Panasonic
ideas for life

MINIATURE RELAY FOR WIDER APPLICATIONS

HJ RELAYS

FEATURES

- **2 contact arrangements**
  4 Form C (for 5 A 250 V AC),
  2 Form C (for 10 A 250 V AC)*
- **Excellent contact reliability by Au plating**
- **Environmentally friendly Cd-free contacts**
- **Coil breakdown detection function (AC type with LED only)**
- **Convenient Screw terminal sockets with finger protection also available**
- **Test button type available**
- **Built-in diode and CR for surge suppression type available**

*With test button type only
(Without test button type: 7 A 250 V AC)

TYPICAL APPLICATIONS

Control panels
Power supply units
Molding machines
Machine tools
Welding equipment
Agricultural equipment
Office equipment
Vending machines
Communications equipment
Amusement machines

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

ORDERING INFORMATION

Ex. HJ □ – □ – □ – □ – □ – □

Contact arrangement	Operation indication	Test button	Coil voltage	Surge suppression	Contact surface
2: 2 Form C 4: 4 Form C	Nil: Without LED indication L: With LED indication	Nil: Without test button T: With test button	AC: 12, 24, 48, 100, 120, 200, 220/240 V DC: 12, 24, 48, 110 V	Nil: Without D: With diode R: With CR	Nil: Without Au plating 6: With Au plating

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SPECIFICATIONS

Contacts

Arrangement		2 Form C	4 Form C
Initial contact resistance, max. (By voltage drop 6 V DC 1 A)		50mΩ	
Contact material		Au plating type: Au plating Silver Without Au plating type: Silver	
Rating	Nominal switching capacity (resistive load)	10 A 250 V AC#1	5A 250V AC
	Max. switching power (resistive load)	1,750 VA	1,250 VA
	Max. switching voltage	250 V AC, 125 V DC	
	Max. switching current	10 A#2	5 A
	Min. switching current*9	Au plating type: 1 mA 1 V DC Without Au plating type: 1 mA 5 V DC	
Expected life (min. operations)	Mechanical (at 180 cpm)	2×10^7	
	Electrical (at 20 cpm) (resistive load)	10^5 (7A 250 V AC) 5×10^5 (5A 250 V AC)	10^5 (5A 250 V AC) 2×10^5 (3A 250 V AC)

#1 Without test button = 7 A 250 V AC
#2 Without test button = 7 A

Coil

Nominal operating power	0.9W 1.2V A

Remarks

When using low level loads, contact instability may result depending on conditions of use (switching frequency and ambient conditions, etc.); therefore, please use the Au plating type.

* Specifications will vary with foreign standards certification ratings.
*1 Measurement at same location as "Initial breakdown voltage" section
*2 Detection current: 10mA
*3 Excluding contact bounce time
*4 For the AC coil types, the operate/release time will differ depending on the phase.
*5 Half-wave pulse of sine wave: 11ms; detection time: 10μs

Characteristics

		2 Form C	4 Form C
Max. operating speed		20 cpm (at max. rating)	
Initial insulation resistance*1		Min. 100 MΩ at 500 V DC	
Initial breakdown voltage*2	Between open contacts	1,000 Vrms for 1 min.	
	Between contact sets	2,000 Vrms for 1 min.	
	Between contact and coil	2,000 Vrms for 1 min.	
Operate time*3 (at nominal voltage)		Max. 20 ms*4	
Release time (without diode)*3 (at nominal voltage)		Max. 20 ms*4	
Temperature rise, max. (at 70°C) (at nominal voltage)		60°C	
Shock resistance	Functional*5	Min. 100 m/s² {10 G}	
	Destructive*6	Min. 1,000 m/s² {100 G}	
Vibration resistance	Functional*7	10 to 55 Hz at double amplitude of 1.0 mm	
	Destructive	10 to 55 Hz at double amplitude of 1.0 mm	
Conditions for operation, transport and storage*8 (Not freezing and condensing at low temperature)	Ambient temp.	–40°C to +70°C –40°F to +158°F	
	Humidity	5 to 85% R.H.	
Unit weight		Approx. 34g 1.20 oz	

*6 Half-wave pulse of sine wave: 6ms
*7 Detection time: 10μs
*8 The upper operation ambient temperature limit is the maximum temperature that can satisfy the coil temperature rise value.
Refer to 4. Conditions for operation, transport and storage mentioned in AMBIENT ENVIRONMENT.
*9 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.

TYPES

[Au plating type]

1. Plug-in type

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-DC 12V-6	HJ4-DC 12V-6
24V DC	HJ2-DC 24V-6	HJ4-DC 24V-6
48V DC	HJ2-DC 48V-6	HJ4-DC 48V-6
100/110V DC	HJ2-DC110V-6	HJ4-DC110V-6
12V AC	HJ2-AC 12V-6	HJ4-AC 12V-6
24V AC	HJ2-AC 24V-6	HJ4-AC 24V-6
48V AC	HJ2-AC 48V-6	HJ4-AC 48V-6
100/110V AC	HJ2-AC100V-6	HJ4-AC100V-6
110/120V AC	HJ2-AC120V-6	HJ4-AC120V-6
200/220V AC	HJ2-AC200V-6	HJ4-AC200V-6
220/240V AC	HJ2-AC220/240V-6	HJ4-AC220/240V-6

2. Plug-in type (with LED indication)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-L-DC 12V-6	HJ4-L-DC 12V-6
24V DC	HJ2-L-DC 24V-6	HJ4-L-DC 24V-6
48V DC	HJ2-L-DC 48V-6	HJ4-L-DC 48V-6
100/110V DC	HJ2-L-DC110V-6	HJ4-L-DC110V-6
12V AC	HJ2-L-AC 12V-6	HJ4-L-AC 12V-6
24V AC	HJ2-L-AC 24V-6	HJ4-L-AC 24V-6
48V AC	HJ2-L-AC 48V-6	HJ4-L-AC 48V-6
100/110V AC	HJ2-L-AC100V-6	HJ4-L-AC100V-6
110/120V AC	HJ2-L-AC120V-6	HJ4-L-AC120V-6
200/220V AC	HJ2-L-AC200V-6	HJ4-L-AC200V-6
220/240V AC	HJ2-L-AC220/240V-6	HJ4-L-AC220/240V-6

