



# 897



## »» Features

- 70A high power automotive relay.
- High temperature endurance up to 125° C.
- Optional to be equipped with protection diode or resistor.
- Dust cover version, flux free type, sealed & weather proof type or flange cover version to be chosen.
- Tinned terminal is available on request.
- Comply with RoHS-Directive 2002/95/EC, and ELV-Directive 2000/53/EC.

## »» Type List

| Terminal style              | Contact form | Designation (provided with) | Enclosure style |               |                      |
|-----------------------------|--------------|-----------------------------|-----------------|---------------|----------------------|
|                             |              |                             | Dust cover      | Flux tight    | Sealed type washable |
| Socket terminal             | 1A (SPNO)    | -----                       | 897-1AH-D       | 897-1AH-C     | 897-1AH-S            |
|                             |              | Resistor                    | 897-1AH-D-R1    | 897-1AH-C-R1  | 897-1AH-S-R1         |
| PCB terminal <sup>(1)</sup> | 1A (SPNO)    | -----                       | 897P-1AH-D      | 897P-1AH-C    | 897P-1AH-S           |
|                             |              | Resistor                    | 897P-1AH-D-R1   | 897P-1AH-C-R1 | 897P-1AH-S-R1        |

| Terminal style  | Contact form | Designation (provided with) | Enclosure style            |                            |
|-----------------|--------------|-----------------------------|----------------------------|----------------------------|
|                 |              |                             | Flanged cover (dust cover) | Flanged cover (flux tight) |
| Socket terminal | 1A (SPNO)    | -----                       | 897-1AH-D1                 | 897-1AH-C1                 |
|                 |              | Resistor                    | 897-1AH-D1-R1              | 897-1AH-C1-R1              |

| Terminal style  | Contact form | Designation (provided with) | Enclosure style            |                            |
|-----------------|--------------|-----------------------------|----------------------------|----------------------------|
|                 |              |                             | Steel bracket (dust cover) | Steel bracket (flux tight) |
| Socket terminal | 1A (SPNO)    | -----                       | 897-1AH-D1S                | 897-1AH-C1S                |
|                 |              | Resistor                    | 897-1AH-D1S-R1             | 897-1AH-C1S-R1             |

| Terminal style  | Contact form | Designation (provided with) | Enclosure style                        |                                               |
|-----------------|--------------|-----------------------------|----------------------------------------|-----------------------------------------------|
|                 |              |                             | Steel bracket (dust cover with shroud) | Steel bracket (dust cover with weather proof) |
| Socket terminal | 1A (SPNO)    | Resistor                    | 897-1AH-D1SF-R1                        | 897-1AH-D1SW-R1                               |

Note : (1) Special PCB terminal version (NO, COM 3 pin type) are available.

## »» Ordering Information

897      P      -      1AH      -      C      -      R1      -      T      001  
 1          2          3          4          5          6          7

- |          |                                                      |      |                                         |
|----------|------------------------------------------------------|------|-----------------------------------------|
| 1. 897   | -- Basic series designation                          | 4. D | -- Dust cover                           |
| 2. Blank | -- Socket terminal                                   | C    | -- Flux tight                           |
| P        | -- PCB terminal                                      | S    | -- Sealed type washable                 |
| P1       | -- Special PCB terminal (NO,COM 3 pin type)          | D1   | -- Flanged cover (dust cover)           |
| 3. 1AH   | -- Single pole normally open, contact material AgSnO | C1   | -- Flanged cover (flux tight)           |
|          |                                                      | S1   | -- Flanged cover (sealed type washable) |
|          |                                                      | D1S  | -- Steel bracket (dust cover)           |

- C1S -- Steel bracket (flux tight)  
 S1S -- Steel bracket (sealed type washable)  
 D1SF -- Steel bracket (dust cover with shroud)  
 D1SW -- Steel bracket (dust cover with weather proof)
5. Blank -- Standard type  
 R1 -- Coil parallel with resistor 1/2W for 12V 680Ω, 24V 2700Ω
6. Blank -- Standard type  
 T -- Special requirement for Tin plated terminal
7. Blank -- Standard type  
 001 -- Coil parallel with diode IN4007 the positive pole on # 85 terminal  
 002 -- Coil parallel with diode IN4007 the negative pole on # 85 terminal

### »» Contact Rating

|                         |                      |
|-------------------------|----------------------|
| Max. Continuous current | 70A 14VDC, 25A 28VDC |
|-------------------------|----------------------|

### »» 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 <sup>(1)</sup> | Pick up voltage(Max) at 23°C | Drop out voltage(Min) at 23°C | Power consumption at rated voltage |
|-------------------|----------------------------------|-----------------------------------|------------------------------------------------|------------------------------|-------------------------------|------------------------------------|
| 12                | 133                              | 90                                | 100% of rated voltage                          | 65% of rated voltage         | 10% of rated voltage          | approx. 1.6W                       |
| 24                | 66.7                             | 360                               |                                                |                              |                               |                                    |

Notes : (1) Continuous contact current at 50A.

