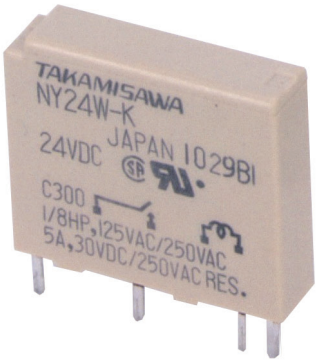
POWER RELAY
1 POLE - 5A SLIM TYPE

NY Series

RoHS Compliant

■ FEATURES



- Slim type with 5mm thickness
  - Suited for high density mounting
- Low power consumption and high sensitivity
  - Nominal coil power: 120mW
  - Operating power: 54mW
- UL and CSA recognized
- High insulation
  - Surge voltage: 5,080V
  - Dielectric strength: 3,000VAC (coil and contacts)
- SIL pitch terminals
- Plastic sealed type, RTIII
- Compatible with solid state I/O module type SN in size and pin (terminal) arrangement
- Environmentally friendly cadmium free contact type
- RoHS compliant

■ APPLICATIONS

PLC, FA equipment etc.

■ PART NUMBERS

[Example] NY P - 12 W - K - IE
(a) (b) * (c) (d) (e) * (f)

(a)	Relay type	NY series
(b)	Mounting type	Nil : PCB mounting type P : Socket mounting type
(c)	Coil rated voltage	12 : 4.5...24VDC Please refer to coil rating table
(d)	Contact design	W : Bifurcated contact
(e)	Enclosure	K : Plastic sealed type, RTIII
(f)	Insulation	IE : Conform to IEC standard

Note: Actual marking omits the hyphen (-) of * and IE.

■ SPECIFICATIONS

Item			Specifications	Remarks/Conditions
Contact Data	Configuration		1a (1 Form A, SPST-NO)	
	Construction		Bifurcated	
	Material		Gold overlay silver alloy (AgNi +Au)	
	Resistance		Max. 30mΩ	Initial at 1A, 6VDC
	Contact rating		5A, 250VAC/30VDC	Resistive
	Max. carrying current		5A	
	Max. switching voltage		270VAC/125 VDC	
	Max. switching power		1,250VA/150W	
	Max. switching current		5A	
	Min. switching load *1		1mA, 5VDC	
Coil	Rated power (20°C)		120mW	
	Operate power (20°C)		54mW	
	Operating temperature range		-40°C to +90°C	No frost
Time	Operate (at nominal voltage)		Max. 10ms	Without bounce
	Release (at nominal voltage)		Max. 5ms	Without bounce
Life	Mechanical		Min. 20 x 10^6 operations	
	Electrical (resistive)		Min. 100 x 10^3 operations (at 3A, 250VAC/30VDC resistive) Min. 50 x 10^3 operations (at 5A, 250VAC/30VDC resistive)	
Insulation	Insulation resistance (initial)		Min. 1,000MΩ	At 500VDC
	Dielectric strength	Open contacts	750VAC, 1minute	
		Coil to contacts	3,000VAC, 1 minute	
	Surge strength	Coil to contacts	5,080V / 1.2 x 50μs standard wave	
	Clearance / Creepage		Min. 3mm / Min. 3mm	
Others	Vibration resistance	Misoperation	10 to 55 to 10Hz single amplitude 0.75mm	Coil ON/OFF, 3 axis, total 6 cycles
		Endurance	10 to 55 to 10Hz single amplitude 2.5mm	Coil OFF, 3 axis, total 6 hours
	Shock resistance	Misoperation	Min. 100m/s^2 (11±1ms)	Coil ON/OFF, 3 axis, total 36 operations
		Endurance	Min. 1,000m/s^2 (6±1ms)	Coil OFF, 3 axis, total 18 operations
	Dimensions / Weight		5.0×20.1×17.5mm / Approximately 3.5g	
	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

■ COIL DATA

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance ±10% (Ω)	Must Operate Voltage*1 (VDC)	Must Release Voltage*1 (VDC)	Nominal Power (mW)
4.5	4.5	169	3	0.45	120
5	5	208	3.35	0.5	
6	6	300	4	0.6	
9	9	675	6	0.9	
12	12	1,200	8	1.2	
18	18	2,700	12.1	1.8	
24	24	4,800	16.1	2.4	

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

*1: 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.

■ SAFETY STANDARDS

Type	Compliance	Contact Rating
UL	Flammability: UL 94-V-0 (plastics)	
	UL 508 ANSI/ISA12.12.01 File No. E56140, E199193	3A, 250VAC/30VDC (General use) 5A, 250VAC/30VDC (resistive) 1/8 HP, 250VAC /125VAC Pilot duty: C300, D150, R300
CSA	C22.2 No. 14 File No. LR40304	

Also conform to IEC61010, 61131 reinforced insulation.

