

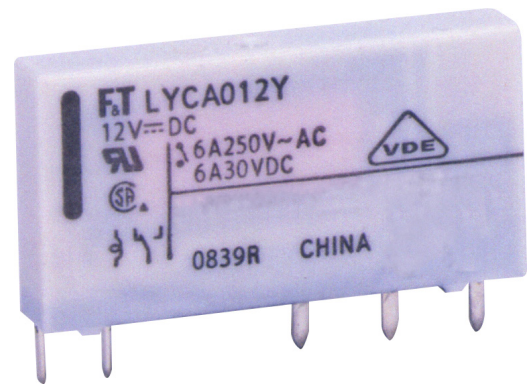
POWER RELAY

1 POLE - 6A Slim Type (Medium Load Control)

FTR-LY Series

■ FEATURES

- Slim 15.0mm (h) x 5.0 mm (w) x 28.0mm (l)
 - 1 form C and right angle type available
 - Mounting space: 140mm², weight: 5.0g
 - High insulation in small package
Insulation distance (between coil and contacts): 8mm (creepage/clearance)
Dielectric strength: 4,000 VAC
Surge strength: 6,000V
 - Plastic sealed type RTIII
 - UL, CSA, VDE compliance
 - Socket type available
 - RoHS compliant
- Please see page 7 for more information



■ PARTNUMBER INFORMATION

[Example] FTR-LY A A 005 Y - SK
 (a) (b) (c) (d) (e) (f)

(a)	Relay type	FTR-LY : FTR-LY-Series
(b)	Contact configuration	A : 1 form A C : 1 form C P : 1 form A (right angle type) R : 1 form C (right angle type)
(c)	Coil type	A : Standard type (170mW)
(d)	Coil rated voltage	005 : 5.....60 VDC Coil rating table at page 3
(e)	Contact material	E : AgNi Y : AgSnO ₂ V : AgSnO ₂ + Au ≥1.0 μm
(f)	Special type	Nil : PCB mounting type SK : Socket mounting type (only contact configuration A and C)

Actual marking does not carry the type name : "FTR" and "SK"
E.g.: Ordering code: FTR-LYAA005Y-SK Actual marking: LYAA005Y

■ SPECIFICATION

Item			LY (C,R) A () (Y,E,V)	LY (A,P) A () (Y,E,V)
Contact Data	Configuration		1 form C (SPDT)	1 form A (SPST-NO)
	Construction		Single	
	Material		Y: AgSnO ₂ / E: AgNi / V: AgSnO ₂ + Au ≥1.0 μm	
	Resistance (initial)		Y, E: Max. 100 mΩ at 6 VDC, 1 A V: Max. 30 mΩ at 6 VDC, 1A	
	Contact rating		6A, 250VAC / 24VDC	
	Max. carrying current		6A	
	Max. switching voltage		250VAC	
	Max. switching power		1,500VA / 144W	
	Min. switching load *		Y, E: 100 mA 5 VDC V: 10mA 5 VDC	
Life	Mechanical		Min. 10 x 10 ⁶ operations	
	Electrical		Min. 50 x 10 ³ operations (N.O.) Min. 30 x 10 ³ operations (N.C.) at 6A, 250VAC / 30VDC resistive	
Coil Data	Rated power		170 to 217 mW	
	Operate power		74 to 95 mW	
	Operating temperature range		-40 °C to +85 °C (no frost)	
Timing Data	Operate (at nominal voltage)		Max. 8ms (no diode, without bounce)	
	Release (at nominal voltage)		Max. 4ms (no diode, without bounce)	
Insulation	Resistance (initial)		Min. 1,000MΩ at 500VDC	
	Dielectric strength	Open contacts	1,000VAC (50/60Hz) 1min., 10mA detection current	
		Contacts to coil	4,000VAC (50/60Hz) 1min., 10mA detection current	
	Surge strength	Coil to contacts	6,000V / 1.2 x 50μs standard wave	
	Clearance		8 mm	
	Creepage		8 mm	
	EN61810-1, VDE0435	Voltage	250V	
		Pollution degree	3	
		Material group	III a	
		Category	C / 250V	
Other	Vibration resistance	Misoperation	10 to 55 to 10Hz single amplitude 0.5mm	
		Endurance	10 to 55 to 10hz single amplitude 0.75mm	
	Shock	Misoperation	Min. 50m/s ² (11 ± 1ms)	Min. 100m/s ² (11 ± 1ms)
		Endurance	Min. 1,000m/s ² (6 ± 1ms)	
	Weight		Approximately 5 g	
	Sealing		Plastic sealed RTIII	

