OMRON_® **General Purpose Relay**

- Designed small, 2- and 3-pole types break 5 A loads and 4-pole type, 3 A load
- High reliability, long life
- Ultra-high sensitivity with quick response
- High vibration/shock resistance
- 3- and 4-pole types have an arc barrier
- UL and CSA approved
- Withstands dielectric strength of 2,000 V
- Relays with high-capacity, LED indicator, diode surge suppression, push-to-test button, or RC circuit are available
- Changes due to aging are negligible because of use of special magnetic materials, thus ensuring long continuous holding time
- Little change in characteristics such as contact follow, contact pressure, etc., throughout long life

Ordering Information.

To Order: Select the part number and add the desired coil voltage rating (e.g., MY4-DC6).

				Part number							
				Single cont	tact		Bifurcated contact				
Туре	Terminal	Contact form	Construction	Standard bracket mounting	Upper mounting bracket	Lower mounting bracket	Standard bracket mounting	Upper mounting bracket	Lower mounting bracket		
Standard	Plug-in/solder	DPDT	Unsealed	MY2	MY2F	MY2S	MY2Z	MY2ZF	MY2ZS		
		3PDT		MY3	MY3F	MY3S		_	-		
-		4PDT		MY4	MY4F	MY4S	MY4Z	MY4ZF	MY4ZS		
	РСВ	DPDT		MY2-02	_	—	MY2Z-02	_	_		
		3PDT		MY3-02	_	—	_	_	_		
		4PDT		MY4-02		—	MY2Z-02	_			
	Plug-in/solder 4PDT Se	Sealed	MYQ4		—	MYQ4Z	_	-			
	PCB	4PDT		MYQ4-02	_	—	MYQ4Z-02	_	_		
	Plug-in/solder 4PDT Hermetic	Hermetically	MY4H	_	_	MY4ZH	_	_			
	РСВ	4PDT	Sealed	MY4H-0	-	_	MY4ZH-0	_	_		

Note: 1. For SEV approved type, order the following: MY4-SV-DC6. (Lloyd's Register approval. See "Approvals" section.) 2. To order connecting sockets and mounting tracks, see "Accessories" section.

3. AgCdO contacts are also available (MY2E, MY3E, MY4E). Contact your OMRON sales representative for details.

MY







= MY

Ordering information (continued)

				Part numb	er				
				Single con	tact		Bifurcated of	contact	
Туре	Terminal	Contact	Construction	Standard bracket mounting	Upper mounting bracket	Lower mounting bracket	Standard bracket mounting	Upper mounting bracket	Lower mounting bracket
LED indicator	Plug-in/solder	DPDT		MY2N	_	_	MY2ZN	_	_
		3PDT		MY3N	_	_	_	_	_
		4PDT		MY4N	_	_	MY4ZN	_	—
High-capacity		DPDT	w/o LED indicator	MY2-Y	—	—	_	_	—
			LED indicator	MY2N-Y	_	—	_	_	—
Diode surge		DPDT		MY2-D	—	—	MY2Z-D	—	—
suppression*		3PDT		MY3-D	—	—	—	—	—
		4PDT		MY4-D	—	—	MY4Z-D	—	—
LED indicator		DPDT		MY2N-D2	—	—	MY2ZN-D2	—	—
and diode surge		3PDT		MY3N-D2	—	—	—	—	—
suppression*		4PDT		MY4N-D2	—	—	MY4ZN-D2	—	—
RC circuit**		DPDT	w/o LED	MY2-CR	—	—	MY2Z-CR	—	—
		3PDT	indicator	MY3-CR	—	—	—	—	—
		4PDT		MY4-CR	—	—	MY4Z-CR	—	—
		DPDT	LED indicator	MY2N-CR	—	—	—	—	—
		4PDT		MY4N-CR	—	—	—	—	—
Push-to-test		DPDT		MY214	—	—	MY2Z12	_	—
button		4PDT		MY414		—	MY4Z12		—
LED indicator		DPDT		MY214N		—	MY2Z12N		—
and RC circuit		4PDT		MY414N	—	_	MY4Z12N	_	—

Туре	Terminal	Contact form	Part number
Latching	Plug-in	DPDT	MY2K-US
	PC board		MY2K-02-US

Note: 1. For SEV approved type, order as the following: MY4-SV-DC6. (Lloyd's Register approval. See "Approvals" section.)

