

	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 ₂ type
Nominal switching capacity	20 A 250 V AC (resistive)
Min. switching capacity ^{#1}	100 mA, 5 V DC

Expected life (min. operations)

Mechanical (at 180 cpm)	AC type: 10 ⁷ , DC type: 10 ⁶
Electrical (at 20 cpm) (resistive)	20 A 250 V AC 10 ⁵

#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.
- *¹ Measurement at same location as "Initial breakdown voltage" section
- *² Detection current: 10 mA
- *³ Excluding contact bounce time
- *⁴ Half-wave pulse of sine wave: 11ms; detection time: 10μs
- *⁵ Half-wave pulse of sine wave: 6ms
- *⁶ Detection time: 10μs
- *⁷ 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 ^{*1}	Min. 100 MΩ at 500 V DC	
Initial breakdown voltage ^{*2}	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 ^{*3} (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) ^{*3} (approx.) (at nominal voltage)	2 Form C type
Shock resistance	3 Form C & 4 Form C type	Max. 40 ms
	Functional ^{*4}	98 m/s ² {10 G} (except for the contact moving direction)
		Destructive ^{*5}
Vibration resistance	Functional ^{*6}	10 to 55 Hz at 1 mm double amplitude
		Destructive
	Conditions for operation, transport and storage ^{*7} (Not freezing and condensing at low temperature)	Ambient temp.
Humidity		5 to 85% R.H.
Unit weight	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 3: 3 Form C 4: 4 Form C	AC 6, 12, 24, 48, 115, 220, 240 V DC 6, 12, 24, 48, 110, 200 V	F: AgSnO ₂ 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.

TYPICAL APPLICATIONS

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

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, Ω ($\pm 10\%$)	Nominal coil current, mA	Operating power, W
HG2 (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
	HG2-DC200V-F	200	160	20	220	27,800	7.2	(approx.) 1.4
HG3 (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
	HG3-DC200V-F	200	160	20	220	23,800	8.4	(approx.) 1.6
HG4 (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-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 (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
	HG2-AC240V-F	240	192	72	264	41.68	15	(approx.) 3.6
HG3 (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
	HG3-AC240V-F	240	192	72	264	29.06	21.6	(approx.) 5.2
HG4 (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-AC240V-F	240	192	72	264	19.87	31.6	(approx.) 7.6

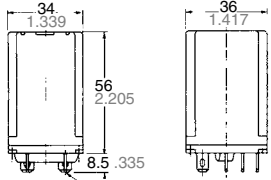
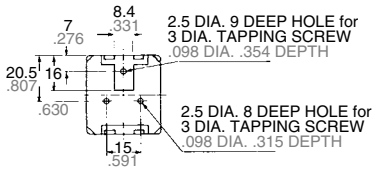
Notes: 1. The coil current ranges is $\pm 15\%$ for AC (60 Hz), $\pm 10\%$ for DC (20°C 68°F).

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 $\pm 1^\circ\text{C}$.

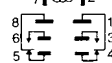
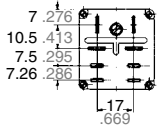
DIMENSIONS

HG2 (2 Form C)

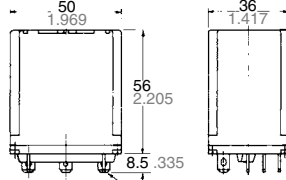
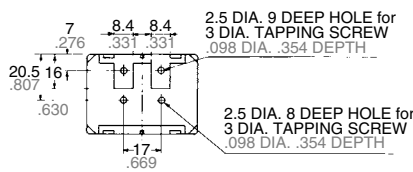


AMP SERIES FASTON 250 CONNECTORS CAN BE USED

Schematic (Bottom view)

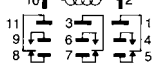
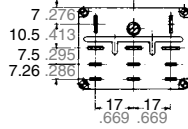


HG3 (3 Form C)

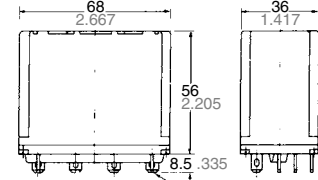
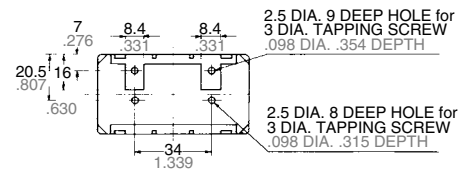


