

# Miniature Power Sealed Relays

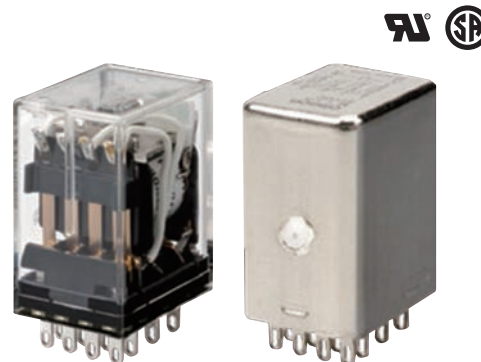
## MYQ/MYH

### Sealed relays that are tough in environments where dust or corrosive gases, etc., are present

- Plastic sealed relays (MYQ) and hermetically sealed relays (MYH) that are resistant to effects from the surrounding environment
- Highly airtight structures that are tough in environments where corrosive gases such as chloride gas, sulfuric gas, and silicone gas are generated. They are also resistant to environments where salt damage is occurred and where dust is generated.
- Prevent relay contact failures via a highly airtight structure.



Refer to *Safety Precautions* on pages 59 to 60 and *Safety Precautions for All Relays*.



Refer to the standards certifications and compliance section of your OMRON website for the latest information on certified models.

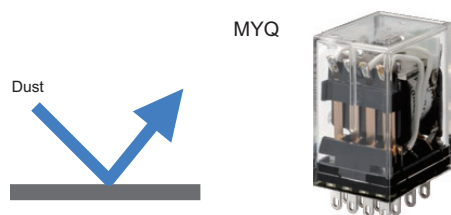
## Features

### Highly Airtight Relays (Plug-in Terminals)

| Seal performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Degree of protection                                                                                           | Typical relay | Features                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div style="display: flex; align-items: center;"> <div style="flex: 1; border-left: 1px solid black; border-right: 1px solid black; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; height: 10px; background: linear-gradient(to top, transparent 49%, #ccc 49%, #ccc 51%, transparent 51%);"></div> <div style="position: absolute; bottom: 0; left: 0; right: 0; height: 10px; background: linear-gradient(to bottom, transparent 49%, #ccc 49%, #ccc 51%, transparent 51%);"></div> </div> <div style="flex: 1; text-align: center;"> <p>High ↑</p> </div> </div> |  <p>Hermetically sealed</p>  | MYH           | Sealing with metals, the glass case and base, etc. with inert gases (N <sub>2</sub> ) inside makes it airtight structure which provides the external casing with durability against harmful corrosion, and prevents corrosive gases from intruding inside relays. |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  <p>Plastic sealed</p>      | MYQ           | Structure that seals relays with the resin case and cover, etc., to prevent effects from corrosive environments.                                                                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  <p>Closed type (cased)</p> | MY, MY4Z-CBG  | Relays in the case realize the structure that protects them from contact with foreign materials.                                                                                                                                                                  |
| <div style="display: flex; align-items: center;"> <div style="flex: 1; border-left: 1px solid black; border-right: 1px solid black; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; height: 10px; background: linear-gradient(to top, transparent 49%, #ccc 49%, #ccc 51%, transparent 51%);"></div> <div style="position: absolute; bottom: 0; left: 0; right: 0; height: 10px; background: linear-gradient(to bottom, transparent 49%, #ccc 49%, #ccc 51%, transparent 51%);"></div> </div> <div style="flex: 1; text-align: center;"> <p>Low</p> </div> </div>    |                                                                                                                |               |                                                                                                                                                                                                                                                                   |

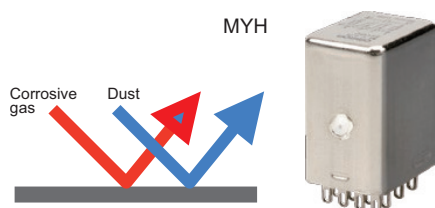
### Plastic Sealed Relays: MYQ

These realize excellent reliability even in environments where salt damage occurs or where dust is generated.



### Hermetically Sealed Relays: MYH

These realize excellent reliability even in environments where dust is generated or where corrosive gases (chloride gas, sulfuric gas, silicone gas, etc.) are present.



