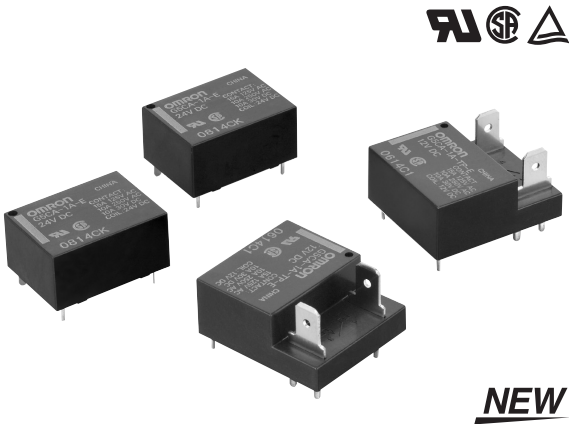


PCB Relay
G5CA

Flat Relays that Switch 10-A/15-A Loads
with New Quick-connect Terminals

- Ideal for switching power in household appliances or for outputs from industrial devices.
- Subminiature dimensions: 16 x 22 x 11 mm (L x W x H).
- High-sensitivity models available with low power consumption (150 mW).
- UL recognized / CSA certified.
- Fully sealed models and quick-connect terminal models available (#187 load contact terminals).
- RoHS Compliant.



Ordering Information

To order: Select the part number and add the rated coil voltage to the part number. Example: G5CA-1A4-H DC12.

Item		Model			
Enclosure Ratings	Contact configuration	Standard	High-sensitivity	High-capacity	Quick-connect terminals (#187)
Flux protection	SPST-NO	G5CA-1A	G5CA-1A-H	G5CA-1A-E	G5CA-1A-TP-E
Fully sealed		G5CA-1A4	G5CA-1A4-H	---	---

- Note:** 1. Contact your OMRON representative for details on other coil voltage specifications.
2. High-capacity models with a fully sealed structure are not available.
3. Standard or high-sensitivity models with quick-connect terminals are not available.

Model Number Legend

G5CA-1A □-□-□-□
1 2 3 4 5

1. **Number of Poles**
1A: 1 pole (SPST-NO)

2. **Enclosure Ratings**
None: Flux protection
4: Fully sealed

3. **Terminal form**
None: PCB terminal
TP: Quick-connect terminal (#187)
4. **Special functions**
None: Standard
E: High-capacity

5. **Coil consumption**
None: Standard
H: High-sensitivity
- Standard Specifications**
Contact Configuration: SPST-NO
Enclosure Ratings: Flux protection
Terminal form: PCB terminal

Specifications

■ Coil Ratings

Item	Standard, high-capacity, or quick-connect terminals			High-sensitivity		
	5 VDC	12 VDC	24 VDC	5 VDC	12 VDC	24 VDC
Rated current	40 mA	16.7 mA	8.3 mA	30 mA	12.5 mA	6.25 mA
Coil resistance	125 Ω	720 Ω	2,880 Ω	167 Ω	960 Ω	3,840 Ω
Must-operate voltage	75% of rated voltage (max.)			80% of rated voltage (max.)		
Must-release voltage	10% of rated voltage (min.)					
Max. voltage	150% (standard)/130% (high-capacity, quick-connect terminals) of rated voltage (at 23°C)			150% of rated voltage at 23°C		
Power consumption	Approx. 200 mW			Approx. 150 mW		

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of $\pm 10\%$.

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

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

■ Contact Ratings

Item	Standard		High-sensitivity		High-capacity, or quick-connect terminals	
	Resistive load	Inductive load ($\cos\phi = 0.4$, L/R = 7 ms)	Resistive load	Inductive load ($\cos\phi = 0.4$, L/R = 7 ms)	Resistive load	Inductive load ($\cos\phi = 0.4$, L/R = 7 ms)
Contact form	Single					
Contact material	Silver alloy					
Rated load	10 A at 250 VAC; 10 A at 30 VDC	3 A at 250 VAC; 3 A at 30 VDC	10 A at 250 VAC; 10 A at 30 VDC	3 A at 250 VAC; 3 A at 30 VDC	15 A at 110 VAC; 10 A at 30 VDC	5 A at 110 VAC; 3 A at 30 VDC
Rated carry current	10 A		10 A		15 A	
Max. switching voltage	250 VAC, 125 VDC					
Max. switching current	10 A		10 A		15 A	
Max. switching power (reference value)	2,500 VA, 300 W	750 VA, 90 W	2,500 VA, 300 W	750 VA, 90 W	2,500 VA, 300 W	750 VA, 90 W

