Miniature Intermediate Power Relay	KMH

Features

- High capacity
- Multiple auxiliary functions available
- Various terminals available
- Socket available
- 2 to 4 pole configurations
- Transparent dust cover, various installation types
- Automatic production
- Gold plated contact available

c UL us
(File No.:E122258)

1. COIL DATA (at 23°C)

1) DC Type

Nominal Voltage (VDC)	Pick-up Voltage (VDC)	Drop-out Voltage (VDC)	Max Allowable Voltage (VDC)	Coil Resistance (Ω)	Coil Power (W)
5	4.0	0.5	5.5	28 x (1±10%)	Approx. 0.8 to 1.1
6	4.8	0.6	6.6	40 x (1±10%)	
9	7.2	0.9	9.9	90 x (1±10%)	
12	9.6	1.2	13.2	160 x (1±10%)	
21	16.8	2.1	23.1	490 x (1±10%)	
24	19.2	2.4	26.4	640 x (1±10%)	
30	24.0	3.0	33.0	1000 x (1±10%)	
36	28.8	3.6	39.6	1440 x (1±10%)	
48	38.4	4.8	52.8	2560 x (1±15%)	
60	48	6.0	66.0	4000 x (1±15%)	
110[3)]	80	11.0	121.0	12250 x (1±15%)	
125[3)]	100	12.5	137.5	17360 x (1±15%)	
220	176	22.0	242.0	53360 x (1±15%)	

2) AC Type

Nominal Voltage (VAC)	Pick-up Voltage (VAC)	Drop-out Voltage (VAC)	Max Allowable Voltage (VAC)	Coil Resistance (Ω)	Coil Power (VA)
6	4.8	1.8	6.60	11 x (1±10%)	Approx. 0.9 to 1.5
12	9.6	3.6	13.2	44 x (1±10%)	
24	19.2	7.2	26.4	177 x (1±10%)	
36	28.8	10.8	39.6	400 x (1±10%)	
48	38.4	14.4	52.8	708 x (1±10%)	
60	48.0	18.0	66	1100 x (1±10%)	
110[3)]	80.0	33.0	121	3400 x (1±15%)	
120[3)]	88.0	36.0	132	4080 x (1±15%)	
220[3)]	160.0	66.0	242	13600 x (1±15%)	
230	176.0	72.0	253	16300 x (1±15%)	
240[3)4)]	176.0	72.0	264	16300 x (1±15%)	
277	221.6	83.1	304.7	23590 x (1±15%)	

Notes:

1) Under ambient temperature, applying more than 80% of rating voltage to coil, relay will take action accordingly. But in order to meet the stated product performance, please apply rated voltage to coil.

2) Maximum allowable voltage refers to the maximum voltage which relay coil could endure in a short period of time.

3) 110VAC: Nominal voltage 100~110VAC; 120VAC: Nominal voltage 110~120VAC; 220VAC: Nominal voltage 200~220VAC; 240VAC: Nominal voltage 220~240VAC; 110VDC: Nominal voltage 100~110VDC; 125VDC: Nominal voltage 110~125VDC

4) When the 240VAC specification coil test coil temperature rises, the installation pitch needs to be ≥6mm

2. CONTACT DATA

Contact Arrangement		2 From C	3 Form C	4 From C
Contact Resistance		100mΩ max. (at 1A 6VDC)		
Contact Material		$AgSnO_2$		
Contact Ratings (Resistive load)		7A 250VAC/30VDC	7A 250VAC/30VDC	6A 250VAC / 30VDC
Max. Switching Voltage		250VAC / 30VDC		
Max. Switching Current		7A	7A	6A
Max. Switching Power		1750VA / 210W	1750VA / 210W	1500VA / 180W
Life Expectancy	Electrical	100,000 operations		
	Mechanical	20,000,000 operations		

Note: 1) The data shown above are initial values.

2) Please refer to the characteristic curves for detailed electrical endurance information. If you need other conditions, please contact us.

3. CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)
Dielectric Strength	Open Contacts	1000VAC 1min
	Coil and Contacts	1500VAC 1min
	Contact Sets	1500VAC 1min
Operate Time (at nominal voltage)		20ms max.
Release Time (at nominal voltage)		DC type: 15ms max. DC type with diode: 25ms max. AC type: 25ms max.
Temperature Rise[2)] (no-load, at nominal voltage)		85K max.
Temperature Range		-40℃ ~ 70℃
Shock Resistance	Functional	$100m/s^2$
	Destructive	$1000m/s^2$
Vibration Resistance		10 ~ 55Hz 1mm DA
Humidity		5 ~ 85% RH
Termination		PCB, Plug-in
Weight		Approx. 35.6g
Outline dimension (L x W x H)		28.0 x 21.5 x 36.0mm

Note: 1) The data shown above are initial values.

2) When testing the temperature rise, please separate test each relay.

4. SAFETY APPROVAL

UL / cUL	2 Form C	7A 250VAC/30VDC Resistive at 70℃
	3 Form C	7A 250VAC/30VDC Resistive at 70℃
	4 Form C	6A 250VAC/30VDC Resistive at 70℃

5. ORDERING INFORMATION

KMH ①	2 ②	-	D24 ③	S ④	L ⑤	-	T ⑥

① Relay Model	KMH
② Contact Arrangement	2: 2 Form C (DPDT) 3: 3 Form C (3PDT) 4: 4 From C (4PDT)
③ Coil Voltage	DC: D5=5VDC, D6=6VDC, D9-9VDC, D12=12VDC, D21=21VDC, D24=24VDC, D30=30VDC, D36=36VDC, D48=48VDC, D60=60VDC, D110=110VDC, D125=125VDC, D220=220VDC AC: A6=6VAC, A12=12VAC, A24=24VAC,A36=36VDC, A48=48VAC, A60=60VAC, A110=110VAC, A120=120VDC, A220=220VAC, A230=230VAC, A240=240VAC, A277-277VAC
④ Terminal Form	P: PC board S: Plug-in B: Top mounting[1)]
⑤ Component Code	Nil: Without component D: With diode L: With LED DL: With LED and diode
⑥ Test Button	Nil: Without button T: With button

Note:

1) T type without top mounting termination, please choose without button when ordering.

