour  |  |  |
| Insulation resistance                               |  | 100 MΩ min. (at 500 VDC)   |  |  |
| Dielectric strength                                 |  | 2,000 VAC, 50/60 Hz for 1 minute   |  |  |
|   |  | 1,000 VAC, 50/60 Hz for 1 minute between contacts of same polarity                               |  |  |
| Vibration   | Mechanical durability  | 10 to 55 Hz, 1.00 mm (0.04 in) double amplitude  |  |  |
|   | Malfunction durability   | 10 to 55 Hz, 1.00 mm (0.04 in) double amplitude  |  |  |
| Shock Mechanical durability  Malfunction durability |  | 1,000 m/s <sup>2</sup> (approx. 100 G)   |  |  |
|   |  | 200 m/s² (approx. 20 G)  |  |  |
| Ambient temperature                                 | bient temperature Operating LY1, LY2, LY3: -25° to 55°C; LY4 =-25° to 40°C |  |  |  |
| Humidity  |  | 35 to 85% RH   |  |  |
| Service Life Mechanically                           |  | AC: 50 million operations min. (at operating frequency of 18,000 operations/hour)                |  |  |
|   |  | DC: 100 million operations min. (at operating frequency of 18,000 operations/hour)               |  |  |
|   | Electrically   | See "Characteristic Data"  |  |  |
| Weight  |  | SPDT, DPDT: Approx. 40 g (1.41 oz), 3PDT: Approx. 50 g (1.76 oz)<br>4PDT: Approx. 70 g (2.47 oz) |  |  |

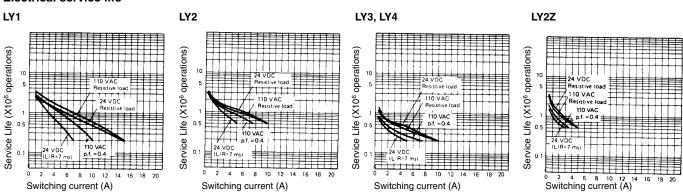
Note: Data shown are of initial value.

## **■** Characteristic Data

#### Maximum switching capacity



#### **Electrical service life**

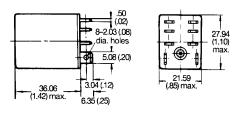


## **Dimensions**

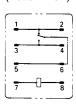
Unit: mm (inch)

## **■** Relays

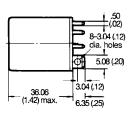
LY1



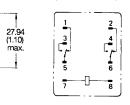
**Terminal** arrangement (Bottom view)



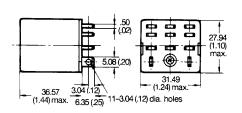
LY2



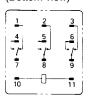
**Terminal** arrangement (Bottom view)



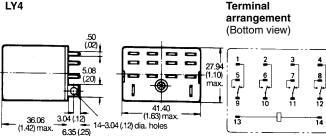
LY3



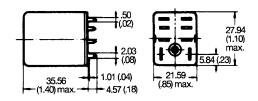
**Terminal** arrangement (Bottom view)





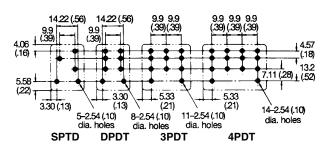


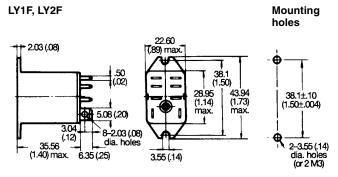
LY1-0, LY2-0, LY3-0, LY4-0



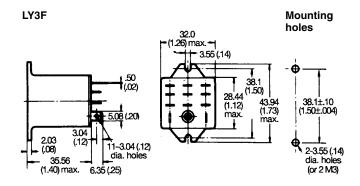
Note: The above drawing shows LY2-0. With LY1-0, dimension "\*" should read as eight 6.35 (.25).

#### Mounting holes for LY1-0, LY2-0, LY3-0, LY4-0 (Bottom view)





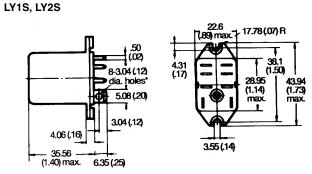
Note: The above drawing shows LY1F. With LY2F, dimension "\*" should read as eight 3.05 mm (0.12 in) dia. holes.

