

POWER RELAY

1 POLE - 120A Inrush current

FTR-F2P Series

■ FEATURES

- SPST 5A
- TV-8 rating capability (120A inrush current)
- High density mounting
Saves space by 26% compared to FTR-H1 type
- High insulation
Insulation distance between coil and contacts: 6mm
Dielectric Strength: 4KV
Surge Strength: 12KV
- Flux proof type. RTII
- Flammability 94V-0
- Cadmium free contact for eco-program
- Safety standards
UL, CSA approved
UL/CSA TV-8 rating approved
- RoHS Compliant
Please see page 5 for more information



■ PARTNUMBER INFORMATION

[Example] $\frac{\text{FTR-F2P}}{\text{(a)}}$ $\frac{\text{M}}{\text{(b)}}$ $\frac{\text{012}}{\text{(c)}}$ $\frac{\text{T}}{\text{(d)}}$

(a)	Relay type	FTR-F2P : FTR-F2P-Series
(b)	Coil type / enclosure	M : High sensitivity (250mW) and high isolation
(c)	Coil rated voltage	012 : 5.....24 VDC Coil rating table at page 3
(d)	Contact material	T : Silver tin oxide

Actual marking does not carry the type name : "FTR"
E.g.: Ordering code: FTR-F2PM012T Actual marking: F2PM012T

■ SPECIFICATION

Item			Open type
			F2 PM () T
Contact Data	Configuration		1 form A (SPST-NO)
	Construction		Single
	Material		Silver tin oxide (AgNi)
	Resistance (Initial)		Max. 100 mΩ at 6 VDC, 1 A
	Rated current		5A
	Rated switching voltage		250VAC, 30VDC
	Max. carrying current		5A
	Max. inrush current		117A 250VAC
	Max. switching voltage		400VAC / 300 VDC
	Max. switching power		1,250VA / 150W
	Min. switching load*		100 mA, 5 VDC
Life	Mechanical		Min. 2 x 10 ⁶ operations
	Electrical	AC contact rating	Min. 100 x 10 ³ operations
		DC contact rating	Min. 100 x 10 ³ operations
		Lamp load (TV-8)	Min. 25 x 10 ³ operations
Coil Data	Rated power		250mW
	Operate power		160mW
	Operating temperature range		-40 °C to +70 °C (no frost)
Timing Data	Operate		Max. 15ms (no diode, without bounce)
	Release		Max. 5ms (no diode, without bounce)
Insulation	Resistance (Initial)		Min. 1,000MΩ @500VDC
	Dielectric strength	Open contacts	1,000VAC (50/60Hz) 1min
		Contacts to coil	4,000VAC (50/60Hz) 1min
	Surge strength	Coil to contacts	12,000V / 1.2 x 50μs standard wave
	Clearance		6mm
	Creepage		6mm
	EN61810-1, VDE0435	Voltage	250V
		Pollution degree	2
Material group		III a	
Other	Vibration resistance	Misoperation>1us	10 to 55 to 10Hz single amplitude 0.75mm
		Endurance	10 to 55 to 10Hz single amplitude 0.75mm
	Shock	Misoperation>1us	Min. 200m/s ² (11+/-1ms)
		Endurance	Min. 1,000m/s ² (6+/-1ms)
	Weight		Approximately 12g
	Sealing		Flux proof, RTII

* 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**

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Rated Power (mW)
005	5	100	3.5	0.25	250
006	6	145	4.2	0.3	
009	9	325	6.3	0.45	
012	12	575	8.4	0.6	
018	18	1,245	12.6	0.9	
024	24	2,310	16.8	1.2	

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

* Specified operate values are valid for pulse wave voltage.

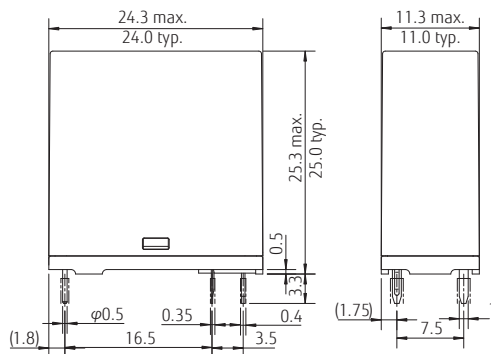
■ Please use at rated coil voltage. Please refer to characteristic data and set up adequate voltage in case of use at over voltage.

■ **SAFETY STANDARDS**

Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics) 5A, 30 VDC/250VAC (resistive) 1/6 HP, 125VAC
	E63614	
CSA	C22.2 No. 14 LR 40304	1/2 HP, 250VAC TV-8, 120 VAC Pilot duty: C300

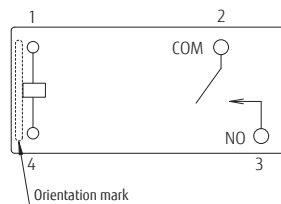
■ **DIMENSIONS**

● **Dimensions**



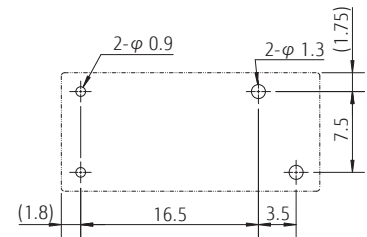
● **Schematics**

(BOTTOM VIEW)



