731

Features

- ☐ 10A general purpose Power Relay.
- ☐ SPDT, DPDT, TPDT contact configurations.
- ☐ AC & DC coils are both available.
- ☐ Optional for anti-rotation tab, tapped core, indicator lamp & push-to-test button, flanged cover.
- ☐ RoHS Compliant.

Type List

◆731

Terminal style	Contact form	Enclosure style				
		Open type	Dust cover	Ears on cover	Antirotation -tab	Ears on top
Quick terminal	1A (SPNO)	731-SPNO	731-SPNO-C	731-SPNO-C1	731-SPNO-C2	731-SPNO-C3
	1C (SPDT)	731-SPDT	731-SPDT-C	731-SPDT-C1	731-SPDT-C2	731-SPDT-C3
	2A (DPNO)	731-DPNO	731-DPNO-C	731-DPNO-C1	731-DPNO-C2	731-DPNO-C3
	2C (DPDT)	731-DPDT	731-DPDT-C	731-DPDT-C1	731-DPDT-C2	731-DPDT-C3
	3A (TPNO)	731-TPNO	731-TPNO-C	731-TPNO-C1	731-TPNO-C2	731-TPNO-C3
	3C (TPDT)	731-TPDT	731-TPDT-C	731-TPDT-C1	731-TPDT-C2	731-TPDT-C3

◆731H

Terminal style	Contact form	Enclosure style		
		Dust cover	Ears on cover	Ears on top
Quick terminal	1A (SPNO)	731H-SPNO-C	731H-SPNO-C1	731H-SPNO-C3
	1C (SPDT)	731H-SPDT-C	731H-SPDT-C1	731H-SPDT-C3
	2A (DPNO)	731H-DPNO-C	731H-DPNO-C1	731H-DPNO-C3
	2C (DPDT)	731H-DPDT-C	731H-DPDT-C1	731H-DPDT-C3
	3A (TPNO)	731H-TPNO-C	731H-TPNO-C1	731H-TPNO-C3
	3C (TPDT)	731H-TPDT-C	731H-TPDT-C1	731H-TPDT-C3

Ordering Information

731 ☐ - TPDT - ☐ ☐ - ☐ ☐

1 2 3 4 5 6 7

1. 731 -- Basic series designation

2. Blank -- Standard type
   H -- High power type

3. SPDT -- Single pole double throw
   SPNO -- Single pole normally open
   SPNC -- Single pole normally closed
   DPDT -- Double pole double throw
   DPNO -- Double pole normally open
   DPNC -- Double pole normally closed
   TPDT -- Three pole double throw
   TPNO -- Three pole normally open
   TPNC -- Three pole normally closed

4. Blank -- Open type without frame tab
   C -- Dust cover
   C1 -- With mounting ears on cover
   C2 -- With accessible mounting hole with anti-rotation tab
   C3 -- Mounting Ears on top of cover
   X -- Open type with frame tab

5. Blank -- No special feature
   M -- With manual operator
   T -- Printed circuit board terminals
   L -- Pilot lamp

6. Blank -- Standard type
   F -- Class F

7. □ -- Coil voltage (please refer to the coil rating data for the availability)

Contact Rating

Resistive load	731	731H 1P、2P	731H 3P
	10A 28VDC 10A 240VAC	20A 300VAC 25A 277VAC	16A 300VAC 20A 277VAC
Max. switching current	10A	25A	20A
Max. switching voltage	240VAC	300VAC	300VAC
Max. switching capacity	2400VA	6925VA	6000VA

Coil Rating (DC)

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 70°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
6	188	32	140 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 1.2W
12	100	120				
24	51	472				
48	27	1,800				
110	11	10,000				
120	12	10,000				

Coil Rating (AC)

Rated voltage (V)		Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 70°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
SP DP	12	21	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 2.0VA
	24	85				
	110	1,700				
	115	1,700				
	120	2,250				