3. Plug-in type (with diode)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-DC 12V-D-6	HJ4-DC 12V-D-6
24V DC	HJ2-DC 24V-D-6	HJ4-DC 24V-D-6
48V DC	HJ2-DC 48V-D-6	HJ4-DC 48V-D-6
100/110V DC	HJ2-DC110V-D-6	HJ4-DC110V-D-6

4. Plug-in type (with diode and LED indication)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-L-DC 12V-D-6	HJ4-L-DC 12V-D-6
24V DC	HJ2-L-DC 24V-D-6	HJ4-L-DC 24V-D-6
48V DC	HJ2-L-DC 48V-D-6	HJ4-L-DC 48V-D-6
100/110V DC	HJ2-L-DC110V-D-6	HJ4-L-DC110V-D-6

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5. Plug-in type (with CR)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
100/110V AC	HJ2-AC100V-R-6	HJ4-AC100V-R-6
110/120V AC	HJ2-AC120V-R-6	HJ4-AC120V-R-6
200/220V AC	HJ2-AC200V-R-6	HJ4-AC200V-R-6
220/240V AC	HJ2-AC220/240V-R-6	HJ4-AC220/240V-R-6

Note) Packing quantity: 20pcs. (Inner carton), 200pcs. (Outer carton)

6. Plug-in type (with CR and LED indication)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
100/110V AC	HJ2-L-AC100V-R-6	HJ4-L-AC100V-R-6
110/120V AC	HJ2-L-AC120V-R-6	HJ4-L-AC120V-R-6
200/220V AC	HJ2-L-AC200V-R-6	HJ4-L-AC200V-R-6
220/240V AC	HJ2-L-AC220/240V-R-6	HJ4-L-AC220/240V-R-6

[Without Au plating type]

1. Plug-in type

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-DC 12V	HJ4-DC 12V
24V DC	HJ2-DC 24V	HJ4-DC 24V
48V DC	HJ2-DC 48V	HJ4-DC 48V
100/110V DC	HJ2-DC110V	HJ4-DC110V
12V AC	HJ2-AC 12V	HJ4-AC 12V
24V AC	HJ2-AC 24V	HJ4-AC 24V
48V AC	HJ2-AC 48V	HJ4-AC 48V
100/110V AC	HJ2-AC100V	HJ4-AC100V
110/120V AC	HJ2-AC120V	HJ4-AC120V
200/220V AC	HJ2-AC200V	HJ4-AC200V
220/240V AC	HJ2-AC220/240V	HJ4-AC220/240V

2. Plug-in type (with LED indication)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-L-DC 12V	HJ4-L-DC 12V
24V DC	HJ2-L-DC 24V	HJ4-L-DC 24V
48V DC	HJ2-L-DC 48V	HJ4-L-DC 48V
100/110V DC	HJ2-L-DC110V	HJ4-L-DC110V
12V AC	HJ2-L-AC 12V	HJ4-L-AC 12V
24V AC	HJ2-L-AC 24V	HJ4-L-AC 24V
48V AC	HJ2-L-AC 48V	HJ4-L-AC 48V
100/110V AC	HJ2-L-AC100V	HJ4-L-AC100V
110/120V AC	HJ2-L-AC120V	HJ4-L-AC120V
200/220V AC	HJ2-L-AC200V	HJ4-L-AC200V
220/240V AC	HJ2-L-AC220/240V	HJ4-L-AC220/240V

3. Plug-in type (with test button)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-T-DC 12V	HJ4-T-DC 12V
24V DC	HJ2-T-DC 24V	HJ4-T-DC 24V
48V DC	HJ2-T-DC 48V	HJ4-T-DC 48V
100/110V DC	HJ2-T-DC110V	HJ4-T-DC110V
12V AC	HJ2-T-AC 12V	HJ4-T-AC 12V
24V AC	HJ2-T-AC 24V	HJ4-T-AC 24V
48V AC	HJ2-T-AC 48V	HJ4-T-AC 48V
100/110V AC	HJ2-T-AC100V	HJ4-T-AC100V
110/120V AC	HJ2-T-AC120V	HJ4-T-AC120V
200/220V AC	HJ2-T-AC200V	HJ4-T-AC200V
220/240V AC	HJ2-T-AC220/240V	HJ4-T-AC220/240V

4. Plug-in type (with LED indication and test button)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-L-T-DC 12V	HJ4-L-T-DC 12V
24V DC	HJ2-L-T-DC 24V	HJ4-L-T-DC 24V
48V DC	HJ2-L-T-DC 48V	HJ4-L-T-DC 48V
100/110V DC	HJ2-L-T-DC110V	HJ4-L-T-DC110V
12V AC	HJ2-L-T-AC 12V	HJ4-L-T-AC 12V
24V AC	HJ2-L-T-AC 24V	HJ4-L-T-AC 24V
48V AC	HJ2-L-T-AC 48V	HJ4-L-T-AC 48V
100/110V AC	HJ2-L-T-AC100V	HJ4-L-T-AC100V
110/120V AC	HJ2-L-T-AC120V	HJ4-L-T-AC120V
200/220V AC	HJ2-L-T-AC200V	HJ4-L-T-AC200V
220/240V AC	HJ2-L-T-AC220/240V	HJ4-L-T-AC220/240V

5. Plug-in type (with diode)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-DC 12V-D	HJ4-DC 12V-D
24V DC	HJ2-DC 24V-D	HJ4-DC 24V-D
48V DC	HJ2-DC 48V-D	HJ4-DC 48V-D
100/110V DC	HJ2-DC110V-D	HJ4-DC110V-D