2) Free-wheeling diode is available for DC coil relay; CR circuit is available for AC coil relay.

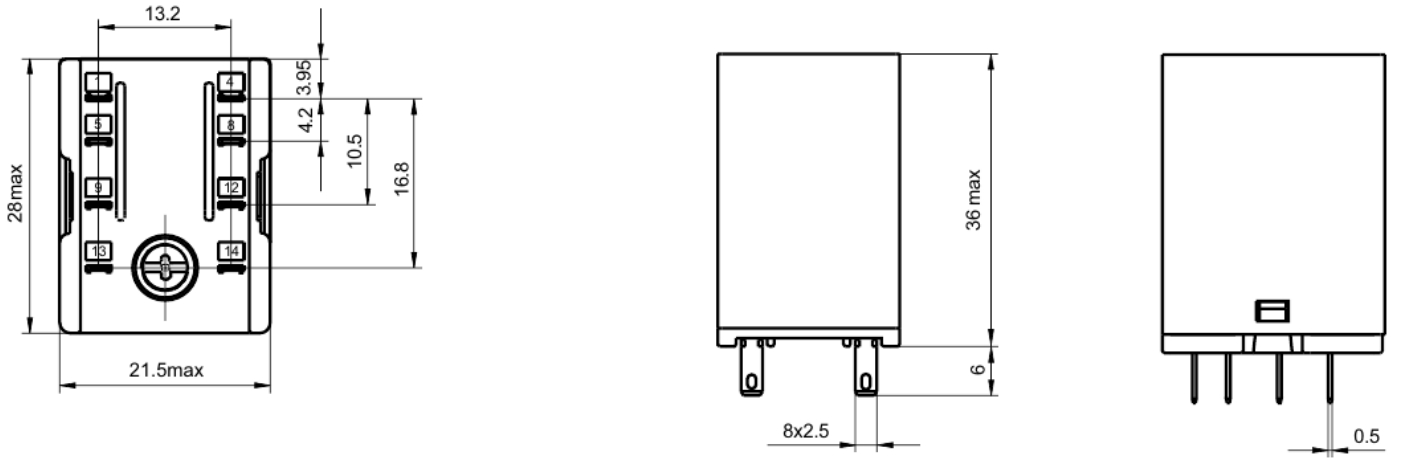
3) For coil specifications of 110VDC and above, it is recommended that the customer add the coil protection measures in the circuit.

4) For products that should meet the explosion-proof requirement of “IEC 60079 series”, please contact us in order to select the suitable products, if necessary. Not all products have explosion-proof certification.

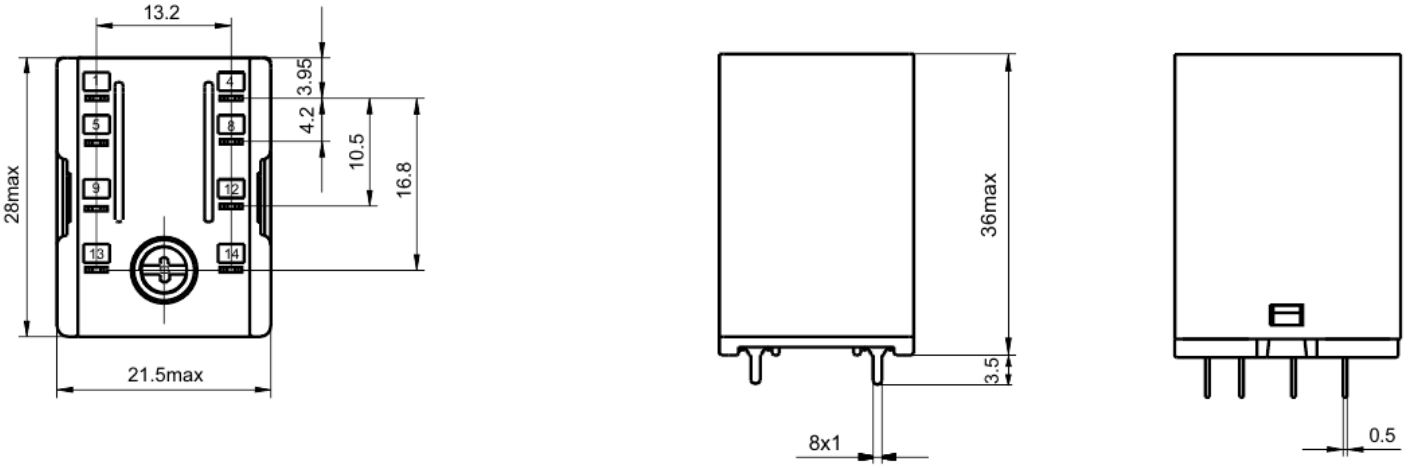
6. DIMENSIONS (Unit: mm)

