FUJITSU THE POSSIBILITIES ARE INFINITE

MINIATURE RELAY

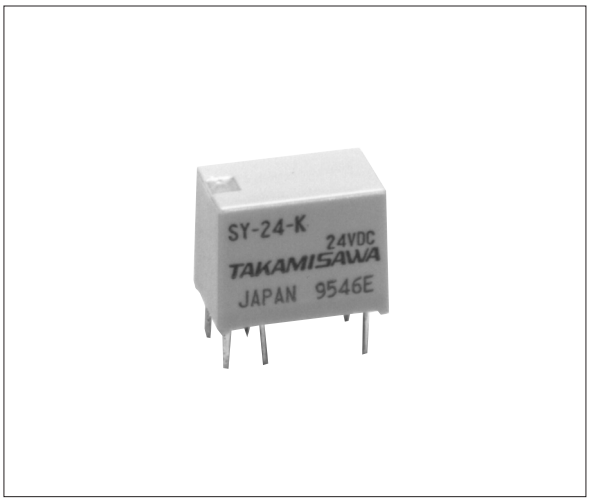
1 POLE—1 A (FOR SIGNAL SWITCHING)

SY SERIES

RoHS compliant

■ FEATURES

- Very small size and light weight
- UL, CSA recognized
- Conforms to FCC rules and regulations part 68
  —Dielectric strength 1000 VAC between coil and contacts
  —Surge strength 1500 V
- High sensitivity
- Wide ambient temperature range (-30˚C to +90˚C)
- Wide operating range
- DIL pitch terminals
- Plastic sealed type
- Dial-pulse relay available (10pps, 20pps)
- RoHS compliant since date code: 0519
  Please see page 5 for more information



■ ORDERING INFORMATION

[Example] SY (a) – 12 (b) W (c) – K (d)

(a)	Series Name	SY: SY Series
(b)	Nominal Voltage	Refer to the COIL DATA CHART
(c)	Contact	Nil: Single type W: Bifurcated type
(d)	Enclosure	K: Plastic sealed type

Note: For movable and stationary contact with gold overlay type, add suffix “–OH”

■ SAFETY STANDARD AND FILE NUMBERS

UL478, 508 (File No. E45026)
C22.2 No. 14 (File No. LR35579)
Please request when the approval markings are required on the cover.

Nominal voltage	Contact rating
1.5 to 24 VDC	0.5 A 120 VAC 1 A 30 VDC 0.15 A 48 VDC — resistive

■ SPECIFICATIONS

Item			SY-( ) -K (Single)	SY-( ) W - K (Bifurcated)
Contact	Arrangement		1 form C (SPDT)	
	Material		Gold overlay silver alloy	
	Resistance (initial)		Maximum 100 mΩ (at 1 A 6 VDC)	
	Rating (resistive)		0.5 A 120 VAC or 1 A 24 VDC	
	Maximum Carrying Current		2 A	
	Maximum Switching Power		60 AV, 24 W	
	Maximum Switching Voltage		120 VAC/60 VDC	
	Maximum Switching Current		1 A	
	Minimum Switching Load*1		1 mA 1 VDC	0.1 mA 100 mVDC
	Capacitance (at 10 MHz)		Approximately 1.4 pF (between open contacts) Approximately 5.0 pF (between coil and contacts)	
Coil	Nominal Power (at 20°C)		0.15 to 0.175 W	
	Operate Power (at 20°C)		0.075 to 0.086 W	
	Operating Temperature		–30°C to +90°C (no frost)/18 V coil: +85°C, 24 V coil: +80°C	
Time Value	Operate (at nominal voltage)		Maximum 5 ms	
	Release (at nominal voltage)		Maximum 2 ms	
Insulation	Resistance		Minimum 1,000 MΩ (at 500 VDC)	Minimum 1,000 MΩ (at 250 VDC)
	Dielectric strength	between open contacts	400 VAC 1 minute	300 VAC 1 minute
		between coil and contacts	1,000 VAC 1 minute	
	Surge Strength		1,500 V	
Life	Mechanical		5×10^6 operations minimum	
	Electrical (at contact rating)		1×10^5 operations minimum	1×10^5 operations minimum
Other	Vibration Resistance	Misoperation	10 to 55 Hz (double amplitude of 1.5 mm)	
		Endurance	10 to 55 Hz (double amplitude of 1.5 mm)	
	Shock Resistance	Misoperation	300 m/s^2 (11 ±1 ms)	
		Endurance	1,000 m/s^2 (6 ±1 ms)	
	Weight		Approximately 1.7 g	

