

POWER RELAY

1 POLE - 25A - 1.5mm contact gap

FTR-K3-WG Series

■ FEATURES

- 1 pole, 25A
- 1 Form A
- Contact gap 1.5mm
 - Surge strength (B/T open contacts) 2.5kV
 - 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
- Coil holding voltage can be reduced up to 35% of nominal coil voltage (ambient temperature; +20 °C, contact current; 25A)
Power consumption at the lowest coil holding voltage; 95mW
* Coil holding voltage is the coil voltage after 100ms of applied nominal coil voltage
- Flammability UL94V-0 (plastics)
- Cadmium-free contacts
- Flux free, cat. RTII protection
- RoHS compliant
Please see page 6 for more information



■ PARTNUMBER INFORMATION

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

| | | |
|-----|-----------------------|---|
| (a) | Relay type | FTR-K3 : FTR-K3-Series |
| (b) | Contact configuration | A : 1 form A / PCB type |
| (c) | Coil power | B : Standard type (780mW) |
| (d) | Coil rated voltage | 012 : 5.....48 VDC Coil rating table at page 3 |
| (e) | Contact material | W : Silver alloy |
| (f) | Option code | 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

FTR-K3-WG SERIES

■ SPECIFICATION

| Item | FTR-K3-WG | | |
|--------------|-------------------------------|---|--------------------------------------|
| Contact Data | Configuration | 1 form A | |
| | Material | Silver alloy | |
| | Resistance (initial) | Max. 100mΩ at 1A, 6VDC | |
| | Contact rating | 25A, 250VAC (resistive) | |
| | Max. carrying current | 25A | |
| | Max. switching voltage | 250VAC | |
| | Max. switching power | 6,250VA | |
| | Max. switching current | 25A | |
| | Min. switching load *1 | 100mA, 5VDC (reference value) | |
| Life | Mechanical | Min. 2 x 10 ⁶ operations | |
| | Electrical (resistive) | 25A / 250VAC, min. 100 x 10 ³ operations | |
| | Electrical (inductive) | Endurance: 25A, 250VAC, cos φ = 0.8, min. 30 x 10 ³ operations Overload: 37.5A, 250VAC, cos φ = 0.8, min. 50 operations | |
| Coil Data | Rated power (at 20 °C) | Approximately 780mW | |
| | Operate power (at 20 °C) | Approximately 380mW | |
| | Coil power at holding voltage | 95mW (35% of nominal coil voltage) | |
| | Holding voltage *2 | 35~120% of nominal coil voltage (25A at +20 °C) 40~80% of nominal coil voltage (25A at +85 °C) | |
| | Operating temperature range | -40 °C to +60 °C (coil nominal voltage) -40 °C to +85 °C (holding voltage; 40~80% of nominal coil voltage) | |
| Timing Data | Operate (at nominal voltage) | Max. 20ms (without bounce) | |
| | Release (at nominal voltage) | Max. 10ms (no diode, without bounce) | |
| Insulation | Contact gap (initial) | Min. 1.5 mm | |
| | Resistance | Min. 1,000MΩ 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 |

*1 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.

*2 Reduction of minimum coil holding voltage to maximum coil voltage range, after 100msec energizing with nominal coil voltage.

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■ COIL RATING

| Coil Code | Rated Coil Voltage (VDC) | Coil Resistance +/- 10% (Ohm) | Must Operate Voltage (VDC) *1 | Must Release Voltage (VDC) *1 | Min. Non Release Voltage (VDC) *1 | Rated Power +/- 10% (mW) |
|-----------|--------------------------|-------------------------------|-------------------------------|-------------------------------|-----------------------------------|--------------------------|
| 005 | 5 | 32 | 3.5 | 0.5 | 1.75 | Approx. 780 (97)*2 |
| 006 | 6 | 46 | 4.2 | 0.6 | 2.1 | |
| 009 | 9 | 105 | 6.3 | 0.9 | 3.15 | |
| 012 | 12 | 185 | 8.4 | 1.2 | 4.2 | |
| 018 | 18 | 415 | 12.6 | 1.8 | 6.3 | |
| 024 | 24 | 740 | 16.8 | 2.4 | 8.4 | |
| 048 | 48 | 2,955 | 33.6 | 4.8 | 16.8 | |

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

*1 Specified operate values are valid for pulse wave voltage.

