



### »» 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

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

### »» 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 M $\Omega$ 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 |

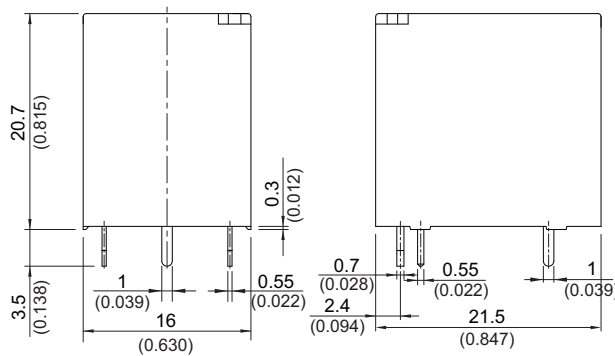
## »» Safety Approval Rating

| 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

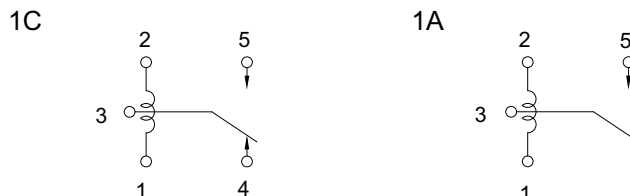


TOLERANCE:  
 LESS THAN: 1(0.039) ±0.1(0.004)  
 5(0.197) ±0.3(0.012)  
 20(0.787) ±0.5(0.020)  
 MORE THAN: 20(0.787) ±1(0.039)

## »» Wiring Diagram

BOTTOM VIEW

### ◆ 207,207H



### ◆ 207A,207HA



## »» PC Board Layout

BOTTOM VIEW

◆ 207,207H

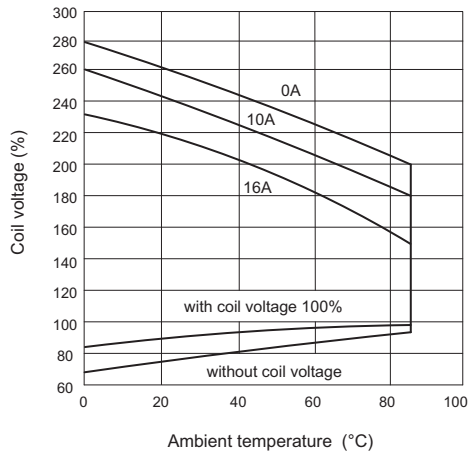


◆ 207A,207HA

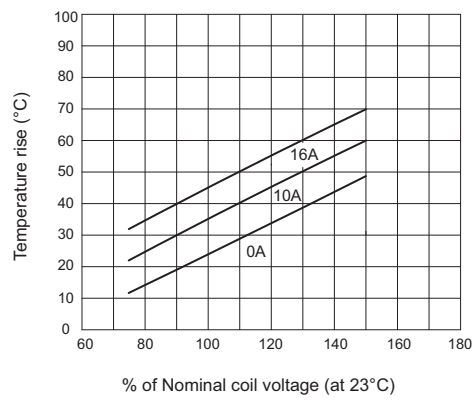


## »» Engineering Data

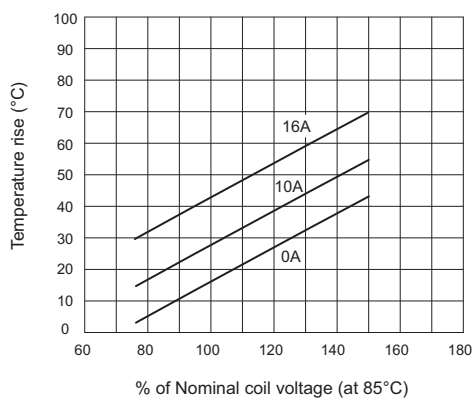
Coil operating range



Coil temperature rise



Coil temperature rise



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