

PRELIMINARY

FUJITSU Component Relay FTR-E3 series Automotive relays

Fujitsu high voltage switching relay

Features

- 150A, 450VDC, Higher voltage switching
- Maximum continuous current 200A at 60°C
- Plastic sealed relay
- No hydrogen gas
- Non-polarization in the main contact circuit

Applications

- Battery junction box in HEV, PHEV, 48V MHEV (mild hybrid) and EV
- Quick battery charger in PHEV and EV
- Quick stationary charger station
- Inverter (solar and industrial)
- Energy storage system DC line
- Hybrid construction machinery

Part numbers

Example	FTR-E3 (a)	V (b)	A (c)	012 (d)	Y (e)
(a)	Series name			FTR-E3 series	
(b)	Terminal form			V	Screw terminal type
(c)	Power consumption			A	Standard type
(d)	Nominal voltage			012	12 VDC
				024	24VDC
(e)	Contact material			Y	Silver alloy

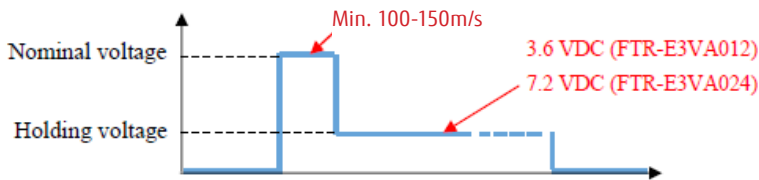


FTR-E3

■ Specifications

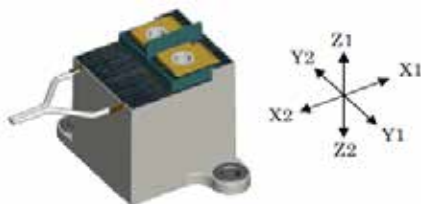
Item		Specifications		
Contact	Arrangement	1a (1 form X)		
	Material	Silver alloy		
	Rating	150A, 450VDC, resistive load		
	Max. carrying current	150A Continuity, 250A 4min., 370A 1min. (at AWG 00 (67.4mm ²) wire, 85°C) 200A Continuity (at AWG 00 (67.4mm ²) wire, 60°C)		
	Contact voltage drop	Max. 0.078V (at 150 A, initial)		
Coil	Nominal voltage	12VDC	24VDC	
	Operate voltage	+20°C	7.2VDC	14.4VDC
		+85°C	9.0VDC	18.0VDC
	Release voltage	+20°C	0.2VDC	0.4VDC
	Holding voltage*1		3.6VDC	7.2VDC
	Nominal power (at 20°C)	48W (at nominal voltage, approx. 100 to 150ms) 4.3W (at holding voltage)		
	Operating temperature	-40 to +85°C (no frost)		
Time value	Operate	Max. 50ms (at nominal voltage, without bounce)		
	Release	Max. 30ms (at nominal voltage, without diode)		
Insulation	Resistance (at 1000 VDC)	Min. 1,000 MΩ		
	Dielectric Strength	Between contacts	2,500VAC, 1 minute	
		Between coil and contacts	2,500VAC, 1 minute	
Life	Mechanical	Min. 300 × 10 ³ operations		
	Electrical	150A, 450VDC	100 operations*2	
		Break 200A, 450VDC	100 operations*2	
		Make 150A, 450VDC / Break 5A, 450VDC	30 × 10 ³ operations*2	
Vibration resistance	Functional	5 to 200 Hz, acceleration 30 m/s ² , constant acceleration		
	Destructive	Destructive 5 to 200 Hz, acceleration 45 m/s ² , constant acceleration		
Shock resistance	Functional	Min. 490 m/s ² (11±1 ms)(De-energized, direction X1: Min. 294 m/s ²)*3		
	Destructive	Min. 490 m/s ² (11±1 ms)		

*1: FTR-E3 relay needs to be used at holding voltage drive as shown in the figure below. (FTR-E3 relay does not have holding voltage control circuit.) Please apply nominal voltage for 100ms or more so that relay operates properly.

