

Mechanical Indicators Added as a Standard Feature to Our Best-selling MY General-purpose Relays



- A lineup of models with latching levers added for easier circuit checking.
- Reduces wiring work by 60% when combined with the PYF-PU Push-In Plus Socket (according to actual OMRON measurements).
- Relays with AC and DC coils have different colors of operating indicators (LEDs).
- Printing on the coil tape indicates the operating coil specification.
- Mechanical operation indicators are a standard feature on all models.
- RoHS compliant.
- UL, CSA, IEC (VDE certification), and CQC.

Refer to the *Common Relay Precautions*.

Features

Common to all specifications

- Mechanical indicators are a standard feature on all models so that you can easily check the contact status.
- The color of the LED shows whether the coil voltage is AC or DC.

Mechanical indicators
(one on left and one on right)

Contacts ON (coil energized)

Contacts OFF (coil de-energized)

LED operation indicator
Relay with AC coil: Red
Relay with DC coil: Green



Relay with AC Coil (LED: Red)



Relay with AC Coil (LED: Red)






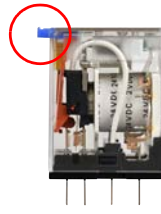


Relay with DC Coil (LED: Green)

With latching lever

- Useful for the operation check of relay sequence circuits.
- The coil voltage AC/DC can be identified by the color of the latching lever (AC coil specification: red, DC coil specification: Blue).

Latching lever operating method

	Normal State	Mode 1: Momentary State	Mode 2: Locked State
When seen from the top			
When seen from the side			
Operation Description	---	Slide the lever one step and press the yellow button with an insulated tool to operate the contacts.	If you slide the lever two steps, the contacts lock in the operation position.

Model Number Structure


Model Number Legend

MY □ □ □ - □ □ -GS DC24
 1 2 3 4 5

1. Number of Poles
 2: 2 poles
 4: 4 poles
2. Latching Lever
 Blank: Without latching lever
 I: With latching lever
3. LED Operation Indicator
 Blank: Built-in mechanical indicators
 N: LED operation indicator and built-in mechanical indicators
4. Coil Surge Absorption
 Blank: Standard models
 D2: Models with built-in diodes
 CR: Models with built-in CR circuits
5. Operating Coil Voltage
 Display Example: DC24

List of Models

Miniature Power Relays (MY-GS)

Category	Number of poles	Contact structure	Plug-in (octal pins) terminals		
				With operation indicator	
					With latching lever
Standard models	2	Single	MY2-GS	MY2N-GS	MY2IN-GS
	4		MY4-GS	MY4N-GS	MY4IN-GS
Models with built-in diodes for coil surge absorption	2		---	MY2N-D2-GS	MY2IN-D2-GS
	4		---	MY4N-D2-GS	MY4IN-D2-GS
Models with built-in CR circuits for coil surge absorption	2		---	MY2N-CR-GS	MY2IN-CR-GS
	4		---	MY4N-CR-GS	MY4IN-CR-GS

Ordering Information

Main unit

Standard model without operation indicator

Number of poles	Model	Rated voltage (V)
2	MY2-GS	12, 24, 48, 100/110, 110/120, 200/220, 220/240 VAC 6, 12, 24, 48, 100/110 VDC
4	MY4-GS	12, 24, 48, 100/110, 110/120, 200/220, 220/240 VAC 6, 12, 24, 48, 100/110 VDC

Standard model with operation indicator

Number of poles	Model	Rated voltage (V)
2	MY2N-GS	12, 24, 48, 100/110, 110/120, 200/220, 220/240 VAC 6, 12, 24, 48, 100/110, 220 VDC
4	MY4N-GS	12, 24, 48, 100/110, 110/120, 200/220, 220/240 VAC 6, 12, 24, 48, 100/110, 220 VDC

Standard model with operation indicator and latching lever

Number of poles	Model	Rated voltage (V)
2	MY2IN-GS	12, 24, 48, 100/110, 110/120, 200/220, 220/240 VAC 6, 12, 24, 48, 100/110, 220 VDC
4	MY4IN-GS	12, 24, 48, 100/110, 110/120, 200/220, 220/240 VAC 6, 12, 24, 48, 100/110, 220 VDC

Models with built-in diodes for coil surge absorption with operation indicator

Number of poles	Model	Rated voltage (V)
2	MY2N-D2-GS	12, 24, 48, 100/110, 220 VDC
4	MY4N-D2-GS	12, 24, 48, 100/110, 220 VDC

Models with built-in diodes for coil surge absorption with operation indicator and latching lever

Number of poles	Model	Rated voltage (V)
2	MY2IN-D2-GS	12, 24, 48, 100/110, 220 VDC
4	MY4IN-D2-GS	12, 24, 48, 100/110, 220 VDC

Models with built-in CR circuits for coil surge absorption with operation indicator

Number of poles	Model	Rated voltage (V)
2	MY2N-CR-GS	100/110, 110/120, 200/220, 220/240 VAC
4	MY4N-CR-GS	100/110, 110/120, 200/220, 220/240 VAC

Models with built-in CR circuits for coil surge absorption with operation indicator and latching lever

Number of poles	Model	Rated voltage (V)
2	MY2IN-CR-GS	100/110, 110/120, 200/220, 220/240 VAC
4	MY4IN-CR-GS	100/110, 110/120, 200/220, 220/240 VAC

Options (order separately)

Front-mounting Sockets

Number of Pins	Applicable Relay Model	Terminal Type	Mounting Method	Appearance	Model	Hold-down Clips
8	MY2-GS MY2N-GS MY2IN-GS MY2N-D2-GS MY2IN-D2-GS MY2N-CR-GS MY2IN-CR-GS	Screw terminal Finger protection structure *1 (Screw size M3)	DIN Track or screw mounting		PYFZ-08-E	PYC-A1 *3
		Screw terminal Finger protection structure *1 (Screw size M3)	DIN Track or screw mounting		PYF08A-E	PYC-A1 *3
		Screw terminal Finger protection structure *1 (Screw size M3)	DIN Track or screw mounting		PYF08A-N	PYC-A1* 3
		Push-In Plus Terminal (Integrated Socket with release lever)	DIN Track or screw mounting *2		PYF-08-PU	---
14	MY4-GS MY4N-GS MY4IN-GS MY4N-D2-GS MY4IN-D2-GS MY4N-CR-GS MY4IN-CR-GS	Screw terminal Finger protection structure *1 (Screw size M3)	DIN Track or screw mounting		PYFZ-14-E	PYC-A1 *3
		Screw terminal Finger protection structure *1 (Screw size M3)	DIN Track or screw mounting		PYF14A-E	PYC-A1 *3
		Screw terminal Finger protection structure *1 (Screw size M3)	DIN Track or screw mounting		PYF14A-N	PYC-A1 *3
		Push-In Plus Terminal (Integrated Socket with release lever)	DIN Track or screw mounting *2		PYF-14-PU	---



*1. In the finger protection type (PYF□A-E, PYFZ-□-E, and PYF□A-N), the terminal cover is integrated into the Socket. Round terminals cannot be used.

Use forked terminals or ferrules instead.



*2. There are screw mounting holes in the DIN hooks on the PYF-□□-PU. Pull out the DIN hook tabs to mount the Sockets with screws.

*3. Model number of the applicable Mounting Bracket. Sold in sets of two.

Back-mounting Sockets

Number of Pins	Applicable Relay Model	Terminal Type	Appearance	Model	Hold-down Clips
8	PY08-02	PCB terminals		PY08-02	PYC-P
14	PY14-02	PCB terminals		PY14-02	

Socket accessories
Mounting Bracket

Appearance *1	Model	Weight *2	Application
	PYC-A1	Approx. 0.54 g	For joining the Socket and Relay
	PYC-P	Approx. 1.4 g	For joining the Socket and Relay

*1. Describes the appearance when the Relay, Socket, and Mounting Bracket have been combined together.

*2. The PYC-A1 includes two Mounting Brackets in one set. The weight specified above is the weight of one Mounting Bracket.

Ratings and Specifications

Ratings

Main unit

Operating Coil

Item	Rated current (mA)		Coil resistance (Ω)	Coil inductance (H)		Must-operate voltage	Must-release voltage	Maximum voltage	Power consumption (VA, W)
	50 Hz	60 Hz		Armature OFF	Armature ON				
AC	12	106.5	91	46	0.17	0.33	30% min. *2	110%	Approx. 0.9 to 1.3 (at 60 Hz)
	24	53.8	46	180	0.69	1.3			
	48	25.7	21.1	788	3.22	5.66			
	100/110	11.7/12.9	10.0/11.0	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	94.07			
	220/240	5.2/6.2	4.3/5.0	15,920	83.5	136.4			
DC	6	146 (151)		41.0 (39.8)	0.17	0.33	10% min. *2	110%	Approx. 0.9
	12	72.7 (75)		165 (160)	0.73	1.37			
	24	36.3 (37.7)		662 (636)	3.2	5.72			
	48	17.6 (18.8)		2,725 (2,560)	10.6	21.0			
	100/110	8.7 (9.0)/9.6 (9.9)		11,440 (11,100)	45.6	86.2			
	220	3.6		60,394	362.3	452.9			Approx. 0.8

- Note:**
- The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/-20% for the AC rated current and +15% for the DC coil resistance.
 - The AC coil resistance and inductance values are reference values only (at 60 Hz).
 - Operating characteristics were measured at a coil temperature of 23°C.
 - The values in parentheses for the rated currents and coil voltages of DC coils are for models with LED operation indicators.
 - The maximum voltage capacity was measured at an ambient temperature of 23°C.

*1. There is variation between products, but actual values are 80% max.

The Relay will operate if 80% or higher of the rated voltage is applied. However, to achieve the specified characteristics, apply the rated voltage to the coil.

*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.

Contacts

	2 poles			4 poles		
	Resistive load	Inductive load (cos φ = 0.4, L/R = 7 ms)		Resistive load	Inductive load (cos φ = 0.4, L/R = 7 ms)	
Contact configuration	DPDT			4PDT		
Contact structure	Single					
Contact material	Ag					
Rated load	7 A at 250 VAC 7 A at 30 VDC	5 A at 220 VAC 5 A at 24 VDC	2 A at 220 VAC 2 A at 24 VDC	6 A at 250 VAC 6 A at 30 VDC	3 A at 220 VAC 3 A at 24 VDC	0.8 A at 220 VAC 1.5 A at 24 VDC
Electrical endurance *1	120,000 operations	500,000 operations		30,000 operations	200,000 operations	
Rated carry current *2	7 A			6 A		
Maximum contact voltage	250 VAC, 220 VDC			250 VAC, 220 VDC		
Maximum contact current *2	7 A			6 A		
Maximum switching capacity	1,750 VA 210 W		440 VA 48 W	1,500 VA 180 W		176 VA 36 W
Minimum load (reference values) *3	1 mA at 5 VDC					

*1. Rated load, switching frequency: 2,400 operations/h. Ambient temperature condition: 23°C. Duty ratio: 33%.

*2. 2 poles of 7 A is for an ambient temperature of 40°C. At an ambient temperature of 70°C, the value is 5 A.

4 poles of 6 A is for an ambient temperature of 50°C. At an ambient temperature of 70°C, the value is 3 A.

*3. These values are guides for the switchable limits for minute load levels, such as in electronic circuits. Actual characteristics may be different. These values will depend on the switching frequency, atmosphere, and expected reliability level. Confirm applicability in the actual system under actual application conditions.

Characteristics

Main unit

		2 poles	4 poles
Contact resistance *1		100 mΩ max.	
Operation time *2		20 ms max.	
Release time *2		20 ms max.	
Maximum operating frequency	Mechanical	18,000 operations/h	
	Rated load	2,400 operations/h	
Insulation resistance *3		1,000 MΩ min.	
Dielectric strength	Between coil and contacts	2,000 VAC at 50/60 Hz for 1 min.	
	Between contacts of different polarity	2,000 VAC at 50/60 Hz for 1 min.	
	Between contacts of the same polarity	1,000 VAC at 50/60 Hz for 1 min.	
Vibration resistance	Destruction	10 to 55 to 10 Hz, Double amplitude: 1.0 mm	
	Malfunction	10 to 55 to 10 Hz, Double amplitude: 1.0 mm	
Shock resistance	Destruction	1,000 m/s ² (approx. 100 G)	
	Malfunction	200 m/s ² (Approx. 20 G)	
Mechanical endurance		50,000,000 operations (switching frequency: 18,000 operations/h)	
Ambient operating temperature		Standard models: -55 to 70°C (with no icing or condensation) Models with LED operation indicators: -40 to 70°C (with no icing or condensation)	
Ambient humidity		5% to 85%	
Weight		Approx. 35 g	

Note: The above values 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 time.

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

Options (order separately)

Sockets

Model	Conn ection	Number of Pins	Terminal Type	Ambient operating temperature	Ambient humidity	Continuous carry current	Dielectric strength			Insulation resistance *1	Weight
							Between contact terminals of same polarity	Between contact terminals of different polarity	Between coil and contact terminals		
PYFZ-08-E	Front	8	Screw terminal	-55 to 70°C	5% to 85% RH	10 A	2,250 VAC 1 min	2,250 VAC 1 min	2,250 VAC 1 min	1,000 MΩ min. (500 VDC)	Approx. 32 g
PYF08A-E				-55 to 70°C	5% to 85% RH	7A	2,000 VAC 1 min	2,000 VAC 1 min	2,000 VAC 1 min	1,000 MΩ min. (500 VDC)	Approx. 32 g
PYF08A-N				-55 to 55°C	5% to 85% RH	7A *3	2,000 VAC 1 min	2,000 VAC 1 min	2,000 VAC 1 min	1,000 MΩ min. (500 VDC)	Approx. 32 g
PYF-08-PU			Push-In Plus Terminal	-40 to 70°C	5% to 85% RH	10A *2	2,000 VAC 1 min	2,000 VAC 1 min	2,000 VAC 1 min	1,000 MΩ min. (500 VDC)	Approx. 80 g
PYFZ-14-E		14	Screw terminal	-55 to 70°C	5% to 85% RH	6A	2,250 VAC 1 min	2,250 VAC 1 min	2,250 VAC 1 min	1,000 MΩ min. (500 VDC)	Approx. 50 g
PYF14A-E				-55 to 70°C	5% to 85% RH	5A	2,000 VAC 1 min	2,000 VAC 1 min	2,000 VAC 1 min	1,000 MΩ min. (500 VDC)	Approx. 50 g
PYF14A-N				-55 to 55°C	5% to 85% RH	5A *3	2,000 VAC 1 min	2,000 VAC 1 min	2,000 VAC 1 min	1,000 MΩ min. (500 VDC)	Approx. 50 g
PYF-14-PU			Push-In Plus Terminal	-40 to 70°C	5% to 85% RH	6A	2,000 VAC 1 min	2,000 VAC 1 min	2,000 VAC 1 min	1,000 MΩ min. (500 VDC)	Approx. 87 g
PY08-02	Back	8	PCB terminals	-55 to 70°C	5% to 85% RH	7A	1,500 VAC 1 min	1,500 VAC 1 min	1,500 VAC 1 min	100 MΩ min.	Approx. 7.2 g
PY14-02		14		-55 to 70°C	5% to 85% RH	3A	1,500 VAC 1 min	1,500 VAC 1 min	1,500 VAC 1 min	100 MΩ min.	Approx. 10 g

*1. For 500 VDC applied to the same location as for dielectric strength measurement.

*2. The continuous carry current of 10 A is for an ambient temperature of 55°C. At an ambient temperature of 70°C, the value is 7 A.

*3. When using the PYF08A-N or PYF14A-N at an ambient operating temperature exceeding 40°C, reduce the continuous carry current to 60%.

Socket Accessories

For front-connecting Sockets

Short Bars

Application	Applicable sockets	Model	Maximum carry current	Ambient operating temperature	Ambient operating humidity
For Contact terminals (common)	PYF-08-PU(-L) PYF-14PU(-L)	PYDN-7.75-020□	20 A	-40 to 70°C	5% to 85%RH
		PYDN-7.75-030□			
		PYDN-7.75-040□			
		PYDN-7.75-200□			
For Coil terminals	PYF-08-PU(-L) PYF-14PU(-L)	PYDN-31.0-080□	20 A	-40 to 70°C	5% to 85%RH

Certified Ratings for Models Certified for Safety Standards

The rated values for safety standard certification are not the same as individually defined performance values. Always check the specifications before use.

Main unit

UL-certified Models: UL508

MY-GS	Number of poles	Coil ratings	Contact ratings	Certified number of operations
	2	12 VAC, 24 VAC, 48 VAC, 100/110 VAC, 110/120 VAC, 200/220 VAC, or 220/240 VAC 6 VDC, 12 VDC, 24 VDC, 48 VDC, 100/110 VDC, or 220 VDC	5 A, 30 VDC (General Use) 7 A, 30 VDC Resistive Load 5 A, 250 VAC (General Use) 7 A, 250 VAC Resistive Load	6,000 operations
	4	12 VAC, 24 VAC, 48 VAC, 100/110 VAC, 110/120 VAC, 200/220 VAC, or 220/240 VAC 6 VDC, 12 VDC, 24 VDC, 48 VDC, 100/110 VDC, or 220 VDC	3 A, 30 VDC (General Use) 6 A, 30 VDC Resistive Load 3 A, 250 VAC (General Use) 6 A, 250 VAC Resistive Load	6,000 operations

CSA-certified Models: CSA C22.2 No.14

MY-GS	Number of poles	Coil ratings	Contact ratings	Certified number of operations
	2	12 VAC, 24 VAC, 48 VAC, 100/110 VAC, 110/120 VAC, 200/220 VAC, or 220/240 VAC 6 VDC, 12 VDC, 24 VDC, 48 VDC, 100/110 VDC, or 220 VDC	5 A, 30 VDC (General Use) 7 A, 30 VDC Resistive Load 5 A, 250 VAC (General Use) 7 A, 250 VAC Resistive Load	6,000 operations
	4	12 VAC, 24 VAC, 48 VAC, 100/110 VAC, 110/120 VAC, 200/220 VAC, or 220/240 VAC 6 VDC, 12 VDC, 24 VDC, 48 VDC, 100/110 VDC, or 220 VDC	3 A, 30 VDC (General Use) 6 A, 30 VDC Resistive Load 3 A, 250 VAC (General Use) 6 A, 250 VAC Resistive Load	6,000 operations

VDE-certified Models: EN 61810-1

MY-GS	Number of poles	Coil ratings	Contact ratings	Certified number of operations
	2	12 VAC, 24 VAC, 48 VAC, 100/110 VAC, 110/120 VAC, 200/220 VAC, or 220/240 VAC 6 VDC, 12 VDC, 24 VDC, 48 VDC, 100/110 VDC, or 220 VDC	7 A, 30 VDC (L/R = 0) 7 A, 250 VAC (cosφ = 1)	10,000 operations
	4	12 VAC, 24 VAC, 48 VAC, 100/110 VAC, 110/120 VAC, 200/220 VAC, or 220/240 VAC 6 VDC, 12 VDC, 24 VDC, 48 VDC, 100/110 VDC, or 220 VDC	6 A, 30 VDC (L/R = 0) 6 A, 250 VAC (cosφ = 1)	10,000 operations

CQC-certified Models

Model	Standard number	Certification No.
MY-GS	GB/T 21711.1	CQC18002198531

Options (order separately)

Sockets

CSA certified (File No. LR031928)

Model	Ratings	Class number	Standard number
PYFZ-08-E	10A 250V	3211 07	CSA C22.2 No14
PYFZ-14-E	6A 250V *		
PYF08A-E	7A 250V		
PYF14A-E	7A 250V		
PYF08A-N	7A 250V		
PYF14A-N	7A 250V		
PYF-08-PU	10A 250V		
PYF-14-PU	6A 250V *		

* When power is supplied to all four poles, use with a total power current that does not exceed 20 A.

UL Standards Certification (File No. E87929)

Model	Ratings	Standard number	Category	Listed/Recognized
PYFZ-08-E	10A 250V	UL 508	SWIV2	Recognition
PYFZ-14-E	6A 250V *			
PYF08A-E	7A 250V			
PYF14A-E	7A 250V			
PYF08A-N	7A 250V			
PYF14A-N	7A 250V			
PYF-08-PU	10A 250V			
PYF-14-PU	6A 250V *			

* When power is supplied to all four poles, use with a total power current that does not exceed 20 A.

TÜV Rheinland certification

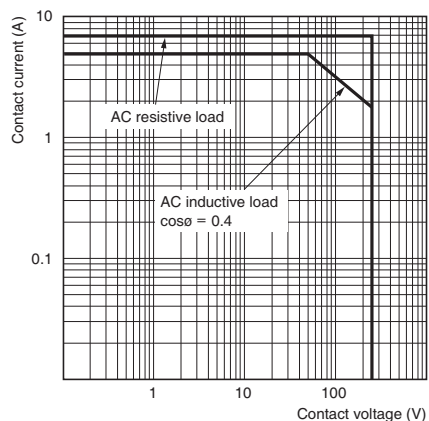
Model	Ratings	Standard number	Certification No.
PYFZ-08-E	10A 250V	EN 61984	R50405329
PYFZ-14-E	6A 250V		
PYF08A-N	7A 250V		J50224549
PYF14A-N			
PYF-08-PU	10A 250V *		R50327595
PYF-14-PU	6A 250V		

* Ratings are for an ambient temperature of up to 55°C. At an ambient temperature of 70°C, the value is 7A.

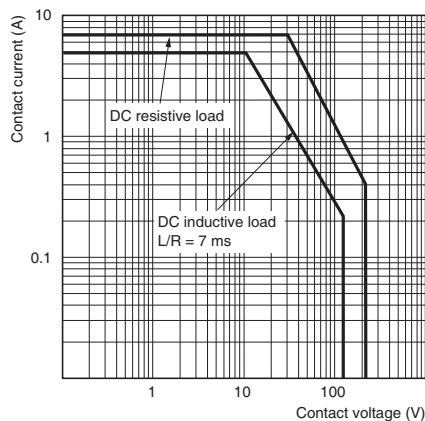
Engineering Data (Reference Value)

Maximum Switching Capacity

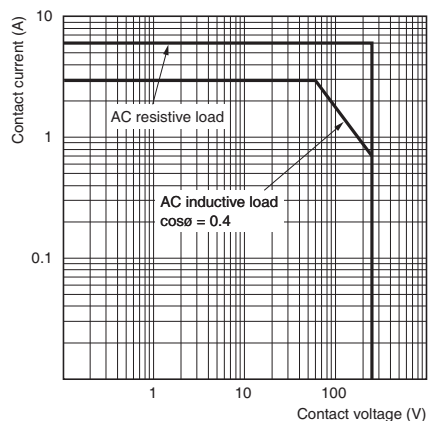
MY2□□-□□-GS (AC load)



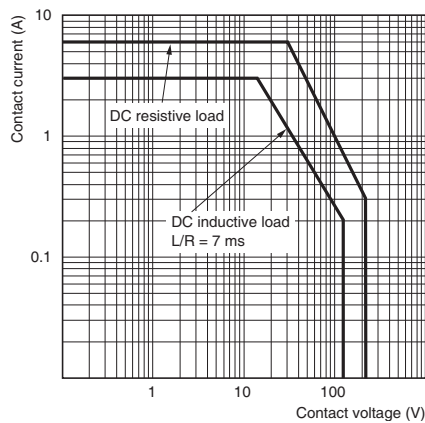
MY2□□-□□-GS (DC load)



MY4□□-□□-GS (AC load)

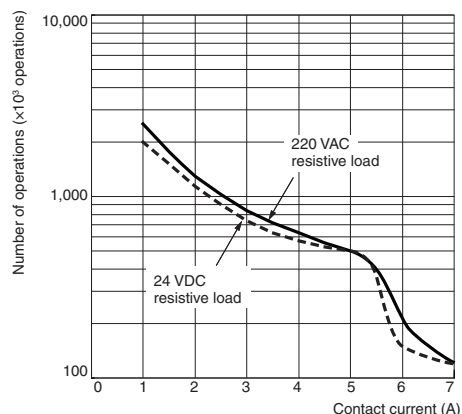


MY4□□-□□-GS (DC load)

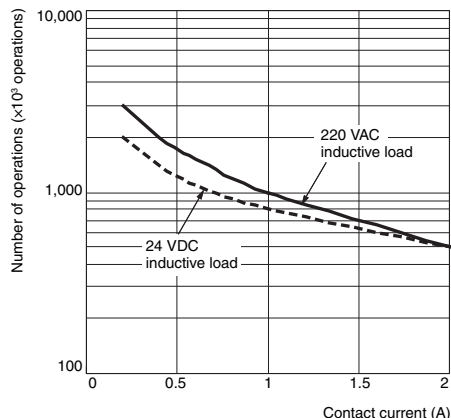


Endurance Curve

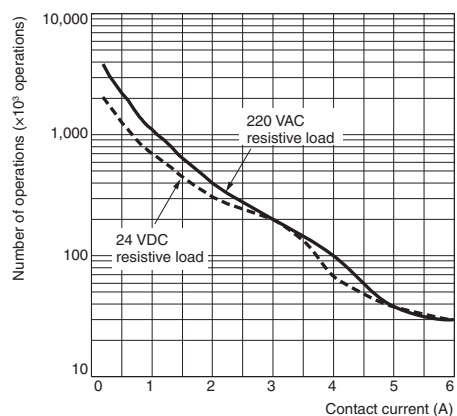
MY2□□-□□-GS (Resistive Load)



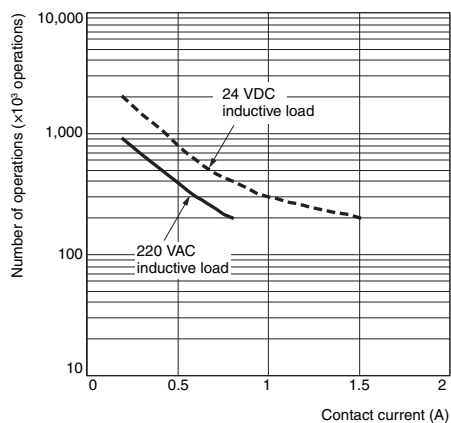
MY2□□-□□-GS (Inductive Load)



MY4□□-□□-GS (Resistive Load)