MY-GS-R

MYK

MYQ-MYH

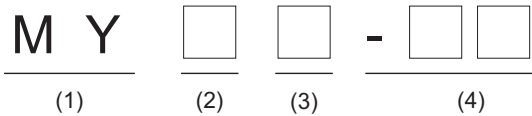
Other MY

Common Options (Order Separately)

Common Precautions

Model Number Structure

Model Number Legend



(1) Basic model name

MY: Miniature Power Sealed Relays

(3) Type

None: None  
N: With operation indicator\*  
\*Only MYQ (plastic sealed relay)

(2) Contacts/seals

Q4: 4-pole, single contacts, plastic sealed relays  
Q4Z: 4-pole, bifurcated contacts, plastic sealed relays  
4H: 4-pole, single contacts, hermetically sealed relays  
4ZH: 4-pole, bifurcated contacts, hermetically sealed relays

(4) Options, terminal type

None: Plug-in terminals  
02: Plastic sealed relays, PCB terminals  
0: Hermetically sealed relays, PCB terminals

Ordering Information

When your order, specify the rated voltage.

Plastic Sealed Relays

●Plug-in terminals

| Classification                                                                 | Number of poles | Contacts   | Model | Rated voltage                                    | With operation indicator |                                                                       |
|--------------------------------------------------------------------------------|-----------------|------------|-------|--------------------------------------------------|--------------------------|-----------------------------------------------------------------------|
|                                                                                |                 |            |       |                                                  | Model                    | Rated voltage                                                         |
| Standard models (compliant with Electrical Appliances and Material Safety Act) | 4               | Single     | MYQ4  | 100/110, 110/120, 200/220, 220/240 VAC<br>24 VDC | MYQ4N                    | 24, 100/110, 110/120, 200/220, 220/240 VAC<br>12, 24, 48, 100/110 VDC |
|                                                                                |                 | Bifurcated | MYQ4Z | 100/110, 110/120, 200/220 VAC<br>12, 24 VDC      |                          |                                                                       |

●PCB terminals

| Classification                                                                 | Number of poles | Contacts   | Model    | Rated voltage            |
|--------------------------------------------------------------------------------|-----------------|------------|----------|--------------------------|
| Standard models (compliant with Electrical Appliances and Material Safety Act) | 4               | Single     | MYQ4-02  | 50, 200/220, 220/240 VAC |
|                                                                                |                 |            |          | 24 VDC                   |
|                                                                                |                 | Bifurcated | MYQ4Z-02 | 100/110 VAC              |
|                                                                                |                 |            |          | 24, 48 VDC               |

Hermetically Sealed Relays

●Plug-in terminals

| Classification                                                                 | Number of poles | Contacts   | Model | Rated voltage            |
|--------------------------------------------------------------------------------|-----------------|------------|-------|--------------------------|
| Standard models (compliant with Electrical Appliances and Material Safety Act) | 4               | Single     | MY4H  | 24, 100/110, 110/120 VAC |
|                                                                                |                 |            |       | 12, 24, 48, 100/110 VDC  |
|                                                                                |                 | Bifurcated | MY4ZH | 24, 100/110, 110/120 VAC |
|                                                                                |                 |            |       | 12, 24, 48, 100/110 VDC  |

●PCB terminals

| Classification                                                                 | Number of poles | Contacts   | Model   | Rated voltage   |
|--------------------------------------------------------------------------------|-----------------|------------|---------|-----------------|
| Standard models (compliant with Electrical Appliances and Material Safety Act) | 4               | Single     | MY4H-0  | 110/120 VAC     |
|                                                                                |                 |            |         | 24 VDC          |
|                                                                                |                 | Bifurcated | MY4ZH-0 | 24, 100/110 VDC |
|                                                                                |                 |            |         |                 |

