

|     | a          |
|-----|------------|
| HG2 | 34.0 1.339 |
| HG3 | 50.0 1.969 |
| HG4 | 68.0 2.667 |

**RoHS Directive compatibility information**  
<http://www.nais-e.com/>

### FEATURES

- Large capacity — 20 A 250 V AC resistive and 1.5 kW 3 phase 220 V AC motor loads
- High contact reliability after long use
- Usable with direct soldering, quick-connect and plug-in terminals. (.250)

#### About Cd-free contacts

We have introduced Cadmium free type products to reduce Environmental Hazardous Substances. (The suffix "F" should be added to the part number) Please replace parts containing Cadmium with Cadmium-free products and evaluate them with your actual application before use because the life of a relay depends on the contact material and load.

### SPECIFICATIONS

#### Contacts

|  |                              |
|--|------------------------------|
| Arrangement  | 2 Form C, 3 Form C, 4 Form C |
| Initial contact resistance, max. (By voltage drop 6 V DC 1A) | 15 mΩ                        |
| Contact material   | AgSnO <sub>2</sub> type      |
| Nominal switching capacity                                   | 20 A 250 V AC (resistive)    |
| Min. switching capacity <sup>#1</sup>                        | 100 mA, 5 V DC               |

#### Expected life (min. operations)

|                                    |   |
|------------------------------------|---|
| Mechanical (at 180 cpm)            | AC type: 10 <sup>7</sup> , DC type: 10 <sup>6</sup> |
| Electrical (at 20 cpm) (resistive) | 20 A 250 V AC 10 <sup>5</sup>                       |

#1 This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

#### Remarks

- \* Specifications will vary with foreign standards certification ratings.
- \*<sup>1</sup> Measurement at same location as "Initial breakdown voltage" section
- \*<sup>2</sup> Detection current: 10 mA
- \*<sup>3</sup> Excluding contact bounce time
- \*<sup>4</sup> Half-wave pulse of sine wave: 11ms; detection time: 10μs
- \*<sup>5</sup> Half-wave pulse of sine wave: 6ms
- \*<sup>6</sup> Detection time: 10μs
- \*<sup>7</sup> Refer to 6. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT

#### Characteristics (at 60 Hz, 20°C 68°F)

|   |   |  |
|---|---|--|
| Maximum operating speed                                   | 20 cpm  |  |
| Initial insulation resistance <sup>*1</sup>               | Min. 100 MΩ at 500 V DC   |  |
| Initial breakdown voltage <sup>*2</sup>                   | Between open contacts   | 2,000 Vrms for 1 min.  |
|   | Between contacts sets   | 2,000 Vrms for 1 min.  |
|   | Between contacts and coil   | 2,000 Vrms for 1 min.  |
| Operate time <sup>*3</sup> (approx.) (at nominal voltage) | 2 Form C type   | Max. 30 ms   |
|   | 3 Form C & 4 Form C type  | Max. 40 ms   |
|   | Release time (without diode) <sup>*3</sup> (approx.) (at nominal voltage) | 2 Form C type  |
| Shock resistance  | 3 Form C & 4 Form C type  | Max. 40 ms   |
|   | Functional <sup>*4</sup>  | 98 m/s <sup>2</sup> {10 G} (except for the contact moving direction)   |
|   | Destructive <sup>*5</sup>   | 980 m/s <sup>2</sup> {100 G}   |
| Vibration resistance                                      | Functional <sup>*6</sup>  | 10 to 55 Hz at 1 mm double amplitude   |
|   | Destructive   | 10 to 55 Hz at 2 mm double amplitude   |
|   |   | Conditions for operation, transport and storage <sup>*7</sup> (Not freezing and condensing at low temperature) |
| Unit weight   | Humidity  | 5 to 85% R.H.  |
|   | 2 Form C type   | Approx. 130 g 4.59 oz  |
|   | 3 Form C type   | Approx. 185 g 6.53 oz  |
| 4 Form C type   | Approx. 240 g 8.47 oz   |  |

### ORDERING INFORMATION

Ex. HG 2 — AC 240 V — F

| Contact arrangement                       | Coil voltage  | Contact material           |
|---|---|----------------------------|
| 2: 2 Form C<br>3: 3 Form C<br>4: 4 Form C | AC 6, 12, 24, 48, 115, 220, 240 V<br>DC 6, 12, 24, 48, 110, 200 V | F: AgSnO <sub>2</sub> type |

(Note) Standard packing Carton: HG2 20 pcs. Case: HG2 100 pcs.  
 HG3, HG4 10 pcs. HG3, HG4 50 pcs.  
 UL/CSA approved type is standard.

