

POWER RELAY

1 POLE 5A SLIM TYPE RELAY

FTR-F3-HA Series

RoHS compliant

■ FEATURES

HIGH DENSITY MOUNTING
 Slim type with 7mm width and 142mm² mounting space

• HIGH ISOLATION

Insulation Distance: Minimum 6mm between coil and contact (conforms to IEC 60065)

Dielectric Strength: 4KV
Surge Strength: 10KV

HIGH COIL SENSITIVITY

Nominal coil power consumption of 200mW

• CADMIUM FREE CONTACT FOR ECO-PROGRAM

 SAFETY STANDARDS UL, CSA, VDE, SEMKO, CQC

Plastic sealed relay

 RoHS compliant since date code: 0435R1, 0432R2, 0429R3, 0434R4, 0437L2

Please see page 6 for more information





■ ORDERING INFORMATION

(a)	Series Name	FTR-F3		
(b)	Contact Arrangement	A: 1 Form A (SPST-NO)		
(c)	Coil Type	A : Standard (200mW)		
(d)	Coil Nominal Voltage	005 : 5DC		
(e)	Contact Material	E : Silver nickel		
(f)	Contact Rating	HA: 5A sealing confirmed		

Remarks: Actual marking on relay would not carry code FTR and be as below:

Ordering code Actual marking FTR-F3AA012E → F3AA012E

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■ PART NUMBERS

Ordering Part Number	Series	Contact	Coil Power	Coil Voltage	Contact Material	Contact Rating
FTR-F3AA005E-HA		TR-F3 1 form A	1 form A Standard (200 mW)	5	Silver nickel	5A
FTR-F3AA006E-HA				6		
FTR-F3AA009E-HA	ETD E2			9		
FTR-F3AA012E-HA	FIK-F3			12		
FTR-F3AA018E-HA				18		
FTR-F3AA024E-HA				24		

COIL DATA CHART

Coil Voltage	Nominal Voltage (VDC)	Max. Coil Voltage* ¹	Coil Resistance (±10%)	Must Operate Voltage* ²	Must Release Voltage* ²	Coil Power
005	5	12.0 VDC	125 Ω	3.75 VDC	0.5 VDC	
006	6	14.4 VDC	180 Ω	4.5 VDC	0.6 VDC	
009	9	21.6 VDC	405 Ω	6.75 VDC	0.9 VDC	200 m\M
012	12	28.8 VDC	720 Ω	9.0 VDC	1.2 VDC	200 mW
018	18	43.2 VDC	1,620 Ω	13.5 VDC	1.8 VDC	
024	24	57.6 VDC	2,880 Ω	18.0 VDC	2.2 VDC	

Note: All values in the table are measured at 20°C.

^{*1:} No contact current at 20°C
*2: Specified values are subject to pulse wave voltage

■ SPECIFICATIONS

Item			FTR-F3 AA () E-HA		
Contact	Arrangement		1 form A (SPST-NO)		
	Material		Silver nickel		
	Configuration		Single		
	Resistance (initial)		Maximum 100 mΩ at 6 VDC, 1 A		
	Rating		5 A, 250 VAC / 30 VDC		
	Maximum Carry Current		5A		
	Maximum Switching Power		1,250 VA / 150 W		
	Maximum Switching Voltage		277 VAC / 30VDC		
	Maximum Switching Load*1		10 mA 5 VDC		
Coil	Rating Power		200 mW		
	Must Operate Power		113 mW		
	Operating Temperature		-40°C to +70°C (no frost)		
Time Value	Operate Time (without diode)		Maximum 10 ms		
	Release Time (without diode)		Maximum 10 ms		
Life	Mechanical		5 x 10 ⁶ operations minimum		
	Electrical		100 x 10 ³ operations minimum		
Other	Vibration Resistance	Misoperation	10 to 55 Hz, at double amplitude of 1.5 mm		
		Endurance	10-55Hz, at double amplitude of 1.5 mm		
	Shock Resistance	Misoperation	Min. 100m/s ² (11±1ms)		
		Endurance	Min. 1,000m/s ² (6±1ms)		
	Weight		Approximately 4g		

