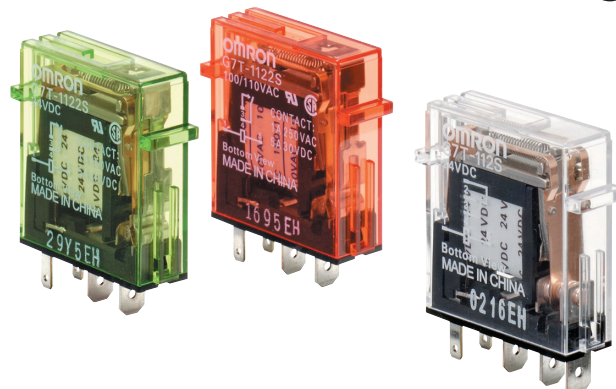


## Slim-styled I/O Relay Saves Space in Panel

- SPST-NO, SPST-NC, and SPDT contact forms available for output (SPST-NO only for input).
- Ultra-slim housing measuring 29 (W) x 10 (D) x 32 (H) mm.
- All Output Relays provide a long endurance (1,000,000 operations at 5 A), while all Input Relays provide microswitching power (100  $\mu$ A at 1 V).
- Approved by UL and CSA standards.



Refer to *Safety Precautions for All Relays*.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

## Ordering Information

When your order, specify the rated voltage.

| Classification             |         | Model                  | Rated voltage |
|----------------------------|---------|------------------------|---------------|
| Input (bifurcated contact) | SPST-NO | G7T-1122S (see note 2) | 12 VDC        |
|                            |         |                        | 24 VDC        |
|                            |         |                        | 100/110 VAC   |
|                            |         |                        | 200/220 VAC   |
| Output (single contact)    | SPST-NO | G7T-1112S (see note 2) | 12 VDC        |
|                            |         |                        | 24 VDC        |
|                            | SPST-NC | G7T-1012S              | 12 VDC        |
|                            |         |                        | 24 VDC        |
|                            | SPDT    | G7T-112S               | 12 VDC        |
|                            |         |                        | 24 VDC        |

**Note:** 1. When ordering, add the rated voltage to the model number. Rated voltages are given in the coil ratings table in *Specifications*.

Example: G7T-112S 12 VDC

Rated voltage

- The G7T-1122S and G7T-1112S are approved by UL and CSA. Contact your OMRON representative for the coil ratings of other models. The G7T-112S cannot be used in place of the G7TC. The G7T-112S can only be used with the P7TF-05 Socket.
- “Input” and “output” indicate the I/O relationship to a PLC. Input Relays are mainly suitable for input signals to a PLC or other device. Output Relays are mainly suitable to switching loads that receive output signals from a PLC or other device. The Input and Output Relays have different switching performances. Select a suitable Relay for the application.

## Model Number Legend

G7T-□□□□S  
1 2 3 4 5

### 1. No. of Contact Poles

### 2. Contact Form

No indication: Transfer contact

Number: Number of NO contacts

### 3. Contact Mechanism

1: Single contact

2: Bifurcated contact

### 4. Enclosure Construction

2: Casing

### 5. Terminal Type

S: Plug-in Terminal

## ■ Accessories

### Socket

| Applicable Relay                       | Model   |
|----------------------------------------|---------|
| All G7T I/O Relay and the G3TA models. | P7TF-05 |

### P70 Indicator Module

Remove the transparent style strip of the Socket and mount this module. It will function as an operation indicator with surge suppression.

| Model        | Applicable Relay coil voltage | Remarks                                |
|--------------|-------------------------------|----------------------------------------|
| For AC Relay | P70A 100/110 VAC              | Surge suppressing system with varistor |
|              | 200/220 VAC                   |                                        |
| For DC Relay | P70D 12/24 VDC                | Surge suppressing system with diode    |

- Note:**
1. Order the Indicator Module that is suited to the Relay coil voltage.
  2. The Indicator Module for DC Relays has a multiple power supply common to 12 and 24 VDC.
  3. Input current (reference values):  
 100/110 VAC: 1.14 to 1.38 mA  
 200/220 VAC: 1.40 to 1.71 mA  
 12/24 VDC: 4.83 to 5.90 mA