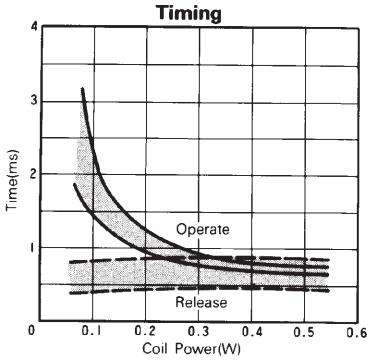
*1 Minimum switching loads mentioned above are reference values. Please perform the confirmation test with the actual load before production since reference values may vary according to switching frequencies, environmental conditions and

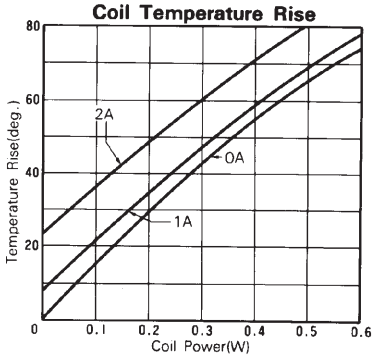
■ COIL DATA CHART

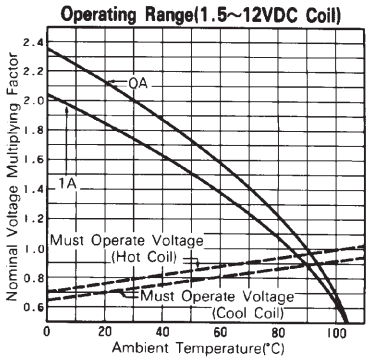
MODEL		Nominal voltage	Coil resistance (±10%)	Must operate voltage	Must release voltage	Nominal power
Single	Bifurcated					
SY-1.5-K	SY-1.5W-K	1.5 VDC	15 Ω	1.05 VDC	0.08 VDC	150 mW
SY- 3 -K	SY- 3 W-K	3 VDC	60 Ω	2.1 VDC	0.15 VDC	150 mW
SY-4.5-K	SY-4.5W-K	4.5 VDC	135 Ω	3.2 VDC	0.23 VDC	150 mW
SY- 5 -K	SY- 5 W-K	5 VDC	167 Ω	3.5 VDC	0.25 VDC	150 mW
SY- 6 -K	SY- 6 W-K	6 VDC	240 Ω	4.2 VDC	0.3 VDC	150 mW
SY- 9 -K	SY- 9 W-K	9 VDC	540 Ω	6.3 VDC	0.45 VDC	150 mW
SY-12 -K	SY-12 W-K	12 VDC	960 Ω	8.4 VDC	0.6 VDC	150 mW
SY-18 -K	SY-18 W-K	18 VDC	1,940 Ω	12.6 VDC	0.9 VDC	170 mW
SY-24 -K	SY-24 W-K	24 VDC	3,290 Ω	16.8 VDC	1.2 VDC	175 mW

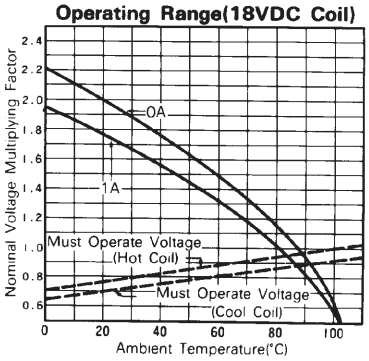
Note : All values in the table are measured at 20°C.