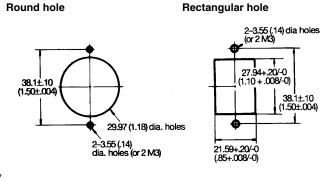




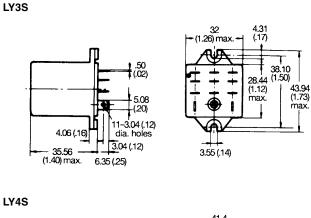
## LY4F 41.4 (1.63) max. 2.03 (.08) 3.55 (.14) 27.94 (1.10) max. 43.94 (1.73) 2.03 04 (12) dia. holes (.08)35.56 (1.40) max. 6.35 (.25)

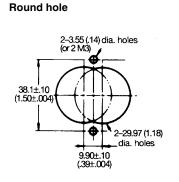
## **Mounting holes** 2-3.55 (.14) dia. holes (or 2 M3) 38.1±.10 (1.50±.004) 27.94±.10 (1.10±.004)

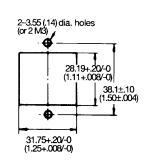




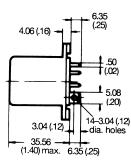
Note: The above drawing shows LY2S-US. With LY1S-US, dimension "\*" should read as eight 2.03 mm (0.08 in) dia. holes.

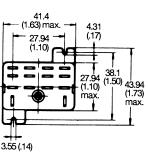


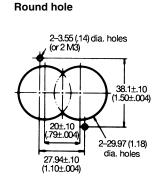


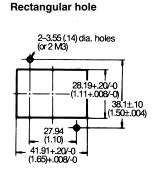


Rectangular hole





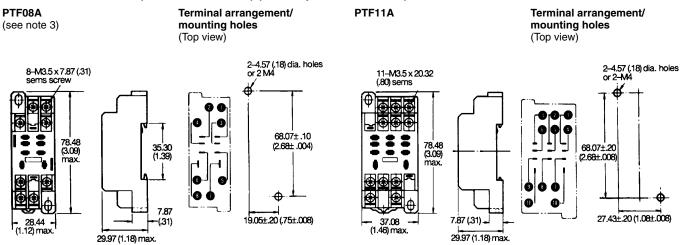




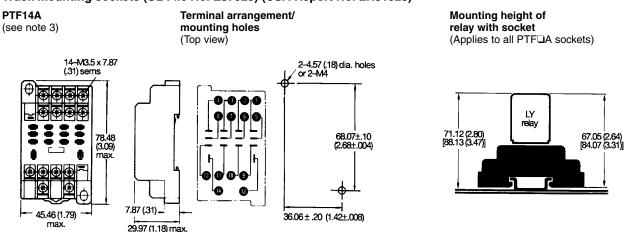
#### Accessories

Unit: mm (inch)

#### Track mounted sockets (UL File No. E87929) (CSA Report No. LR31928)

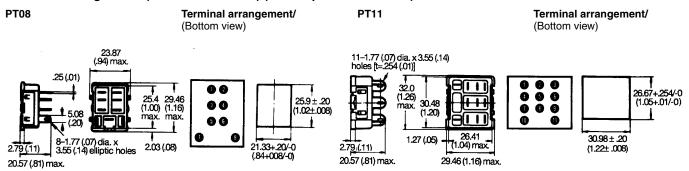


#### Track mounting sockets (UL File No. E87929) (CSA Report No. LR31928)



- Note: 1. UL/CSA does not apply to wire wrap (Q) type sockets.
  - 2. Values in brackets for LYQCR.
  - 3. PTF08A-E and PTF14A-E = touch safe screws. Height = 33 mm max.

#### Back connecting socket (UL File No. E87929) (CSA Report No. LR31928)





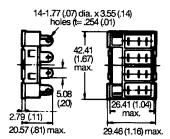
#### Back connecting socket (UL File No. E87929) (CSA Report No. LR31928)

#### **PT14**

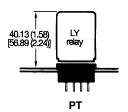
## **Terminal arrangement**

(Bottom view)

Mounting height of relay with socket (Applies to all PT sockets)







Note: Values in brackets for LY□CR.

