FUJITSU

POWER RELAY
1 POLE - 16A Relay
FTR-K2 Series

■ FEATURES

- SPST-NO
- High insulation
  Insulation distance: minimum 6mm between coil and contact
  Dielectric strength: 4KV
  Surge strength: 10KV
- TV-5 rating
- Heat resistance, flammability
  Class B (130° C) wire class, flammability 94V-0
- Cadmium free contact for eco-program
- Safety standards
  UL, CSA, VDE approved, SEMKO
  UL/CSA TV-5 rating approved
- Flux proof sealing, RTII
- RoHS compliant
  Please see page 6 for more information

■ PARTNUMBER INFORMATION

[Example] FTR-K2 (a) A (b) K (c) 012 (d) T (e) - ** (f)

(a)	Relay type	FTR-K2: FTR-K2 Series
(b)	Contact configuration	A : 1 form A (SPST-NO)
(c)	Coil type	K : Standard type (530mW)
(d)	Coil rated voltage	012 : 5.....48VDC Coil rating table at page 3
(e)	Contact material / TV type	T : Silver-tin oxide (TV-5)
(f)	Special type	OK : 1.0mm contact gap

Actual marking does not carry the type name : "FTR"
E.g.: Ordering code: FTR-K2AK012T Actual marking: K2AK012T

■ SPECIFICATION

Item			FTR-K2AK ( ) T
Contact Data	Configuration		1 form A (SPST-NO)
	Construction		Single
	Material		Silver tin oxide ($AgSnO_2$)
	Resistance (initial)		Max. 100mOhm at 1A, 6VDC
	Contact rating (resistive)		250VAC / 30VDC / 16A
	Max. carrying current		16A
	Max. switching voltage		400VAC / 300VDC
	Max. switching power		4,000VA / 480W
	Min. switching load*		100mA, 5VDC
Life	Mechanical		Min. 2 x 10^6 operations
	Electrical	DC contact rating	Min. 100 x 10^3 operations
		AC contact rating	Min. 100 x 10^3 operations
		Lamp load (TV-5)	Min. 25 x 10^3 operations
Coil Data	Rated power (20 °C)		530mW
	Operate power (20 °C)		260mW
	Operating temperature range		-40 °C to +70 °C (no frost)
Timing Data	Operate (at nominal voltage)		Max. 15ms (without bounce)
	Release (at nominal voltage)		Max. 5ms (no diode)
Insulation	Resistance (initial)		Min. 1,000MOhm at 500VDC
	Dielectric strength	Open contacts	1,000VAC (50/60Hz) 1min
		Contacts to coil	4,000VAC (50/60Hz) 1min
	Surge strength	Coil to contacts	10,000V / 1.2 x 50μs standard wave
	Clearance		6mm
	Creepage		6mm
	EN61710-1, VDE0435	Voltage	250V
		Pollution degree	2
		Material group	III a
		Category	B / 250V
Other	Vibration resistance	Misoperation>1us	10 to 55Hz double amplitude 1.5mm
		Endurance	10 to 55Hz double amplitude 1.5mm
	Shock	Misoperation>1us	200m/s² (11 ± 1ms)
		Endurance	1,000m/s² (6 ± 1ms)
	Weight		Approximately 13g
	Sealing		Flux proof (RT II)

* 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 contions and expected reliability levels.

■ COIL RATING

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	47	3.5	0.25	8.5	530
006	6	68	4.2	0.3	10.2	
009	9	155	6.3	0.45	15.3	
012	12	270	8.4	0.6	20.4	
018	18	610	12.6	0.9	30.6	
024	24	1,110	16.8	1.2	40.8	
048	48	4,400	33.6	2.4	81.6	

Note: All values in the table are valid for 20°C and zero contact current.
* Specified operate values are valid for pulse wave voltage.

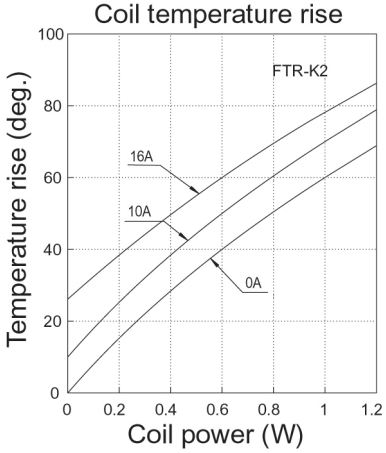
■ SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508 E63614	Flammability: UL 94-V0 (plastics) 16A, 30VDC (resistive) 16A, 125VAC (resistive) 10A, 277VAC (resistive) 1/2 HP,125VAC 1 HP. 277VAC TV-5, 120 VAC Pilot duty: A300
CSA	C22.2 No. 14 LR 40304	
VDE	0435, 0860 40015431	16A, 250 VAC (cosφ=1) 8A, 250 VAC cosφ=0.4) 18A, 30 VDC (0ms) 250VAC 5/80A inrush
SEMKO	EN 61058-1: 1992 AND A1 EN 61095:1993 and A1+A11	250 VAC, 10 (3) or 5/80 40T70