Outline Dimensions

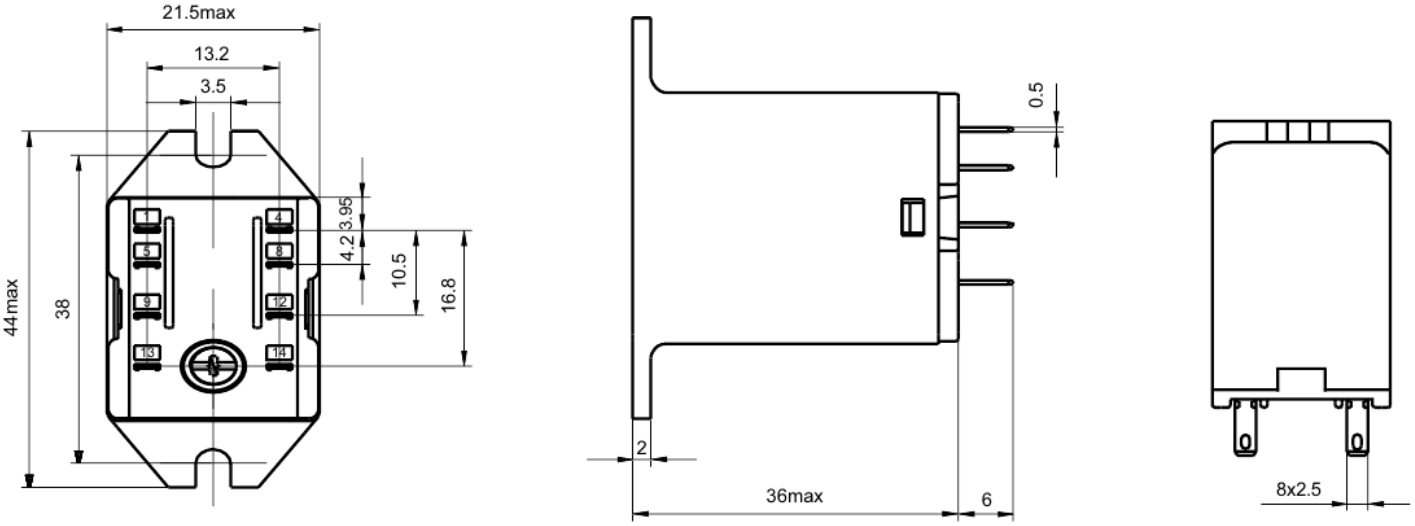
2 Form C, Plug-in, Without button



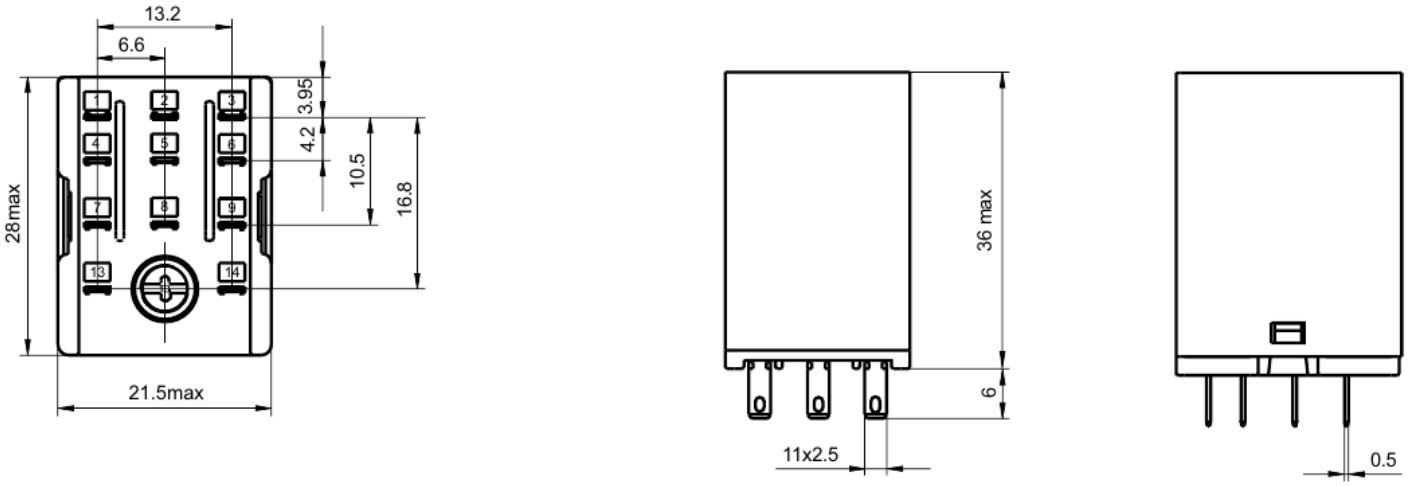
2 Form C, PC board, Without button



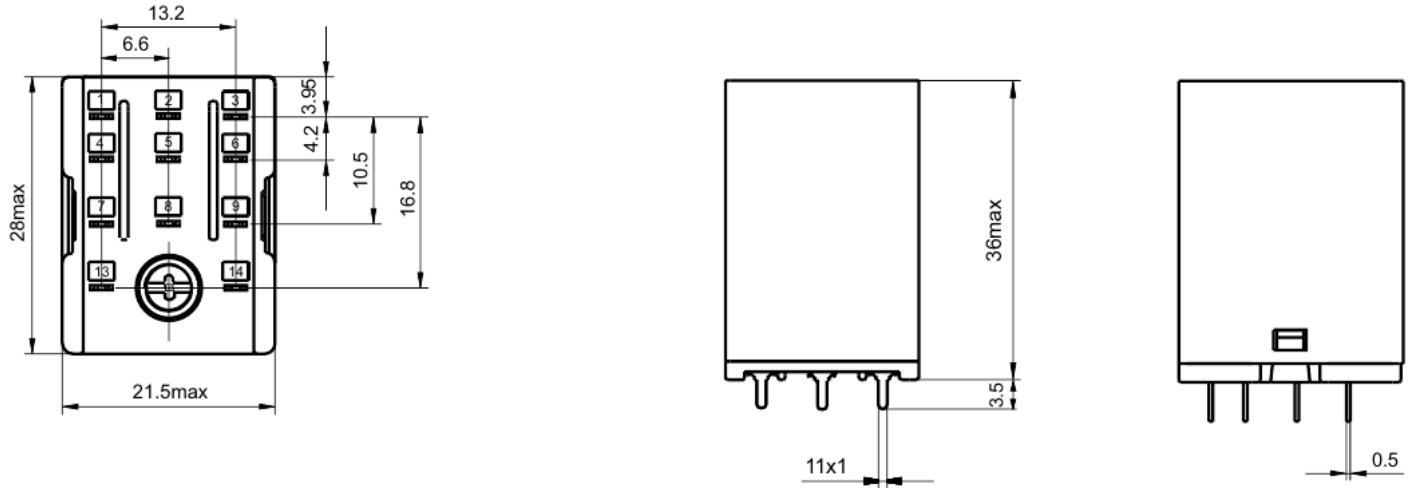
2 Form C, Top mounting, Without button



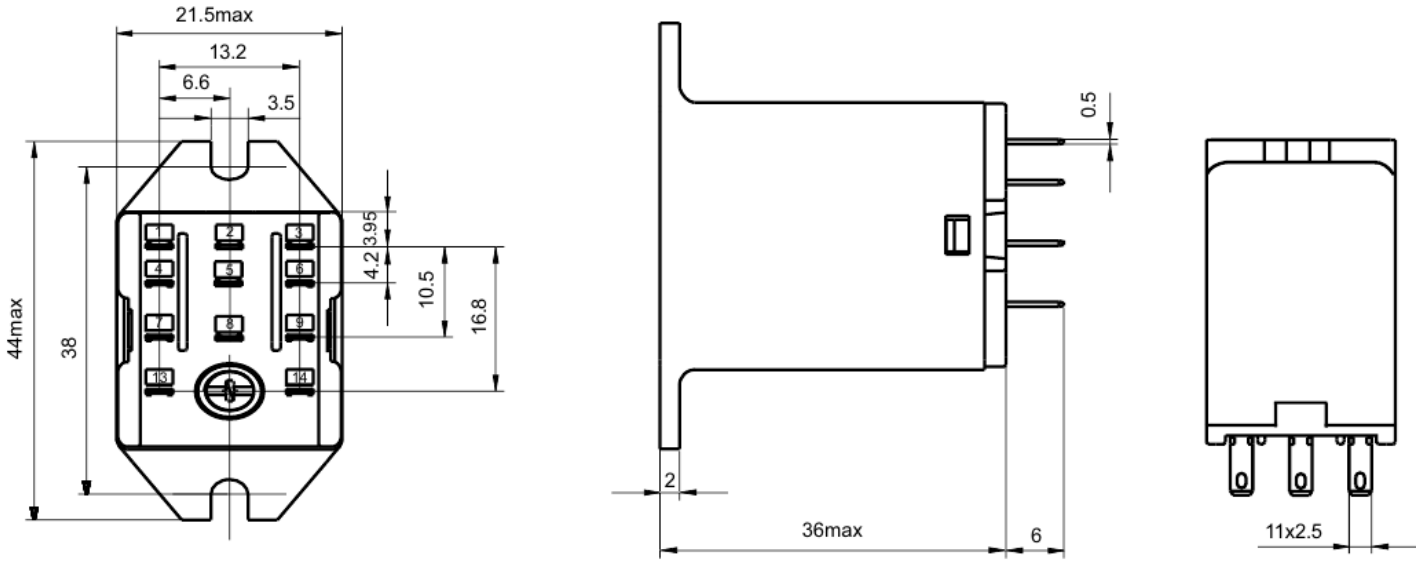
3 Form C, Plug-in, Without button



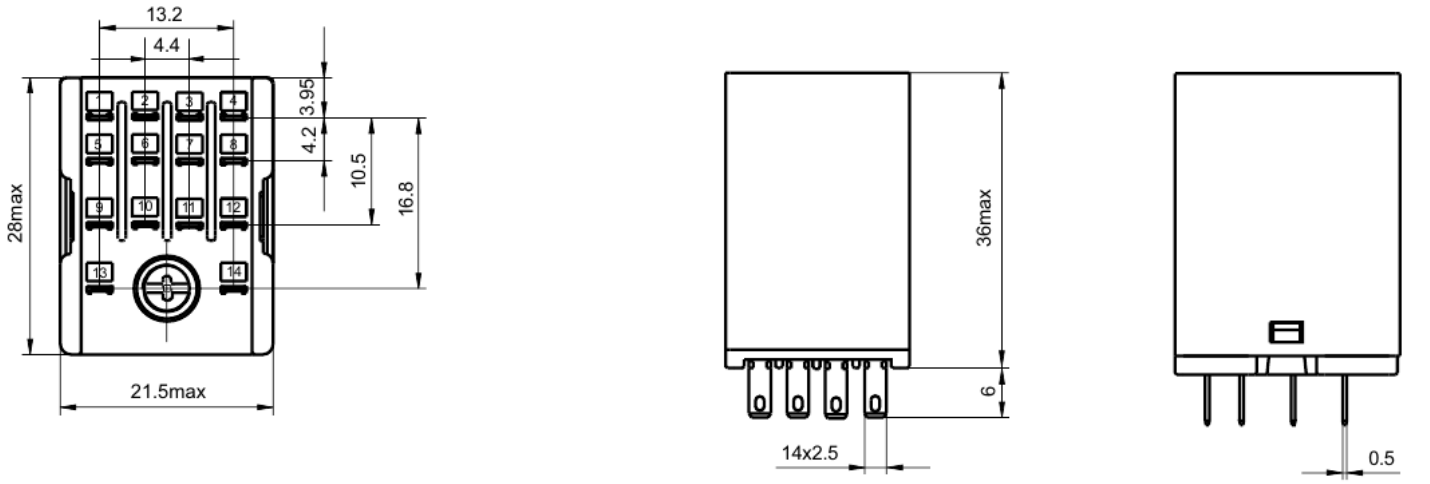
3 Form C, PC board, Without button



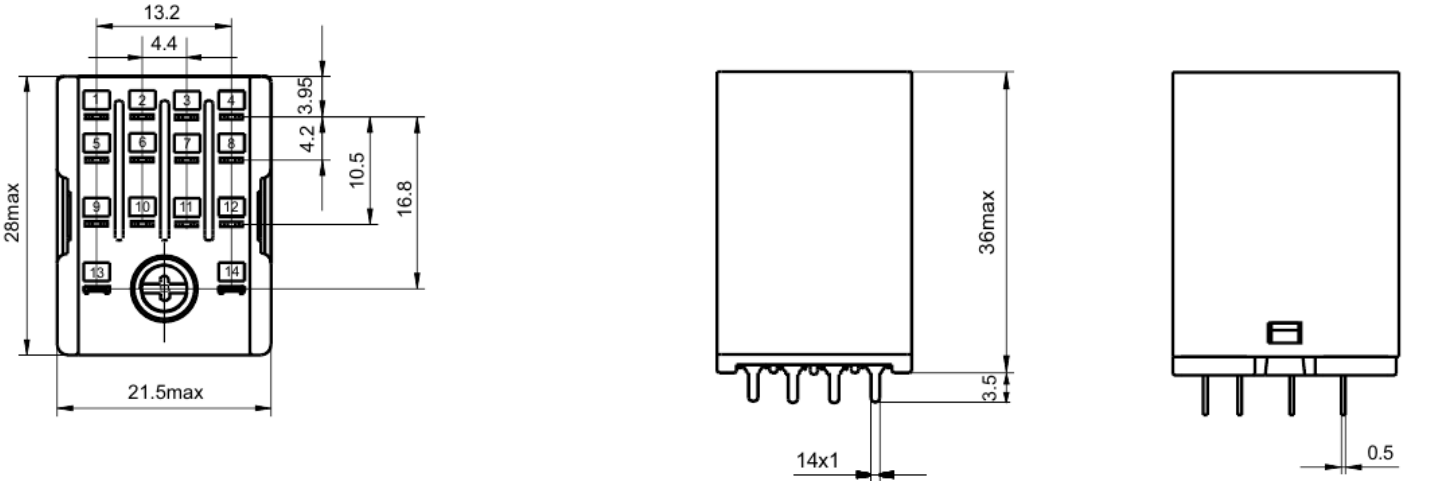
3 Form C, Top mounting, Without button



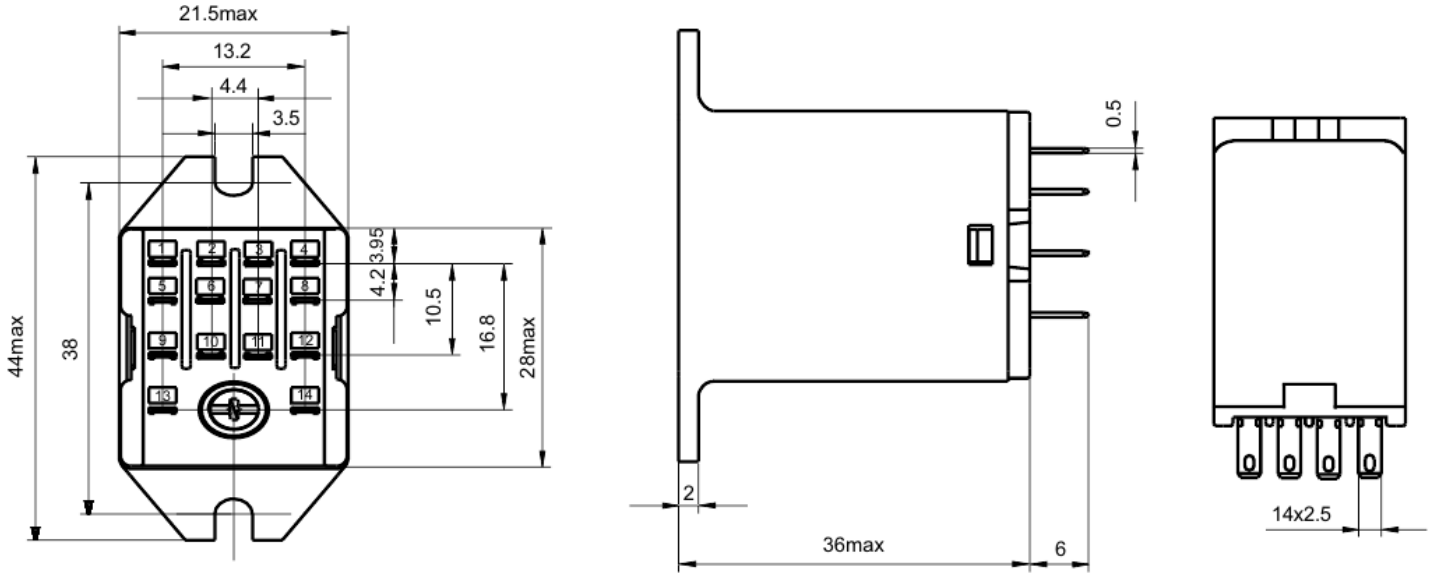