2. To order connecting sockets and mounting tracks, see "Accessories" section.

3. AgCdO contacts are also available. Contact your OMRON sales representative for details.

4. * DC coils only

** AC coils only

ACCESSORIES

Connecting Sockets

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

Available Types

Track mounted sockets

		Relay hold-down clip		
Relay	Socket*	Standard	RC circuit	Mounting track
DPDT	PYF08A-E	PYC-A1	Y92-H3	PFP-100N/PFP-50N &
3PDT	PYF11A	•		PFP-M or PFP-100N2
4PDT	PYF14A-E			PFP-S (Optional spacer)

* Track mounted socket can be used as a front connecting socket.

Back connecting sockets

	Solder terminal	Wire wrap terminal	Relay hold-	down clip			Socket Mounting Plate		
Relay	socket	socket	Standard	Push-to-test	RC circuit	Mtg. plate	1	18	36
DPDT	PY08	PY08QN	PYC-P	PYC-P2	PYC-1	PYC-S	PYP-1	PYP-18	PYP-36
3PDT	PY11	PY11QN							
4PDT	PY14	PY14QN]						

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

	PC terminal	Relay hold-down clip						
Relay	socket	Standard	Push-to-test	RC circuit				
DPDT	PY08-02	PYC-P	PYC-P2	PYC-1				
3PDT	PY11-02							
4PDT	PY14-02							

Specifications _____

■ CONTACT DATA

Non-latching - Unsealed

	DPDT, 3PDT		4DPT		High-capacity	
	Resistive load	Inductive load	Resistive load	Inductive load	Resistive load	Inductive load
	(p.f. = 1)	(p.f. = 0.4)	(p.f. = 1)	(p.f. = 0.4)	(p.f. = 1)	(p.f. = 0.4)
Load		(L/R = 7 ms)		(L/R = 7 ms)		(L/R = 7 ms)
Rated load	5 A at 220 VAC	2 A at 220 VAC	3 A at 220 VAC	0.8 A at 220 VAC	7 A 220 VAC	3.5 A 220 VAC
	5 A at 24 VDC	2 A at 24 VDC	3 A at 24 VDC	1.5 A at 24 VDC	7 A 24 VDC	3.5 A 24 VDC
Contact material	Ag		Ag (Au Flash)		AgCdO	
Carry current	5 A	3 A	1 A	3 A	7 A	
Max. operating	250 VAC					
voltage	125 VDC					
Max. operating	5 A		1 A	3 A	7 A	
current						
Max. switching	1,100 VA	440 VA	660 VA	176 VA	1,540 VA	770 VA
capacity	120 W	48 W	72 W	36 W	168 W	84 W
Min. permissible	Standard type: 1	mA, 5 VDC	Standard and hig	h sensitivity types:	100 μA, 1 VDC	
			1 mA, 1 VDC			
load (see note)	Bifurcated type: 1	00 μA, 1 VDC				

