



»» Features

- 200A high power automotive relay.
- SPNO contact configuration.
- Switches up to 200A resistive load, 50,000 ops., 23°C.
- Optional resistor or diode for coil transient suppression.
- Complies with RoHS-Directive 2011/65/EU and ELV-Directive 2000/53/EC.

»» Type List

Contact form	Enclosure style
	Flanged cover (Sealed type)
1A (SPNO)	409-1AH-V1

»» Ordering Information

409 - 1A H - V1 -
 1 2 3 4 5 6 7

- | | |
|--|---|
| 1. 409 -- Basic series designation
2. 1A -- Single pole normally open
3. H -- Contact material Ag alloy
4. V1 -- Flanged cover (sealed type)
5. Blank -- Standard type
R1 -- Coil parallel with resistor 1/2W for
12V 680Ω, 1W for 24V 1000Ω | 6. Blank -- Standard type
001 -- Coil parallel with diode 1N4007
the diode anode on # 2 terminal
002 -- Coil parallel with diode 1N4007
the diode cathode on # 2 terminal
7. <input type="checkbox"/> -- Coil voltage (please refer to the
coil rating data for the availability) |
|--|---|

»» Contact Rating

Resistive load	200A 24VDC, On 1s / Off 3s, 50K ops.
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»» Coil Rating (DC)

Rated voltage	Rated current ±10 % at 23°C		Coil resistance ±10 % at 23°C		Max. continuous voltage at 75°C	Pick up voltage (Max.) at 23°C	Drop out voltage (Min.) at 23°C	Power consumption at rated voltage	
	without resistor	with resistor	without resistor	with resistor				without resistor	with resistor
12V	400 mA	414 mA	30 Ω	29 Ω	14 V	8 V	0.5 V	approx. 4.8W	approx. 5.0W
24V	266 mA	289 mA	90 Ω	83 Ω	28 V	16 V	1 V	approx. 6.5W	approx. 6.9W

»» Specification

Contact material	Ag alloy
Contact voltage drop ⁽¹⁾	Typ. 200mV at 200A
Operate time ⁽¹⁾	50 ms Max.
Release time ⁽¹⁾	50 ms Max./100 ms Max. (for coil parallel with diode)
Insulation resistance ⁽¹⁾	20 MΩ Min. (DC 500V)

Dielectric strength ⁽¹⁾	Between open contact	: AC 1000V, 50/60Hz 1 min.
	Between contact and coil	: AC 1000V, 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	1,000,000 ops. (frequency 18,000 ops./hr.)
Operating ambient temperature	-40 ~ +75°C (no freezing)	
Weight	Approx. 330g	

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

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

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

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

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

(6) Do not switch the contacts without any load as the contact resistance may become increased rapidly.

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

(8) Flux tight version is recommended. If there is cleaning process and sealed type is selected, the vent-hole should be removed after the process.

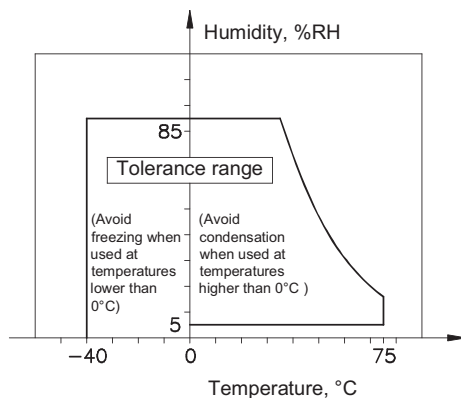
(9) Use suitable harnesses and bus bars according to the current as below :

200A type : Min. 70.0 mm

(10) To avoid unexpected damage, when tightening a screw, use no exceeding specified torque range as below : M8 screw : 9 ~ 12 N.m