4 Form C, Plug-in, Without button



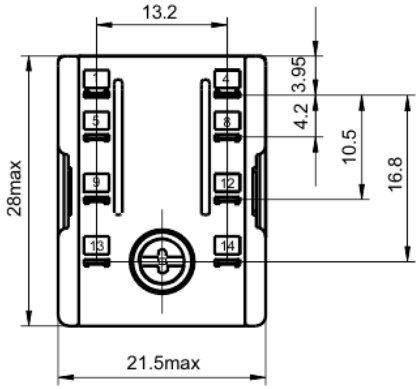
4 Form C, PC board, Without button

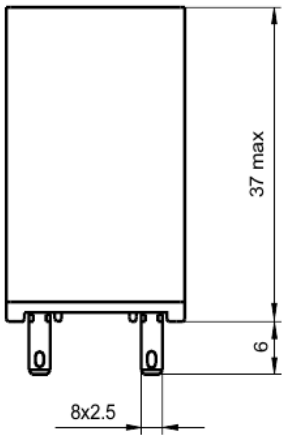


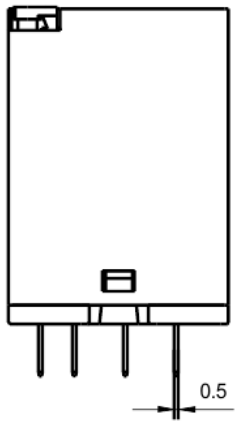
4 Form C, Top mounting, Without button



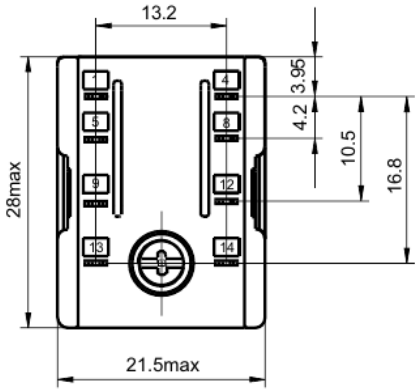
2 Form C, Plug-in, With button

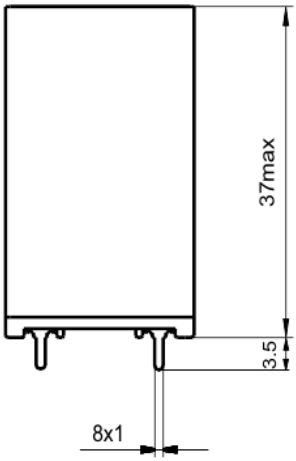


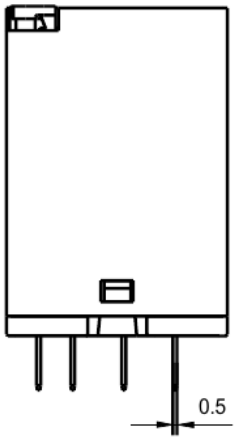




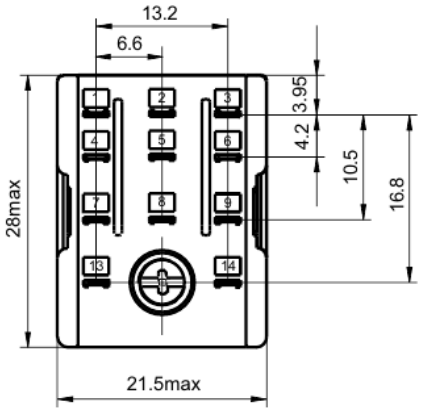
2 Form C, PC board, With button

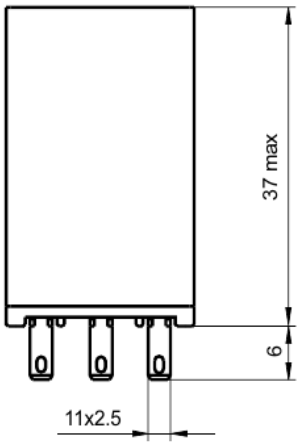


