

# 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 form C available
- Mounting space: 140mm<sup>2</sup>, 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]       $\frac{\text{FTR-LY}}{\text{(a)}}$      $\frac{\text{A}}{\text{(b)}}$      $\frac{\text{A}}{\text{(c)}}$      $\frac{\text{005}}{\text{(d)}}$      $\frac{\text{Y}}{\text{(e)}}$      $\frac{\text{SK}}{\text{(f)}}$

(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

# FTR-LY SERIES

## ■ 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			

# FTR-LY SERIES

## ■ COIL DATA CHART

Coil Voltage	Nominal Voltage	Max. Coil Voltage* <sup>1</sup>	Coil Resistance (±10%)	Must Operate Voltage* <sup>2</sup>	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	-40°C to +85°C (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 x 10 <sup>6</sup> operations minimum		
	Electrical	50 x 10 <sup>3</sup> operations min. (N.O.) 30 x 10 <sup>3</sup> 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 <sup>2</sup> (11±1ms)	Min. 100m/s <sup>2</sup> (11±1ms)
		Endurance	Min. 1,000m/s <sup>2</sup> (6±1ms)	
Weight	Approximately 5g			

# FTR-LY SERIES

## ■ INSULATION

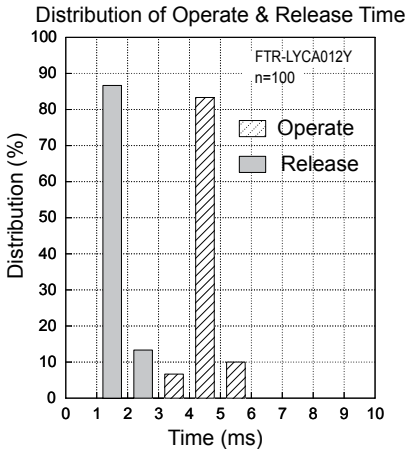
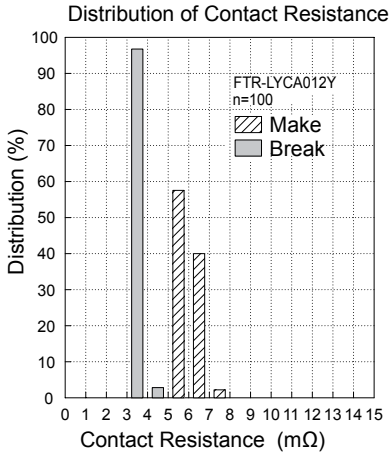
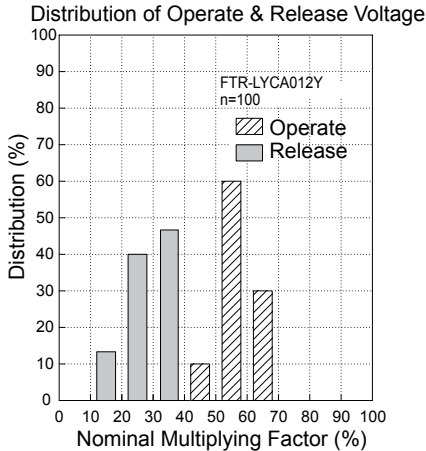
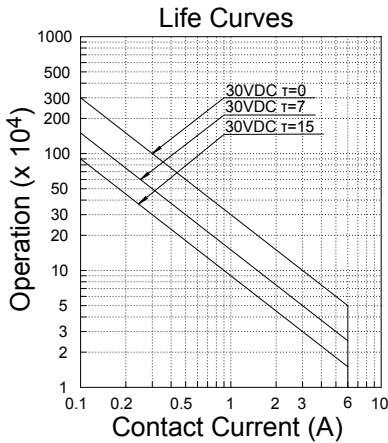
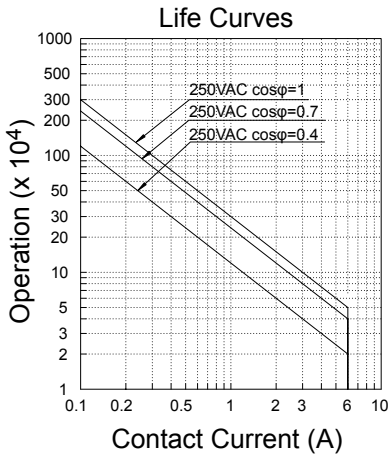
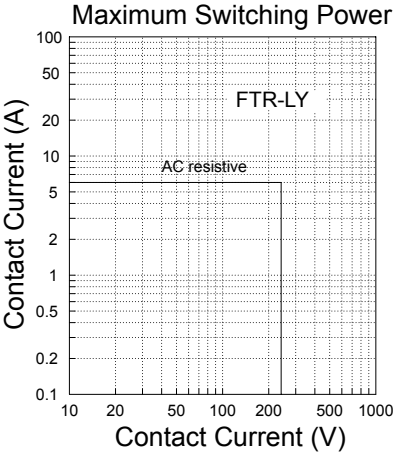
Item	FTR-LY	
Resistance (at 500 VDC)	Minimum 1,000 MΩ 1 min.	
Dielectric Strength	open contacts	1,000 VAC (50/60 Hz) 1 min. 10mA detection current
	coil and contacts	4,000 VAC (50/60 Hz) 1 min. 10mA detection current
Surge Voltage (coil and contact)	6,000 V (1.2 x 50µs standard wave)	
Clearance/Creepage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