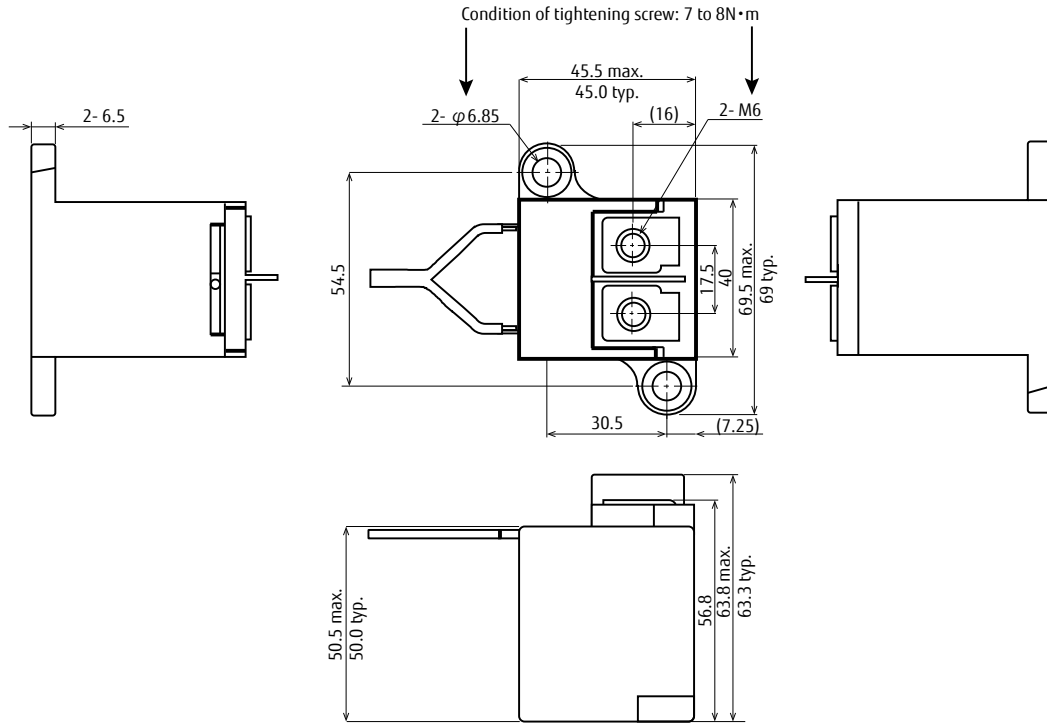


*2: Please use a varistor as a protective circuit against reverse surge in the relay coil. The varistor is connected in parallel to the coil. The reverse blocking voltage should be about 3 times the value of the power source voltage. The life will be down when a diode is used in relay drive circuit.

*3: Shock direction of shock resistance.



■ Dimensions

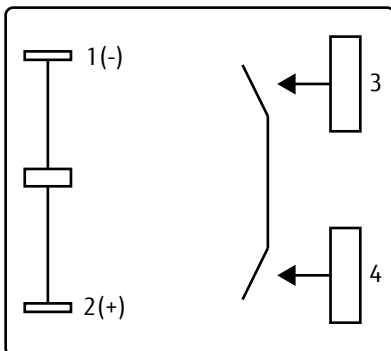


Unit: mm

Dimensions do not include tolerance.

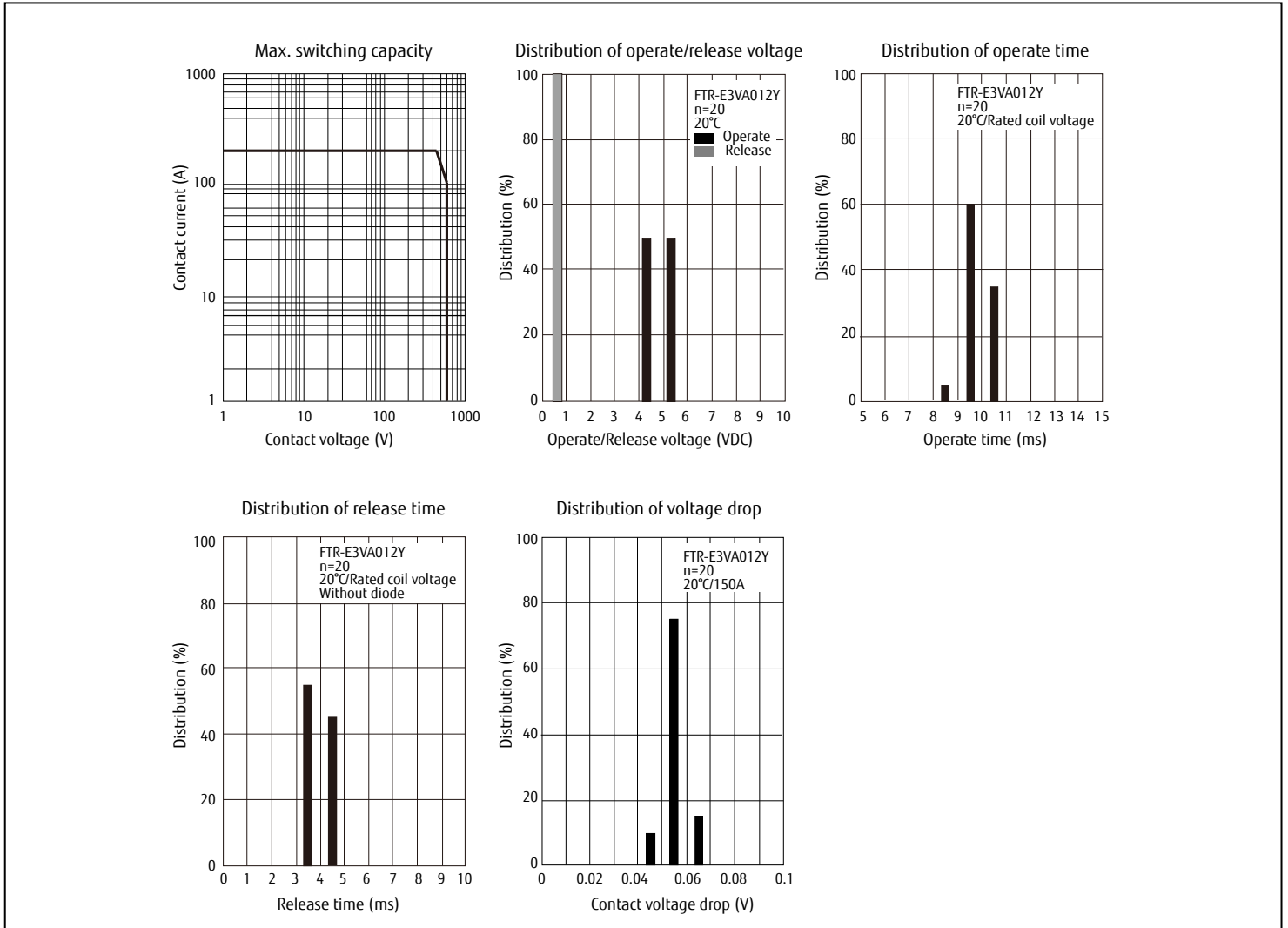
Please ask for specifications in case you need the tolerance values.

■ Schematics



■ Characteristic data

Characteristic data is not guaranteed value but measured values of samples from production line.



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