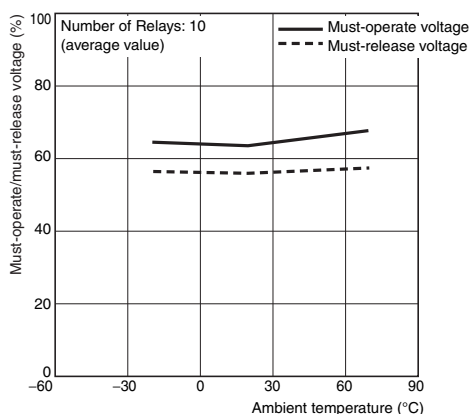
MY4□□-□□-GS (Inductive Load)



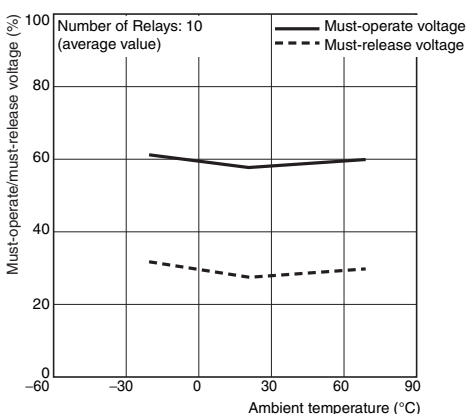
Note: 1. Number of operations: AC load, 50 Hz, 80%
 2. Switching condition: NO or NC

Ambient Temperature vs. Must-operate and Must-release Voltage

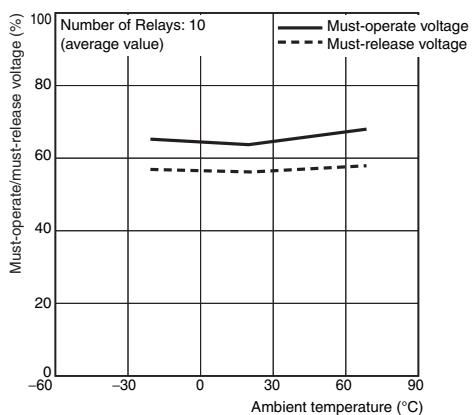
MY2□□-□□-GS AC Models



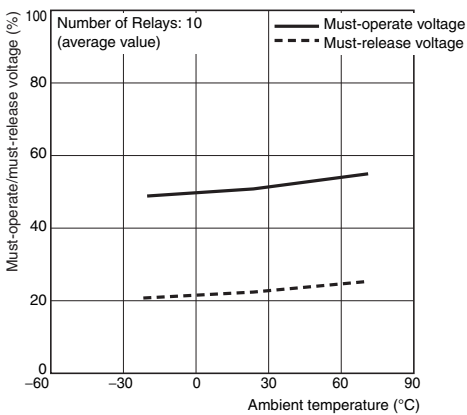
MY2□□-□□-GS DC Models



MY4□□-□□-GS AC Models

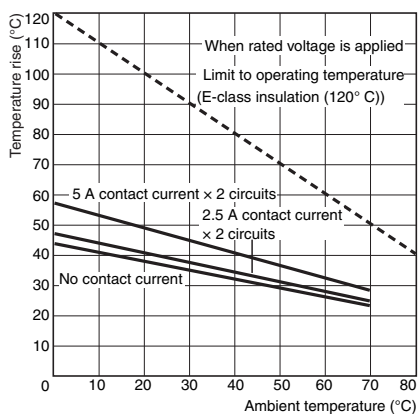


MY4□□-□□-GS DC Models

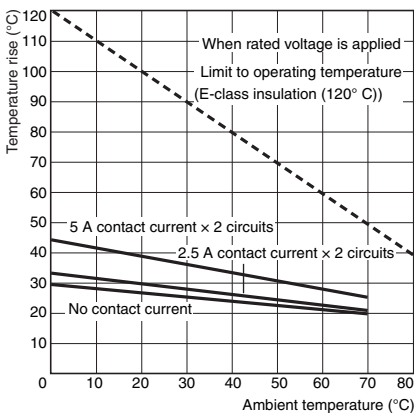


Ambient Temperature vs. Coil Temperature Rise

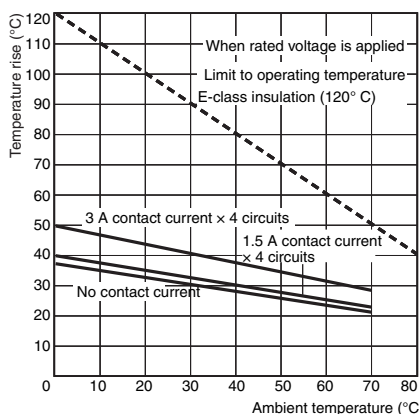
MY2□□-□□-GS AC Models, 50 Hz



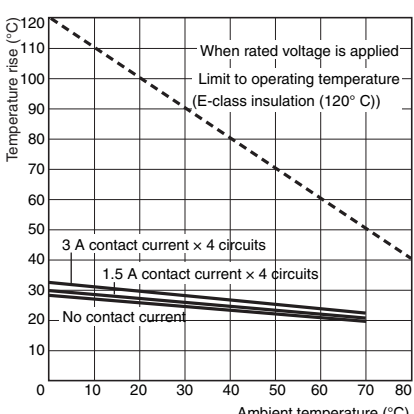
MY2□□-□□-GS DC Models



MY4□□-□□-GS AC Models, 50 Hz



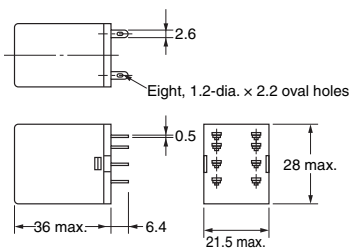
MY4□□-□□-GS DC Models



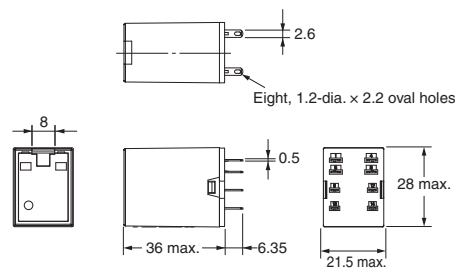
Dimensions

Relays

MY2-GS
MY2N-GS
MY2N-D2-GS
MY2N-CR-GS



MY2IN-GS
MY2IN-D2-GS
MY2IN-CR-GS

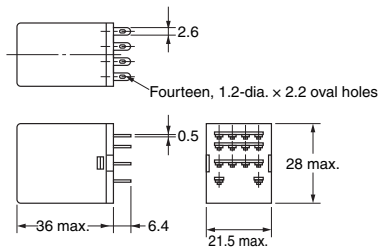


Terminal Arrangement/Internal Connections (Bottom View)

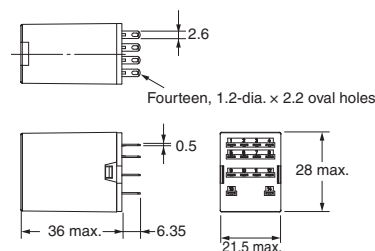
MY2-GS	MY2□N-GS			MY2□N-D2-GS		MY2□N-CR-GS
Standard Models	AC Models	DC Models (except 220 VDC)	DC Models (for 220 VDC)	DC Models (except 220 VDC)	DC Models (for 220 VDC)	AC Models
(The coil has no polarity.)	(The coil has no polarity.)	(The coil has polarity.)	(The coil has polarity.)	(The coil has polarity.)	(The coil has polarity.)	(The coil has no polarity.)

- Note:**
1. An AC model has coil disconnection self-diagnosis.
 2. For the DC models, check the coil polarity when wiring and wire all connections correctly.
 3. The indicator is red for AC and green for DC.
 4. The LED operation indicators indicate the energization of the coil and do not necessarily represent contact operation.

MY4-GS
MY4N-GS
MY4N-D2-GS
MY4N-CR-GS



MY4IN-GS
MY4IN-D2-GS
MY4IN-CR-GS



Terminal Arrangement/Internal Connections (Bottom View)

MY4-GS	MY4□N-GS			MY4□N-D2-GS		MY4□N-CR-GS
Standard Models	AC Models	DC Models (except 220 VDC)	DC Models (for 220 VDC)	DC Models (except 220 VDC)	DC Models (for 220 VDC)	DC Models
(The coil has no polarity.)	(The coil has no polarity.)	(The coil has polarity.)	(The coil has polarity.)	(The coil has polarity.)	(The coil has polarity.)	(The coil has no polarity.)

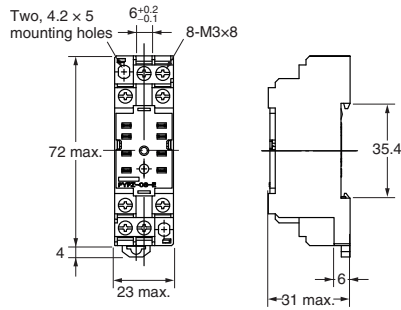
- Note:**
1. An AC model has coil disconnection self-diagnosis.
 2. For the DC models, check the coil polarity when wiring and wire all connections correctly.
 3. The indicator is red for AC and green for DC.
 4. The LED operation indicators indicate the energization of the coil and do not necessarily represent contact operation.

Options (Order Separately)

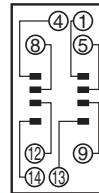
Connection Sockets

Front-mounting Sockets

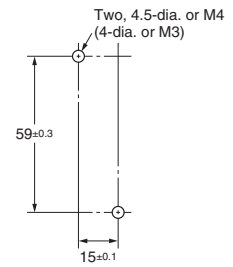
PYFZ-08-E



Terminal Arrangement/
Internal Connections
(Top View)

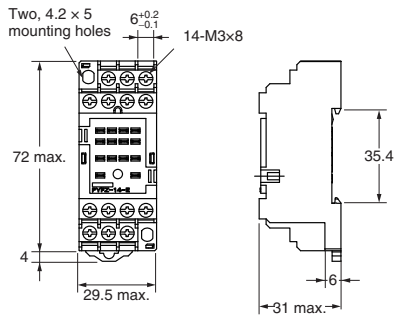


Mounting Hole
Dimensions (Top View)

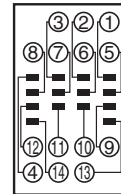


Note: Mounts to DIN Track.

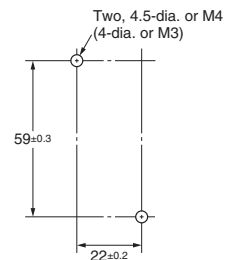
PYFZ-14-E



Terminal Arrangement/
Internal Connections
(Top View)

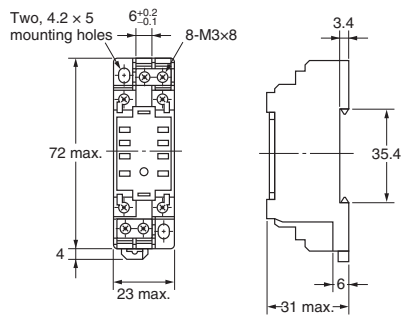


Mounting Hole
Dimensions (Top View)

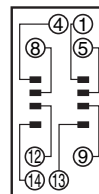


Note: Mounts to DIN Track.

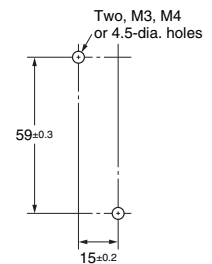
PYF08A-E



Terminal Arrangement/
Internal Connections
(Top View)

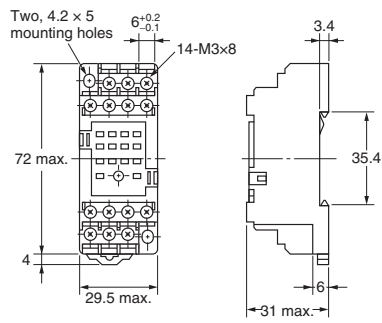


Mounting Hole
Dimensions (Top View)

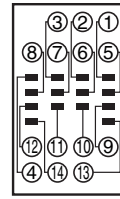


Note: Mounts to DIN Track.

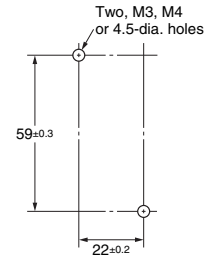
PYF14A-E



**Terminal Arrangement/
Internal Connections
(Top View)**

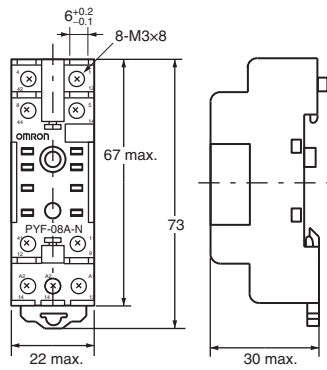
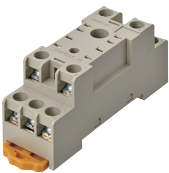


**Mounting Hole
Dimensions (Top View)**

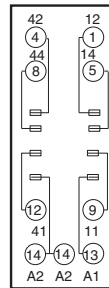


Note: Mounts to DIN Track.

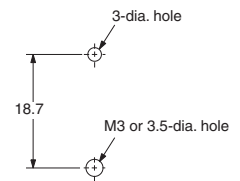
PYF08A-N



**Terminal Arrangement/
Internal Connections
(Top View)**

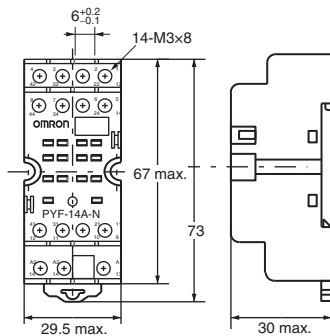
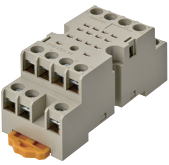


**Mounting Hole
Dimensions (Top View)**

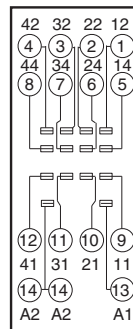


Note: Mounts to DIN Track.

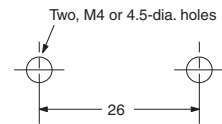
PYF14A-N



**Terminal Arrangement/
Internal Connections
(Top View)**

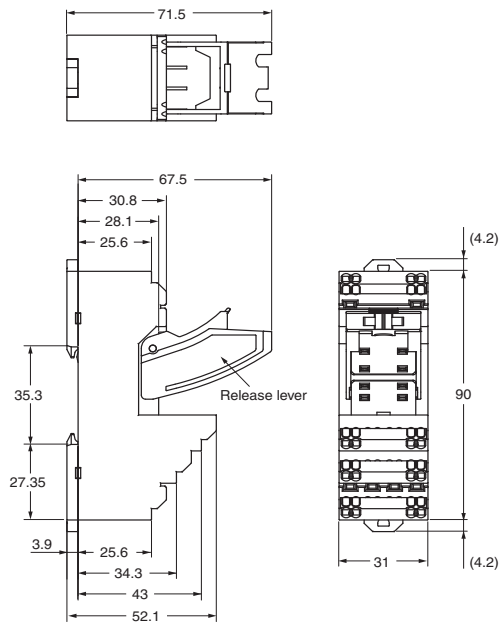


**Mounting Hole
Dimensions (Top View)**

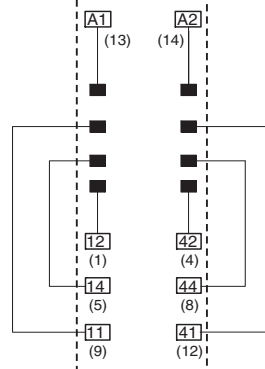


Note: Mounts to DIN Track.

PYF-08-PU

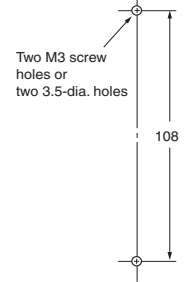


Terminal Arrangement/
Internal Connection Diagram
(TOP VIEW)



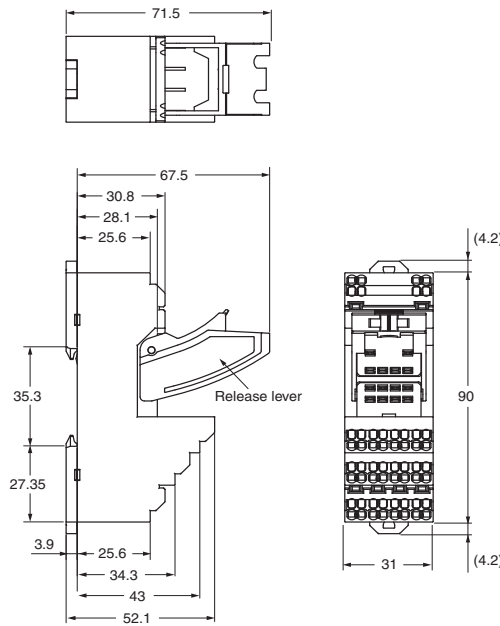
Note: The numbers in parentheses are traditionally used terminal numbers.

Mounting Hole Dimensions

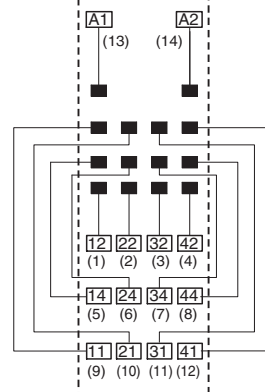


Note: Pull out the hooks to mount the Socket with screws.

PYF-14-PU

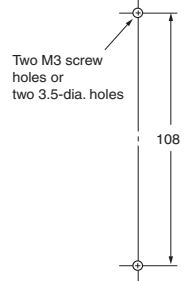


Terminal Arrangement/
Internal Connection Diagram
(TOP VIEW)



Note: The numbers in parentheses are traditionally used terminal numbers.

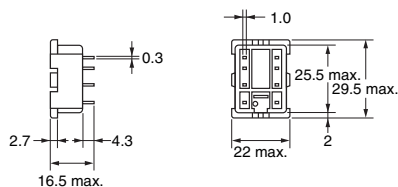
Mounting Hole Dimensions



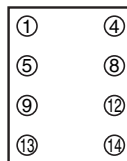
Note: Pull out the hooks to mount the Socket with screws.

Back-mounting Sockets

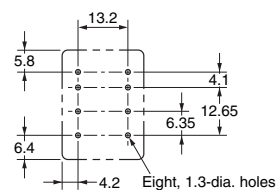
PY08-02



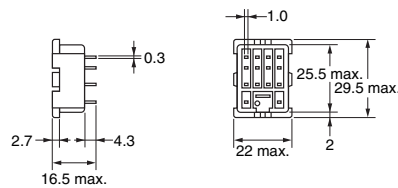
Terminal Arrangement/
Internal Connections
(Bottom View)



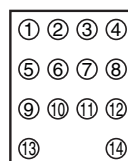
PCB Processing
Dimensions



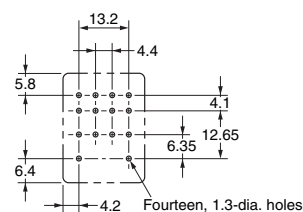
PY14-02



Terminal Arrangement/
Internal Connections
(Bottom View)



PCB Processing
Dimensions

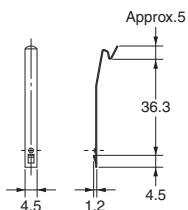


Socket Accessories

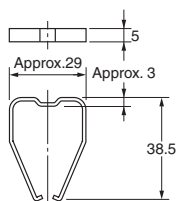
Hold-down Clips

PYC-A1

Set of 2 clips

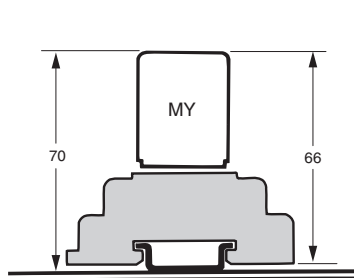


PYC-P

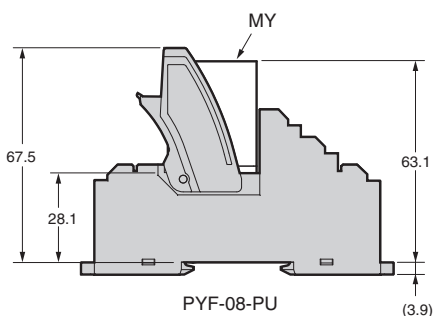


Mounting Heights with Sockets (Unit: mm)

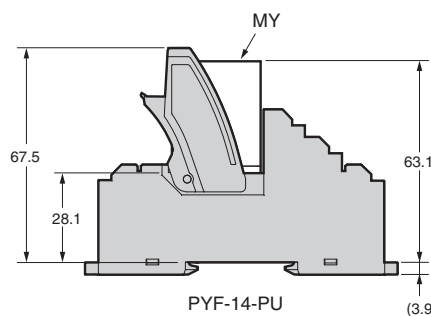
Front-mounting Sockets



PYFZ-□ -E
PYF0 □ A-E
PYF0 □ A-N

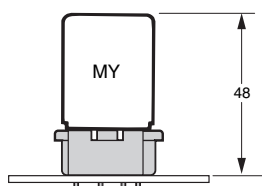


PYF-08-PU



PYF-14-PU

Back-mounting Sockets



PY□□-02

Safety Precautions

Refer to the *Common Relay Precautions* for precautions that apply to all Relays in the website at the following URL: <http://www.ia.omron.com/>.

Precautions for Correct Use

Handling

For models with built-in LED operation indicators, check the coil polarity when wiring and wire all connections correctly. (DC operation).

Installation

There is no specifically required installation orientation, but make sure that the Relays are installed so that the contacts are not subjected to vibration or shock in their movement direction.

Using MY-GS Relays with Microloads with Infrequent Operation

If standard MYGS Relays are used to infrequently switch microloads, the contacts may become unstable and eventually result in poor contact. In this case, we recommend using the MY4Z-CBG Series, which has high contact reliability for microloads

Relay Replacement

To replace the Relay, turn OFF the power supply to the load and Relay coil sides to prevent unintended operation and possible electrical shock.

Applicable Sockets

Use only combinations of OMRON Relays and Sockets.

Latching Levers

- Turn OFF the power supply when operating the latching lever.
After you use the latching lever always return it to its original state.
- Do not use the latching lever as a switch.
- The latching lever can be used for 100 operations min.

Terms and Conditions Agreement

Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

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Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

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Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

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

Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

2020.6

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

<http://www.ia.omron.com/>

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Power-switching Compact General-purpose Relays



- Wiring work can be shortened by as much as 60%* compared to conventional screw terminal sockets by combining with push-in plus terminal sockets (PYF-□-PU) that feature light insertion force and strong pull-out strength to achieve less wiring work.
- The standard models include models that are compliant with the UL, CSA, and SEV safety standards and with the Electrical Appliances and Material Safety Act.
- Equipped with an arc barrier for arc interruption.
- Withstand voltages up to 2,000 V.
- New built-in diode and built-in CR circuit models have joined the series.
- The lineup also includes models that are compliant with the LR and VDE safety standards.



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

* When both push-in plus terminals and screw terminal sockets are combined with plug-in terminal types (according to actual OMRON measurements as of November 2015)

Refer to the *Common Relay Precautions*.

Model Number Structure

Classification	Structure	Relays with Plug-in Terminals		Relays with PCB Terminals	Case-surface mounting
			With operation indicators		
Standard models Compliance with Electrical Appliances and Material Safety Act	1	*LY1	**LY1N	*LY1-0	*LY1F
		*LY2	**LY2N	*LY2-0	*LY2F
	2 Bifurcated	**LY2Z	**LY2ZN	**LY2Z-0	**LY2ZF
	3	*LY3	**LY3N	*LY3-0	*LY3F
Models with diode for coil surge absorption (DC coil specification only)	4	*LY4	*LY4N	*LY4-0	*LY4F
	1	**LY1-D	**LY1N-D2	---	---
	2 Bifurcated	**LY2-D	**LY2N-D2	---	---
	3	**LY2Z-D	**LY2ZN-D2	---	---
Models with CR circuits for coil surge absorption (AC coil specification only)	4	**LY3-D	**LY3N-D2	---	---
		**LY4-D	**LY4N-D2	---	---
	1	---	---	/	
2 Bifurcated	**LY2-CR	**LY2N-CR			
	**LY2Z-CR	**LY2ZN-CR			

- Note:**
1. Cells with a diagonal line cannot be manufactured. Ask your OMRON representative for details on manufacturing products for cells containing "----" in the above table.
 2. If #187 tab terminals are required, use the LY1F-T2 or LY2F-T2 (single-pole or double-pole models only).
 3. Refer to page 20 for information on plug-in terminal and socket combinations.
 4. Items with an asterisk (*) in the table are certified for UL, CSA, and SEV. This is indicated with a certification mark on the products.
 5. Items with two asterisks (**) in the table are certified for UL and CSA. This is indicated with a certification mark on the products.
 6. All models in the table are certified for IEC (TÜV).
 7. The models with plug-in terminals (single-pole, double-pole, and 4-pole) were combined with the PTF-E for the EC Declaration of Conformity. These products display the CE Marking.

Ordering Information

When your order, specify the rated voltage.