## ■ SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics) 5A, 277 VAC (resistive) 5A, 30 VDC (resistive)
	E63614	
CSA	C22.2 No. 14 LR 40304	1/10 HP, 277VAC /125VAC Pilot duty: D300, C300, R300
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	

# FTR-LY SERIES

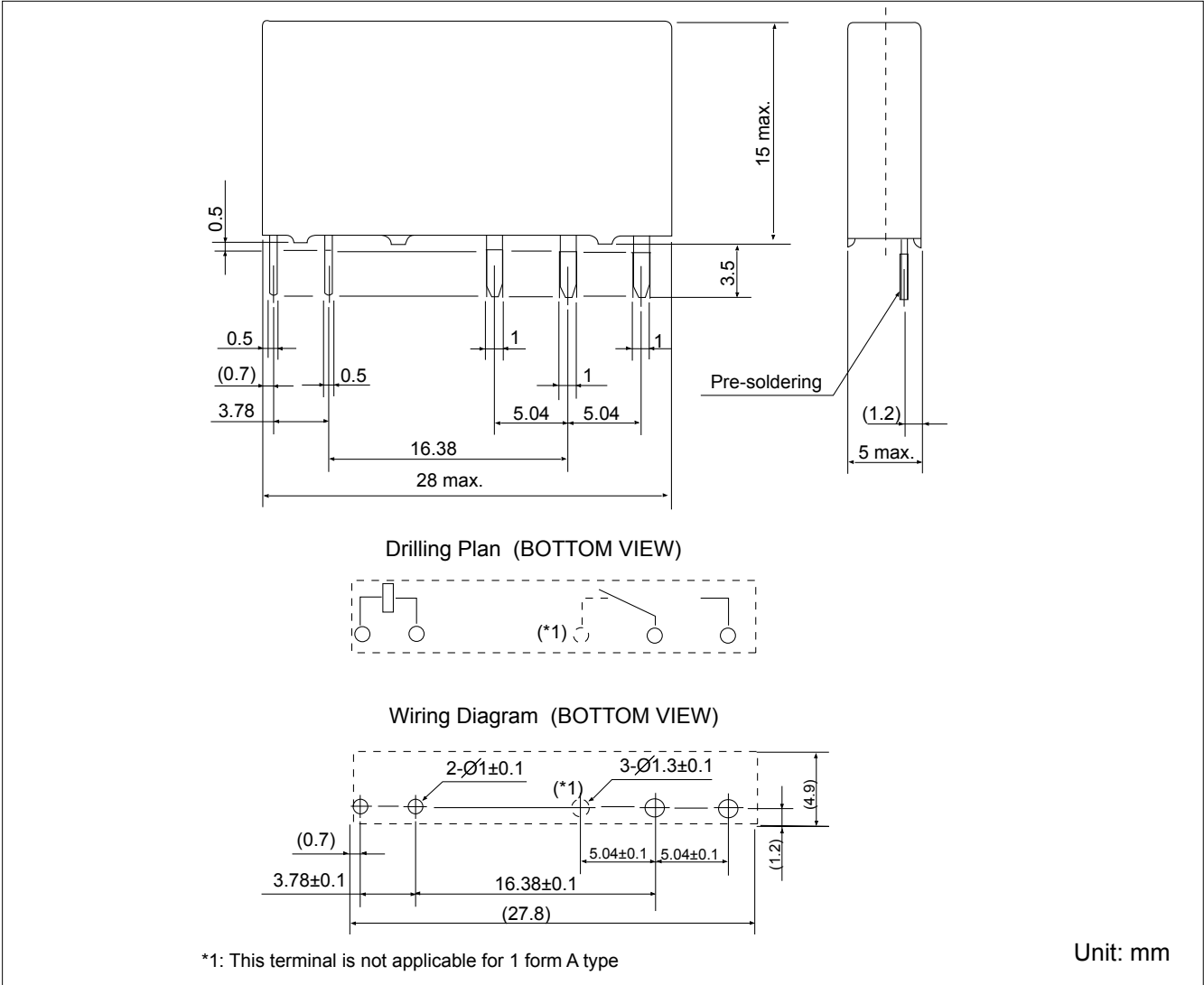
## ■ REFERENCE DATA



# FTR-LY SERIES

## ■ DIMENSIONS

Thru hole type



## 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.