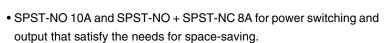
G6C PCB Power Relay

Miniature High Capacity Relays with SPST-NO 10A and SPST-NO + SPST-NC 8A



- Small High-capacity Relays Compact: $20 \times 15 \times 10$ mm (L × W × H).
- Low power consumption: 200 mW.
- Ultrasonically cleanable models is available.
- Exclusive P6C model for sockets is now available.

RoHS Compliant

■Model Number Legend ■Appli

1. Relay Function

None: Single-side stable
U: Single-winding latching

K : Double-winding latching

2. Number of poles

1: 1-pole/SPST-NO (1a)

2: 2-pole/SPST-NO (1a) + SPST-NC (1b)

3. Contact Form

1: SPST-NO (1a)

4. Contact Type

1: Single

5. Enclosure rating

4: Fully sealed

7: Flux protection

6. Terminal Shape

P: PCB terminals

Socket mounting Terminals

7. Contact Material

None: Standard (Ag-alloy

(Cd free))

FD: AgSnIn Contacts
(Suitable for DC
inductive load with high
inrush current)

8. Approved Standards

US: UL/CSA

9. Washability

None: Standard model (not compatible with ultrasonically cleanable models)

U : For ultrasonically cleanable

10. Mounting

None: Mounted directly to

PCB

P6C: Mounted to Socket





R1 (1) (2)



Ideal for output applications of control equipments

■Ordering Information

●Standard Models (UL, CSA certified)

	Relay Function	Single-side sta	ble	Single-winding latch	ning	Double-winding late	hing	Minimun
Enclosure rating	Contact form	Model	Rated coil voltage	Model	Rated coil voltage	Model	Rated coil voltage	packing unit
			3 VDC		3 VDC		3 VDC	
	ODOTNO		5 VDC		5 VDC		5 VDC	
	SPST-NO (1a)	G6C-1117P-US	6 VDC	G6CU-1117P-US	-	G6CK-1117P-US	6 VDC	
	(14)		12 VDC		12 VDC		12 VDC	
Flux protection			24 VDC		24 VDC		24 VDC	100 pcs/
Flux protection			3 VDC		3 VDC		3 VDC	tray
	SPST-NO	G6C-2117P-US	5 VDC	G6CU-2117P-US	5 VDC	G6CK-2117P-US	5 VDC	
	(1a) + SPST-NC		6 VDC		6 VDC		6 VDC	
	(1b)		12 VDC		12 VDC		12 VDC	
	, ,		24 VDC	24 VDC			24 VDC	
			3 VDC		3 VDC		3 VDC	
	ODOTNO		5 VDC		5 VDC		5 VDC	
	SPST-NO (1a)	G6C-1114P-US	6 VDC	G6CU-1114P-US	6 VDC	G6CK-1114P-US	6 VDC	
	(14)		12 VDC		12 VDC		12 VDC	1
Fully soaled			24 VDC		24 VDC		24 VDC	100 pcs/
I ully sealed	Fully sealed		3 VDC		3 VDC		3 VDC	tray
	SPST-NO		5 VDC		5 VDC		5 VDC	
	(1a) + SPST-NC	G6C-2114P-US	6 VDC	G6CU-2114P-US	6 VDC	G6CK-2114P-US	6 VDC	
	(1b)		12 VDC		12 VDC		12 VDC	
	, ,		24 VDC		24 VDC		24 VDC	1

Note. Products with UL/CSA certification marks will be supplied for orders of standard models (-US models).

