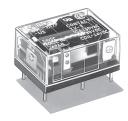
G6C PCB Power Relay

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

- SPST-NO 10A and SPST-NO + SPST-NC 8A for power switching and output that satisfy the needs for space-saving.
- 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

1. Relay Function

None: Single-side stable

U: Single-winding latching

K: Double-winding latching

2. Contact Form

11: SPST-NO (1a)

21: SPST-NO (1a) + SPST-NC (1b)

3. Contact Type

1: Single

4. Enclosure rating

4: Fully sealed

7: Flux protection

5. Terminal Shape

P: PCB terminals

Socket mounting Terminals

C: Self-clinching PCB

6. Contact Material

None: Standard (Ag-alloy (Cd free))

FD: AgSnIn Contacts

(Suitable for DC inductive load with high inrush current)

7. Approved Standards

US: UL/CSA

8. Washability

None: Standard model

(not compatible with ultrasonically

cleanable models)

U : For ultrasonically cleanable

9. Mounting

None: Mounted directly to PCB P6C: Mounted to Socket

■Application Examples

Ideal for output applications of control equipments

■Ordering Information

●Standard Models (UL, CSA certified)

		Relay Function	Single-side st	able	Single-winding la	atching	Double-winding la	atching	Minimun
Enclosure rating	Contact form	Terminals	Model	Rated coil voltage	Model	Rated coil voltage	Model	Rated coil voltage	packing unit
				3 VDC		3 VDC		3 VDC	
				5 VDC		5 VDC		5 VDC	
			G6C-1117P-US	6 VDC	G6CU-1117P-US	_	G6CK-1117P-US	6 VDC	
		Straight PCB		12 VDC		12 VDC		12 VDC	
		ondigin 1 05		24 VDC		24 VDC		voltage 3 VDC 5 VDC 6 VDC 12 VDC 24 VDC	
	SPST-NO (1a)			5 VDC		5 VDC	G6CK-1117P-FD-US		
	0. 0 ()		G6C-1117P-FD-US	12 VDC	G6CU-1117P-FD-US				
				24 VDC		24 VDC		-	
				3 VDC		_		_	
		Self-clinching	G6C-1117C-US	5 VDC	_	_	G6CK-1117C-US	_	
		PCB		12 VDC		_			
Flux				24 VDC		_			100 pcs/
protection				3 VDC		3 VDC	G6CK-2117P-US		tray
				5 VDC		5 VDC		5 VDC 6 VDC 12 VDC 24 VDC	
			G6C-2117P-US	6 VDC	G6CU-2117P-US	6 VDC			
		Straight PCB		12 VDC		12 VDC			
		oa.g.n. r o.z		24 VDC		24 VDC			
	SPST-NO (1a) +			5 VDC		5 VDC		5 VDC	
	SPST-NC (1b)		G6C-2117P-FD-US	12 VDC	G6CU-2117P-FD-US		G6CK-2117P-FD-US	-	
	, ,			24 VDC		24 VDC			
				3 VDC		_		3 VDC	
		Calf alinahing		5 VDC		5 VDC		5 VDC	
		Self-clinching PCB	G6C-2117C-US	6 VDC	G6CU-2117C-US	-	G6CK-2117C-US	-	
				12 VDC		12 VDC		12 VDC	
				24 VDC		-		24 VDC	