#### Back connecting socket (UL File No. E87929) (CSA Report No. LR31928)

#### PT08QN

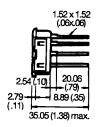
Panel cut-out and terminal arrangement are the same as Type PT08.

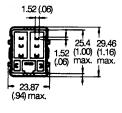
#### PT11QN

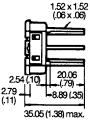
Panel cut-out and terminal arrangement are the same as Type PT11.

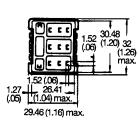
#### PT14QN

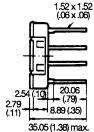
Panel cut-out and terminal arrangement are the same as Type PT14.

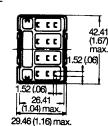












#### Back connecting socket (UL File No. E87929) (CSA Report No. LR31928)

#### PT08-0

Terminal arrangement is the same as Type PT08.

.25 (.01)

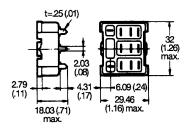
22.09 (.87) max

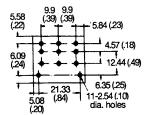
#### **Mounting holes** (Bottom view)

9.9 (.39) 8-2.54 (.10) dia. holes 4.57 (.18) 12.44 (.49)

## PT11-0

Terminal arrangement is the same as Type PT11. Mounting holes (Bottom view)





#### Back connecting socket (UL File No. E87929) (CSA Report No. LR31928)

Mounting holes

3.04 (.12)

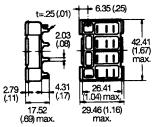
(.61)

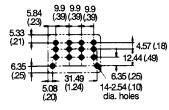
18.03 (.71)

Terminal arrangement is the same as Type PT14.

## (Bottom view)

(1.16)





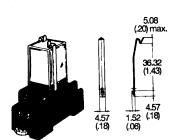


Unit: mm (inch)

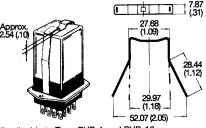
#### Relay hold-down clips

#### PYC-A1

For PTF□A socket

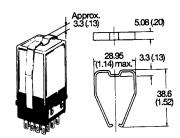


PYC-S For relay mounting plates (Applicable to Type PYP-1 and PYP-18 socket mounting plates only.)



(Applicable to Type PYP-1 and PYP-18 socket mounting plates only.)

PYC-P For PT□ socket

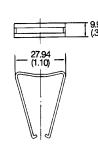


#### Relay hold-down clips

PYC-P2

For push-to-test button type with PT⊡ socket







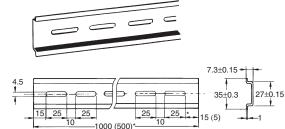


PYC-1 For RC circuit type



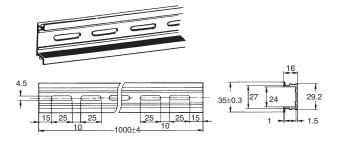
#### Mounting track/end plate/spacer

#### PFP-100N, PFP-50N (Conforming to EN 50022)



\* The figure in parenthesis is for PFP-50N.

#### PFP-100N2 (Conforming to EN 50022)



PFP-50N L = 497.84 mm (19.60 in) PFP-100N L = 990.60 mm (39.00 in)PFP-100N2 L = 990.60 mm (39.00 in)

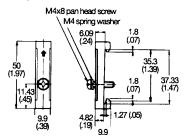
<sup>\*</sup>This dimension is 14.99 mm (0.59 in) on both ends in the case of PFP-100N, but on one end in the case of PFP-50N.

<sup>\*\*</sup> L = Length

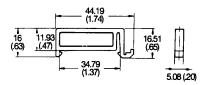
<sup>\*\*\*</sup>A total of twelve 24.89 x 4.57 mm (0.98 x 0.18 in) elliptic holes are provided, with six holes cut from each end of the track at a pitch of 9.91 (0.39) between holes.