* 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 RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release-Voltage (VDC) *	Rated Power (mW)
005	5	147	3.3	0.25	170
006	6	211	4	0.3	
009	9	476	5.9	0.45	
012	12	847	7.9	0.6	
018	18	1,910	11.9	0.9	
024	24	3,390	15.9	1.2	
048	48	10,600	31.7	2.4	217
060	60	20,570	39.6	3	175

Note 1: All values given in the coil table(s) are valid at 20°C ambient temperature, at zero contact current, without pre-energizing and are specified at pulse wave voltage.

Note 2: When applying a higher than rated coil voltage, please refer to the "coil temperature rise" and "operating range" reference graphs, for the effects on the relay operating behaviour.

■ SAFETY STANDARDS

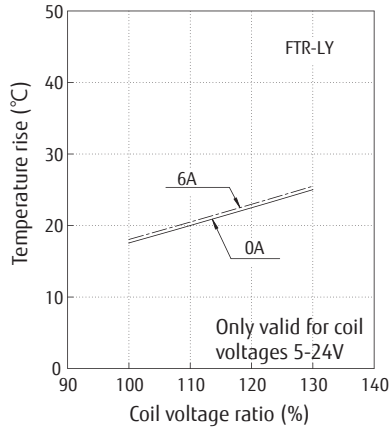
Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
	E63614	6A, 277 VAC (resistive) 6A, 30 VDC (resistive)
CSA	C22.2 No. 14 LR 40304	1/10 HP, 277VAC /125VAC 1/8hp, 277VAC/125VAC Pilot duty: D300, C300, R300, B300
VDE 40006591	DIN/EN61810-1 (VDE 0435-part 201) 2009-02 IEC 61810-1:2008	250VAC; 6A / 30VDC; 6A : - 10K ops. FTR-LY(A;P)A...(E;Y;V) -40 °C to +85 °C - 5K ops. FTR-LY(C;R)A...(E;Y;V) -40 °C to +85 °C
	EN 60730-1 (VDE 0631-Part 1) *1	250VAC; 6(1,5)A, 30K ops. : FTR-LY(A;P)A...(Y;V) +85 °C 250VAC; 3(1,5)A, 100K ops. : FTR-LY(A;P)A...(Y;V) +85 °C
	EN 61984 (VDE 0627) EN 60335-1 (VDE 0700-Part 1) *2	-

*1: Clause 12.2, 13.2, 20.1, 20.2, 20.3, 17.5, 17.7, 17.8

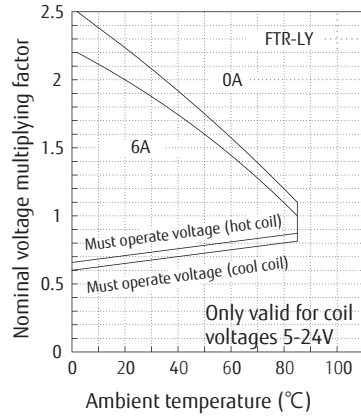
*2: Clause 15.3, 16.3, 29.1, 29.2, 29.3

■ CHARACTERISTIC DATA (For reference only)

