POWER RELAY
1 POLE - 8A Polarized Latching Type

JSL Series

RoHS Compliant

■ FEATURES

- Small footprint
  Width: 10mm
  Height: 12.5mm
- High insulation
  Insulation distance: 8.0mm (between coil and contacts)
  Dielectric strength: 5,000VAC
  Surge strength: 10,000V
- Plastic materials
  UL 94 flame class V-0
- RoHS compliant

■ APPLICATIONS

Smart meter, power saving equipment etc.

■ PART NUMBERS

[Example] JS L - D 12 M N - K
(a) (b) (c) (d) (e) (f) (g)

(a)	Relay type	JS series
(b)	Operating function	L : Latching
(c)	Coil type	Nil : 1 coil D : 2 coils
(d)	Coil rated voltage	12 : 3....24VDC See coil rating table
(e)	Contact configuration	Nil : 1c (1 Form C) M : 1a (1 Form A)
(f)	Contact material	N : $AgSnO_2$ + Au plated
(g)	Sealed type	K : Plastic sealed type

Note: Actual marking omits the hyphen (-) .

■ SPECIFICATIONS

Item			Specifications		Remarks/Conditions
			JSL (1 coil)	JSL-D (2 coils)	
Contact Data	Configuration		1c (1 Form C), 1a (1 Form A)		
	Construction		Single		
	Material		$AgSnO_2$ + Au plated		
	Resistance		Max.100mΩ at 6VDC, 1A		
	Contact rating		8A, 250VAC / 24VDC		Resistive
	Max. carrying current		10A		
	Max. switching voltage		400VAC / 150VDC		
	Max. switching power		2000VA / 192W		
	Max. switching current		10A		
	Min. switching load *1		100 mA, 5VDC		
Coil	Rated power (20°C)		220 to 290mW	480mW	
	Operating temperature range		-40ºC to +85ºC (at rated voltage)		No frost
Time	Set/reset (at nominal coil voltage)		Max. 10ms		Without bounce, no diode
	Applied pulse width		20ms to 1,000ms		
Life	Mechanical		Min. 5 x 10^6 operations		
	Electrical (resistive)		Min. 50 x 10^3 operations		At rated load
Insulation	Insulation resistance		Min. 1000MΩ at 500VDC		
	Dielectric strength	Open contacts	1000VAC (50/60Hz), 1 minute		
		Coil to contacts	5000VAC (50/60Hz), 1 minute		
	Surge strength	Coil-contacts	10000V / 1.2 x 50μs standard wave		
	Clearance / Creepage		8mm / 8mm		
Others	Vibration resistance	Misoperation	10Hz to 55Hz to 10Hz single amplitude 1mm		
		Endurance	10Hz to 55Hz to 10Hz single amplitude 1.5mm		
	Shock resistance	Misoperation	Min. 100m/s² (11 ± 1ms)		
		Endurance	Min. 1,000m/s² (6 ± 1ms)		
	Dimensions / Weight		10.0 x 29.0 x 12.5 mm / approx. 8.0g		
	Sealing		Plastic sealed		

*1: 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	Coil rated voltage (VDC)	1 coil			2 coils		
		Coil resistance (Ω) ±10%	Set/reset voltage*1 (VDC)	Max. applicable voltage*1 (VDC)	Coil resistance (Ω) ±10%	Set/resent voltage*1 (VDC)	Max. applicable voltage*1 (VDC)
3	3	41	2.4	5.4	19	2.4	5.4
5	5	114	4.0	9.0	53	4.0	9.0
12	12	655	9.6	21.2	300	9.6	21.2
24	24	2,304	19.2	42.2	1,200	19.2	42.2

Note: All values in the table are valid at 20oC and zero contact current, unless otherwise specified.

*: Specified operated values are valid for pulse wave voltage.

Note: Please use at rated coil voltage. Please refer to characteristic data and set up adequate voltage in case of use at over voltage.

Care shall be taken on the heat generated on PC board when maximum carrying current exceeds 10A. Please perform the confirmation test with actual conditions.