OMRON G6C-1117	
-US	CONTACT:
	TV-5
24VDC	10A 250VAC
MADE IN	10A 30VDC
JAPAN	COIL:24VDC

G6C-2114P TU (F)
G6C-2114P TU (F)
-US CONTACT:
TV-5
24VDC 8A 250VAC
MADE IN 8A 20VDC
JAPAN COIL:24VDC

OUItrasonically Cleanable Models (UL, CSA certified)

	Relay Function	Single-side stable		Single-winding latching		Double-winding latching		Minimun
Enclosure rating	Contact form	Model	Rated coil voltage	Model	Rated coil voltage	Model	Rated coil voltage	packing unit
			3 VDC		-		-	
	ODOTNO		5 VDC		5 VDC		5 VDC	
	SPST-NO (1a)	G6C-1114P-US-U	6 VDC	G6CU-1114P-US	-	G6CK-1114P-US	-	
	(1α)		12 VDC		12 VDC		12 VDC	
Fully sealed			24 VDC		-		24 VDC	100 pcs/
I ully sealed			_		-		-	tray
	SPST-NO		5 VDC		-	G6CK-2114P-US	5 VDC	
	SPST-NC (1b) G6C-		-	G6CU-2114P-US	-		-	
			12 VDC		-		12 VDC	
	, ,		24 VDC					

Note. Products with UL/CSA certification marks will be supplied for orders of standard models (-US models).

OMRON
G6C-1117P
-US CONTACT:
TV-5
24VDC 10A 250VAC
MADE IN 10A 30VDC
JAPAN COIL:24VDC

GBC-2114P TU
-US CONTACT:
TV-5
24VDC 8A 250VAC
MADE IN 8A 30VDC
JAPAN COIL:24VDC

Connecting Sockets (Sold Separately)

Applicable relays	Model	Minimun packing unit
G6C-2114P-US-P6C G6C-2117P-US-P6C G6C-1114P-US-P6C G6C-1117P-US-P6C G6CU-2114P-US-P6C G6CU-2117P-US-P6C G6CU-1114P-US-P6C G6CU-1117P-US-P6C	P6C-06P	20 pcs/tube
G6CK-2114P-US-P6C G6CK-2117P-US-P6C G6CK-1114P-US-P6C G6CK-1117P-US-P6C	P6C-08P	
Removal Tool	P6B-Y1	
Hold-down Clips	P6B-C2	

Note 1. Use the G6C-□□□□P-US-P6C to mount to a P6C Socket.

^{2.} When using by combining sockets, the rated current will be 5A due to its rated switching current.

■Ratings

Coil: 1-Pole, Single-side Stable Type (Including models for ultrasonically cleanable)

Item Rated voltage	Rated current (mA)	Coil resistance (Ω)	Must operate voltage (V)	Must release voltage (V) of rated voltage	Max. voltage (V)	Power consumption (mW)
3 VDC	67	45				
5 VDC	40	125	1		1000/	
6 VDC	33.3	180	70% max.	10% min.	160% (at 23°C)	Approx. 200
12 VDC	16.7	720	1		(41 20 0)	
24 VDC	8.3	2,880	Ī			

Coil: Single-winding Latching Type (Including models for ultrasonically cleanable)

Item	Rated	Coil	Must set	Must reset	Max.	Power cor	nsumption
	current (mA)	resistance (Ω)	voltage (V)	voltage (V)	voltage (V)	Set coil	Reset coil
Rated voltage	(IIIA)	(52)	%	of rated volta	ige	(mW)	(mW)
3 VDC	67	45					
5 VDC	40	125			1000/		
6 VDC	33.3	180	70% max.	70% max.	160% (at 23°C)	200	200
12 VDC	16.7	720			(41 20 0)		i
24 VDC	8.3	2,880					

Coil: Double-winding Latching Type (Including models for ultrasonically cleanable)

Item	Rated cui	rrent (mA)	Coil resis	tance (Ω)	Must set	Must reset Max		Power cor	nsumption
	Set coil	Reset coil	Set coil	Reset coil	voltage (V)	voltage (V)	voltage (V)	Set coil	Reset coil
Rated voltage					% of rated voltage		Э	(mW)	(mW)
3 VDC	93.5	93.5	32.1	32.1					
5 VDC	56.0	56.0	89.3	89.3			1000/		
6 VDC	46.7	46.7	129	129	70% max.	70% max.	130% (at 23°C)	280	280
12 VDC	23.3	23.3	514	514			(41 20 0)		
24 VDC	11.7	11.7	2,056	2,056					