## Specifications

### ■ Ratings

#### Coil Ratings (Common to Both Input and Output)

| Item | Rated voltage (V) | Rated current |             | Coil resistance | Must operate voltage    | Must release voltage    | Max. voltage        | Power consumption |
|------|-------------------|---------------|-------------|-----------------|-------------------------|-------------------------|---------------------|-------------------|
|      |                   | 50 Hz         | 60 Hz       |                 |                         |                         |                     |                   |
| AC   | 100/110           | 8.2/9 mA      | 7/7.7 mA    | 8,700 $\Omega$  | 80% max. of rated value | 30% min. of rated value | 110% of rated value | 0.7 VA            |
|      | 200/220           | 4.1/4.5 mA    | 3.5/3.85 mA | 33,300 $\Omega$ |                         |                         |                     |                   |
| DC   | 12                | 42 mA         |             | 290 $\Omega$    | 80% max. of rated value | 10% min. of rated value | 110% of rated value | 0.5 W             |
|      | 24                | 21 mA         |             | 1,150 $\Omega$  |                         |                         |                     |                   |
|      | 100/110           | 5 mA          |             | 20,000 $\Omega$ | 80% max. of rated value | 10% min. of rated value | 110% of rated value | 0.5 W             |

- Note:**
1. The rated current and coil resistance values are measured at a coil temperature of 23°C. Tolerances of AC rated current are +15%, -20% and tolerances of coil resistance are  $\pm 15\%$ .
  2. Four rated voltages or currents are available to single AC models used with the P7TF-05 Socket. Only three rated voltages or currents are available, however, when the Relay is used in place of the G7TC.
  3. The operating characteristics values are for a coil temperature of 23°C.
  4. The maximum voltage is one that is applicable to the Relay coil instantaneously at 23°C and not continuously.

### Contact Ratings

| Classification<br>Item         | For input                            |                                           | For output                           |                                                           |
|--------------------------------|--------------------------------------|-------------------------------------------|--------------------------------------|-----------------------------------------------------------|
|                                | Resistive load<br>( $\cos\phi = 1$ ) | Inductive load<br>( $L/R = 7\text{ ms}$ ) | Resistive load<br>( $\cos\phi = 1$ ) | Inductive load<br>( $\cos\phi = 0.4, L/R = 7\text{ ms}$ ) |
| Contact mechanism              | Crossbar bifurcated                  |                                           | Single                               |                                                           |
| Contact material               | AgAu-clad Ag                         |                                           | AgSnIn                               |                                                           |
| Rated load                     | 1 A at 24 VDC                        | 0.5 A at 24 VDC                           | 5 A at 24 VDC<br>2 A at 220 VAC      | 2 A at 24 VDC<br>1 A at 220 VAC                           |
| Rated carry current            | 1 A                                  |                                           | 5 A                                  |                                                           |
| Max. switching voltage         | 250 VAC, 125 VDC                     |                                           |                                      |                                                           |
| Max. switching current         | 1 A                                  |                                           | 5 A                                  |                                                           |
| Failure rate (reference value) | 100 $\mu$ A at 1 VDC                 |                                           | 10 mA at 5 VDC                       |                                                           |