## Ratings and Specifications

### ●Operating coil

| Rated voltage (V) |         | Rated current (mA) |         | Coil resistance (Ω) | Coil inductance (H) |             | Must operate voltage (V)*1 | Must release voltage (V)*2 | Maximum voltage (V)        | Power consumption (VA, W)     |
|-------------------|---------|--------------------|---------|---------------------|---------------------|-------------|----------------------------|----------------------------|----------------------------|-------------------------------|
|                   |         | 50 Hz              | 60 Hz   |                     | Armature OFF        | Armature ON |                            |                            |                            |                               |
| AC                | 24      | 53.8               | 46      | 180                 | 0.69                | 1.3         | 80% max.                   | 30% min.                   | 110% max. of rated voltage | Approx. 0.9 to 1.3 (at 60 Hz) |
|                   | 100/110 | 11.7/12.9          | 10/11   | 3,750               | 14.54               | 24.6        |                            |                            |                            |                               |
|                   | 110/120 | 9.9/10.8           | 8.4/9.2 | 4,430               | 19.2                | 32.1        |                            |                            |                            |                               |
|                   | 200/220 | 6.2/6.8            | 5.3/5.8 | 12,950              | 54.75               | 91.07       |                            |                            |                            |                               |
|                   | 220/240 | 4.8/5.3            | 4.2/4.6 | 18,790              | 83.5                | 136.4       |                            |                            |                            |                               |
| DC                | 12      | 75                 |         | 165                 | 0.734               | 1.37        |                            | 10% min.                   | 110% max. of rated voltage | Approx. 0.9                   |
|                   | 24      | 36.9               |         | 650                 | 3.2                 | 5.72        |                            |                            |                            |                               |
|                   | 48      | 18.5               |         | 2,600               | 10.6                | 21.0        |                            |                            |                            |                               |
|                   | 100/110 | 9.1/10             |         | 11,000              | 45.6                | 86.0        |                            |                            |                            |                               |

**Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/-20% for AC rated current and ±15% for DC coil resistance.  
 2. The AC coil resistance and coil inductance values are for reference only.  
 3. Operating characteristics were measured at a coil temperature of 23°C.  
 4. The maximum voltage capacity was measured at an ambient temperature of 23°C.  
 \*1. There is variation between products, but actual values are 80% maximum. To ensure operation, apply at least 80% of the rated value.  
 \*2. There is variation between products, but actual values are 30% minimum for AC and 10% minimum for DC. To ensure release, use a value that is lower than the specified value.

### ●Contact Ratings

#### Plastic Sealed Relays: MYQ

| Number of poles (contact configuration)<br>Contact structure<br>Load | 4-pole (4PDT)                   |                                          |
|----------------------------------------------------------------------|---------------------------------|------------------------------------------|
|                                                                      | Single/bifurcated               |                                          |
|                                                                      | Resistive load                  | Inductive load (cos φ = 0.4, L/R = 7 ms) |
| Rated load                                                           | 1 A at 220 VAC<br>1 A at 24 VDC | 0.5 A at 220 VAC<br>0.5 A at 24 VDC      |
| Rated carry current                                                  | 1 A                             |                                          |
| Maximum switching voltage                                            | 250 VAC<br>125 VDC              |                                          |
| Maximum switching current                                            | 1 A                             |                                          |
| Maximum switching power                                              | 220 VA<br>24 W                  | 110 VA<br>12 W                           |
| Contact material                                                     | Au plating + Ag                 |                                          |

#### Hermetically Sealed Relays: MYH

| Number of poles (contact configuration)<br>Contact structure<br>Load | 4-pole (4PDT)                   |                                          |                                 |                                          |
|----------------------------------------------------------------------|---------------------------------|------------------------------------------|---------------------------------|------------------------------------------|
|                                                                      | Single                          |                                          | Bifurcated                      |                                          |
|                                                                      | Resistive load                  | Inductive load (cos φ = 0.4, L/R = 7 ms) | Resistive load                  | Inductive load (cos φ = 0.4, L/R = 7 ms) |
| Rated load                                                           | 3 A at 110 VAC<br>3 A at 24 VDC | 0.8 A at 110 VAC<br>1.5 A at 24 VDC      | 3 A at 110 VAC<br>3 A at 24 VDC | 0.8 A at 110 VAC<br>1.5 A at 24 VDC      |
| Rated carry current                                                  | 3 A                             |                                          |                                 |                                          |
| Maximum switching voltage                                            | 125 VAC<br>125 VDC              |                                          |                                 |                                          |
| Maximum switching current                                            | 3 A                             |                                          |                                 |                                          |
| Maximum switching power                                              | 330 VA<br>72 W                  | 88 VA<br>36 W                            | 330 VA<br>72 W                  | 88 VA<br>36 W                            |
| Contact material                                                     | Au plating + Ag                 |                                          |                                 |                                          |

