## General-purpose Relay MY New model

#### Versatile and Function-filled Miniature Power Relay for Sequence Control and Power Switching Applications

- Models with lockable test buttons now available.
- Many variations possible through a selection of operation indicators (mechanical and LED indicators), lockable test button, built-in diode and CR (surge suppression), bifurcated contacts, etc.
- Arc barrier standard on 4-pole Relays.
- Dielectric strength: 2,000 VAC (coil to contact)
- Environment-friendly cadmium-free contacts.
- Safety standard approvals obtained.
- Wide range of Sockets (PY, PYF Series) and optional parts are available.
- Max. Switching Current: 2-pole: 10 A, 4-pole: 5 A
- Provided with nameplate.

## **Ordering Information**

### ■ Relays

#### **Standard Coil Polarity**

Туре	Contact form	Solder terminals	Without LED indicator	
		Standard with LED indicator	With LED indicator and lockable test button	
Standard	DPDT	MY2N	MY2IN	MY2
	4PDT	MY4N	MY4IN	MY4
	4PDT (bifurcated)	MY4ZN	MY4ZIN	MY4Z
With built-in diode	DPDT	MY2N-D2	MY2IN-D2	
(DC only)	4PDT	MY4N-D2	MY4IN-D2	
	4PDT (bifurcated)	MY4ZN-D2	MY4ZIN-D2	
With built-in CR	DPDT	MY2N-CR	MY2IN-CR	
(220/240 VAC, 110/120 VAC only)	4PDT	MY4N-CR	MY4IN-CR	
	4PDT (bifurcated)	MY4ZN-CR	MY4ZIN-CR	

### **Reverse Coil Polarity**

Туре	Contact form	Plug-in so	Plug-in socket/Solder terminals			
		With LED indicator	With LED indicator and lockable test button			
Standard (DC only)	DPDT	MY2N1	MY2IN1			
	4PDT	MY4N1	MY4IN1			
	4PDT (bifurcated)	MY4ZN1	MY4ZIN1			
With built-in diode	DPDT	MY2N1-D2	MY2IN1-D2			
(DC only)	4PDT	MY4N1-D2	MY4IN1-D2			
	4PDT (bifurcated)	MY4ZN1-D2	MY4ZIN1-D2			

Note: When ordering, add the rated coil voltage and "(s)" to the model number. Rated coil voltages are given in the coil ratings table.

Example: MY2 6VAC (S)

Rated coil voltage



C E 🖾 🔊 🚯 🕃 🕲 LR

## ■ Accessories (Order Separately)

### **Sockets**

Poles	Front-mounting	Back-mounting Socket					
	Socket (DIN-track/ screw mounting)	Solder terminals		Wire-wrap terminals		PCB terminals	
		Without clip	With clip	Without clip	With clip		
2	PYF08A-E PYF08A-N	PY08	PY08-Y1		PY08QN-Y1 PY08QN2-Y1	PY08-02	
4	PYF14A-E PYF14A-N	PY14	PY14-Y1		PY14QN-Y1 PY14QN2-Y1	PY14-02	

#### Socket Hold-down Clip Pairing

Relay type	Poles		Front-connecting Socket (DIN-track/		Back-connecting Socket				
			screw mounting)		Solder/Wire-wrap terminals		terminals		
		Socket	Clip	Socket	Clip	Socket	Clip		
Without 2-pole test button	2	PYF08A-E PYF08A-N	PYC-A1	PY08(QN)	PYC-P PYC-P2	PY08-02	PYC-P PYC-P2		
	4	PYF14A-E PYF14A-N		PY14(QN)		PY14-02			
2-pole test button	2	PYF08A-E PYF08A-N	PYC-E1	PY08(QN)	PYC-P2	PY08-02	PYC-P2		

### **Mounting Plates for Sockets**

Socket model	For 1 Socket	For 18 Sockets	For 36 Sockets
PY08, PY08QN(2), PY14, PY14QN(2)	PYP-1	PYP-18	PYP-36

Note: PYP-18 and PYP-36 can be cut into any desired length in accordance with the number of Sockets.

