

# TYPE : HV022 Series Relay

Revised : 2021-02-03  
Issued : 2015-09-18



## ■ Type List

Terminal style	Contact form	Designation (provided with)	
		Flux tight	Flanged cover (Flux tight )
Plug-in terminal	1A (SPDM)	HV022-1AH-C	-----
PCB terminal		HV022P-1AH-C	-----
Screw terminal		-----	HV022S1-1AH-C1

## ■ Ordering Information

HV022 P1 - 1A H - C  
1 2 3 4 5

- |  |  |
|--|--|
| 1. HV022 -- Basic series designation             | 4. H -- Contact material Ag alloy          |
| 2. Blank -- Plug-in terminal                     | 5. C -- Flux tight                         |
| P1 -- PCB terminal                               | V -- Sealed type                           |
| S1 -- Screw terminal (M6)                        | S -- Sealed type washable                  |
|  | C1 -- Flanged cover (Flux tight)           |
| 3. 1A -- Form A, single-pole, double-make (SPDM) | V1 -- Flanged cover (Sealed type)          |
|  | S1 -- Flanged cover (Sealed type washable) |

## ■ Contact Rating

Rated load (Resistive)	80A 450VDC
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## ■ Coil Rating (DC)

Rated voltage (V)	Rated current $\pm 10\%$ at 23°C (mA)	Coil resistance $\pm 10\%$ at 23°C ( $\Omega$ )	Pick up voltage (Max.) at 23°C	Drop out voltage (Min.) at 23°C	Max. continuous voltage at 23°C <sup>(1)</sup>	Power consumption at rated voltage
12	416.7	28.8	80% of rated voltage	5% of rated voltage	116% of rated voltage	approx. 5W
24	208.3	115.2				

Note : (1) Without continuous contact current.

## ■ Specification

Contact material	Ag alloy
Voltage drop <sup>(1)</sup>	Typ.10mV at 10A
Operate time <sup>(1)</sup>	50ms Max.
Release time <sup>(1)</sup>	30ms Max.

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Insulation resistance <sup>(1)</sup>	100MΩ Min. (DC 500V)		
Dielectric strength <sup>(1)</sup>	Between open contact		: AC 2000V, 50/60Hz 1 min.
	Between contact and coil		: AC 4000V, 50/60Hz 1 min.
Vibration resistance	Operating extremes	10~500Hz, 5.0G	
	Damage limits	10~500Hz, 5.0G	
Shock resistance	Operating extremes	10G	
	Damage limits	100G	
Life expectancy	Mechanical		500,000 ops. (frequency 9,000 ops./hr)
	Electrical	Rated switching capacity (Resistive)	80A 450VDC: 500 ops. (frequency 180 ops./hr)
		Overload switching capacity	120A 450VDC: 5 ops.
		Short term carrying current	150A 60sec., 250A 5sec.
Operating ambient temperature	-40 ~ +70°C (no freezing)		
Weight	Approx. 180g, 185g (flanged cover)		

Notes : (1) Initial value. Operate and release time excluding contact bounce.

(2) Load sides with polarities (+) and (-).

(3) Unless otherwise specified, all tests are under room temperature and humidity.

(4) Consider the heat of PCB is necessary, please check the actual condition of PCB.

(5) Applying no diode to this relay. The life expectancy will be lower when a diode is used. To use a varistor (ZNR) could absorb the coil surge of relay that is recommended.

(6) Do not use the relay exceeding the coil rating, contact rating and life expectancy, or this may cause the risk of overheating.

(7) To assure optimum performance, avoid the relay from dropping, hitting, or other unnecessary shocks.

(8) Take care to avoid cross connections as they may cause malfunctions or overheating.

(9) To avoid mounting the relay in strong magnetic fields (near a transformer or magnet) or close to an object that radiates heat.

(10) Always keep the oils and fats kind from the main terminal parts.