6. Plug-in type (with diode and LED indication)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
12V DC	HJ2-L-DC 12V-D	HJ4-L-DC 12V-D
24V DC	HJ2-L-DC 24V-D	HJ4-L-DC 24V-D
48V DC	HJ2-L-DC 48V-D	HJ4-L-DC 48V-D
100/110V DC	HJ2-L-DC110V-D	HJ4-L-DC110V-D

7. Plug-in type (with CR)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
100/110V AC	HJ2-AC100V-R	HJ4-AC100V-R
110/120V AC	HJ2-AC120V-R	HJ4-AC120V-R
200/220V AC	HJ2-AC200V-R	HJ4-AC200V-R
220/240V AC	HJ2-AC220/240V-R	HJ4-AC220/240V-R

Note) Packing quantity: 20pcs. (Inner carton), 200pcs. (Outer carton)

8. Plug-in type (with CR and LED indication)

Coil voltage	2 Form C	4 Form C
	Part No.	Part No.
100/110V AC	HJ2-L-AC100V-R	HJ4-L-AC100V-R
110/120V AC	HJ2-L-AC120V-R	HJ4-L-AC120V-R
200/220V AC	HJ2-L-AC200V-R	HJ4-L-AC200V-R
220/240V AC	HJ2-L-AC220/240V-R	HJ4-L-AC220/240V-R

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9. Accessories

Type	No. of channels	Product name	Part No.
Terminal socket	2 channels	HJ2 terminal socket	HJ2-SFD
		HJ2 terminal socket (Finger protect type)	HJ2-SFD-S
	2/4 channels (common)	HJ4 terminal socket	HJ4-SFD
		HJ4 terminal socket (Finger protect type)	HJ4-SFD-S
Socket for plug-in	2 channels	HC2-socket (for HJ relay)	HC2-SS-K-H105
	2/4 channels (common)	HC4-socket (for HJ relay)	HC4-SS-K-H105
Socket for PC board	2 channels	HC2-PC board socket (for HJ relay)	HC2-PS-K-H105
	2/4 channels (common)	HC4-PC board socket (for HJ relay)	HC4-PS-K-H105

Notes) 1. Packing quantity: 10pcs. (Inner carton), 100pcs. (Outer carton)
2. Use the hold-down clip that is shipped with the terminal socket or socket.
3. Terminal sockets conform to UL, CSA and TÜV, as standard.
Sockets conform to UL and CSA, as standard.
4. In order to prevent breakage and disfiguring, the screw tightening torque for the terminal socket should be within the range of 0.49 to 0.69 N·m (5 to 7 kgf·cm).
5. When attaching directly to a chassis, please use an M4 × 10 metric coarse screw thread, a spring washer, and a hexagonal nut.
6. For S1DX/S1DXM timer, use the leaf holding clip (Part No. ADX18012).

COIL DATA

AC coils (50/60Hz)

Coil voltage V AC	Pick-up voltage, V AC (max.) (at 20°C 68°F) (Initial)	Drop-out voltage, V AC (max.) (at 20°C 68°F) (Initial)	Nominal coil current, mA (±20%)		Nominal operating power, V A		Max. allowable voltage, V AC (at 70°C 158°F)
			50Hz	60Hz	50Hz	60Hz	
12	9.6	3.6	102.9	85.4	Approx. 1.2 to 1.5	Approx. 1.0 to 1.3	13.2
24	19.2	7.2	54.5	45.6			26.4
48	38.4	14.4	30.7	25.9			52.8
100/110	80	33	11.8/13.9	10.0/11.6			121
110/120	88	36	10.9/12.5	9.1/10.3			132
200/220	160	66	6.8/8.1	5.7/6.7			242
220/240	176	72	6.8/7.8	5.6/6.4			264

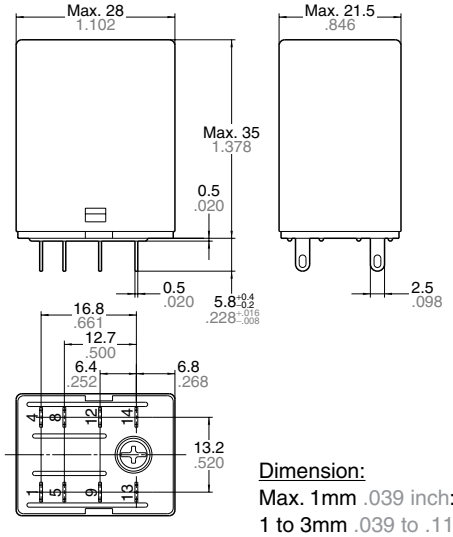
DC coils

Coil voltage V DC	Pick-up voltage, V DC (max.) (at 20°C 68°F) (Initial)	Drop-out voltage, V DC (max.) (at 20°C 68°F) (Initial)	Nominal coil current, mA	Coil resistance, Ω (at 20°C 68°F)	Nominal operating power, W	Max. allowable voltage, V DC (at 70°C 158°F)
12	9.6	1.2	75 (±10%)	160	0.9	13.2
24	19.2	2.4	37 (±10%)	650	0.9	26.4
48	38.4	4.8	18 (±15%)	2,600	0.9	52.8
100/110	80	11	9.1/10 (±15%)	11,000	1.1	121

DIMENSIONS

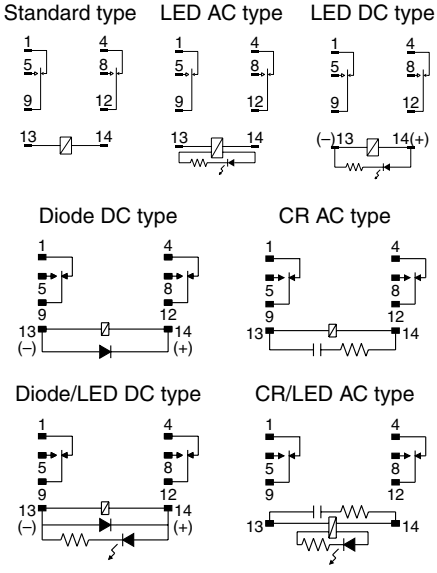
mm inch

1. Plug-in type 2 Form C (including diode/CR)



Dimension: Tolerance
Max. 1mm .039 inch: ±0.1 ±.004
1 to 3mm .039 to .118 inch: ±0.2 ±.008
Min. 3mm .118 inch: ±0.3 ±.012