MY-GS-R

MYK

MYQ-MYH

Other MY

Common Options (Order Separately)

Common Precautions

MY-GS-R

MYK

MYQ-MYH

Other MY

Common Options (Order Separately)

Common Precautions

Characteristics

| Model                                    |                                        | MYQ                                                                                                                                                                                                             | MYH                                                                                                                                                 |
|------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Contact resistance*1                     |                                        | 50 mΩ max.                                                                                                                                                                                                      |                                                                                                                                                     |
| Operate time*2                           |                                        | 20 ms max.                                                                                                                                                                                                      |                                                                                                                                                     |
| Release time*2                           |                                        | 20 ms max.                                                                                                                                                                                                      |                                                                                                                                                     |
| Maximum switching frequency              | Mechanical                             | 18,000 operations/h                                                                                                                                                                                             |                                                                                                                                                     |
|                                          | Rated load                             | 1,800 operations/h                                                                                                                                                                                              |                                                                                                                                                     |
| Insulation resistance*3                  |                                        | 100 MΩ min.                                                                                                                                                                                                     |                                                                                                                                                     |
| Dielectric strength                      | Between coil and contacts              | 1,500 VAC at 50/60 Hz for 1 min                                                                                                                                                                                 | 1,000 VAC at 50/60 Hz for 1 min                                                                                                                     |
|                                          | Between contacts of different polarity | 1,500 VAC at 50/60 Hz for 1 min                                                                                                                                                                                 | 1,000 VAC at 50/60 Hz for 1 min                                                                                                                     |
|                                          | Between contacts of the same polarity  | 1,000 VAC at 50/60 Hz for 1 min                                                                                                                                                                                 | 700 VAC at 50/60 Hz for 1 min                                                                                                                       |
| Vibration resistance                     | Destruction                            | 10 to 55 to 10 Hz, 0.5-mm single amplitude (1.0-mm double amplitude)                                                                                                                                            |                                                                                                                                                     |
|                                          | Malfunction                            | 10 to 55 to 10 Hz, 0.5-mm single amplitude (1.0-mm double amplitude)                                                                                                                                            |                                                                                                                                                     |
| Shock resistance                         | Destruction                            | 1,000 m/s <sup>2</sup>                                                                                                                                                                                          |                                                                                                                                                     |
|                                          | Malfunction                            | 200 m/s <sup>2</sup>                                                                                                                                                                                            |                                                                                                                                                     |
| Endurance                                | Mechanical                             | Single contacts: AC: 50,000,000 operations min., DC: 100,000,000 operations min.<br>Bifurcated contacts: 5,000,000 operations min., DC: 5,000,000 operations min.<br>(switching frequency: 18,000 operations/h) | Single contacts: 50,000,000 operations min.<br>Bifurcated contacts: 5,000,000 operations min.<br>(switching frequency: 18,000 operations/h)         |
|                                          | Electrical*4                           | Single contacts: 200,000 operations min.<br>Bifurcated contacts: 100,000 operations min.<br>(at rated load, switching frequency: 1,800 operations/h)                                                            | Single contacts: 100,000 operations min.<br>Bifurcated contacts: 50,000 operations min.<br>(at rated load, switching frequency: 1,800 operations/h) |
| Failure rate P Level (reference value)*5 |                                        | Single contacts: 1 mA at 1 VDC<br>Bifurcated contacts: 100 μA at 1 VDC                                                                                                                                          | Single contacts: 100 μA at 1 VDC<br>Bifurcated contacts: 100 μA at 100 mVDC                                                                         |
| Ambient operating temperature*6          |                                        | -55 to 60°C                                                                                                                                                                                                     | -25 to 60°C                                                                                                                                         |
| Ambient operating humidity               |                                        | 5% to 85%                                                                                                                                                                                                       |                                                                                                                                                     |
| Weight                                   |                                        | Approx. 35 g                                                                                                                                                                                                    | Approx. 50 g                                                                                                                                        |

**Note:** The data shown above are initial values.

\*1. Measurement conditions: 1 A at 5 VDC using the voltage drop method.

