FUJITSU THE POSSIBILITIES ARE INFINITE

POWER RELAY

1 POLE - 6A (MEDIUM LOAD CONTROL)

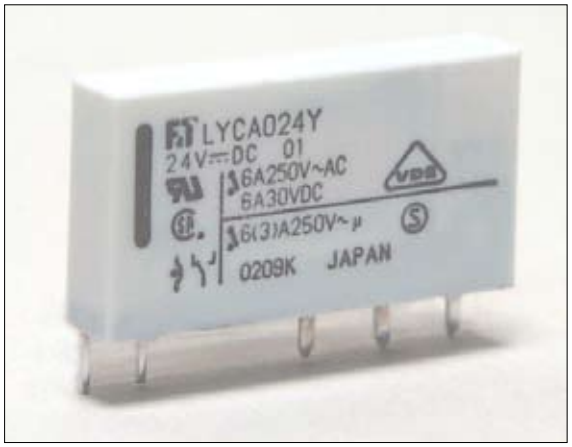
SLIM TYPE

FTR-LY Series

RoHS compliant

■ FEATURES

- Slim(15.0mm(h) x 5.0 mm(w) x 28.0mm (l)
- 1 from C available
- Mounting space: 140mm^2, weight: 5.0g
- High insulation in small package
  - Insulation Distance (Between coil and contacts): 8mm (crepage/clearance)
  - Dielectric strength: 4,000 VAC
  - Surge strength: 6,000V
- UL, CSA, VDE, SEMKO, FIMKO, DEMKO, NEMKO compliance
- Contains no lead and features cadmium-free contacts
- Socket type available
- RoHS Compliant since production
- Plastic sealed



■ ORDERING INFORMATION

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

(a)	Series Name	FTR-LY : FTR-LY Series
(b)	Contact Arrangement	A : 1 form A P: 1 form A (Right Angle Type) C : 1 form C R: 1 form C (Right Angle Type)
(c)	Coil Type	A : Standard (170 mW)
(d)	Nominal Voltage	005 : 5 VDC, 006 : 6VDC, (refer to COIL DATA chart) 012 : 12VDC, 024 : 24VDC, 048 : 48VDC
(e)	Contact Material	E : Silver nickel Y : Silver alloy silver tin oxide V : Gold plated silver tin oxide
(f)	Socket Type	Nil : PCB mounting type SK : Socket mounting type (contact arrangement A&C only)

Actual marking does not carry the type name : "FTR" and "SK"
E.g.: Ordering code: FTR-LYAA012Y Actual marking: LYAA012Y

■ PART NUMBERS

Ordering P/N	Series	Contact	Coil Power	Coil Voltage	Contact
FTP-LY(A,P)A005Y	FTR-LY	1 form A	170 mW	5	Y: Silver tin oxide
FTP-LY(A,P)A006Y				6	
FTP-LY(A,P)A009Y				9	
FTP-LY(A,P)A012Y				12	
FTP-LY(A,P)A018Y				18	
FTP-LY(A,P)A024Y				24	
FTP-LY(A,P)A048Y			217 mW	48	
FTP-LY(A,P)A060Y			175 mW	60	
FTP-LY(C,R)A005Y		1 form C	170 mW	5	
FTP-LY(C,R)A006Y				6	
FTP-LY(C,R)A009Y				9	
FTP-LY(C,R)A012Y				12	
FTP-LY(C,R)A018Y				18	
FTP-LY(C,R)A024Y				24	
FTP-LY(C,R)A048Y			217 mW	48	
FTP-LY(C,R)A060Y			175 mW	60	
FTP-LY(A,P)A005V		1 form A	170 mW	5	V: Gold plated silver tin oxide
FTP-LY(A,P)A006V				6	
FTP-LY(A,P)A009V				9	
FTP-LY(A,P)A012V				12	
FTP-LY(A,P)A018V				18	
FTP-LY(A,P)A024V				24	
FTP-LY(A,P)A048V			217 mW	48	
FTP-LY(A,P)A060V			175 mW	60	
FTP-LY(C,R)A005V		1 form C	170 mW	5	
FTP-LY(C,R)A006V				6	
FTP-LY(C,R)A009V				9	
FTP-LY(C,R)A012V				12	
FTP-LY(C,R)A018V				18	
FTP-LY(C,R)A024V				24	
FTP-LY(C,R)A048V			217 mW	48	
FTP-LY(C,R)A060V			175 mW	60	
FTP-LY(A,P)A005E		1 form A	170 mW	5	E: Silver nickel
FTP-LY(A,P)A006E				6	
FTP-LY(A,P)A009E				9	
FTP-LY(A,P)A012E				12	
FTP-LY(A,P)A018E				18	
FTP-LY(A,P)A024E				24	
FTP-LY(A,P)A048E			217 mW	48	
FTP-LY(A,P)A060E			175 mW	60	
FTP-LY(C,R)A005E		1 form C	170 mW	5	
FTP-LY(C,R)A006E				6	
FTP-LY(C,R)A009E				9	
FTP-LY(C,R)A012E				12	
FTP-LY(C,R)A018E				18	
FTP-LY(C,R)A024E				24	
FTP-LY(C,R)A048E			217 mW	48	
FTP-LY(C,R)A060E			175 mW	60	

