

POWER RELAY

1 POLE - 30A DC Relay

2 x 3.2mm contact gap

FTR-K2W Series

■ FEATURES

- Contact rating: 60VDC, 30A; 72VDC, 25A
- Wide contact gap: 2 x 3.2mm
- Compact size: 36.5 (L) x 34.9 (W) x 30.2 (H) mm
- 1 form A contact
- High insulation (between coil and contact)
 - Insulation distance: Clearance > 8.0mm
Creepage > 9.5mm
 - Dielectric strength: 5,000VAC
 - Surge strength: 10,000V
- Flammability UL94V-0 (plastics)
- RoHS compliant
Please see page 6 for more information



■ PARTNUMBER INFORMATION

[Example] FTR-K2W A K 012 W
 (a) (b) (c) (d) (e)

(a)	Relay type	FTR-K2W : FTR-K2W-Series
(b)	Contact configuration	A : 1 form A
(c)	Coil type	K : Standard (2,000mW)
(d)	Coil rated voltage	12 : 5.....48 VDC Coil rating table at page 3
(e)	Contact material	W : Silver alloy

Actual marking does not carry the type name : "FTR"
 E.g.: Ordering code: FTR-K2WAK012W Actual marking: K2WAK012W

FTR-K2W SERIES

■ SPECIFICATION

Item			FTR-K2W
Contact Data	Configuration		1 form A
	Material		Silver alloy
	Resistance (initial)		Max. 100mΩ at 1A, 6VDC
	Contact rating		30A / 60VDC, 25A / 72VDC (resistive)
Life	Mechanical		Min. 1 x 10 ⁶ operations
	Electrical		10 x 10 ³ operations
Coil Data	Rated power (at 20 °C)		Approximately 2,000mW
	Nominal voltage		5, 12, 24, 48VDC
	Operating temperature range		-40 °C to +70 °C (no frost)
Timing Data	Operate (at nominal voltage)		Max. 30ms (without bounce)
	Release		Max. 15ms (no diode)
Insulation	Resistance (initial)		Min. 1,000MΩ at 500VDC
	Dielectric strength	Open contacts	2,000VAC (50/60 Hz) 1min.
		Coil and contacts	5,000VAC (50/60 Hz) 1min.
	Surge strength	Coil to contacts	10,000V / 1.2 x 50µs standard wave
	Clearance		≥ 8 mm
Creepage		≥ 9.5 mm	
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. 100m/s ² (11 ± 1ms)
		Endurance	Min. 1,000m/s ² (6 ± 1ms)
	Weight		Approximately 74 g
Sealing		Flux proof, RT II	

Notes:

- To prevent hazardous situation in case of catastrophic contact failures like contact welding, please carefully evaluate the relay application parameters, to assure a fail-safe design. This is particularly important in case of over spec use and long periods of continuous use.
- Use of a varistor in parallel over the coil is recommended to clamp reverse inductive voltage surges. Reverse blocking voltage should be about 3 times the surge voltage level.
- A contact carrying currents higher than 10A, it is recommended to consider addition heat develop in the PCB contact tracks.
- Specified values are valid in case of series connection of coils, by connecting pin 2 and 3, at Tamb 20°C and at zero contact current.

■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release-Voltage (VDC) *	Rated Power +/- 10% (mW)
005	5	12.5	3.25	0.25	Approx. 2,000
012	12	72	7.8	0.6	
024	24	290	15.6	1.2	
048	48	1,160	31.2	2.4	

Notes:

- 1) Specified values are valid in case of series connection of coils, by connecting pin 2 and 3, at Tamb 20°C and at zero contact current.
- 2) Normal use it at nominal coil voltage. If the relay is energized at higher coil voltage, refer to data "coil temperature rise"

*Specified operate- and must release voltage are valid for pulse wave voltages.