\*2. Measurement conditions: With rated operating power applied, not including contact bounce.  
Ambient temperature condition: 23°C

\*3. Measurement conditions: For 500 VDC applied to the same location as for dielectric strength measurement.

\*4. Ambient temperature condition: 23°C

\*5. This value was measured at a switching frequency of 120 operations per minute.

\*6. With no icing or condensation.

# Engineering Data (Reference Value)

MY-GS-R

MYK

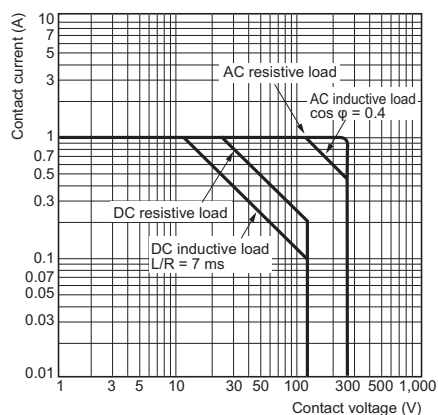
MYQ·MYH

Other MY

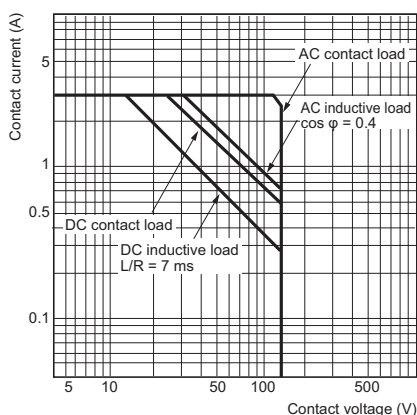
Common Options (Order Separately)

Common Precautions

## Maximum Switching Capacity MYQ4(Z)

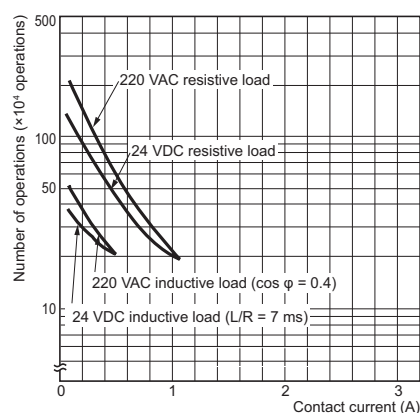


## MY4(Z)H



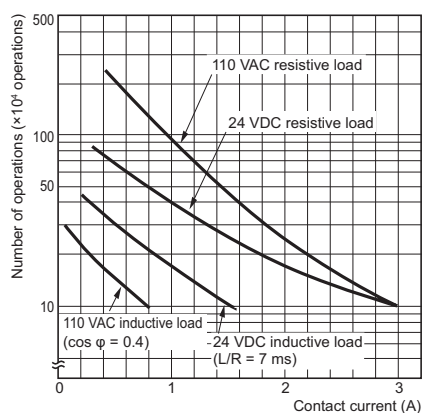
## Endurance Curve

### MYQ4



**Note:** The endurance of bifurcated contacts is one-half that of single contacts.

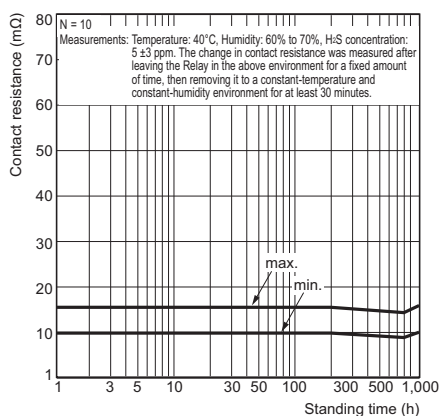
### MY4H



**Note:** The endurance of bifurcated contacts is one-half that of single contacts.

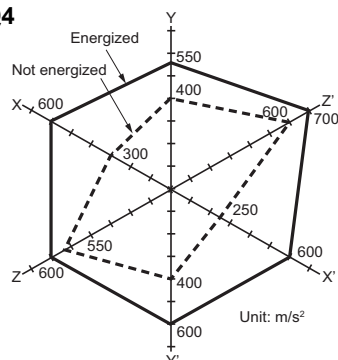
## H<sub>2</sub>S Gas Data

### MYQ4



## Shock Malfunction

### MYQ4



N = 20

Measurement: Shock was applied 3 times each in 6 directions along 3 axes with the Relay energized and not energized to check the shock values that cause the Relay to malfunction.