Coil Rating (AC)

Rated voltage (V)		Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 70°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
SP DP	220	7,200	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 2.0VA
	230	7,200				
	240	9,110				

Coil Rating (AC)

Rated voltage (V)		Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 70°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
TP	12	18	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 2.7VA
	24	72				
	110	1,300				
	115	1,300				
	120	1,700				
	220	5,600				
	230	5,600				
	240	7,200				

Specification

Contact material	AgSnO alloy	
Contact resistance (1)	50 mΩ Max. (for 731) ; 100 mΩ Max. (for 731H) (at 1A/6VDC by 4-wire resistance measurement)	
Operate time (1)	20 ms Max.	
Release time (1)	20 ms Max.	
Vibration resistance	Operating extremes	10～55Hz , amplitude 1.0 mm
	Damage limits	10～55Hz , amplitude 1.5 mm
Shock resistance	Operating extremes	10G
	Damage limits	100G
Life expectancy	Mechanical	10,000,000 ops. (frequency 18,000 ops./hr)
	Electrical	100,000 ops. (frequency 1,200 ops./hr) (for 731) 50,000 ops. (frequency 360 ops./hr) (for 731H)
Operating ambient temperature	-45～+70°C (no freezing) (for 731)	
	AC coil : -45～+55°C (no freezing) DC coil : -45～+65°C (no freezing) (for 731H)	
Weight	Approx. 79.2 g	

Note：(1) Initial value. Operate and release time excluding contact bounce.

(2) Unless otherwise specified, all tests are under room temperature and humidity.

(3) Consider the heat of PCB is necessary, please check the actual condition of PCB.

(4) Applying no diode to this relay. The life expectancy will be lower when a diode is used. To use a varistor (ZNR) could absorb the coil surge of relay that is recommended.

(5) Do not use the relay exceeding the coil rating, contact rating and life expectancy, or this may cause the risk of overheating.

(6) To assure optimum performance, avoid the relay from dropping, hitting, or other unnecessary shocks.

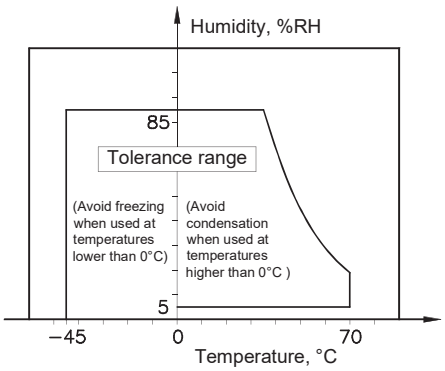
(7) Use suitable harnesses and bus bars according to the current as below：

10A type：Min. 1.5 mm^2

25A type：Min. 3.3 mm^2

(8) Usage, transport and storage conditions

- 1. Temperature: -45～+70°C
- 2. Humidity: 5 to 85% R.H.
- 3. Pressure: 86 to 106 kPa
- Furthermore, the humidity range varies with the temperature. So, use relays within the range indicated in the graph below.



(9) Please contact Song Chuan for the detailed information.

Insulation Data

Insulation resistance (1)	1000 MΩ Min. (DC 500V)		
Dielectric strength (1)	Between open contact	: AC 500V , 50/60Hz 1 min.	(for 731)
		: AC 1000V , 50/60Hz 1 min.	(for 731H)
	Between contact and coil	: AC 1500V , 50/60Hz 1 min.	(for 731)
		: AC 2500V , 50/60Hz 1 min.	(for 731H)
	Between contact circuits	: AC 1500V , 50/60Hz 1 min.	(for 731)
		: AC 2500V , 50/60Hz 1 min.	(for 731H)
Insulation of IEC 61810-1			
Clearance / creepage distances	Between coil to contact	: Reinforce, ≧ 3.0mm / ≧ 5.0mm	
	Between open contact	: Functional	
Rated insulation voltage	250V		
Rated impulse withstand voltage	2500V		
Pollution degree	2		
Rated voltage	230 / 400V		
Overvoltage category	II		

Note：(1) Initial value.