Non-latching - Sealed/Hermetically sealed

	Sealed, 4PDT		Hermetically sealed, 4DPT	
	Resistive load	Inductive load	Resistive load	Inductive load
	(p.f. = 1)	(p.f. = 0.4)	(p.f. = 1)	(p.f. = 0.4)
Load		(L/R = 7 ms)		(L/R = 7 ms)
Rated load	1 A at 220 VAC	0.5 A at 220 VAC	3 A at 110 VAC	0.8 A at 110 VAC
	1 A at 24 VDC	0.5 A at 24 VDC	3 A at 24 VDC	1.5 A at 24 VDC
Contact material	Ag (Au Flash)			
Carry current	1 A		3 A	
Max. operating	250 VAC		125 VAC	
voltage	125 VDC		125 VDC	
Max. operating	1 A		3 A	
current				
Max. switching	220 VA	110 VA	330 VA	88 VA
capacity	24 W	12 W	72 W	36 W
Min. permissible	Standard and high sensitivi	ty types: 1 mA, 1 VDC		
load (see note)	Bifurcated type: 100 µA, 1 V	/DC		

Note: P level: $^{\circ}$ 60 = 0.1 x 10⁻⁶/operation

COIL DATA

Non-latching – AC

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

Non-latching – DC

		Coil	Coil inductance (ref. value) (H)		Pick-up	Dropout	Maximum	Power
Rated		resistance	Armature	Armature	voltage	voltage	voltage	consumption
voltage (V)	Rated current (mA)	(Ω)	OFF	ON	(% of rated	voltage)		(VA, W)
6	150	40	0.17	0.33	80% max.	10% min.	110% max.	Approx.
12	75	160	0.73	1.37				0.90
24	36.90	650	3.20	5.72				
48	18.50	2,600	10.60	21.00				
100/110	9.10/10	11,000	45.60	86.20]			

Latching – AC

Rated	Rated	current (r	nA)				Dropout	Maximum	Power consumption	
voltage	Set coi		Reset coil	Coil resista	nce (Ω)	voltage	voltage	voltage	(VA, W)	•
(V)	50 Hz	60 Hz	50/60 Hz	Set coil	Reset coil	(% of rated	voltage)		Set coil	Reset coil
6	146	142	68	13	32	80% max.	80% max.	110% max.	Approx.	Approx.
12	57	56	39	72	130				0.60 to 0.90	0.20 to 0.50
24	27.40	26.40	18.60	320	550					
50	14	13.40	3.50	1,400	3,000					
120	15.80	5.60	3.50	8,300	3,000					

Latching – DC

Rated	Rated current (r	nA)			Pick-up	Dropout	Maximum	Power consu	umption
voltage	Set coil	Reset coil	Coil resista	nce (Ω)	voltage	voltage	voltage	(VA, W)	•
(V)	50/60 Hz	50/60 Hz	Set coil	Reset coil	(% of rated voltage)		Set coil	Reset coil	
6	230	100	26	60	80% max.	80% max.	110% max.	Approx.	Approx.
12	110	50	110	235				1.30	0.06
24	52	25	470	940					

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

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

3. The performance characteristics are measured at a coil temperature of 23°C (73°F).

4. Because the coil is designed for low power consumption, connect a bleeder (if necessary after confirming the leakage current), when the coil is driven by an SCR.

5. For AC type latching coils, the rated current values are half-wave rectified current values measured with a DC ammeter.