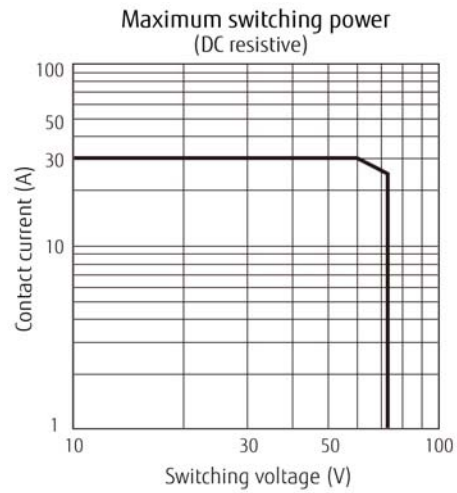
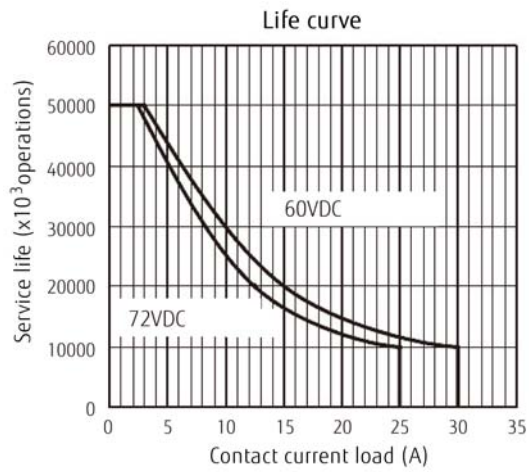
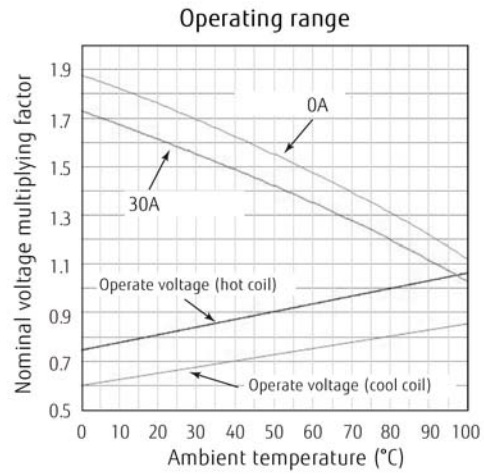
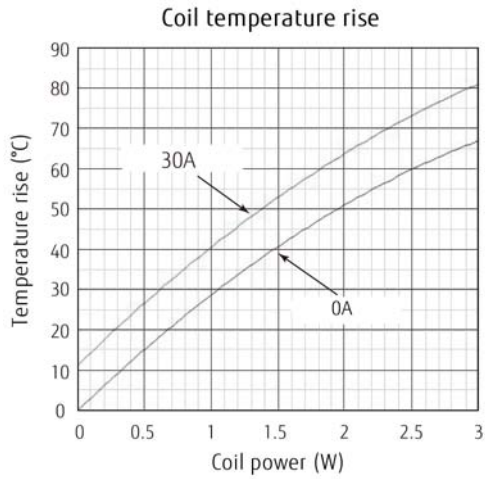
■ SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508 CSA22.2 No. 14-05	30A, 60VDC, resistive, 10,000 cycles
TUV	EN61810-1 / IEC61810-1	30A, 60VDC, resistive, 10,000 cycles

FTR-K2W SERIES

■ CHARACTERISTIC DATA

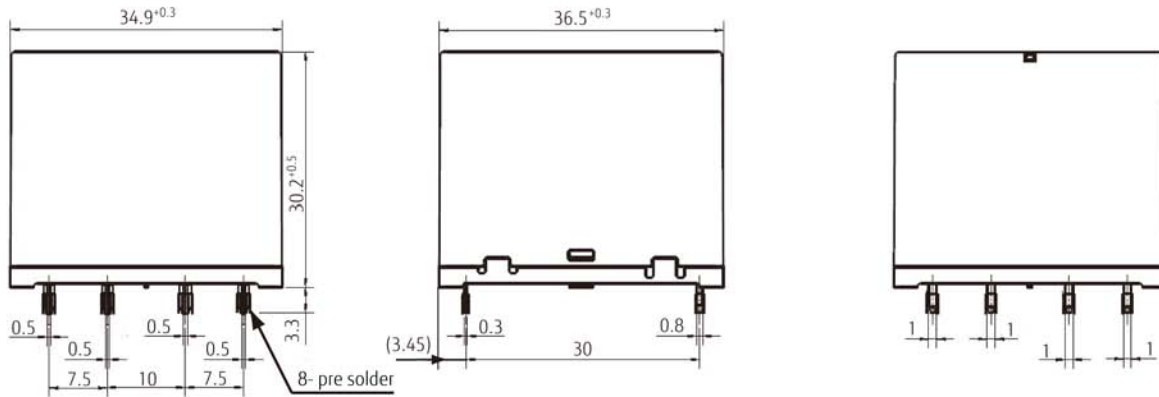
The graphs are based on measurement data and are typical values.