Relays

Models with Plug-in Terminals

Classification		1 pole		2 poles		3 poles		4 poles	
		Model	Rated voltage (V)	Model	Rated voltage (V)	Model	Rated voltage (V)	Model	Rated voltage (V)
Models with single contacts	Standard models	LY1	12, 24, 100/110, 110/120, or 200/220 VAC	LY2	12, 24, 100/110, 110/120, 200/220, or 220/240 VAC	LY3	12, 24, 100/110, or 200/220 VAC	LY4	12, 24, 100/110, or 200/220 VAC
			12, 24, 48, or 100/110 VDC		12, 24, 48, or 100/110 VDC		12, 24, 48, or 100/110 VDC		12, 24, 48, or 100/110 VDC
	Models with built-in operation indicators	LY1N	12, 24, 100/110, 110/120, or 200/220 VAC	LY2N	12, 24, 100/110, 110/120, 200/220, or 220/240 VAC	LY3N	12, 24, 100/110, or 200/220 VAC	LY4N	12, 24, 100/110, or 200/220 VAC
			12, 24, or 100/110 VDC		12, 24, 48, or 100/110 VDC		12, 24, 48, or 100/110 VDC		12, 24, 48, or 100/110 VDC
	Models with built-in diodes	LY1-D	12, 24, 48, or 100/110 VDC	LY2-D	12, 24, 48, or 100/110 VDC	LY3-D	12, 24, 48, or 100/110 VDC	LY4-D	12, 24, 48, or 100/110 VDC
	Models with built-in diodes and operation indicators	LY1N-D2	12, 24, or 48 VDC	LY2N-D2	12, 24, 48, or 100/110 VDC	LY3N-D2	12, 24, or 100/110 VDC	LY4N-D2	12, 24, 48, or 100/110 VDC
Models with built-in CR circuits	---	---	LY2-CR	100/110, 110/120, 200/220, or 220/240 VAC	---	---	---	---	
Models with built-in CR circuits and operation indicators	---	---	LY2N-CR	100/110, 110/120, 200/220, or 220/240 VAC	---	---	---	---	
Bifurcated contacts	Standard models	---	---	LY2Z	100/110 or 200/220 VAC	---	---	---	---
		---	---		12, 24, 48, or 100/110 VDC	---	---	---	---
	Models with built-in operation indicators	---	---	LY2ZN	100/110, 110/120, 200/220, or 220/240 VAC	---	---	---	---
		---	---		12 or 24 VDC	---	---	---	---
	Models with built-in diodes	---	---	LY2Z-D	12, 24, or 48 VDC	---	---	---	---
	Models with built-in diodes and operation indicators	---	---	LY2ZN-D2	12, 24, or 100/110 VDC	---	---	---	---
Models with built-in CR circuits	---	---	LY2Z-CR	100/110 VAC	---	---	---	---	
Models with built-in CR circuits and operation indicators	---	---	LY2ZN-CR	100, 110, 110/120, or 200/220 VAC	---	---	---	---	

Relays with PCB Terminals



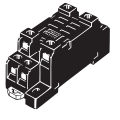
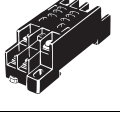
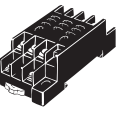

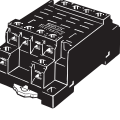
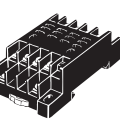
Classification		1 pole		2 poles		3 poles		4 poles	
		Model	Rated voltage (V)	Model	Rated voltage (V)	Model	Rated voltage (V)	Model	Rated voltage (V)
Models with single contacts	LY1-0	24, 100/110, 110/120, or 200/220 VAC	LY2-0	12, 24, 100/110, 110/120, 200/220, or 220/240 VAC	LY3-0	24, 100/110, or 200/220 VAC	LY4-0	24, 100/110, or 200/220 VAC	
		12 or 24 VDC		12, 24, 48, or 100/110 VDC		12, 24, 48, or 100/110 VDC		12, 24, 48, or 100/110 VDC	
Bifurcated contacts	---	---	LY2Z-0	100/110 VAC 24, 48, or 100/110 VDC	---	---	---	---	

Case-surface Mounting

Classification		1 pole		2 poles		3 poles		4 poles	
		Model	Rated voltage (V)	Model	Rated voltage (V)	Model	Rated voltage (V)	Model	Rated voltage (V)
Models with single contacts	LY1F	24, 100/110, 110/120, 200/220, or 220/240 VAC	LY2F	12, 24, 100/110, 110/120, 200/220, or 220/240 VAC	LY3F	12, 24, 100/110, or 200/220 VAC	LY4F	12, 24, 100/110, or 200/220 VAC	
		6, 12, 24, or 100/110 VDC		12, 24, 48, or 100/110 VDC		12, 24, or 100/110 VDC		12, 24, or 100/110 VDC	
Bifurcated contacts	---	---	LY2ZF	24, 100/110, or 200/220 VAC 12 or 24 VDC	---	---	---	---	

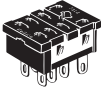
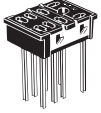
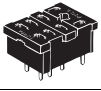
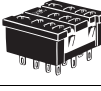

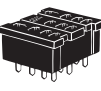
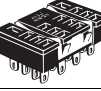

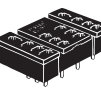
Accessories (Order Separately)

Front-mounting Sockets

Applicable relay model	Mounting Method	Conductive part protection	Terminal Type	Applicable crimp terminal/ Electric wire	Appearance	Model	Hold-down Clips/ Release Levers (Order Separately)
LY1□ LY2□ LY2□-CR	Mounted on a DIN track or with screws	Available	Push-In Plus Terminal	Ferrules Solid wire Stranded wire	<i>NEW</i> 	PTF-08-PU * LY2□-CR cannot be used	With release lever * Hold by release lever
					<i>NEW</i> 	PTF-08-PU-L	
		None	Screw terminal (M3.5 screw size)	Forked terminals Solid wire Stranded wire		PTF08A-E *	LY2□-CR: Y92H-3 Other than those above: PTC-A1
						PTF08A	
LY3□		None	Screw terminal (M3.5 screw size)	Round terminals Forked terminals Solid wire Stranded wire		PTF11A	PYC-A1
LY4□		Available	Push-In Plus Terminal	Ferrules Solid wire Stranded wire	<i>NEW</i> 	PTF-14-PU-L	PYC-A1
						PTF14A-E *	
		None	Screw terminal (M3.5 screw size)	Round terminals Forked terminals Solid wire Stranded wire		PTF14A	

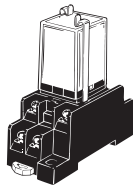
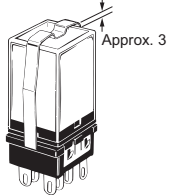
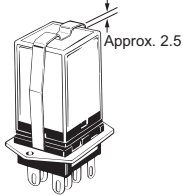
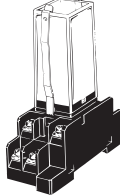

* The PTF□A-E Relays have finger protection. Round terminals cannot be used. Use forked terminals.

Back-mounting Sockets

Applicable relay model	Terminal Type	Appearance	Mode	Hold-down Clips (Order Separately)
LY1□ LY2□ LY2□-CR	Solder terminals		PT08*	LY2□-CR: PYC-1 Other than those above: PYC-P
	Wrapping terminals		PT08QN	
	PCB terminals		PT08-0	
LY3□	Solder terminals		PT11*	PYC-P
	Wrapping terminals		PT11QN	
	PCB terminals		PT11-0	
LY4□	Solder terminals		PT14*	PYC-P
	Wrapping terminals		PT14QN	
	PCB terminals		PT14-0	

* When ordering PT08, PT11, or PT14 sockets, please note that the minimum order quantity is 10 and orders are accepted in multiples of the minimum order.

Relay Hold-down Clips

Application Item	Used with Socket		Used with Socket mounting plate	For models with built-in CR circuits	
Appearance					
Model	PYC-A1	PYC-P	PYC-S	Y92H-3	PYC-1
Minimum order (quantity)*	100	100	10	10	10

* Orders are accepted in multiples of the minimum order.

Socket Mounting Plates

Applicable sockets	Number of sockets	Model
PT08 PT08QN	1	PYP-1 *1
	18	PYP-18 *2
	36	PYP-36 *2
PT11 PT11QN	1	PTP-1-3
	12	PTP-12
PT14 PT14QN	1	PTP-1
	10	PTP-10

*1. When ordering PYP-1, please note that the minimum order quantity is 10 and orders are accepted in multiples of the minimum order.

*2. PYP-18 and PYP-36 can be cut to any required length.

Ratings and Specifications

Ratings

Standard Models with Built-in Operation Indicators

Operating Coil, Single-pole and Double-pole Models

Item	Rated voltage (V)	Rated current (mA)		Coil resistance (Ω)	Coil inductance (H)		Must-operate voltage (V)	Must-release voltage (V)	Maximum voltage (V)	Power consumption (VA, W)
		50 Hz	60Hz		Armature OFF	Armature ON				
AC	12	106.5	91	46	0.17	0.33	80% max.*1	30% min.*2	110% of rated voltage	Approx. 1.0 to 1.2 (at 60 Hz)
	24	53.8	46	180	0.69	1.3				
	50	25.7	22	788	3.22	5.66				
	100/110	11.7/12.9	10/11	3,750	14.54	24.6				Approx. 0.9 to 1.1 (at 60 Hz)
	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	94.07				
	220/240	4.8/5.3	4.2/4.6	18,790	83.5	136.4				
DC	6	150		40	0.16	0.33	80% max.*1	10% min.*2	110% of rated voltage	Approx. 0.9
	12	75		160	0.73	1.37				
	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	86.2				

3 poles

Item	Rated voltage (V)	Rated current (mA)		Coil resistance (Ω)	Coil inductance (H)		Must-operate voltage (V)	Must-release voltage (V)	Maximum voltage (V)	Power consumption (VA, W)
		50 Hz	60Hz		Armature OFF	Armature ON				
AC	12	159	134	24	0.12	0.21	80% max.*1	30% min.*2	110% of rated voltage	Approx. 1.6 to 2.0 (at 60 Hz)
	24	80	67	100	0.44	0.79				
	100/110	14.1/16	12.4/13.7	2,300	10.5	18.5				
	200/220	9.0/10.0	7.7/8.5	8,650	34.8	59.5				
DC	12	112		107	0.45	0.98	80% max.*1	10% min.*2	110% of rated voltage	Approx. 1.4
	24	58.6		410	1.89	3.87				
	48	28.2		1,700	8.53	13.9				
	100/110	12.7/13		8,500	29.6	54.3				

4 poles

Item	Rated voltage (V)	Rated current (mA)		Coil resistance (Ω)	Coil inductance (H)		Must-operate voltage (V)	Must-release voltage (V)	Maximum voltage (V)	Power consumption (VA, W)
		50 Hz	60Hz		Armature OFF	Armature ON				
AC	12	199	170	20	0.1	0.17	80% max.*1	30% min.*2	110% of rated voltage	Approx. 1.95 to 2.5 (at 60 Hz)
	24	93.6	80	78	0.38	0.67				
	100/110	22.5/25.5	19/21.8	1,800	10.5	17.3				
	200/220	11.5/13.1	9.8/11.2	6,700	33.1	57.9				
DC	12	120		100	0.39	0.84	80% max.*1	10% min.*2	110% of rated voltage	Approx. 1.5
	24	69		350	1.41	2.91				
	48	30		1,600	6.39	13.6				
	100/110	15/15.9		6,900	32.0	63.7				

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

2. The AC coil resistance and inductance values are reference values only. (at 60 Hz).

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% max.

To ensure operation, apply at least 80% of the rated value (at a coil temperature of +23° C).

*2. The actual values are 30% min. for AC and 10% min. for DC. To ensure release, use a value that is lower than the specified value.

Refer to *List of Certified Models* for a list of models that are certified for safety standards and the Electrical Appliances and Material Safety Act.

Item	Classification	1 pole		Double-, 3-, and 4-pole models		Bifurcated contacts	
		Resistive load	Inductive load (cos φ = 0.4, L/R = 7 ms)	Resistive load	Inductive load (cos φ = 0.4, L/R = 7 ms)	Resistive load	Inductive load (cos φ = 0.4, L/R = 7 ms)
Contact type		Single				Bifurcated	
Contact materials		Ag alloy					
Rated load		15 A at 110 VAC 15 A at 24 VDC	10 A at 110 VAC 7 A at 24 VDC	10 A at 110 VAC 10 A at 24 VDC	7.5 A at 110 VAC 5 A at 24 VDC	5 A at 110 VAC 5 A at 24 VDC	4 A at 110 VAC 4 A at 24 VDC
Rated carry current		15 A		10 A		7 A	
Maximum contact voltage		250 VAC 125 VDC		250 VAC 125 VDC		250 VAC 125 VDC	
Maximum contact current		15 A	15 A	10 A	10 A	7 A	7 A

Item	Type	Single-pole and double-pole models (standard models and bifurcated contact models)	Single-pole, double-pole models (models with built-in operation indicators, models with built-in diodes, and models with built-in CR circuits), 3-pole and 4-pole models
Ambient operating temperature		-25 to 55°C (with no icing or condensation)*1	-25 to +40°C (with no icing or condensation)*2
Ambient operating humidity		5% to 85%	

- Note:**
- Some models in the LY1 and LY2 Series have an upper temperature limit of +40°C. This limitation is due to the diode junction temperature and the elements used. Refer to *Ambient Temperature vs. Coil Temperature Rise* in *Engineering Data* on page 8 to 9 for information on operation in temperature conditions that are not described here.
 - When you apply a minimum of 10 A of current to an LY1 when it is used in combination with the PTF-08-PU, PTF-08-PU-L, PTF08A, PTF08A-E, or PT08, connect each of the following terminal pairs: (1) to (2), (3) to (4), and (5) to (6).
 - If the carry current is 4 A or less, the usable ambient temperature range is -25 to 70° C.
 - If the flowing current is 4 A or less, the usable ambient temperature range is -25 to 55° C.

Characteristics

Item	Type	Standard models, models with built-in operation indicators, models with built-in CR circuits, and models with built-in diodes	Bifurcated contacts
Contact resistance*1		50 mΩ max.	
Operating time*2		25 ms max.	
Release time*2		25 ms max.	
Maximum operating frequency	Mechanical	18,000 operations/h	
	Rated load	1,800 operations/h	
Insulation resistance*3		100 MΩ min.	
Dielectric strength	Between coil and contacts	2,000 VAC at 50/60 Hz for 1 min.	
	Between contacts of different polarity	2,000 VAC at 50/60 Hz for 1 min.	
	Between contacts of the same polarity	1,000 VAC at 50/60 Hz for 1 min.	
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 ²	
	Malfunction	200 m/s ²	
Endurance	Mechanical	AC: 50,000,000 operations min. DC: 100,000,000 operations min.	(switching frequency: 18,000 operations/h)
	Electrical*4	1-, 3-, 4-pole: 200,000 operations min. 2-pole: 500,000 operations min. (rated load, operating frequency: 1,800 operations/h)	2-pole: 500,000 operations min. (rated load, operating frequency: 1,800 operations/h)
Failure rate P value (reference value)*5		100 mA at 5 VDC	10mA at 5 VDC
Weight		1-pole and 2-pole: 40 g, 3-pole: Approx. 50 g, 4-pole: Approx. 70 g	

- Note:** The values at the left 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.

Endurance Under Real Loads (Reference Only)

Item	Load type	LY1, 100 VAC			LY2, 100 VAC			LY4, 100 VAC		
		Conditions	Operating frequency	Electrical life (x10,000 operations min.)	Conditions	Operating frequency	Electrical life (x10,000 operations min.)	Conditions	Operating frequency	Electrical life (x10,000 operations min.)
AC motor	400 W, 100 VAC single-phase with 35-A inrush current, 7-A current flow	ON for 10 s, OFF for 50 s	5	200 W, 100 VAC single-phase with 25-A inrush current, 5-A current flow	ON for 10 s, OFF for 50 s	20	200 W, 200 VAC three-phase with 5-A inrush current, 1-A current flow	ON for 10 s, OFF for 50 s	50	
							750 W, 200 VAC three-phase with 18-A inrush current, 3.5-A current flow		7	
AC lamp	300 W, 100 VAC with 51-A inrush current, 3-A current flow	ON for 5 s, OFF for 55 s	10	300 W, 100 VAC with 51-A inrush current, 3-A current flow	ON for 5 s, OFF for 55 s	8	300 W, 100 VAC with 51-A inrush current, 3-A current flow	ON for 5 s, OFF for 55 s	5	
	500 W, 100 VAC with 78-A inrush current, 5-A current flow		2.5							
Capacitor (2,000 μF)	24 VDC with 50-A inrush current, 1-A current flow	ON for 1 s, OFF for 6 s	10	24 VDC with 50-A inrush current, 1-A current flow	ON for 1 s, OFF for 15 s	1	24 VDC with 50-A inrush current, 1-A current flow	ON for 1 s, OFF for 15 s	0.5	
				24 VDC with 20-A inrush current, 1-A current flow		15	24 VDC with 20-A inrush current, 1-A current flow		20	
AC solenoid	50 VA with 2.5-A inrush current, 0.25-A current flow	ON for 1 s, OFF for 2 s	150	50 VA with 2.5-A inrush current, 0.25-A current flow	ON for 1 s, OFF for 2 s	100	50 VA with 2.5-A inrush current, 0.25-A current flow	ON for 1 s, OFF for 2 s	100	
	100 VA with 5-A inrush current, 0.5-A current flow		80	100 VA with 5-A inrush current, 0.5-A current flow		50	100 VA with 5-A inrush current, 0.5-A current flow		50	

Details on Safety-standard-certified Models, LY□

- Standard models are certified for the UL, CSA, and SEV safety standards.
- Refer to *Model Number Structure* on page 1 for a list of applicable models.
- The rated values for safety standard certification are not the same as individually defined performance values. Always check the specifications before use.

UL-certified Models (File No. E41643)

Model	Coil ratings	Number of poles	Contact ratings	Certified number of operations	
LY	6 to 240VAC 6 to 125VDC	1	15A, 120VAC (General use)	100,000 operations	
			15A, 240VAC (General use)	6,000 operations	
			15A, 30VDC (Resistive)		
			1/2HP, 120VAC	100,000 operations	
			8.5FLA, 30LRA, 120VAC	25,000 operations	
			TV-5, 120VAC		
			470VA, Pilot duty, 120VAC		6,000 operations
	6 to 240VAC 6 to 125VDC	2	15A, 120VAC (General use)	100,000 operations	
			12A, 240VAC (General use)	6,000 operations	
			7A, 250VAC (General use)		
			15A, 30VDC (Resistive)		
			5A, 38VDC (Resistive)		
			1/2HP, 120VAC	100,000 operations	
			1/3HP, 240VAC	1,000 operations	
			8.5FLA, 30LRA, 120VAC	100,000 operations	
			5FLA, 50LRA, 50VDC	25,000 operations	
			TV-3, 120VAC		
			345VA, Pilot duty, 120-240VAC		6,000 operations
			B300/R300	6,000 operations	
			6 to 240VAC 6 to 125VDC	3	10A, 240VAC (General use) (Same polarity)
	10A, 30VDC (General use) (Same polarity)				
	4	2A, 40VDC (Resistive) (Same polarity)		1,000 operations	
		1/2HP, 240VAC			
				0.6A, 100VDC (Resistive) (Same polarity)	6,000 operations

CSA-certified Models (File No. LR31928)

Model	Coil ratings	Number of poles	Contact ratings	Certified number of operations	
LY	6 to 240VAC 6 to 125VDC	1	15A, 120VAC (General use)	100,000 operations	
			15A, 240VAC (General use)	6,000 operations	
			15A, 30VDC (Resistive)		
			1/2HP, 120VAC	100,000 operations	
			8.5FLA, 30LRA, 120VAC	25,000 operations	
			TV-5, 120VAC		
			470VA, Pilot duty, 120VAC		6,000 operations
	6 to 240VAC 6 to 125VDC	2	15A, 120VAC (General use)	6,000 operations	
			12A, 240VAC (General use)		
			7A, 250VAC (General use)		
			15A, 30VDC (Resistive)		
			5A, 38VDC (Resistive)	100,000 operations	
			1/2HP, 120VAC		
			1/3HP, 240VAC	1,000 operations	
			8.5FLA, 30LRA, 120VAC	100,000 operations	
			5FLA, 50LRA, 50VDC	25,000 operations	
			TV-3, 120VAC		
			345VA, Pilot duty, 120-240VAC		6,000 operations
			B300/R300 Pilot duty	6,000 operations	
			6 to 240VAC 6 to 125VDC	3	10A, 240VAC (General use) (Same polarity)
	10A, 30VDC (Resistive) (Same polarity)				
	4	1/8HP, 240VAC (Same polarity)		1,000 operations	
		1/2HP, 240VAC (Same polarity)			
				1/3HP, 240VAC (Same polarity)	6,000 operations
				2A, 40VDC (Resistive)	
			0.6A, 100VDC (Resistive)	6,000 operations	

TÜV-certified Models (File No. R50030064, EN 61810-1)

Model	Coil ratings	Number of poles	Contact ratings	Certified number of operations		
LY□	6 to 240 VAC 6 to 110 VDC	1	15 A, 110 VDC resistive load	200,000 operations		
			10 A, 110 VAC inductive load			
			10 A, 250 VAC resistive load			
			7A, 250 VAC inductive load			
			10 A, 30 VDC resistive load			
			7 A, 30 VDC inductive load			
		2	10 A, 110 VAC resistive load		100,000 operations	
			7.5A, 110 VAC inductive load			
			7A, 250 VAC resistive load			
			4 A, 250 VAC inductive load			
			7 A, 30 VDC resistive load			
			4 A, 30 VDC inductive load			
		3	4		10 A, 110 VAC resistive load	100,000 operations
					7.5A, 110 VAC inductive load	

- When ordering a model that is certified for VDE or Lloyd's Register (LR) standards, always specify "VDE-certified Model" or "LR Standard-certified Model" with your order.

VDE Certification (Certificate No. 6359, EN 61810-1)

Model	Coil ratings	Number of poles	Contact ratings	Certified number of operations
LY□-VD	6, 12, 24, 50, 110, or 220 VAC 6, 12, 24, 48, or 110 VDC	1	10 A, 220 VAC resistive load	200,000 operations
			7 A, 220 VAC inductive load	
			10 A, 28 VDC resistive load	
			7 A, 28 VDC inductive load	
		2	7 A, 220 VAC resistive load	
			4 A, 220 VAC inductive load	
			7 A, 28 VDC resistive load	
			4 A, 28 VDC inductive load	

LR-certified Models (File No. 00/10047)

Model	Coil ratings	Number of poles	Contact ratings
LY□	6 to 240 VAC 6 to 110 VDC	2	7.5 A, 230 VAC inductive load
		4	5 A, 24 VDC inductive load

Details on Safety-standard-certified Models, Sockets

UL-certified Models (File No. E87929) 

Model	Ratings	Standard number	Category	Listed/Recognized
PTF-08-PU	10A 250V	UL508	SWIV2	Recognized
PTF-14-PU	10A 250V (Same polarity)			
PTF08A(-E) PT08	15A 250V			
PTF11A PTF14A(-E) PT11 PT14	10A 250V			

CSA-certified Models (File No. LR31928) 

Model	Ratings	Standard number	Class number
PTF-08-PU	10A 250V	CSA C22.2 (No.14)	3211 07
PTF-14-PU	10A 250V (Same polarity)		
PTF08A(-E)	15A 240V AC		
PTF11A PTF14A(-E)	10A 240V AC		

CE Marking Compliance

Model	EMC Directive	Low Voltage Directive	Machinery Directive	Safety Category
PTF08A(-E) PTF14A(-E)	Not applicable	○	Not applicable	1

- Note:**
- CE compliance is achieved when used with a relay (LY).
 - The Safety Category refers to the maximum applicable category selected when constructing control system safety components. The category does not apply to individual components.

TÜV Rheinland certification

Model	Ratings	Standard number	Certification number
PTF-08-PU	10A 250V *1	EN 61984	R50327595
PTF-14-PU	10A 250V *2		

- *1. Ratings are for an ambient temperature of 55°C. At an ambient temperature of 70°C, the value is 7A.
 *2. Ratings are for an ambient temperature of 40°C. At an ambient temperature of 70°C, the value is 7A.

Compliance with Electrical Appliances and Material Safety Act, LY□

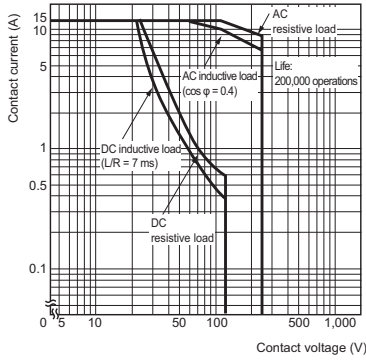
All standard models comply with the Electrical Appliances and Material Safety Act.