■ Characteristics

Contact resistance (see note 2)	30 mΩ max. (quick-connect terminals type: 100 mΩ max.)
Operate time (see note 3)	10 ms max. (15 ms max.)
Release time	10 ms max.
Insulation resistance (see note 4)	1,000 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
Impulse withstand voltage	4,500 V (1.2 x 50 μs)
Vibration resistance	Destruction: 10 to 55Hz, 1.5-mm double amplitude Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Destruction: 1,000 m/s ² (Approx. 100 G) Malfunction: 200 m/s ² (Approx. 20 G)
Life expectancy	Mechanical: 20,000,000 operations min. at 18,000 operations/hr Electrical: • 300,000 operations min. (100,000 operations min. for Fully sealed Type) at 1,200 operations/hr under resistive load of 10 A at 250 VAC; • 100,000 operations min. under resistive load of 15 A at 110 VAC for high-capacity models • 100,000 operations min. at 1,200 operations/hr under resistive load of 10 A at 30 VDC
Minimum permissible load (reference value: see note 5)	5 VDC, 100 mA
Ambient temperature	Operating: -25°C to 70°C (with no icing or condensation)
Ambient humidity	Operating: 5% to 85%
Weight	Approx. 8 g (for TP model: Approx. 9.6 g)

Note: 1. The data shown above are initial values.

2. Measurement conditions: 5 VDC, 1 A, voltage drop method.

3. Measurement conditions: The value in parentheses indicates the operate time for high-sensitivity types.

4. Measurement conditions: Measured at the same points as the dielectric strength using a 500-VDC ohmmeter.

5. This value is for a switching frequency of 120 operations/minute. (P level: $\lambda_{60} = 0.1 \times 10^{-5}$ operations)

■ Approved Standards

- The following UL-, CSA-, and EN/TÜV-certifying ratings differ from the performance characteristics of the individual models.

UL Recognized

(File No. E41515) - - Ambient Temp. = 40°C

Model	No. of poles	Coil rating	Contact rating	No. of operations
G5CA	1	5 to 100 VDC	15 A, 125 VAC (General purpose) 10 A, 250 VAC (General purpose) 10 A, 30 VDC (Resistive)	100,000

EN Standard/TÜV Certified:

EN61810-1 (Certification No. R50030053)

Model	No. of poles	Coil rating	Contact rating	No. of operations
G5CA	1	3, 5, 6, 12, 24, 48 VDC	15 A, 125 VAC (cosφ = 1.0) 15 A, 250 VAC (cosφ = 1.0) 10 A, 30 VDC ($\frac{t}{t_A} = 0$ ms)	100,000

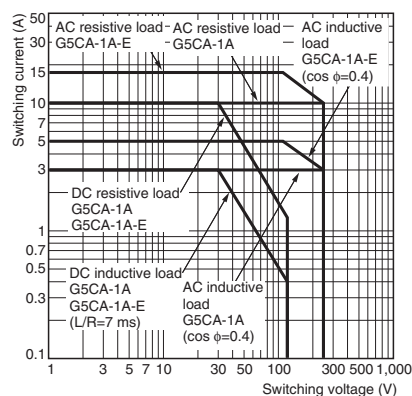
CSA Certified

(File No. LR31928)

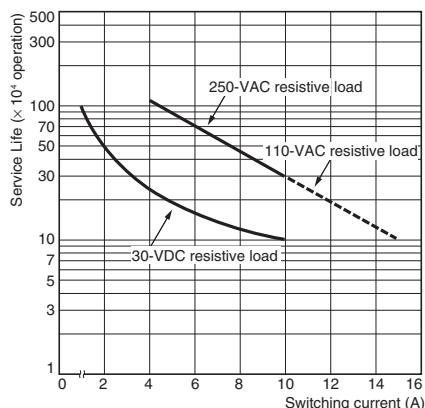
Model	No. of poles	Coil rating	Contact rating	No. of operations
G5CA	1	5 to 100 VDC	15 A, 125 VAC (General purpose) 10 A, 250 VAC (General purpose) 10 A, 30 VDC (Resistive)	100,000