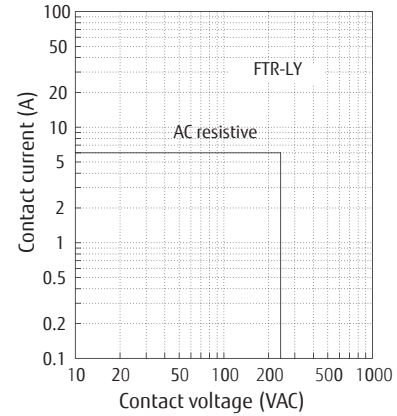
Coil temperature rise



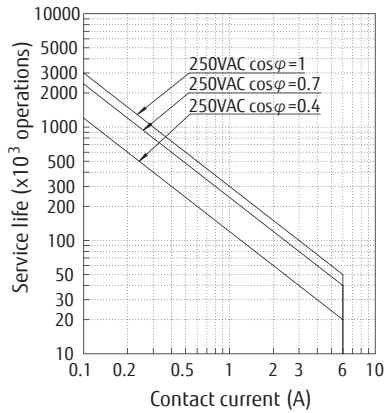
Operating range



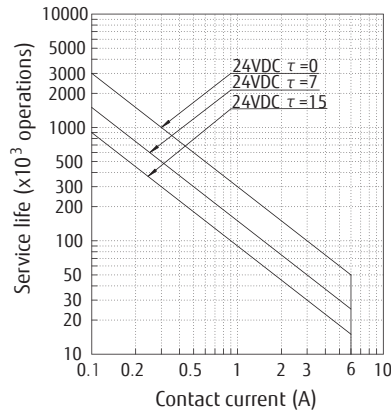
Maximum switching power



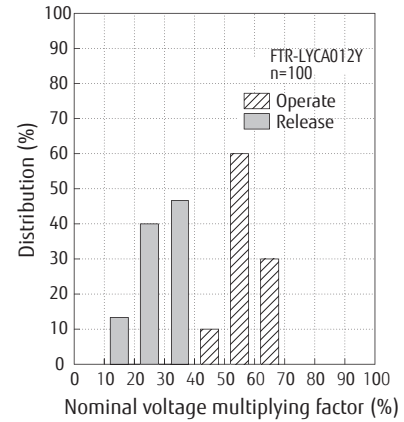
Life curve 1



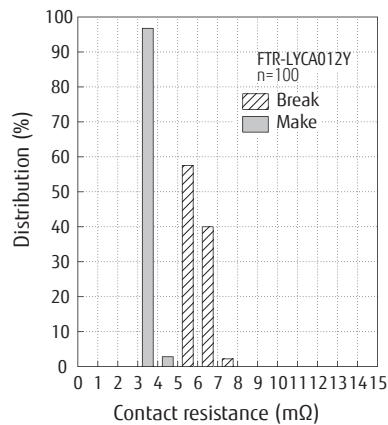
Life curve 2



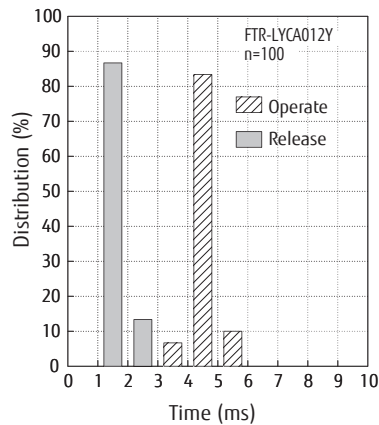
Distribution of operate/release voltage



Distribution of contact resistance

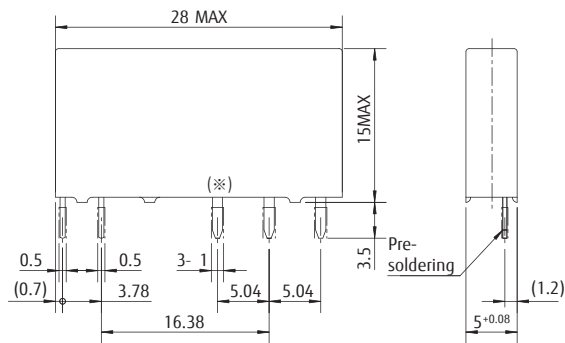


Distribution of operate/release time

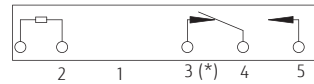


■ DIMENSIONS

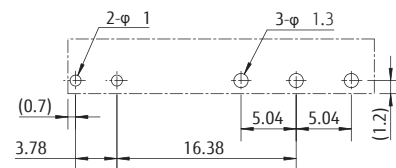
Straight type



Schematics
(BOTTOM VIEW)