#### Track and Accessories

Supporting Track (length = 500 mm)	PFP-50N
Supporting Track (length = 1,000 mm)	PFP-100N, PFP-100N2
End Plate	PFP-M
Spacer	PFP-S

## **Specifications**

## ■ Coil Ratings

I	Rated voltage	Rated	d current	Coil resistance		ductance nce value)	Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)
		50 Hz	60 Hz		Arm. OFF	Arm. ON	%	of rated volt	age	1
AC	6 V*	214.1 mA	183 mA	12.2 Ω	0.04 H	0.08 H	80% max.	30% min.	110%	1.0 to 1.2 VA
	12 V	106.5 mA	91 mA	46 Ω	0.17 H	0.33 H				(60 Hz)
	24 V	53.8 mA	46 mA	180 Ω	0.69 H	1.30 H				
	48/50 V*	24.7/ 25.7 mA	21.1/ 22.0 mA	788 Ω	3.22 H	5.66 H				
	110/120 V	9.9/10.8 mA	8.4/9.2 mA	4,430 Ω	19.20 H	32.1 H				0.9 to 1.1 VA
	220/240 V	4.8/5.3 mA	4.2/4.6 mA	18,790 Ω	83.50 H	136.4 H				(60 Hz)
DC	6 V*	151 mA		39.8 Ω	0.17 H	0.33 H		10% min.		0.9 W
	12 V	75 mA		160 Ω	0.73 H	1.37 H				
	24 V	37.7 mA		636 Ω	3.20 H	5.72 H				
	48 V*	18.8 mA		2,560 Ω	10.60 H	21.0 H	1			
	100/110 V	9.0/9.9 mA		11,100 Ω	45.60 H	86.2 H	1			

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

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

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

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

5. Rated voltage denoted by "\*" will be manufactured upon request. Ask your OMRON representative.

## ■ Contact Ratings

Item		2-pole		4-pole	4-pole (bifurcated)		
	Resistive load	Inductive load	Resistive load	Inductive load	Resistive load	Inductive load	
	(cos∳ = 1)	(cos∳ = 0.4, L/R = 7 ms)	(cos∳ = 1)	(cos∳ = 0.4, L/R = 7 ms)	(cos∳ = 1)	(cos∳ = 0.4, L/R = 7 ms)	
Rated load	5A, 250 VAC	2A, 250 VAC	3 A, 250 VAC	0.8 A, 250 VAC	3 A, 250 VAC	0.8 A, 250 VAC	
	5A, 30 VDC	2 A, 30 VDC	3 A, 30 VDC	1.5 A, 30 VDC	3 A, 30 VDC	1.5 A, 30 VDC	
Carry current	10 A (see note)		5 A (see note)				
Max. switching	250 VAC		250 VAC				
voltage	125 VDC		125 VDC				
Max. switching current	10 A		5 A				
Max. switching	2,500 VA	1,250 VA	1,250 VA	500 VA	1,250 VA	500 VA	
power	300 W	300 W	150 W	150 W	150 W	150 W	
Failure rate (reference value)	5 VDC, 1 mA		1 VDC, 1 mA		1 VDC, 100 μA		

Note: Don't exceed the carry current of a Socket in use. Please see page 9.

### ■ Characteristics

Item	All Relays
Contact resistance	100 mΩ max.
Operate time	20 ms max.
Release time	20 ms max.
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	2,000 VAC, 50/60 Hz for 1.0 min (1,000 VAC between contacts of same polarity)
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	See the following table.
Ambient temperature	Operating: –55°C to 70°C (with no icing)
Ambient humidity	Operating: 5% to 85%
Weight	Approx. 35 g

Note: The values given above are initial values.

### ■ Endurance Characteristics

Pole	Mechanical life (at 18,000 operations/hr)	Electrical life (at 1,800 operations/hr under rated load)
2-pole		500,000 operations min.
4-pole	DC:100,000,000 operations min.	200,000 operations min.
4-pole (bifurcated)	20,000,000 operations min.	100,000 operations min.