■ COIL DATA CHART

Coil Voltage	Nominal Voltage	Max. Coil Voltage*1	Coil Resistance (±10%)	Must Operate Voltage*2	Must Release Voltage	Nominal Power
5	5 VDC	11.5 VDC	147 Ω	3.3 VDC	0.25 VDC	170 mW
6	6 VDC	13.8 VDC	211 Ω	4.0 VDC	0.3 VDC	170 mW
9	9 VDC	20.7 VDC	476 Ω	5.9 VDC	0.45 VDC	170 mW
12	12 VDC	27.6 VDC	847 Ω	7.9 VDC	0.6 VDC	170 mW
18	18 VDC	41.4 VDC	1,910 Ω	11.9 VDC	0.9 VDC	170 mW
24	24 VDC	55.2 VDC	3,390 Ω	15.9 VDC	1.2 VDC	170 mW
48	48 VDC	110.4 VDC	10,600 Ω	31.7 VDC	2.4 VDC	217 mW
60	60 VDC	138.0 VDC	20,570 Ω	39.6 VDC	3.0 VDC	175 mW

Note: All values in the table are measured at 20°C.
*1: No contact current at 20°C
*2: Specified values are subject to pulse wave voltage

■ SPECIFICATIONS

Item			FTR-LY (C, R) A ( ), (Y, E, V)	FTR-LY (A, P) A ( ), (Y, E, V)
Contact	Arrangement		1 form C	1 form A
	Material		Y: silver tin oxide, E: silver nickel, V: gold plated silver tin oxide	
	Configuration		Single	
	Resistance (initial)		Y, E: Maximum 100 mΩ at 6 VDC, 1 A V: Maximum 30 mΩ at 6 VDC, 1A	
	Rating		6 A, 250 VAC / 24 VDC	
	Maximum Carrying Current		6A	
	Maximum Switching Power		1,500 VA / 144 W	
	Maximum Switching Voltage		250 VAC	
	Maximum Switching Load*1		Y, E: 100 mA 5 VDC V: 10mA 5 VDC	
Coil	Operating Temperature		-40ºC to +85ºC (no frost)	
	Rating Power		170 to 217 mW	
	Must Operate Power		74 to 76 mW	
Time Value	Operate Time (without diode)		Maximum 8 ms (at nominal voltage, no bounce)	
	Release Time (without diode)		Maximum 4 ms (at nominal voltage, no bounce)	
Life	Mechanical		10×10^6 operations minimum	
	Electrical		50×10^3 operations min. (N.O.) 30×10^3 operations min. (N.C.) at 6 A, 250VAC/30VDC resistive	
Other	Vibration Resistance	Misoperation	10 to 55 Hz, at double amplitude of 1,0 mm	
		Endurance	10-55Hz, at double amplitude of 1.5 mm	
	Shock Resistance	Misoperation	Min. 50m/s^2 (11±1ms)	Min. 100m/s^2 (11±1ms)
		Endurance	Min. 1,000m/s^2 (6±1ms)	
	Weight		Approximately 5g	

■ INSULATION

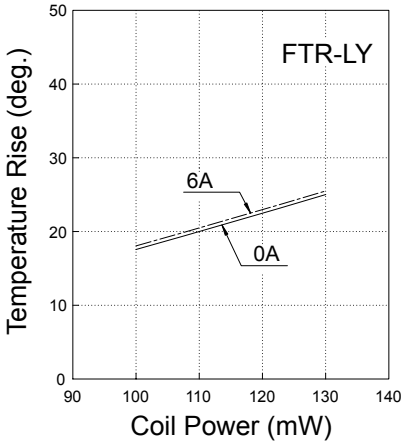
Item		FTR-LY
Resistance (at 500 VDC)		Minimum 1,000 MΩ 1 min.
Dielectric Strength	open contacts	1,000 VAC (50/60 Hz) 1 min. 10mA detection current
	coil and contacts	4,000 VAC (50/60 Hz) 1 min. 10mA detection current
Surge Voltage (coil and contact)		6,000 V (1.2 x 50μs standard wave)
Clearance/Creepage		8 mm / 8 mm
(DIN EN61810-1 VDE0435) Voltage Pollution Isolation material group		 250 V 3 IIIa
Isolation category / Reference voltage (VDE01106)		C / 250 V