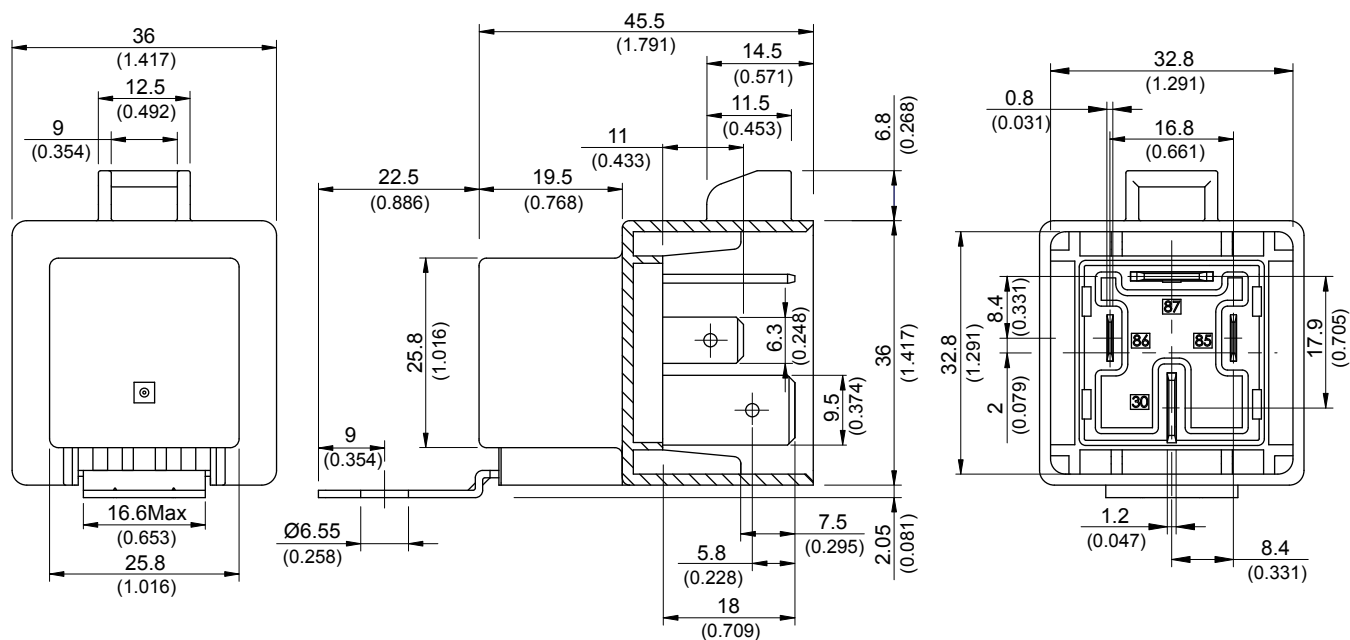
### »» Specification

|                                      |                          |                                                           |
|--------------------------------------|--------------------------|-----------------------------------------------------------|
| Contact material                     | AgSnO alloy              |                                                           |
| Contact voltage drop <sup>(1)</sup>  | Typ. 30mV at 10A         |                                                           |
| Insulation resistance <sup>(1)</sup> | 20 MΩ Min. (DC 500V)     |                                                           |
| Operate time <sup>(1)</sup>          | 20ms Max.                |                                                           |
| Release time <sup>(1)</sup>          | 20ms Max.                |                                                           |
| Dielectric strength <sup>(1)</sup>   | Between open contact     | : AC 500V , 50/60Hz 1 min.                                |
|                                      | Between contact and coil | : AC 500V , 50/60Hz 1 min.                                |
| Vibration resistance                 | Operating extremes       | 10~55Hz , amplitude 2mm                                   |
| Shock resistance                     | Operating extremes       | 10G                                                       |
|                                      | Damage limits            | 100G                                                      |
| Life expectancy                      | Mechanical               | 10,000,000 operations<br>(frequency 18,000 operations/hr) |
|                                      | Electrical               | 100,000 operations<br>(frequency 1,200 operations/hr)     |
| Temperature range                    | Operating                | -40~+125°C (no freezing)                                  |
| Weight                               | Approx. 40 g             |                                                           |