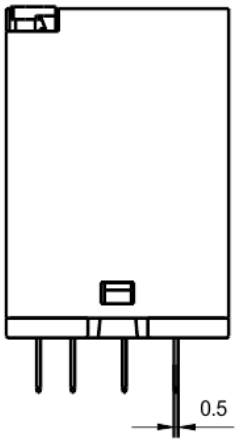




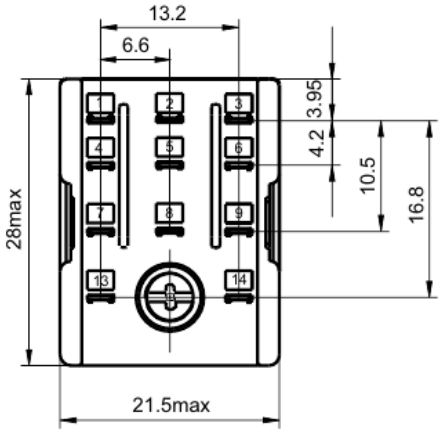
3 Form C, Plug-in, With button

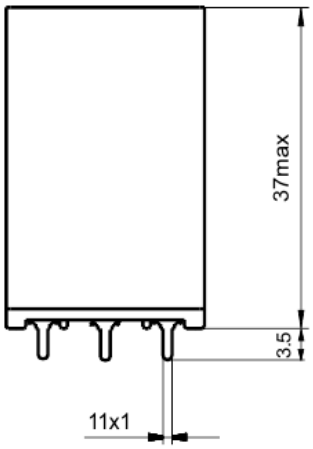


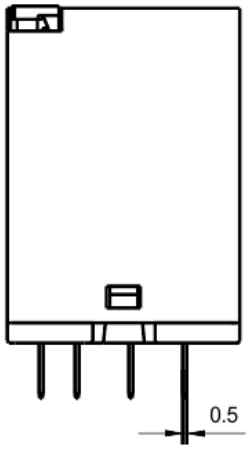




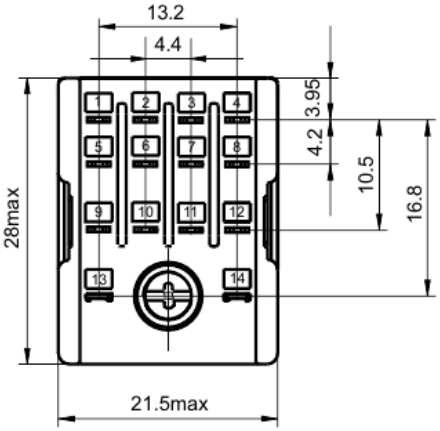
3 Form C, PC board, With button

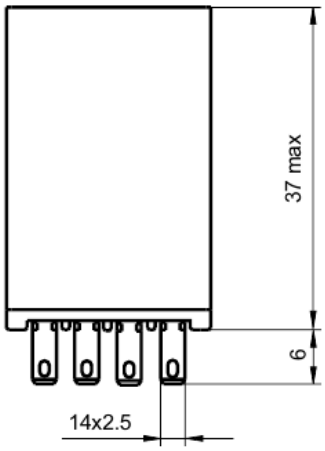


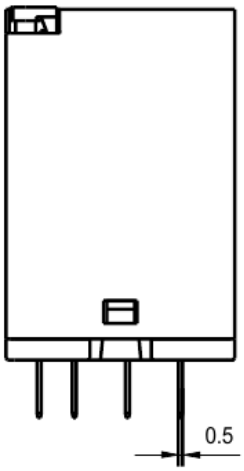




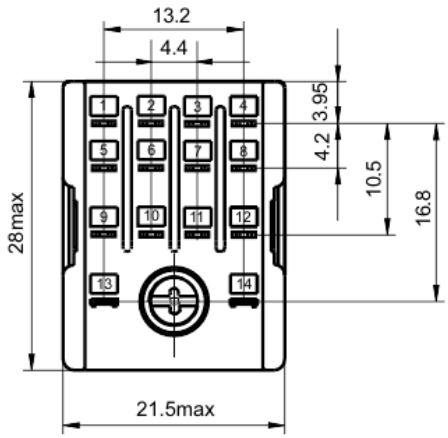
4 Form C, Plug-in, With button

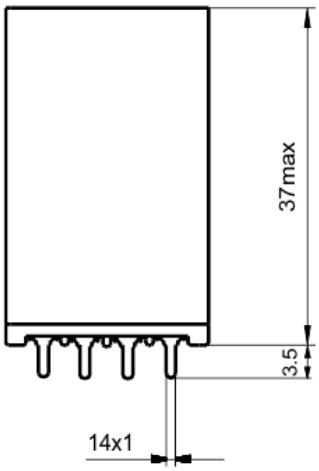


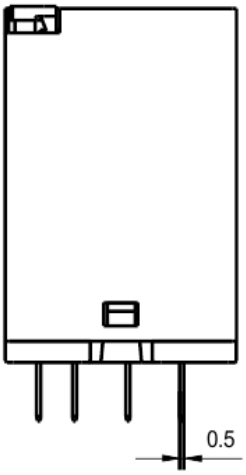




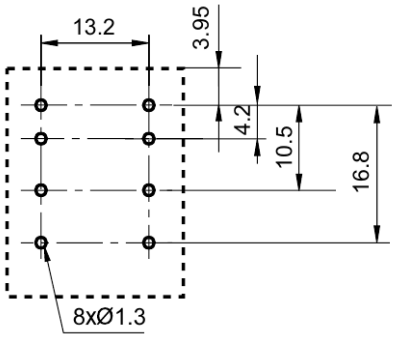