		Relay Function	Single-side st	able	Single-winding la	ntching	Double-winding la	atching	Minimun
Enclosure rating	Contact form	Terminals	Model	Rated coil voltage	Model	Rated coil voltage	Model	Rated coil voltage	packing unit
				3 VDC		3 VDC		3 VDC	
				5 VDC		5 VDC		5 VDC	
			G6C-1114P-US	6 VDC	G6CU-1114P-US	6 VDC	G6CK-1114P-US	6 VDC	
		Straight PCB		12 VDC		12 VDC		12 VDC	
		Straight 1 OB		24 VDC		24 VDC		24 VDC	
	SPST-NO (1a)			5 VDC		5 VDC		5 VDC	
	31 31-NO (1a)		G6C-1114P-FD-US	12 VDC	G6CU-1114P-FD-US	12 VDC	G6CK-1114P-FD-US	Rated coil voltage 3 VDC 5 VDC 6 VDC 12 VDC 24 VDC 3 VDC 24 VDC 3 VDC 5 VDC 12 VDC 24 VDC 3 VDC 5 VDC 12 VDC 24 VDC 3 VDC 5 VDC 12 VDC 24 VDC 3 VDC 5 VDC 6 VDC 12 VDC 24 VDC 5 VDC 6 VDC 12 VDC 24 VDC 12 VDC	
				24 VDC		24 VDC		24 VDC	
				3 VDC		-		3 VDC	
		Self-clinching	G6C-1114C-US	5 VDC	G6CU-1114C-US	-	G6CK-1114C-US	5 VDC	
		PCB	400 11140 00	12 VDC	4000 11140 00	12 VDC	4001(11140-00	12 VDC	
Fully				24 VDC		-		_	100 pcs/
sealed				3 VDC		3 VDC		3 VDC	tray
				5 VDC		5 VDC		5 VDC	
			G6C-2114P-US	6 VDC	G6CU-2114P-US	6 VDC	G6CK-2114P-US	6 VDC	
		Straight PCB		12 VDC		12 VDC		12 VDC	
		Ollaight 1 OB		24 VDC		24 VDC		24 VDC	
	SPST-NO (1a) +			5 VDC		5 VDC		-	
	SPST-NC (1b)		G6C-2114P-FD-US	12 VDC	G6CU-2114P-FD-US	12 VDC	G6CK-2114P-FD-US	I	
				24 VDC		24 VDC		24 VDC	
				3 VDC		-		ī	
		Solf clinching		5 VDC		5 VDC		5 VDC	
		Self-clinching PCB	G6C-2114C-US	6 VDC	G6CU-2114C-US	-	G6CK-2114C-US	6 VDC	
				12 VDC		ī			
				24 VDC		ı		24 VDC	

Note. When ordering, add the rated coil voltage to the model number.

Example: G6C-1117P-US DC3

Rated coil voltage

Rated coil voltage

However, the notation of the coil voltage on the product case as well as on the packing will be marked as □□ VDC.

OUItrasonically Cleanable Models (UL, CSA certified)

		Relay Function	Single-side st	table	Single-winding la	atching	Double-winding I	latching	Minimun
Enclosure rating	Contact form	Terminals	Model	Rated coil voltage	Model	Rated coil voltage	Model	Rated coil voltage	packing unit
				3 VDC		-		-	
				5 VDC		5 VDC		5 VDC	
		Straight PCB	G6C-1114P-US-U	6 VDC	G6CU-1114P-US-U	_	G6CK-1114P-US-U	_	
	SPST-NO (1a)			12 VDC		12 VDC		12 VDC	100 pee/
				24 VDC		_		24 VDC	
		Self-clinching	G6C-1114C-US-U	12 VDC		_		-	
Fully sealed		PCB	G0C-1114C-03-0	24 VDC	_	_	_	_	100 pcs/ tray
				5 VDC		_		5 VDC	lidy
		Straight PCB	G6C-2114P-US-U	12 VDC	_	_	G6CK-2114P-US-U	12 VDC	
	SPST-NO (1a) +			24 VDC		_		_	
	SPST-NC (1b)	0 11 11		5 VDC		-		-	
		Self-clinching PCB	G6C-2114C-US-U	12 VDC	_	-	_	-	1
		. 35		24 VDC		_		_	

Note. When ordering, add the rated coil voltage to the model number.

Example: G6C-1114P-US-U DC3

Dated sail valters.

- Rated coil voltage

However, the notation of the coil voltage on the product case as well as on the packing will be marked as $\square\square$ VDC.

●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	P6C-06P	
G6CU-2114P-US-P6C	P6C-06P	
G6CU-2117P-US-P6C	-2117P-US-P6C	
G6CU-1114P-US-P6C		20 pcs/tube
G6CU-1117P-US-P6C		
G6CK-2114P-US-P6C		
G6CK-2117P-US-P6C	P6C-08P	
G6CK-1114P-US-P6C	P6C-08P	
G6CK-1117P-US-P6C		
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 current (mA)	Coil resistance (Ω)	Must operate voltage (V)	Must release voltage (V)	Max. voltage (V)	Power consumption (mW)
Rated voltage	(IIIA)	(52)	%	of rated voltag	ge	(11100)
3 VDC	67	45				
5 VDC	40	125				
6 VDC	33.3	180	70% max.	10% min.	160% (at 23°C)	Approx. 200
12 VDC	16.7	720			(41.20 0)	
24 VDC	8.3	2,880				

