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POWER RELAY

1 POLE - 3A/5A Slim Type Relay

FTR-F3 Series

■ FEATURES

- High density mounting
Slim type with 7mm width and 142mm² mounting space
- High insulation
Insulation distance: minimum 6mm between coil and contact (conforms to IEC 60065)
Dielectric strength: 4KV
Surge strength: 10KV
- Cadmium free contact for eco-program
- Safety standards
UL, CSA, VDE, SEMKO, CQC
- Plastic sealed relay, RTIII
- RoHS compliant
Please see page 6 for more information



■ PARTNUMBER INFORMATION

[Example] $\frac{\text{FTR-F3}}{\text{(a)}}$ $\frac{\text{A}}{\text{(b)}}$ $\frac{\text{A}}{\text{(c)}}$ $\frac{\text{012}}{\text{(d)}}$ $\frac{\text{E}}{\text{(e)}}$ - $\frac{\text{HA}}{\text{(f)}}$

(a)	Relay type	FTR-F3	:FTR-F3-Series
(b)	Contact configuration	A	: 1 form A (SPST-NO)
(c)	Coil type (power)	A	: 200mW
(d)	Coil rated voltage	012	: 5.....24 VDC Coil rating table at page 3
(e)	Contact material	E	: AgNi
(f)	Contact rating	Nil HA KS	: 3A type : 5A type sealing confirmed : 3A type sealing confirmed

Actual marking does not carry the type name : "FTR"

E.g.: Ordering code: FTR-F3AA012E-HA

Actual marking: F3AA012E

5A 250V~ 5A 30VDC marked on relay

FTR-F3 SERIES

■ SPECIFICATION

Item	FTR-F3			
	FTR-F3AA()E		FTR-F3AA()E-HA	
Contact Data	Configuration	1 form A (SPST-NO)		
	Construction	Single		
	Material	AgNi		
	Resistance (initial)	Max. 100mOhm at 1A, 6VDC		
	Contact rating (resistive)	3A, 125VAC, 30VDC	5A, 250VAC, 30VDC	
	Max. carrying current	5A		
	Max. switching voltage	277VAC, 30VDC		
	Max. switching power	750VA, 90W	1,250VA, 150W	
	Min. switching load *	10 mA, 5VDC		
Life	Mechanical	Min. 5 x 10 ⁶ operations		
	Electrical (at rated load)	Min. 200 x 10 ³ operations	Min. 100 x 10 ³ operations	
Coil Data	Rated power (20 °C)	200mW		
	Operate power	113mW		
	Operating temperature range	-40 °C to +70 °C (no frost)		
Timing Data	Operate (at nominal voltage)	Max. 10ms (without bounce, no diode)		
	Release (at nominal voltage)	Max. 10ms (without bounce, no diode)		
Insulation	Resistance (initial)	Min. 1,000MOhm at 500VDC		
	Dielectric strength	Open contacts	750VAC (50/60Hz) 1min	
		Contacts to coil	4,000VAC (50/60Hz) 1min	
	Surge strength	Contacts to coil	10,000V / 1.2 x 50µs standard wave	
	Clearance	6mm		
	Creepage	6mm		
	EN61810-1, VDE0435	Voltage	250V	
		Pollution degree	2	
Material group		III		
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5mm	
		Endurance	10 to 55Hz double amplitude 1.5mm	
	Shock	Misoperation	Min. 100m/s ² (11±1ms)	
		Endurance	Min. 1,000m/s ² (6±1ms)	
	Weight	Approximately 4g		
	Sealing	Plastic sealed RTIII		

* Minimum switching loads mentioned above are reference values. Please perform the confirmation test with actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

■ COIL RATING

200mW type

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Max. Coil Voltage (VDC)	Rated Power (mW)
005	5	125	3.75	0.5	12	200
006	6	180	4.5	0.6	14.4	
009	9	405	6.75	0.9	21.6	
012	12	720	9	1.2	28.8	
018	18	1,620	13.5	1.8	43.2	
024	24	2,880	18	2.4	57.6	