AMP SERIES FASTON 250 CONNECTORS CAN BE USED

Schematic (Bottom view)

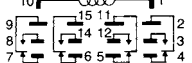
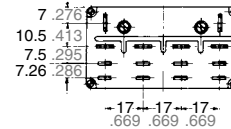


HG4 (4 Form C)



AMP SERIES FASTON 250 CONNECTORS CAN BE USED









Schematic (Bottom view)



General tolerance: $\pm 0.5 \pm .020$

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 	HG2-SS 
HG3 (3 Form C)		HG3-SFD 	HG3-SS 
HG4 (4 Form C)		No screw terminal socket for HG4 use 2 screw terminal sockets (HG2-SFD)	HG4-SS 

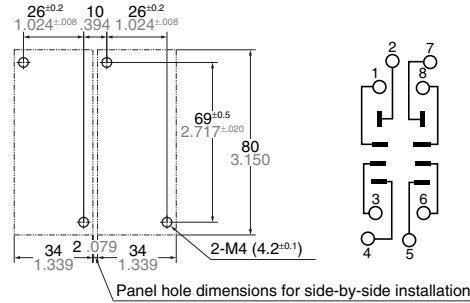
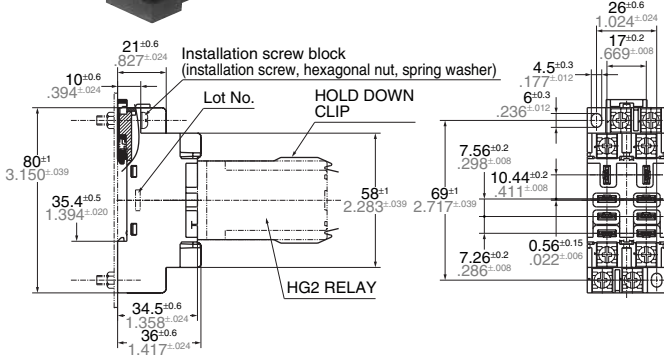
Note: Tapping-screw holes are provided on the cover top for direct mounting.

MOUNTING METHOD AND DIMENSIONS

mm inch

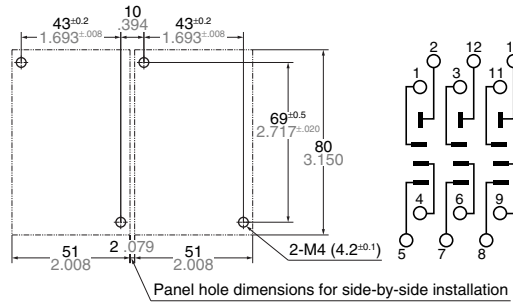
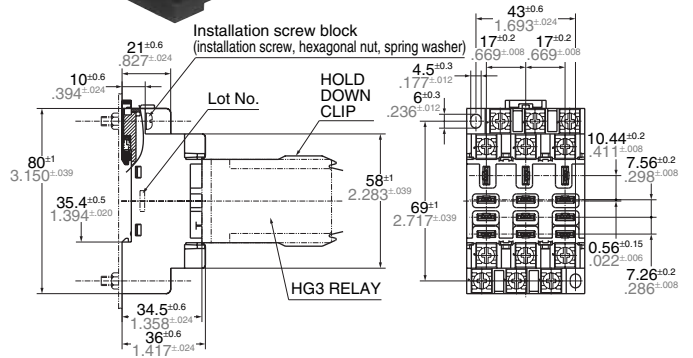
Screw terminal socket (Hold-down clips included)

HG2-SFD



Note: Hold down clip and installation screw block are included in package.