Model	Coil ratings	Number of poles	Contact ratings
LY□	6 to 240 VAC 6 to 120 VDC	1	15 A at 200 VAC
		2	10A at 200 VAC
		3	
		4	

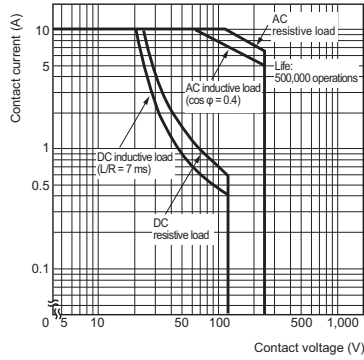
Engineering Data

Engineering Data

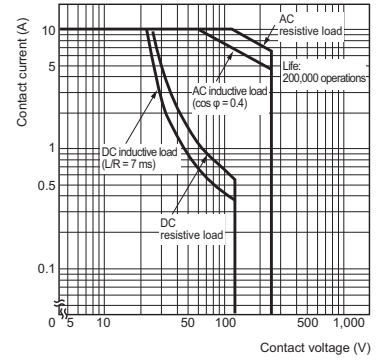
Maximum Switching Capacity LY1



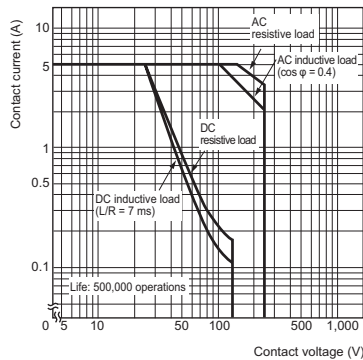
LY2



LY3 and LY4

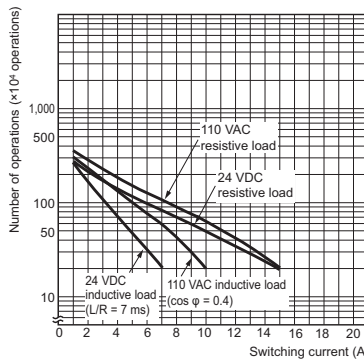


LY2Z

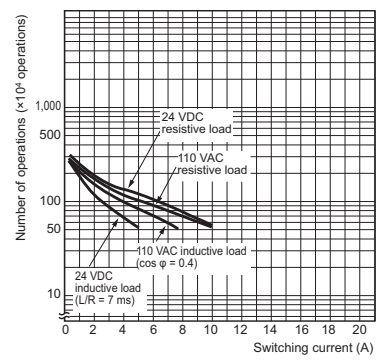


Endurance Curve

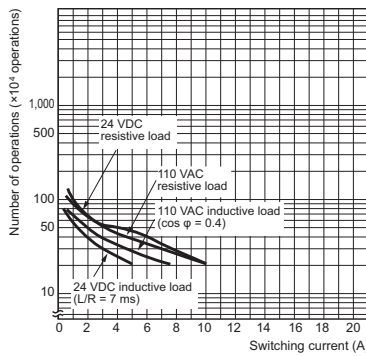
LY1



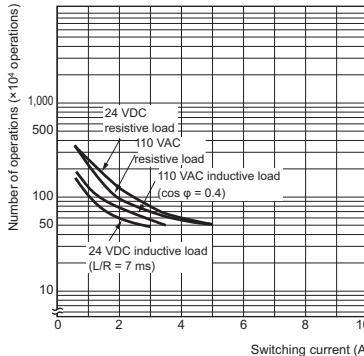
LY2



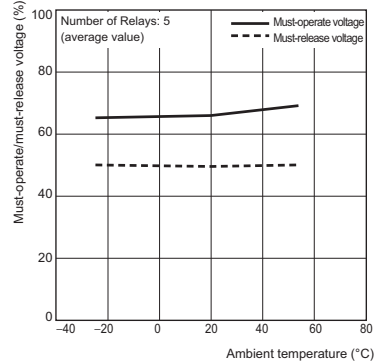
LY3 and LY4



LY2Z

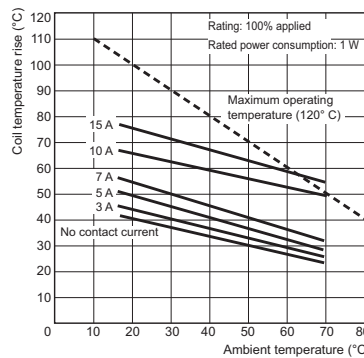


Ambient Temperature vs. Must-operate and Must-release Voltage LY2 100/110 VAC at 50Hz

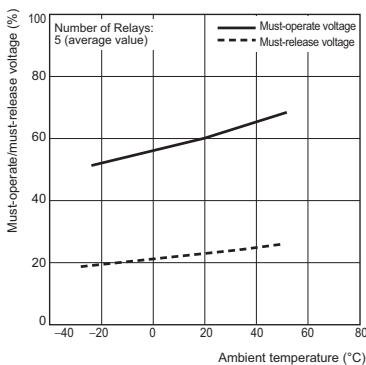


Ambient Temperature vs. Coil Temperature Rise

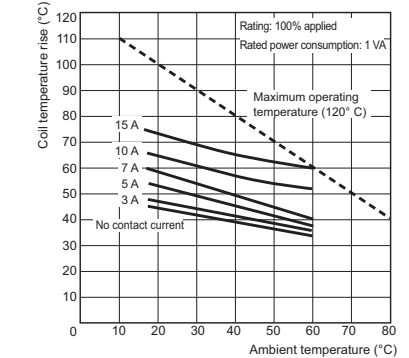
LY1 24 VDC



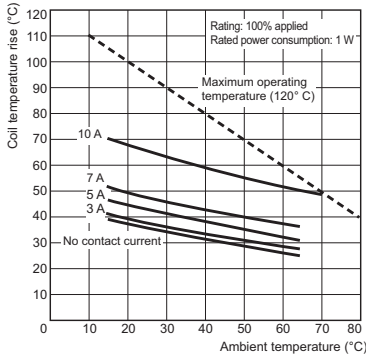
LY2 24 VDC



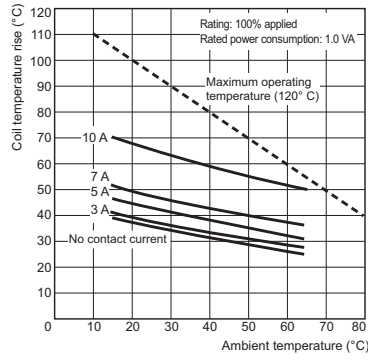
LY1 100/110 VAC at 50Hz



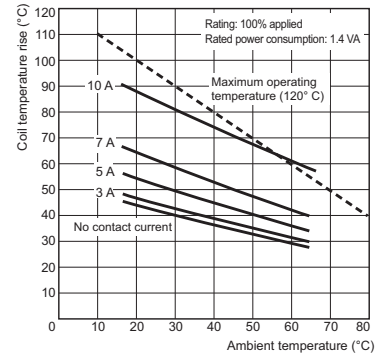
LY2 24 VDC



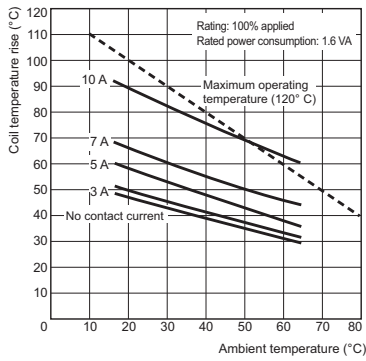
LY2 100/110 VAC at 50Hz



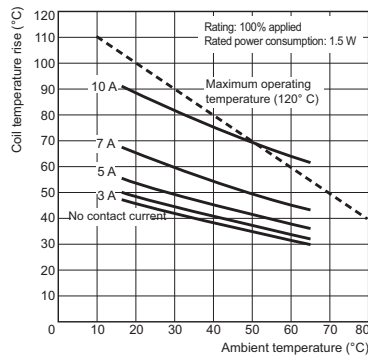
LY3 24 VDC



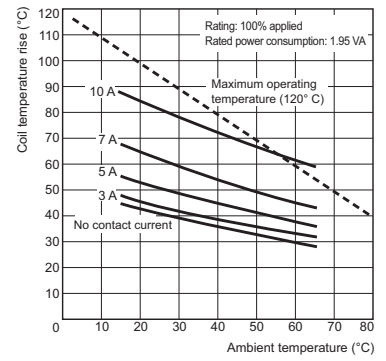
LY3 100/110 VAC at 50Hz



LY4 24 VDC



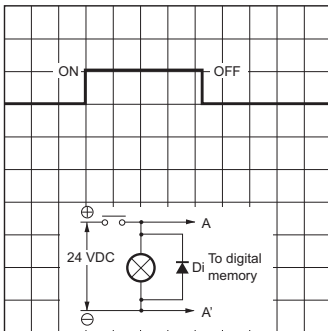
LY4 100/110 VAC at 50Hz



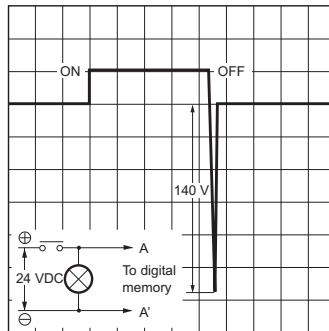
Models with built-in diodes

The diode absorbs surge from the coil.

With Diode



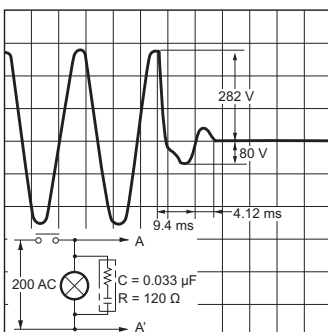
Without Diode



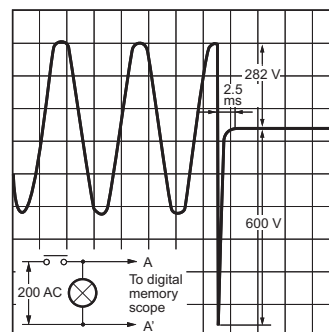
- Note:**
1. Make sure that the polarity is correct.
 2. The release time will increase, but the 25-ms specification for standard models is satisfied.
 3. Diode characteristics:
Reversed dielectric strength: 1,000 V
Forward current: 1 A

Models with Built-in CR Circuits

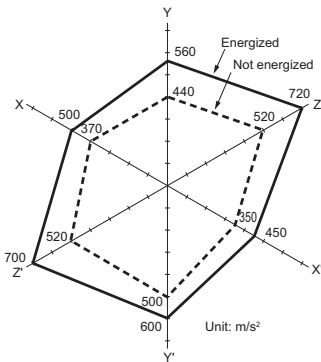
With CR



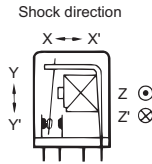
Without CR



Malfunctioning Shock
LY2 100/110 VAC



N = 20
Measurement: Shock was applied 2 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/s² , Energized: 200 m/s²

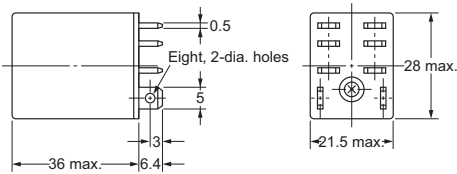
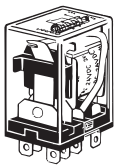


Dimensions

(Unit: mm)

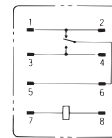
Relays
Solder terminals

LY1
LY1N
LY1-D
LY1N-D2



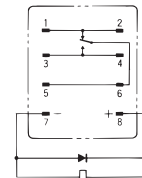
Terminal Arrangement/Internal Connections (Bottom View)

LY1



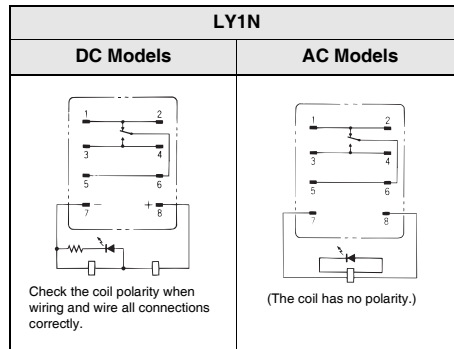
(The coil has no polarity.)

LY1N-D

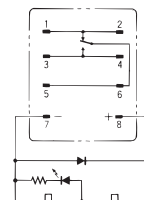


(Check the coil polarity when wiring and wire all connections correctly.)

- Note:**
1. For the DC models, check the coil polarity when wiring and wire all connections correctly.
 2. The indicator is red for AC and green for DC.
 3. The operation indicator indicates the energization of the coil and does not represent contact operation.



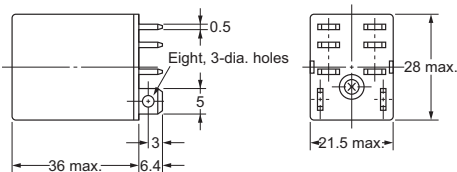
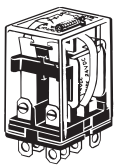
LY1N-D2



Check the coil polarity when wiring and wire all connections correctly.

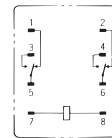
LY2
LY2Z
LY2N
LY2ZN

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



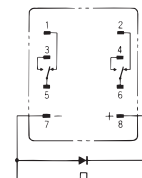
Terminal Arrangement/Internal Connections (Bottom View)

LY2(Z)



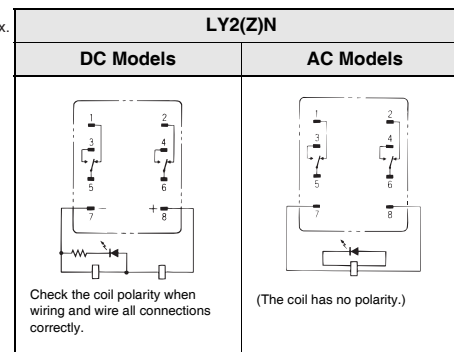
(The coil has no polarity.)

LY2(Z)-D

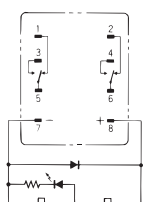


Check the coil polarity when wiring and wire all connections correctly.

- Note:**
1. For the DC models, check the coil polarity when wiring and wire all connections correctly.
 2. The indicator is red for AC and green for DC.
 3. The operation indicator indicates the energization of the coil and does not represent contact operation.

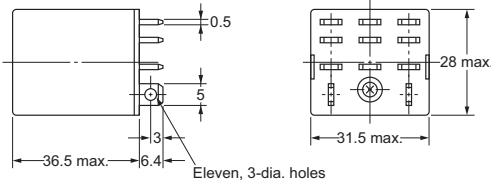
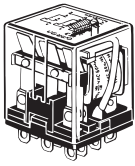


LY2(Z)N-D2

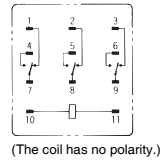


Check the coil polarity when wiring and wire all connections correctly.

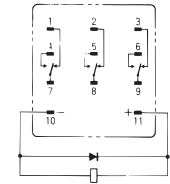
LY3
LY3N
LY3-D
LY3N-D2



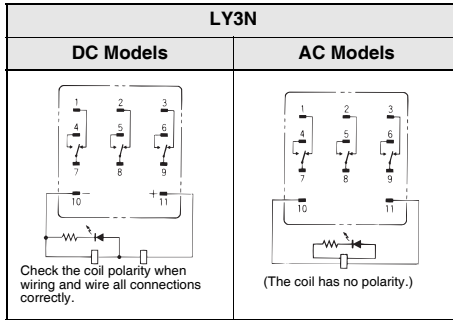
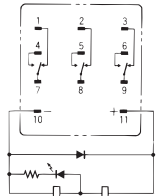
Terminal Arrangement/Internal Connections (Bottom View)
LY3



LY3-D

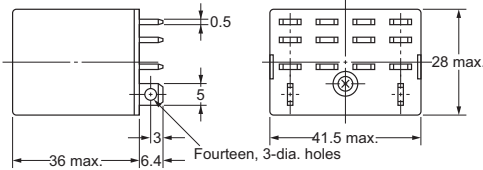
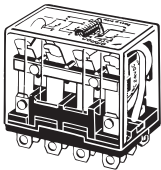


LY3N-D2



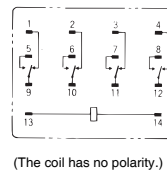
- Note:**
1. For the DC models, check the coil polarity when wiring and wire all connections correctly.
 2. The indicator is red for AC and green for DC.
 3. The operation indicator indicates the energization of the coil and does not represent contact operation.

LY4
LY4N
LY4-D
LY4N-D2

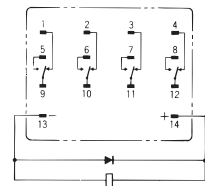


Terminal Arrangement/Internal Connections (Bottom View)

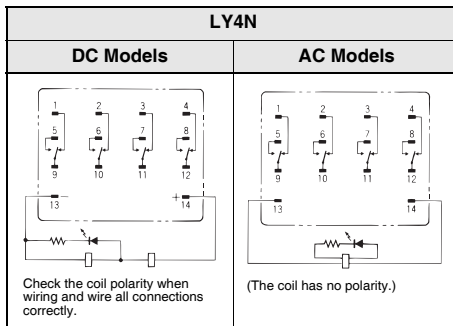
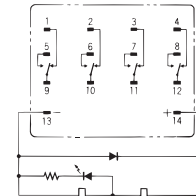
LY4



LY4-D

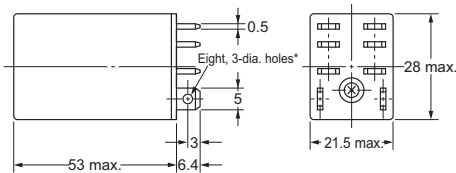


LY4N-D2



- Note:**
1. For the DC models, check the coil polarity when wiring and wire all connections correctly.
 2. The indicator is red for AC and green for DC.
 3. The operation indicator indicates the energization of the coil and does not represent contact operation.

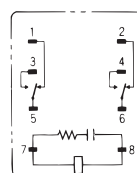
LY2-CR
LY2Z-CR
LY2N-CR
LY2ZN-CR



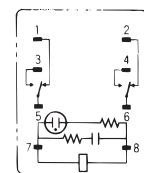
*These dimensions are for the LY2N-CR.

Terminal Arrangement/Internal Connections (Bottom View)

LY2(Z)-CR



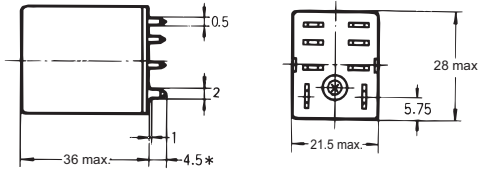
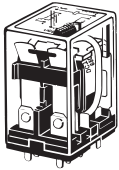
LY2(Z)N-CR



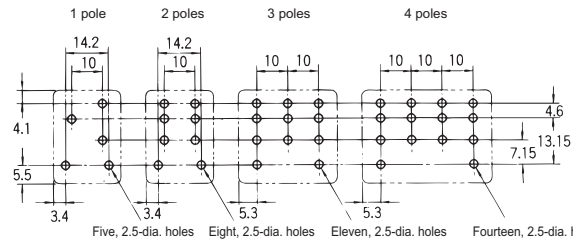
CR element
C = 0.033 μF
R = 120 Ω

Relays with PCB Terminals

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



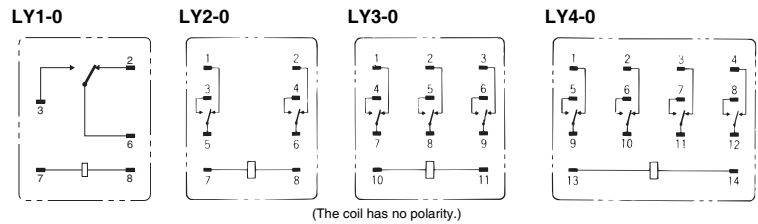
PCB Processing Dimensions (Bottom View)



Note: The figures and dimensions depicted here are for the LY2-0. The dimension with an asterisk (*) is 6.4 for the LY1-0.

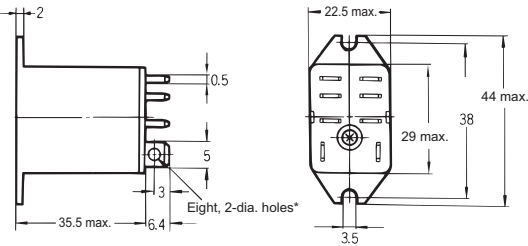
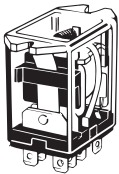
Note: 1. The dimensional tolerance is 0.1 mm.
2. There are exposed parts (conductive parts) on the LY1-0 other than the terminals. Be careful when using this Relay on a double-sided PCBs.

Terminal Arrangement/Internal Connections (Bottom View)

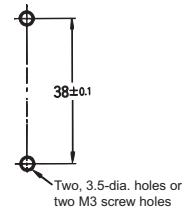


Case-surface mounting

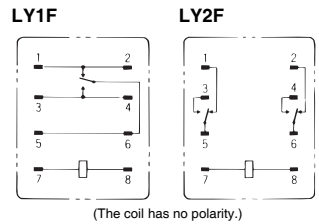
LY1F
LY2F



Mounting Hole Dimensions



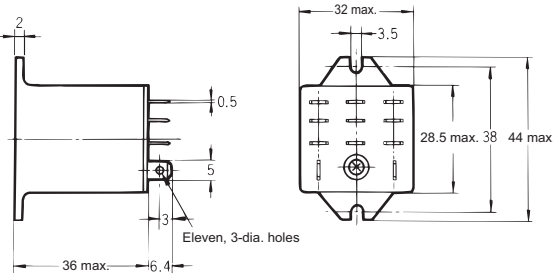
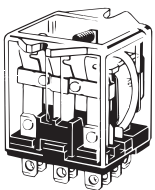
Terminal Arrangement/Internal Connections (Bottom View)



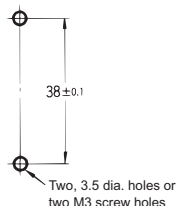
Note: The figures and dimensions depicted here are for the LY1F. The LY2F is also conforms to these measurements.

Note: The dimensional tolerance is ±0.1 mm.

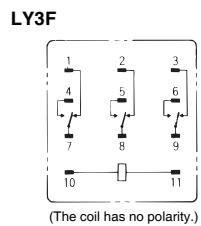
LY3F



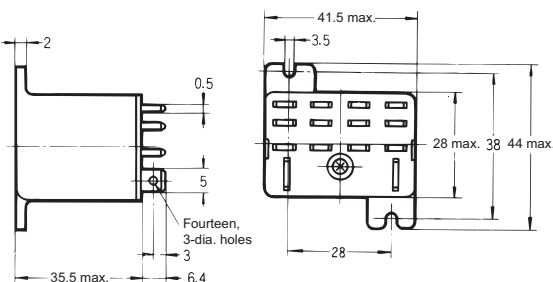
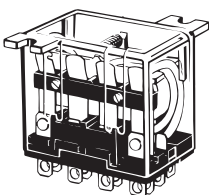
Mounting Hole Dimensions



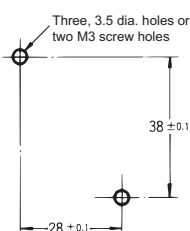
Terminal Arrangement/Internal Connections (Bottom View)



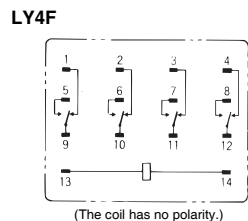
LY4F




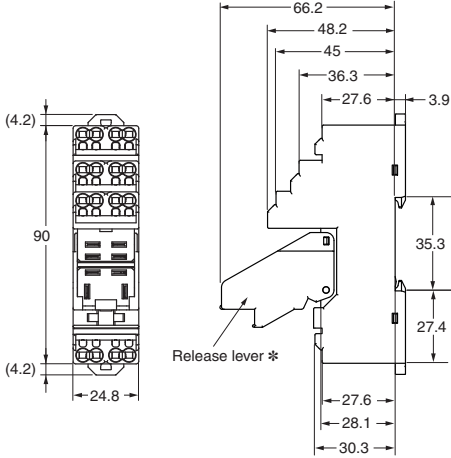
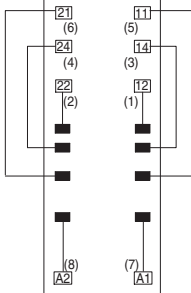
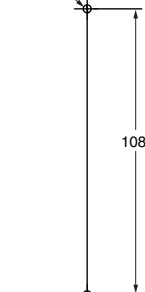
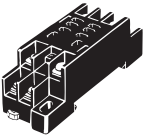
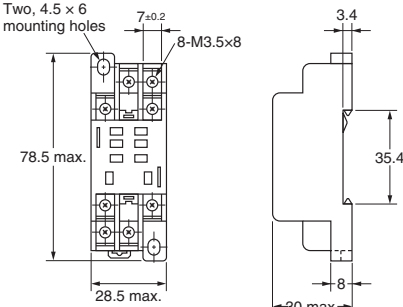
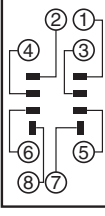
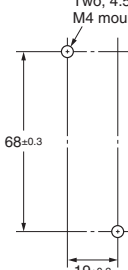
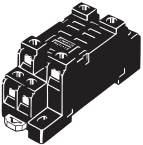
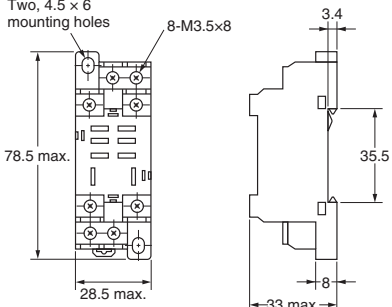
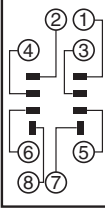
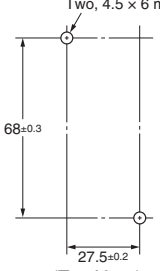
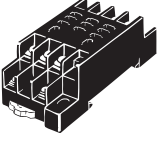
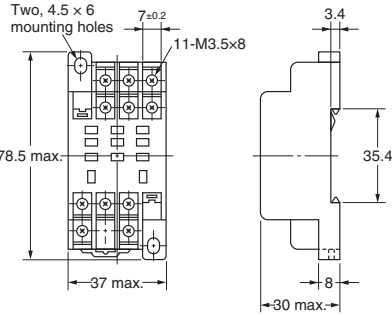
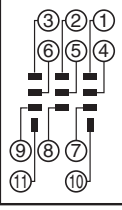
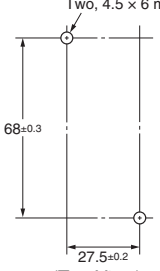
Mounting Hole Dimensions


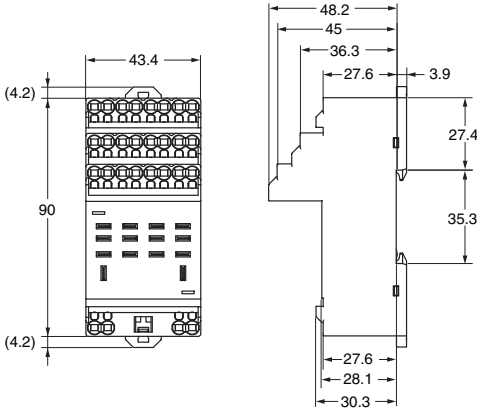
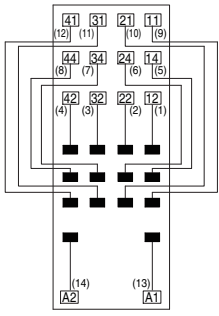
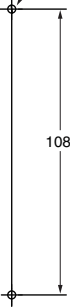
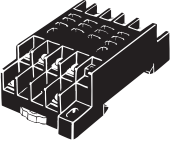
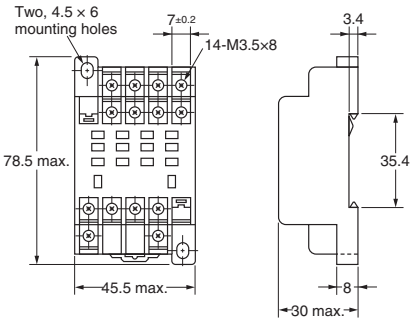
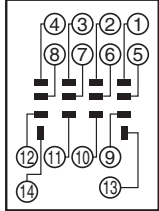
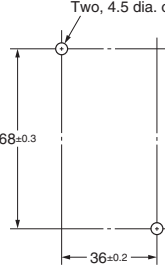
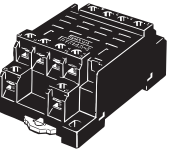
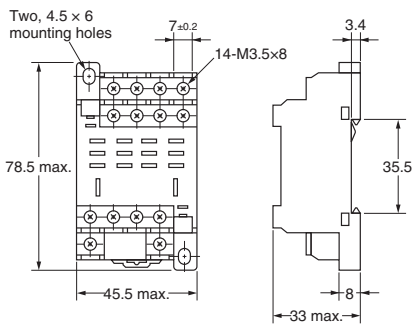
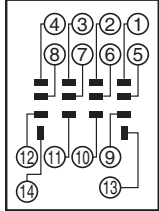
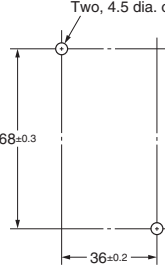