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

2. The operating characteristics are measured at a coil temperature of 23°C.

3. The "Max. voltage" is the maximum voltage that can be applied to the relay coil.

Contact

Contact Form	SPST-N	NO (1a)	SPST-NO (1a) + SPST-NC (1b)		
	Resistive load	Inductive load $(\cos\phi = 0.4; L/R = 7 ms)$	Resistive load	Inductive load (cosφ = 0.4; L/R = 7 ms)	
Rated load	10 A (8 A) at 250 VAC 10 A (10 A) at 30 VDC	5 A (5 A) at 250 VAC 5 A (5 A) at 30 VDC	8 A (8 A) at 250 VAC 8 A (8 A) at 30 VDC	3.5 A (3.5 A) at 250 VAC 3.5 A (3.5 A) at 30 VDC	
Contact type		Sin	igle		
Contact material		Ag-Alloy	(Cd free)		
Rated carry current	10 A	(10 A)	8 A (8 A)		
Max. switching voltage		380 VAC,			
Max. switching current	10 A	(10 A)	8 A (8 A)		

Note. The values shown in parentheses ($\,$) are for -FD models only.

■Characteristics (Including models for ultrasonically cleanable)

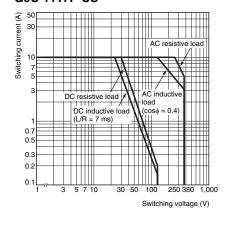
Item	Classification	Single-side Stable	Single-winding Latching	Double-winding Latching			
Contact resista	nce *1		30 m Ω max.				
Operate (set) ti		10 ms max.					
Release (reset)			10 ms max.				
Min. set pulse v		1	1	(at 23°C)			
Min. reset pulse		_	20 ms ((at 23°C)			
	Between coil and contacts		1,000 m Ω min.				
Insulation	Between contacts of the same polarity		1,000 m Ω min.				
resistance *2	Between contacts of different polarity	1,00	00 m Ω min. (SPST-NO, SP	ST-NC)			
	Between set and reset coils	-	-	1,000 m Ω min.			
	Between coil and contacts	2,000 VAC 50/60Hz for 1min					
Dielectric	Between contacts of the same polarity	1,000 VAC 50/60Hz for 1min					
strength	Between contacts of different polarity	2,000 VAC 50/60Hz for 1min (SPST-NO, SPST-NC)					
	Between set and reset coils	-	_	250 VAC 50/60Hz for 1min			
Vibration	Destruction	10 to 55 to 10 Hz, 0.7	75 mm single amplitude (1.	5 mm double amplitude)			
resistance	Malfunction	10 to 55 to 10 Hz, 0.7	75 mm single amplitude (1.	5 mm double amplitude)			
Shock	Destruction		1,000 m/s ²				
resistance	Malfunction		100 m/s ²				
Durability Mechanical		50,000,000 operations min. (at 18,000 operations/hr)					
•	Electrical	100,000 operation min. (at 1,800 operations/hr under rated load)					
,	level) (reference value) *3	10 mA at 5 VDC					
	ing temperature	-25°C to 70°C (with no icing or condensation)					
Ambient operat	ing humidity	5% to 85%					
Weight		Approx. 5.6 g					

Note. The given values are initial values.

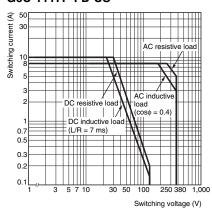
- Measurement conditions: 5 VDC, 1 A, voltage drop method.
 - Testing conditions: measured with a 500 VDC megohmmeter (at 250 VDC between set/reset
- *3. This value was measured at a switching frequency of 120 operations/min.