Schematic (Bottom view)



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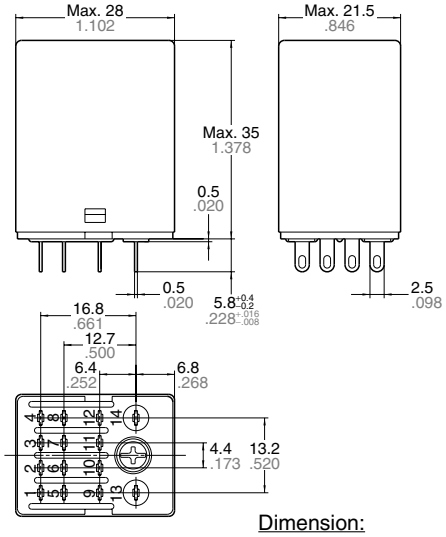
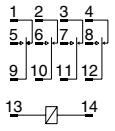
2. Plug-in type 4 Form C (including diode/CR)

mm inch

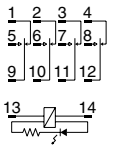


Schematic (Bottom view)

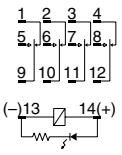
Standard type



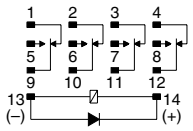
LED AC type



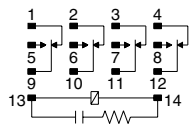
LED DC type



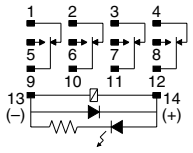
Diode DC type



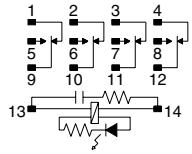
CR AC type



Diode/LED DC type

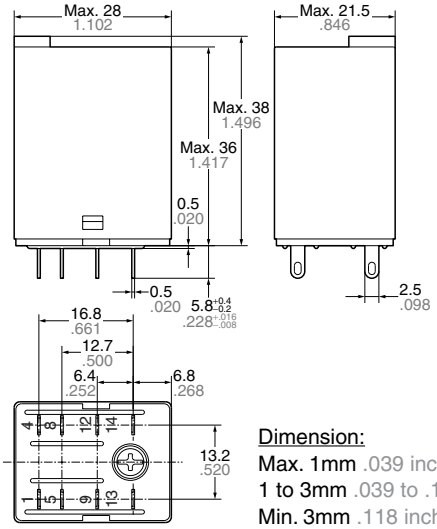


CR/LED AC type



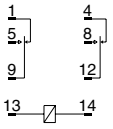
Dimension:	Tolerance
Max. 1mm .039 inch:	±0.1 ±.004
1 to 3mm .039 to .118 inch:	±0.2 ±.008
Min. 3mm .118 inch:	±0.3 ±.012

3. Plug-in type with test button 2 Form C

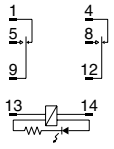


Schematic (Bottom view)

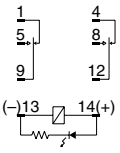
Standard type



LED AC type

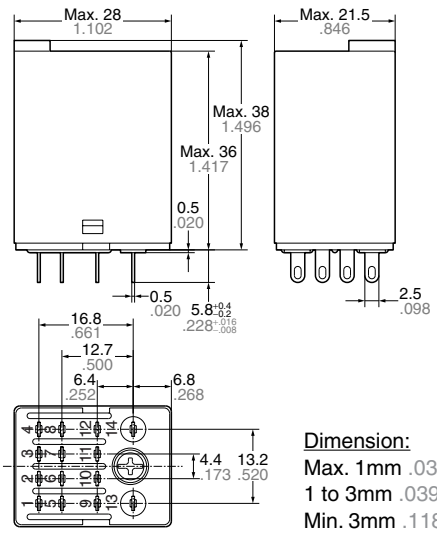


LED DC type



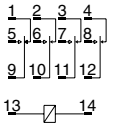
Dimension:	Tolerance
Max. 1mm .039 inch:	±0.1 ±.004
1 to 3mm .039 to .118 inch:	±0.2 ±.008
Min. 3mm .118 inch:	±0.3 ±.012

4. Plug-in type with test button 4 Form C

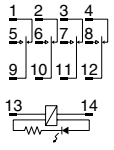


Schematic (Bottom view)

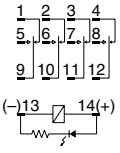
Standard type



LED AC type



LED DC type



Dimension:	Tolerance
Max. 1mm .039 inch:	±0.1 ±.004
1 to 3mm .039 to .118 inch:	±0.2 ±.008
Min. 3mm .118 inch:	±0.3 ±.012

