

# FRA3D Automotive Relays

## Features

- Miniature power designed twin relay
- Small size and light weight
- Low cost and high performance
- Rugged design
- Dust cover or wash tight type



## Ordering information

|  |   |   |                                    |   |   |
|--|---|---|------------------------------------|---|---|
| <b>FRA3D C - S 1 DC12V F</b>                             |   |   |                                    |   |   |
| 1  | 2 | 3 | 4                                  | 5 | 6 |
| 1 Relay model  |   |   | 6 High temperature +155°C          |   |   |
| 2 Contact arrangement: A: 2 x 1 Form A; C : 2 x 1 Form C |   |   | Note: RoHS : RoHS compliant relay  |   |   |
| 3 Construction: NIL: Dust cover; S: Wash tight type      |   |   | RoHS-I : AgNi contact              |   |   |
| 4 Version: 1: Special operate voltage 55% Max. (at 20°C) |   |   | RoHS-N: AgSnO <sub>2</sub> contact |   |   |
| 5 Rated voltage  |   |   |                                    |   |   |

## Coil rating

| Rated voltage<br>(V) | Coil resistance<br>Ω+/-10% | Rated current<br>(mA) | Must operate voltage         | Must dropout voltage | Maximum voltage | Power consumption (W)<br>Approx. | Operate time<br>(ms) | Release time<br>(ms) |
|----------------------|----------------------------|-----------------------|------------------------------|----------------------|-----------------|----------------------------------|----------------------|----------------------|
|                      |                            |                       | % of rated voltage (at 20°C) |                      |                 |                                  |                      |                      |
| 6                    | 30                         | 200                   |                              |                      |                 |                                  |                      |                      |
| 12                   | 120                        | 100                   | 57.5 Max.                    | 10 Min.              | 150 Max.        | 1.2                              | <6                   | <3                   |
| 24                   | 480                        | 50                    |                              |                      |                 |                                  |                      |                      |

CAUTION: 1. The use of any coil voltage less than the rated coil voltage will compromise the operation of the relay.  
2. Pickup and release voltage are for test purposes only and are not to be used as design criteria.

## Characteristics

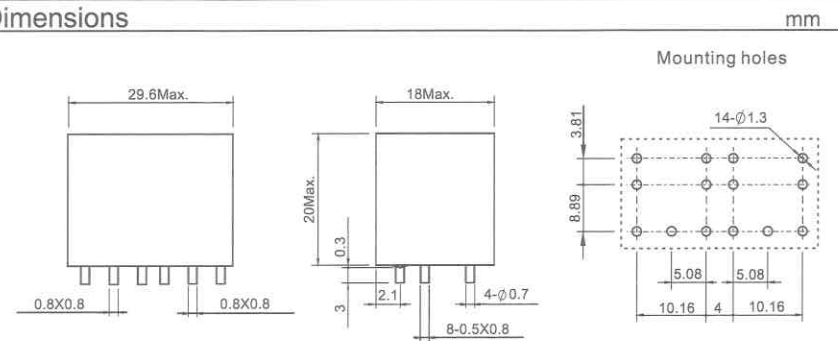
|                            |   |                                 |
|----------------------------|---|---------------------------------|
| Contact arrangement        | 2 x SPST (2 x 1 Form A or 2 x 1 Form B per relay); 2 x SPDT (2 x 1 Form C per relay)    |                                 |
| Contact material           | Silver alloy  |                                 |
| Contact resistance         | 50mΩ Max.   |                                 |
| Contact rating (resistive) | Max. switching current 20A 15.2VDC Max. steady state current 10A 15.2VDC                |                                 |
| Switching voltage          | DC 75V Max.   |                                 |
| Insulation resistance      | 100MΩ Min. (500VDC)   |                                 |
| Dielectric strength        | 750VAC (50Hz/min) Between open contacts<br>1,500VAC (50Hz/min) Between coil and contact |                                 |
| Shock resistance           | 10g Approx.   |                                 |
| Vibration resistance       | 1.27mm Double amplitude 10-40Hz   |                                 |
| Ambient temperature        | Storage: -40°C to +130°C; Operation: -40°C to +105°C                                    |                                 |
| Humidity                   | 85% RH, 40°C  |                                 |
| Operation life             | Mechanical  | 10 <sup>7</sup>                 |
|                            | Electrical  | 10 <sup>6</sup> (at rated load) |
| Weight                     | 20g Approx.   |                                 |

(Specifications are subject to change without notices.)

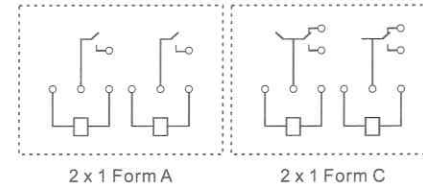
# FRA3D

Automotive Relays

## Dimensions

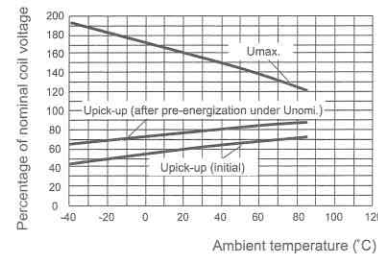


## Wiring diagram (Bottom view)



## Reference data

### 1. Coil operating voltage range



### 2. Load limit curve