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 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## TYPICAL APPLICATIONS

Industrial machinery, machine tools, food processing and packing machines, office machines, transportation equipment and amusement devices.

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## TYPES AND COIL DATA

### DC TYPES at 20°C 68°F

| Type              | Part No.     | Nominal coil voltage, V DC | Pick-up voltage, V DC (max.) | Drop-out voltage, V DC (min.) | Max. allowable, V DC voltage | Coil resistance, $\Omega$ ( $\pm 10\%$ ) | Nominal coil current, mA | Operating power, W |
|-------------------|--------------|----------------------------|------------------------------|-------------------------------|------------------------------|--|--------------------------|--------------------|
| HG2<br>(2 Form C) | HG2-DC6V-F   | 6                          | 4.8                          | 0.9                           | 6.6                          | 26.4                                     | 230                      | (approx.) 1.4      |
|                   | HG2-DC12V-F  | 12                         | 9.6                          | 1.8                           | 13.2                         | 100                                      | 119.6                    | (approx.) 1.4      |
|                   | HG2-DC24V-F  | 24                         | 19.2                         | 3.6                           | 26.4                         | 416                                      | 57.6                     | (approx.) 1.4      |
|                   | HG2-DC48V-F  | 48                         | 38.4                         | 7.2                           | 52.8                         | 1585                                     | 30.3                     | (approx.) 1.4      |
|                   | HG2-DC110V-F | 110                        | 88                           | 16.5                          | 121                          | 7650                                     | 14.4                     | (approx.) 1.4      |
| HG3<br>(3 Form C) | HG3-DC6V-F   | 6                          | 4.8                          | 0.9                           | 6.6                          | 22.7                                     | 264                      | (approx.) 1.6      |
|                   | HG3-DC12V-F  | 12                         | 9.6                          | 1.8                           | 13.2                         | 89.5                                     | 134                      | (approx.) 1.6      |
|                   | HG3-DC24V-F  | 24                         | 19.2                         | 3.6                           | 26.4                         | 364                                      | 66                       | (approx.) 1.6      |
|                   | HG3-DC48V-F  | 48                         | 38.4                         | 7.2                           | 52.8                         | 1450                                     | 33.1                     | (approx.) 1.6      |
|                   | HG3-DC110V-F | 110                        | 88                           | 16.5                          | 121                          | 6670                                     | 16.5                     | (approx.) 1.6      |
| HG4<br>(4 Form C) | HG4-DC6V-F   | 6                          | 4.8                          | 0.9                           | 6.6                          | 18.5                                     | 325                      | (approx.) 2.1      |
|                   | HG4-DC12V-F  | 12                         | 9.6                          | 1.8                           | 13.2                         | 71.4                                     | 168                      | (approx.) 2.1      |
|                   | HG4-DC24V-F  | 24                         | 19.2                         | 3.6                           | 26.4                         | 296                                      | 81.2                     | (approx.) 2.1      |
|                   | HG4-DC48V-F  | 48                         | 38.4                         | 7.2                           | 52.8                         | 1050                                     | 45.7                     | (approx.) 2.1      |
|                   | HG4-DC110V-F | 110                        | 88                           | 16.5                          | 121                          | 5420                                     | 20.3                     | (approx.) 2.1      |
| HG4<br>(4 Form C) | HG4-DC200V-F | 200                        | 160                          | 20                            | 220                          | 15,500                                   | 12.9                     | (approx.) 2.1      |

