

POWER RELAY

1 POLE - 25A - 1.5mm contact gap

FTR-K3-WG Series

■ FEATURES

- 1 pole, 25A
- 1 Form A
- Contact gap 1.5mm
 - 2.5kV surge breakdown voltage
 - Compliance with European photovoltaic standard (VDE0126)
- High insulation in small package (between coil and contact)
 - Insulation distance: Clearance > 6.4mm
 - Creepage > 9.5mm
- Dielectric strength: 5,000VAC
- Surge strength: 8,500V
- Low coil holding voltage contributes to energy saving of equipment. The coil holding voltage can be reduced to 35% of nominal coil voltage.
 - Power consumption at the coil holding voltage: 125mW equivalent.
 - Coil holding voltage is the coil voltage after 100ms of applied nominal coil voltage.
- Flammability UL94V-0 (plastics)
- Sealing: Flux free, cat II
- RoHS compliant
 - Please see page 5 for more information
 - Contains no lead and features cadmium-free contacts



■ PARTNUMBER INFORMATION

FTR-K3 A B 012 W - WG
 [Example] (a) (b) (c) (d) (e) (f)

(a)	Relay type	FTR-K3: FTR-K3 Series
(b)	Contact configuration	A : 1 form A
(c)	Coil type	B : Standard type (0.78W)
(d)	Coil rated voltage	012 : 5...48VDC Coil rating table at page 3
(e)	Contact material	W : Silver tin oxide (AgSnO ₂)
(f)	Version	WG : Contact gap 1.5mm

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

E.g.: Ordering code: FTR-K3AB012W-WG Actual marking: K3AB012W
WG marked on the relay

FTR-K3-WG SERIES

■ SPECIFICATION

Item			FTR-K3-WG
Contact Data	Configuration		1 form A
	Material		Silver tin oxide (AgSnO ₂)
	Resistance (initial)		Max. 100mOhm at 1A, 6VDC
	Contact rating		25A / 250VAC (resistive)
	Max. carrying current		25A
	Max. switching power		6,250VA
	Max. switching voltage		250VAC
	Max. switching current		25A
	Min. switching load (reference)		100mA, 5VDC
Life	Mechanical		Min. 2 x 10 ⁶ operations
	Electrical	Resistive load	25A 250VAC, 100 x 10 ³ operations
		Inverter load	Inrush 200A / break 25A 100VAC: 30 x 10 ³ operations
		Motor load	Inrush 80A cosφ 0.7 / 20A cosφ 0.9 ; 250VAC 200 x 10 ³ operations
Coil Data	Rated power (at 20 °C)		Approximately 0.78W
	Operate power (at 20 °C)		Approximately 0.38W
	Holding/max. coil voltage (valid after 100msec. nom. coil energizing voltage)		40 to 120% of nominal coil voltage (contact carrying current: 25A at 60 °C) 40 to 80% of nominal coil voltage (contact carrying current: 25A at 85 °C) 35 to 120% of nominal coil voltage (contact carrying current: 25A at 20 °C)
	Operating temperature range (no frost)		-40 °C to +60 °C (at nominal coil voltage) -40 °C to +85 °C (at coil holding voltage 40 to 80% of nominal coil voltage application)
Timing Data	Operate (at nominal voltage)		Max. 20ms (no bounce)
	Release *		Max. 10ms (no diode, no bounce)
Insulation	Contact gap (initial)		Min. 1.5 mm
	Resistance		Min. 1,000MOhm at 500VDC
	Dielectric strength	Open contacts	2,500VAC, 1min.
		Coil and contacts	5,000VAC, 1min.
	Surge strength	Coil to contacts	8,500V / 1.2 x 50µs standard wave
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5 mm
		Endurance	10 to 55Hz double amplitude 1.5 mm
	Shock resistance	Misoperation	Min. 200m/s ² (11 ± 1ms)
		Endurance	Min. 1,000m/s ² (6 ± 1ms)
	Weight		Approximately 25 g
	Sealing		Flux proof cat II

* Use a varistor as a protective circuit against reverse surge in the relay coil. A varistor is connected parallel to the coil. The reverse blocking voltage should be about 3 times the value of the power surge voltage.

