

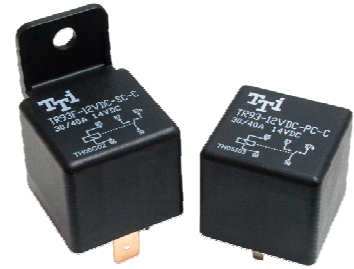
# TR93

## MAIN FEATURES

- Small size, heavy duty, capable of 40A.
- Low contacts voltage drop ( $\leq 3\text{mV/A}$ ), reduce circuit consumption and contacts noise.
- Contact structure, performance reliable, with plug-in pins, bracket model available, handle with ease.

## APPLICATIONS

- Car compressor, light, starter, horn. Automatic devices, communication equipment, control and switch circuit, etc.



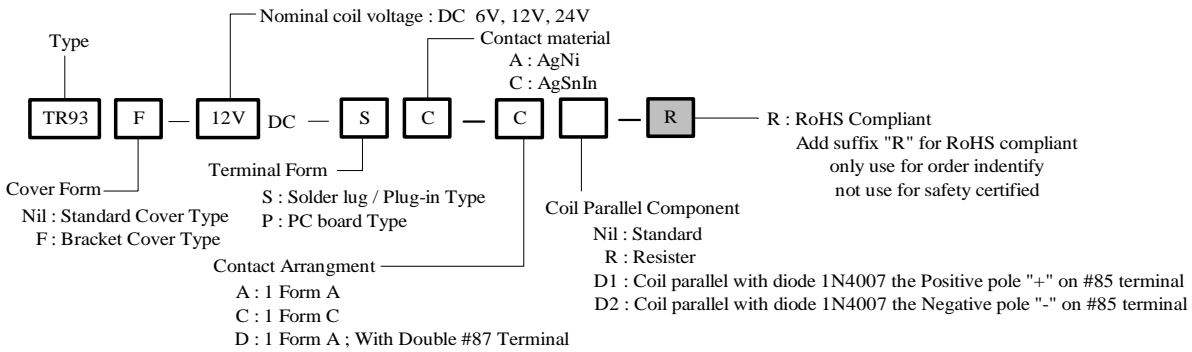
### Option Socket :

Please refer appendix P103



- OD07-0011A
- OD07-0012A
- OD07-0013A
- OD07-0014A
- OD07-0022A

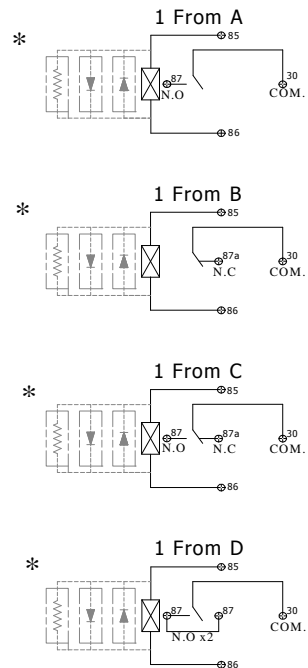
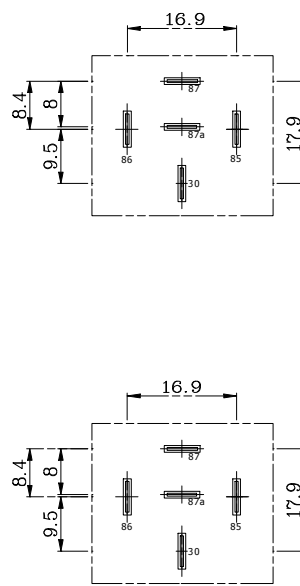
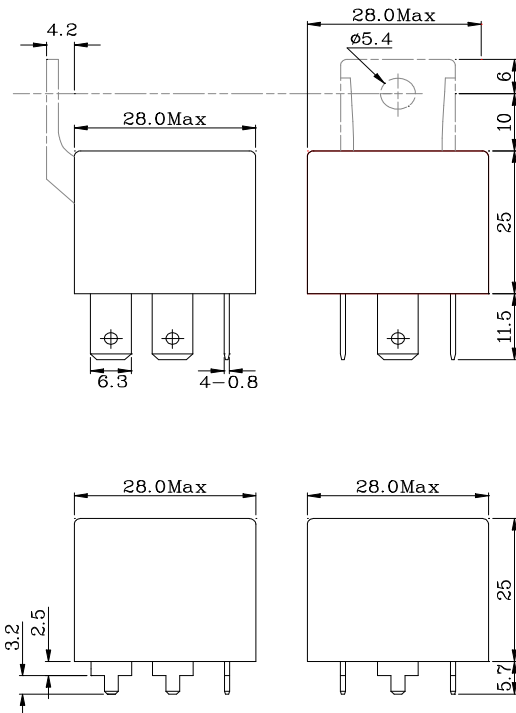
## ORDERING INFORMATION