### AC TYPES (50/60 Hz) at 60 HZ, 20°C 68°F

| Type              | Part No.     | Nominal coil voltage, V AC | Pick-up voltage, V AC (max.) | Drop-out voltage, V AC (min.) | Max. allowable, V AC voltage | Inductance, H | Nominal coil current, mA | Operating power, VA |
|-------------------|--------------|----------------------------|------------------------------|-------------------------------|------------------------------|---------------|--------------------------|---------------------|
| HG2<br>(2 Form C) | HG2-AC6V-F   | 6                          | 4.8                          | 1.8                           | 6.6                          | 0.026         | 600                      | (approx.) 3.6       |
|                   | HG2-AC12V-F  | 12                         | 9.6                          | 3.6                           | 13.2                         | 0.104         | 300                      | (approx.) 3.6       |
|                   | HG2-AC24V-F  | 24                         | 19.2                         | 7.2                           | 26.4                         | 0.416         | 150                      | (approx.) 3.6       |
|                   | HG2-AC48V-F  | 48                         | 38.4                         | 14.4                          | 52.8                         | 1.660         | 75                       | (approx.) 3.6       |
|                   | HG2-AC115V-F | 115                        | 92                           | 34.5                          | 126.5                        | 9.531         | 31.3                     | (approx.) 3.6       |
|                   | HG2-AC220V-F | 220                        | 176                          | 66                            | 242                          | 34.96         | 16.4                     | (approx.) 3.6       |
| HG3<br>(3 Form C) | HG3-AC6V-F   | 6                          | 4.8                          | 1.8                           | 6.6                          | 0.018         | 864                      | (approx.) 5.2       |
|                   | HG3-AC12V-F  | 12                         | 9.6                          | 3.6                           | 13.2                         | 0.073         | 432                      | (approx.) 5.2       |
|                   | HG3-AC24V-F  | 24                         | 19.2                         | 7.2                           | 26.4                         | 0.290         | 216                      | (approx.) 5.2       |
|                   | HG3-AC48V-F  | 48                         | 38.4                         | 14.4                          | 52.8                         | 1.163         | 108                      | (approx.) 5.2       |
|                   | HG3-AC115V-F | 115                        | 92                           | 34.5                          | 126.5                        | 6.648         | 45.2                     | (approx.) 5.2       |
|                   | HG3-AC220V-F | 220                        | 176                          | 66                            | 242                          | 24.26         | 23.6                     | (approx.) 5.2       |
| HG4<br>(4 Form C) | HG4-AC6V-F   | 6                          | 4.8                          | 1.8                           | 6.6                          | 0.012         | 1264                     | (approx.) 7.6       |
|                   | HG4-AC12V-F  | 12                         | 9.6                          | 3.6                           | 13.2                         | 0.050         | 632                      | (approx.) 7.6       |
|                   | HG4-AC24V-F  | 24                         | 19.2                         | 7.2                           | 26.4                         | 0.199         | 316                      | (approx.) 7.6       |
|                   | HG4-AC48V-F  | 48                         | 38.4                         | 14.4                          | 52.8                         | 0.795         | 158                      | (approx.) 7.6       |
|                   | HG4-AC115V-F | 115                        | 92                           | 34.5                          | 126.5                        | 4.557         | 66.1                     | (approx.) 7.6       |
|                   | HG4-AC220V-F | 220                        | 176                          | 66                            | 242                          | 16.89         | 34                       | (approx.) 7.6       |
| HG4<br>(4 Form C) | HG4-AC240V-F | 240                        | 192                          | 72                            | 264                          | 19.87         | 31.6                     | (approx.) 7.6       |

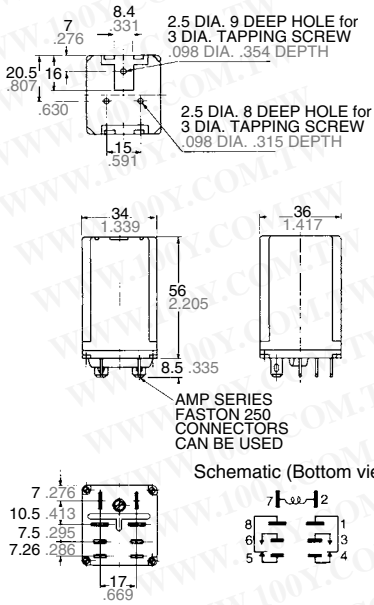
Notes: 1. The coil current ranges is  $\pm 15\%$  for AC (60 Hz),  $\pm 10\%$  for DC (20°C 68°F).

