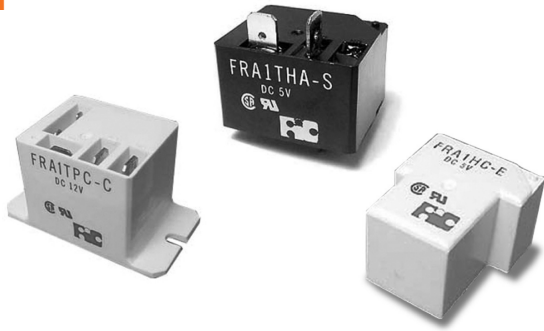


**FRA1**



- Miniature high power designed for mounting on P.C. Board
- High contact rating (10-40A), high shock/vibration resistance
- High reliability and long life
- High temperature design, F Class +155 °C is available
- Ideal for use in control car, air conditioner, home appliance, etc.
- Open type, different dust cover types or sealed type

**RU** Recognized File No.: E 139468

**△** Recognized File No.: R2034463

For FRA1/FRA1T/FRA1TP - N type only

NO: 40A 14VDC/240VAC - NC: 30A 14VDC/240VAC

**Technical data**

**Characteristics**

- Contact Arrangement: SPST (1 Form A or 1 Form B)  
SPDT (1 Form C)
- Contact Material: Silver Alloy
- Contact Resistance: 30mΩ Max. (<Special: 20mΩ Max.)
- Contact Rating (Resistive Load): (see figure 1)
- Switching Voltage: DC 125V Max. AC 250V Max.
- Operate Time (Initial): 15 ms Max. (Typical 9ms) including Bounce
- Release Time (Initial): 10 ms Max. (Typical 7ms) including Bounce
- Insulation Resistance: 1000MΩ Min. (500V DC)
- Dielectric Strength:
  - 1500VAC 50 Hz, 1 minute between open contacts
  - 1500VAC 50 Hz, 1 minute between coil and contact
  - 2500VAC 50 Hz, 1 minute between coil and contact  
Only for type R
  - 4000VAC 50 Hz, 1 minute between coil and contact  
Only for type R  
4K is printed on the case
- Shock Resistance: 20g Approx.
- Vibration Resistance: 1.5mm Double Amplitude, 10-55Hz
- Ambient Temperature:
  - B Class Temp: Storage: -55 °C to 130 °C Operation: -55 °C to +100 °C
  - F Class Temp: Storage: -55 °C to 155 °C Operation: -55 °C to +125 °C
- Humidity: 20 - 85% RH
- Operation Life:
  - Mechanical: 10<sup>7</sup>
  - Electrical: 10<sup>5</sup> (At rated load)
- Weight:
  - FRA1: 22g Approx. (Open Type), 28g Approx. (Sealed Type)
  - FRA1T: 32g Approx. (Sealed Type), FRA1TP: 35g Approx. (Sealed Type)

**Coil rating**

Rated Voltage (VDC)	Coil Resistance Ω +/- 10%	Must operate voltage	Must dropout voltage	Maximum voltage	Power consumption
		% of rated voltage (at +20 °C)			
DC	5	75 Max.	10 Min.	120 Max.	0.9 Approx. (W)
	6				
	9				
	12				
	18				
	24				
	48				
110	13445				
AC	12	85 Max.	20 Min.	120 Max.	2.0 Approx. (VA)
	24				
	110				
	120				
	220/240				

**FRA1(T/P) UL Rating Type**

	Form A 50/60Hz	Form B 50/60Hz	Form C 50/60Hz	Form C 50/60Hz	
	NO	NC	NO	NC	
Resistive	10A 240V AC	5A 240V AC	10A 240V AC	5A 240V AC	
Tungsten	5A 240V AC	3A 240V AC	5A 240V AC	3A 240V AC	
HP	1hp 125VAC	1hp 125VAC	1/2hp 125VAC	1/2hp 125VAC	
	2hp 240VAC	2hp 240VAC	1hp 240VAC	1hp 240VAC	
Coil Rating: 5-120V DC					

**FRA1(T/P) H UL Rating Type**

	Form A 50/60Hz	Form B 50/60Hz	Form C 50/60Hz	Form C 50/60Hz	Cycles
	NO	NC	NO	NC	
Resistive	30A 14VDC/240VAC	30A 14VDC/20A 240VAC	30A 14VDC/240VAC	30A 14VDC/ 20A 240VAC	100K
Tungsten	15A 120V AC				30k
HP	1hp/16 FLA/120V	30 LRA/10FLA/120V	1hp/16 FLA/120V	30 LRA/10FLA/120V	30K
	2hp/12 FLA/240V	30 LRA/10FLA/240V	2hp/12 FLA/240V	30 LRA/10FLA/240V	30K
Coil Ratings: 5 - 120V DC; 12 - 220VAC					
NO: 1hp/30FLA/80LRA/120VAC 2hp/12FLA/240VAC NC: 10FLA/30LRA/120VAC 10FLA/30LRA/240VAC			1 Form C NO: 1hp/30FLA/80LRA/120VAC 2hp/12FLA/240VAC NC: 10FLA/30LRA/120VAC 10FLA/30LRA/240VAC		

