For Reference

Date of Issue: March 17, 2011

OMRON Corporation
OMRON RELAY&DEVICES Corporation

SPECIFICATIONS

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OMRON Corporation

OMRON RELAY & DEVICES Corporation

Issued by	Checked by	Authorized by
March 17, 2011 M.Miura	March 17, 2011 T.FUKUDA	March,17,2011 K.Kawahara

PRODUCT SPECIFICATION

NAME: TERMINAL RELAY

MODEL: G6C-4B(N)(D)

ITEM: ALL RATINGS

After the confirmation for all description on the specification sheet, your kindly cooperation with sending back the original copy with your acknowledgement to us is required until --- --, ----.

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Revision history

See Item --

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1. Classification — Terminal Relay

2. Construction
   - 2.1 Outline dimensions — See item 14.
   - 2.2 Connection diagram — -----
   - 2.3 Contact configuration — SPST-NO+SPST-NC X 2

3. Standards
   - 3.1 Approved standards — UL: UL508(E87929), CSA: C22.2 No.14(LR35535),
   - 3.2 Conformed standards — -------

4. Ratings (per G6C relay 1pc.)
   - 4.1 Coil ratings — ■See table 1
     - (1) Rated voltage and Frequency — --- VDC --- Hz
     - (2) Rated current ☐Set — --- mA± --- Hz(at ____V, on ____Hz)
       ☐Reset — --- mA± --- Hz(at ____V, on ____Hz)
     - (3) Coil resistance ☐Set — --- mA± --- Hz(at ____V, on ____Hz)
       ☐Reset — --- mA± --- Hz(at ____V, on ____Hz)
     - (4) Operate voltage — --- to --- % of the rated voltage
     - (5) Rated power consumption — Approx. --- W MAX.
   - 4.2 Contact ratings
     - (1) Rated load — Resistive load 250 VAC 8 A
       30 VDC 8 A
       Inductive load 250 VAC 3.5 A (p.f. = 0.4)
       30 VDC 3.5 A (L/R = 7 ms)
     - (2) Rated carry current — 8 A
     - (3) Max. switching voltage — 380 VAC 125 VDC
     - (4) Max. switching current — Resistive load AC 8 A DC 8 A
       Inductive load AC 8 A (p.f. = 0.4)
       DC 8 A (L/R = 7 ms)
     - (5) Max. switching capacity — Resistive load AC 2000 VA DC 240 W
       Inductive load AC 875 VA (P.f. = 0.4)
       DC 170 W (L/R = 7 ms)

5. Characteristics (Initial value)
   - 5.1 Contact resistance — 100 mΩ Max. (Initial value)
     ■Measured by the voltage drop method
     with DC5 V 1 A applied

5.2 ■Must operate voltage(or current) --- (☐V ☐mA) Max.
☐Must set voltage(or current) ■See table 1

5.3 ■Must release voltage(or current) --- (☐V ☐mA) Max.
☐Must reset voltage(or current) ■See table 1

5.4 ■Operate time ☐Set time 10 ms Max. (at rated voltage)

5.5 ■Release time ☐Reset time 10 (G6B-4B/-4BN) ms Max. (at rated voltage)
15 (G6B--4BND) ms Max. (at rated voltage)

5.6 Insulation resistance 1000 MΩ Min. (at 500VDC)

5.7 Dielectric strength (at 50/60Hz for 1 minute)

(1) Between coil contacts of the different polarity 250 VAC
(2) Between contact terminals of the different polarity 2000 VAC
(3) Between contact terminals of the same polarity 1000 VAC
(4) Between coil and contacts 2000 VAC

5.8 Temperature rise

(1)Coil 50 °C Max. (by the coil resistance method)
Ambient temperature 55°C
Applied voltage of coil: 100 % of rated voltage
Carry current of contact: 8 A

(2)Contact 65 °C Max. (by the coil thermometer method)
Ambient temperature 55°C
Applied voltage of coil: 100 % of rated voltage
Carry current of contact: 8 A

5.9 Vibration resistance

(1) Destruction Must be free from any abnormality in both the construction and characteristics after the relay is held at a variable vibration of 0.75 mm single amplitude (1.5 mm double amplitude) at a vibration frequency of 10 to 55 to 10 Hz in each direction for 2 hours.

(2) Malfunction
(When energized) Contacts must not open for 1 ms or longer after the relay is held at a variable vibration of 0.75 mm single amplitude (1.5mm double amplitude) at a vibration frequency of 10 to 55 to 10 Hz in each direction for 1 cycle.

