



### »» Features

- Mini ISO high power automotive relay 30A/50A.
- High temperature endurance up to 125 degree C.
- Optional SPNC, SPNO, SPDT, DPNO contact configurations.
- Optional to be equipped with protection diode or resistor.
- Both available PCB terminal and quick connect terminal versions.
- Available for plain cover type, skirted cover flanged cover, and weather proof versions.
- 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 | Enclosure style |             |                      |
|-----------------|--------------|-----------------|-------------|----------------------|
|                 |              | Dust cover      | Flux tight  | Sealed type washable |
| Socket terminal | 1A (SPNO)    | 896-1AH-D       | 896-1AH-C   | 896-1AH-S            |
|                 |              | 896H-1AH-D      | 896H-1AH-C  | 896H-1AH-S           |
|                 | 1C (SPDT)    | 896-1CH-D       | 896-1CH-C   | 896-1CH-S            |
|                 |              | 896H-1CH-D      | 896H-1CH-C  | 896H-1CH-S           |
|                 | 2A (DPNO)    | 896-2AH-D       | 896-2AH-C   | 896-2AH-S            |
|                 |              | 896H-2AH-D      | 896H-2AH-C  | 896H-2AH-S           |
| PCB terminal    | 1A (SPNO)    | 896P-1AH-D      | 896P-1AH-C  | 896P-1AH-S           |
|                 |              | 896HP-1AH-D     | 896HP-1AH-C | 896HP-1AH-S          |
|                 | 1C (SPDT)    | 896P-1CH-D      | 896P-1CH-C  | 896P-1CH-S           |
|                 |              | 896HP-1CH-D     | 896HP-1CH-C | 896HP-1CH-S          |
|                 | 2A (DPNO)    | 896P-2AH-D      | 896P-2AH-C  | 896P-2AH-S           |
|                 |              | 896HP-2AH-D     | 896HP-2AH-C | 896HP-2AH-S          |

| Terminal style  | Contact form | Enclosure style            |                            |
|-----------------|--------------|----------------------------|----------------------------|
|                 |              | Flanged cover (dust cover) | Flanged cover (flux tight) |
| Socket terminal | 1A (SPNO)    | 896-1AH-D1                 | 896-1AH-C1                 |
|                 |              | 896H-1AH-D1                | 896H-1AH-C1                |
|                 | 1C (SPDT)    | 896-1CH-D1                 | 896-1CH-C1                 |
|                 |              | 896H-1CH-D1                | 896H-1CH-C1                |
|                 | 2A (DPNO)    | 896-2AH-D1                 | 896-2AH-C1                 |
|                 |              | 896H-2AH-D1                | 896H-2AH-C1                |

| Terminal style  | Contact form | Enclosure style             |                            |
|-----------------|--------------|-----------------------------|----------------------------|
|                 |              | Steel bracket ( dust cover) | Steel bracket (flux tight) |
| Socket terminal | 1A (SPNO)    | 896-1AH-D1S                 | 896-1AH-C1S                |
|                 |              | 896H-1AH-D1S                | 896H-1AH-C1S               |
|                 | 1C (SPDT)    | 896-1CH-D1S                 | 896-1CH-C1S                |
|                 |              | 896H-1CH-D1S                | 896H-1CH-C1S               |
|                 | 2A (DPNO)    | 896-2AH-D1S                 | 896-2AH-C1S                |
|                 |              | 896H-2AH-D1S                | 896H-2AH-C1S               |

| Terminal style  | Contact form | Designation (provided with) | Enclosure style                         |  |
|-----------------|--------------|-----------------------------|---|--|
|                 |              |                             | Steel bracket ( dust cover with shroud) | Steel bracket ( dust cover with weather proof) |
| Socket terminal | 1C (SPDT)    | Resistor                    | 896H-1CH-D1SF-R1                        | 896H-1CH-D1SW-R1                               |

### »» Ordering Information

896      H      P      -      1CH      -      C      -      R1      -      T      001  
 1          2          3          4          5          6          7          8

- |    |       |  |      |  |   |
|----|-------|--|------|--|---|
| 1. | 896   | -- Basic series designation                            | D1S  | -- Steel bracket (dust cover)                    |   |
| 2. | Blank | -- Standard type                                       | C1S  | -- Steel bracket (flux tight)                    |   |
|    | H     | -- High power type                                     | S1S  | -- Steel bracket (sealed type washable)          |   |
| 3. | Blank | -- Socket terminal                                     | D1SF | -- Steel bracket (dust cover with shroud)        |   |
|    | P     | -- PCB terminal  | D1SW | -- Steel bracket (dust cover with weather proof) |   |
| 4. | 1AH   | -- Single pole normally open, contact material AgSnO   | 6.   | Blank  | -- Standard type  |
|    | 1BH   | -- Single pole normally closed, contact material AgSnO |      | R1   | -- Coil parallel with resistor 1/2W for 12V 680Ω , 24V 2700Ω          |
|    | 1CH   | -- Single pole double throw, contact material AgSnO    | 7.   | Blank  | -- Standard type  |
|    | 2AH   | -- Double pole double make, contact material AgSnO     |      | T  | -- Special requirement for Tin plated terminal                        |
| 5. | D     | -- Dust cover  | 8.   | Blank  | -- Standard type  |
|    | C     | -- Flux tight  |      | 001  | -- Coil parallel with diode IN4007 the positive pole on # 85 terminal |
|    | S     | -- Sealed type washable                                |      | 002  | -- Coil parallel with diode IN4007 the negative pole on # 85 terminal |
|    | C1    | -- Flanged cover (flux tight)                          |      |  |   |
|    | D1    | -- Flanged cover (dust cover)                          |      |  |   |
|    | S1    | -- Flanged cover (sealed type washable)                |      |  |   |