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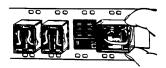
#### PFP-M end plate



#### PFP-S spacer

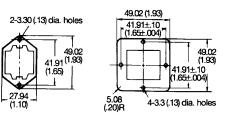


#### Socket mounting plates [t=1.52 (.06)]



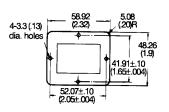
|               |         | Number | of socket specs | <b>5.</b> |
|---------------|---------|--------|-----------------|-----------|
| Socket needed | 1       | 10     | 12              | 18        |
| PT08, PT08QN  | PYP-1   | _      | _               | PYP-18    |
| PT11, PT11QN  | PTP-1-3 | _      | PTP-1-2         | _         |
| PT14, PT14QN  | PTP-1   | PTP-10 | _               | _         |
| PTP-10        | PTP-12  |        |                 |           |

PYP-1

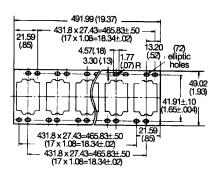


PTP-1-3

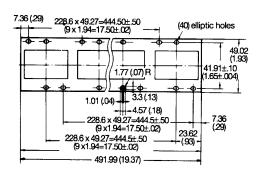
PTP-1



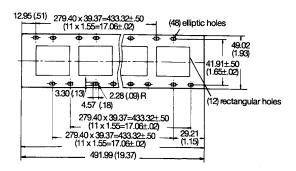
**PYP-18** 



PTP-10



PTP-12



## **■ Relay Options**

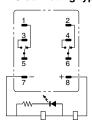
#### **LED Indicator**

Specifications and dimensions same as the Standard Type with the following exception. With the LED indicator type, the rated current is approximately 0 to 5.0 mA higher than the Standard Type.

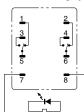
#### Terminal arrangement/Internal connections (Bottom view)

#### LY2N

#### DC coil rating type



#### AC coil rating type

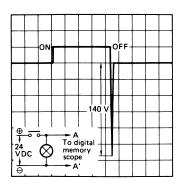


- Note: 1. The coil terminals 10 and 11 of Type LY3N become (-) and (+) and terminals 13 and 14 of Type LY4N become (-) and (+), respectively.
  - 2. Pay special attention to the polarities when using the DC type.

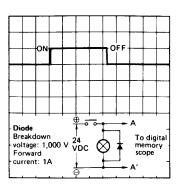
## **Diode Surge Suppression**

Specifications and dimensions same as the Standard Type with the following exception. Ambient operating temperature: -25° to 40°C (-13° to 104°F)

#### Without Diode



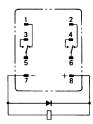
#### With Diode



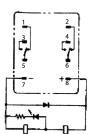
#### Terminal arrangement/Internal connections (Bottom view)

#### LY2(N)-D(2)

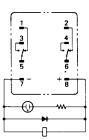
LY2-D 6, 12, 24, 48 100/110 VDC



LY2N-D2 6, 12, 24, 48 VDC



LY2N-D2 100/110 VDC



- Note: 1. Pay special attention to the polarities when using the DC type.
  - 2. The release time is somewhat longer, but satisfies the standard specifications of 25 ms.
  - 3. The reverse-breakdown voltage of the diode is 1,000 VDC.
  - 4. Available on DC versions only.

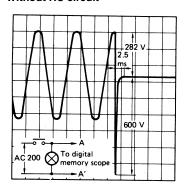
## **■** Relay Options

#### **RC Circuit**

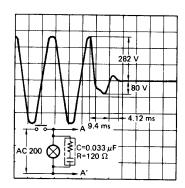
Specifications and dimensions same as the Standard Type with the following exceptions.

#### **Characteristic Data**

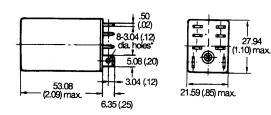
#### Without RC circuit



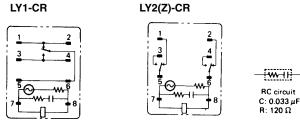
With RC circuit



LY1-CR, LY2(Z)-CR



Terminal arrangement/Internal connections (Bottom view)



Note: 1. The above drawing shows LY2(Z)-CR. With LY1-CR, "\*" should read eight 2.03 mm (0.08 in) dia. holes.