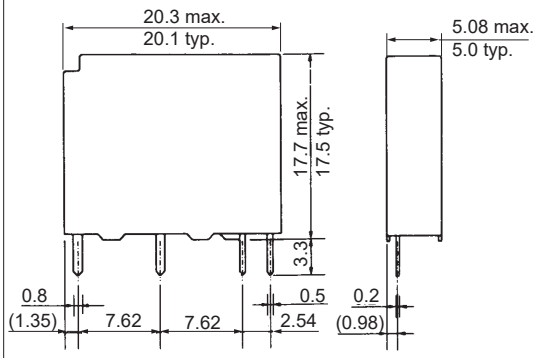
■ PART NUMBER LIST

Part Number	Mounting Type	Contact Design	Enclosure	Insulation	Socket
NY-( )W-K-IE	PCB mounting	Bifurcated contact	Plastic sealed	Conform to IEC standard	-
NYP-( )W-K-IE	Socket mounting				JL-5N

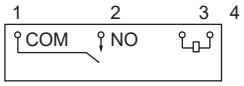
■ DIMENSIONS

NY type

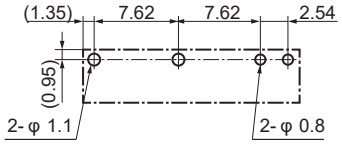
- Dimensions



- Schematics (BOTTOM VIEW)

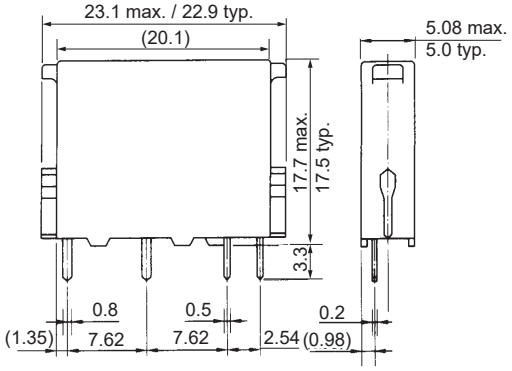


- PC board mounting hole layout (BOTTOM VIEW)



NYP type

- Dimensions



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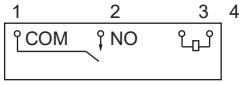
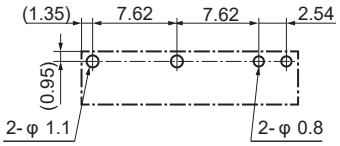
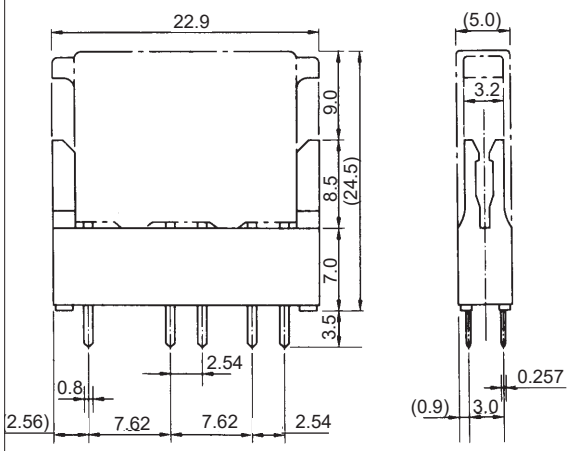


- PC board mounting hole layout (BOTTOM VIEW)

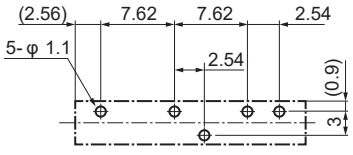


Socket type JL-5N

- Dimensions



- PC board mounting hole layout (BOTTOM VIEW)



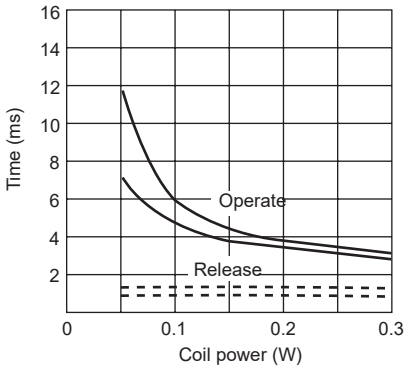
Note: Dimensions do not include tolerances.
Note: Dimensions of the terminals do not include thickness of pre-soldering.
Note: Tolerance for PC board mounting hole/pad layout: ±0.1.

