



### »» Features

- Heavy duty sugar cube relay with 20A 120VAC, 16A 240VAC, TV-8 rating.
- UL & VDE safety approval.
- Optional for flux free, sealed type and sealed type washable cover, SPNO, SPDT contact configuration.
- High CTI 250 material or product comply with IEC 60335-1 are available.
- High performance PCB power relay for motor control, compressor control, home appliances.
- Complies with RoHS-Directive 2011/65/EU.
- Optional for halogen free version.

### »» Type List

#### ◆ Standard type

| Terminal style | Contact form | Insulation system | Designation (provided with) |             |                      |
|----------------|--------------|-------------------|-----------------------------|-------------|----------------------|
|                |              |                   | Flux tight                  | Sealed type | Sealed type washable |
| PCB terminal   | 1A<br>(SPNO) | -----             | 207-1AH-C                   | 207-1AH-V   | 207-1AH-S            |
|                |              | F                 | 207-1AH-F-C                 | 207-1AH-F-V | 207-1AH-F-S          |

#### ◆ High power type

|              |              |       |              |              |              |
|--------------|--------------|-------|--------------|--------------|--------------|
| PCB terminal | 1A<br>(SPNO) | ----- | 207H-1AC-C   | 207H-1AC-V   | 207H-1AC-S   |
|              |              | F     | 207H-1AC-F-C | 207H-1AC-F-V | 207H-1AC-F-S |

### »» Ordering Information

207   - 1A H -  - C   
 1 2 3 4 5 6 7 8

- |   |   |
|---|---|
| <p>1. 207 -- Basic series designation</p> <p>2. Blank -- Standard type<br/>H -- High power type</p> <p>3. Blank -- Standard type<br/>A -- Double pin type</p> <p>4. 1A -- Single pole normally open<br/>1C -- Single pole double throw</p> <p>5. C -- Contact material AgNi<br/>H -- Contact material AgSnO</p> | <p>6. Blank -- Standard type<br/>F -- Class F</p> <p>7. C -- Flux tight<br/>V -- Sealed type<br/>S -- Sealed type washable</p> <p>8. <input type="checkbox"/> -- Coil voltage (please refer to the coil rating data for the availability)</p> |
|---|---|

### »» Contact Rating

#### ◆ 207

|                         |   |
|-------------------------|---|
| Resistive load          | NO: 17A 240VAC 100K cycles<br>10A 240VAC at 105°C 300K cycles (B10 value)<br>NC: 10A 240VAC 100K cycles |
| Max. switching current  | 20A   |
| Max. switching voltage  | 277VAC  |
| Max. switching capacity | 4080VA  |

## ◆ 207H

|                         |  |
|-------------------------|--|
| Resistive load          | NO: 17A 240VAC 100K cycles<br>16A 240VAC at 105°C 100K cycles<br>10A 240VAC at 105°C 300K cycles<br>NC: 10A 240VAC 100K cycles |
| Max. switching current  | 20A  |
| Max. switching voltage  | 277VAC   |
| Max. switching capacity | 4080VA   |

## »» Coil Rating (DC)

| Rated voltage (V) | Rated current ±10 % at 23°C (mA) | Coil resistance ±10 % at 23°C (Ω) | Max. continuous voltage at 85°C | Pick up voltage(Max.) at 23°C | Drop out voltage(Min.) at 23°C | Power consumption at rated voltage |
|-------------------|----------------------------------|-----------------------------------|---------------------------------|-------------------------------|--------------------------------|------------------------------------|
| 3                 | 130                              | 23                                | 150 % of rated voltage          | 75 % of rated voltage         | 5 % of rated voltage           | approx. 0.4W                       |
| 5                 | 79                               | 63                                |                                 |                               |                                |                                    |
| 6                 | 67                               | 90                                |                                 |                               |                                |                                    |
| 9                 | 44                               | 203                               |                                 |                               |                                |                                    |
| 12                | 33                               | 360                               |                                 |                               |                                |                                    |
| 18                | 22                               | 810                               |                                 |                               |                                |                                    |
| 24                | 17                               | 1440                              |                                 |                               |                                |                                    |
| 36                | 11                               | 3240                              |                                 |                               |                                |                                    |
| 48                | 8                                | 5760                              |                                 |                               |                                |                                    |

