

# Miniature Power Relays MY(S)

## MY(S) Versatile plug-in Relay



- Reduces wiring work by 60% when combined with the PYF-PU Push-In Plus Socket (according to actual OMRON measurements).
- 10 A (DPDT) and 5 A (4PDT)
- Gold-clad contacts (MY4(S))
- Test button (lockable)
- Wide portfolio includes hermetically sealed and latching types
- 2.6 mm wide pins offer higher conductivity and less temperature increase



The compliant standards depend on the model.  
For details, refer to information provided for individual models.

Refer to the Common Relay Precautions and Safety Precautions on page 34.

## Model Number Structure

Coil Polarity (DC case) *	Type	Contact form	Plug-In socket/solder terminals			Flange mounting	
			With LED indicator	With LED Indicator and Lockable test button	Without LED Indicator		
	Standard model	DPDT	MY2N(S)	MY2IN(S)	MY2(S)	MY2F	
		DPDT (Bifurcated)	MY2ZN	---	---	---	
		4PDT	MY4N(S)	MY4IN(S)	MY4(S)	MY4F	
		4PDT (Bifurcated)	MY4ZN(S)	MY4ZIN(S)	MY4Z(S)	MY4ZF	
	With Built-in diode (DC only)		DPDT	MY2N-D2(S)	MY2IN-D2(S)	---	---
			DPDT (Bifurcated)	MY2ZN-D2	---	---	---
			4PDT	MY4N-D2(S)	MY4IN-D2(S)	---	---
			4PDT (Bifurcated)	MY4ZN-D2(S)	MY4ZIN-D2(S)	---	---
	With Built-in CR (AC only)		DPDT	MY2N-CR(S)	MY2IN-CR(S)	---	---
			4PDT	MY4N-CR(S)	MY4IN-CR(S)	---	---
			4PDT (Bifurcated)	MY4ZN-CR(S)	MY4ZIN-CR(S)	---	---
	High reliability contacts	4PDT (Crossbar Bifurcated)	---	---	MY4Z-CBG	---	
	Plastic Sealed	4PDT	MYQ4N	---	---	---	
		4PDT (Bifurcated)	---	---	MYQ4Z	---	
Latching (coil latching)	DPDT	---	---	MY2K-US	---		
Hermetic	4PDT	---	---	MY4H	---		
	4PDT (Bifurcated)	---	---	MY4ZH	---		
	Standard model	DPDT	MY2N1(S)	MY2IN1(S)	---	---	
		4PDT	MY4N1(S)	MY4IN1(S)	---	---	
		4PDT (Bifurcated)	MY4ZN1(S)	MY4ZIN1(S)	---	---	
	With Built-in diode (DC only)		DPDT	MY2N1-D2(S)	MY2IN1-D2(S)	---	---
			4PDT	MY4N1-D2(S)	MY4IN1-D2(S)	---	---
			4PDT (Bifurcated)	MY4ZN1-D2(S)	MY4ZIN1-D2(S)	---	---

\* In case of AC coil type relay, please select them from "Type 1" of Coil Polarity.

Refer to *Connection Socket and Mounting Bracket Selection Table* on page 25 in *Options* for information on the possible combinations of Models with Plug-in Terminals and Sockets.

# MY(S)

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## Specifications

### Coil Ratings

#### MY(S)

Rated voltage	Rated current		Coil resistance	Coil inductance (reference value)		Must operate voltage	Must release voltage	Max. voltage	Power consumption (approx.)
	50 Hz	60 Hz		Arm. OFF	Arm. ON				
AC	6 V	214.1 mA	183 mA	12.2 Ω	0.04 H	80% max.	30% min.	110%	Approx. 0.9 to 1.3 VA (60 Hz)
	12 V	106.5 mA	91 mA	46 Ω	0.17 H				
	24 V	53.8 mA	46 mA	180 Ω	0.69 H				
	48/50 V	24.7/25.7 mA	21.1/22.0 mA	788 Ω	3.22 H				
	110/120 V	9.9/10.8 mA	8.4/9.2 mA	4,430 Ω	19.20 H				
	220/240 V	4.8/5.3 mA	4.2/4.6 mA	18,790 Ω	83.50 H				
DC	6 V	151 mA		39.8 Ω	0.17 H	10% min.			0.9 W
	12 V	75 mA		160 Ω	0.73 H				
	24 V	37.7 mA		636 Ω	3.20 H				
	48 V	18.8 mA		2,560 Ω	10.60 H				
	100/110 V	9.0/9.9 mA		11,100 Ω	45.60 H				

- Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C with tolerances of +15%/–20% for rated currents and ±15% for DC coil resistance.  
 2. Performance characteristic data are measured at a coil temperature of 23°C.  
 3. AC coil resistance and impedance are provided as reference values (at 60 Hz).  
 4. Power consumption drop was measured for the above data. When driving transistors, check leakage current and connect a bleeder resistor if required.