## DIMENSION (unit:mm)

## DRILLING (unit:mm)

## WIRING DIAGRAM



## COIL DATA CHART (AT20°C)

| Coil Sensitivity | Coil Voltage Code | Nominal Voltage (VDC) | Nominal Current (mA) | Coil Resistance ( $\Omega$ ) $\pm 10\%$ | Power Consumption (W) | Pull-In Voltage (VDC) | Drop-Out Voltage (VDC) | Max-Allowable Voltage (VDC)              |
|------------------|-------------------|-----------------------|----------------------|---|-----------------------|-----------------------|------------------------|--|
| TR93             | 6                 | 6                     | 267                  | 22                                      | abt. 1.6              | 65% Max.              | 10% Min.               | 150% but for short time carrying current |
|                  | 12                | 12                    | 134                  | 90                                      |                       |                       |                        |  |
|                  | 24                | 24                    | 67                   | 360                                     |                       |                       |                        |  |

## CONTACT RATING

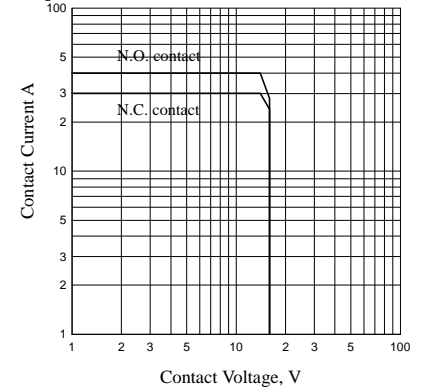
| Item \ Type                                  | 1 Form A       | 1 Form D                    | 1 Form B     | 1 Form C       |                |
|--|----------------|-----------------------------|--------------|----------------|----------------|
|  |                |                             |              | N/C            | N/O            |
| Contact Capacity Resistive Load $\cos\phi=1$ | 40A<br>14VDC   | 2x20A<br>14VDC<br>(N/O x 2) | 20A<br>14VDC | 30A<br>14VDC   | 40A<br>14VDC   |
| Max. Carrying Current                        | 30A            |                             |              | 30A            | 30A            |
| Max. Make Current                            | 120A           |                             |              | 45A            | 120A           |
| Max. Break Current                           | 40A            |                             |              | 30A            | 30A            |
| Initial Voltage Drop                         | 200mV (at 40A) |                             |              | 250mV (at 10A) | 200mV (at 10A) |
| Min. Load                                    | 0.1A, 12VDC    |                             |              |                |                |
| Contact Material                             | Ag Alloy       |                             |              |                |                |

## PERFORMANCE (at initial value)

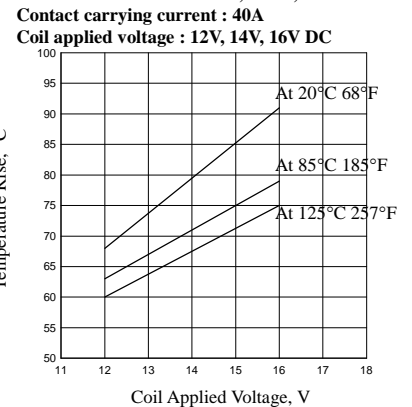
| Item \ Type                   | TR93   |
|-------------------------------|--|
| Contact Resistance            | 100m $\Omega$ Max.   |
| Operation Time                | 15msec Max.  |
| Release Time                  | 15msec Max.(type with diode inside : 20msec max.)  |
| Dielectric Strength           | Between coil & contact<br>500VAC 50/60Hz (1 minute)<br>Between contacts<br>500VAC 50/60Hz (1 minute)   |
| Insulation Resistance         | 100 M $\Omega$ Min .(500VDC)   |
| Max. ON/OFF Switching         | Mechanically<br>300 operation/min<br>Electrically<br>30 operation/min                                  |
| Operating Ambient Temperature | -40°C to +80°C<br>(No water drop condensation)   |
| Operating Humidity            | 45 to 85% RH   |
| Coil Temperature Rise         | 60 deg. Max. (at rated coil voltage)   |
| Vibration                     | Endurance<br>10 to 55Hz Double Amplitude 1.5mm<br>Error Operation<br>10 to 55Hz Double Amplitude 1.5mm |
| Shock                         | Endurance<br>100G Min.<br>Error Operation<br>10G Min   |
| Life Expectancy               | Mechanically<br>$10 \times 10^6$<br>Electrically<br>$1 \times 10^5$ for 1 Form A<br>30000 for 1 Form C |
| Weight                        | abt. 34grs.  |

## REFERENCE DATA

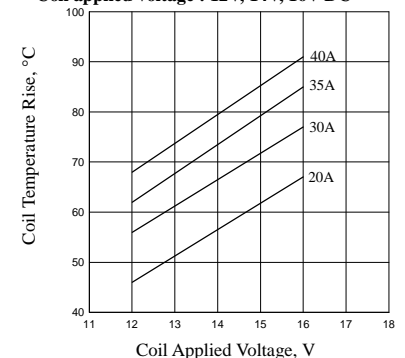
1. Maximum value for switching capacity No. of operations :  $10^5$



2-(1). Coil temperature rise (resistive)  
Ambient temperature : 20°C, 85°C, 125°C  
68°F, 185°F, 257°F



2-(1). Coil temperature rise (resistive)  
Ambient temperature : 20°C, 68°C  
Contact carrying current : 20A, 30A, 35A, 40A  
Coil applied voltage : 12V, 14V, 16V DC



This datasheet for reference and subject to change without notice. Please double check final specification with Tai-Shing.