2. Available on AC versions only.

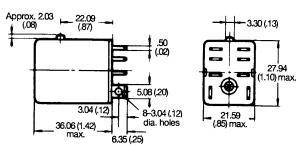
#### **Push-to-test Button**

Specifications and dimensions same as the Standard Type with the following exceptions.

#### LY□I2

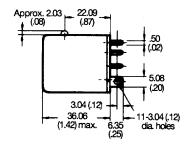


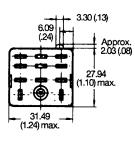
#### LY112, LY212



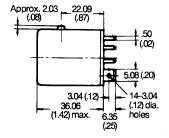
Note: Type LY1I2 has the same dimensions and appearances as Type LY2I2 shown except that dimensions "\*" is 2.03 mm (0.08 in) dia. holes.

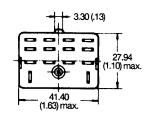






## LY4I2





## **■** Approvals

#### **UL Recognized Type (File No. E41643)**

| Туре         | Contact form | Coil ratings | Contact ratings                                 | Number of test operations |
|--------------|--------------|--------------|---|---------------------------|
| LY1□         | SPDT         | 6 to 240 VAC | 15A, 30VDC (Resistive), 40°C                    | 6 x 10 <sup>3</sup>       |
|              |              | 6 to 120 VDC | 15A, 240VAC (General use), 40°C                 |                           |
|              |              |              | TV-5, 120VAC, 40°C                              | 25 x 10 <sup>3</sup>      |
|              |              |              | 1/2HP, 120VAC, 50°C                             |                           |
| LY2□         | DPDT         |              | 15A, 28VDC (Resistive), 40°C                    | 6 x 10 <sup>3</sup>       |
|              |              |              | 15A, 120VAC (Resistive), 40°C                   |                           |
|              |              |              | 12A, 240VAC (General use), 40°C                 |                           |
|              |              |              | 1/2HP, 120VAC, 50°C                             | 25 x 10 <sup>3</sup>      |
|              |              |              | TV-3, 120VAC, 40°C                              |                           |
| LY3□         | 3PDT         |              | 10A, 30VDC (Resistive), 40°C (Same polarity)    | 6 x 10 <sup>3</sup>       |
| LY4□         | 4PDT         |              | 10A, 240VAC (General use), 40°C (Same polarity) |                           |
|              |              |              | 1/2HP, 240VAC, 40°C                             |                           |
| LY2Z□        | DPDT         |              | 7A, 240VAC (General use), 40°C                  | 6 x 10 <sup>3</sup>       |
| (Bifurcated) |              |              | 7A, 28VDC (Resistive), 40°C                     | 1                         |

#### CSA Certified Type (File No. LR31928)

| Туре | Contact form | Coil ratings | Contact ratings           |
|------|--------------|--------------|---------------------------|
| LY1□ | SPDT         | 6 to 240 VAC | 15 A, 120 VAC (Inductive) |
|      |              | 6 to 120 VDC | 10 A, 240 VAC (Inductive) |
|      |              |              | 15 A, 28 VDC (Resistive)  |
|      |              |              | TV-5 (ACTV)               |
| LY2□ | DPDT         |              | 13 A, 28 VDC (Resistive)  |
|      |              |              | 12 A, 120 VAC (Inductive) |
|      |              |              | 10 A, 240 VAC (Inductive) |
|      |              |              | 1/3 HP, 120 VAC (Motor)   |
|      |              |              | TV-3 (ACTV)               |
| LY3□ | 3PDT         |              | 10 A, 240 VAC (Inductive) |
| LY3□ | 4PDT         |              | 10 A, 28 VDC (Resistive)  |