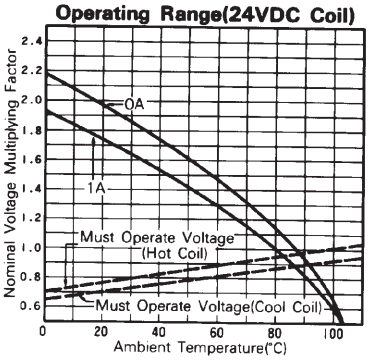
■ CHARACTERISTIC DATA

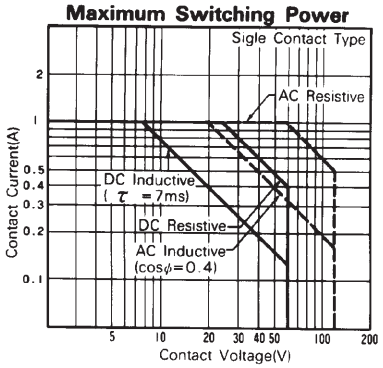


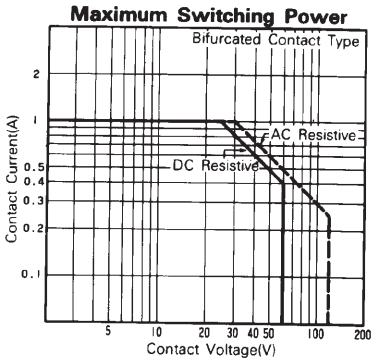


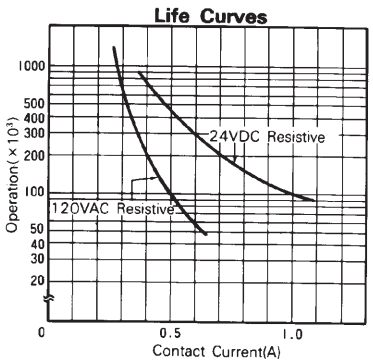




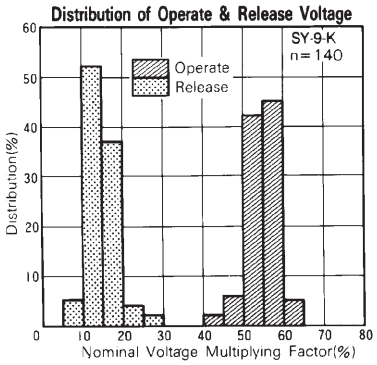


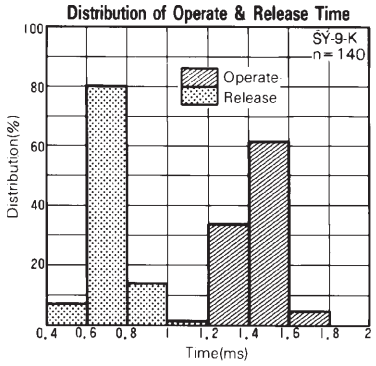


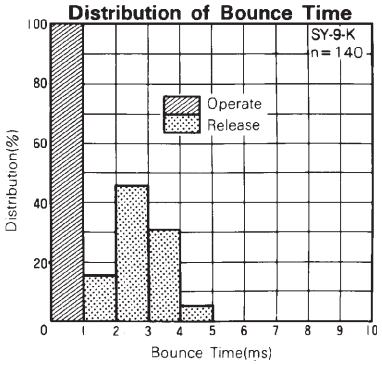


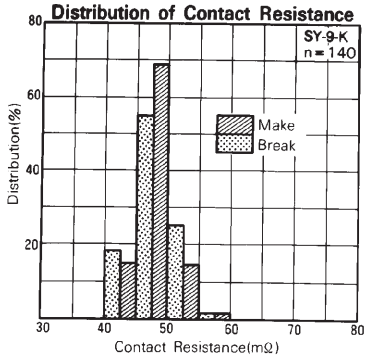


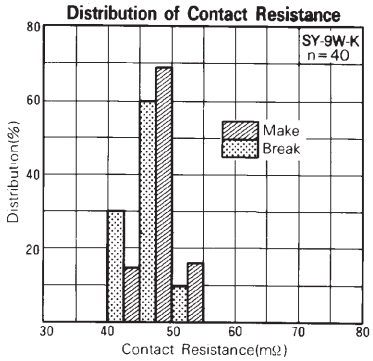
■ REFERENCE DATA

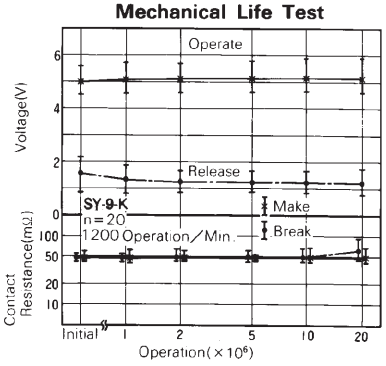


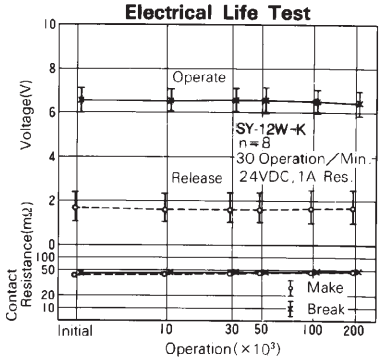


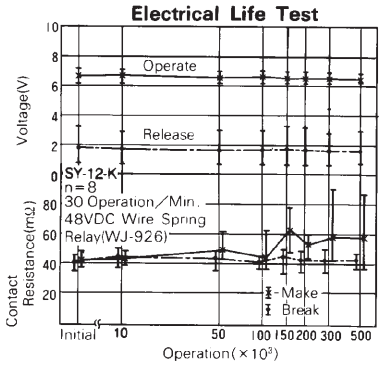






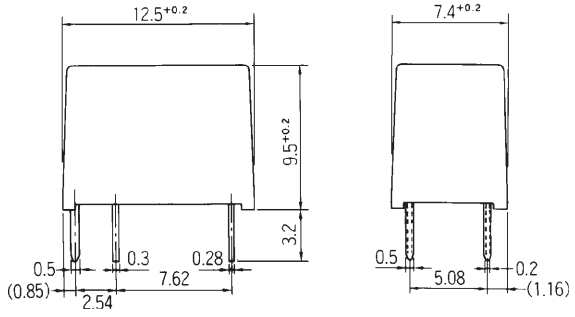




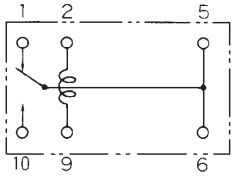


■ DIMENSIONS

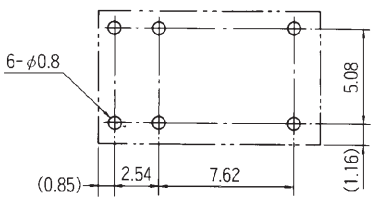
● Dimensions



● Schematics
(Bottom View)



● PC board mounting hole layout
(Bottom View)



Unit: mm

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 lead-free now. Most of our signal and power relays are lead-free. Please refer to Lead-Free 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.