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

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

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

Item	Rated cu	rrent (mA)	Coil resis	tance (Ω)	Must set	Must reset	Max.	Power cor	sumption
	Set coil	Reset coil	Set coil	Reset coil	voltage (V)	voltage (V)	voltage (V)	Set coil (mW)	Reset coil (mW)
Rated voltage					· ·	% of rated voltage	Э		
3 VDC	93.5	93.5	32.1	32.1			130% (at 23°C)	280	280
5 VDC	56.0	56.0	89.3	89.3					
6 VDC	46.7	46.7	129	129	70% max.	70% max.			
12 VDC	23.3	23.3	514	514		(at 23 C	(at 25 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)		
Rated load	Resistive load	Inductive load $(\cos\phi = 0.4; L/R = 7 \text{ ms})$	Resistive load	Inductive load (cosφ = 0.4; L/R = 7 ms)		
Item	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	gle			
Contact material		Ag-Alloy	(Cd free)			
Rated carry current	10 A	(10 A)	8 A (8 A)			
Max. switching voltage		380 VAC,	125 VDC			
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)

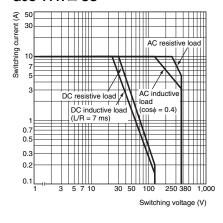
Item	Classification	Single-side Stable	Single-winding Latching	Double-winding Latching			
Contact resistar	nce *1		30 m Ω max.				
Operate (set) til		10 ms max.					
Release (reset)			10 ms max.				
Min. set pulse v		ı	,	at 23°C)			
Min. reset pulse		-	20 ms (at 23°C)			
	Between coil and contacts		1,000 $\text{M}\Omega$ min.				
Insulation	Between contacts of the same polarity		1,000 $\text{M}\Omega$ min.				
resistance *2	Between contacts of different polarity	1,000 M Ω min. (SPST-NO, SPST-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	5 mm single amplitude (1.	5 mm double amplitude)			
resistance	Malfunction	10 to 55 to 10 Hz, 0.7	5 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)					
	evel) (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.

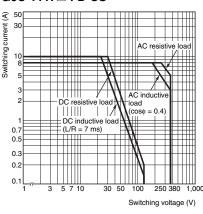
- *1. Measurement conditions: 5 VDC, 1 A, voltage drop method.
- Testing conditions: measured with a 500 VDC megohmmeter (at 250 VDC between set/reset coil).
- This value was measured at a switching frequency of 120 operations/min.

■Engineering Data

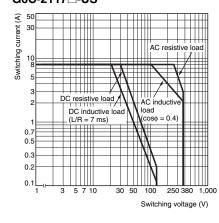
● Maximum Switching Capacity G6C-1114□-US G6C-1117□-US



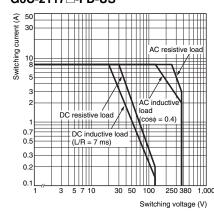
G6C-1114□-FD-US G6C-1117□-FD-US



G6C-2114□-US G6C-2117□-US

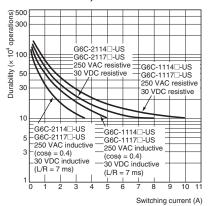


G6C-2114□-FD-US G6C-2117□-FD-US

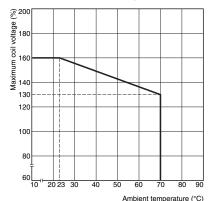


G 6

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

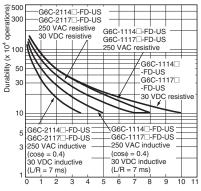


Ambient Temperature vs. Maximum Coil Voltage



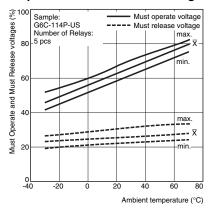
Note. The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

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

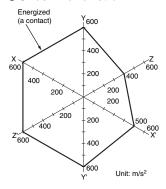


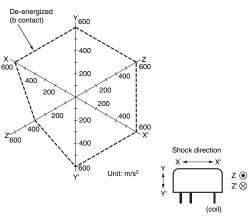
Switching current (A)

Ambient Temperature vs Must Operate and Must Release voltages

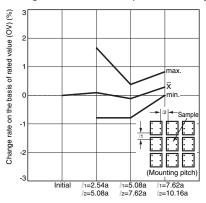


Shock Malfunction





● Magnetic Interference (between Relays)



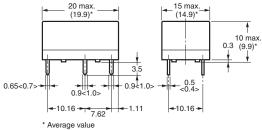
Sample: G6C-2114P-US DC24V Number of Relays: 6 pcs Test conditions: Shock is applied in \pm X, \pm Y, and \pm Z directions three times each with without energizing the Relays to check the number of malfunctions. Requirement: 100 m/s²

G 6 C

■Dimensions

Flux Protection Model (Straight PCB) G6C-□117P (-FD) -US

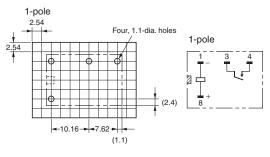




Dimensions in pointed brackets < > are for the Relay mounted to Socket (-P6C).