## ■ Approved Standards

### VDE Recognitions (File No. 112467UG, IEC 255, VDE 0435)

No. of poles	Coil ratings	Contact ratings	Operations
2	110/120, 200/220,	10 A, 250 VAC (cosφ=1) 10 A, 30 VDC (L/R=0 ms)	10 x 10 <sup>3</sup>
4		5 A, 250 VAC (cosφ=1) 5 A, 30 VDC (L/R=0 ms)	100 x 10 <sup>3</sup> MY4Z AC; 50 x 10 <sup>3</sup>

### UL508 Recognitions (File No. 41515)

No. of poles	Coil ratings	Contact ratings	Operations
		10 A, 30 VDC (General purpose) 10 A, 250 VAC (General purpose)	6 x 10 <sup>3</sup>
4		5 A, 250 VAC (General purpose) 5 A, 30 VDC (General purpose)	

### CSA C22.2 No. 14 Listings (File No. LR31928)

No. of poles	Coil ratings	Contact ratings	Operations
		10 A, 30 VDC 10 A, 250 VAC	6 x 10 <sup>3</sup>
4		5 A, 250 VAC (Same polarity) 5 A, 30 VDC (Same polarity)	

### IMQ (File No. EN013 to 016)

No. of poles	Coil ratings	Contact ratings	Operations
	110/120, 200/220,	10 A, 30 VDC 10 A, 250 VAC	10 x 10 <sup>3</sup>
4	6 10 04 40 100/110		100 x 10 <sup>3</sup> MY4Z AC; 50 x 10 <sup>3</sup>

### LR Recognitions (File No. 98/10014)

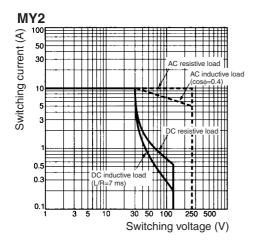
No. of poles	Coil ratings	Contact ratings	Operations
2	6 to 240 VAC 6 to 125 VDC	10 A, 250 VAC (Resistive) 2 A, 250 VAC (PF0.4) 10 A, 30 VDC (Resistive) 2 A, 30 VDC (L/R=7 ms)	50 x 10 <sup>3</sup>
4		5 A, 250 VAC (Resistive) 0.8 A, 250 VAC (PF0.4) 5 A, 30 VDC (Resistive) 1.5 A, 30 VDC (L/R=7 ms)	50 x 10 <sup>3</sup>

### SEV Listings (File No. 99.5 50902.01)

No. of poles	Coil ratings	Contact ratings	Operations
	6 to 240 VAC 6 to 125 VDC	10 A, 250 VAC 10 A, 30 VDC	10 x 10 <sup>3</sup>
4		5 A, 250 VAC 5 A, 30 VDC	100 x 10 <sup>3</sup> MY4Z AC; 50 x 10 <sup>3</sup>

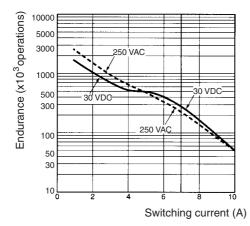
## **Engineering Data**

### Maximum Switching Power

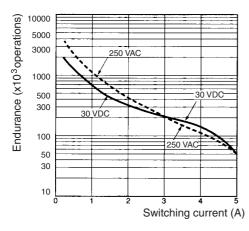


#### **Endurance**

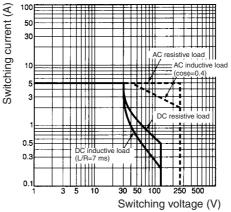
#### MY2 (Resistive Loads)



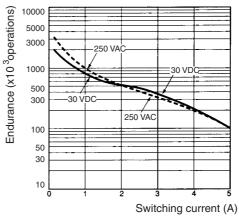
#### MY4 (Resistive Loads)



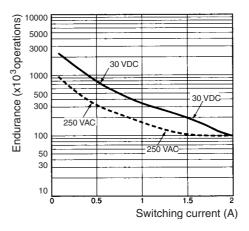
#### MY4, MY4Z



#### MY2 (Inductive Loads)



**MY4 (Inductive Loads)** 



30 VDC

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Switching Current (A)

250 VAC

1.5

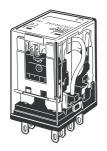
#### MY4Z (Resistive Loads) MY4Z (Inductive Loads) Endurance (x10<sup>3</sup>operations) 000 (x10<sup>3</sup>operations) 001 (x10<sup>3</sup>operations) 10000 Endurance (x10<sup>3</sup> operations) 5000 3000 1000 250 VAC 30 VDC 500 300 -30 VDC ۰. 100 50 250 VA 30 30 10 10 0.5 4 Switching Current (A)

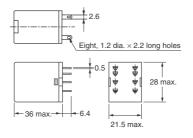
## Dimensions

Note: All units are in millimeters unless otherwise indicated.