Engineering Data

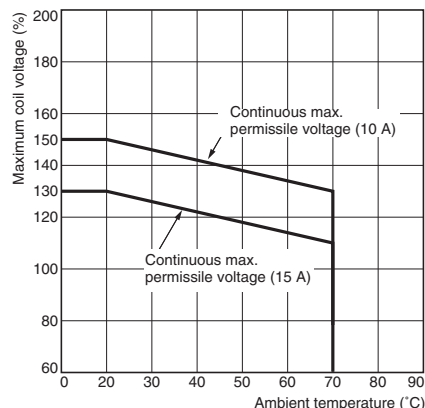
Maximum Switching Capacity



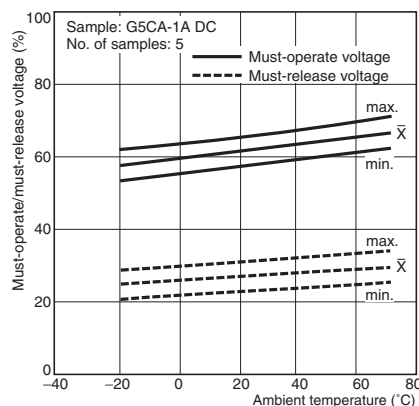
Electrical Service Life



Ambient Temperature vs. Maximum Coil Voltage

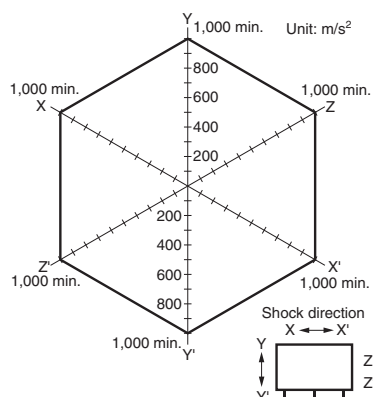


Operating Temperature vs. Must-operate/Must-release Voltage



Note: The "maximum voltage" is the maximum voltage that can be applied to the relay coil, but, not continuously.

Malfunction Shock

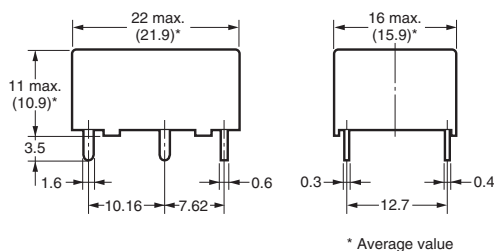
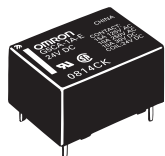


No. of samples: 10
Measured value: The value at which malfunction occurs in the contact when the contact is subjected to shock three times each in six directions for three axes.
Standard: 200 m/s²

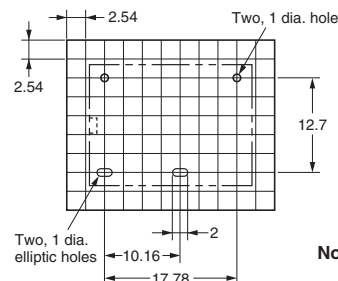
Dimensions

Note: All units are in millimeters unless otherwise indicated.

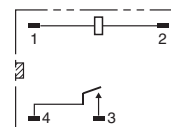
G5CA-1A(-E) G5CA-1A4(-H)



Mounting Holes (PCB) (BOTTOM VIEW) Tolerance: ±0.1 mm



Terminal Arrangement/ Internal Connections (BOTTOM VIEW)



(No coil polarity)

Note: Orientation marks are indicated as follows:

All sales are subject to Omron Electronic Components LLC standard terms and conditions of sale, which can be found at http://www.components.omron.com/components/web/webfiles.nsf/sales_terms.html

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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