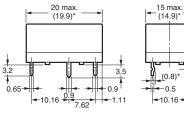
PCB Mounting Holes (Bottom View) Tolerance: ±0.1

Terminal Arrangement/ Internal Connections (Bottom View)

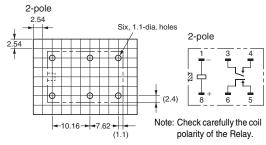


Flux Protection Model (Self-clinching PCB) G6C-□117C-US



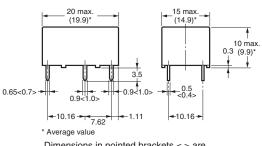


10.16 0.9 -10.16

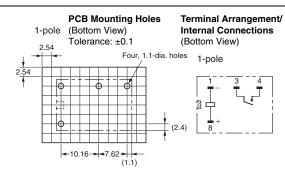


Fully Sealed Model (Straight PCB) G6C-□114P (-FD) -US



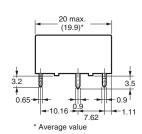


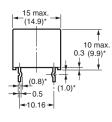
Dimensions in pointed brackets < > are for the Relay mounted to Socket (-P6C).



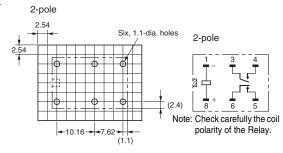
Fully Sealed Model (Self-clinching PCB) G6C-□114C-US







10 max. 0.3 (9.9)*



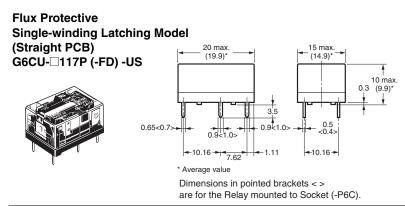
Note: Orientation marks are indicated as follows: □ Ø

Terminal Arrangement/

Terminal Arrangement/

Internal Connections

Internal Connections



Tolerance: ±0.1 (Bottom View)

1-pole

2.54

Four, 1.1-dia. holes

1-pole

2.54

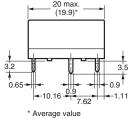
S: Set coil
R: Reset coil

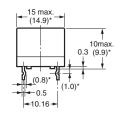
PCB Mounting Holes

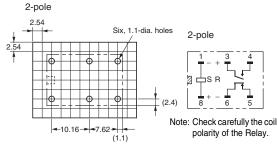
(Bottom View)

Flux Protective Single-winding Latching Model (Self-clinching PCB)

G6CU-□117C-US

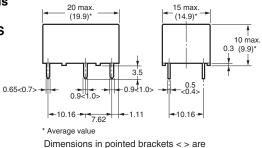




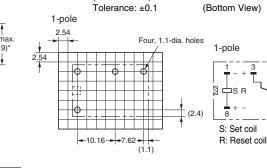


Fully Sealed Model Single Latching Models (Straight PCB) G6CU-□114P (-FD) -US





for the Relay mounted to Socket (-P6C).

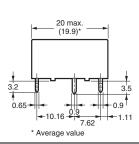


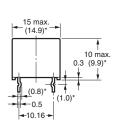
PCB Mounting Holes

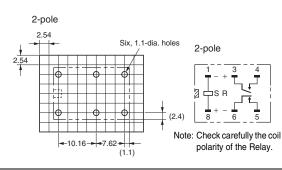
(Bottom View)

Fully Sealed Model Single Latching Models (Self-clinching PCB) G6CU-□114C-US







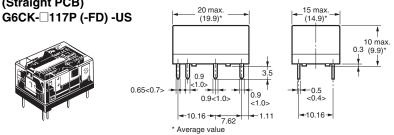


Flux Protective

Double-winding Latching Model

(Straight PCB)

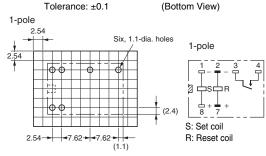




Dimensions in pointed brackets < > are for the Relay mounted to Socket (-P6C).