- All signal and most power relays also comply with RoHS. Please refer to individual data sheets. 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 RoHSon 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.

Fujitsu Components International Headquarter Offices

Japan
Fujitsu Component Limited
Gotanda-Chuo Building
3-5, Higashigotanda 2-chome, Shinagawa-ku
Tokyo 141, Japan
Tel: (81-3) 5449-7010
Fax: (81-3) 5449-2626
Email: promothq@ft.ed.fujitsu.com
Web: www.fcl.fujitsu.com

Europe
Fujitsu Components Europe B.V.
Diamantlaan 25
2132 WV Hoofddorp
Netherlands
Tel: (31-23) 5560910
Fax: (31-23) 5560950
Email: info@fceu.fujitsu.com
Web: http://www.fujitsu.com/emea/services/components/

North and South America
Fujitsu Components America, Inc.
250 E. Caribbean Drive
Sunnyvale, CA 94089 U.S.A.
Tel: (1-408) 745-4900
Fax: (1-408) 745-4970
Email: marcom@fcai.fujitsu.com
Web: http://www.fujitsu.com/us/services/edevices/components/

Asia Pacific
Fujitsu Components Asia Ltd.
102E Pasir Panjang Road
#04-01 Citilink Warehouse Complex
Singapore 118529
Tel: (65) 6375-8560
Fax: (65) 6273-3021
Email: fcal@fcal.fujitsu.com
Web: http://www.fujitsu.com/sg/services/micro/components/