Terminal Arrangement/Internal Connections (Bottom View)

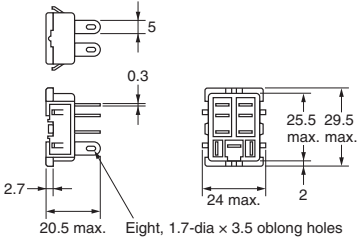
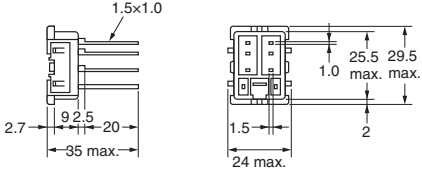
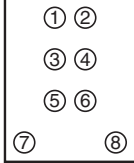
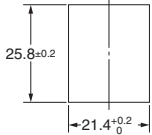
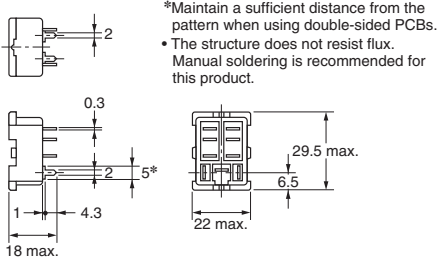
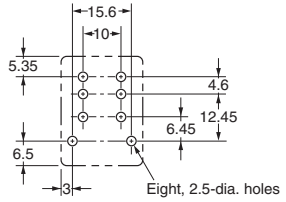
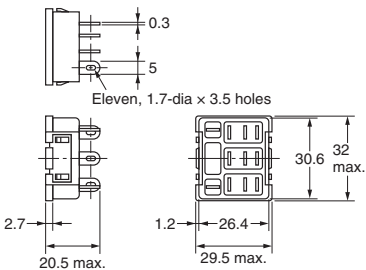
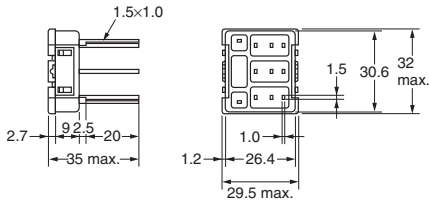
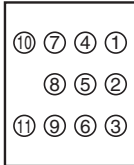
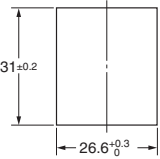
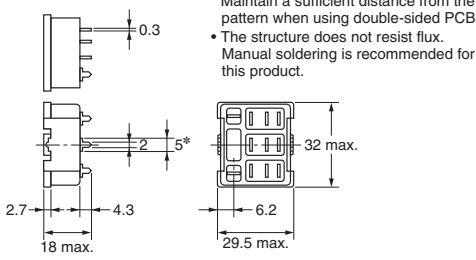
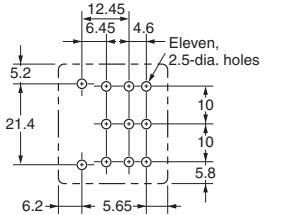


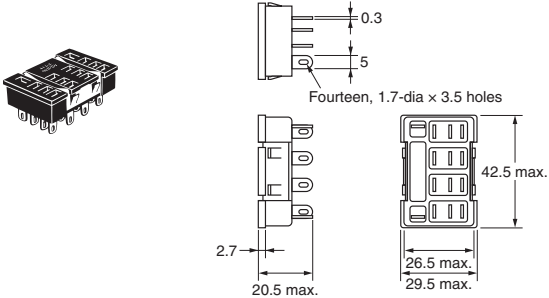
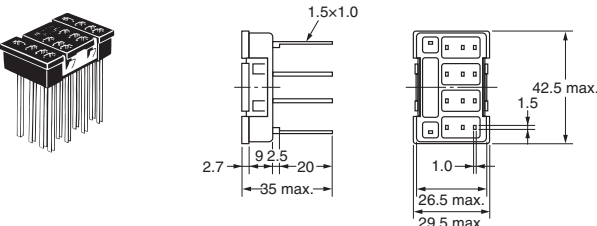
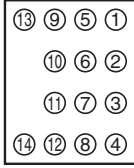
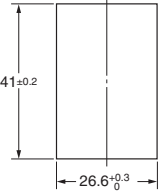
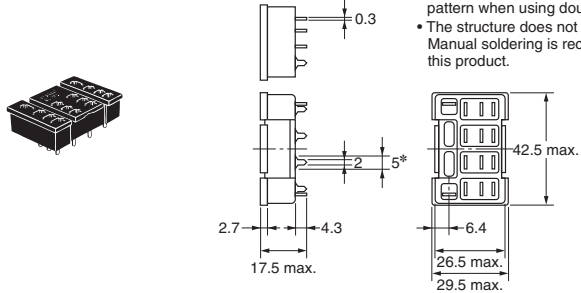
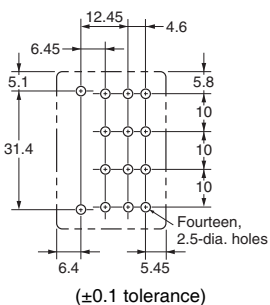
Connection Sockets

Dimensions	Terminal Arrangement/ Internal Connections	Mounting Hole Dimensions
<p>PTF-08-PU(-L)</p>   <p>66.2, 48.2, 45, 36.3, 27.6, 3.9, 35.3, 27.4, 27.6, 28.1, 30.3, 24.8, 90, 4.2, Release lever *</p> <p>* The PTF-08-PU-L Sockets do not have release levers.</p>	 <p>(Top View)</p> <p>Note: The numbers in parentheses are traditionally used terminal numbers.</p>	<p>Two, M3 screw hole or two, 3.5 dia. hole</p>  <p>108</p> <p>(Top View)</p> <p>Note: Pull out the hooks to mount the Relay with screws.</p>
<p>PTF08A</p>   <p>Two, 4.5 × 6 mounting holes, 7±0.2, 8-M3.5×8, 78.5 max., 28.5 max., 3.4, 35.4, 8, 30 max.</p>	 <p>(Top View)</p>	<p>Two, 4.5 dia. or M4 mounting holes</p>  <p>68±0.3, 19±0.2</p> <p>(Top View)</p> <p>Note: Track mounting is also possible.</p>
<p>PTF08A-E (Finger Protection Structure)</p>   <p>Two, 4.5 × 6 mounting holes, 7±0.2, 8-M3.5×8, 78.5 max., 28.5 max., 3.4, 35.5, 8, 33 max.</p>	 <p>(Top View)</p>	<p>Two, 4.5 × 6 mounting holes</p>  <p>68±0.3, 27.5±0.2</p> <p>(Top View)</p> <p>Note: Track mounting is also possible.</p>
<p>PTF11A</p>   <p>Two, 4.5 × 6 mounting holes, 7±0.2, 11-M3.5×8, 78.5 max., 37 max., 3.4, 35.4, 8, 30 max.</p>	 <p>(Top View)</p>	<p>Two, 4.5 × 6 mounting holes</p>  <p>68±0.3, 27.5±0.2</p> <p>(Top View)</p> <p>Note: Track mounting is also possible.</p>

Dimensions	Terminal Arrangement/ Internal Connections	Mounting Hole Dimensions
<p>PTF-14-PU-L</p>  	 <p>(Top View)</p> <p>Note: The numbers in parentheses are traditionally used terminal numbers.</p>	<p>Two, M3 screw hole or two, 3.5 dia. hole</p>  <p>(Top View)</p> <p>Note: Pull out the hooks to mount the Relay with screws.</p>
<p>PTF14A</p>  	 <p>(Top View)</p>	<p>Two, 4.5 dia. or M4 mounting holes</p>  <p>(Top View)</p> <p>Note: Track mounting is also possible.</p>
<p>PTF14A-E (Finger Protection Structure)</p>  	 <p>(Top View)</p>	<p>Two, 4.5 dia. or M4 mounting holes</p>  <p>(Top View)</p> <p>Note: Track mounting is also possible.</p>

Note: If you use the PTF-08-PU, PTF-08-PU-L, PTF08A, PTF08A-E, or PT08 with an LY1 Relay, connect the following terminal pairs: 1-2, 3-4, and 5-6 (for usage at 10 A or higher).

Dimensions	Terminal Arrangement/ Internal Connections	Mounting hole and PCB dimensions
<p>PT08</p>  <p>2.7 20.5 max. 5 0.3 24 max. 25.5 max. 29.5 max. 2 Eight, 1.7-dia x 3.5 oblong holes</p> <p>PT08QN</p>  <p>1.5x1.0 2.7 9.25 20 35 max. 24 max. 1.5 2 25.5 max. 29.5 max.</p>	 <p>(Bottom View)</p>	
<p>PT08-0</p>  <p>2 0.3 1 4.3 18 max. 22 max. 29.5 max. 6.5 *Maintain a sufficient distance from the pattern when using double-sided PCBs. • The structure does not resist flux. Manual soldering is recommended for this product.</p>		 <p>Eight, 2.5-dia. holes (±0.1 tolerance)</p>
<p>PT11</p>  <p>0.3 5 20.5 max. 29.5 max. 32 max. 26.4 1.2 Eleven, 1.7-dia x 3.5 holes</p> <p>PT11QN</p>  <p>1.5x1.0 2.7 9.25 20 35 max. 29.5 max. 1.5 30.6 32 max.</p>	 <p>(Bottom View)</p>	
<p>PT11-0</p>  <p>0.3 2 2 4.3 18 max. 29.5 max. 32 max. 6.2 *Maintain a sufficient distance from the pattern when using double-sided PCBs. • The structure does not resist flux. Manual soldering is recommended for this product.</p>		 <p>Eleven, 2.5-dia. holes (±0.1 tolerance)</p>

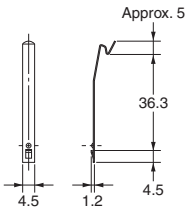
Dimensions	Terminal Arrangement/ Internal Connections	Mounting hole and PCB dimensions
<p>PT14</p>  <p>0.3 5 Fourteen, 1.7-dia × 3.5 holes 42.5 max. 26.5 max. 29.5 max. 2.7 20.5 max.</p> <p>PT14QN</p>  <p>1.5x1.0 42.5 max. 1.5 2.7 9 2.5 20 35 max. 1.0 26.5 max. 29.5 max.</p>	 <p>(Bottom View)</p>	 <p>41^{+0.2} 26.6^{+0.3}</p>
<p>PT14-0</p>  <p>0.3 42.5 max. 2 5* 2.7 4.3 17.5 max. 6.4 26.5 max. 29.5 max.</p> <p>*Maintain a sufficient distance from the pattern when using double-sided PCBs. • The structure does not resist flux. Manual soldering is recommended for this product.</p>		 <p>12.45 6.45 5.1 31.4 5.8 10 10 10 6.4 5.45 Fourteen, 2.5-dia. holes (±0.1 tolerance)</p>

Note: Use a panel with a thickness of 1 to 2 mm when mounting a Socket on it.

Hold-down Clips

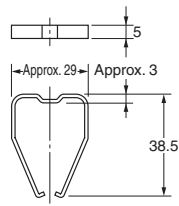
PYC-A1

Approx. 0.54 g (per clip)
One Set (2 Clips)



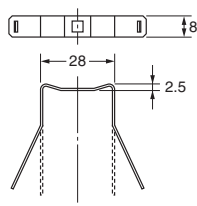
PYC-P

Approx. 1.4 g



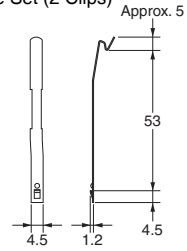
PYC-S

Approx. 1.8 g



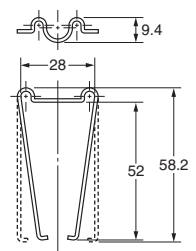
Y92H-3

Approx. 0.7 g (per clip)
One Set (2 Clips)



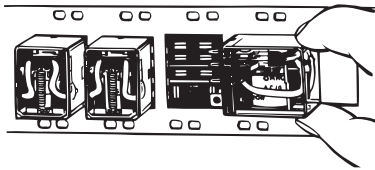
PYC-1

Approx. 6 g

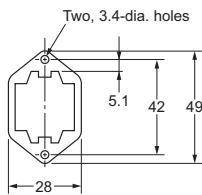


Socket Mounting Plates (t = 1.6)

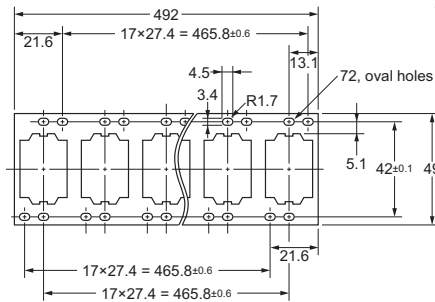
OMRON can provide Socket Mounting Plate for convenient Socket installation. Please use these Plates as required.



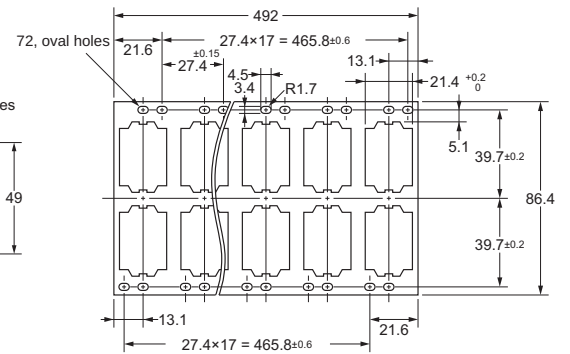
PYP-1



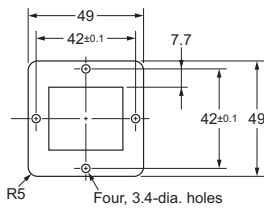
PYP-18



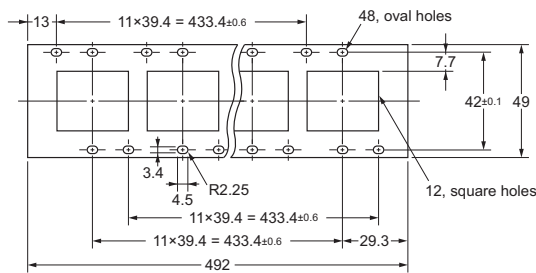
PYP-36



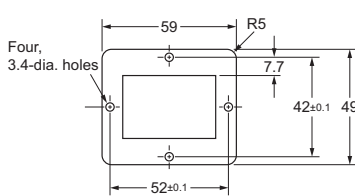
PTP-1-3



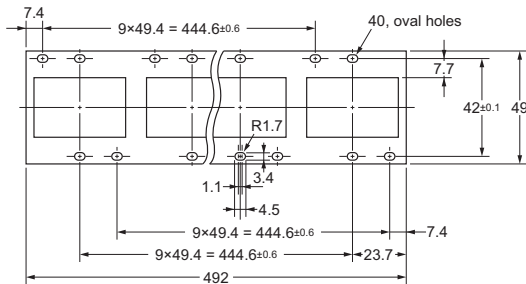
PTP-12



PTP-1

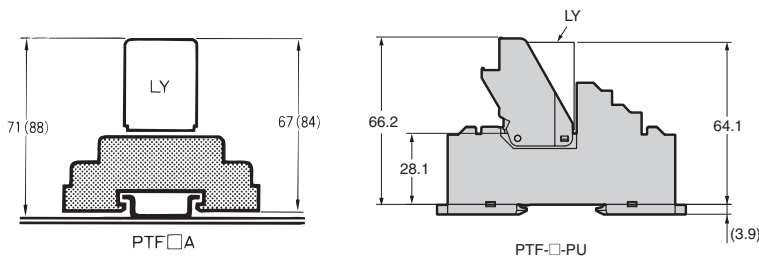


PTP-10

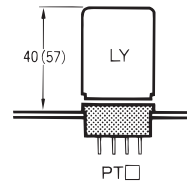


Mounting Height with Sockets

Front-mounting Sockets



Back-mounting Sockets



- Note:** 1. The PTF□A can be mounted on a track or with screws.
2. The measurements in parentheses are for the LY□-CR (built-in CR circuit).

Safety Precautions

Refer to the *Common Relay Precautions* for precautions that apply to all Relays.

Precautions for Correct Use

- Use two M3 screws to attach case-surface-mounted models (LY1F, LY2F, LY3F, and LY4F) and tighten the screws securely. (Normal tightening torque: 0.98 N·m)
- For Relays with Tab Terminals, select a wire diameter for the lead wires that connect to the faston receptacle terminals that is within the allowed range for the load current.
- Do not impose excessive external force on the Relay when inserting the Relay to the faston receptacle or pulling the Relay out from the faston receptacle. Do not attempt to insert a terminal diagonally or insert or pull out more than one terminal at the same time.
- LY Single-contact Relays are for power switching applications. Do not use the LY Series for switching minute loads of 100 mA or less, such as signals.

About the Built-in Diode and CR Elements

The diode or CR element that are built into the Relay are designed to absorb the reverse voltage from the Relay coil. If a large surge in voltage is applied to the diode or CR element from an external source, the element will be destroyed.

If there is the possibility of large voltage surges that could be applied to the elements from an external source, take any necessary surge absorption measures.

Applying 10 A or More When Using an LY1 with the Following Sockets

When you use an LY1 in combination with the PTF-08-PU, PTF-08-PU-L, PTF08A, PTF08A-E, or PT08, connect each of the following terminal pairs: (1) to (2), (3) to (4), and (5) to (6).

Relay Replacement

To replace the Relay, turn OFF the power supply to the load and Relay coil sides to prevent unintended operation and possible electrical shock.

Attaching and Removing Relay Hold-down Clips

When you attach a Hold-down Clip to or remove it from a Socket, wear gloves or take other measures to prevent injuring your fingers on the Hold-down Clip.

Terms and Conditions Agreement

Read and understand this catalog.

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Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

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

Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.

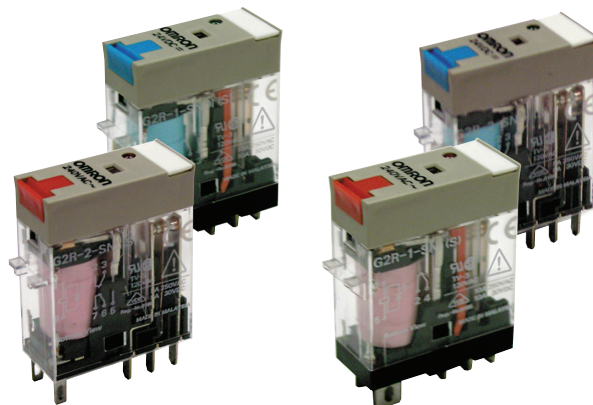
Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

General-purpose Relay G2R-□-S (S)

CSM_G2R-_S_(S)_DS_E_2_7

Slim and Space-saving Power Plug-in Relay

- Reduces wiring work by 60% when combined with the P2RF-□-PU Push-In Plus Socket (according to actual OMRON measurements).
- Lockable test button models available.
- Built-in mechanical operation indicator.
- Provided with nameplate.
- AC type is equipped with a coil-disconnection self-diagnostic function (LED type).
- High switching power (1-pole: 10 A).



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Model Number Structure

Model Number Legend

G2R - □ - S □ □ (S)
1 2 3 4 5

1. Number of Poles

- 1: 1 pole
- 2: 2 poles

2. Terminals

- S: Plug-in

3. Classification

- Blank: General-purpose
- N: LED indicator
- D: Diode
- ND: LED indicator and diode
- NI: LED indicator with test button
- NDI: LED indicator and diode with test button

4. Rated Coil Voltage

5. Mechanical operation indicator and Nameplate

- (S): Models with mechanical operation indicator and Nameplate

Note: Contact your OMRON representative for Relays with gold-plated contacts.

Ordering Information

When your order, specify the rated voltage.

List of Models

Classification	Coil ratings	Contact form	
		SPDT	DPDT
General-purpose	AC 24, 48, 110, 120, 230, 240 DC 6, 12, 24, 48	G2R-1-S (S)	G2R-2-S (S)
LED indicator		G2R-1-SN (S)	G2R-2-SN (S)
LED indicator with test button		G2R-1-SNI (S)	G2R-2-SNI (S)
Diode	DC 6, 12, 24, 48	G2R-1-SD (S)	G2R-2-SD (S)
LED indicator and diode		G2R-1-SND (S)	G2R-2-SND (S)
LED indicator and diode with test button		G2R-1-SNDI (S)	G2R-2-SNDI (S)

Note: 1. The standard models are compliant with UL/CSA and VDE standards. Also, an EC compliance declaration has been made for combinations with the P2RF-□-E, P2RF-□-S and P2RF-□-PU. The Relays bear the CE Marking.

2. Refer to *Connecting Sockets*, below, for applicable Socket models.

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







Example: G2R-1-S 12 VDC (S)

□ Rated coil voltage

Accessories (Order Separately)

Connecting Sockets

Track/surface-mounting Socket

Applicable relay model*1	Mounting Method	Conductive part protection	Terminal Type	Applicable crimp terminal/ Electric wire	Exclusive short bar (Order Separately)	Appearance	Model
G2R-1-S	Mounted on a DIN track or with screws	Available	Push-In Plus Terminal	Ferrules Solid wire Stranded wire	Available		P2RF-05-PU *2
			Screw terminal (M3 screw size)	Forked terminals Solid wire Stranded wire	Available		P2RFZ-05-E *4
		Option (Terminal cover sold separately) *3	Screw terminal (M3.5 screw size)	Round terminals Forked terminals Solid wire Stranded wire	Available		P2RFZ-05
G2R-2-S	Mounted on a DIN track or with screws	Available	Push-In Plus Terminal	Ferrules Solid wire Stranded wire	Available		P2RF-08-PU *2
			Screw terminal (M3 screw size)	Forked terminals Solid wire Stranded wire	Available		P2RFZ-08-E *4
		Option (Terminal cover sold separately) *3	Screw terminal (M3.5 screw size)	Round terminals Forked terminals Solid wire Stranded wire	Available		P2RFZ-08






*1. The applicable relay model is a plug-in terminal type.

*2. There are screw mounting holes in the DIN hooks on the P2RF-□□-PU. Pull out the DIN hook tabs to mount the Sockets with screws.

*3. Terminal cover type is P2CZ-Z. (Order Separately) For details, refer to the on page 6.

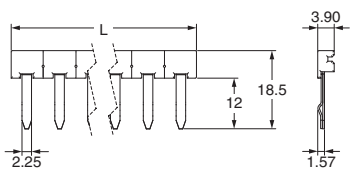
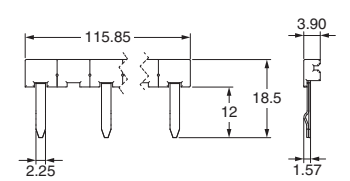
*4. The finger-protection type (P2RFZ-□□-E) is a type in which the terminal cover is integrated into the socket. Round terminals cannot be used. Use forked terminals or ferrules instead.

Back-mounting Socket

Applicable Relay model	Mounting Method	Appearance	Models
G2R-1-S	PCB terminals		P2R-05P
			P2R-057P
	Solder terminals		P2R-05A
		G2R-2-S	PCB terminals
	P2R-087P		
Solder terminals			P2R-08A

For Push-In Plus Terminal Block Sockets

Short Bars

Applicable sockets	Pitch	Application	Shape/external dimensions	Number of poles	L (Length)	Insulation color	Short Bars Model*1	Maximum carry current
P2RF-05-PU P2RF-08-PU	7.75 mm	Bridging contact terminals (common)		2	15.1	Red (R) Blue (S) Yellow(Y)	PYDN-7.75-020□	20 A
				3	22.85		PYDN-7.75-030□	
				4	30.6		PYDN-7.75-040□	
				20	154.6		PYDN-7.75-200□	
	15.5 mm	For Coil terminals		8	115.55		PYDN-15.5-080□	

*1. Replace the box (□) in the model number with the code for the covering color. □Color selection: R = Red, S = Blue, Y = Yellow

Labels

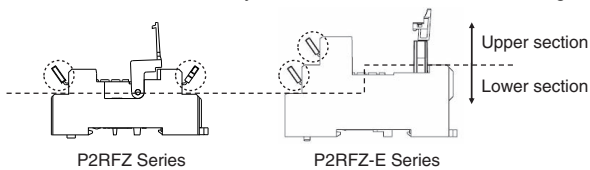
Applicable sockets	Model
P2RF-05-PU P2RF-08-PU	XW5Z-P4.0LB1 (1 sheet/60 pieces)

For Screw Terminal Sockets

Short Bars

Applicable sockets	Pitch	Appearance	Dimensions (mm)	Number of poles	Insulation color	Short Bars Model	Maximum carry current	Minimum order (set)
P2RFZ-05-E P2RFZ-08-E	6.8 mm			20	Blue(S)	P2DN-6.8-100S	20 A	1
	15.7 mm			10		P2DN-15.7-100S		
P2RFZ-05 P2RFZ-08	8.5 mm			20	Blue(S)	P2DN-8.5-100S	20 A	1
	19.4 mm			10		P2DN-19.4-100S		

- Note:**
- Select an applicable type of short bars by checking applicable socket type, appearance, and dimensions.
 - Use the Short Bars for crossover wiring within one Socket or between Sockets.
 - Use the short bars on the lower section of the socket.
When using the short bars on the upper section of the socket, insert them so that their heads are pointed upwards (see the figure below). Otherwise, short bars may interfere with the socket, leading to improper wiring and contact failure.



* One set (order unit) contains 10 short bars and 20 caps.


Accessories for Short Bars (P2DN)

Cap

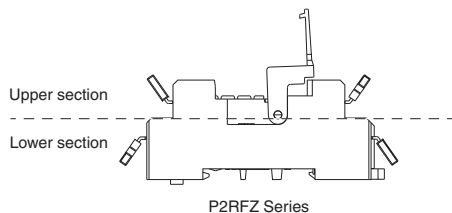
Short Bars Models	Appearance	Dimensions (mm)	Model
P2DN-8.5-100S P2DN-19.4-100S P2DN-6.8-100S P2DN-15.7-100S			P2DN-CP100

For Screw Terminal Sockets (P2RFZ-05/P2RFZ-08)

Terminal covers

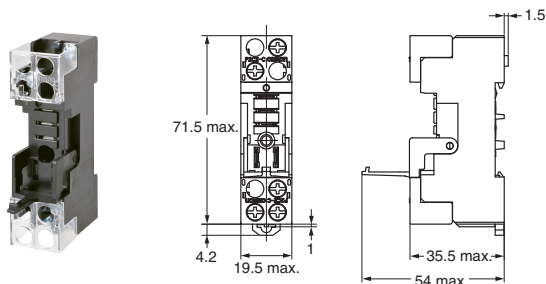
Applicable sockets	Appearance	Model	Minimum order (set)
P2RFZ-05 P2RFZ-08		P2CZ-C	

- Note: 1.** Use these covers in a combination with P2RFZ-05 and P2RFZ-08.
2. Do not install short bars (optional) on the upper section (see the figure below).
 Short bars may interfere with the terminal cover, making the terminal cover unusable.