Safety Approval

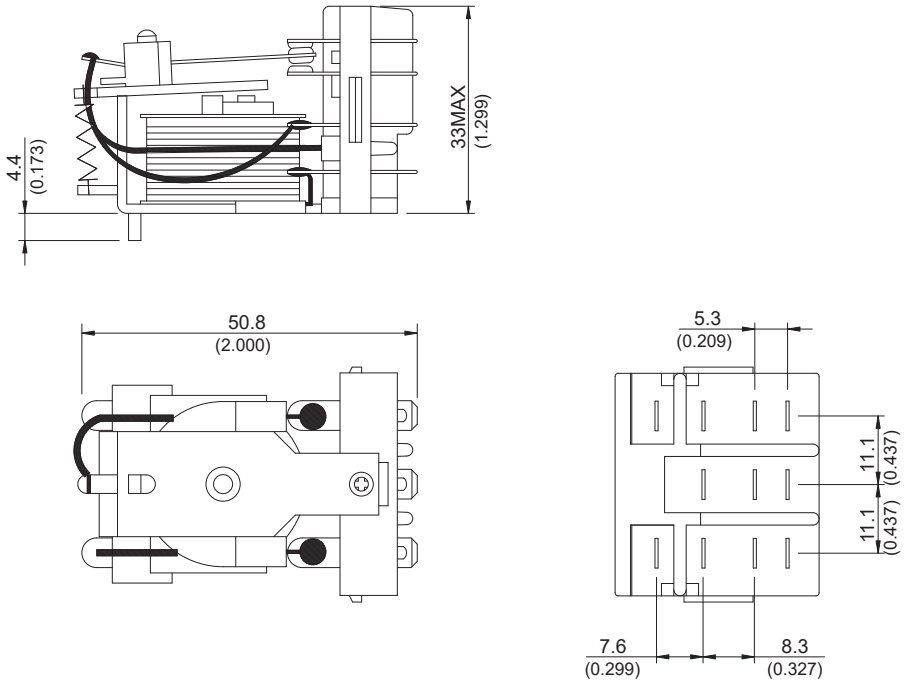
Certified	731	731H
	UL / CUL	UL / CUL
File No.	E88991	E88991

Safety Approval Rating

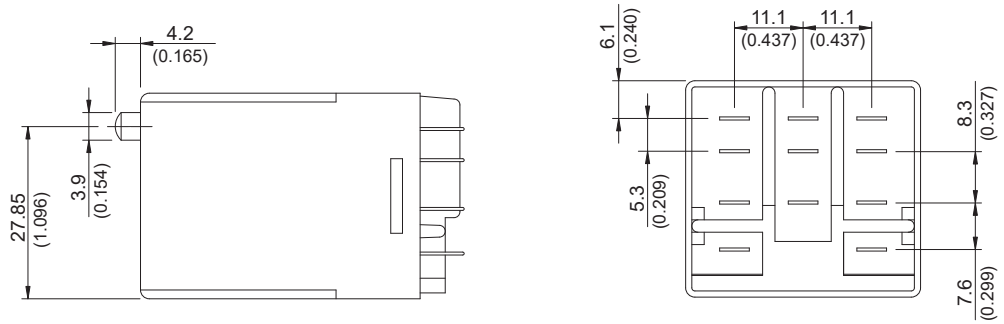
731	731H 1P、2P	731H 3P
UL / CUL	UL / CUL	
10A 240VAC	20A 300VAC	16A 300VAC
10A 28VDC	25A 277VAC	20A 277VAC
1/3HP 120VAC	1.5HP 240VAC	1.5HP 240VAC
1/2HP 240VAC	1HP 120VAC	1HP 120VAC