## ■ Characteristics

|                                                                    |                                                                                                                                                                                                                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact resistance (see note 2)</b>                             | 50 mΩ max.                                                                                                                                                                                                         |
| <b>Operate time (see note 3)</b>                                   | 15 ms max.                                                                                                                                                                                                         |
| <b>Release time (see note 3)</b>                                   | 15 ms max.                                                                                                                                                                                                         |
| <b>Max. operating frequency</b>                                    | Mechanical: 18,000 operations/hour<br>Electrical: 1,800 operations/hour (under rated load)                                                                                                                         |
| <b>Insulation resistance (see note 4)</b>                          | 100 MΩ (at 500 VDC)                                                                                                                                                                                                |
| <b>Dielectric strength</b>                                         | Between coil and contacts: 2,000 VAC, 50/60 Hz for 1 minute<br>Between contacts of same polarity: 1,000 VAC, 50/60 Hz for 1 minute                                                                                 |
| <b>Vibration resistance</b>                                        | Malfunction: 10 to 55 to 10 Hz, 0.5 mm single amplitude (1.0 mm double amplitude)                                                                                                                                  |
| <b>Shock resistance</b>                                            | Malfunction: 200 m/s <sup>2</sup>                                                                                                                                                                                  |
| <b>Mechanical endurance</b>                                        | 50,000,000 operations                                                                                                                                                                                              |
| <b>Electrical endurance (see note 5)</b>                           | Input: 10,000,000 operations (10 mA) or 50,000 operations (1 A) with resistive load<br>2,500,000 operations (10 mA) or 20,000 operations (1 A) with inductive load<br>Output: 1,000,000 operations with rated load |
| <b>Error rate (level P)<br/>(Reference value)<br/>(see note 6)</b> | Input: 100 μA at 1 VDC<br>Output: 10 mA at 5 VDC                                                                                                                                                                   |
| <b>Ambient temperature</b>                                         | Operating: -40°C to 70°C (with no icing or condensation)                                                                                                                                                           |
| <b>Ambient humidity</b>                                            | Operating: 5% to 85% (with no icing or condensation)                                                                                                                                                               |
| <b>Weight</b>                                                      | Approx. 17 g                                                                                                                                                                                                       |

**Note:** 1. The above values are all initial values.

2. The contact resistance was measured with 1 A at 5 VDC using the voltage drop method.

3. The operate and the release times were measured with the rated voltage imposed with any contact bounce ignored at an ambient temperature of 23°C.

4. The insulation resistance was measured with a 500-VDC megger applied to the same places as those used for checking the dielectric strength.

5. The electrical endurance was measured at an ambient temperature of 23°C.

6. This value was measured at a switching frequency of 120 operations per minute.

## ■ Socket Ratings

### Features

- Easily mounts or dismounts the G7T I/O Relay.
- Also mounts the Indicator Module (with surge suppressing function).
- Only 19 mm in width.
- Terminals corresponding to the NO and NC contacts of a Relay are arranged on top of the Socket to enhance maintainability.
- Also permits mounting of the G3TA Solid-state I/O Relay.

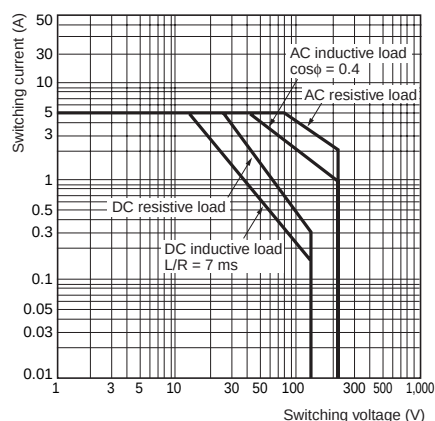
### Specifications

|                              |                                                                      |
|------------------------------|----------------------------------------------------------------------|
| <b>Model</b>                 | P7TF-05                                                              |
| <b>Contact resistance *</b>  | 10 mΩ max.                                                           |
| <b>Dielectric strength</b>   | 2,000 VAC for 1 minute                                               |
| <b>Insulation resistance</b> | 1,000 MΩ min. (at 500 VDC)                                           |
| <b>Vibration resistance</b>  | 10 to 55 to 10 Hz, 0.5 mm single amplitude (1.0 mm double amplitude) |
| <b>Shock resistance</b>      | 1,000 m/s <sup>2</sup>                                               |
| <b>Ambient temperature</b>   | Operating: -40°C to 70°C (with no icing or condensation)             |
| <b>Ambient Humidity</b>      | Operating: 5% to 85%RH                                               |
| <b>Weight</b>                | Approx. 28 g                                                         |

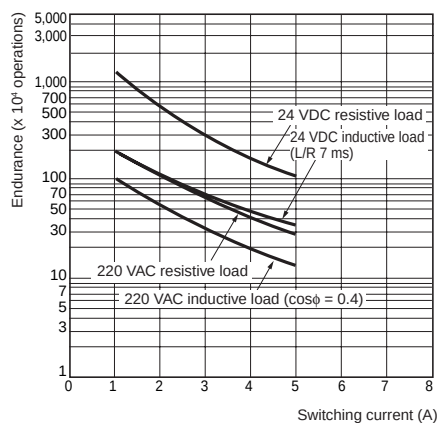
\* Measurement condition: 1 A at 5 VDC.