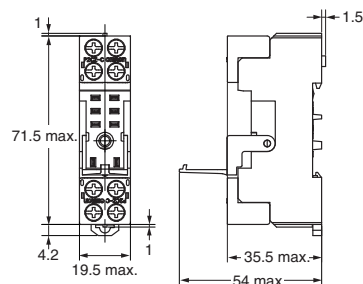


Dimensions with terminal cover

P2RFZ-05



P2RFZ-08



Labels

Applicable sockets	Model	Minimum order (sheet) (quantity per sheet)
P2RFZ-□-E	XW5Z-P2.5LB1	5 1 sheet (72 pieces)

Note: This label cannot be applied on sockets other than P2RFZ-□-E.

Mounting Tracks

Applicable Socket	Description		Model	Minimum order (quantity)
Track-connecting Socket	Mounting track	50 cm (l) × 7.3 mm (t):	PFP-50N	---
		1 m (l) × 7.3 mm (t):	PFP-100N	
		1 m (l) × 16 mm (t):	PFP-100N2	
	End plate *1		PFP-M	10
	Spacer		PFP-S	
Back-connecting Socket	Mounting plate *2		P2R-P	1

*1. When mounting DIN rail, please use End Plate (PFP-M).

*2. Used to mount several P2R-05A and P2R-08A Connecting Sockets side by side.

Specifications

Coil Ratings

Rated voltage		Rated current*		Coil resistance	Coil inductance (H) (ref. value)		Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)
		50 Hz	60 Hz		Armature OFF	Armature ON				
AC	24 V	43.5 mA	37.4 mA	253 Ω	0.81	1.55	80% max.	30% max.	110%	0.9 VA at 60 Hz
	48 V	21.8 mA	18.8 mA	1,040 Ω	3.12	6.17				
	110 V	9.5 mA	8.2 mA	5,566 Ω	13.33	26.83				
	120 V	8.6 mA	7.5 mA	7,286 Ω	16.13	32.46				
	230 V	4.4 mA	3.8 mA	27,172 Ω	72.68	143.90				
	240 V	4.2 mA	3.7 mA	27,800 Ω	90.58	182.34				

Rated voltage		Rated current*		Coil resistance	Coil inductance (H) (ref. value)		Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)
		50 Hz	60 Hz		Armature OFF	Armature ON				
DC	6 V	87.0 mA		69 Ω	0.25	0.48	70% max.	15% min.	110%	0.53 W
	12 V	43.2 mA		278 Ω	0.98	2.35				
	24 V	21.6 mA		1,113 Ω	3.60	8.25				
	48 V	11.4 mA		4,220 Ω	15.2	29.82				

- Note:**
1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/-20% for the AC rated current and ±10% for the DC coil resistance.
 2. The AC coil resistance and inductance values are reference values only (at 60 Hz).
 3. Operating characteristics were measured at a coil temperature of 23°C.
 4. The maximum voltage is the maximum possible value of the voltage that can be applied to the relay coil. It is not the maximum voltage that can be applied continuously.

Contact Ratings

Number of poles	1 pole		2 poles	
Load	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)	Resistive load (cosφ = 1)	Inductive load (cosφ = 0.4; L/R = 7 ms)
Rated load	10 A at 250 VAC; 10 A at 30 VDC	7.5 A at 250 VAC; 5 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 3 A at 30 VDC
Rated carry current	10 A		5 A	
Max. switching voltage	440 VAC, 125 VDC		380 VAC, 125 VDC	
Max. switching current	10 A		5 A	
Max. switching power	2,500 VA, 300 W	1,875 VA, 150 W	1,250 VA, 150 W	500 VA, 90 W
Failure rate (reference value) *	100 mA at 5 VDC		10 mA at 5 VDC	

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

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

Characteristics

Item	1 pole	2 poles
Contact configuration	SPDT	
Contact structure	Single	
Contact resistance	100 mΩ max.	
Operate (set) time	15 ms max.	
Release (reset) time	AC: 10 ms max.; DC: 5 ms max. (w/built-in diode: 20 ms max.)	AC: 15 ms max.; DC: 10 ms max. (w/built-in diode: 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 *	5,000 VAC, 50/60 Hz for 1 min between coil and contacts; 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity	5,000 VAC, 50/60 Hz for 1 min between coil and contacts; 3,000 VAC, 50/60 Hz for 1 min between contacts of different polarity 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)	
Shock resistance	Destruction: 1,000 m/s ² Malfunction: 200 m/s ² when energized; 100 m/s ² when not energized	
Endurance	Mechanical: AC coil: 10,000,000 operations min.; DC coil: 20,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operations min. (at 1,800 operations/hr under rated load)	
Ambient temperature	Operating: -40°C to 70°C (with no icing or condensation)	
Ambient humidity	Operating: 5% to 85%	
Weight	Approx. 20 g	

Note: Values in the above table are the initial values.

*These values are relay only. Please refer to the "Products Related to Common Sockets and DIN Tracks Data Sheet" for connecting sockets.

Approved Standards

UL 508 (File No. E41643)

Model	Contact form	Coil ratings	Contact ratings	Operations
G2R-1-S (S)	SPDT	5 to 110 VDC 6 to 240 VAC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use)	100 × 10 ³
			TV-3 (NO contact only)	25 × 10 ³
G2R-2-S (S)	DPDT	5 to 110 VDC 6 to 240 VAC	5 A, 30 VDC (resistive) 5 A, 250 VAC (general use)	100 × 10 ³
			TV-3 (NO contact only)	25 × 10 ³

CSA 22.2 No.0, No.14

(File No. LR31928)

Model	Contact form	Coil ratings	Contact ratings	Operations
G2R-1-S (S)	SPDT	5 to 110 VDC 6 to 240 VAC	10 A, 30 VDC (resistive) 10 A, 250 VAC (general use)	100 × 10 ³
			TV-3 (NO contact only)	25 × 10 ³
G2R-2-S (S)	DPDT	5 to 110 VDC 6 to 240 VAC	5 A, 30 VDC (resistive) 5 A, 250 VAC (general use)	100 × 10 ³
			TV-3 (NO contact only)	25 × 10 ³

IEC/VDE (Certificate No. 40015012 EN 61810-1)

Contact form	Coil ratings	Contact ratings	Operations
1 pole	6, 12, 24, 48 VDC 24, 110, 120, 230, 240 VAC	5 A, 440 VAC (cosφ = 1.0) 10 A, 250 VAC (cosφ = 1.0) 10 A, 30 VDC (0 ms)	100 × 10 ³
2 poles	6, 12, 24, 48 VDC 24, 110, 120, 230, 240 VAC	5 A, 250 VAC (cosφ = 1.0) 5 A, 30 VDC (0 ms)	100 × 10 ³

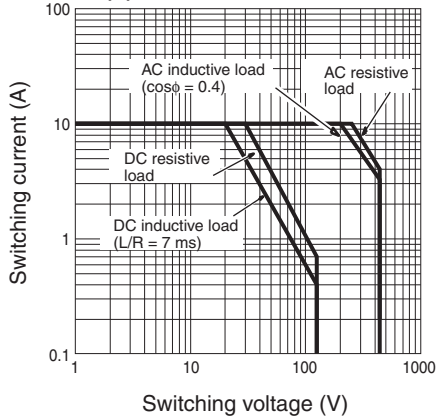
LR

Number of poles	Coil ratings	Contact ratings	Operations
1 pole	5 to 110 VDC 6 to 240 VDC	10 A, 250 VAC (general use) 7.5 A, 250 VAC (PF0.4) 10 A, 30 VDC (resistive) 5A, 30VDC (L/R=7ms)	100 × 10 ³
2 poles	5 to 110 VDC 6 to 240 VDC	5 A, 250 VAC (general use) 2 A, 250 VAC (PF0.4) 5 A, 30 VDC (resistive) 3A, 30VDC (L/R=7ms)	100 × 10 ³

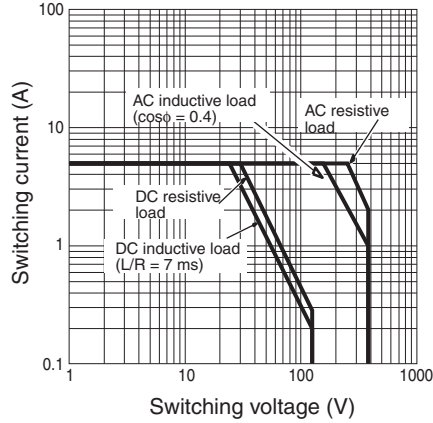
Engineering Data

Maximum Switching Power

G2R-1-S (S)

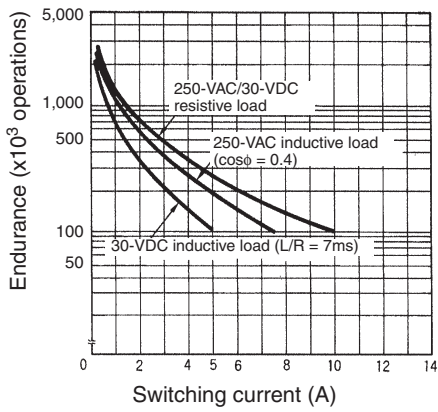


G2R-2-S (S)

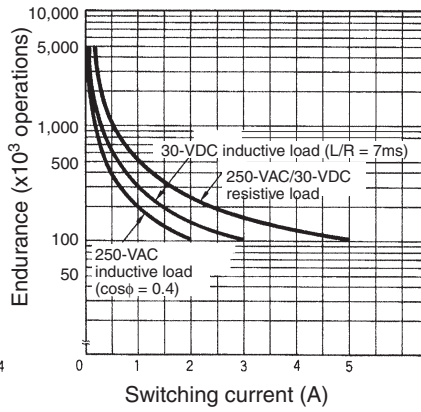


Endurance

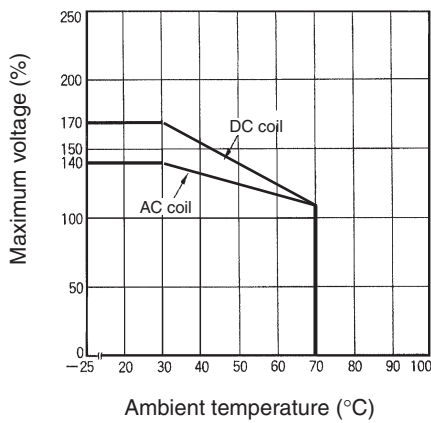
G2R-1-S (S)



G2R-2-S (S)



Ambient Temperature vs Maximum Coil Voltage

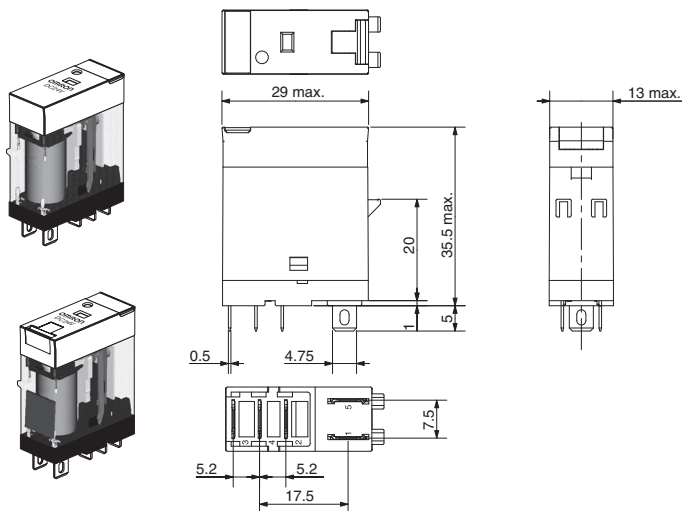


Dimensions

Note: All units are in millimeters unless otherwise indicated.

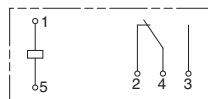
SPDT Relays

G2R-1-S (S), G2R-1-SN (S), G2R-1-SNI (S)
G2R-1-SD (S), G2R-1-SND (S), G2R-1-SNDI (S)

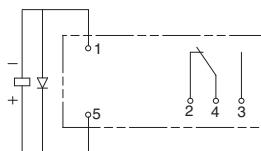


Terminal Arrangement/Internal Connections (Bottom View)

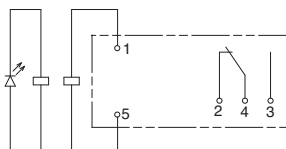
G2R-1-S (S)



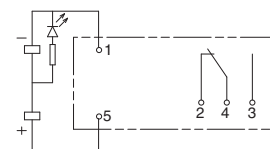
G2R-1-SD (S) (DC)



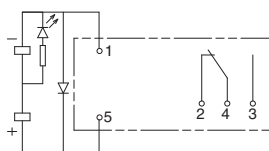
G2R-1-SN (S), G2R-1-SNI (S) (AC)



G2R-1-SN (S), G2R-1-SNI (S) (DC)

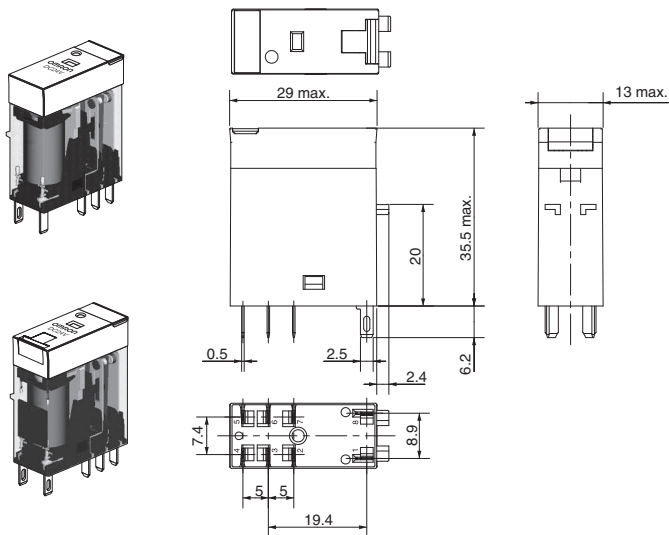


G2R-1-SND (S), G2R-1-SNDI (S) (DC)



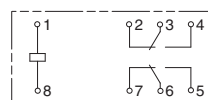
DPDT Relays

G2R-2-S (S), G2R-2-SN (S), G2R-2-SNI (S)
G2R-2-SD (S), G2R-2-SND (S), G2R-2-SNDI (S)

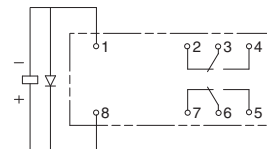


Terminal Arrangement/Internal Connections (Bottom View)

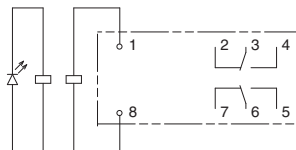
G2R-2-S (S)



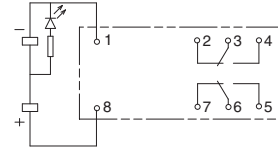
G2R-2-SD (S) (DC)



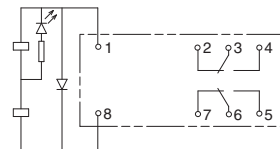
G2R-2-SN (S), G2R-2-SNI (S) (AC)



G2R-2-SN (S), G2R-2-SNI (S) (DC)



G2R-2-SND (S), G2R-2-SNDI (S) (DC)



Accessories (Order Separately)

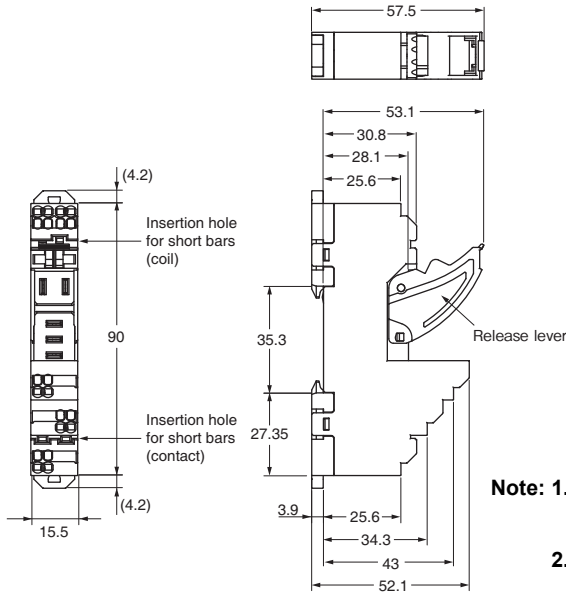
Socket Characteristics

Model	Rated carry current	Dielectric strength	Insulation resistance*	Remarks
P2RF-05-PU	10 A	Between contact terminals of same polarity: 1,000 VAC for 1 min	1,000 MΩ min.	
		Between coil and contact terminals: 4,000 VAC for 1 min		
P2RF-08-PU	6 A	Between contact terminals of different polarity: 3,000 VAC for 1 min	1,000 MΩ min.	
		Between contact terminals of same polarity: 1,000 VAC for 1 min		
		Between coil and contact terminals: 4,000 VAC for 1 min		
P2RFZ-05(-E)	10 A	Between contact terminals of same polarity: 1,000 VAC for 1 min	1,000 MΩ min.	
		Between coil and contact terminals: 4,000 VAC for 1 min		
P2RFZ-08(-E)	6 A	Between contact terminals of different polarity: 3,000 VAC for 1 min	1,000 MΩ min.	
		Between contact terminals of same polarity: 1,000 VAC for 1 min		
		Between coil and contact terminals: 4,000 VAC for 1 min		
P2R-05P	10 A	Between contact terminals of same polarity: 1,000 VAC for 1 min	1,000 MΩ min.	
		Between coil and contact terminals: 4,000 VAC for 1 min		
P2R-08P	5 A	Between contact terminals of different polarity: 3,000 VAC for 1 min	1,000 MΩ min.	
		Between contact terminals of same polarity: 1,000 VAC for 1 min		
		Between coil and contact terminals: 4,000 VAC for 1 min		
P2R-057P	10 A	Between contact terminals of same polarity: 1,000 VAC for 1 min	1,000 MΩ min.	
		Between coil and contact terminals: 5,000 VAC for 1 min		
P2R-087P	5 A	Between contact terminals of different polarity: 3,000 VAC for 1 min	1,000 MΩ min.	
		Between contact terminals of same polarity: 1,000 VAC for 1 min		
		Between coil and contact terminals: 5,000 VAC for 1 min		
P2R-05A	10 A	Between contact terminals of same polarity: 1,000 VAC for 1 min	1,000 MΩ min.	
		Between ground terminals: 1,500 VAC for 1 min		
		Between coil and contact terminals: 4,000 VAC for 1 min		
P2R-08A	5 A	Between contact terminals of different polarity: 3,000 VAC for 1 min	1,000 MΩ min.	
		Between contact terminals of same polarity: 1,000 VAC for 1 min		
		Between ground terminals: 1,500 VAC for 1 min		
		Between coil and contact terminals: 4,000 VAC for 1 min		

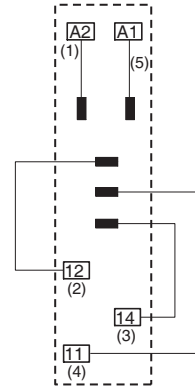
* The insulation resistance was measured with a 500-VDC insulation resistance meter at the same places as those used for measuring the dielectric strength.

Track/Surface Mounting Sockets

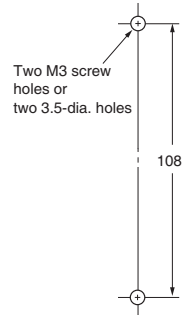
P2RF-05-PU



Terminal Arrangement/
Internal Connection Diagram
(Top View)



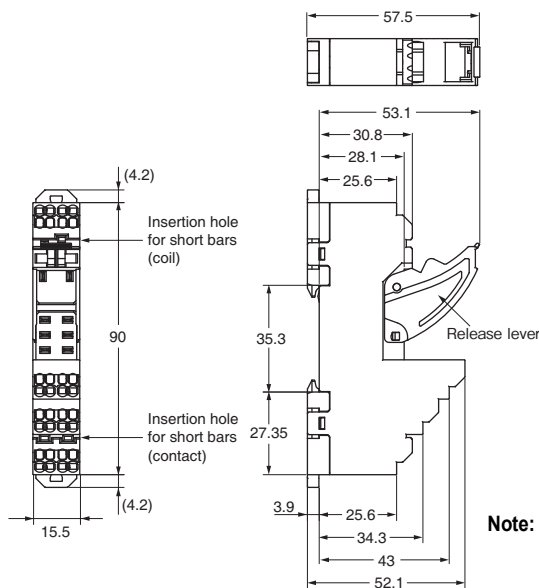
Mounting Hole
Dimensions



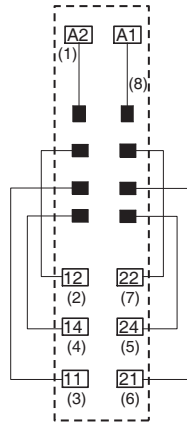
- Note:**
1. The numbers in parentheses are traditionally used terminal numbers.
 2. Insert the short bar into only the A1 or A2 side.
 3. Contact terminal crossover will result in functionality only on the No. 11 terminal side. The insertion hole on the No. 14 terminal side is a dummy hole for installing a short bar without bending the pins.

Note: Pull out the hooks to mount the Socket with screws.

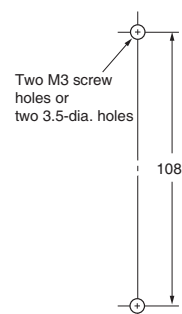
P2RF-08-PU



Terminal Arrangement/
Internal Connection Diagram
(Top View)



Mounting Hole
Dimensions

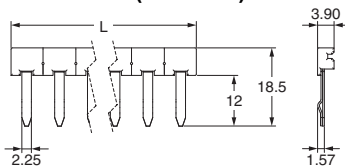


- Note:**
1. The numbers in parentheses are traditionally used terminal numbers.
 2. Insert the short bar into only the A1 or A2 side.

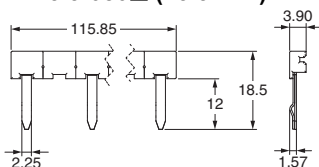
Note: Pull out the hooks to mount the Socket with screws.

Accessories for P2RF-□-PU
Short Bars

PYDN-7.75-□□ (7.75 mm)



PYDN-15.5-080□ (15.5 mm)

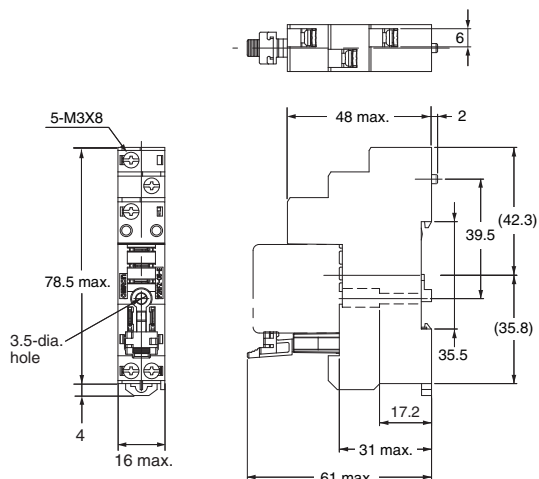


Application	Pitch	No. of poles	L (Length)	Colors	Model *	Maximum carry current
For Contact terminals (common)	7.75 mm	2	15.1	Red (R) Blue (S) Yellow (Y)	PYDN-7.75-020□	20 A
		3	22.85		PYDN-7.75-030□	
		4	30.6		PYDN-7.75-040□	
		20	154.6		PYDN-7.75-200□	
For Coil terminals	15.5 mm	8	115.85		PYDN-15.5-080□	

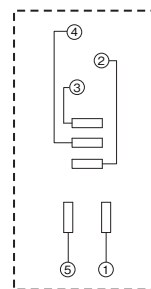
* Replace the box (□) in the model number with the code for the covering color.

- Note:**
1. Use the Short Bars for crossover wiring within one Socket or between Sockets.
 2. When using short bar to coil terminals of PYF-□□-PU, make sure to use PYDN-31.0-080□ (31 mm).
When using short bar to coil terminals of P2RF-□□-PU, make sure to use PYDN-15.5-080□ (15.5 mm).