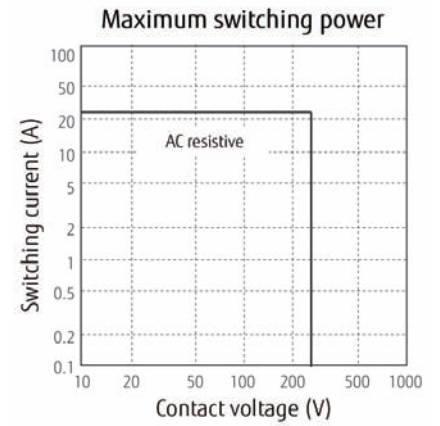
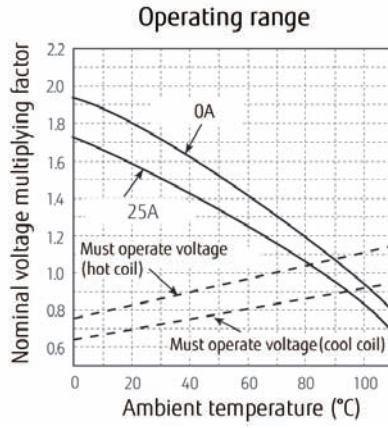
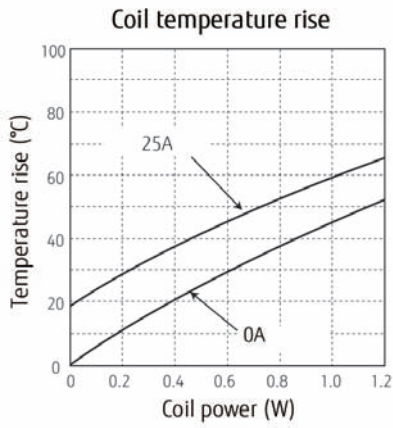
*2 This value is the coil power at 35% of nominal voltage at 20°C.

■ SAFETY STANDARDS

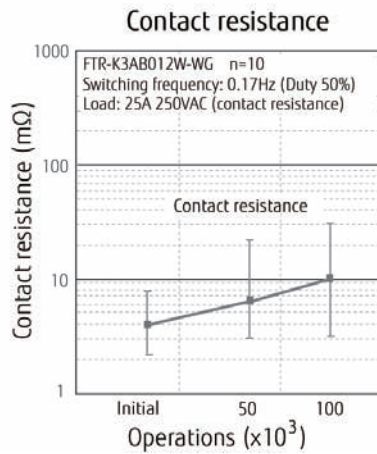
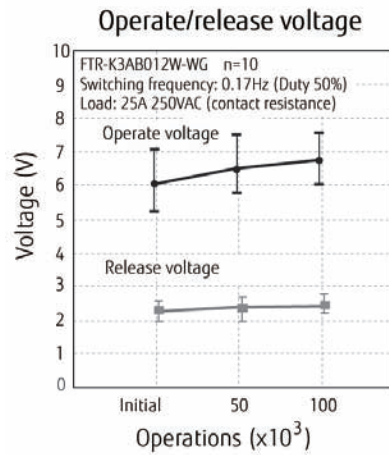
| Type | Compliance | Contact rating |
|------|---|--|
| UL | UL 508 E63614 | 25A, 277VAC (resistive, at 60 °C) 1HP, 125VAC (at 60 °C) 2HP, 277VAC, 100x10 ³ (at 60 °C) |
| VDE | IEC61810-1 | 25A, 250VAC (cosφ =1 at 60 °C) |
| CQC | GB15092.1, GB8898 GB/T21711.1 04001009179 | 20A, 250VAC |

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■ REFERENCE DATA



Electrical life tests (resistive load)



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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