#### MY2ZN, MY□F, MY4(Z)H

Rated voltage (V)	Item	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	60 Hz		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. 0.9 to 1.3 VA (60 Hz)
	24	53.8	46	180	0.69	1.3				
	100/110	11.7/12.9	10/11	3,750	14.54	24.6				
	110/120	9.9/10.8	8.4/9.2	4,430	19.2	32.1				
	200/220	6.2/6.8	5.3/5.8	12,950	54.75	94.07				
	220/240	4.8/5.3	4.2/4.6	18,790	83.5	136.4				
DC	12	75		160	0.73	1.37	10% min.*2			Approx. 0.9
	24	36.9		650	3.2	5.72				
	48	18.5		2,600	10.6	21.0				
	100/110	9.1/10		11,000	45.6	86.2				

- 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

\*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.

**Note:** Refer to page 19 for the coil specifications of the MY2K.

# Miniature Power Relays: MY2(S)/MY4(S)/MY4Z(S)



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

## Specifications

### Contact Ratings

Item	DPDT		4PDT		4PDT (bifurcated)	
	Resistive load (cos φ = 1)	Inductive load (cos φ = 0.4, L/R = 7 ms)	Resistive load (cos φ = 1)	Inductive load (cos φ = 0.4, L/R = 7 ms)	Resistive load (cos φ = 1)	Inductive load (cos φ = 0.4, L/R = 7 ms)
Rated load	5A, 250 VAC 5A, 30 VDC	2A, 250 VAC 2A, 30 VDC	3 A, 250 VAC 3 A, 30 VDC	0.8 A, 250 VAC 1.5 A, 30 VDC	3 A, 250 VAC 3 A, 30 VDC	0.8 A, 250 VAC 1.5 A, 30 VDC
Carry current	10 A (see note)		5 A (see note)			
Max. switching voltage	250 VAC 125 VDC					
Max. switching current	10 A		5 A			
Contact materials	Ag		Au cladding + Ag alloy			
Failure rate (reference value)	5 VDC, 1 mA		1 VDC, 1 mA		1 VDC, 100 μA	

Note: Don't exceed the carry current of a Socket in use. Please see page 23.

### Characteristics

Item	All Relays
Contact resistance	100 mΩ max. (50 mΩ: 4PDT bifurcated)
Operate time	20 ms max.
Release time	20 ms max.
Max. operating frequency	Mechanical:18,000 operations/hr Electrical:1,800 operations/hr (under rated load)
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	2,000 VAC, 50/60 Hz for 1.0 min (1,000 VAC between contacts of same polarity)
Vibration resistance	Destruction:10 to 55 to 10 Hz, 0.5 mm single amplitude (1.0 mm double amplitude) Malfunction:10 to 55 to 10 Hz, 0.5 mm single amplitude (1.0 mm double amplitude)
Shock resistance	Destruction:1,000 m/s <sup>2</sup> Malfunction:200 m/s <sup>2</sup>
Endurance	See the following table.
Ambient temperature	Operating: -55 to 70°C (with no icing)
Ambient humidity	Operating: 5 to 85% RH
Weight	Approx. 35 g

Note: The values given above are initial values.

### Endurance Characteristics

Contact form	Mechanical life (at 18,000 operations/hr)	Electrical life (at 1,800 operations/hr under rated load)
DPDT	AC:50,000,000 operations min. DC:100,000,000 operations min.	500,000 operations min.
4PDT		200,000 operations min.
4PDT (bifurcated)	20,000,000 operations min.	100,000 operations min.

# Miniature Power Relays: MY2ZN



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

## Specifications

### Contact Ratings

Item	Load	Resistive load	Inductive load (cos φ = 0.4, L/R = 7 ms)
Rated load		5 A at 220 VAC 5 A at 24 VDC	2 A at 220 VAC 2 A at 24 VDC
Rated carry current		5 A	
Maximum contact voltage		250 VAC, 125 VDC	
Maximum contact current		5 A	
Contact form		DPDT (Bifurcated)	
Contact materials		Au plating + Ag	

Item	Type	Standard models	Model with built-in operation indicator, diode, or CR circuit
Ambient operating temperature*1		-55 to 70° C	-55 to 60° C*2
Ambient operating humidity		5% to 85%	

\*1. With no icing or condensation.  
\*2. This limitation is due to the diode junction temperature and elements used.

### Characteristics

Item	MY2ZN series	
Contact resistance*1	50 mΩ max.	
Operation time*2	20 ms max.	
Release time*2	20 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	
	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)
	Malfunition	10 to 55 to 10 Hz, 0.5-mm single amplitude (1.0-mm double amplitude)
Shock resistance	Destruction	1,000 m/s <sup>2</sup>
	Malfunition	200 m/s <sup>2</sup>
Endurance	Mechanical	50,000,000 operations min. (operating frequency: 18,000 operations/h)
	Electrical*4	200,000 operations min. (rated load, switching frequency: 1,800 operations/h)

Item	MY2ZN
Failure rate P value (reference value)*5	100 μA at 1 VDC
Weight	Approx. 35 g

**Note:** These are initial values.  
\*1. Measurement conditions: 1 A at 5 VDC using the voltage drop method.  
\*2. Measurement conditions: With rated operating power applied. 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.