2. These relays are applicable to a range of 80% to 110% of the nominal coil voltage. However, it is recommended that the relay be used in a range of 85% to 110% of the nominal coil voltage, taking the temporary voltage variation into consideration. For AC types, when operating voltage is 70% of nominal coil voltage, "buzzing" will occur, and a large amount of current will flow, burning the coil.

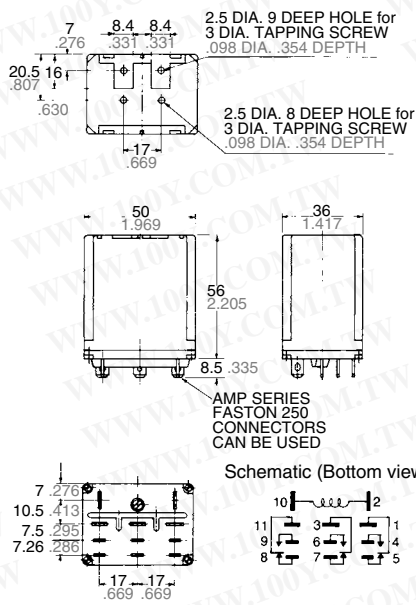
3. Each coil resistance of DC types is the measured value at coil temperature of 20°C 68°F. Please compensate the coil resistance by  $\pm 0.4\%$ , each time the coil temperature changes by  $\pm 1^\circ\text{C}$ .

**DIMENSIONS**

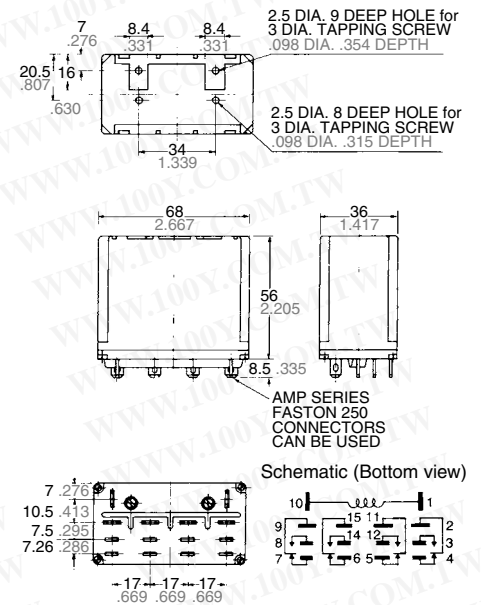
**HG2 (2 Form C)**



**HG3 (3 Form C)**



**HG4 (4 Form C)**



General tolerance: ±0.5 ±.020

**ACCESSORIES**

Please refer to "MOUNTING METHOD" for further information.

| HG             | Relay | Screw terminal socket for DIN rail assembly (with hold-down clip)       | Solder terminal socket for rectangular hole (with hold-down clip) |
|----------------|-------|---|---|
| HG2 (2 Form C) |       | HG2-SFD<br>   | HG2-SS<br>  |
| HG3 (3 Form C) |       | HG3-SFD<br>   | HG3-SS<br>  |
| HG4 (4 Form C) |       | No screw terminal socket for HG4 use 2 screw terminal sockets (HG2-SFD) | HG4-SS<br>  |

Note: Tapping-screw holes are provided on the cover top for direct mounting.