■ COIL DATA

Type	Compliance	
UL	Flammability: UL 94-V0 (plastics)	
	UL standards File No. E56140	8A, 24VDC (resistive) 8A, 250VAC (resistive)
CSA	CSA standards File No. No. LR40304	
VDE	IEC/EN standards File No 40013847	8A, 24VDC (0ms) 8A, 250VAC (cosφ=1)

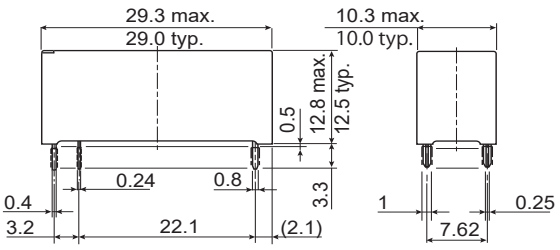
■ PART NUMBER LIST

Part number	Coil	Contact configuration	Contact material	Sealing
JSL-( )MN-K	1 coil	1a (1 Form A)	$AgSnO_2$ + Au plated	Plastic sealed
JSL-( )N-K		1c (1 Form C)		
JSL-D( )MN-K	2 coils	1a (1 Form A)	$AgSnO_2$ + Au plated	Plastic sealed
JSL-D( )N-K		1c (1 Form C)		

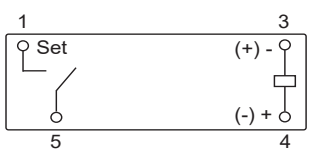
■ DIMENSIONS

JSL-M

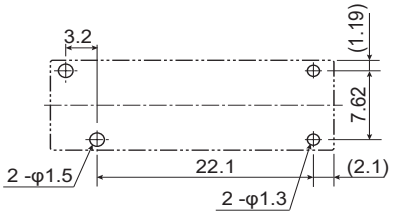
• Dimensions



• Schematics (BOTTOM VIEW)

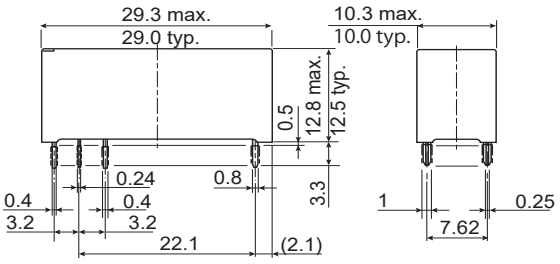


• PC board mounting layout (BOTTOM VIEW)

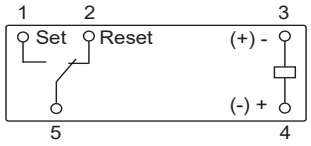


JSL

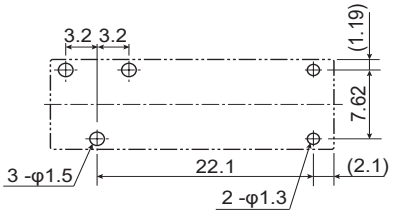
• Dimensions



• Schematics (BOTTOM VIEW)

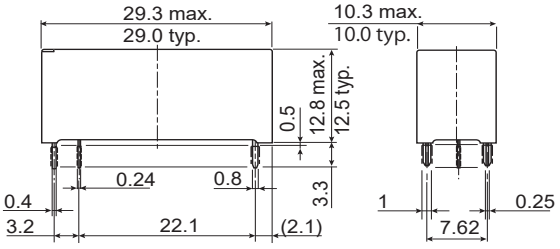


• PC board mounting layout (BOTTOM VIEW)

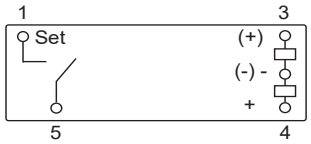


JSL-DM

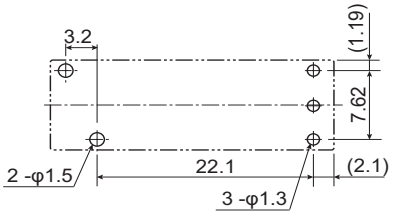
• Dimensions



• Schematics (BOTTOM VIEW)

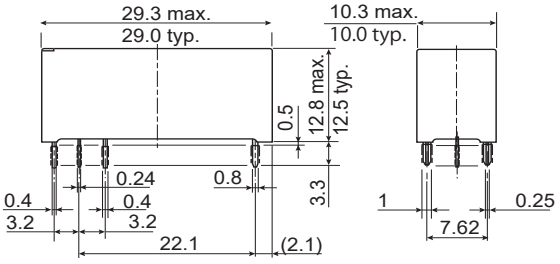


• PC board mounting layout (BOTTOM VIEW)

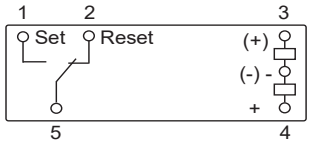


JSL-D

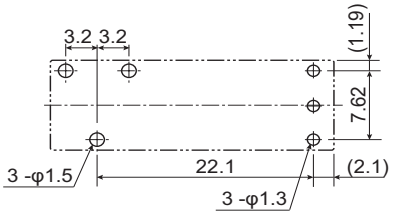
• Dimensions



• Schematics (BOTTOM VIEW)



• PC board mounting layout (BOTTOM VIEW)



* Dimensions of the terminals do not include thickness of pre-soldering.