■ SAFETY STANDARDS

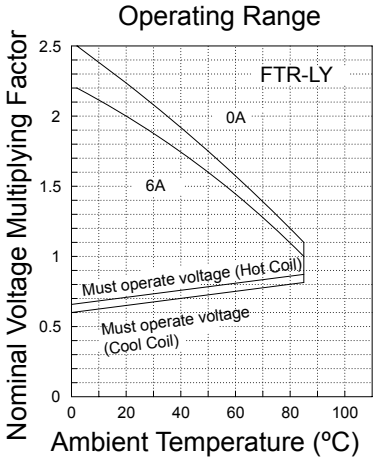
Type	Compliance	Contact rating
UL	UL 508 E63614	Flammability: UL 94-V0 (plastics) 5A, 277 VAC (resistive) 5A, 30 VDC (resistive) 1/10 HP, 277VAC /125VAC Pilot duty: D300, C300, R300
CSA	C22.2 No. 14 LR 40304	
VDE	0435, 0631, 0700	Flammability: UL 94-V0 (plastics) 5A, 277 VAC (resistive) 5A, 30 VDC (resistive) 1/10 HP, 277VAC /125VAC Pilot duty: D300, C300, R300
SEMKO	EN 61058-1+A1:1993 EN 61095:1993+A11	