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HG

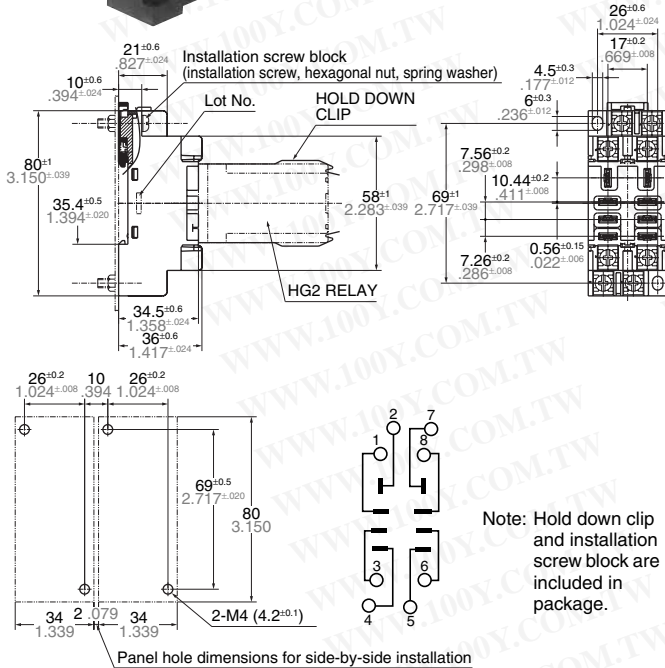
**MOUNTING METHOD AND DIMENSIONS**

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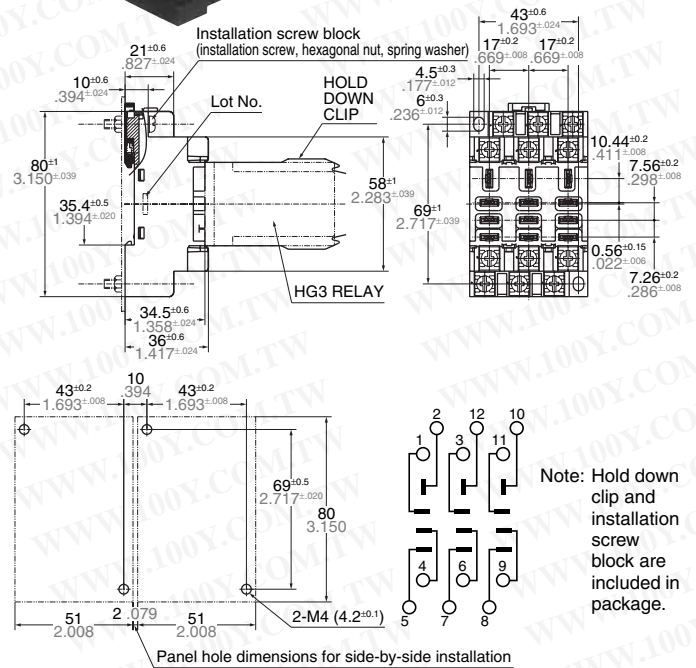
mm inch