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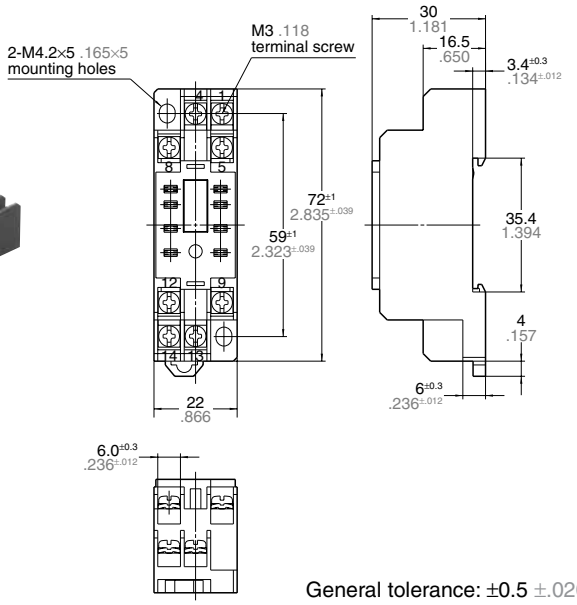
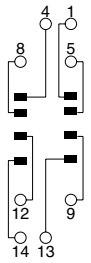
5. Terminal socket

mm inch

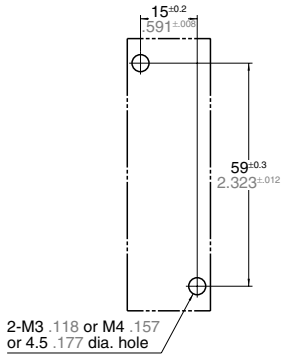
HJ2 terminal socket



Schematic (Bottom view)

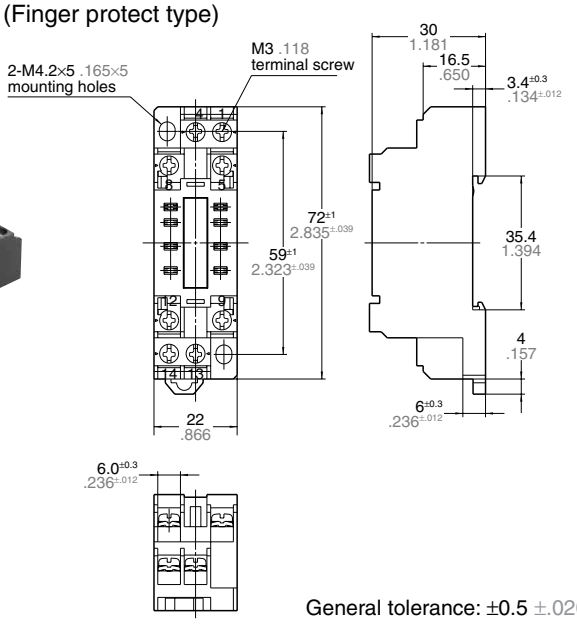


Mounting hole dimensions

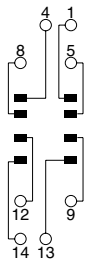


General tolerance: ±0.5 ±.020

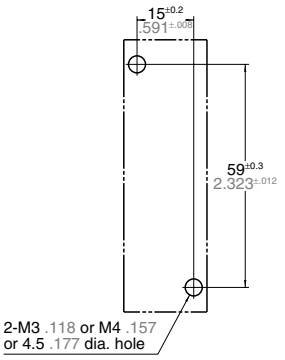
HJ2 terminal socket (Finger protect type)



Schematic (Bottom view)



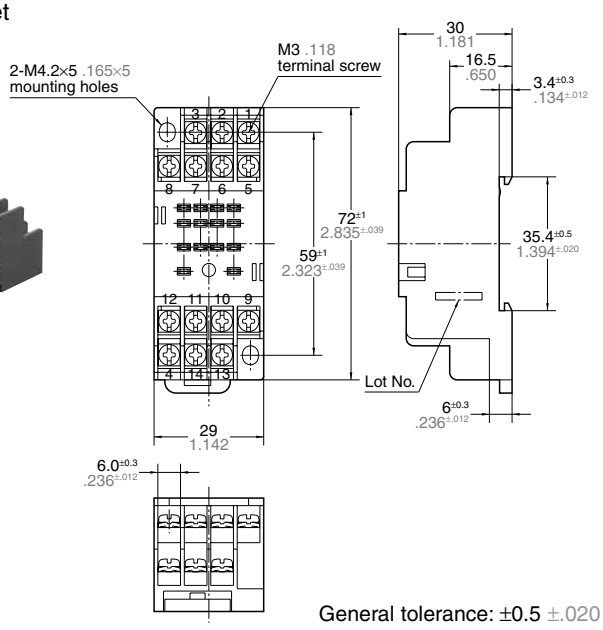
Mounting hole dimensions



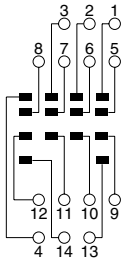
General tolerance: ±0.5 ±.020

Note) Round type terminal is unable to attach.

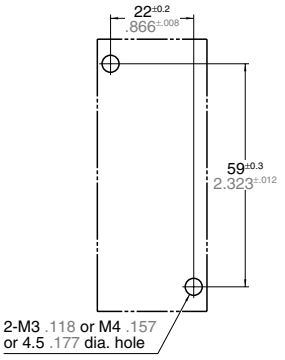
HJ4 terminal socket



Schematic (Bottom view)



Mounting hole dimensions



General tolerance: ±0.5 ±.020

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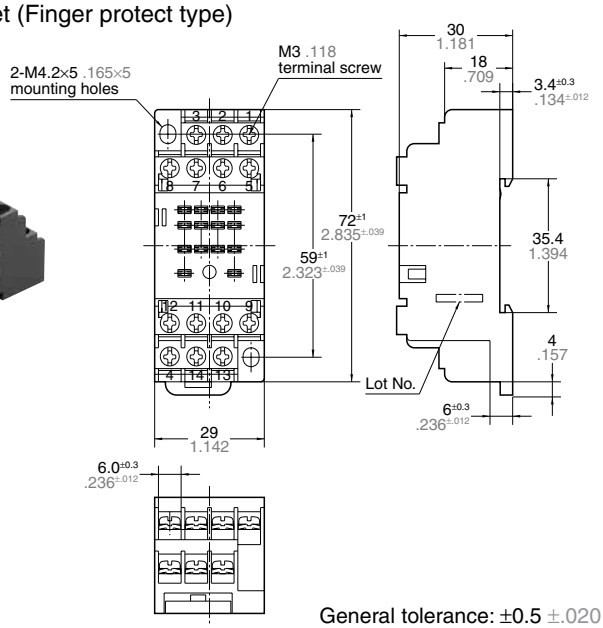
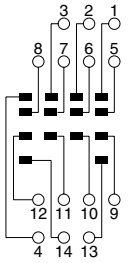
HJ4 terminal socket (Finger protect type)