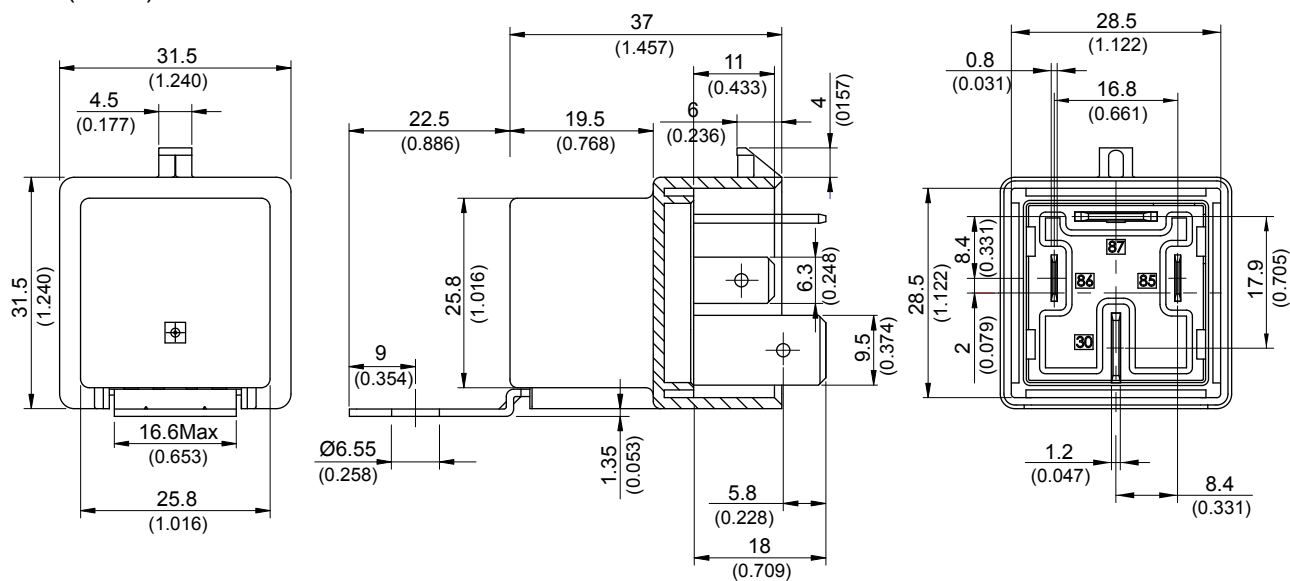
Note : (1) initial value



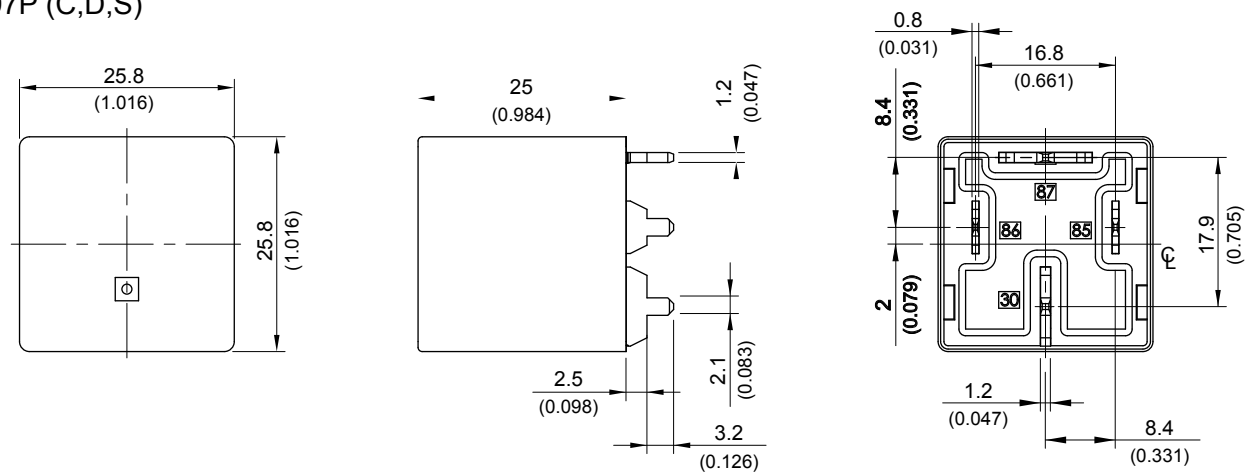
## ◆897 (D1SW)