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

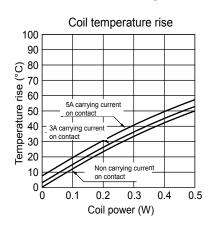
■ INSULATION

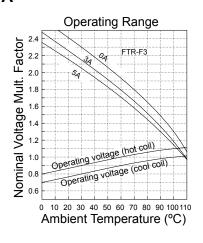
Item		FTR-F3		
Resistance (50	00 VDC)	Minimum 1,000 MΩ		
Dielectric Strength	open contacts	750 VAC (50/60 Hz) 1 min.		
	coil and contacts	4,000 VAC (50/60 Hz) 1 min.		
Surge Voltage	(coil and contact)	10,000 V (1.2 x 50µs standard wave)		
Clearance/Cre	epage	6 mm / 6 mm		
Insulation (DIN Voltage Pollution Isolation mate	N EN61810-1 VDE0435) erial group	250 V 2 Ila		
Isolation categ	ory / Reference voltage (VDE01106)	C / 250 V		

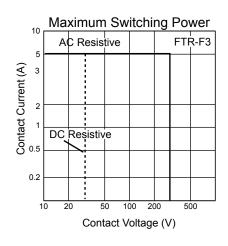
■ SAFETY STANDARDS

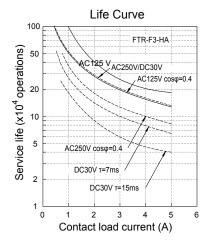
Туре	Compliance	Contact rating
UL	UL 508 E63614	Flammability: UL 94-V0 (plastics) 5A, 30 VDC/ 277 VAC (resistive) 1/10 HP, 250VAC /125VAC
CSA	C22.2 No. 14 LR 40304	1/8 HP, 277VAC Pilot duty: D300, 120 VAC / 240 VAC
VDE	0435	5A, 250 VAC / 30 VDC 85°C 4A, 250 VAC break 1A cosØ=0.8, 85C
SEMKO	EN 61058-1: 1992 +A1:1993 EN 61095:1993+A11	5A, 250 VAC 40T70

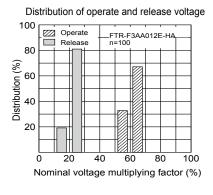
■ CHARACTERISTIC DATA

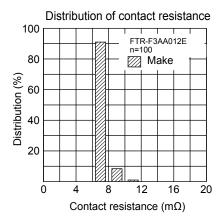






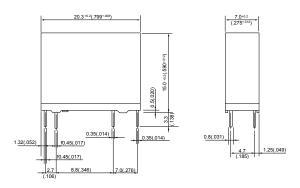




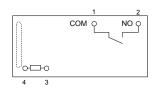


■ DIMENSIONS

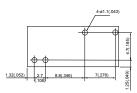
Dimensions



Schematics (BOTTOM VIEW)



PC board mounting hole layout (BOTTOM VIEW)



RoHS Compliance and Lead Free Relay Information

1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. All of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu.
- All signal and power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 5 hazardous materials that are restricted by RoHS directive (lead, mercury, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in leaded assembly process will not cause any problems (compatible).
- "LF" is marked on each outer and inner carton. (No marking on individual relays).
- To avoid leaded relays (for lead-free sample, etc.) please consult with area sales office.
- We will ship leaded relays as long as the leaded relay inventory exists.

Note: Cadmium was exempted from RoHS on October 21, 2005. (Amendment to Directive 2002/95/EC)

2. Recommended Lead Free Solder Profile

Recommended solder paste Sn-3.0Ag-0.5Cu.

Reflow Solder condition

Flow Solder condition:

Pre-heating: maximum 120°C dip within 5 sec. at

260°C soler 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 realys.

4. Tin Whisker

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

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