## »» Contact Rating

| Type           | 896 1A    | 896 1B    | 896 1C                           | 896 2A      |
|----------------|-----------|-----------|----------------------------------|-------------|
| Resistive load | 40A 14VDC | 40A 14VDC | NO : 40A 14VDC<br>NC : 30A 14VDC | 2×15A 14VDC |

| Type           | 896H 1A                | 896H 1B                | 896H 1C  | 896H 2A                    |
|----------------|------------------------|------------------------|--|----------------------------|
| Resistive load | 50A 14VDC<br>20A 28VDC | 40A 14VDC<br>15A 28VDC | NO : 50A 14VDC, 20A 28VDC<br>NC : 30A 14VDC, 15A 28VDC | 2×30A 14VDC<br>2×10A 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                                | 120 % of rated voltage                         | 65 % of rated voltage        | 10 % of rated voltage         | approx. 1.6W                       |
| 24                | 66.7                             | 360                               |  |                              |                               |                                    |

Notes : (1) Without switching the load.

## »» Specification

|                                      |                          |   |
|--------------------------------------|--------------------------|---|
| Contact material                     | AgSnO alloy              |   |
| Contact voltage drop <sup>(1)</sup>  | Typ. 50mV at 10A         |   |
| Insulation resistance <sup>(1)</sup> | 20MΩ 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

## &gt;&gt;&gt; Outline Dimensions

## ◆ 896,896H (C,D,S)



## ◆ 896,896H (C1,D1,S1)



## ◆ 896,896H (C1S,D1S,S1S)



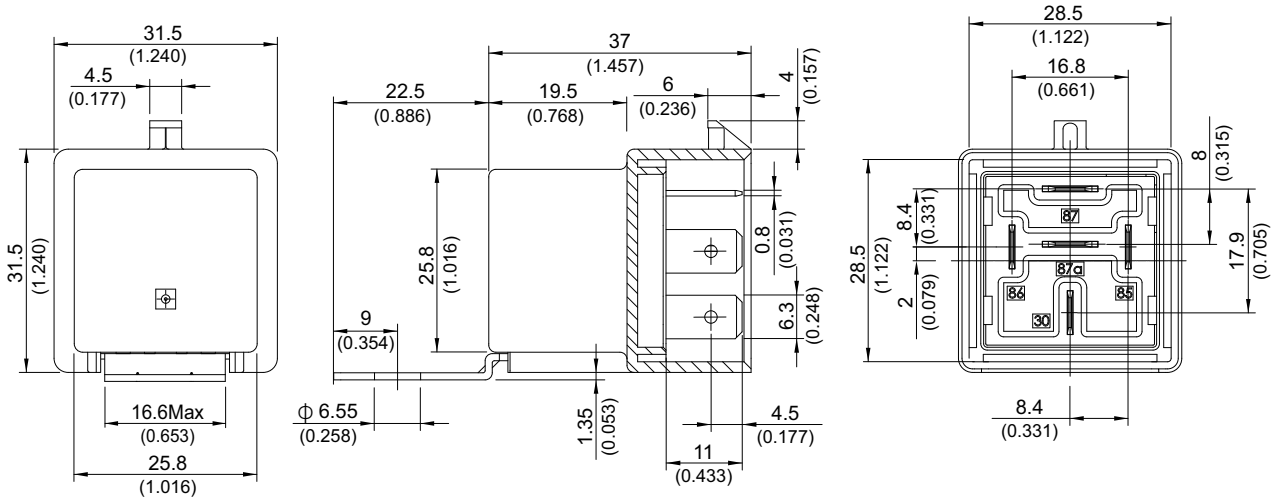
## ◆ 896P,896HP (C,D,S)



◆ 896H (D1SW)



◆ 896H (D1SF)



»» Wiring Diagram

BOTTOM VIEW

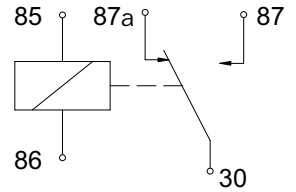
1A



1B



1C



2A



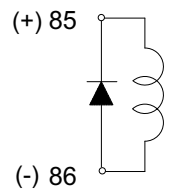
R1



001



002



## »» PC Board Layout

BOTTOM VIEW



## »» Engineering Data

