

POWER RELAY 1 POLE – 20A High Ampere Type

FTR-K1 Series

■ FEATURES

- High capacity 20A (1 form A type)
- Low profile (height: 15.7 mm)
- High insulation
 - Insulation distance min. 10mm between coil and contact
 - Dielectric strength: 5,000VAC
 - Surge strength: 10,000V
- Class F coil wire
- Low coil power (approx. 400mW)
- Safety standards: UL, CSA, VDE, CQC
- Flux proof, RT II
- RoHS compliant

БТ КЛАКО12W-НС А Ф В 20А280V-АС 4 1 224381 А ЈАРАН

APPLICATIONS

- Oven controls
- Electric heating controls
- Power supplies
- Air conditioning

PARTNUMBER INFORMATION

[Example] $\frac{\text{FTR-K1}}{(a)} \frac{\text{A}}{(b)} \frac{\text{K}}{(c)} \frac{\text{O12}}{(d)} \frac{\text{W}}{(e)} \frac{-\text{HA}}{(f)}$

(a)	Relay type	FTR-K1	: FTR-K1 Series
(b)	Contact configuration	А	: 1 form A (SPST-NO)
(c)	Coil type	к	: Standard sensitive
(d)	Coil voltage	012	: 518VDC See coil data chart
(e)	Contact material	W	: Silver alloy
(f)	Special type	HA	: High ampere type (20A)

Actual marking does not carry the type name "FTR", and special type is marked " HC"

SPECIFICATIONS

Item	Specification			Remarks	
Contact	Configuration		1 Form A (SPST-NO)		
data	Material		Silver alloy		
	Construction		Single		
	Contact rating		20A, 250VAC	Resistance	
	Resistance (initial)		Max. 100mΩ	At 1A 6VDC	
	Max. carrying current		24A		
	Max. switching power		5,000VA		
	Max. switching voltage		440VAC		
	Min. switching load		100mA, 5VDC		
Coil	Rated power consu	Imption	Approx. 400mW	At 20°C	
	Operate power consumption		Approx. 196mW	At 20°C	
	Operating temperature range		-40°C to +85°C	No frost, no condense dew	
Time	Operate		Max. 15ms (without diode)	Nominal voltage, without bounce	
	Release		Max. 5ms (without diode)	Nominal voltage, without bounce	
Life	Mechanical Electrical		Min. 1 x 10 ⁶ operations		
			Min. 30 x 10 ³ operations	At room temperature	
Insula-	Insulation resistance		Min. 1,000MΩ	At 500VDC	
tion	Dielectric withstanding voltage	Open contacts	1,000VAC (50/60Hz), 1 minute		
		Contacts to coil	5,000VAC (50/60Hz), 1 minute		
	Surge strength		10,000V (1.2 x 50µs)	Between coil and contacts	
	Clearance / Creepage		10.0mm / 10.0 mm	Between coil and contacts	
	Insulation (IEC/EN61810-1)	Voltage	250V		
		Pollution degree	3		
		Material group	Illa		
Others	Vibration resistance	Misoperation	10 to 55 Hz at single amplitude of 0.35mm		
		Endurance	10 to 55 Hz at single amplitude of 0.75mm		
	Shock resistance	Misoperation	100m/s² (11±1ms)		
		Endurance	1,000m/s² (6±1ms)		

*1: Need to consider the heat from PCB when max. current is more than 10A.

*2: 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 DATA

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance ± 10% (Ω)	Must Operate Voltage* (VDC)	Must Release Voltage* (VDC)	Rated Power (mW)
005	5	62	3.5	0.5	
006	6	90	4.2	0.6	Approx 400
012	12	360	8.4	1.2	Approx. 400
018	18	810	12.6	1.8	

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

*: Specified operated values are valid for pulse voltage.

SAFETY STANDARDS

Туре	Compliance	Contact Rating
UL	UL508	Flammability: UL94-V0 (Plastics)
	File No. E63614	20A, 277VAC, resistive, at 85°C
CSA	C22.2 No. 14 File No. LR40304	20A, 277VAC (cosφ=1)
VDE	IEC/EN61810-1	20A, 250VAC (cosφ=1)
CQC	GB/T21711.1	20A, 250VAC

DIMENSIONS

Dimensions



Notes: Dimensions of the terminals do not include thickness of pre-solder. Dimensions do not include tolerance.

> Unit:mm (): Reference

• Schematics (Bottom view)



Connect terminal #1 and #8 on the PC board

• PC board mounting hole layout (Bottom view)



Unit:mm (): Reference

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 FCL 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.

Contact

Japan

FCL COMPONENTS LIMITED Shinagawa Seaside Park Tower 12-4, Higashi-shinagawa 4-chome, Tokyo 140 0002, Japan Tel: +81-3-3450-1682 Email: fcl-contact@cs.fcl-components.com

Asia Pacific

FCL COMPONENTS ASIA PTE LTD. No. 20 Harbour Drive, #07-01B Singapore 117612 Tel: +65-6375-8560 Email: fcal@fcl-components.com

North and South America

FCL COMPONENTS AMERICA, INC. 2055 Gateway Place Suite 480, San Jose, CA 95110 USA Tel: +1-408-745-4900 Email: fcai.components@fcl-components.com

Europe

FCL COMPONENTS EUROPE B.V. Diamantlaan 25 2132 WV Hoofddorp, Netherlands Tel: +31-23-556-0910 Email: info.fceu@cs.fcl-components.com

China

FCL COMPONENTS (SHANGHAI) CO., LTD. Unit 1105, Central Park - Jing An, No.329 Heng Feng Road, Shanghai 200070, China Tel: +86-21-3253 0998 Email: fcsh@fcl-components.com

Web: www.fcl-components.com/en/

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