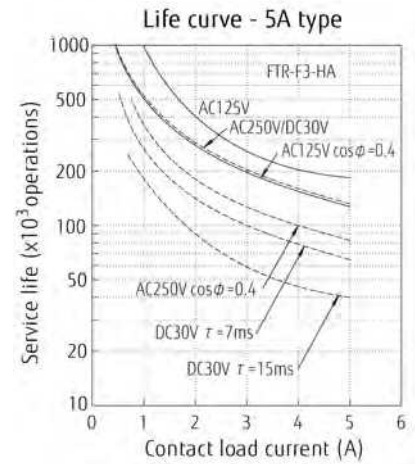
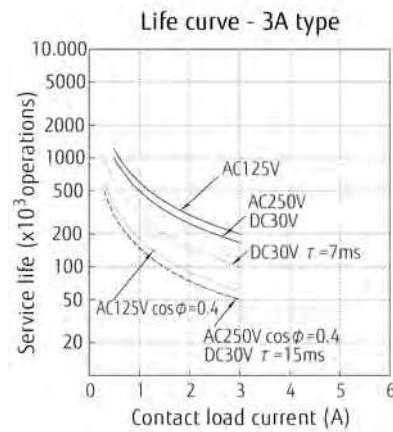
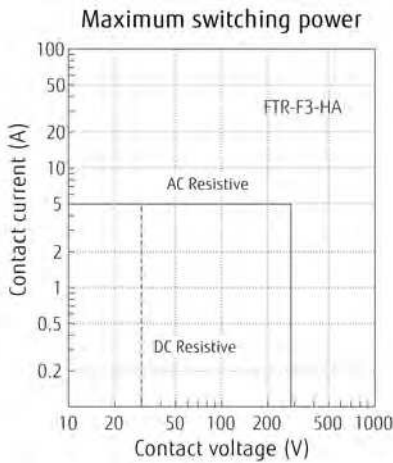
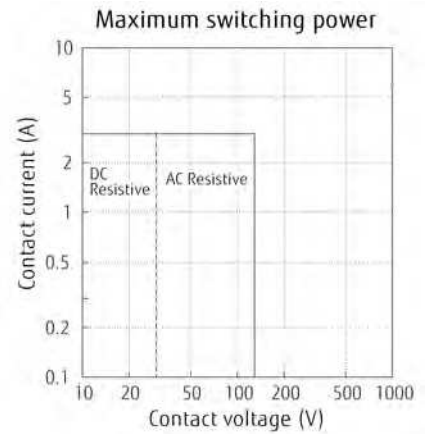
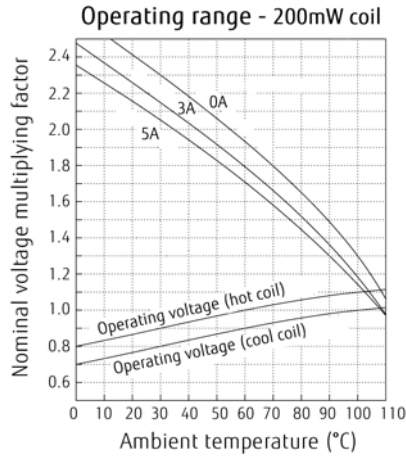
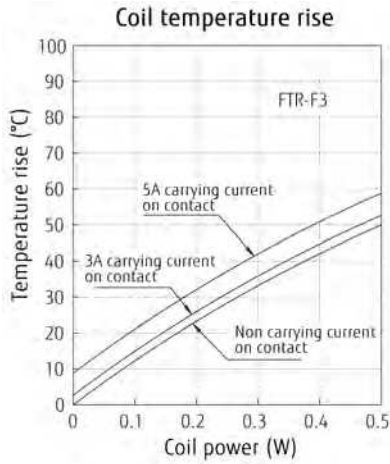
Note: All values in the tables are valid for 20°C and zero contact current.

* Specified operate values are valid for pulse wave voltage.

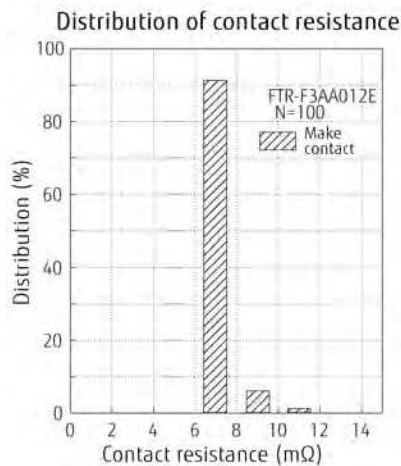
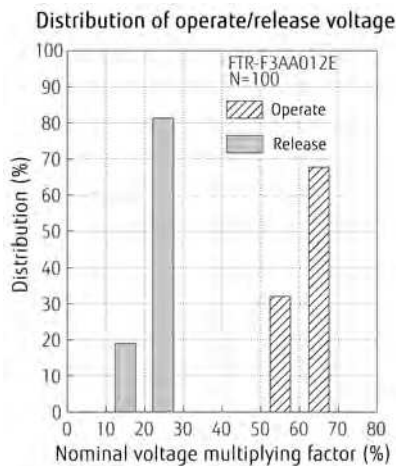
■ SAFETY STANDARDS