(11) Use suitable harnesses and bus bars according to the current as below :

80A type : Min. 25 mm<sup>2</sup>

(12) To avoid unexpected damage, when tightening a screw, use no exceeding specified torque range as below :

M5 screw : 4.5 ~ 5 N.m

M6 screw : 6 ~ 8 N.m

(13) Please pay attention to the phenomenon of freezing in the low temperature environment below 0°C.  
Please evaluate the actual use of the environment.

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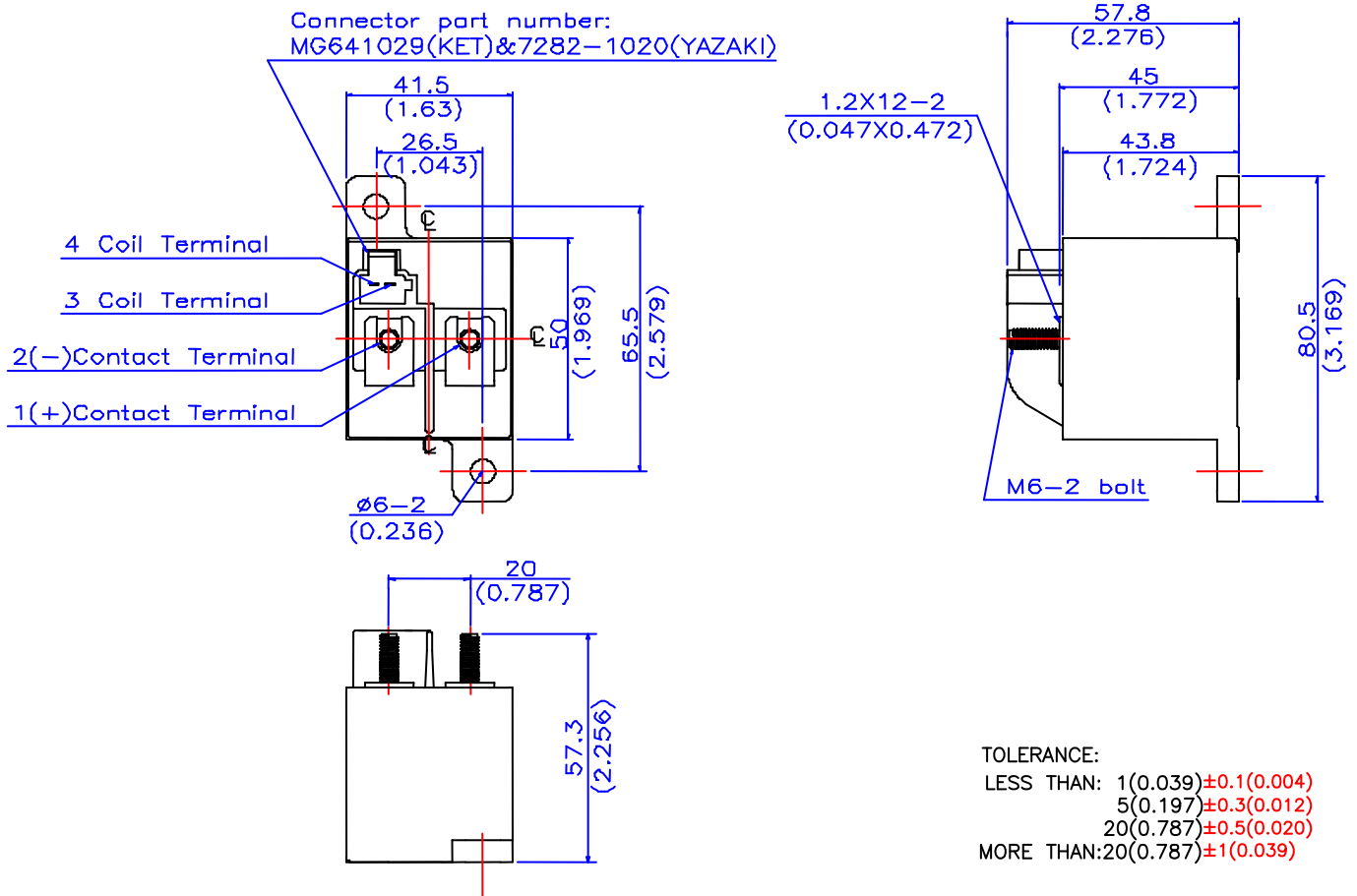
(14) Please contact Song Chuan for the detailed information.