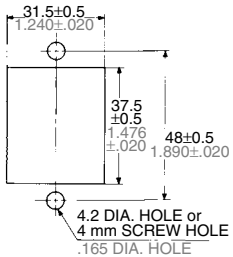
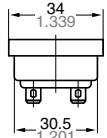
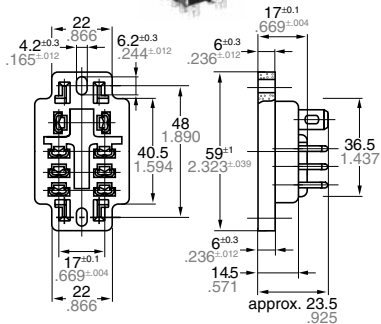
HG3-SFD



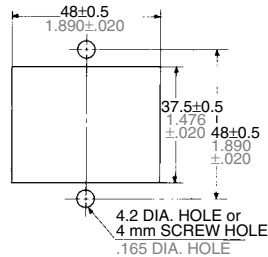
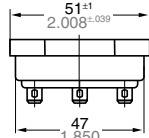
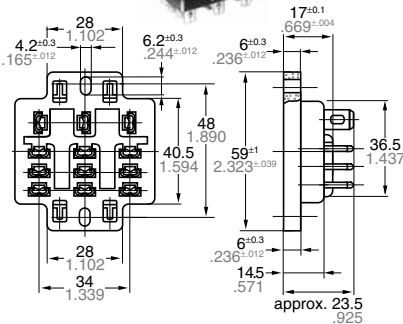
Note: Hold down clip and installation screw block are included in package.

Solder terminal socket (Hold-down clips included)

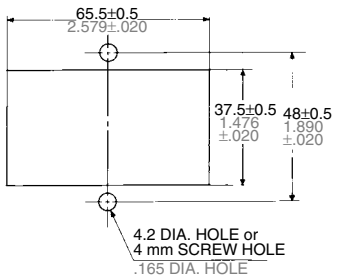
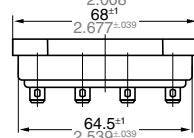
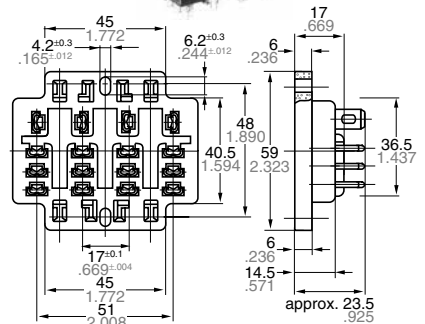
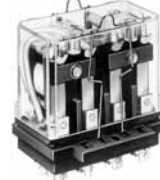
HG2-SS



HG3-SS



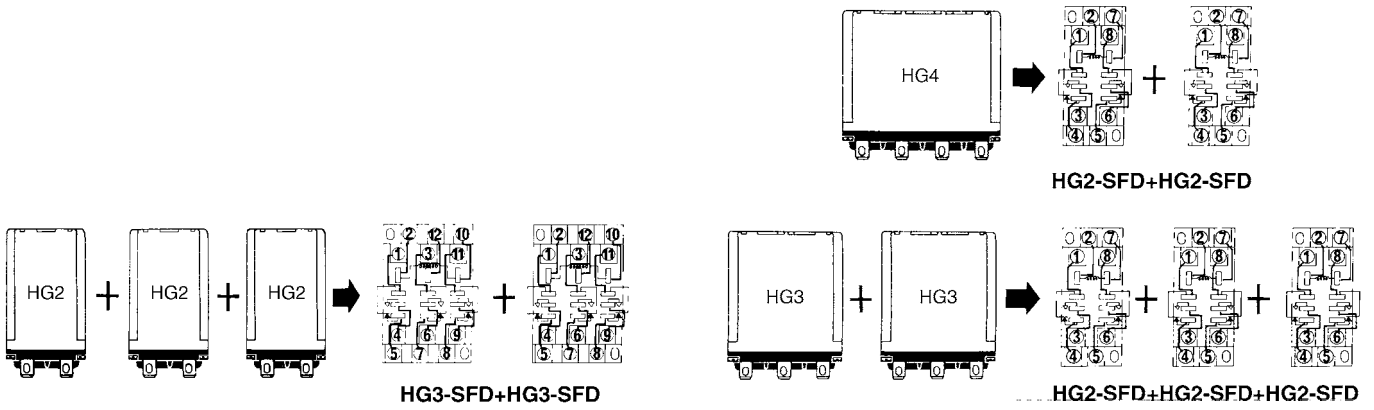
HG4-SS



Note: HG sockets accept Faston 250.

General tolerance: ±0.6 ±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