## »» Specification

|                                   |  |  |
|-----------------------------------|--|--|
| Contact material                  | AgSnO / AgNi alloy                                       |  |
| Contact resistance <sup>(1)</sup> | 100mΩ Max. (at 1A/6VDC by 4-wire resistance measurement) |  |
| Operate time <sup>(1)</sup>       | 15ms Max.  |  |
| Release time <sup>(1)</sup>       | 10ms Max.  |  |
| Vibration resistance              | Operating extremes                                       | 10~50Hz , amplitude 1.0 mm                     |
|                                   | Damage limits  | 10~50Hz , amplitude 1.0 mm                     |
| Shock resistance                  | Operating extremes                                       | 10G  |
|                                   | Damage limits  | 100G   |
| Life expectancy                   | Mechanical   | 10,000,000 ops.<br>(frequency 18,000 ops./hr)  |
|                                   | Electrical   | See contact rating.<br>(frequency 360 ops./hr) |
| Operating ambient temperature     | -40~+85°C (no freezing) <sup>(2)</sup>                   |  |
| Weight                            | Approx. 15 g   |  |

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

(2) special version of high temperature 105°C can be selected.

- (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) Do not switch the contacts without any load as the contact resistance may become increased rapidly.
- (9) Usage, transport and storage conditions
  - 1. Temperature:  $-40 \sim +85^{\circ}\text{C}$
  - 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.



- (10) Please contact Song Chuan for the detailed information.

## »» Insulation Data

|                                      |                          |  |
|--------------------------------------|--------------------------|--|
| Insulation resistance <sup>(1)</sup> | 100 MΩ Min. (DC 500V)    |  |
| Dielectric strength <sup>(1)</sup>   | Between open contact     | : AC 1000V, 50/60Hz 1 min.                       |
|                                      | Between contact and coil | : AC 2500V, 50/60Hz 1 min.                       |
| Insulation of IEC 61810-1            |                          |  |
| Clearance / creepage distances       | Between coil to contact  | : Basic, $\geq 1.5\text{mm} / \geq 2.5\text{mm}$ |
|                                      | Between open contact     | : Functional                                     |
| Rated insulation voltage             | 250V                     |  |
| Rated impulse withstand voltage      | 2500V                    |  |
| Pollution degree                     | 2                        |  |
| Rated voltage                        | 230 / 400V               |  |
| Overvoltage category                 | II                       |  |

## »» Safety Approval

| Certified | UL / CUL | VDE      |
|-----------|----------|----------|
| File No.  | E88991   | 40025801 |

### »» Safety Approval Rating

| UL / CUL                 |  |                          |  | VDE   |
|--------------------------|--|--------------------------|--|---|
| 207                      |  | 207H                     |  |   |
| NO                       | NC   | NO                       | NC   |   |
| 20A 277VAC               | 16A 277VAC   | 20A 277VAC               | 16A 277VAC   | NO : 17A 250VAC T105<br>NC : 10A 250VAC T85 |
| 1HP 125VAC               | 1/3HP 7.2A/125VAC  | 1HP 125VAC               | 1/3HP 7.2A/125VAC  |   |
| TV-5 (for AgSnO contact) | 1/2HP 4.9A/250VAC<br>1/2HP 9.8A/125VAC (for AgSnO contact) | TV-8 (for AgSnO contact) | 1/2HP 4.9A/250VAC<br>1/2HP 9.8A/125VAC (for AgSnO contact) |   |

Note : (1) Flux tight version is recommended in high temperature. If there is cleaning process and sealed type is selected, the vent-hole should be removed after the process.

### »» Outline Dimensions

#### ◆ 207,207H



#### ◆ 207A,207HA



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)

### »» Wiring Diagram

BOTTOM VIEW

#### ◆ 207,207H



#### ◆ 207A,207HA



## »» PC Board Layout

BOTTOM VIEW

◆ 207,207H



◆ 207A,207HA



## »» Engineering Data

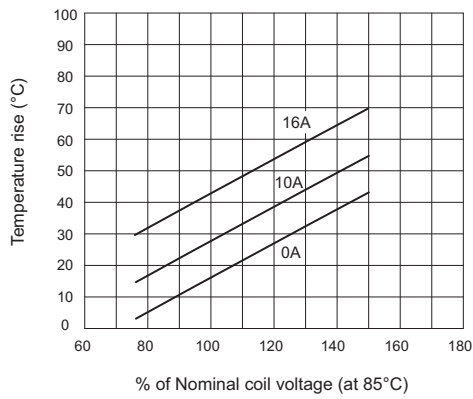
Coil operating range



Coil temperature rise



Coil temperature rise



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