Confirmed by	Checked by	Prepared by
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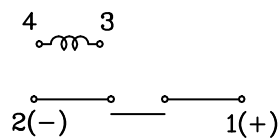
### ■ Outline Dimensions

#### ◆ Screw terminal / Flanged cover (flux tight) type



### ■ Wiring Diagram

(Top view)

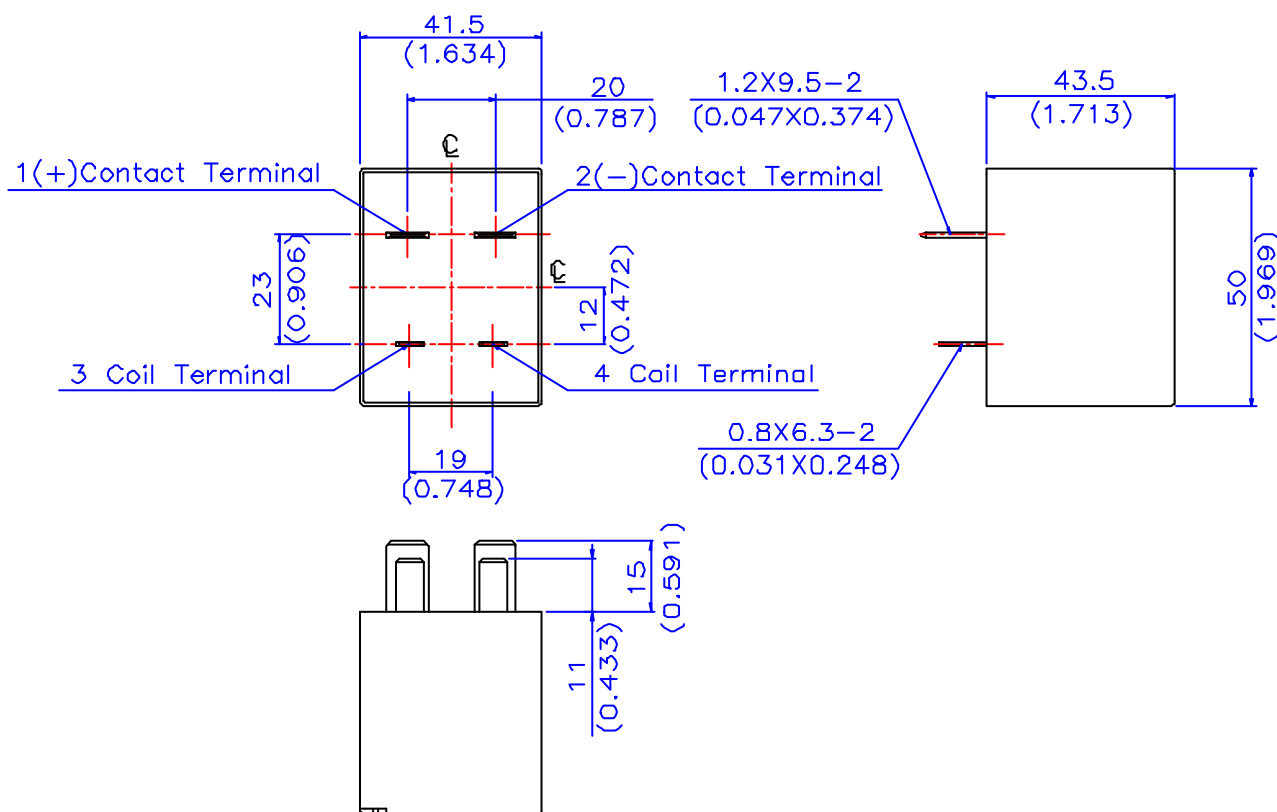


LOAD SIDES WITH POLARITIES (+) AND (-).