Type	Compliance	Contact rating	
		FTR-F3	FTR-F3-HA
UL	UL 508 E63614	Flammability: UL 94-V0 (plastics)	
CSA	C22.2 No. 14 LR 40304	3A, 30 VDC/ 277 VAC (resistive) 1/10 HP, 250VAC /125VAC 1/8 HP, 277VAC Pilot duty: D300	5A, 30 VDC/ 277 VAC (resistive) 1/10 HP, 250VAC /125VAC 1/8 HP, 277VAC Pilot duty: D300
VDE	0435 40015024	3A, 250 VAC, $\cos\phi = 1$, 200×10^3 , 85°C 3A, 30 VDC, $\tau=0\text{msec}$, 200×10^3 , 85°C 4A, 250VAC, cut off 1A, $\cos\phi = 0.8$, 200×10^3 , 70°C	5A, 250 VAC, $\cos\phi = 1$, 100×10^3 , 85°C 5A, 30 VDC, $\tau=0\text{msec}$, 100×10^3 , 85°C 4A, 250VAC, cut off 1A, $\cos\phi = 0.8$, 100×10^3 , 70°C
SEMKO	EN 61058-1: 1992 +A1:1993 EN 61095:1993+A11	5A, 250 VAC 40T70	

CHARACTERISTIC DATA



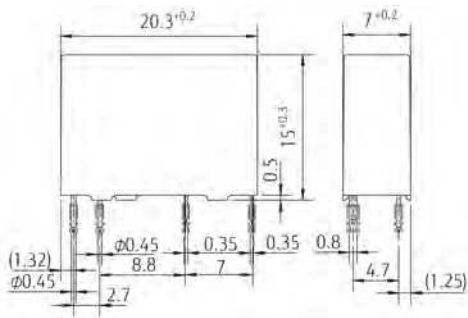
REFERENCE DATA



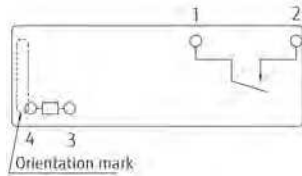
■ DIMENSIONS

Standard type

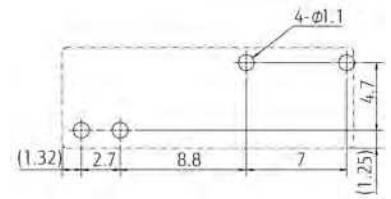
● Dimensions



● Schematics (BOTTOM VIEW)



● PC board mounting hole layout (BOTTOM VIEW)



Unit: mm

RoHS Compliance and Lead Free Information

1. General Information

- All signal and power relays produced by Fujitsu Components are compliant with RoHS directive 2002/95EC including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives on October 21st, 2005. (Amendment to Directive 2002/95/EC)
- All of our signal and power relays are lead-free. Please refer to Lead-Free Status Info for older date codes at: <http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf>
- Lead free solder plating on relay terminals is Sn-3.0Ag-0.5Cu, unless otherwise specified. This material has been verified to be compatible with PbSn assembly process.

2. Recommended Lead Free Solder Profile

- **Recommended solder Sn-3.0Ag-0.5Cu.**

Flow Solder condition:

Pre-heating: maximum 120°C
Soldering: dip within 5 sec. at
260°C solder bath

Solder by Soldering Iron:

Soldering Iron
Temperature: maximum 360°C
Duration: maximum 3 sec.

We highly recommend that you confirm your actual solder conditions

3. Moisture Sensitivity

- Moisture Sensitivity Level standard is not applicable to electromechanical relays, unless otherwise indicated.

4. Tin Whiskers

- Dipped SnAgCu solder is known as presenting a low risk to tin whisker development. No considerable length whisker was found by our in house test.

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