■ CHARACTERISTICS

Non-latching

Contact resistance		50 mΩ max.		
Operate time		20 ms max.		
Release time		20 ms max.		
Operating frequency	Mechanically	18,000 operations/hour		
	Under rated load	1,800 operations/hour		
Insulation resistance		100 MΩ min. (at 500 VDC)		
Dielectric strength	Single contact type	Unsealed: 2,000 VAC, 50/60 Hz for 1 minute 1,000 VAC, 50/60 Hz for 1 minute between contacts of same polarity Sealed: 1,500 VAC, 50/60 Hz for 1 minute		
		1,000 VAC, 50/60 Hz for 1 minute between contacts of same polarity		
		Hermetically sealed: 1,000 VAC, 50/60 Hz for 1 minute 700 VAC, 50/60 Hz for 1 minute between contacts of same polarity		
	Bifurcated contact type	1,500 VAC, 50/60 Hz for 1 minute 1,000 VAC, 50/60 Hz for 1 minute between non-continuous contacts		
Vibration	Mechanical durability	10 to 55 Hz, 1.00 mm (0.04 in) double amplitude		
	Malfunction durability	10 to 55 Hz, 1.00 mm (0.04 in) double amplitude		
Shock	Mechanical durability	1,000 m/s² (approx. 100 G)		
	Malfunction durability	200 m/s² (approx. 20 G)		
Ambient temperature	Operating	Unsealed: -55° to 70°C (-67° to 158°F) Sealed: -55° to 60°C (-67° to 140°F)		
		Hermetically sealed: 25° to 60°C (77° to 140°F)		
Humidity	L	35% to 85% RH		
Service Life	Mechanically	Single contact type: AC: 50 million operations min. (at operating frequency of 18,000 operations/hour) DC: 100 million operations min. (at operating frequency of 18,000 operations/hour)		
	Mechanically	Bifurcated contact type: AC: 50 million operations min. DC: 20 million operations min. (5 million operations for the sealed/hermetically sealed types) (at operating frequency of 1,800 operations/hour)		
	Electrically	See "Characteristic Data"		
Weight		Sealed/unsealed: Approx. 35 g (1.23 oz) Hermetically sealed: Approx. 50 g (1.76 oz)		

Latching

Contact resistance		50 mΩ max.	
Operate time		AC: 30 ms max.; DC: 15 ms max.	
Release time		AC: 30 ms max.; DC: 15 ms max.	
Operating frequency	Mechanically	18,000 operations/hour	
	Under rated load	1,800 operations/hour	
Insulation resistance		100 MΩ min. (at 500 VDC)	
Dielectric strength		1,500 VAC, 50/60 Hz for 1 minute	
		1,000 VAC, 50/60 Hz for 1 minute between contacts of same polarity, and between	
		set and reset coils	
Vibration Mechanical durability Malfunction durability		10 to 55 Hz, 1.00 mm (0.04 in) double amplitude	
		10 to 55 Hz, 1.00 mm (0.04 in) double amplitude	
Shock	Mechanical durability	1,000 m/s ² (approx. 100 G)	
	Malfunction durability	200 m/s² (approx. 20 G)	
Ambient temperature	Operating	-55° to 70°C (-67° to 158°F)	
Humidity		45% to 85% RH	
Service Life Mechanically		100 million operations min. (at operating frequency of 18,000 operations/hour)	
	Electrically	See "Characteristic Data"	
Weight		Approx. 30 g (1.06 oz)	

Note: Data shown are of initial value.

: MY

■ CHARACTERISTIC DATA







Service life (operations x 10⁶)

Service life (operations x 10⁶)

500

100

100

Electrical service life

110 ac 220 VAC resisti

resistive

2

Rated operating current (A)

MY2K(-02)-US (Resistive load)

15

(Inductive load)

220

0.5

Rated operating current (A)

(operations x 106)

Service life

500

100

100

c

Maximum switching capacity - Latching MY2K(-02)-US



Rated operating voltage (V)

Dimensions

Unit: mm (inch)

RELAYS



Note: The above dimensioned drawing shows the 4-pole type. The dimensions of the 2- and 3-pole types are identical to the 4-pole type.

ł

38.10 (1.50) max.

6.09 (.24)

3.55 14)

~ 22.60 (.89) max.

.50 (.02)

- 36.06 (1.42) max.

Unit: mm (inch)



MY□-5

Mounting holes











MY4, MYQ4(Z), MY4(Z)H, MY4H-0



Note: The above dimensioned drawing shows the 4-pole type. The dimensions of the 2- and 3-pole types are identical the 4-pole type.