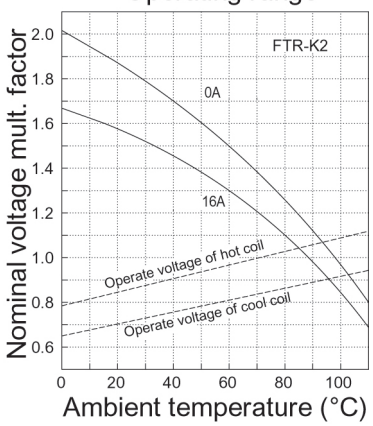
Complies with CQC, NEMKO, DEMKO, FIMKO

■ CHARACTERISTIC DATA

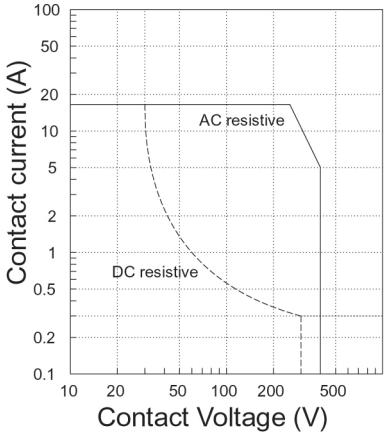
Coil temperature rise



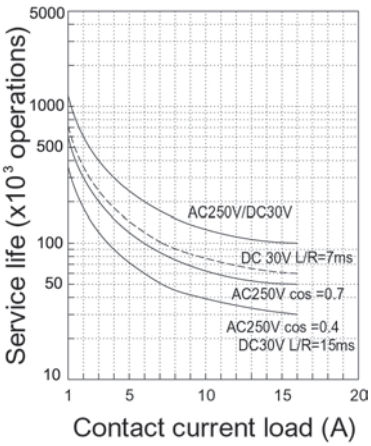
Operating range



Maximum switching power

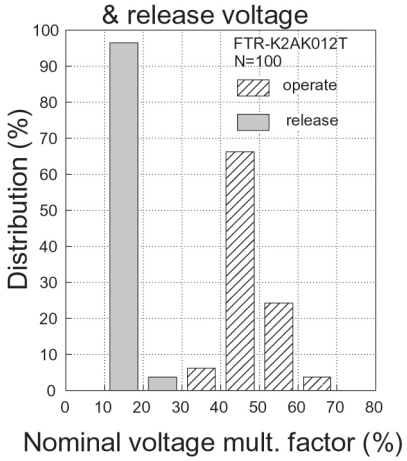


Life curve

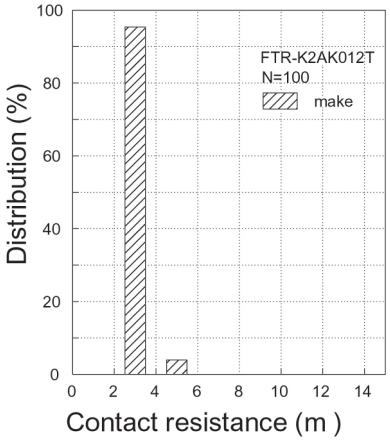


■ REFERENCE DATA

Distribution of operate & release voltage

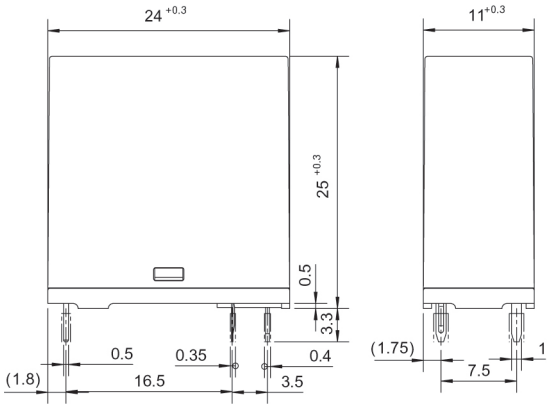


Distribution of contact resistance

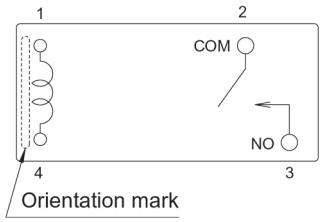


■ DIMENSIONS

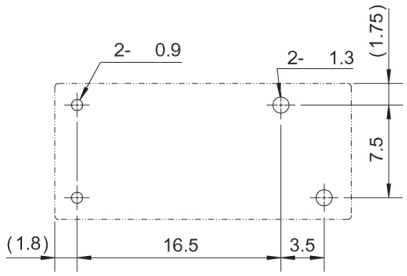
- **Dimensions**



- **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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