* Schematics: +/- = Set, (+)/(-) = Reset

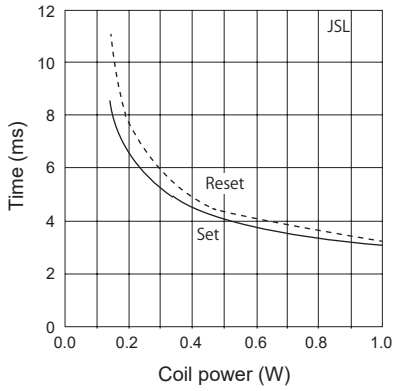
Unit: mm

* Tolerance of PC board mounting hole layout : ±0.1 unless otherwise specified.

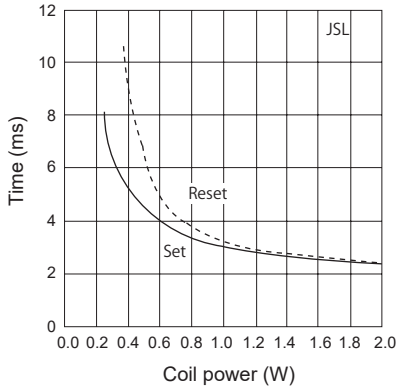
■ CHARACTERISTIC DATA

(Characteristic data is not guaranteed value but measured values of samples from production line.)

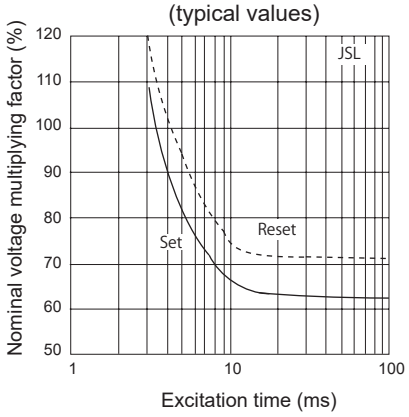
Set/reset time (typical values)
Single coil



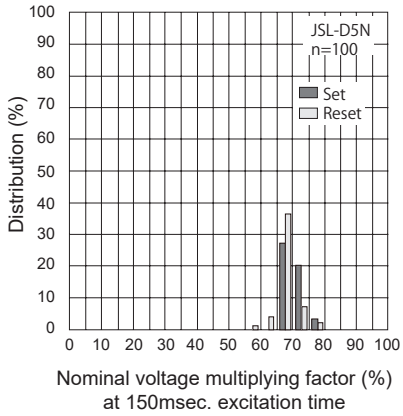
Set/reset time (typical values)
Dual coil



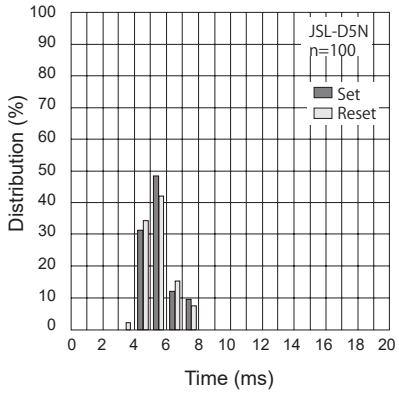
Pulse time
(typical values)



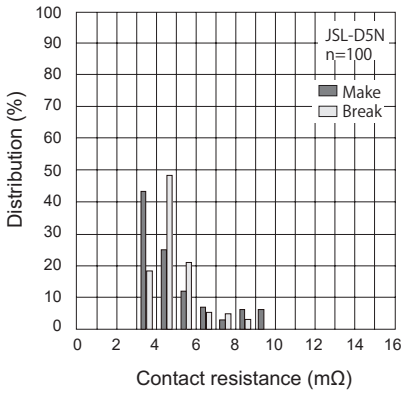
Distribution of set/reset voltage



Distribution of set/reset time



Distribution of contact resistance



■ REFERENCE DATA

Version	1 coil		2 coils		
Terminal No.	3	5	3	4	5
Set	-	+		-	+
Reset	+	-	+	-	

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.

Notes for latching relays

- Latching relays are shipped in the state set, but state may change due to shock during transportation or mounting. Before uing the relays, it is advisable to bring the relays in necessary state (set or reset) and program a circuit sequence. Otherwise, it will or will not operate simultaneously with power activation.
- Please connect relay coils according to specified polarity.
- Do not apply voltage to both set coil and reset coil at a time.

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 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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