**FRA1(T/P) N UL/cUL Rating Type**

	Form A 50/60Hz	Form B 50/60Hz	Form C 50/60Hz	Form C 50/60Hz	
	NO	NC	NO	NC	
Resistive	40A 240VAC	30A 240VAC	40A 240VAC	30A 240VAC	
HP	2hp 250VAC	1 1/2 HP 250 VAC			
Coil Ratings: 3 - 120VDC; 12 - 220VAC					

**TUV approved rating : For FRA1/FRA1T/FRA1TP - N type only**

NO : 40A 14VDC/ 240VAC; NC : 30A 14VDC/240VAC

**Ordering information**

**FRA1 R H C - S 1 J - DC 12V F**

NIL : Class B insulation 130 °C  
 F : Class F insulation 155 °C

Rated Voltage: 5-120V DC or 12-220/240V AC

J : Com Pin on another syde

1 : Snap outside  
 (only available for FRA1T and FRA1TP)

NIL : Open type  
 E : Dust cover <Epoxy base>  
 D : Dust cover <Separate cover> (only for FRA1/FRA1H)  
 S : Sealed type <Washable>

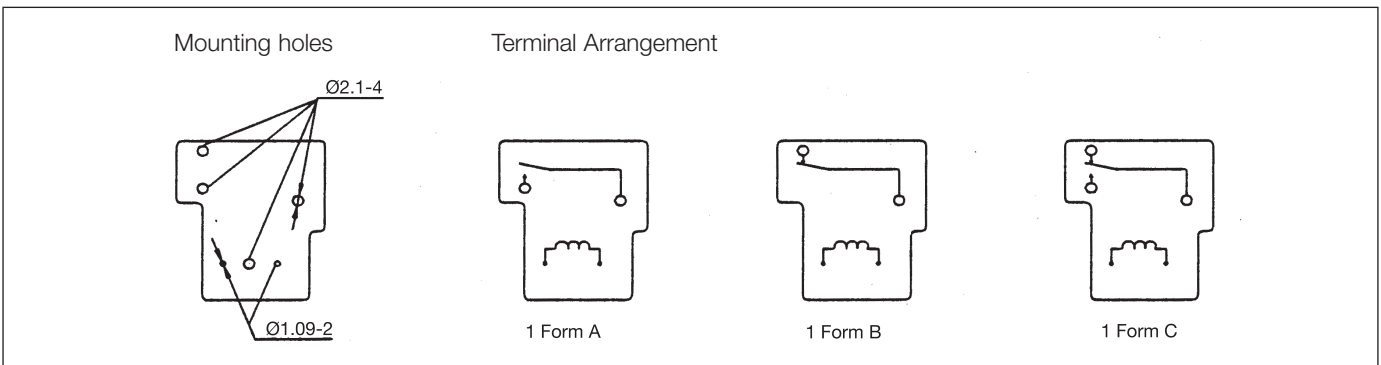
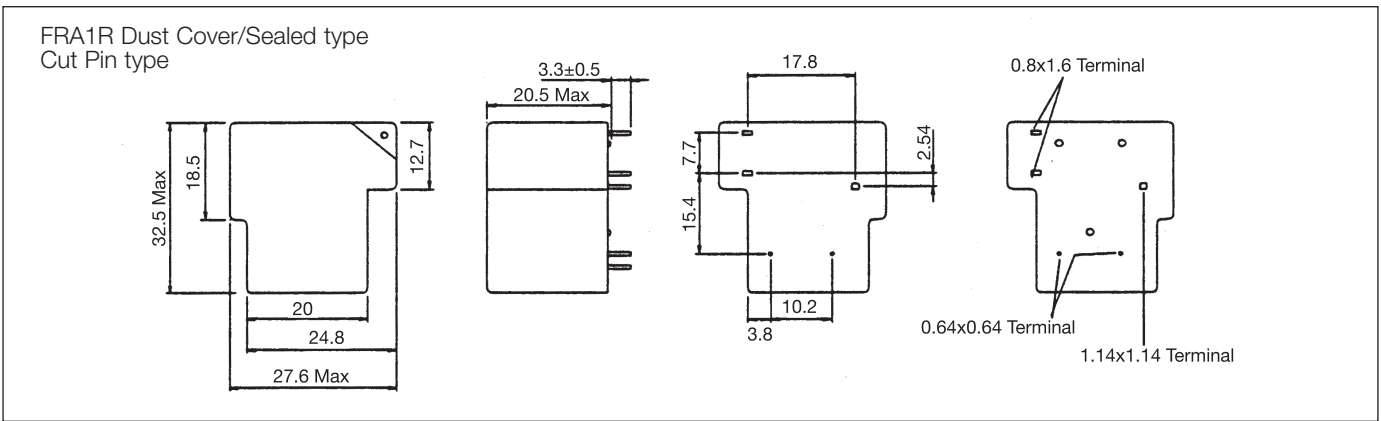
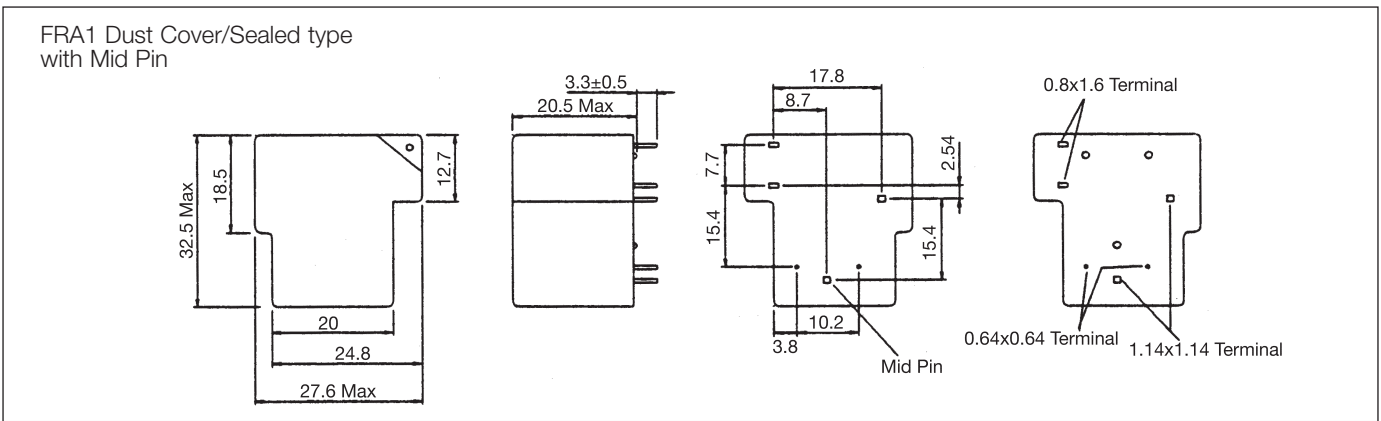
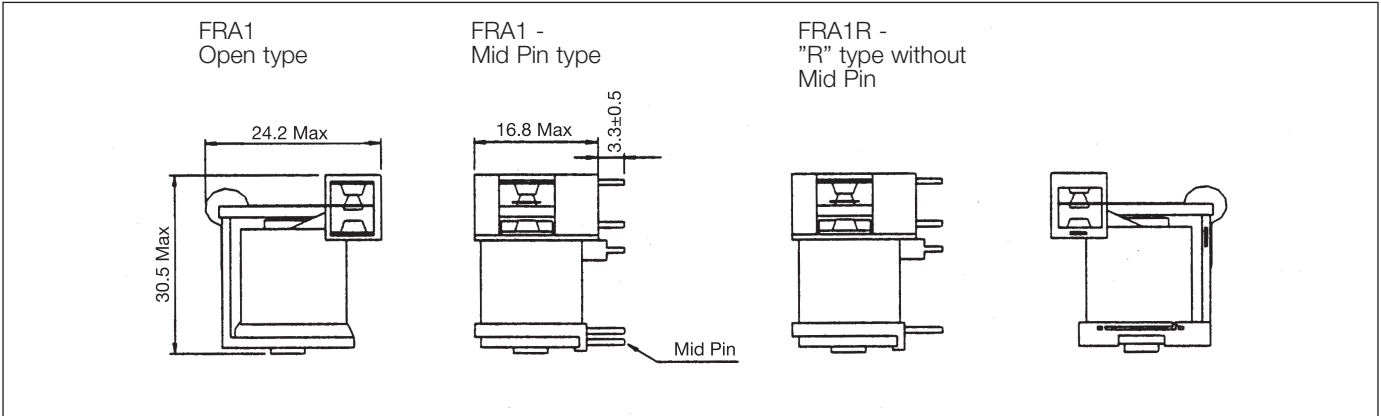
Contact arrangement  
 A = 1 Form A  
 B = 1 Form B  
 C = 1 Form C