# Engineering Data

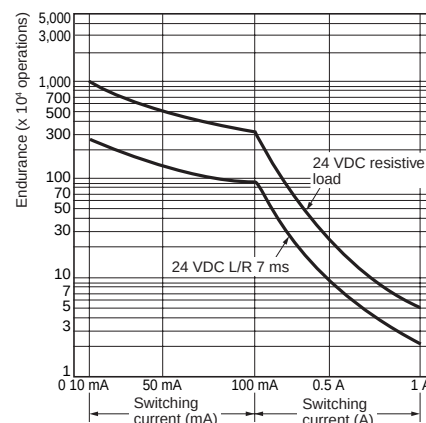
## Maximum Switching Power (Output Model with Life of 1,000,000 Operations)



## Electrical Endurance Output Relay



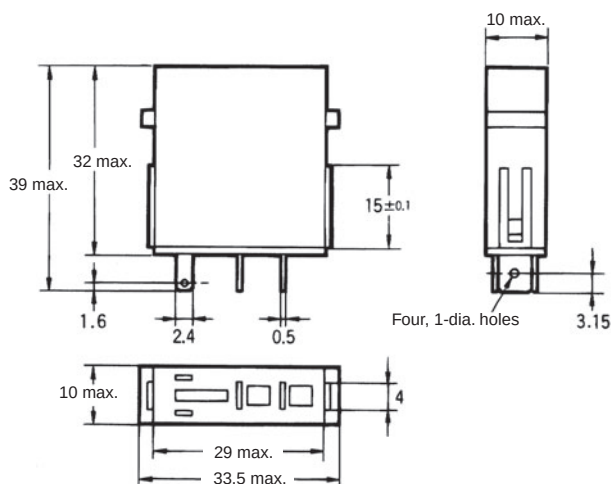
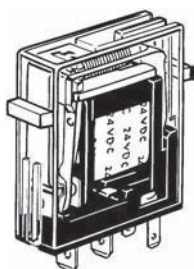
## Input Relay



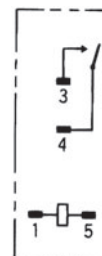
# Dimensions

**Note:** All units are in millimeters unless otherwise indicated.

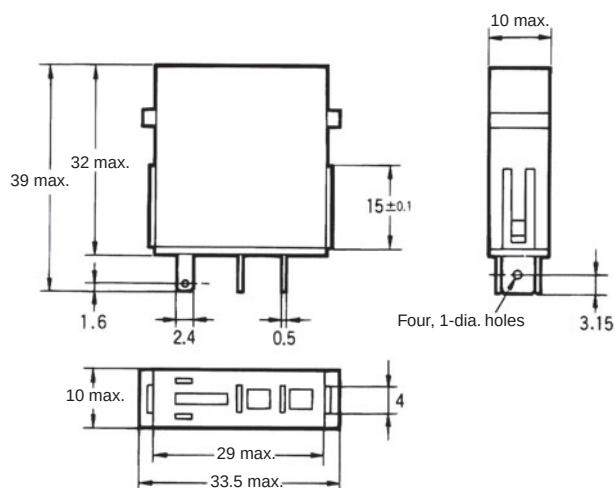
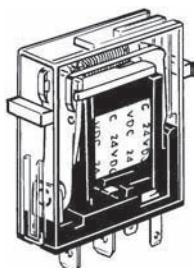
## SPST-NO Type G7T-1122S (for input) G7T-1112S (for output)



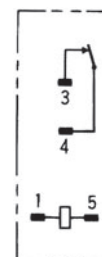
### Terminal Arrangement/ Internal Connections (Bottom View)