#### VDE Approved Type (File No. 9903 [SPDT, DPDT & 3PDT], File No. 9947 [4PDT])

| Туре            | Contact form | Coil ratings   | Contact ratings                         |
|-----------------|--------------|----------------|---|
| LY <b>□</b> -VD | SPDT         | 6, 12, 24, 50, | 10 A, 220 VAC (Resistive)               |
|                 |              | 110, 220 VAC   | 10 A, 28 VDC (Resistive)                |
|                 |              | and 6, 12, 24, | 7 A, 220 VAC (Inductive)                |
|                 |              | 48, 110 VDC    | 7 A, 28 VDC (Inductive)                 |
| LY□-VD          | DPDT         |                | 7 A, 220 VAC (Resistive)                |
|                 | 3PDT         |                | 7 A, 28 VDC (Resistive)                 |
|                 | 4PDT         |                | 4 A, 28 VDC and 4A, 220 VAC (Inductive) |

#### LR (Lloyd's Register) Approved Type (File No. 562KOB-204523)

| Туре | Contact form | Coil ratings | Contact ratings            |
|------|--------------|--------------|----------------------------|
| LY□  | DPDT         | 6 to 240 VAC | 7.5 A, 230 VAC (Inductive) |
|      | 4PDT         | 6 to 110 VDC | 5 A, 24 VDC (Inductive)    |

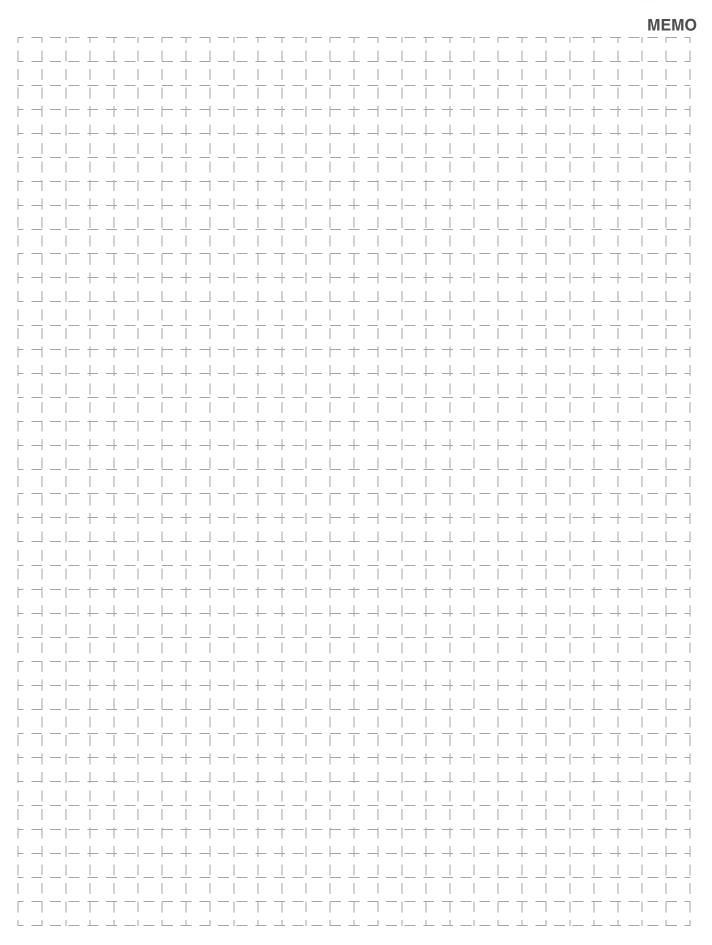
#### SEV Listed Type (File No. D7 91/82 [2- & 4-pole], D 91/204a [1- & 3-pole])

| Туре   | Contact form | Coil ratings | Contact ratings           |
|--------|--------------|--------------|---------------------------|
| LY□-SV | SPDT         | 6 to 240 VAC | 15 A, 220 VAC (Resistive) |
|        |              | 6 to 110 VDC | 15 A, 24 VDC (Resistive)  |
| LY□-SV | DPDT         |              | 10 A, 220 VAC (Resistive) |
|        | 3PDT         |              | 10 A, 24 VDC (Resistive)  |
|        | 4PDT         |              |                           |

Note: 1. The rated values approved by each of the safety standards (e.g., UL, CSA, VDE, and SEV) may be different from the performance characteristics individually defined in this catalog.

2. In the interest of product improvement, specifications are subject to change.

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