4 Form C, PC board, With button



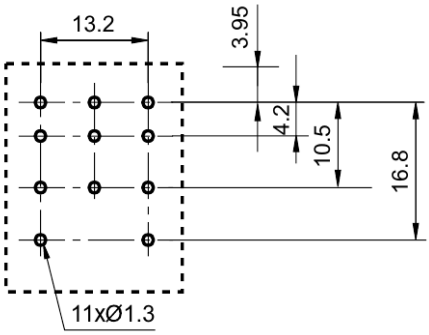




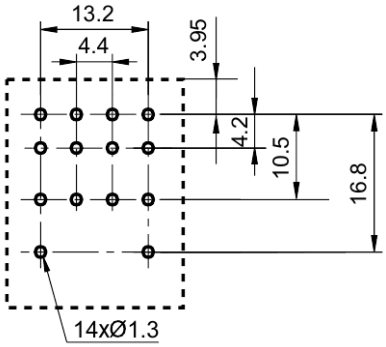
PCB Layout (Bottom view)



2 Form C

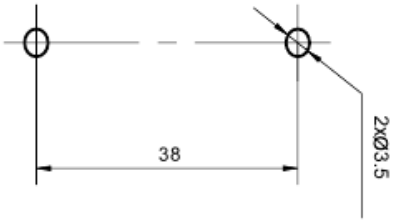


3 Form C

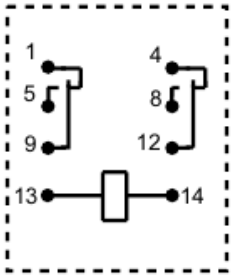


4 Form C

Mounting Holes



Wiring Diagram (Bottom View)



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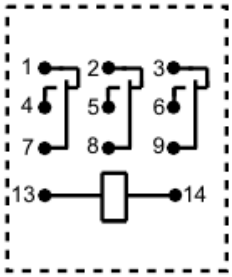
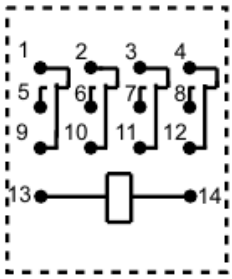
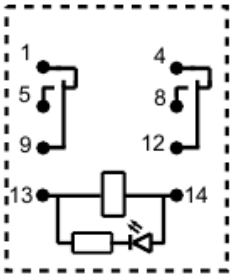


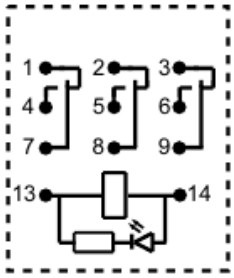