### 2-Pole Models

MY2N





### **4-Pole Models**

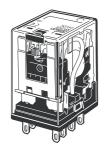
MY4N

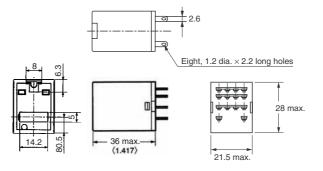


#### 

## Models with Test Button

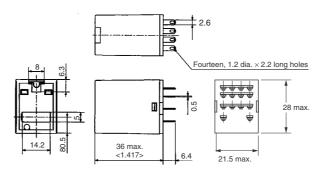
MY2IN



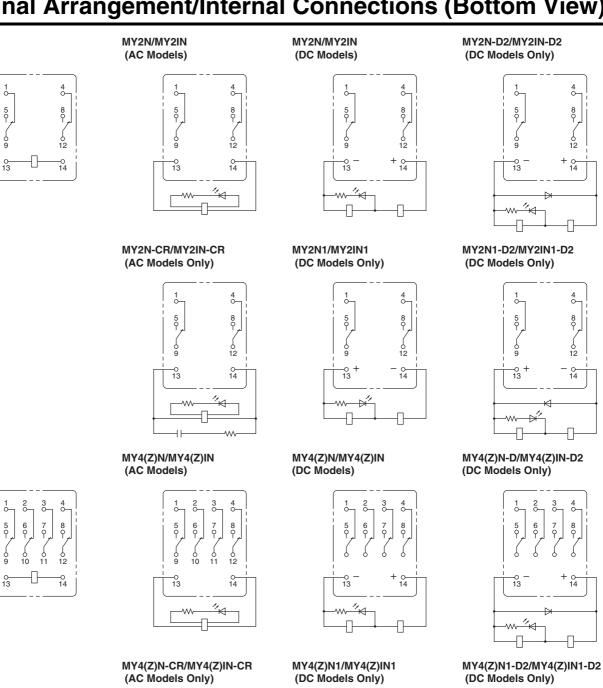


MY4IN





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



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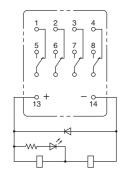
0-14

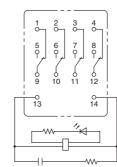
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5 9 6 9 7 9 8 9

-0 13

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Note: The DC models have polarity.

MY2

MY4(Z)

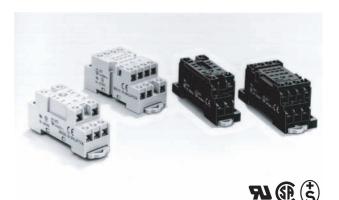
1 C

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## Socket for MY

#### Track-mounted (DIN Track) Socket Conforms to VDE 0106, Part 100

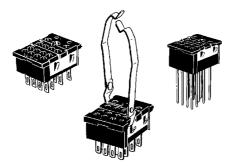
- Snap into position along continuous sections of any mounting track.
- Facilitates sheet metal design by standardized mounting dimensions.
- Design with sufficient dielectric separation between terminals eliminates the need of any insulating sheet.



## Safety Standards for Sockets

Model	Standards	File No.
PYF08A-E, PYF08A-N	UL508	E87929
PYF14A-E, PYF14A-N	CSA22.2	LR31928