■ REFERENCE DATA

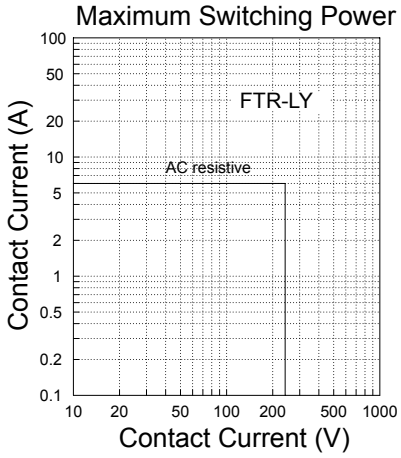
Coil Temperature Rise



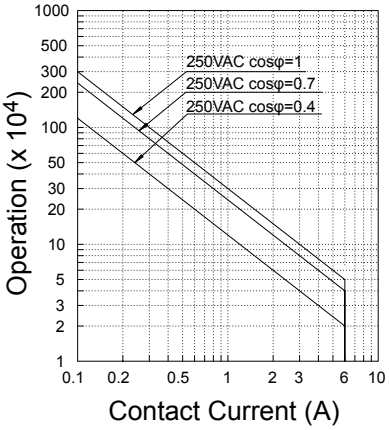
Operating Range



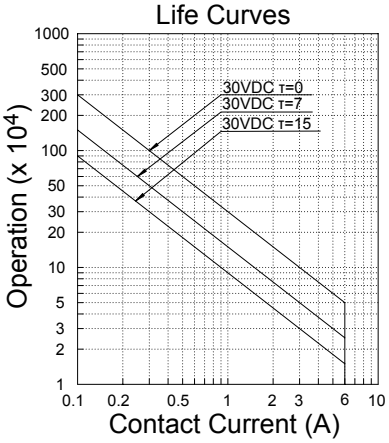
Maximum Switching Power



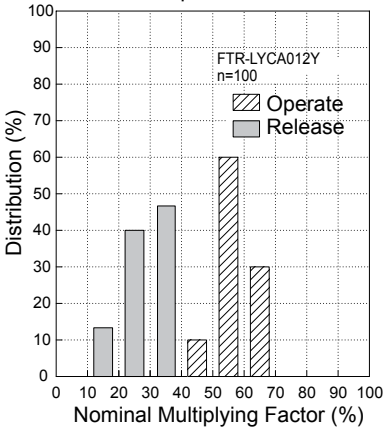
Life Curves



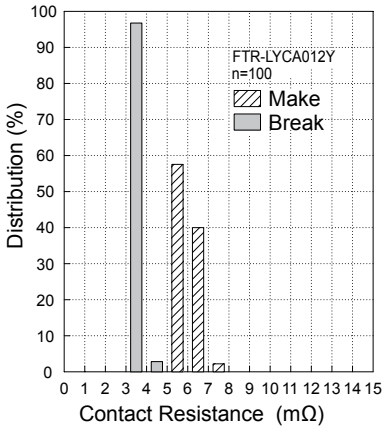
Life Curves



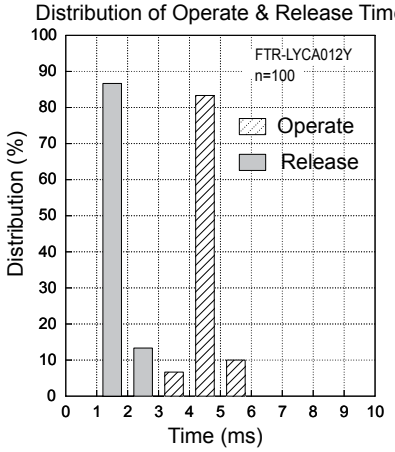
Distribution of Operate & Release Voltage



Distribution of Contact Resistance

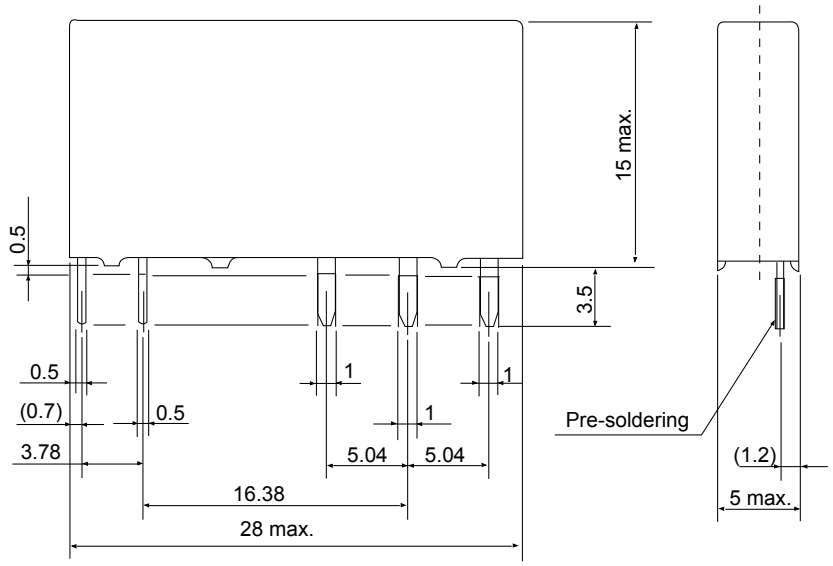


Distribution of Operate & Release Time

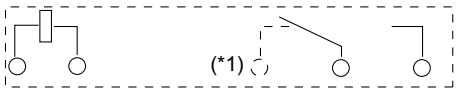


■ DIMENSIONS

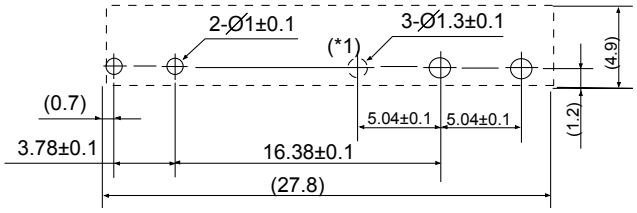
Thru hole type



Drilling Plan (BOTTOM VIEW)



Wiring Diagram (BOTTOM VIEW)