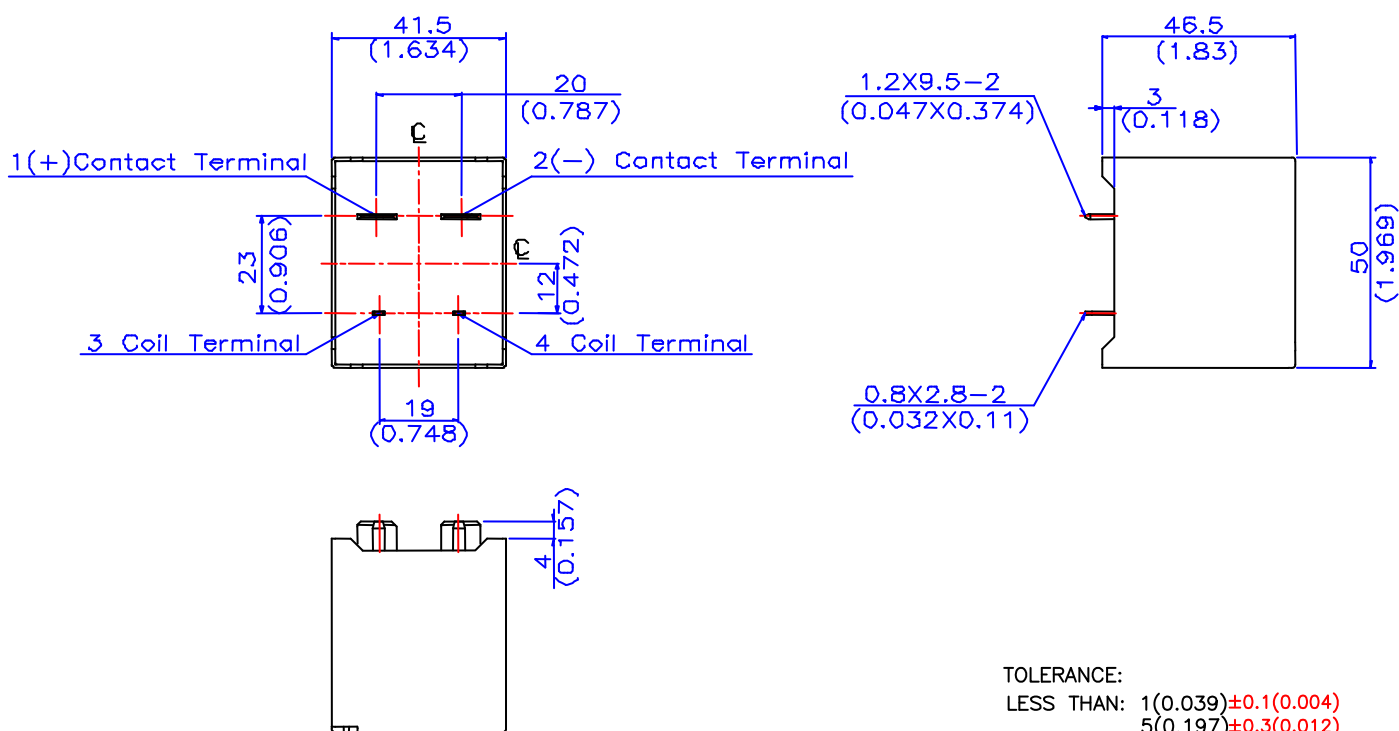
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## ■ Outline Dimensions

### ◆ Plug-in terminal / Flux tight cover type



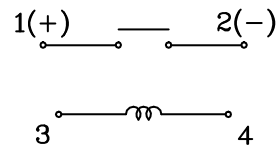
### ◆ PCB terminal / Flux tight cover type



TOLERANCE:  
 LESS THAN: 1(0.039)±0.1(0.004)  
 5(0.197)±0.3(0.012)  
 20(0.787)±0.5(0.020)  
 MORE THAN: 20(0.787)±1(0.039)

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### ■ Wiring Diagram (Bottom view)



LOAD SIDES WITH POLARITIES (+) AND (-).

### ■ PC Board Layout (Bottom view)