### **Back-connecting Sockets**



## ■ Specifications

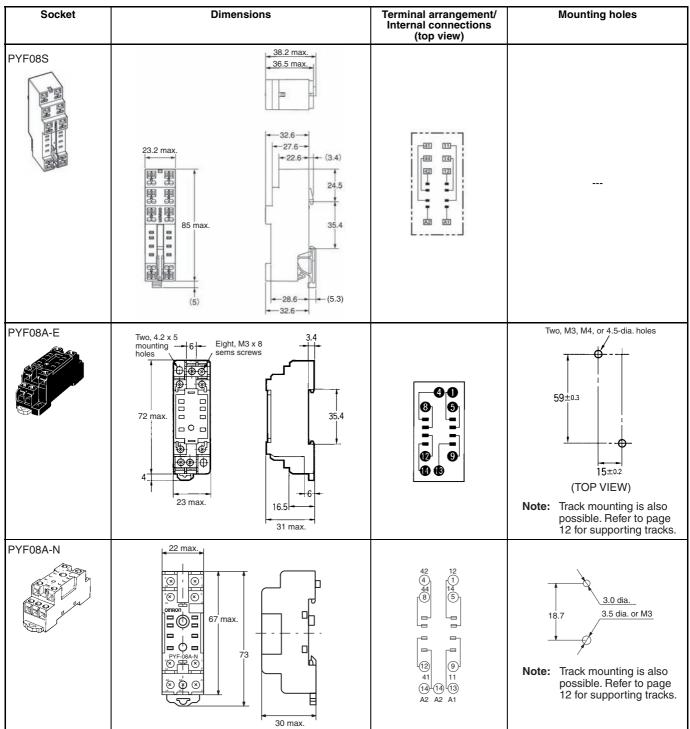
Item	Pole	Model	Carry current	Dielectric withstand voltage	Insulation resistance (see note 2)
Screwless Clamp Terminal Socket	2	PYF08S	10 A	2,000 VAC, 1 min	Less than 1,000 M $\Omega$
	4	PYF14S	5 A		
Track-mounted Socket	2	PYF08A-E	7 A	2,000 VAC, 1 min	1,000 MΩ min.
		PYF08A-N (see note 3)	7 A (see note 4)		
	4	PYF14A-E	5 A		
		PYF14A-N (see note 3)	5 A (see note 4)		
Back-connecting Socket	2	PY08(-Y1)	7 A	1,500 VAC, 1 min	100 MΩ min.
		PY08QN(-Y1)			
		PY08-02			
	4 PY14(-Y1) PY14QN(-Y1)	3 A			
		PY14QN(-Y1)	1		
		PY14-02	1		

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

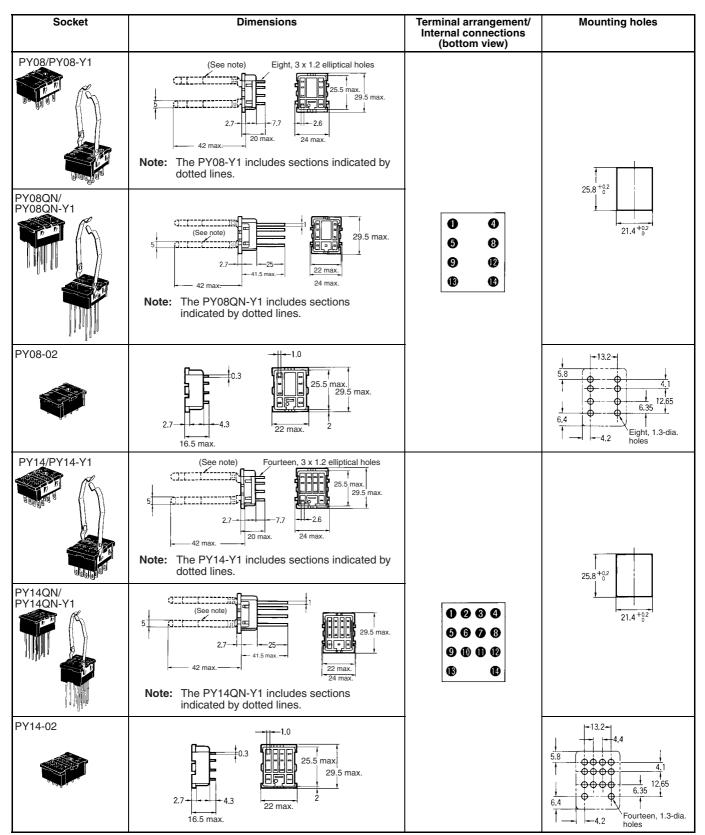
- 2. The values for insulation resistance were measured at 500 V at the same place as the dielectric strength.
- 3. The maximum operating ambient temperature for the PYF08A-N and PYF14A-N is 55°C.
- 4. When using the PYF08A-N or PYF14A-N at an operating ambient temperature exceeding 40°C, reduce the current to 60%.
- 5. The MY2(S) can be used at 70°C with a carry current of 7 A.