■Engineering Data

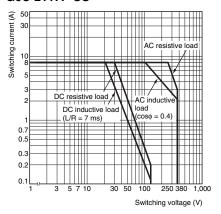
Maximum Switching Capacity G6C-1114P-US G6C-1117P-US



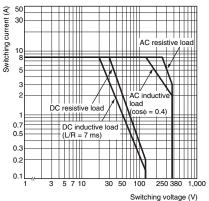
G6C-1114P-FD-US G6C-1117P-FD-US



G6C-2114P-US G6C-2117P-US

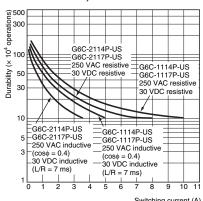


G6C-2114P-FD-US G6C-2117P-FD-US

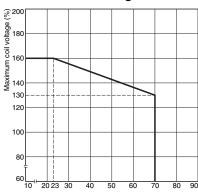


G 6

● Durability G6C-1114P-US, G6C-2114P-US G6C-1117P-US, G6C-2117P-US

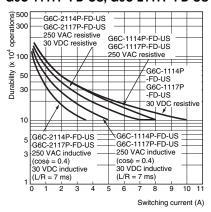


Ambient Temperature vs. Maximum Coil Voltage

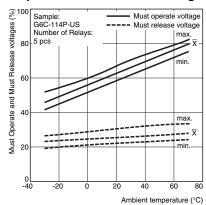


Ambient temperature (°C)
Note. The maximum coil voltage refers to the
maximum value in a varying range of
operating power voltage, not a continuous
voltage.

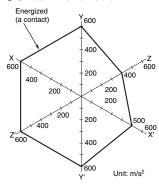
G6C-1114P-FD-US, G6C-2114P-FD-US G6C-1117P-FD-US, G6C-2117P-FD-US

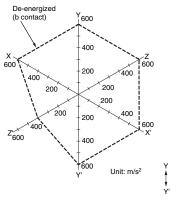


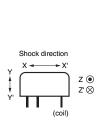
Ambient Temperature vs Must Operate and Must Release voltages



Shock Malfunction

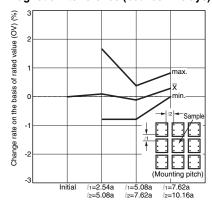






Sample: G6C-2114P-US DC24V Number of Relays: 6 pcs Test conditions: Shock is applied in $\pm X$, $\pm Y$, and $\pm Z$ directions three times each with without energizing the Relays to check the number of malfunctions. Requirement: 100 m/s²

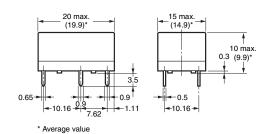
Magnetic Interference (between Relays)

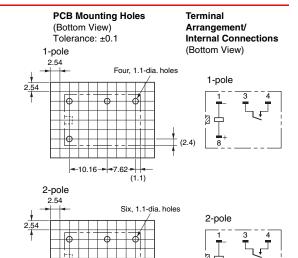


■Dimensions

Flux Protection Model G6C-□117P-US







(1.1) polarity of the Relay.

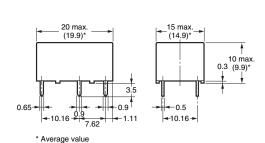
Note: Orientation mark is indicated as follows: [] [

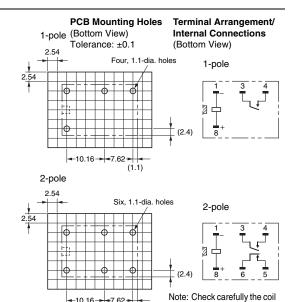
Note: Check carefully the coil

polarity of the Relay.