NIL : General capacity (10A)  
 H : High capacity (30A)  
 N : New high capacity (40A)

Alternative Terminal Arrangement (only available for FRA1)  
 R : Cut pin type  
 Note: AC coil voltage is only available with cut pin type

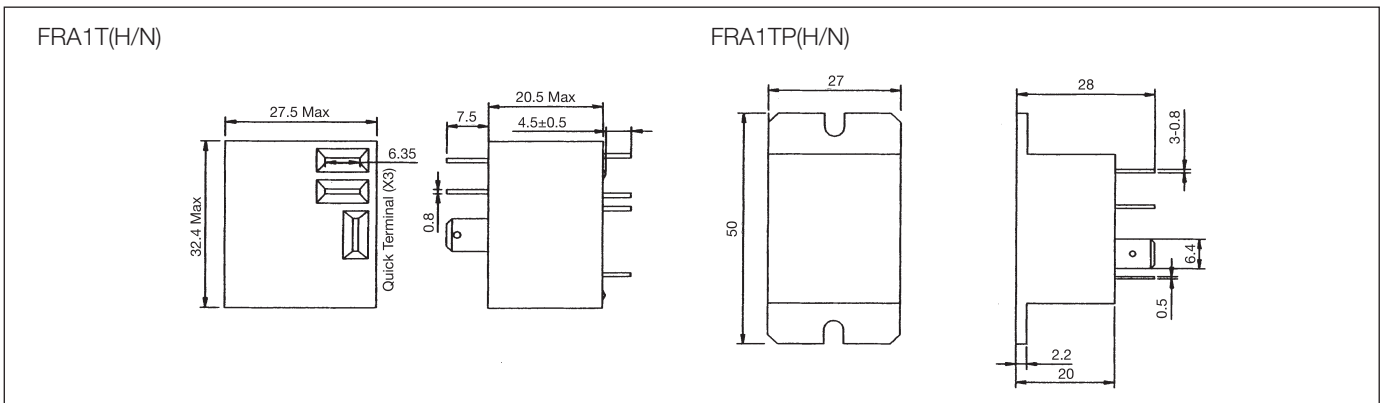
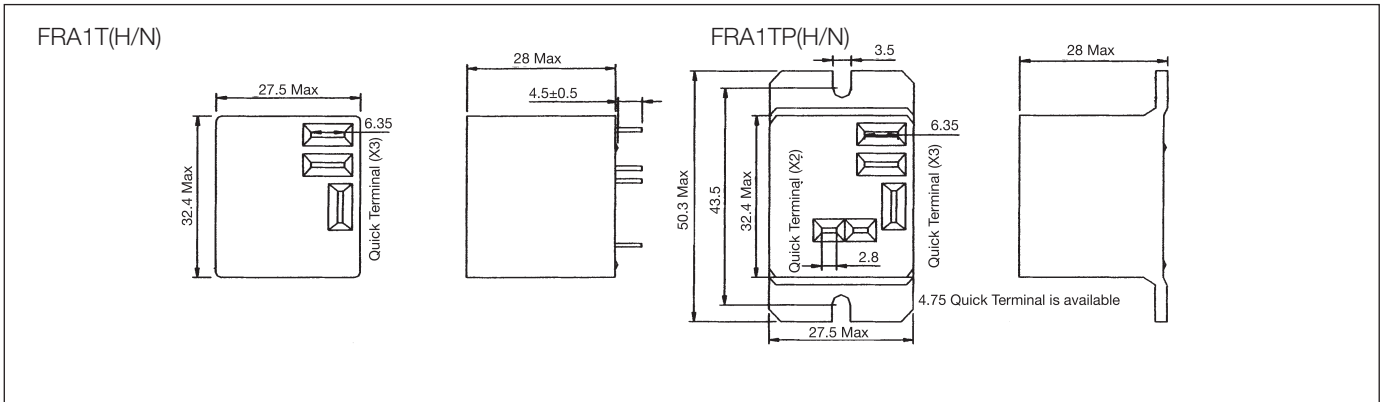
Relay model: FRA1 (PCB mount)  
 FRA1T (PCB and QC mount)  
 FRA1TP (QC and Panel mount)

**DIMENSIONS (mm)**



**DIMENSIONS (mm)**

**Standard Type** (With Com Pin on the same side)



**Special Type** (J Type with Com Pin on another side)