3 Form C



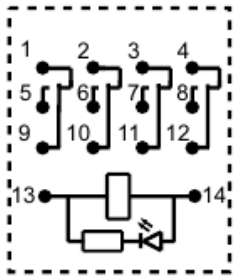
4 Form C



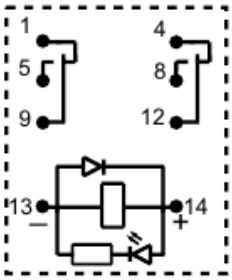
2 Form C (With LED)



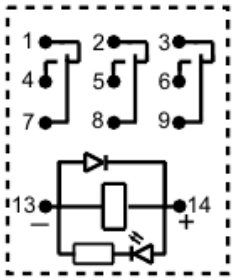
3 Form C (with LED)



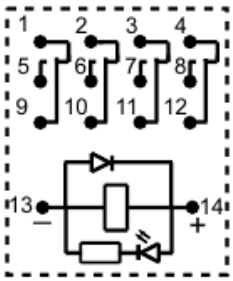
4 Form C (with LED)



2 Form C
(DC, With fly-wheel diode)



3 Form C
(DC, With fly-wheel diode)



4 Form C
(DC, With fly-wheel diode)

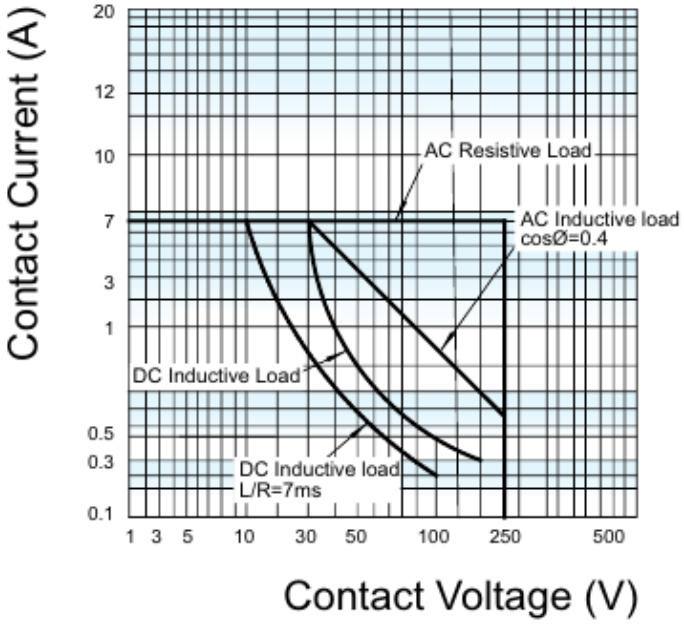
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.

2) The tolerance without indicating for PCB layout is always ±0.1mm.