MYQ4(Z)



MY2K-US



MYQ4(Z)-02







Mounting holes (Bottom view)



Unit: mm (inch)

■ ACCESSORIES

Track mounted sockets (UL File No. E87929) (CSA Report No. LR46088)



PYF14A-E

Terminal arrangement/ mounting holes (Top view)





Back connecting socket (UL File No. E87929) (CSA Report No. LR46088) – DPDT PY08 PY08QN



Back connecting socket (UL File No. E87929) (CSA Report No. LR46088) – 3PDT PY11 PY11QN



Note: 1. UL/CSA does not apply to wire wrap (Q) type sockets.2. Value in brackets is for MY□CR.

: MY

Unit: mm (inch)

ACCESSORIES (continued)

Back connecting socket (UL File No. E87929) (CSA Report No. LR46088) - 4PDT



Y92-HC

for RC circuit

Relay hold-down clip

PYC-P2

for test button self-contained type with PYDA socket

T 9.9





PFP-100N/PFP-50N mounting track



PFP-100N2 mounting track



This dimension is 14.99 mm (0.59	9 in) on both ends in the case	of PFP-100N, but on or	e end in the case of PFP-50N.

16.00 (.63)

1.52

29.21 (1.15)

1

1.01 (.04)

24.13 (.95) 26.92 35.05±.02 (1.06) (1.38±.01)

ŧ

** L = Length

*

PFP-50N	L = 497.84 mm (19.60 in)
PFP-100N	L = 990.60 mm (39.00 in
DED_100N/2	I = 990.60 mm (39.00 in)

- PFP-100N2L = 990.60 mm (39.00 in)
- *** A total of twelve 24.89 x 4.57 mm (0.98 x 0.18 in) elliptic holes are provided, with six holes cut from each end of the track at a pitch of 9.91 (0.39) between holes.

PFP-M end plate



PFP-S spacer



PYC-1 for RC circuit





13.2 (.52)

 $39.62 \pm .20$

.56±.008)

21.33±.20/-0

Unit: mm (inch)

ACCESSORIES (continued)

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

PYP-1

Square hole

PYP-18





	Number of s	socket specs.	
Socket needed	1	18	36
PY08, PY11, PY11QN, PY14, PY4QN	PYP-1	PYP-18	PYP-36

RELAY OPTIONS

LED Indicator

Specifications and dimensions same as the standard type with the following exception. Because an LED indicator is employed as the operation indicator, the rated current is approximately 3.8 mA higher in the DC types and 0.5 to 5 mA higher in the AC types than in the standard type.

Ambient operating temperature: -55° to 60°C (-67° to 140°F).

Green LED DC Red LED AC



491.99 (19.37)

 $1.08 = 18.34 \pm .012$

7(.07)R

431.8 x 27.43=465.83±.50

(.18)

PYP-36

27.43±.15 (1.08±.006)

21.59 (.85

72 elliptic holes

Terminal arrangement/Internal connections (Bottom view) MY4N

DC coil rating type







Terminal arrangement/

Internal connections (Bottom view)

- Note: 1. In MY2N and MY3N, only the contact circuit is different from the illustration below. The coil terminals 10 and 11 of MY3N become (-) and (+), respectively.
 - 2. Pay special attention to the polarities when using the DC type.
 - 3. The AC coil-type is provided with a self-diagnostic function that detects a breakage in the coil.

RC Circuit

Specifications and dimensions same as the standard type with the following exceptions.

The panel cutout dimensions are the same as those of the standard type. However, the height is higher by 17.02 mm (0.67 in).



- Note: 1. The above dimensioned drawing shows the 4-pole type. The dimensions of the 2- and 3-pole types are identical to the 4pole type.
 - 2. Available on AC versions only.
 - 3. Terminal arrangement/internal connections: MY2-Y is the same as the standard type; MY2N-Y is the same as the LED indicator type.

Characteristic Data



Push-to-test button

MY 12



With RC circuit



Mounting holes

When mounting the relay, use the connecting socket PYC-P2 shown in "ACCESSORIES" section. The mounting hole dimensions shown here are applicable to the relay with mounting stud.



Note: The dimension drawings show the 4-pole type. The dimensions of the 2- and 3-pole types are identical to the 4-pole type.