PCB Mounting Holes (Bottom View)

Terminal Arrangement/ Internal Connections (Bottom View)

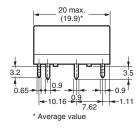


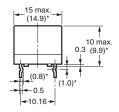
Flux Protective

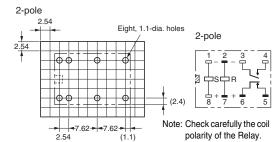
Double-winding Latching Model

(Self-clinching PCB) G6CK-□117C-US





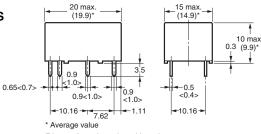




Fully Sealed Double-winding Latching Model (Straight PCB)

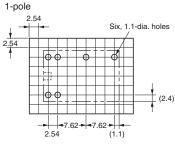
G6CK-□114P (-FD) -US

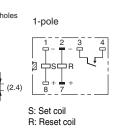




Dimensions in pointed brackets < > are for the Relay mounted to Socket (-P6C). **PCB Mounting Holes** (Bottom View) Tolerance: ±0.1

Terminal Arrangement/ Internal Connections (Bottom View)

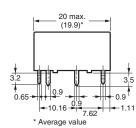


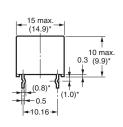


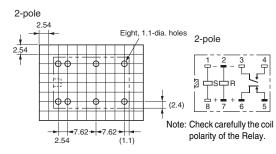
Fully Sealed Double-winding Latching Model (Self-clinching PCB)

G6CK-□114C-US







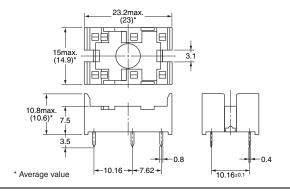


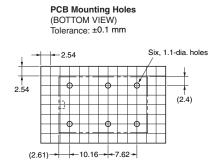
Note: Orientation marks are indicated as follows: []

■Connecting Sockets Dimensions

Socket for single-winding latching/single-side a table Models ${\tt P6C-06P}$



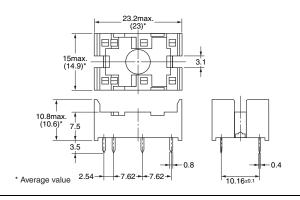


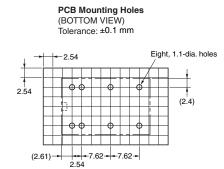


Socket for double-winding latching Models

P6C-08P







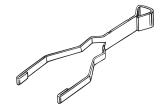
Note: Orientation marks are indicated as follows: □ 🗵

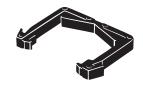
■Removal Tool

■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)

CSA Certified (File No. LR31928)

Model	Number of poles	Coil ratings	Contact ratings	Number of test operations
	1	1 3 to 24 VDC	10 A, 250 VAC (General use) 80°C 10 A, 30 VDC (Resistive) 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 (excluding -FD Models)	6,000
			530 VA, 20 to 265 VAC Max 2A (Pilot Duty) 80°C 43.2 VA, 30 VDC (Pilot Duty) 80°C	6,000
C6C ()			12 LRA, 2.2 FLA, 30 VDC 80°C	30,000 1,000 (-FD Models)
G6C()	2		8 A, 250 VAC (General use) 80°C 8 A, 30 VDC (Resistive) 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 (excluding -FD Models)	6,000
	_		530 VA, 20 to 265 VAC Max 2A (Pilot Duty) 80°C 43.2 VA, 30 VDC (Pilot Duty) 80°C	6,000
			12 LRA, 2.2 FLA, 30 VDC 80°C	30,000 1,000 (-FD Models)

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

Model	Number of poles	Coil ratings	Contact ratings	Approved switching operations
C6C ()	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
G6C()	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)

Model	Number of poles	Coil ratings	Contact ratings	Approved switching operations		
GEC ()	1	• Single-stable: 3, 5, 6, 12, 24 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		
G6C ()	2	• Latching: 3, 5, 6, 12, 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	20,000		

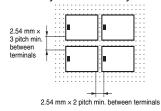
■Precautions

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

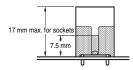
Correct Use

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.



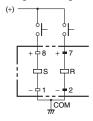
Sockets



- 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.
- Not applicable to the self-clinching type.

●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 shortcircuited with the SPST-NO+SPST-NC Relay. Arcing may generate shortcircuiting 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.

Please check each region's Terms & Conditions by region website.

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