Fully Sealed Model G6C-□114P-US

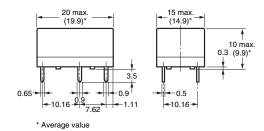


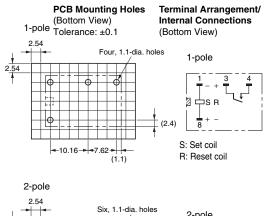


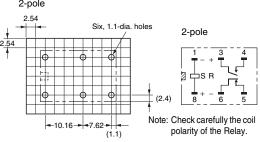


Flux Protective Single-winding Latching Model G6CU-□117P-US



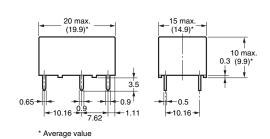


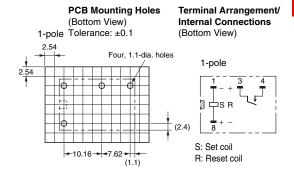


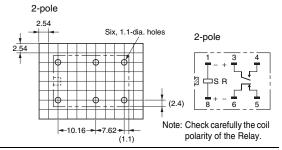


Fully Sealed Model Single Latching Models G6CU-□114P-US









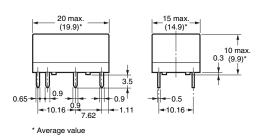
Note: Orientation marks are indicated as follows: []

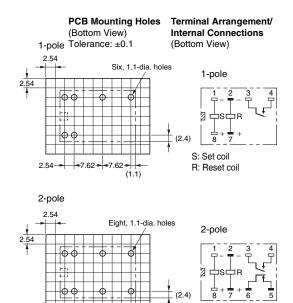
Note: Check carefully the coil

Note: Check carefully the coil

polarity of the Relay.

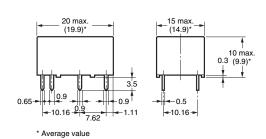


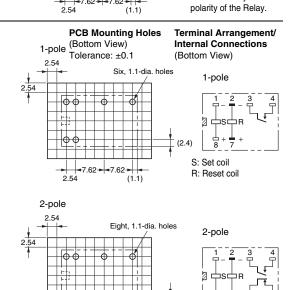




Fully Sealed Double-winding Latching Model G6CK-□114P-US





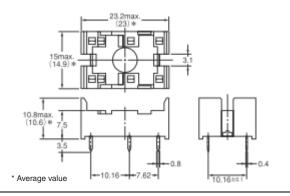


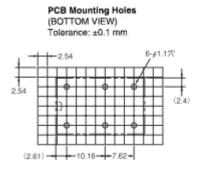
7.62

■Connecting Sockets Dimensions

Socket for single-winding latching/single-side a table Models P6C-06P



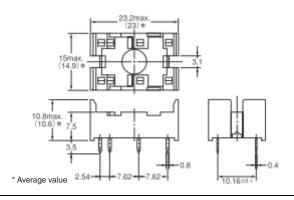


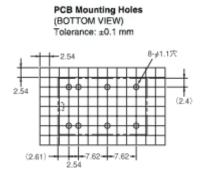


Socket for double-winding latching Models

P6C-08P







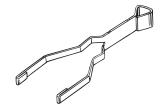
Note: Orientation marks are indicated as follows: []

■Removal Tool

■Hold-down Clips

P6B-Y1

P6B-C2





■Approved Standards

•The rated values approved by each of the safety standards may be different from the performance characteristics individually defined in this catalog.

UL Recognized (File No. E41643)

Model	Number of poles	Coil ratings	Contact ratings	Number of test operations
	1		10 A, 250 VAC 80°C 10 A, 30 VDC 80°C 1/6 HP 250 VAC, 1/4 HP, 125 VAC 80°C 1/3 HP 250 VAC, 1/4 HP, 250 VAC 80°C 600 W, 120 VAC, (Tungsten) 80°C	6,000
			530 VA, 20~265 VAC Max 2A (Pilot Duty) 80°C 43.2 VA, 30 VDC (Pilot Duty) 80°C	
G6C()		3 to 60 VDC	12 LRA, 2.2 FLA 30 VDC 80°C	30,000
G0C ()	2	3 10 60 VDC	8 A, 250 VAC 80°C 8 A, 30 VDC 80°C 1/6 HP, 125 VAC, 1/4 HP, 125 VAC 80°C 1/4 HP, 250 VAC 80°C 600 W, 120 VAC (Tungsten) 80°C	6,000
			530 VA, 20~265 VAC Max 2A (Pilot Duty) 80°C 43.2 VA, 30 VDC (Pilot Duty) 80°C	
			12 LRA, 2.2 FLA, 30 VDC 80°C	30,000