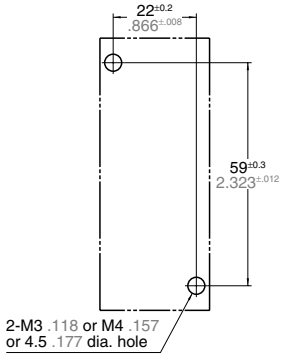
mm inch



Schematic (Bottom view)



Mounting hole dimensions

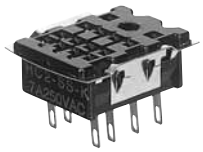


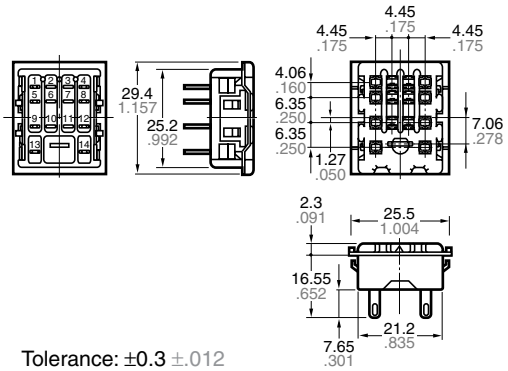
General tolerance: ±0.5 ±.020

Note) Round type terminal is unable to attach.

6. Plug-in socket

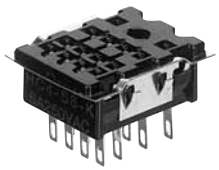
HC2 - Socket for HJ relay (HC2-SS-K-H105)

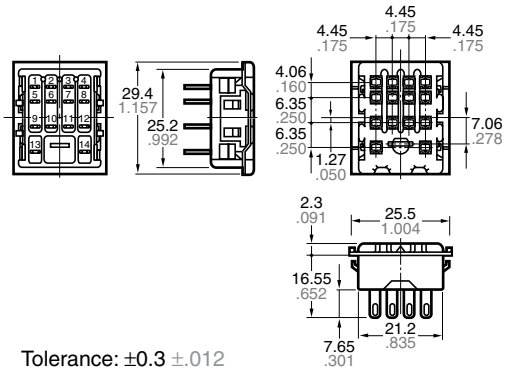




Tolerance: ±0.3 ±.012

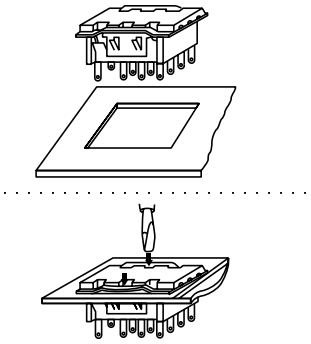
HC4 - Socket for HJ relay (HC4-SS-K-H105)



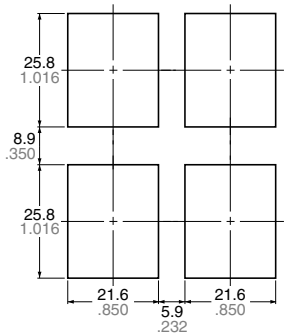


Tolerance: ±0.3 ±.012

Mounting hole diagram



Chassis cutout (Side-by-side installation)



Tolerance: ±0.2 ±.008

Notes: 1. Applicable chassis board thickness is 1.0 to 2.0 mm.
2. Installation is easy by inserting the socket from the top into the holes and by depressing the two down arrows on the retention fitting from the front.

Installed relay (HC2-SS-K-H105)

Hold-down clip is packaged with the socket. (Same product as plug-in socket (Part No.: HC2-SS-K) for HC relay except that hold-down clip shape is different.)

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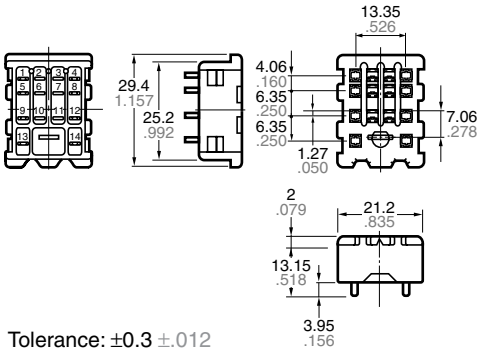
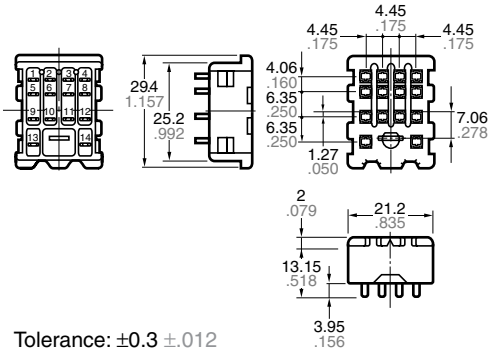
7. PC board socket

HC2 - PC board socket for HJ relay (HC2-PS-K-H105)



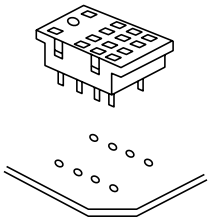
Tolerance: ±0.3 ±.012

HC4 - PC board socket for HJ relay (HC4-PS-K-H105)