**Screw terminal socket (Hold-down clips included)**

**HG2-SFD**

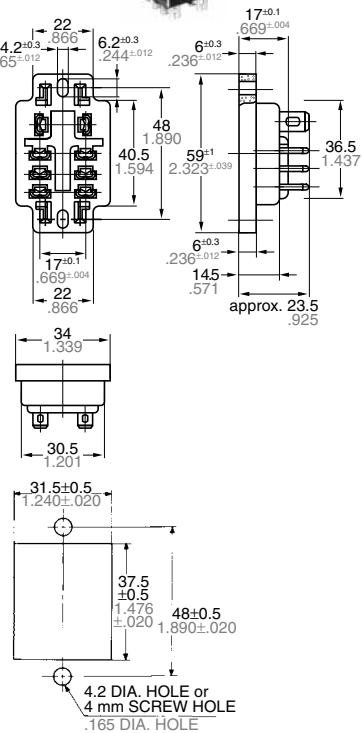


**HG3-SFD**

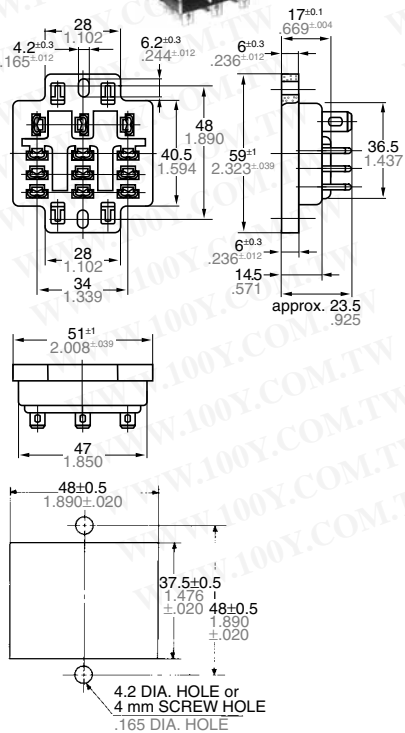


**Solder terminal socket (Hold-down clips included)**

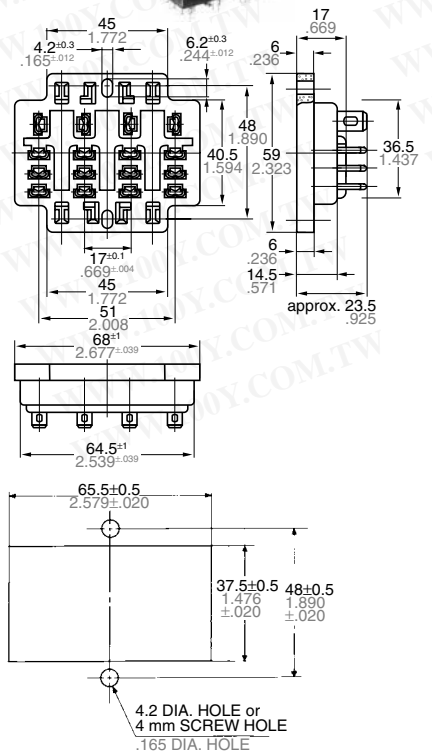
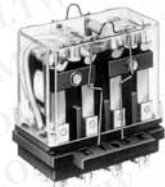
**HG2-SS**



**HG3-SS**



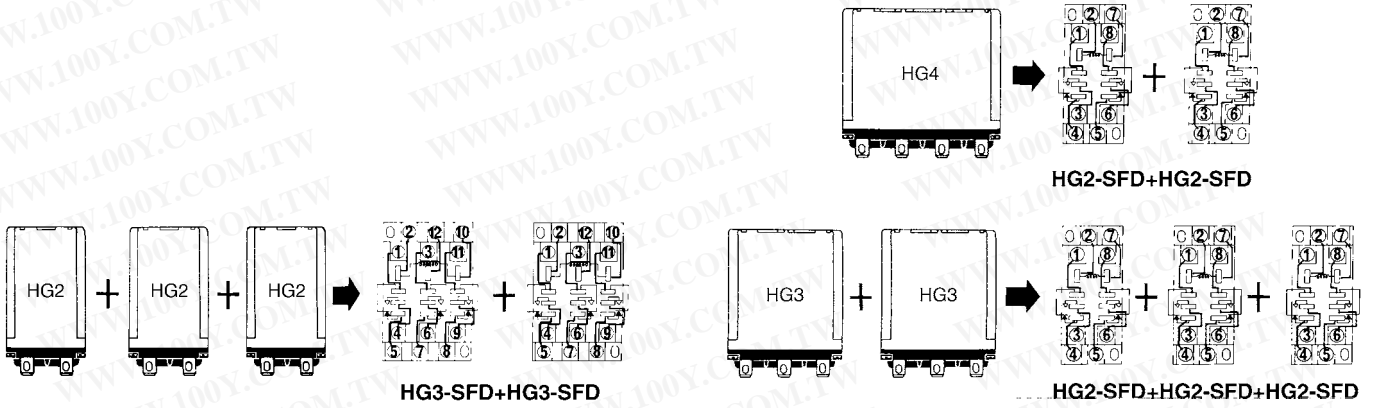
**HG4-SS**



Note: HG sockets accept Faston 250.

General tolerance:  $\pm 0.6 \pm 0.024$

Socket Combinations



NOTES

Please use the hold-down clip whenever HG relays will be used in applications where strong vibrating or shock force occurs. When used in such applications,

mount the relay so that this force does not parallel the direction of contact movement.

For Cautions for Use, see Relay Technical Information

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