Criteria: Non-energized: 200 m/s<sup>2</sup>  
Energized: 200 m/s<sup>2</sup>

Shock direction



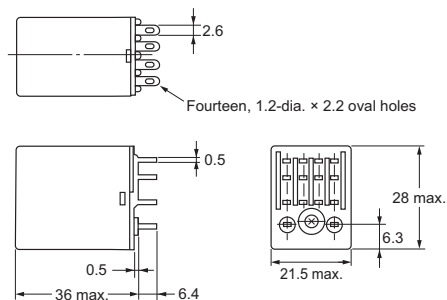
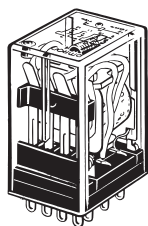
# Dimensions

(Unit: mm)

## ●Plug-in terminals

### Plastic Sealed Relays

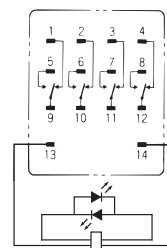
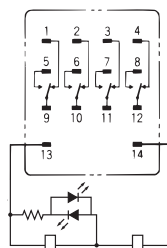
#### MYQ4(Z)(N)



#### MYQ4(Z)N

##### DC Models

##### AC Models



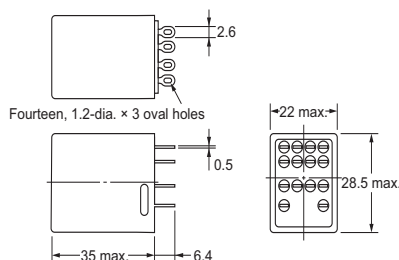
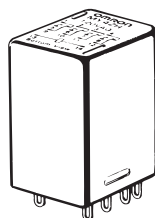
(Coil has no polarity)

(Coil has no polarity)

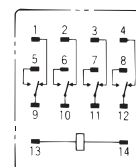
**Note:** An AC model has coil disconnection self-diagnosis.

### Hermetically Sealed Relays

#### MY4(Z)H



#### Terminal Arrangement/ Internal Connection Diagram (Bottom View) MY4(Z)H

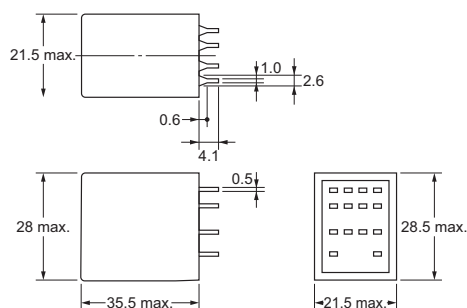
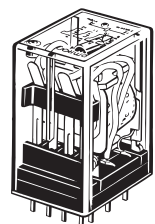


(Coil has no polarity)

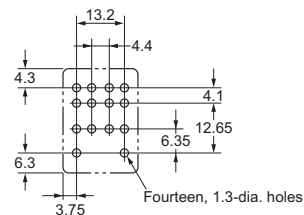
## ●PCB terminals

### Plastic Sealed Relays

#### MYQ4(Z)-02



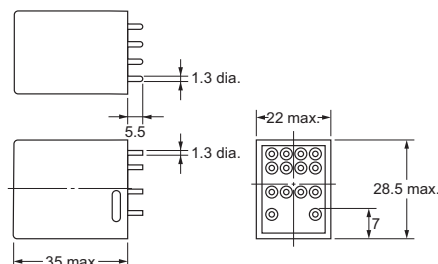
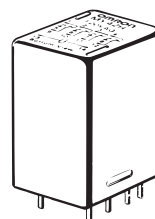
#### PCB Processing Dimensions (Bottom View)



**Note:** The dimensional tolerance is  $\pm 0.1$ .

### Hermetically Sealed Relays

#### MY4(Z)H-0



#### PCB Processing Dimensions (Bottom View)