## ◆897 (D1SF)



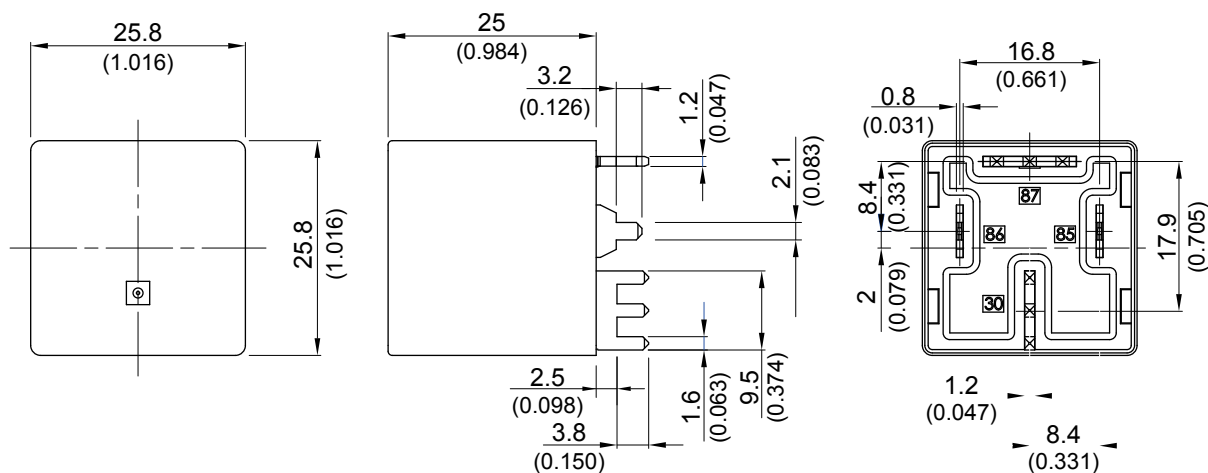
## ◆897P (C,D,S)





# 897

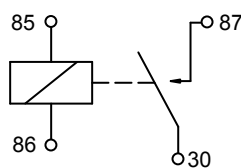
## ◆897P1 (C,D,S)