Unit: mm

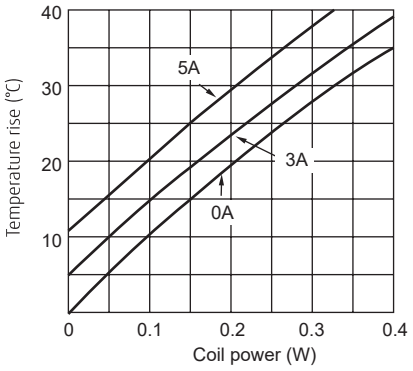
■ CHARACTERISTIC DATA

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

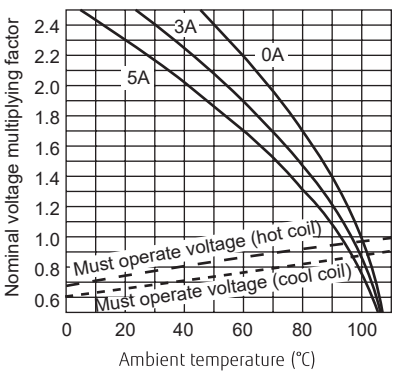
Timing



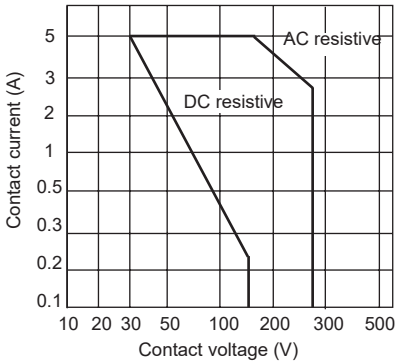
Coil temperature rise



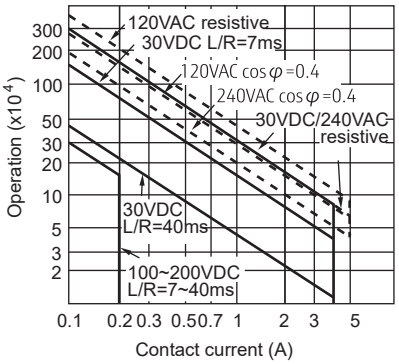
Operating range



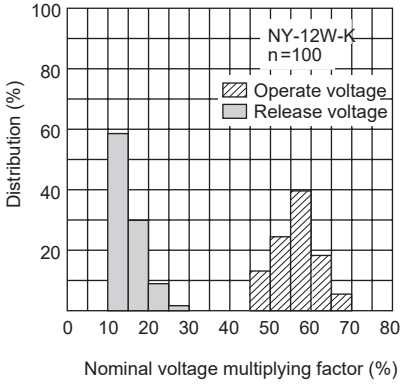
Maximum switching power



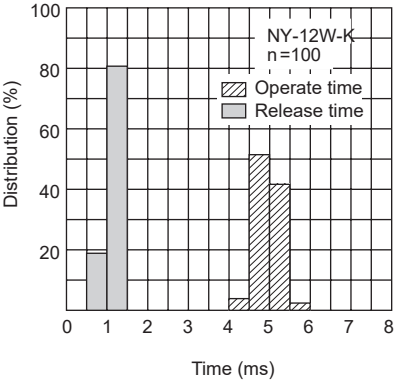
Life curve



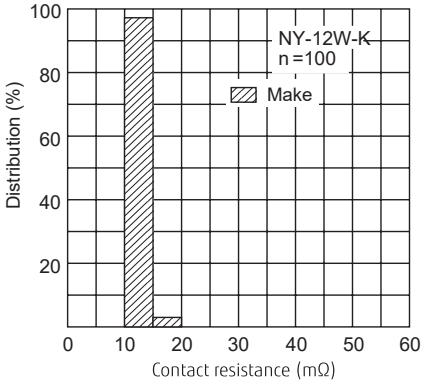
Distribution of operate/release voltage



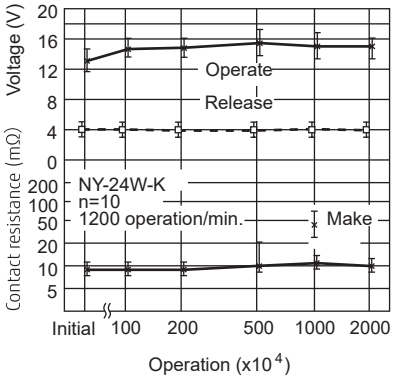
Distribution of operate/release time



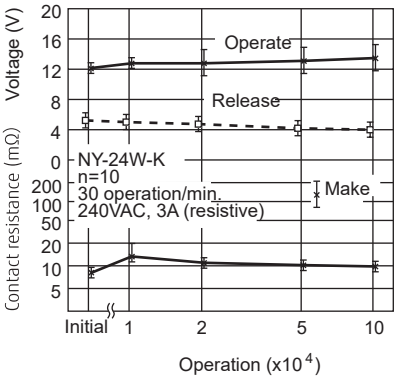
Distribution of contact resistance



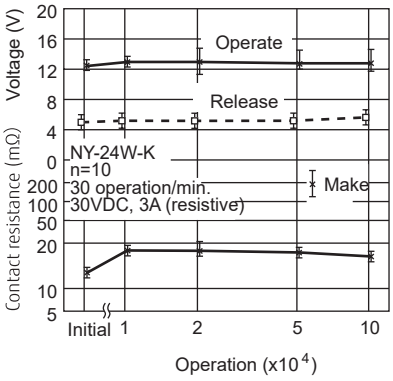
Mechanical life test



Electrical life test



Electrical life test



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.

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 340-360˚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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