### Dimensions

Note: All units are in millimeters unless otherwise indicated.



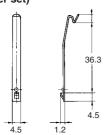
Socket	Dimensions	Terminal arrangement/ Internal connections (top view)	Mounting holes
PYF14S	31 max. 31 max. 32.6 + -27.6 + -27.6 + -27.6 + -27.6 + -27.6 + -24.55 - -24.55 - - - - - - - - - - - - -		
PYF14A-E	Two, 4.2 x 5 mounting holes 72 max. 29.5 max. Two, 4.2 x 5 Sems screws 4 29.5 max. 34 Fourteen, M3 x 8 Sems screws 35.4 16.5 31 max.		Two, M3, M4, or 4.5-dia. holes 59±03 (TOP VIEW) Note: Track mounting is also possible. Refer to page 12 for supporting tracks.
PYF14A-N	© © ⊙ ⊙	$\begin{array}{c} 42 & 32 & 22 & 12 \\ 4 & 32 & 22 & 11 \\ 44 & 34 & 24 & 14 \\ 8 & 7 & 6 & 5 \\ \hline & & & & & \\ 12 & 11 & 10 & 9 \\ 41 & 31 & 21 & 11 \\ 14 & 4 & 13 \\ A2 & A2 & A1 \end{array}$	Two, 4.5 dia. or M4

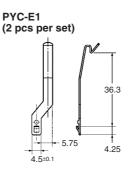


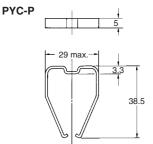
Note: Use a panel with plate thickness of 1 to 2 mm for mounting the Sockets.

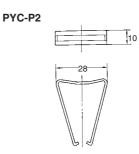
### Hold-down Clips





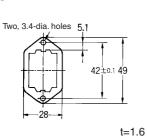




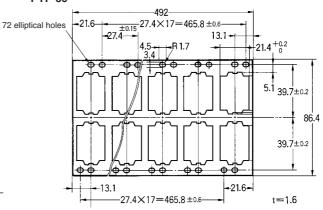


### **Mounting Plates for Back-connecting Sockets**

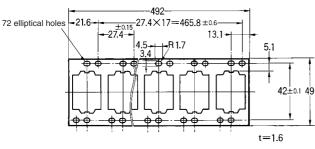
PYP-1



#### PYP-36



#### PYP-18

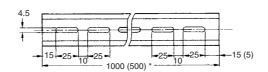


### **Tracks and Accessories**

#### **Supporting Tracks**

PFP-50N/PFP-100N



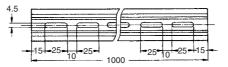


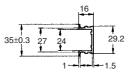
Note: The figure in the parentheses is for PFP-50N.

#### 7.3±0.15 7.3±0.15 7.3±0.15 7.3±0.15 7.3±0.15 7.3±0.15

#### PFP-100N2



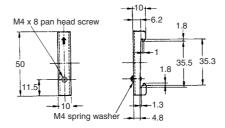




### End Plate

#### PFP-M

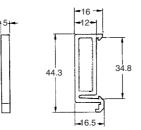




#### Spacer

PFP-S





## **Precautions**

Refer to General Precautions on page 11 of the General-purpose Relays and Power Relays Group Catalog (X034).

## ■ Connections

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

## ■ Mounting

• Whenever possible, mount Relays so that it is not subject to vibration or shock in the same direction as that of contact movement.

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

Cat. No. J111-E1-03 In the interest of product improvement, specifications are subject to change without notice. OMRON RELAY & DEVICES Corporation

General Purpose Relay Division Marketing & Product Engineering Department 1110 Sugi, Yamaga-City, Kumamoto, 861-0596 Japan Tel: (81)968-44-4160/Fax: (81)968-44-4107 Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

#### Warranty and Limitations of Liability

#### WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

#### LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS, OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

#### **Application Considerations**

#### SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the product.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.

• Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.

Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

#### Disclaimers

#### **CHANGE IN SPECIFICATIONS**

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Industrial Automation Company

2007.3

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