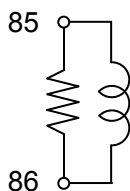
## »» Wiring Diagram

BOTTOM VIEW

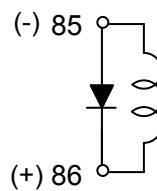
1A



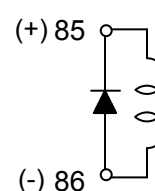
R1



001



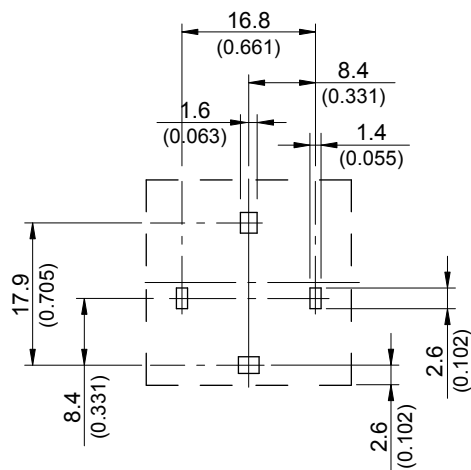
002



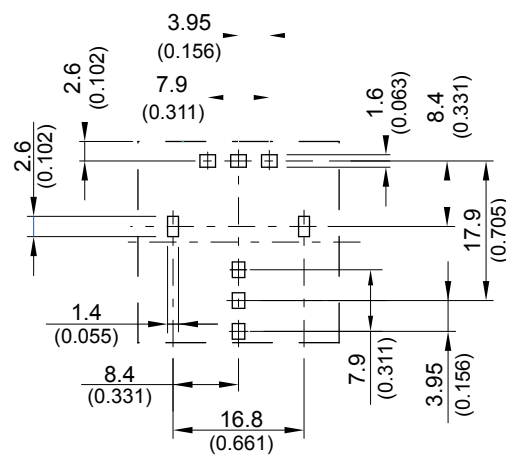
## »» PC Board Layout

BOTTOM VIEW

### ◆897,897P

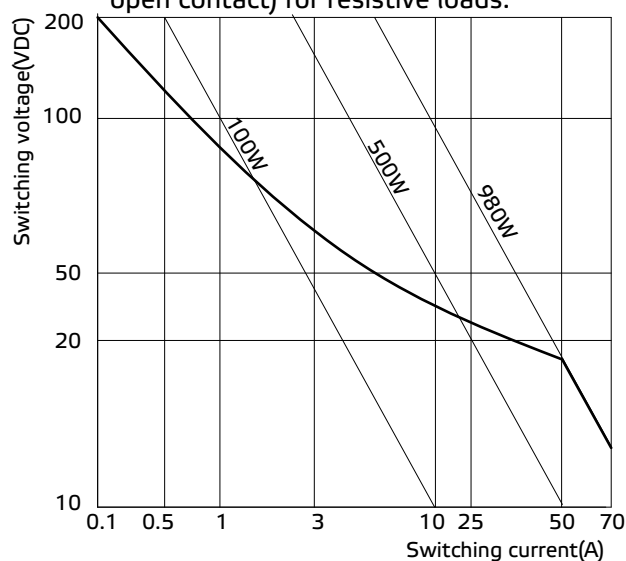


### ◆897P1

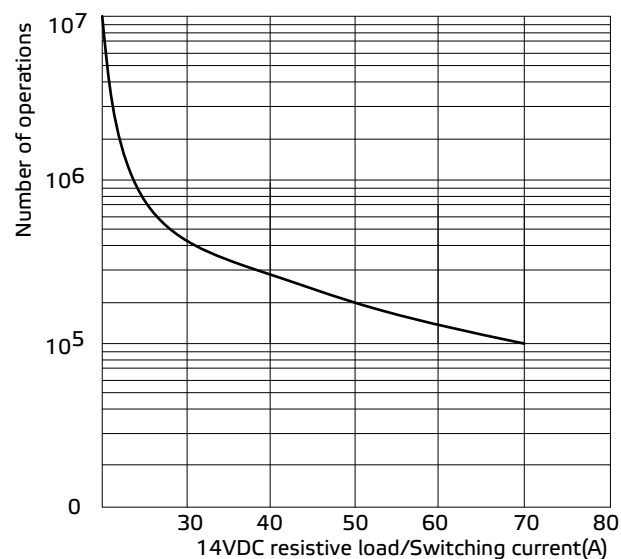


## » Engineering Data

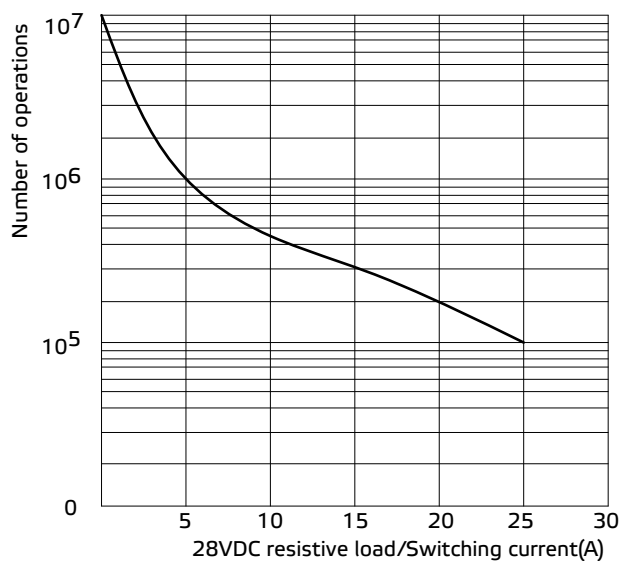
Safe breaking, arc extinguished (normally open contact) for resistive loads.



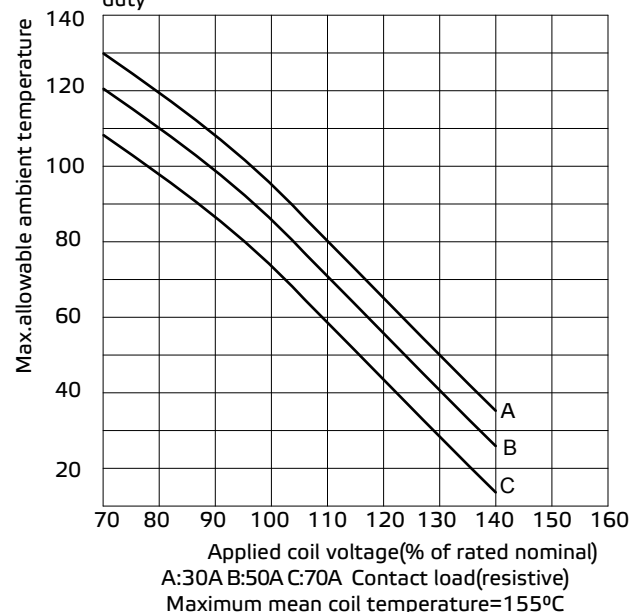
### Life expectancy



### Life expectancy



### Ambient temperature vs coil voltage for continuous duty



### Operate time/Release time