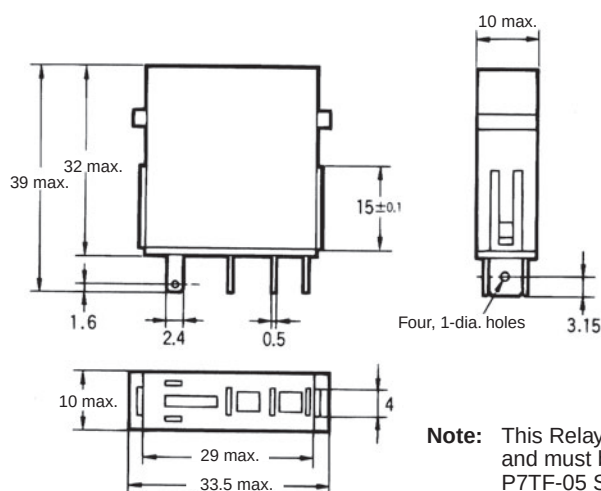
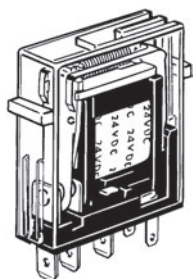
## SPST-NC Type G7T-1012S (for output)



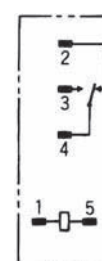
### Terminal Arrangement/ Internal Connections (Bottom View)



## SPDT Type G7T-112S (for output)



### Terminal Arrangement/ Internal Connections (Bottom View)

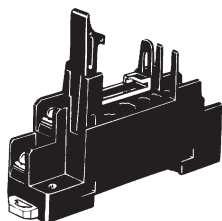


**Note:** This Relay cannot be used as an I/O relay terminals and must be used in combination with the exclusive P7TF-05 Socket.

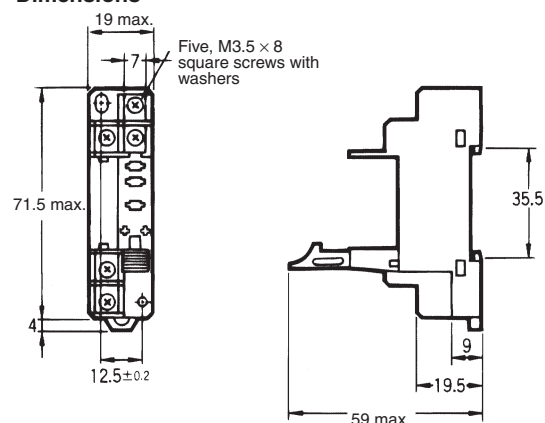
## ■ Accessories

### Socket

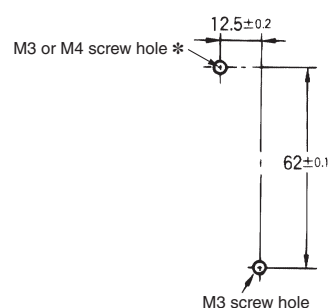
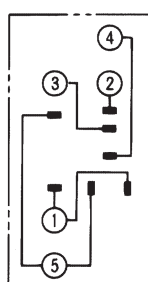
#### P7TF-05



#### Dimensions



#### Internal Connections (Top View)

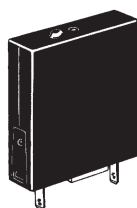


**Note:** If the I/O SSR or Indicator Module is used, be aware that the polarity of terminal 1 is positive.

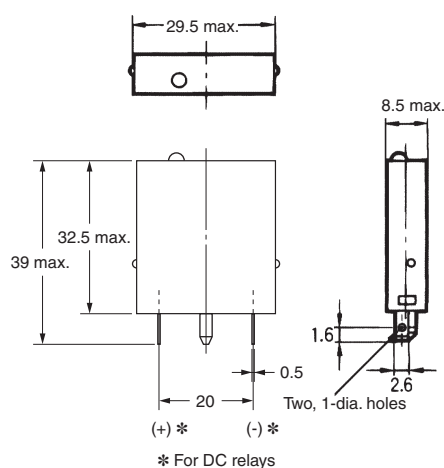
\* We recommend that you insert washers when mounting with M3 screws. A washers are not required when mounting with M4 screws.

### Indicator Module (with Surge Suppressing Function)

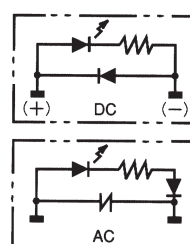
#### P70□



#### Dimensions



#### Internal Connections



## Safety Precautions

Refer to *Safety Precautions for All Relays*.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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

In the interest of product improvement, specifications are subject to change without notice.

## Terms and Conditions Agreement

### Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

### Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

### Limitation on Liability: Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

### Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

### Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

### Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

### Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

### Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.