● **PC board mounting hole layout**

(BOTTOM VIEW)



Unit: mm
(): Reference

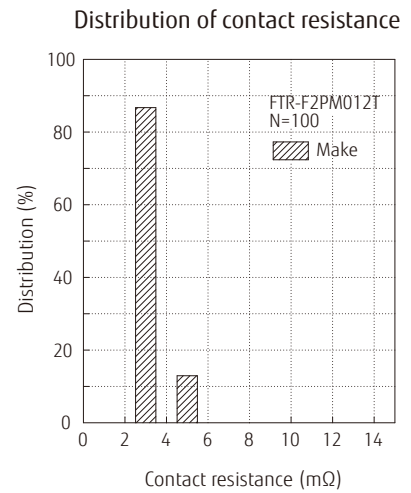
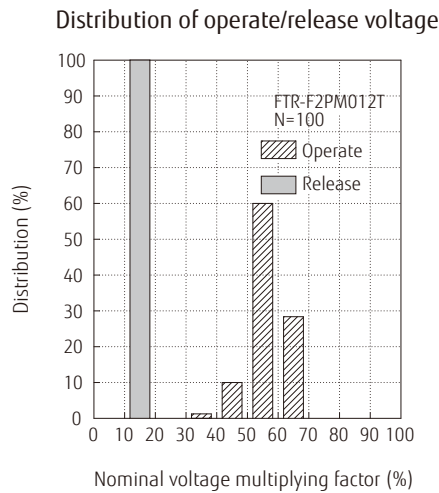
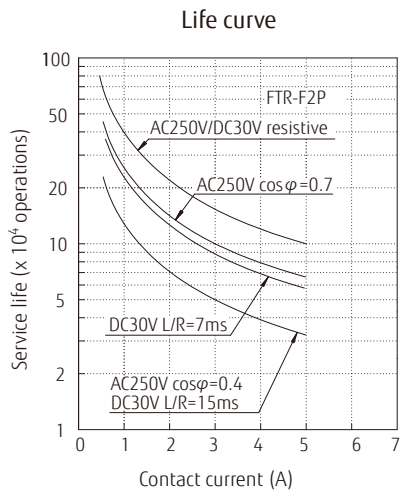
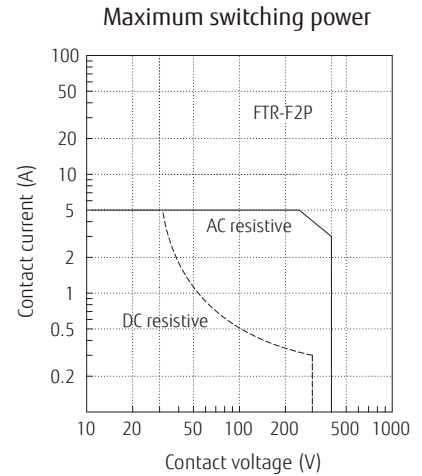
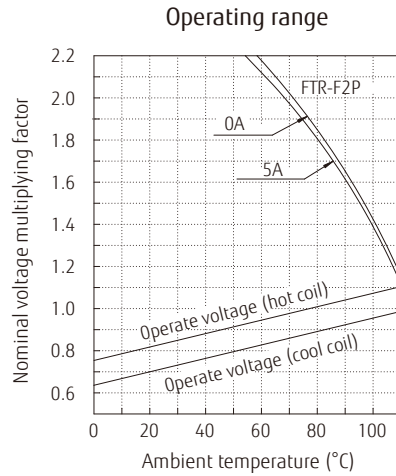
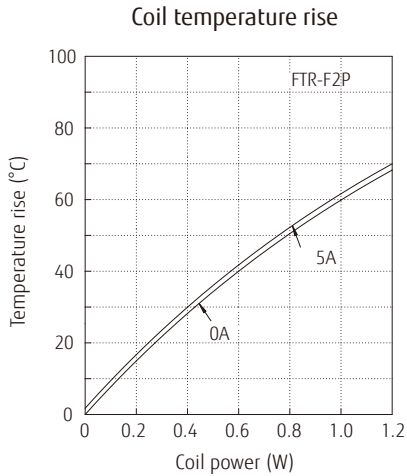
* Dimensions of the terminals do not include thickness of pre-solder.

* Dimensions do not include tolerances.

* Tolerance of PC board mounting hole layout: ±0.1 unless otherwise specified.

CHARACTERISTIC DATA

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



CAUTIONS

- All values mentioned in this datasheet are provided under ideal conditions. Please perform the confirmation test before actual use.
- Reflow soldering is prohibited.
- Do not use relays in the atmosphere with sulfide gas, chloride gas or nitric oxide. Contact resistance may increase.
- Do not use silicon or silicon-containing product or materials near relays. It may cause contact failure.

GENERAL INFORMATION

1. ROHS Compliance

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU, including commission delegated directive 2015/863.

2. Recommended lead free solder condition

- 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.
- Recommended solder for assembly: Sn-3.0Ag-0.5Cu.

Flow Solder Condition:

Pre-Heating: maximum 120°C
within 90 sec.
Soldering: dip within 5 sec. at 255°C±5°C solder bath

Relay must be cooled by air immediately after soldering

Solder by Soldering Iron:

Soldering Iron: 30-60W
Temperature: maximum 340-360°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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