(When not energized) Contacts must not open for 1 ms or longer after the relay is held at a variable vibration of 0.75 mm single amplitude (1.5mm double amplitude) at a vibration frequency of 10 to 55 to 10 Hz in each direction for 1 cycle.

5.10 Shock resistance

(1) Destruction — Must be free from any abnormality in both the construction and characteristics after the relay is subjected to a shock of 1000 m/s² in each direction 5 times.

(2) Malfunction — Must be free from a contact opening of 1 ms or longer after the relay is subjected to a shock of 100 m/s² in each direction 5 times.

(When energized)

(When not energized) — Must be free from a contact opening of 1 ms or longer after the relay is subjected to a shock of 100 m/s² in each direction 5 times.

5.11 Temperature resistance

(1) Heat resistance — Must be free from any abnormality in both the construction and characteristics after the relay is left in a temperature of 85±2 °C for 16 hours and then in room temperature and humidity for 2 hours.

(2) Cold resistance — Must be free form any abnormality in both the construction and characteristics after the relay is left in a temperature of -55±3 °C for 72 hours and then in room temperature and humidity for 2 hours.

5.12 Moisture resistance — Must be free from any abnormality in both the construction and characteristics after the relay is left in a humidity of 90 to 95 %RH for 48 hours at a temperature of 40±2 °C, and then in room temperature and humidity for 2 hours. Insulation resistance, however, must be 5 MΩ MIN.

5.13 Terminal strength — Must be free from any abnormality after a tensile stress of 49N is applied to the terminal in the vertical direction for 1 seconds. Any deformation of the terminal by the load shall not be regarded as a mechanical damage.

* Appropriate clamp torque: 0.78 to 1.18 N·m

5.14 Insert stress — ----- N

5.15 Tensile stress — ----- N

5.16 Mounting strength — Must be no damaging nor shaky mounting part after a tensile stress of 49N is applied to the horizontal direction and for 1 second.

(For a rail direction, 9.8 N Min.)

5.17 Endurance

(1) Mechanical endurance 50,000,000 operations Min.
(under no load at operating frequency of 18,000 operations/h)

(2) Electrical endurance 100,000 operations Min.
(under rated load at operating frequency of 1,800 operations/h)

(3) Endurance of insert and remove
--- times Min.

5.18 Failure rate P Level $\lambda_{60} = 0.1 \times 10^{-6}$

(Reference value) Condition: Resistive load 5 VDC 10 mA
Switching ----- operations/h

6. Standard test conditions Unless otherwise specified, the values described in this specification obtained under the following conditions as standard.

6.1 Temperature 23°C

6.2 Humidity 65% RH

7. Storage conditions

7.1 Environments

(1) Must be in a location where the product or container is not exposed to corrosive gas such as hydrogen sulfide gas or salty air.
(2) Must be in a location where no visible dust exists.
(3) Must be in a location without direct sunlight.
Any stress to the product which may result in the deformation or change in quality of the product is not allowed.

8. Operating conditions Use the product under the following conditions

8.1 Temperature -25 to +55 °C (Without icing nor condensation)

8.2 Humidity 45 to 85 % RH

8.3 Mounting direction ---

8.4 Environments

(1) Must be in a location where the product or container is not exposed to corrosive gas such as hydrogen sulfide gas or salty air.
(2) Must be in a location where no visible dust exists.
(3) Must be in a location without direct sunlight.
Any stress to the product which may result in the deformation or change in quality of the product is not allowed.

9. Changing the contents of this document

OMRON reserves the right to change the specifications except for the ratings, performance, structure, outer dimensions, and mounting dimensions.

10. Valid term of this specification

This specification becomes invalid if you do not contact us after a lapse of 1 year from the issue date of this specification.

11.Handling precautions

Do not drop or give a shock to the product to maintain the initial performance when handling it.

12. Other Information

To Customers Purchasing OMRON Products

Agreement when Placing Orders

Thank you for using OMRON products.

Unless otherwise specified in a written estimate, contract, or specifications, the following conditions and warranty information apply when an OMRON control device (hereafter called “OMRON Product”) is ordered from catalogs. Ordering an OMRON Product implies consent to these terms and conditions.

1. Warranty

(1) Warranty Period

The warranty period for an OMRON Product is one year from either the date of purchase or the date on which the OMRON Product is delivered to the specified location.