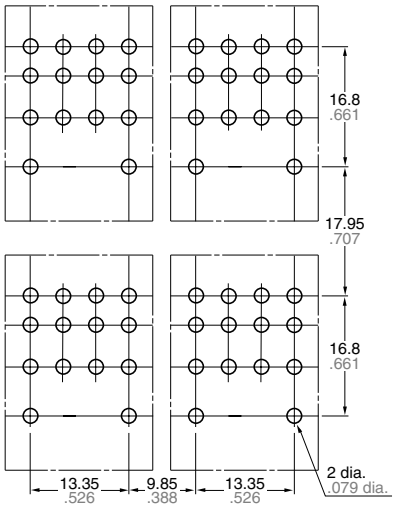


Tolerance: ±0.3 ±.012

PC board pattern (BOTTOM VIEW)



Chassis cutout (Side-by-side installation)

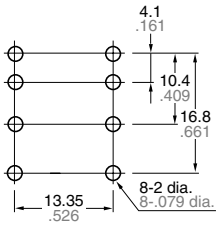


Tolerance: ±0.1 ±.004

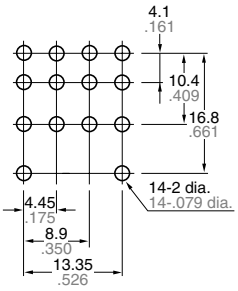
Installed relay (HC2-PS-K-H105)

Hold-down clip is packaged with the socket. (Same product as PC board socket (Part No.: HC2-PS-K) for HC relay except that hold-down clip shape is different.)

2 Form C

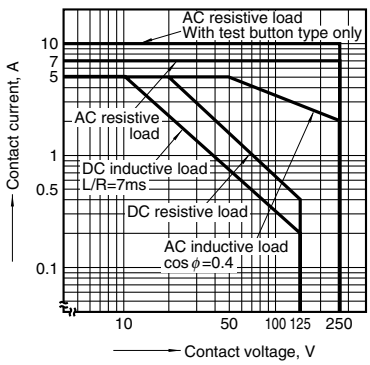


4 Form C

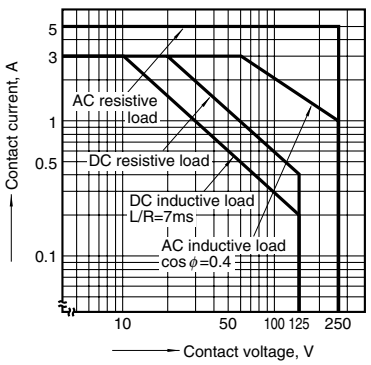


REFERENCE DATA

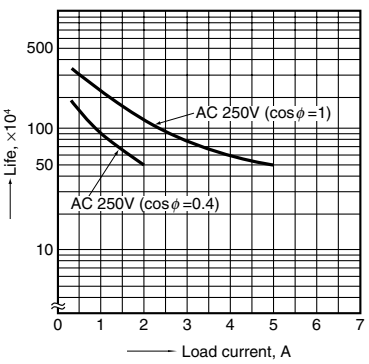
1-(1). Max. switching capacity (2 Form C type)



1-(2). Max. switching capacity (4 Form C type)



2-(1). Life curve (2 Form C)



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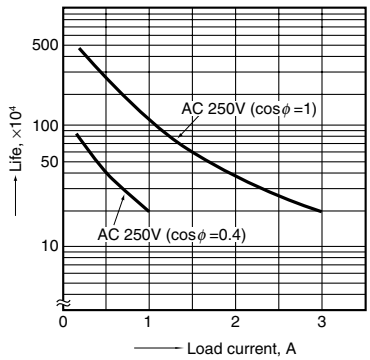
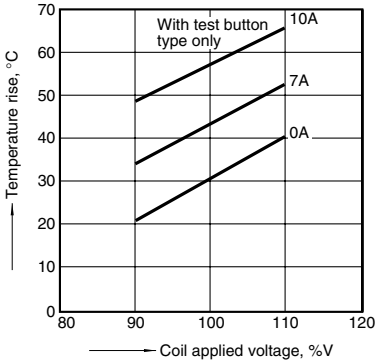
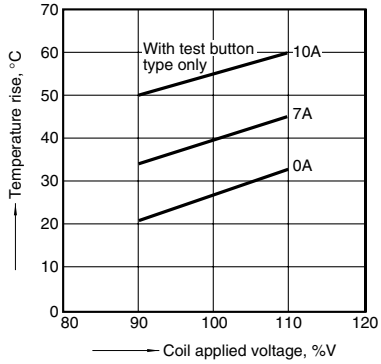
2-(2). Life curve (4 Form C)



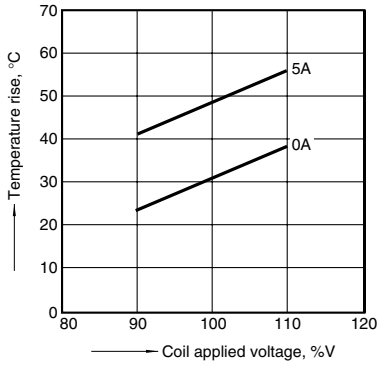
3-(1). Coil temperature rise (2 Form C/AC type)
Measured portion: Inside the coil
Ambient temperature: 70°C 158°F



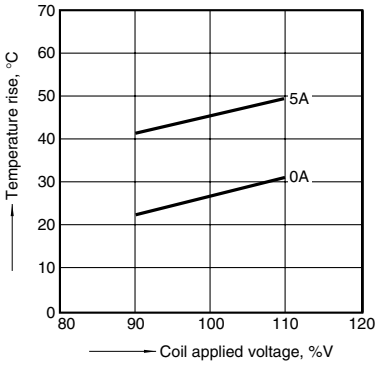
3-(2). Coil temperature rise (2 Form C/DC type)
Measured portion: Inside the coil
Ambient temperature: 70°C 158°F



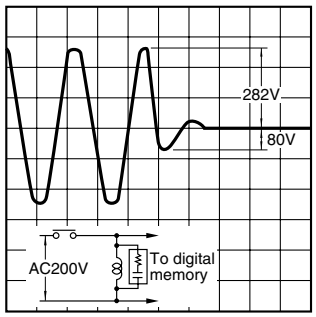
3-(3). Coil temperature rise (4 Form C/AC type)
Measured portion: Inside the coil
Ambient temperature: 70°C 158°F