CSA Certified (File No. LR31928)

Model	Number of poles	Coil ratings	Contact ratings	Number of test operations
	1		10 A, 250 VAC 80°C 10 A, 30 VDC 80°C 1/6 HP 125 VAC, 1/4 HP, 125 VAC 80°C 1/3 HP 250 VAC, 1/4 HP, 250 VAC 80°C 600 W, 120 VAC, (Tungsten) 80°C 530 VA, 20~265 VAC Max 2A (Pilot Duty) 80°C 43.2 VA, 30 VDC (Pilot Duty) 80°C	
G6C()	2	3 to 60 VDC	8 A, 250 VAC 80°C 8 A, 30 VDC 80°C 1/6 HP, 125 VAC, 1/4 HP, 125 VAC 80°C 1/4 HP, 250 VAC 80°C 600 W, 120 VAC (Tungsten) 80°C 530 VA, 20~265 VAC Max 2A (Pilot Duty) 80°C 43.2 VA, 30 VDC (Pilot Duty) 80°C	6,000

EN/IEC, VDE Certified \triangle (Certificate No. 40014439)

Model	Number of poles	Coil ratings	Contact ratings	Approved switching operations
G6C ()	1	3, 5, 6, 12, 24 VDC	10 A, 250 VAC (cosφ = 1) 40°C 5 A, 250 VAC (cosφ = 0.4) 40°C	20,000
GOC ()	2	• Single-stable: 3, 5, 6, 12, 24 VDC	7 A, 250 VAC (cosφ = 1) 40°C 3.5 A, 250 VAC (cosφ = 0.4) 40°C	20,000

EN/IEC, TÜV Certified (Registration No. R50158249)

,		, 5	,	
Model	Number of poles	Coil ratings	Contact ratings	Approved switching operations
G6C()	1	• Single-stable: 3 to 48 VDC	10 A, 250 VAC (cosφ = 1) 40°C 5 A, 250 VAC (cosφ = 0.4) 40°C 10 A, 30 VDC (L/R = 0 ms) 40°C	20,000
	2	Latching: 3 to 24 VDC	8 A, 250 VAC (cosφ = 1) 40°C 3.5 A, 250 VAC (cosφ = 0.4) 40°C 8 A, 30 VDC (L/R = 0 ms) 40°C	

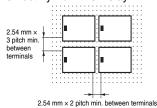
■Precautions

●Please refer to "PCB Relays Common Precautions" for correct use.

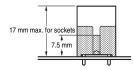
Correct Use

Mounting

- Do not reverse the polarity of the coil (+, -).
- When mounting more than two relays side by side, keep the gap between Relays as shown below to ensure a good heat dissipation. It may result in malfunction if heat is not dissipated smoothly from the Relay.



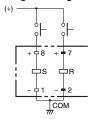
Sockets



- When mounting the Relay, make sure to insert the Relay terminals perpendicularly and correctly into the socket contact pin.
- Hold-down clips (for mounting and removal) are also available.
- The P6C model has a flux-resistant construction. Do not wash it down with water.
- The max. carry current of sockets is 5A.

● Double-winding Latching Circuit

 It is recommended to perform wiring of No.1 and No.2 of the negative (-) terminal as COM wiring, in order to improve the operation stability for Double-winding Latching.



●Using SPDT contact of the SPST-NO+SPST-NC Relay

Do not construct a circuit so that overcurrent and burning occur if the NO, NC and SPDT contacts are short-circuited with the SPST-NO+SPST-NC Relay. Arcing may generate short-circuiting between contacts if there is short-circuiting because of conversion to the MBB contact caused by asynchronous operation of the NO and NC contacts, the interval between the NO and NC contacts is small, or a large current is left open.

Other precautions

 This Relay is a Power Relay which is suitable for power load switching. Do not use the G6C for signal purposes such as micro load switching under 10 mA.

Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
 Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, explicates, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Contact: www.omron.com/ecb

Note: Do not use this document to operate the Unit.

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