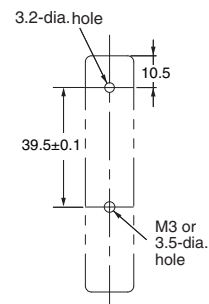
P2RFZ-05-E



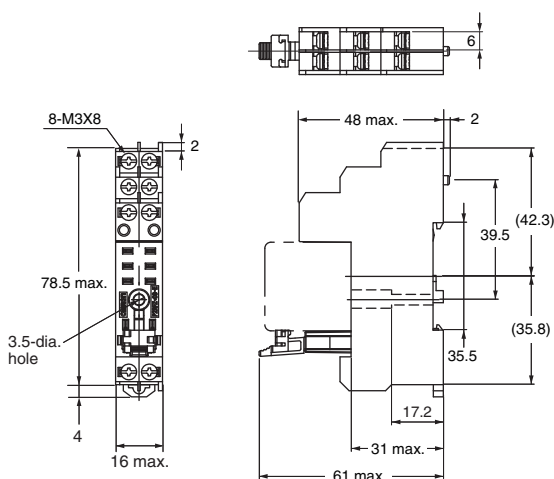
Terminal Arrangement/
Internal Connection Diagram
(Top View)



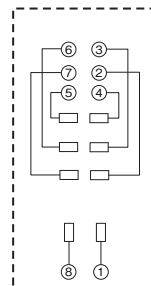
Mounting Hole
Dimensions



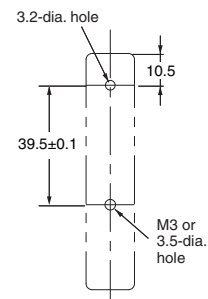
P2RFZ-08-E



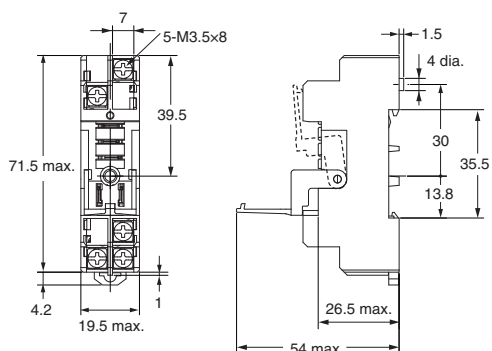
Terminal Arrangement/
Internal Connection Diagram
(Top View)



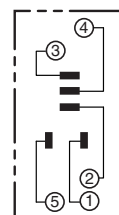
Mounting Hole
Dimensions



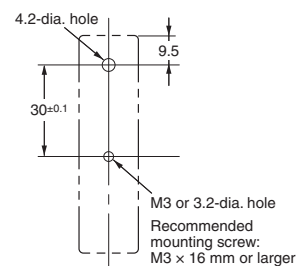
P2RFZ-05



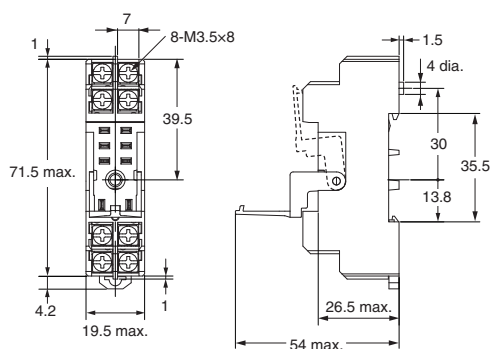
Terminal Arrangement/
Internal Connection Diagram
(Top View)



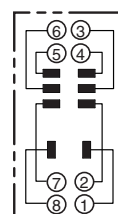
Mounting Hole
Dimensions



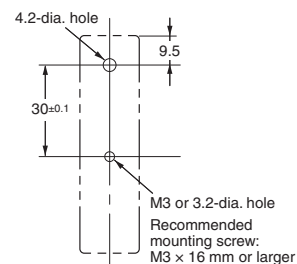
P2RFZ-08



Terminal Arrangement/
Internal Connection Diagram
(Top View)

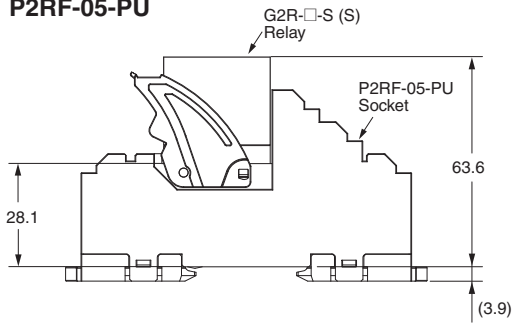


Mounting Hole
Dimensions

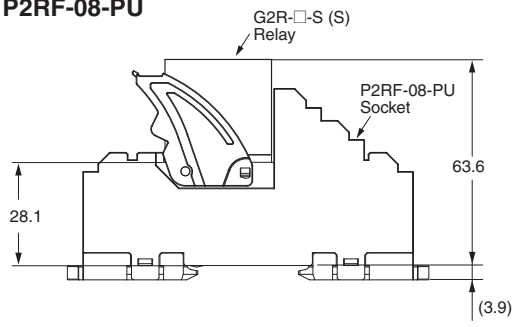


Mounting Height of Relay with Track/Surface Mounting Sockets

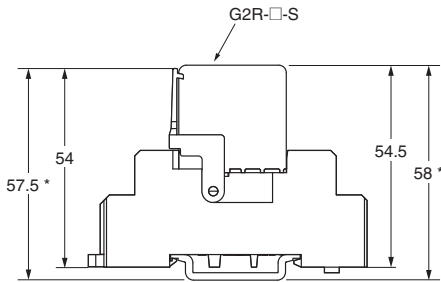
P2RF-05-PU



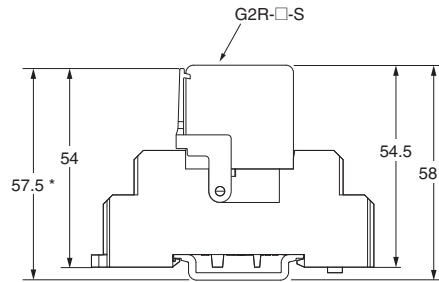
P2RF-08-PU



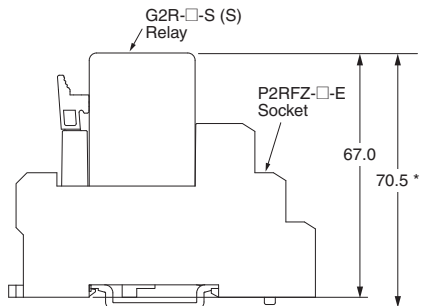
P2RFZ-05



P2RFZ-08



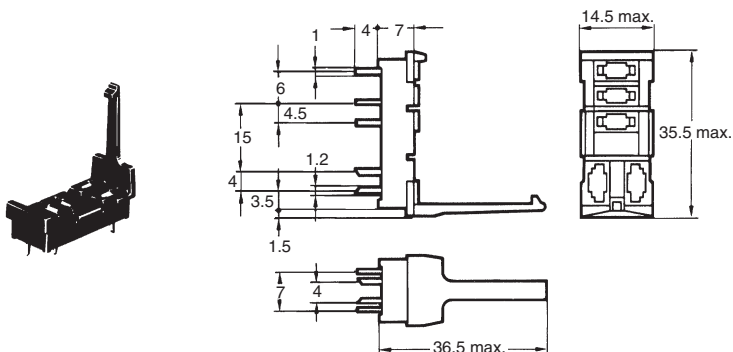
P2RFZ-□-E



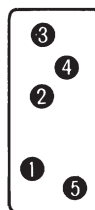
* These are values when using the DIN track PFP-□N.
Heights become higher by approximately 9 mm when using PFP-□N2.

Back-connecting Sockets

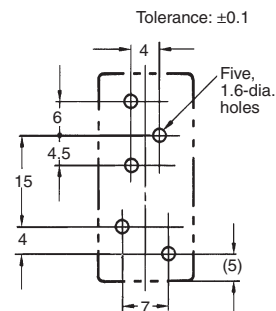
P2R-05P (1-pole)



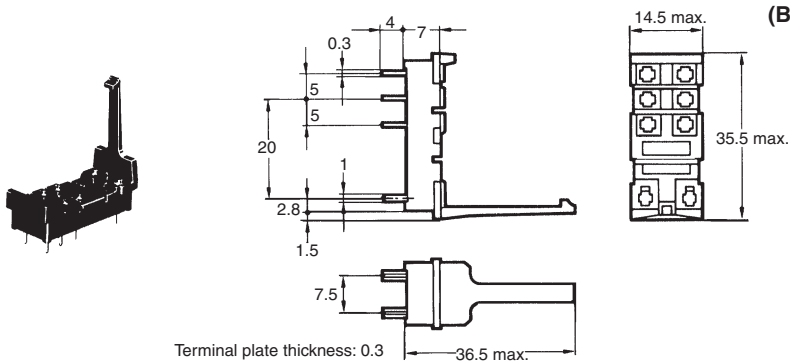
Terminal Arrangement (Bottom View)



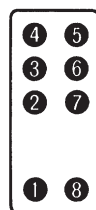
Mounting Holes (Bottom View)



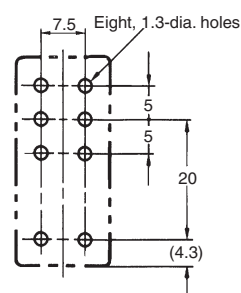
P2R-08P (2-pole)



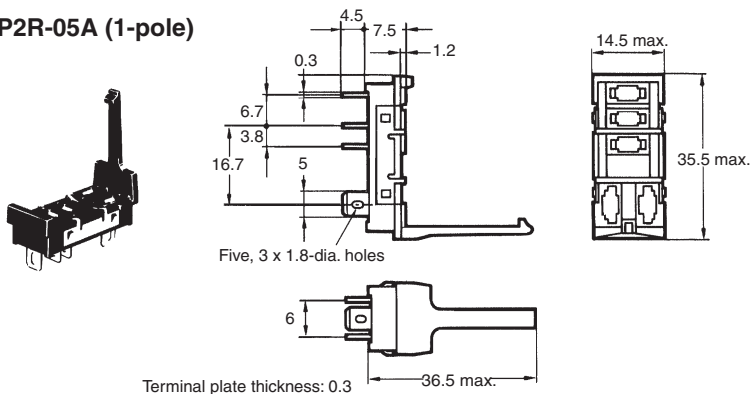
Terminal Arrangement (Bottom View)



Mounting Holes (Bottom View)



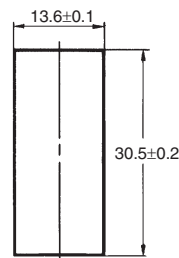
P2R-05A (1-pole)



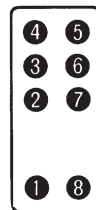
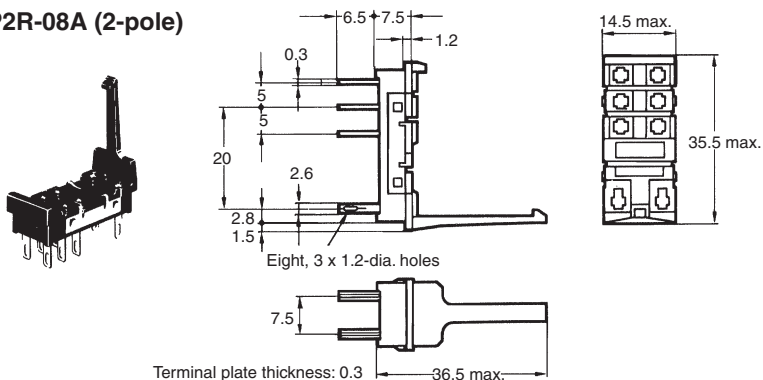
Terminal Arrangement (Bottom View)



Panel Cutout (Bottom View)

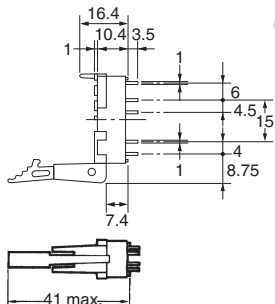
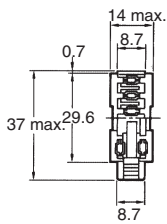
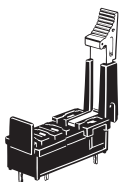


P2R-08A (2-pole)

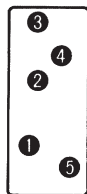


Recommended thickness of the panel is 1.6 to 2.0 mm

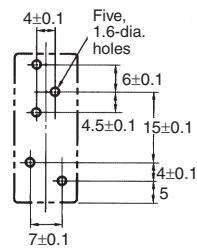
P2R-057P (1-pole)



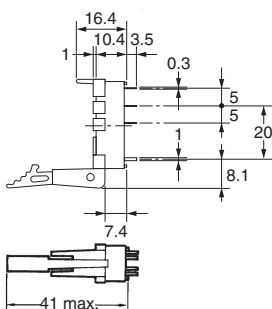
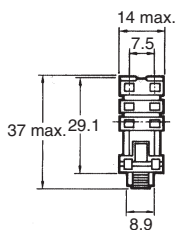
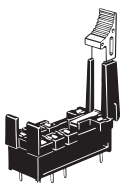
Terminal Arrangement (Bottom View)



Mounting Holes (Bottom View)



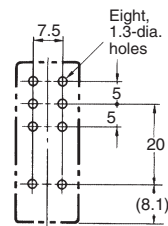
P2R-087P (2-pole)



Terminal Arrangement (Bottom View)

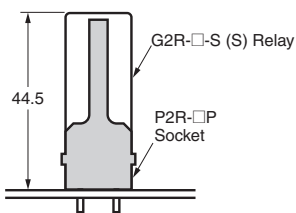


Mounting Holes (Bottom View)

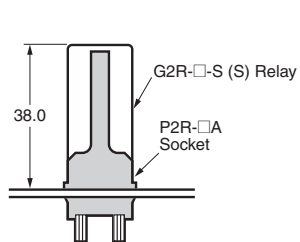


Mounting Height of Relay with Back-connecting Sockets

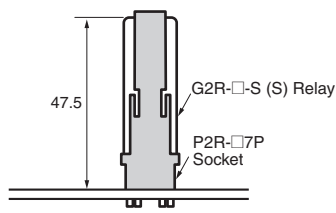
P2R-□P



P2R-□A

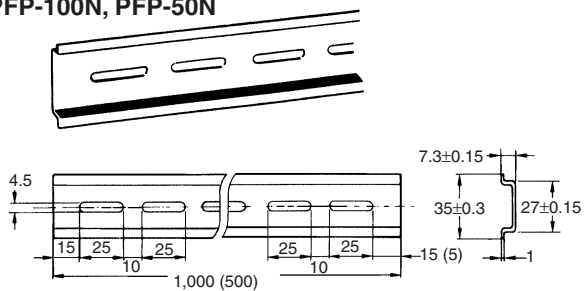


P2R-□7P

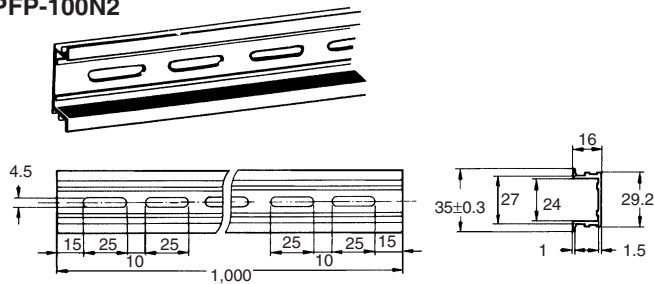


Mounting Tracks

PFP-100N, PFP-50N



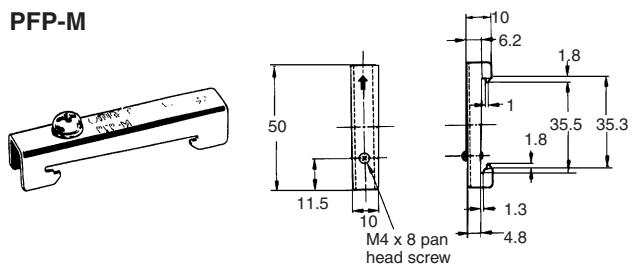
PFP-100N2



It is recommended to use a panel 1.6 to 2.0 mm thick.

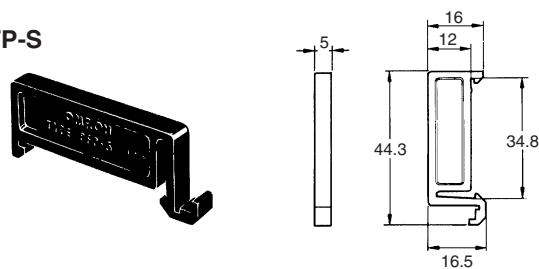
End Plate

PFP-M



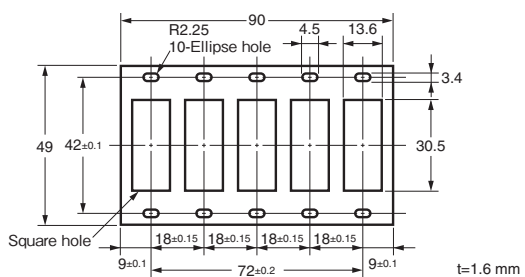
Spacer

PFP-S



Mounting Plate

P2R-P




Safety Precautions

Be sure to read the *Common Precautions for All Relay* in the website at the following URL:
<http://www.ia.omron.com/>.

Refer to *Products Related to Common Sockets and DIN Tracks* for precautions on the applicable Sockets.
 Refer to *PYF-□□-PU/P2RF-□□-PU* for precautions on Push-In Plus Terminal Block Sockets.

Warning Indications

 CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.
Precautions for Correct Use	Supplementary comments on what to do or avoid doing to prevent failure to operate, malfunction, or undesirable effects on product performance.

Cation

- Do not use the test button for any purpose other than testing. Be sure not to touch the test button accidentally as this will turn the contacts ON. Before using the test button, confirm that circuits, the load, and any other connected item will operate safely.
- Check that the test button is released before turning ON relay circuits.
- If the test button is pulled out too forcefully, it may bypass the momentary testing position and go straight into the locked position.
- Use an insulated tool when you operate the test button.

Precautions for Correct Use

About the Built-in Diodes

The diodes that are built into the Relays are designed to absorb reverse voltage from the Relay's coil. If a large surge in voltage is applied to the diode from an external source, the element will be destroyed.

If there is the possibility of large voltage surges that could be applied to the elements from an external source, take any necessary surge absorption measures.

Latching Levers

- Turn OFF the power supply when operating the latching lever. After you use the latching lever always return it to its original state.
- Do not use the latching lever as a switch.
- The latching lever can be used for 100 operations minimum.

Relay Replacement

To replace the Relay, turn OFF the power supply to the load and Relay coil sides to prevent unintended operation and possible electrical shock.

Coil tape color

Pink tape is used for the AC coil type and blue tape is used for the DC coil type, making it easy to distinguish AC and DC.

Screw terminal socket

- Use the following tightening torque for screws during wiring.

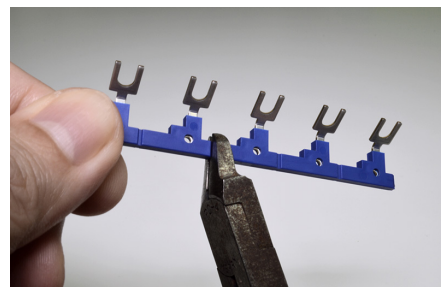
Model	Tightening torque
P2RFZ-05-E P2RFZ-08-E P2RF-05-E P2RF-08-E	0.59 to 0.88 N·m *Use a No. 1 screwdriver.

- Use the following wire diameters as a guide for wiring. (Select the appropriate wire diameter for the current used.)

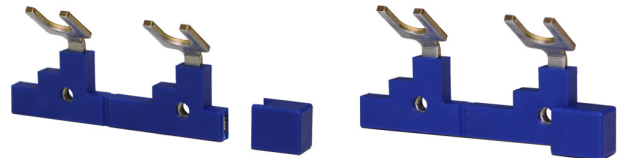
Model	Recommended wire diameter (mm ²)	
P2RFZ-05-E P2RFZ-08-E P2RF-05-E P2RF-08-E	Stranded wire	0.75 to 2.5 mm ² AWG 18 to 14
	Solid wire	0.75 to 1.5 mm ² AWG 18 to 16

Using a short-circuit bar

- Use the short-circuit bar that is suitable for the socket you are using and the location of use.
- Note that the P2DN short-circuit bar for the P2RFZ-E Socket has both a short-circuit bar for shorting coil terminals and a short-circuit bar for shorting contact COM terminals.
- The short-circuit bar can be cut to match any number of poles. Cut with a tool as appropriate for the number of relays and sockets. When using a cut short-circuit bar, take care to avoid injuring yourself on the cut surface.
- When cutting with a tool, insert the tool from the plastic part and cut along the slot in the plastic part between terminals. If you cut a part other than the slot in the plastic part between terminals, it may not be possible to attach the insulating cap.



- When using a cut short-circuit bar (P2DN), always use the provided cap to protect the charger part.



- Use the short-circuit bar to short-circuit two or more coil terminals, or two or more contact COM terminals.
- Do not use a deformed short-circuit bar. Risk of failure, malfunctioning, or deterioration of characteristics.
- In socket terminals, insert the short-circuit bar in the correct orientation all the way into all terminals, and then secure with screws.
- Install the short-circuit bar before wiring.

Common connection method when using a short bar

- When connecting the P2RF-□□-PU input common, insert the short bar into only the A1 or A2 side.

Equivalent Labels from Other Companies and Recommended Label Printers

Use the following label printer.

The following table gives the manufacturer's model number as of March 2017.

Manufacturer	Omron	Phoenix Contact	Weidmuller	Cembre
Label	XW5Z-P4.0LB1	UCT-TM6	MF 10/6	MG-CPM-04 41391
	XW5Z-P2.5LB2	UCT-TMF5	---	---
Label printer	--- *	BLUEMARK CLED, THERMOMA RK CARD SET PLUS, THERMOMA RK CARD	PrintJet ADVANCED, Plotter MCP Plus, Plotter MCP Basic	Markingenius MG3

* When using a printing tool, use a Phoenix Contact label printer.

Note: Ask the label manufacturer or printer manufacturer for details.

Terms and Conditions Agreement

Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses 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. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

Limitation on Liability: Etc.

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

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

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

Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

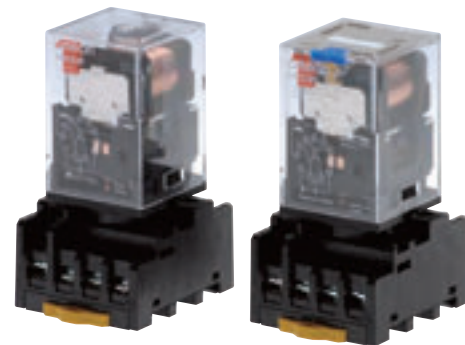
Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

New Super MK Relays. Models with Latching Lever Added to the Series.



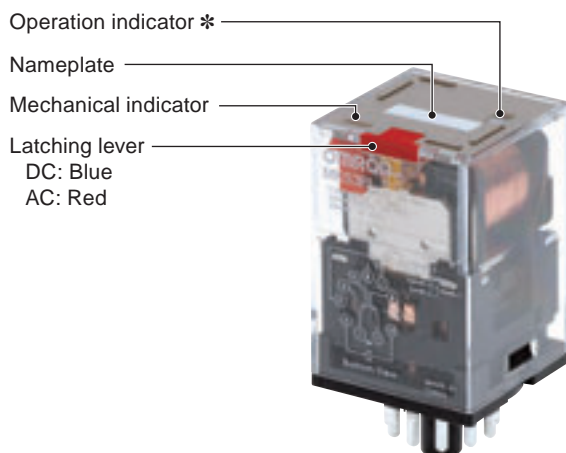
- Same mounting and internal wiring as the previous Super MK Relays
- Built-in mechanical indicator enables checking contact operation.
- Two modes can be used to check circuits for models with latching lever.
- Nameplate provided on models with latching lever.
- All materials are RoHS compliant.
- UL and IEC (TÜV) certification.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Features

Models with Latching Lever

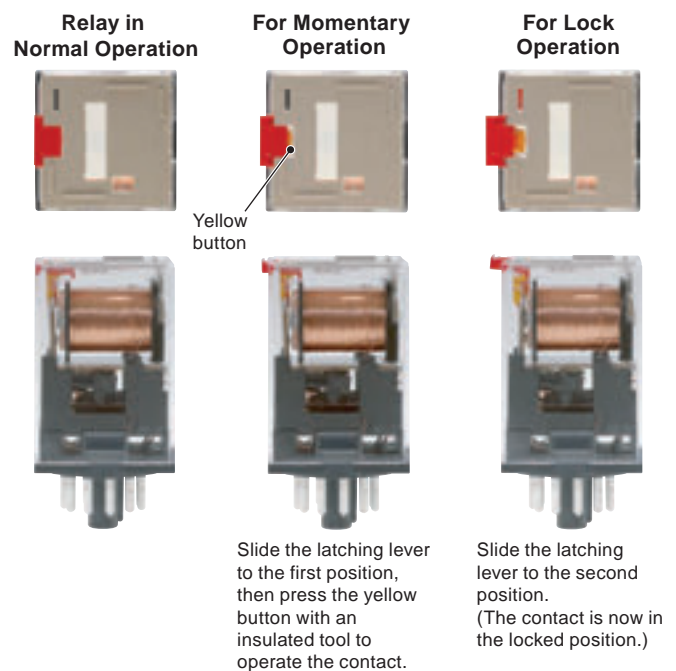


* The operation indicator is built in only on specified models.

Example of Applications of Models with Latching Levers

Operation checks in relay sequence circuits

Operating Method for Latching Lever



Model Number Structure

Model Number Legend

MKS□□□□□-□-□
1 2 3 4 5 6 7

1. Contact Form

- 2: DPDT
- 3: 3PDT

2. Terminals

P: Plug-in

3. Mechanical Indicator/Test Button

- Blank: Mechanical indicator
- I: Mechanical indicator and lockable test button

4. LED Indicator

- Blank: Standard
- N: LED indicator

5. Coil Polarity

- Blank: Standard
- 1: Reverse polarity (DC coil only)

6. Surge Absorption

- Blank: Standard
- D: Surge absorber diode (DC coil only)
- V: Surge absorber varistor (AC coil only)

7. Internal Connections

- Blank: Standard
- 2 or 5: Non-standard connections (Refer to "Terminal Arrangement and Internal Connection (Bottom View)".)

8. Rated Voltage

(Refer to "Coil Ratings".)

Ordering Information

When your order, specify the rated voltage.