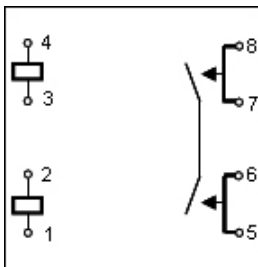
Please use this graph for reference purposes only

■ DIMENSIONS

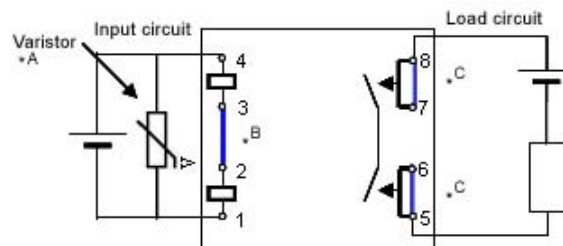
● Dimensions



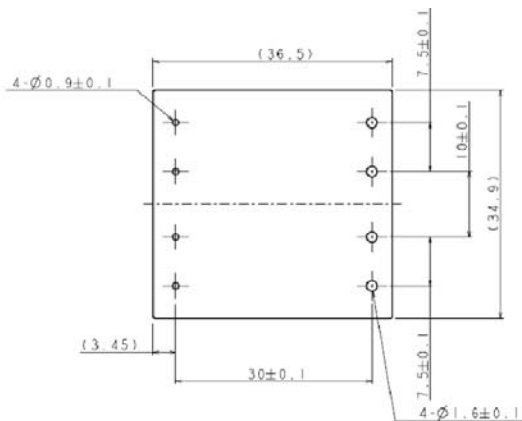
● Schematics (BOTTOM VIEW)



● Circuit (BOTTOM VIEW)



● PC board pattern (BOTTOM VIEW)



Notes:

- A. Use of a varistor in parallel over the coil is recommended to clamp reverse inductive voltage surges. Reverse blocking voltage should be about 3 times the surge voltage level.
- B. Connect pin 2 and 3 to connect coils in series.
- C. To enhance a current carry capability, connect pin 5 with 6 and pin 7 with 8.
- D. Coils are polarity insensitive.

Unit: mm

RoHS Compliance and Lead Free Information

1. General Information

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives.
As per Annex III of directive 2011/65/EU.
- All relays are lead-free. Please refer to Lead-Free Status Info for older date codes at:
<http://www.fujitsu.com/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 Condition

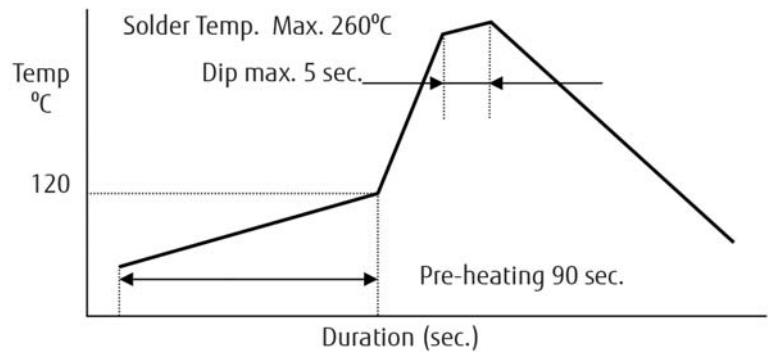
- Recommended solder Sn-3.0Ag-0.5Cu.

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 350-360 °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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