(2) Extent of Warranty

If an OMRON Product is subject to a failure for which OMRON is responsible during the warranty period, either a replacement product will be provided or the defective product will be repaired free of charge at the place of purchase. This warranty, however, will not cover problems that occur as a result of any of the following.

a) Using the OMRON Product under conditions or in an environment not described in catalogs or in the specifications, or not operating the OMRON Product according to the instructions contained in catalogs or in the specifications.
b) Problem caused by something other than the OMRON Product.
c) Modifications or repairs performed by a party other than OMRON.
d) Using the OMRON Product for other than its designed purpose.
e) Problems that could not have been foreseen with the level of science and technology that existed at the time the OMRON Product was shipped.
f) Problems caused by an Act of God or other circumstances for which OMRON is not responsible.

This warranty covers only the OMRON Product itself. It does not cover any other damages that may occur directly or indirectly as a result of a problem with the OMRON Product.

2. Limitations of Liability

(1) OMRON shall not be responsible for special, indirect, or consequential damages originating in an OMRON Product.

(2) For programmable OMRON Products, OMRON does not accept responsibility for any programming that is performed by a party other than OMRON, or for any results arising from that programming.

3. Applicable Conditions

(1) When using OMRON Products in combination with other products, it is the user's responsibility to confirm compliance with all applicable standards and regulations.

It is also the user's responsibility to confirm the suitability of the OMRON Products for the system, devices, and equipment that are being used. OMRON accepts no responsibility for the suitability of OMRON Products used in combination with other products.

(2) When using OMRON Products in any of the following applications, consult an OMRON representative and check specifications to allow sufficient leeway in ratings and performance, and to implement suitable safety measures, such as safety circuits, to minimize danger in the event of an accident.

a) Outdoor applications, applications with potential for chemical contamination or electrical interference, or application under conditions or environments not described in catalogs.

b) Nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, or equipment regulated by government or industrial standards.

c) Other systems, machines, and equipment that may have a serious influence on human life and property.

d) Equipment requiring a high level of reliability, such as gas, water, or electrical supply systems, and systems that operate 24 hours a day.

e) Other applications requiring a high level of safety, corresponding to points I) to iv), above.

(3) When OMRON Products are used in an application that could pose significant risk to human life or property, the overall system must be designed so that the required safety can be ensured by providing notice of the danger and incorporating redundancy into the design. Make sure that OMRON Products are appropriately wired and mounted to serve their intended purpose in the overall system.

(4) Application examples provided in catalogs are for reference only. Confirm functionality and safety before actually using the devices and equipment.

(5) To prevent unexpected problems from arising due to the OMRON Product being used incorrectly by the customer or any other party, make sure that you understand and carefully observe all of the relevant prohibitions and precautions.

4. Changes to Specifications

Specifications and accessories to the products in catalogs may be changed as needed to improve the products or for any other reason. Check with your OMRON representative for the actual specifications for OMRON Products at the time of purchase.

5. Extent of Service

The price of an OMRON Product does not include service costs, such as dispatching technical staff. If you wish for service, please consult with your OMRON representative.

6. Prices

The standard prices listed in the catalog are for reference only, and do not indicate fixed purchase prices. The prices also do not include tax.

7. Applicability

The above information assumes that business and product application will be conducted in Japan.

For business and application outside of Japan, consult with your OMRON representative.

13. Others

13.1 Coil ratings (table 1)

Rated voltage (V)	Rated current (mA)	Coil resistance (Ω)	Operate voltage	Release voltage	MAX. voltage	Power consumption (mW)
			% of rated voltage			
☐DC5	40 (42) <36>	125	70%MAX. (80%MAX.)	10%MIN.	130%	Approx. 200
☐DC12	16.7 (18.6) <17.7>	720				
☐DC24	8.3 (10.5) <10.2>	2,880				

Note: 1. Rated current and coil resistance were measured at a coil temperature 23°C with a tolerance ±10%.

2. The value in ( ) of Rated current is included LED current of –4BN type.
The value in < > of Rated current is included LED current of –4BND type.

3. The value in ( ) of Operate voltage is for –4BN/-4BND type (with operating indicator type).

4. Operating characteristics were measured at a coil temperature of 23°C.

5. The maximum allowable voltage is the maximum value of the allowable voltage range for the relay coil operating power supply. There is no continuous allowance.

13.2 G6C models are connected directly to boards to increase reliability and the relays are thus not replaceable.

14. Dimensions

Note: All units are millimeters unless otherwise indicated.