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■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Max. Operate Voltage (VDC)	Rated Power +/- 10% (W)
005	5	32	3.5	0.5	7.5	Approx. 0.78
006	6	46	4.2	0.6	9	
009	9	105	6.3	0.9	13.5	
012	12	185	8.4	1.2	18	
018	18	415	12.6	1.8	27	
024	24	740	16.8	2.4	36	
048	48	2,955	33.6	4.8	72	

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

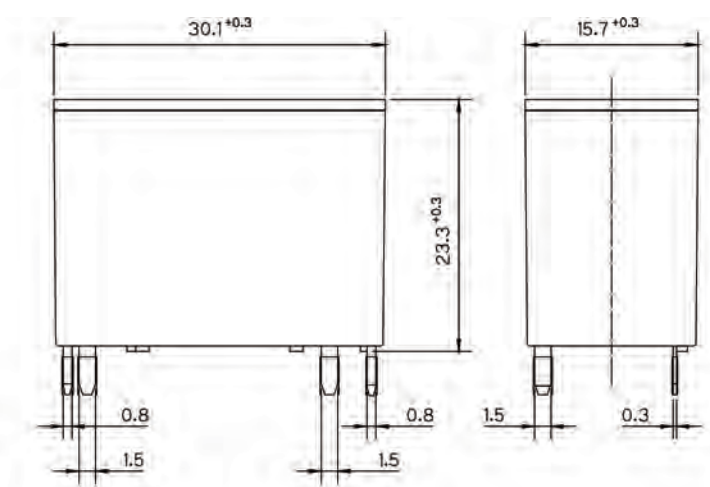
Type	Compliance	Contact rating
UL	UL 508 E63614	25A, 277VAC (resistive, at 60 °C) 1HP, 125VAC * ¹ (at 60 °C) 2HP, 277VAC * ² 100x10 ³ (at 60 °C)
CSA	C22.2 No.14 LR40304	20A, 277VAC (resistive) 1HP, 125VAC * ¹ 2HP, 277VAC * ² 100x10 ³
VDE	0435	25A, 250VAC (cosφ =1/at 60 °C) <i>pending</i>
CQC	GB15092.1, GB8898 04001009179	20A, 250VAC
SEMKO	EN61058-1 / EN61095	20A, 250VAC, 40T60 20A, (13.33) 250VAC, 40T60 20/200A, 100VAC, 40T60 <i>pending</i>

*1 Over load 96A / 50 operations - 32A, cosφ = 0.4-0.5 / 6,000 operations

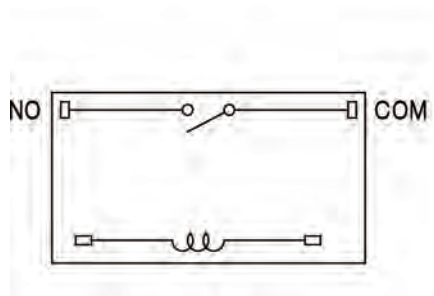
*2 Over load 72A / 50 operations - 24A, cosφ = 0.4-0.5 / 100,000 operations

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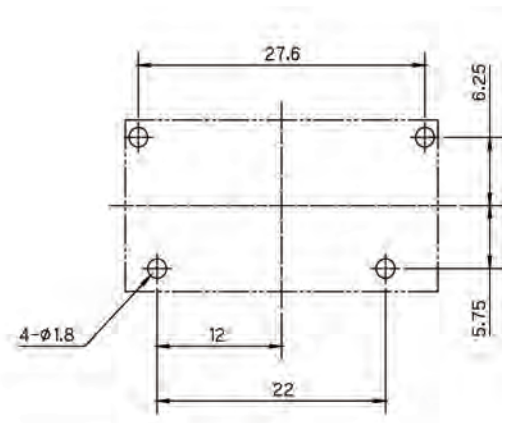
■ DIMENSIONS



- Schematics (BOTTOM VIEW)



- PC board pattern (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 2002/95/EC 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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