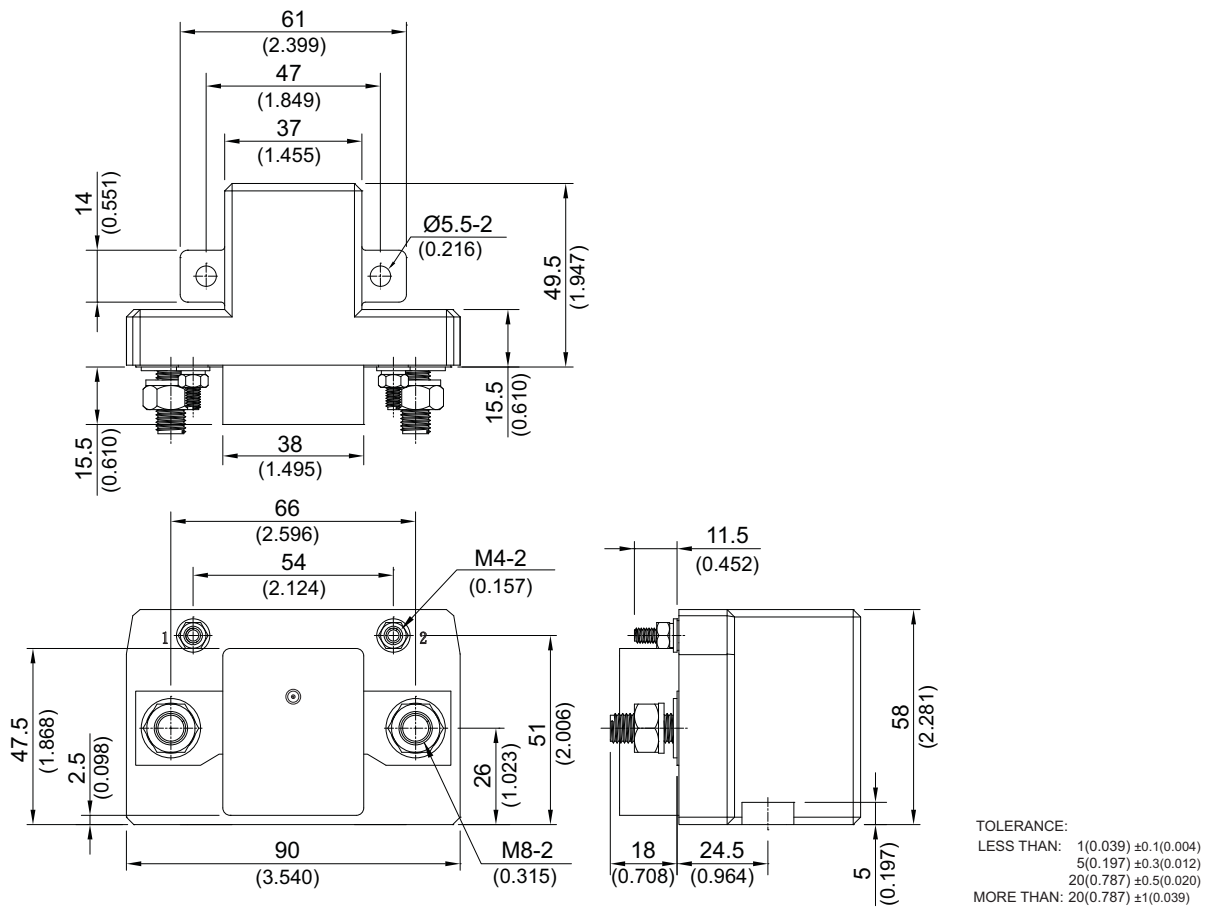
(11) Usage, transport and storage conditions

- 1. Temperature: -40 ~ +75°C
- 2. Humidity: 5 to 85% R.H.
- 3. Pressure: 86 to 106 kPa
- Furthermore, the humidity range varies with the temperature. So, use relays within the range indicated in the graph below.



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

»» Outline Dimensions



»» Wiring Diagram

BOTTOM VIEW