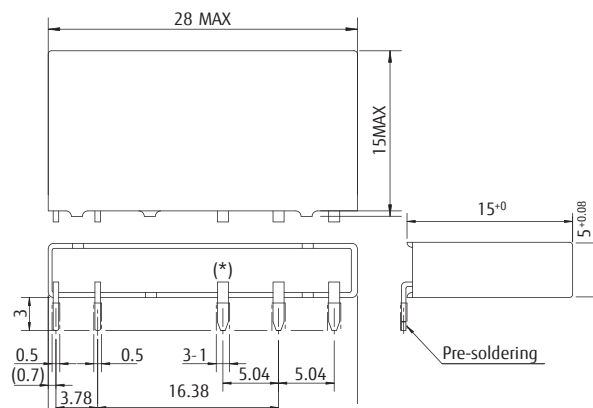
PCB Layout
(BOTTOM VIEW)



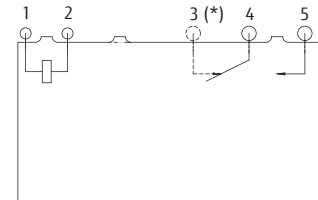
Tolerance: +/-0.1

Right angle type

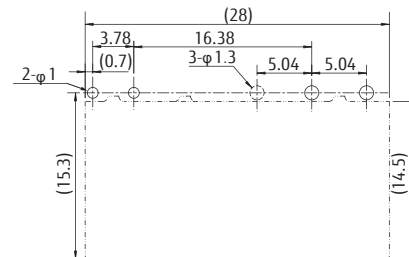
Right angle type



Schematics
(BOTTOM VIEW)



PCB Layout
(BOTTOM VIEW)



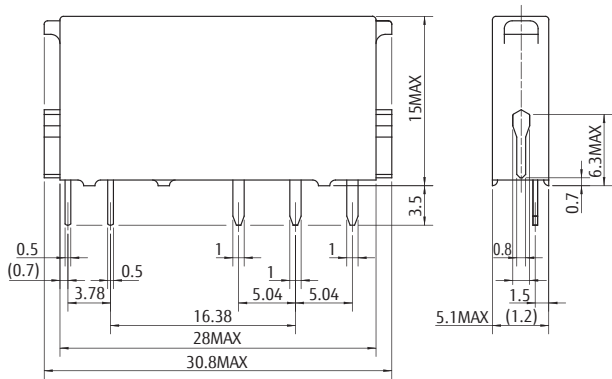
Tolerance: +/-0.1

* This terminal is not applicable for 1 form A type.

* This terminal is not applicable for 1 form A type.

() : Reference value
Unit: mm

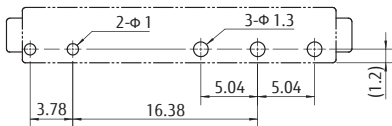
Socket type



Schematics (BOTTOM VIEW)



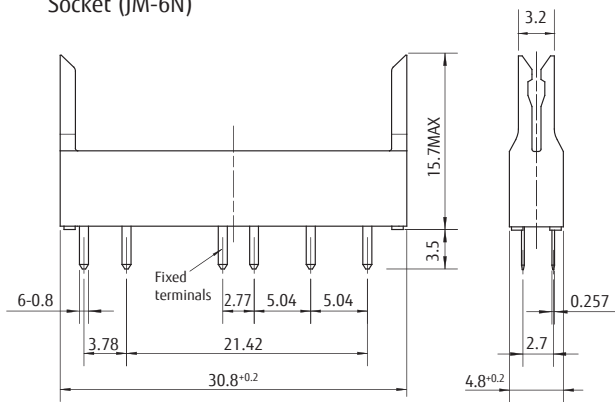
PCB layout (BOTTOM VIEW)



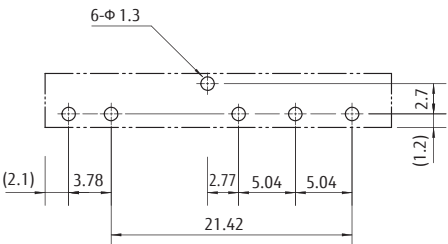
Tolerance: ± 0.1

JM-6N

Socket (JM-6N)



PCB layout (BOTTOM VIEW)



Tolerance: ± 0.1

(): Reference value
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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