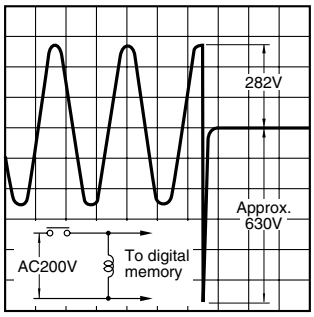
3-(4). Coil temperature rise (4 Form C/DC type)
Measured portion: Inside the coil
Ambient temperature: 70°C 158°F



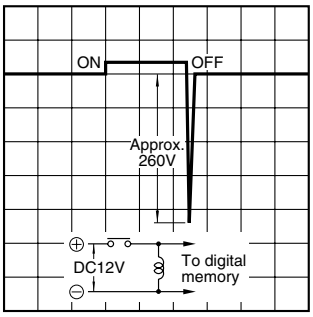
4-(1). AC coil surge voltage waveform (With CR)
Tested sample: HJ4-AC200V-R



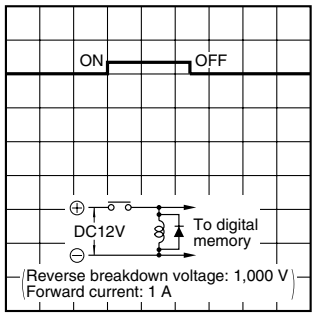
4-(2). AC coil surge voltage waveform (Without CR)
Tested sample: HJ4-AC200V



5-(1). DC coil surge voltage waveform (Without diode)



5-(2). DC coil surge voltage waveform (With diode)
Diode characteristics:
Reverse breakdown voltage: 1,000 V
Forward current: 1 A



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NOTES

1. Coil voltage

Please refer to “COIL DATA” about coil input power supply.

2. LED display

Operation is displayed by the light emitted from the LED. The LED may remain briefly lit if voltage remains after the relay opens.

3. Switching lifetime

The switching lifetime is defined under the standard test condition specified in the JIS* C 5442 standard (temperature 15 to 35°C 59 to 95°F, humidity 25 to 75%). Check this with the real device as it is affected by coil driving circuit, load type, activation frequency, activation phase,ambient conditions and other factors.

Also, be especially careful of loads such as those listed below.

(1) When used for AC load-operating and the operating phase is synchronous.

Rocking and fusing can easily occur due to contact shifting.

(2) High-frequency load-operating

When high-frequency opening and closing of the relay is performed with a load that causes arcs at the contacts, nitrogen and oxygen in the air is fused by the arc energy and HNO_3 is formed. This can corrode metal materials.

Three countermeasures for these are listed here.

- Incorporate an arc-extinguishing circuit.
- Lower the operating frequency
- Lower the ambient humidity

4. Usage, transport and storage conditions

1) Temperature, humidity and pressure during usage, storage and transport

(1) Temperature:

–40 to +70°C –40 to +158°F

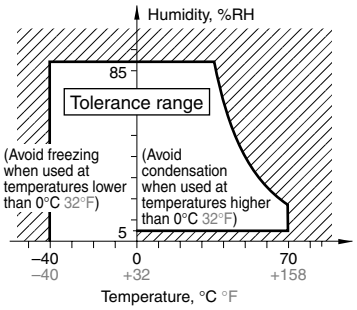
(2) Humidity: 5 to 85% RH

(Avoid freezing and condensation.)

The humidity range varies with the temperature. Use within the range indicated in the graph below.

(3) Atmospheric pressure: 86 to 106 kPa

Temperature and humidity range for usage, transport, and storage



2) Condensation

Condensation forms when there is a sudden change in temperature under high temperature and high humidity conditions. Condensation will cause deterioration of the relay insulation.

3) Freezing

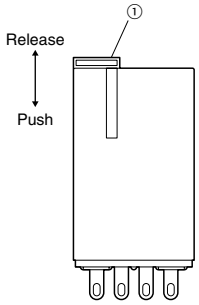
Condensation or other moisture may freeze on the relay when the temperatures is lower than 0°C 32°F. This causes problems such as sticking of movable parts or operational time lags.

4) Low temperature, low humidity environments

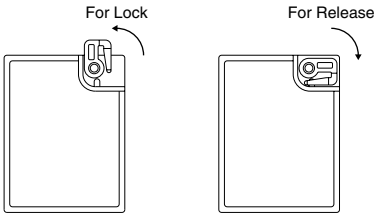
The plastic becomes brittle if the relay is exposed to a low temperature, low humidity environment for long periods of time.

5. Operation method for test button

1) Push and release ① gently to confirm relay switching.



2) To lock to one side turn 90° counter-clockwise while pushing lock and turn 90° clockwise to release.



3) Do not use the test button for anything other than testing, such as when checking the circuit.

6. Rating

Stan-dard	File No.	Ratings	
		2 Form C	4 Form C
UL	E43149	7A 250 V AC 7A 30V DC	5A 250 V AC 5A 30V DC
TÜV	Std. type R 2024382	7A 250 V~ (cosϕ=1) 7A 30V⎓ (0ms)	5A 250 V~ (cosϕ=1) 5A 30V⎓ (0ms)
	Test button R50049126	10A 250 V~ (cosϕ=1) 10A 30V⎓ (0ms)	
	CR, Diode Au plating R50049126	7A 250 V~ (cosϕ=1) 7A 30V⎓ (0ms)	

(CSA: C-UL approved)

7. Diode characteristics

1) Reverse breakdown voltage: 1,000 V

2) Forward current: 1 A

8. Diode and CR built-in type

Since the diode and CR inside the relay coil are designed to absorb the counter emf, the element may be damaged if a large surge, etc., is applied to the diode and CR. If there is the possibility of a large surge voltage from the outside, please implement measures to absorb it.

For Cautions for Use, see Relay Technical Information .

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