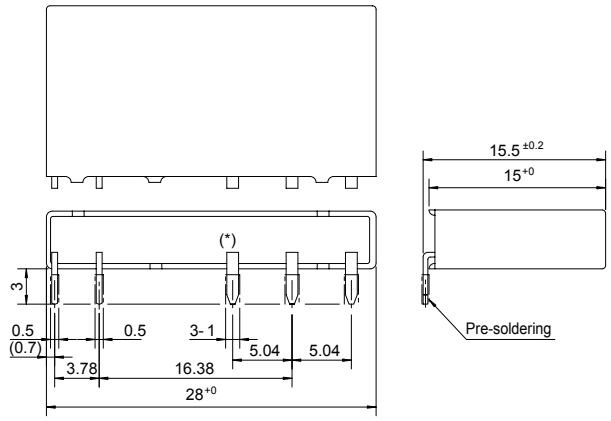


*1: This terminal is not applicable for 1 form A type

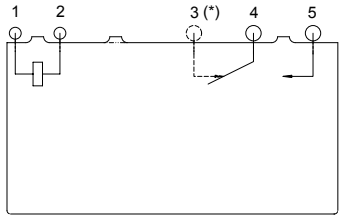
Unit: mm

■ DIMENSIONS

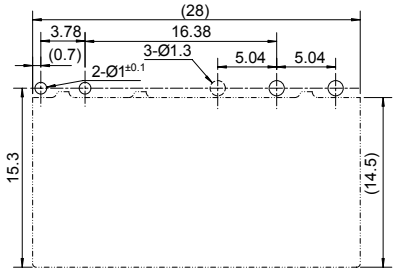
Right Angle type



Drilling Plan (BOTTOM VIEW)



Wiring Diagram (BOTTOM VIEW)

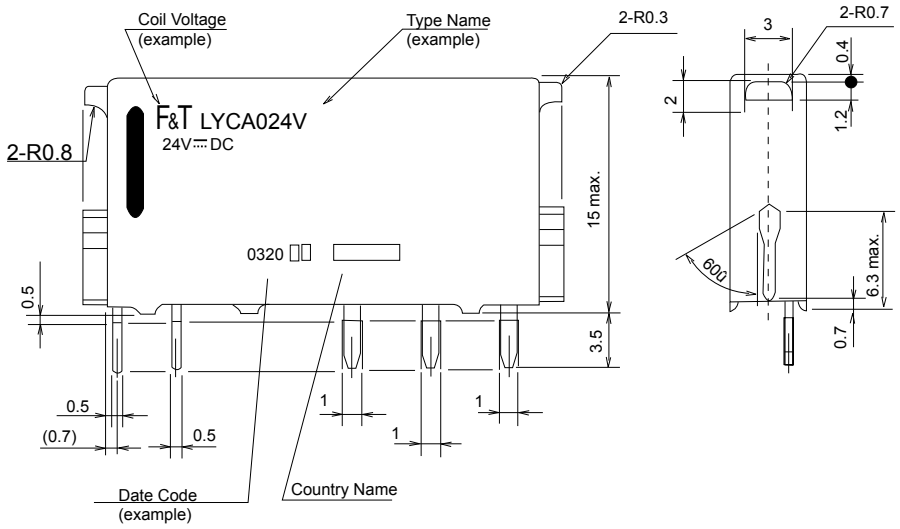


*: This terminal is not applicable for 1 form A type

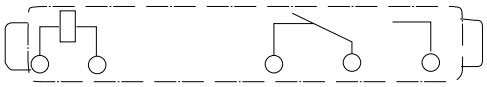
Unit: mm

■ DIMENSIONS

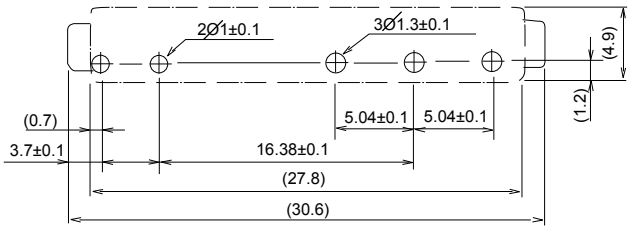
Socket type



Schematics (BOTTOM VIEW)



PC Board Mounting Hole Layout (BOTTOM VIEW)



Unit: mm

Notes: 1. Socket ordering code
2. Standard IC socket is not recommended. Please use JM-6N

RoHS Compliance and Lead Free Relay Information

1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are RoHS-compliant now. Please refer to RoHS-compliant Status Info. (http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu.
- Relays that are RoHS compliant do not contain the 5 hazardous materials that are restricted by RoHS directive (lead, mercury, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in leaded assembly process will not cause any problems (compatible).
- “LF” is marked on each outer and inner carton. (No marking on individual relays).
- To avoid leaded relays (for lead-free sample, etc.) please consult with area sales office.
- We will ship leaded relays as long as the leaded relay inventory exists.

Note: Cadmium was exempted from RoHS on October 21, 2005. (Amendment to Directive 2002/95/EC)

2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu.

Reflow Solder condtion

Flow Solder condtion:

Pre-heating:	maximum 120˚C
Soldering:	dip within 5 sec. at 260˚C soler 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 realys.

4. Tin Whisker

- Dipped SnAgCu solder is known as low risk tin whisker. No considerable length whisker was found by our in house test.

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