Diode Surge Suppression

Specifications and dimensions same as the standard type with the following exceptions.

Terminal arrangement/internal connections: MY2(N)-D(2) is the same as the MY4(N)-D(2) with the exception of the contact configuration.

Ambient operating temperature: -55° to 60°C (-67° to 140°F).

MY4-D 6, 12, 24, 48 100/110 VDC



MY4N-D2 6, 12, 24, 48 VDC

Terminal arrangement/Internal connections (Bottom view)



MY4N-D2

100/110 VDC

Note: 1. Pay special attention to the polarities when using the DC type.

- 2. The release time is somewhat longer, but satisfies the standard specifications of 25 ms.
- 3. The reverse-breakdown voltage of the diode is 1,000 VDC.

10 11 12

RESET

14

4. Available on DC versions only.

Connecting sockets

Use the standard MY4 (4PDT) sockets with the terminal arrangements listed below.

Terminal arrangement/Internal connections (Bottom view)
AC DC

13 SET



Note: 1. R is a resistor for ampere-turn compensation, and is incorporated in the relays rated at 50 VAC or above.

2. Pay attention to the polarity of the set and reset coils, as incorrect connection of positive and negative terminals will result in malfunctioning of the relay.

APPROVALS

UL recognized type (File No. E41515)

Туре	Contact form	Coil ratings	Contact ratings
MY□	DPDT	6 to 240 VAC	5 A, 120 VAC (Resistive)
		6 to 120 VDC	5 A, 28 VDC (Resistive)
			5 A, 240 VAC (Inductive)
	3PDT		5 A, 28 VDC (Resistive)
			5 A, 240 VAC (Resistive)
	4PDT		3 A, 28 VDC (Resistive)
			3 A, 120 VAC (Inductive)
			1.5 A, 240 VAC (Inductive)
			5 A, 240 VAC (Inductive, same polarity)
			5 A, 28 VDC (Resistive, same polarity)
MY2K-□	DPDT	5 to 120 VAC	3 A, 240 VAC (Resistive)
		5 to 48 VDC	3 A, 28 VDC (Resistive)

CSA certified type (File No. LR31928)

Туре	Contact form	Coil ratings	Contact ratings
MY□	DPDT	6 to 240 VAC	5 A, 28 VDC (Resistive)
	3PDT	6 to 120 VDC	5 A, 240 VAC (Inductive)
	4PDT		3 A, 28 VDC (Resistive)
			3 A, 240 VAC (Inductive)
			5 A, 240 VAC (Inductive, same polarity)
			5 A, 28 VDC (Resistive, same polarity)
MY2K-□	DPDT	5 to 120 VAC	3 A, 240 VAC (General purpose)
		5 to 48 VDC	3 A, 30 VDC (Resistive)

LR (Lloyd's Register) approved type (File No. 563KOB-204524)

Туре	Contact form	Coil ratings	Contact ratings
MY□	DPDT	6 to 240 VAC	2 A, 30 VDC (Inductive)
	4PDT	6 to 120 VDC	2 A, 200 VAC (Inductive)
			1.5 A, 30 VDC (Inductive)
			0.8 A, 200 VAC (Inductive)
			1.5 A, 115 VAC (Inductive)

SEV listed type (File No. D791/63 [2- & 4-pole], D791/91 [3-pole])

Туре	Contact form	Coil ratings	Contact ratings
MY⊡-SV	DPDT	6 to 240 VAC	5 A, 220 VAC (Resistive)
	3PDT	6 to 110 VDC	5 A, 24 VDC (Resistive)
	4PDT		

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

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

■ HINTS ON CORRECT USE

When using the relay rated at 120 VAC at a supply voltage of 240 VAC, be sure to connect external resistors Rs and Rr to the relay.



МҮ ———	OMRON	MY



Cat. No. GC RLY6

9/97

OMRON CANADA, INC.

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