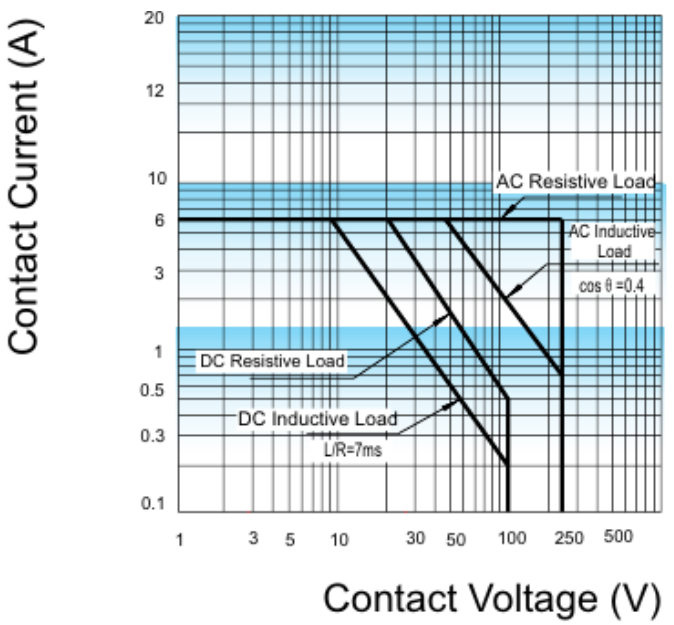
3) DC products with fly-wheel diode, please confirm the positive and negative terminals before wiring.

7. CHARACTERISTIC CURVES

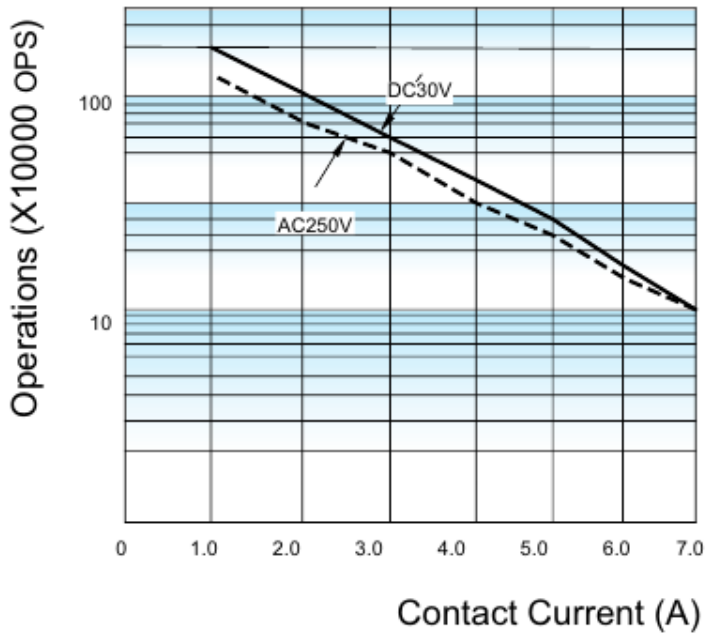
Maximum Switching Power (2, 3 Form C)



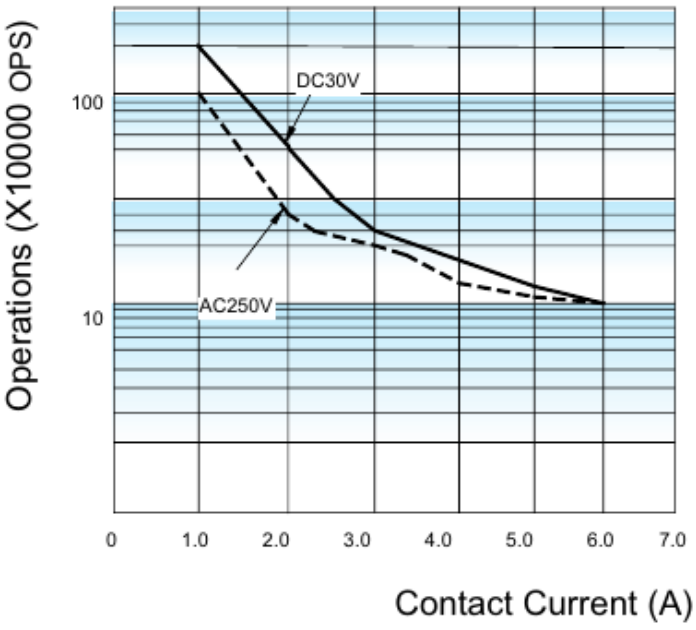
Maximum Switching Power (4 Form C)



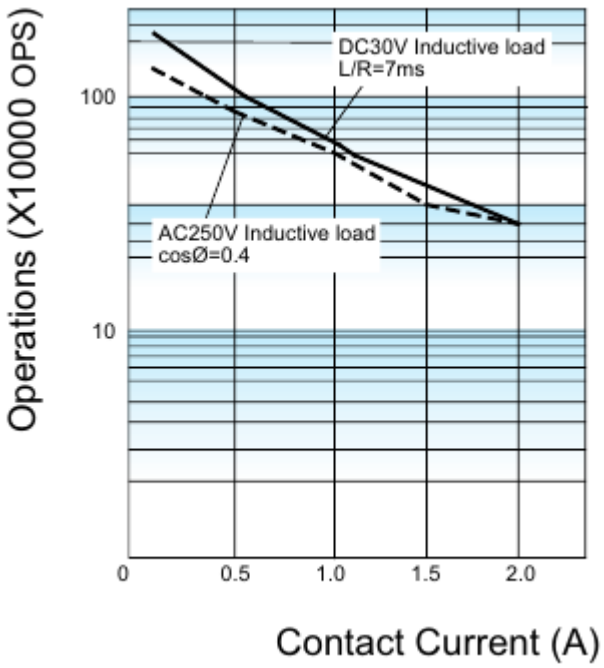
Resistive Load Endurance Curve
(2 Form C, 3 Form C)



Resistive Load Endurance Curve
(4 Form C)



Inductive Load Endurance Curve
(2 Form C, 3 Form C)



Inductive Load Endurance Curve
(4 Form C)