List of Models

Type	Terminals	Contact form	Internal connections (See note 3.)	With mechanical indicator	With mechanical indicator and lockable test button	Coil ratings
Standard Models	Plug-in	DPDT	Standard	MKS2P	MKS2PI	AC/DC
			Non-standard	MKS2P-2	MKS2PI-2	
		3PDT	Standard	MKS3P	MKS3PI	
			Non-Standard	MKS3P-2 MKS3P-5	MKS3PI-2 MKS3PI-5	
Models with LED Indicator (See note 2.)		DPDT	Standard	MKS2PN(1)	MKS2PIN(1)	AC/DC
			Non-standard	MKS2PN(1)-2	MKS2PIN(1)-2	
		3PDT	Standard	MKS3PN(1)	MKS3PIN(1)	
			Non-Standard	MKS3PN(1)-2 MKS3PN(1)-5	MKS3PIN(1)-2 MKS3PIN(1)-5	
Models with Diode (See note 2.)	DPDT	Standard	MKS2P(1)-D	MKS2PI(1)-D	DC	
		Non-standard	MKS2P(1)-D-2	MKS2PI(1)-D-2		
	3PDT	Standard	MKS3P(1)-D	MKS3PI(1)-D		
		Non-Standard	MKS3P(1)-D-2 MKS3P(1)-D-5	MKS3PI(1)-D-2 MKS3PI(1)-D-5		
Models with LED Indicator and Diode	DPDT	Standard	MKS2PN-D	MKS2PIN-D	DC	
		Non-standard	MKS2PN-D-2	MKS2PIN-D-2		
	3PDT	Standard	MKS3PN-D	MKS3PIN-D		
		Non-Standard	MKS3PN-D-2 MKS3PN-D-5	MKS3PIN-D-2 MKS3PIN-D-5		
Models with Varistor	DPDT	Standard	MKS2P-V	MKS2PI-V	AC	
		Non-standard	MKS2P-V-2	MKS2PI-V-2		
	3PDT	Standard	MKS3P-V	MKS3PI-V		
		Non-Standard	MKS3P-V-2 MKS3P-V-5	MKS3PI-V-2 MKS3PI-V-5		
Models with LED Indicator and Varistor	DPDT	Standard	MKS2PN-V	MKS2PIN-V	AC	
		Non-standard	MKS2PN-V-2	MKS2PIN-V-2		
	3PDT	Standard	MKS3PN-V	MKS3PIN-V		
		Non-Standard	MKS3PN-V-2 MKS3PN-V-5	MKS3PIN-V-2 MKS3PIN-V-5		

Note: 1. When ordering, add the rated voltage to the model number. Rated voltages are given in the coil ratings table in the specifications.

Example: MKS3P 24 VDC

Rated voltage

2. The DC coil comes in two types: standard coil polarity and reverse coil polarity.

Refer to *Terminal Arrangement and Internal Connections (Bottom View)*.

Example: MKS2PIN1-2 24 VDC

Reverse coil polarity

3. Refer to *Terminal Arrangement and Internal Connections (Bottom View)* for non-standard internal connections.

List of Models (Order Separately)

Item	Type	Model
Track-mounted Socket	8-pin	PF083A-E
	11-pin	PF113A-E
	8-pin	PF083A-D
	11-pin	PF113A-D
Hold-down Clip (For PF083A-E and PF113A-E)		PFC-A1

Specifications

Ratings

Coil Ratings

Rated voltage	Rated current		Coil resistance	Must operate voltage	Must release voltage	Max. voltage	Power consumption
	50 Hz	60 Hz					
AC	6 V	443 mA	385 mA	3.1 Ω	80% max. of rated voltage	110% of rated voltage	Approx. 2.3 VA at 60 Hz Approx. 2.7 VA at 50 Hz
	12 V	221 mA	193 mA	13.7 Ω			
	24 V	110 mA	96.3 mA	48.4 Ω			
	100 V	26.6 mA	23.1 mA	760 Ω			
	110 V	24.2 mA	21.0 mA	932 Ω			
	200 V	13.3 mA	11.6 mA	3,160 Ω			
	220 V	12.1 mA	10.5 mA	3,550 Ω			
	230 V	10.0 mA	11.5 mA	4,250 Ω			
DC	6 V	224 mA		26.7 Ω	15% min. of rated voltage	Approx. 1.4 W	
	12 V	112 mA		107 Ω			
	24 V	55.8 mA		430 Ω			
	48 V	28.1 mA		1,710 Ω			
	100 V	13.5 mA		7,390 Ω			
	110 V	12.3 mA		8,960 Ω			
	125 V	10.8 mA		11,576 Ω			

- 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. Performance characteristic data are measured at a coil temperature of 23°C.
 3. The maximum voltage is one that is applicable instantaneously to the Relay coil at 23°C and not continuously.
 4. For DC-operated Relays with the LED indicator built-in, add an LED current of approx. 5 mA to the rated current.

Contact Ratings


Load		Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$)
Contact mechanism		Single	
Contact material		AgSnIn	
Rated load	NO	10 A, 250 VAC 10A, 30 VDC	7 A, 250 VAC
	NC	5 A, 250 VAC 5 A, 30 VDC	
Rated carry current		10 A	
Max. switching voltage		250 VAC, 250 VDC	
Max. switching current		10 A	
Max. switching power	NO	2,500 VAC 300 WDC	1,750 VAC
	NC	1,250 VAC 150 WDC	

Characteristics


Contact resistance	100 mΩ max.
Operate time	AC: 20 ms max. DC: 30 ms max.
Release time	20 ms max. (40 ms max. for built-in Diode Relays)
Max. operating frequency	Mechanical: 18,000 operations/h Electrical: 1,800 operations/h (under rated load)
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	2,500 VAC 50/60 Hz for 1 min between coil and contacts 1,000 VAC 50/60 Hz for 1 min between contacts of same polarity and terminals of the same polarity 2,500 VAC 50/60 Hz for 1 min between current-carrying parts, non-current-carrying parts, and opposite polarity
Insulation method	Basic insulation
Impulse withstand voltage	4.5 kV between coil and contacts (with 1.2 × 50 μs impulse wave) 3.0 kV between contacts of different polarity (with 1.2 × 50 μs impulse wave)
Pollution degree	3
Rated insulation voltage	250 V
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-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 ² (approx. 100 G) Malfunction: 100 m/s ² (approx. 10 G)
Endurance	Mechanical: 5,000,000 operations min. (at 18,000 operations/h under rated load) Electrical: 100,000 operations h. (at 1,800 operations/h under rated load)
Failure rate P level (reference value)	10 mA at 1 VDC
Ambient temperature	Operating: -40 to 60°C (with no icing or condensation)
Ambient humidity	Operating: 5% to 85%
Weight	Approx. 90 g

Note: 1. The values given above are initial values.
2. P level: $\lambda_{60} = 0.1 \times 10^{-6}$ /operation
3. Ambient temperature of models with LED indicator is -25 to 60°C.

Approved Standards

UL508 (File No. E41515) 

Coil ratings	Contact ratings	Operations
6 to 110 VDC 6 to 240 VAC	N.O. contact 10 A, 250 V AC 50/60 Hz (Resistive) 10 A, 30 V DC (Resistive) 7 A, 250 V AC 50/60 Hz (General Use)	100,000
	N.C. contact 10 A, 250 V AC 50/60 Hz (Resistive) 10 A, 30 V DC (Resistive) 7 A, 250 V AC 50/60 Hz (General Use)	100,000

CSA Standard: CSA C22.2 No. 14 (File No. LR35535) 

Coil ratings	Number of Poles	Contact ratings	Operations
6 to 125 VDC 6 to 240 VAC	2	10 A, 250 V AC (Resistive) 10 A, 30 V DC (Resistive) 7 A, 250 V AC (General Use)	100,000
	3	10 A, 250 V AC (Resistive) Same Polarity 10 A, 30 V DC (Resistive) Same Polarity 7 A, 250 V AC (General Use) Same Polarity	100,000

IEC Standard/TÜV Certification: IEC61810-1
(Certification No. R50104853) 

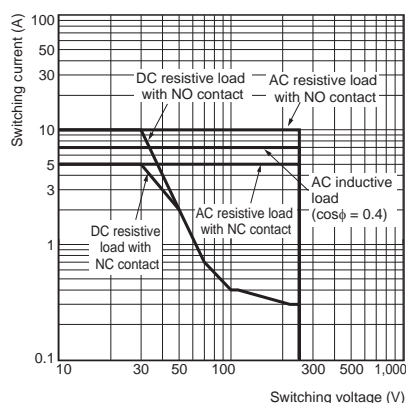
Coil ratings	Contact ratings	Operations
6, 12, 24, 48, 100, 110 VDC 6, 12, 24, 100, 110, 200, 220, 240 VAC	N.O. contact 10 A, 250 V AC 50/60 Hz (Resistive) 10 A, 30 V DC (Resistive) 7 A, 250 V AC 50/60 Hz (General Use)	100,000
	N.C. contact 5 A, 250 V AC 50/60 Hz (Resistive) 5 A, 30 V DC (Resistive) 7 A, 250 V AC 50/60 Hz (General Use)	100,000

Note: When Relays are mounted on the PF083A-E or PF113A-E, the maximum carrying current is 9 A.

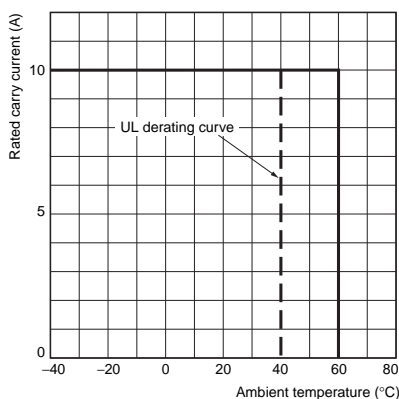
Engineering Data

Reference Data

Maximum Switching Power



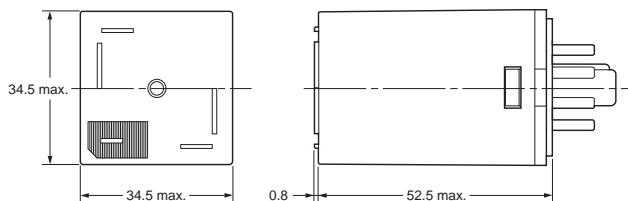
Rated Carry Current vs. Ambient Rated Temperature



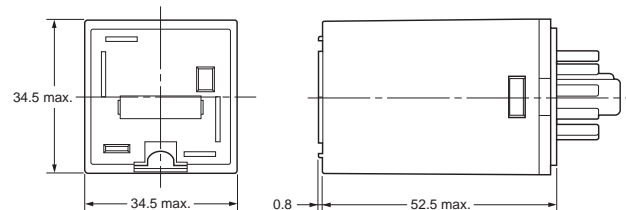
Note: The lower limit of the ambient operating temperature for models with built-in operation indicators is -25°C.

Dimensions

Models without Latching Lever









Models with Latching Lever



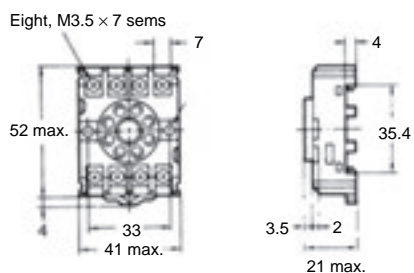
Sockets

See below for Socket dimensions.

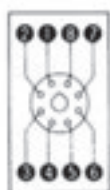
Socket	Surface-mounting Socket (for track or screw mounting)		
	Finger-protection models		---
Maximum carry current	10 A		5 A
2 poles	PF083A-E 	PF083A-D 	PF083A 
3 poles	PF113A-E 	PF113A-E-D 	PF113A 

Note: Use the Surface-mounting Sockets (i.e., finger-protection models) with “-E” at the end of the model number. When using the PF083A and PF113A, be sure not to exceed the Socket’s maximum carry current of 5 A. Using at a current exceeding 5 A may lead to burning. Round terminals cannot be used for finger-protection models. Use Y-shaped terminals.

PF083A-E (Conforming to EN 50022)

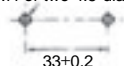


Terminal Arrangement

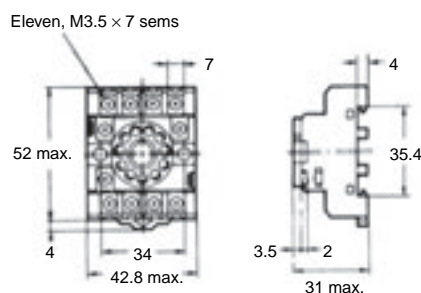


Mounting Holes

Two, M4 or two 4.5-dia. holes



PF113A-E (Conforming to EN 50022)

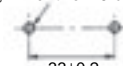


Terminal Arrangement

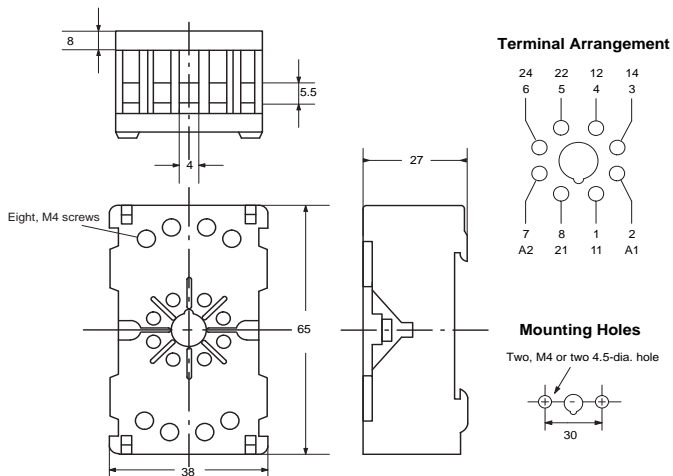


Mounting Holes

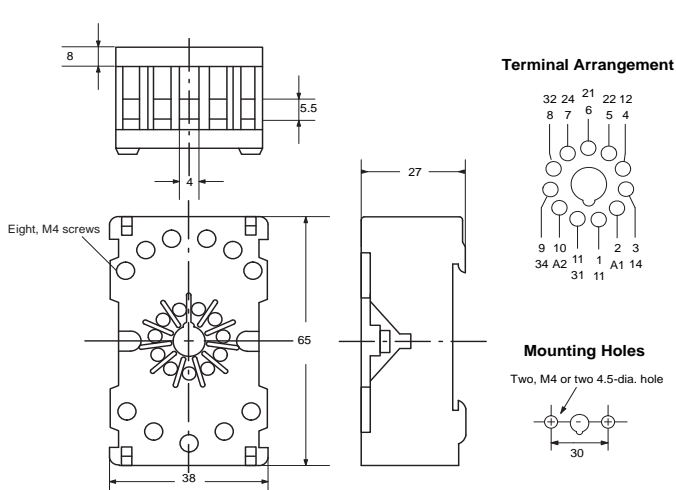
Two, M4 or two 4.5-dia. holes



PF083A-D



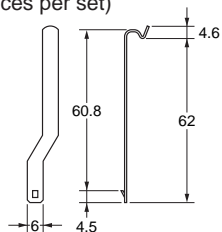
PF113A-D



Hold-down Clips

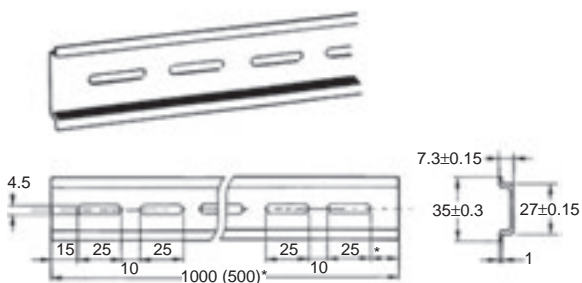
PFC-A1

(2 pieces per set)



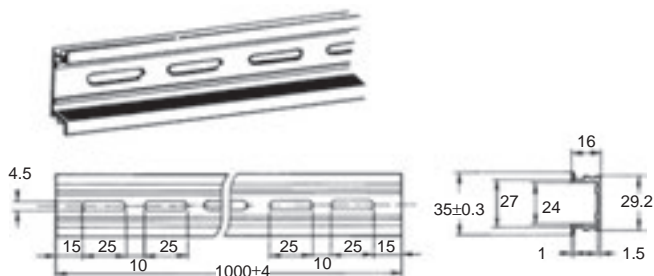
Mounting Tracks

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



* This dimension applies to the PFP-50N Mounting Track.

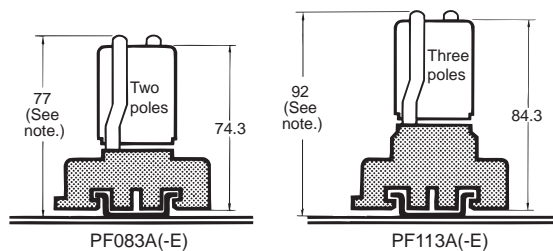
**PFP-100N2
(Conforming to EN 50022)**



* A total of twelve 25 × 4.5 elliptic holes is provided with six holes cut from each track end at a pitch of 10 mm.

Mounting Height with Sockets

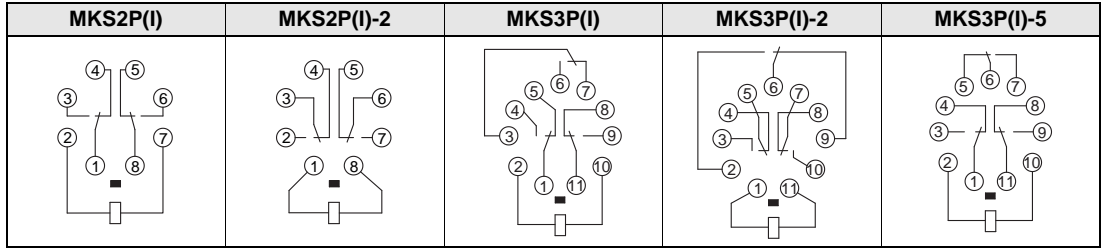
Surface-mounting Sockets



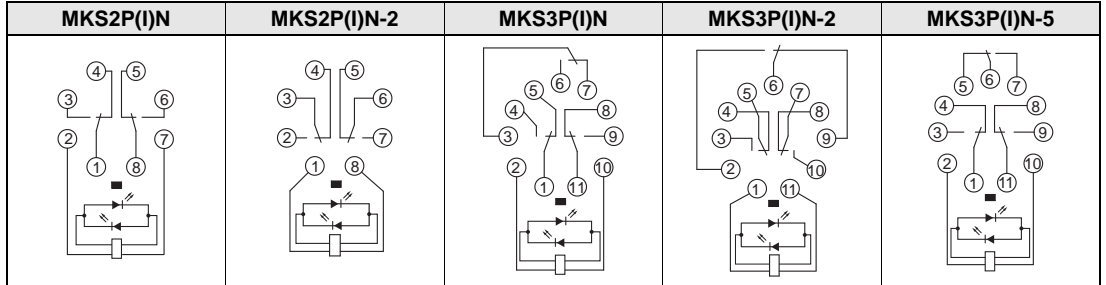
Note: PF083A(-E) and PF113A(-E) allow either track or screw mounting.

Terminal Arrangement and Internal Connection (Bottom View)

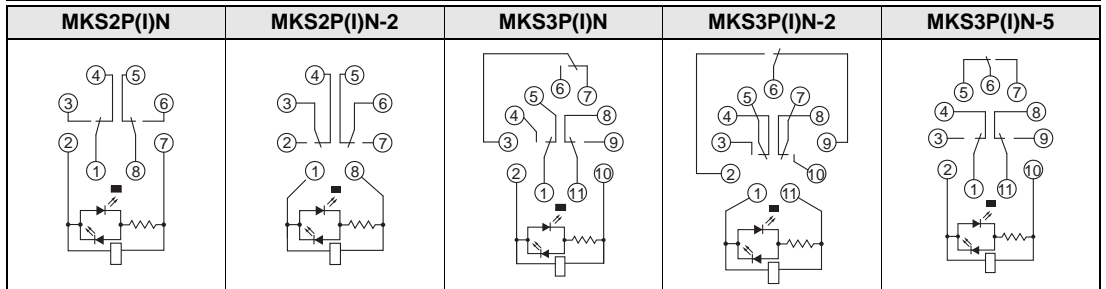
Standard Models
(AC/DC Coil)



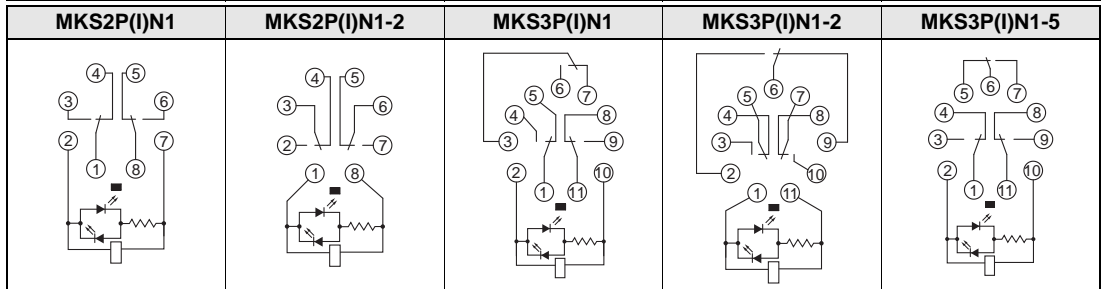
Models with
LED Indicator
(AC Coil)



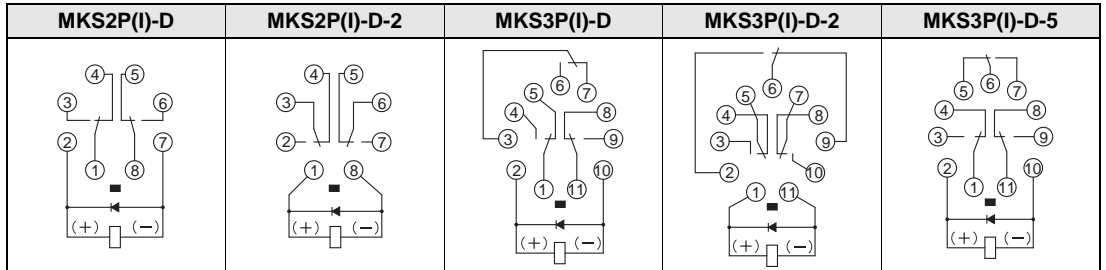
Models with Diode
(DC Coil:
Standard Polarity)



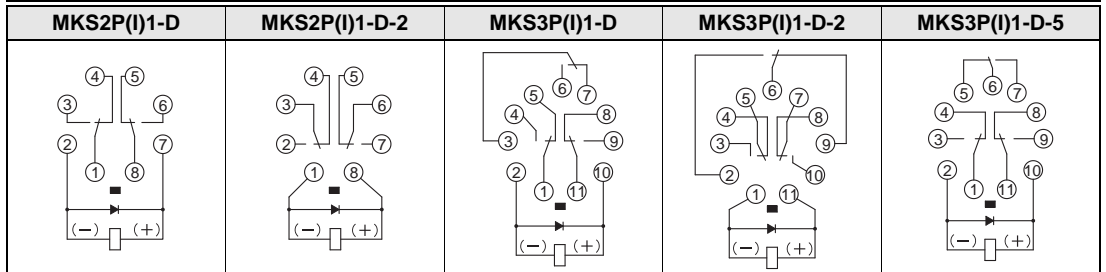
Models with
LED Indicator and Diode
(DC Coil:
Reverse Polarity)



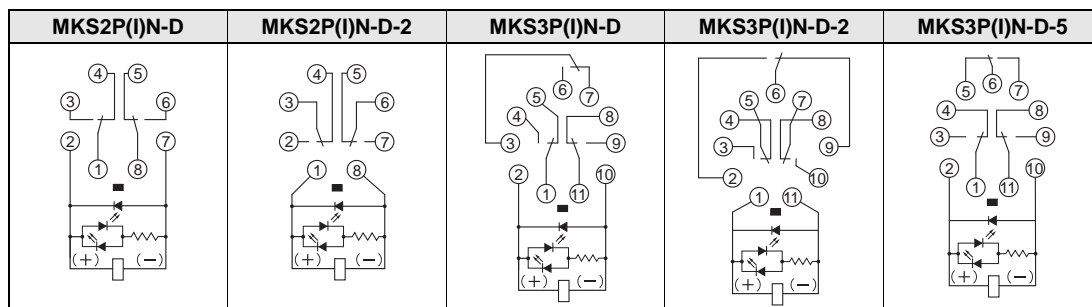
Standard Models
(DC Coil:
Standard Polarity)



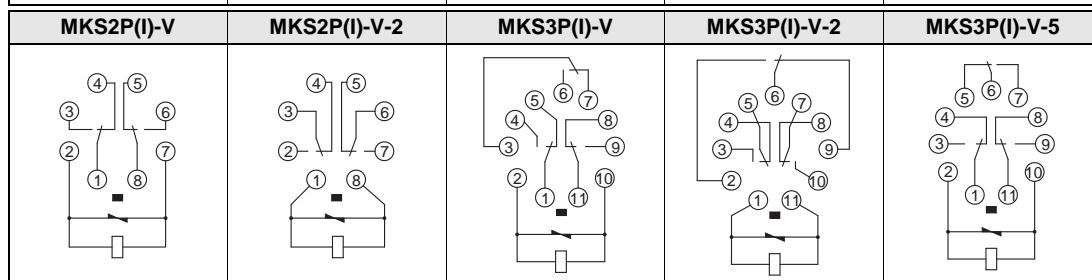
Models with Diode
(DC Coil:
Reverse Polarity)



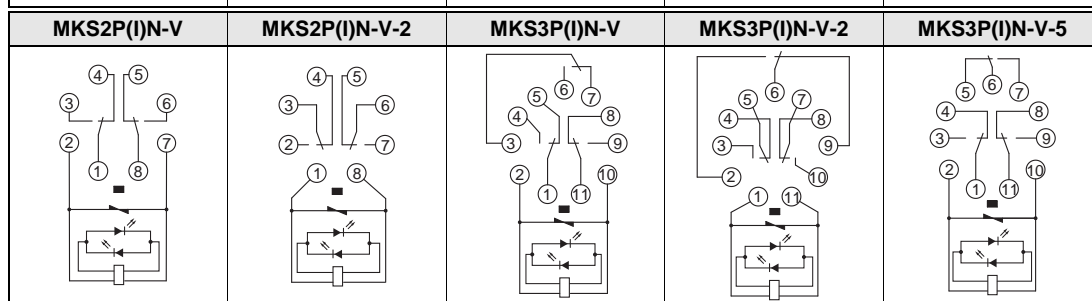
Models with LED indicator (DC Coil)



Models with Varistor (AC Coil)



Models with LED indicator and Varistor (AC Coil)



Safety Precautions

Refer to *Safety Precautions for All Relays*.

Safety Precautions for Correct Use

Installation

Mount the MK-S with the marking at the bottom.

Handling

Check the coil polarity of models with built-in operation indicator (DC operation coil) and wire them correctly .

Test Button

Do not use the test button for any purpose other than testing. Be sure not to touch the test button accidentally as this will turn the contacts ON.

Before using the test button, confirm that circuits, the load, and any other connected item will operate safely.

Check that the test button is released before turning ON relay circuits.

If the test button is pulled out too forcefully, it may bypass the momentary testing position and go straight into the locked position.

Use an insulated tool when you operate the test button.

Models with test buttons or LED indicators fulfill the requirements for reinforced insulation between live parts and the front of cover only when the Relay is in a complete condition, i.e. with the nameplate, nameplate frame, test button, and slider in place. If any of these parts are removed, only the requirements for basic insulation are fulfilled.

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

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