Outline Dimensions

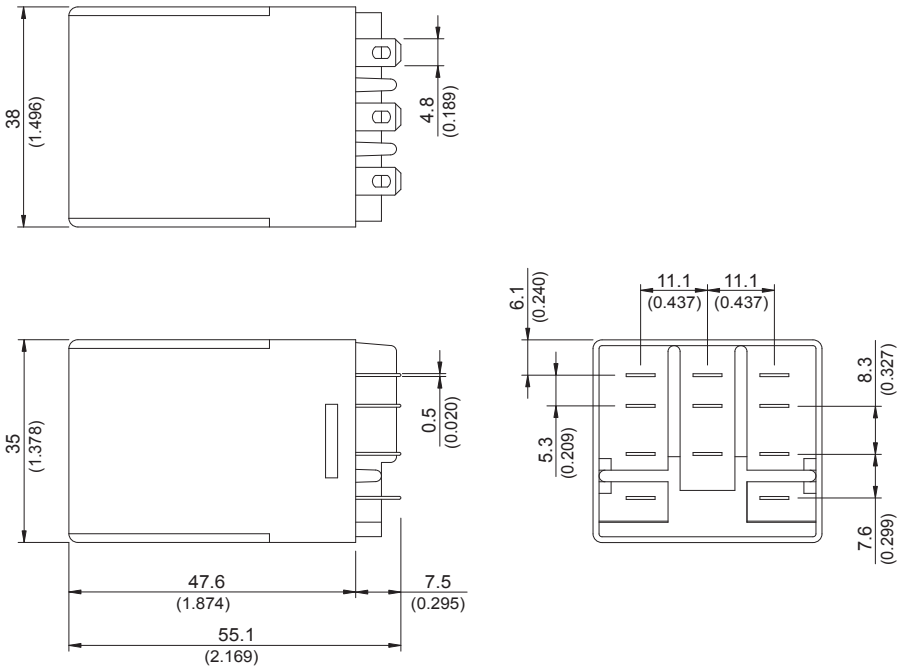
◆731 OPEN



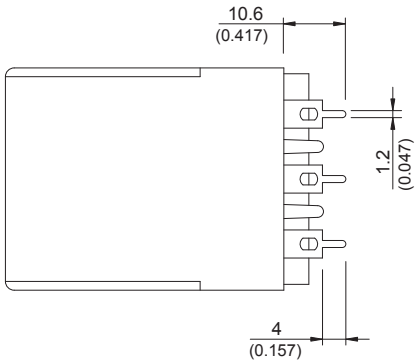
◆731 M



◆731 C



◆731 T



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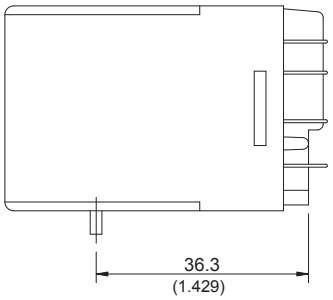
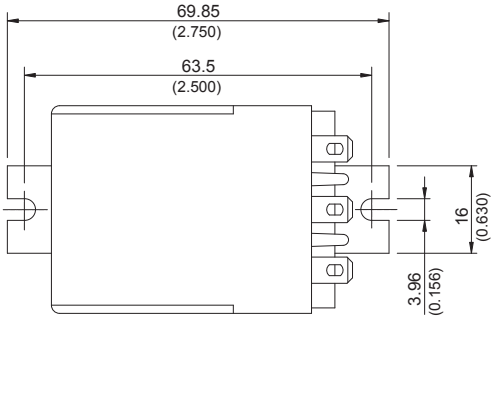
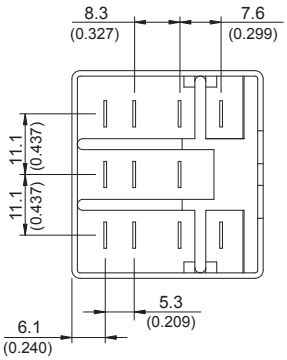
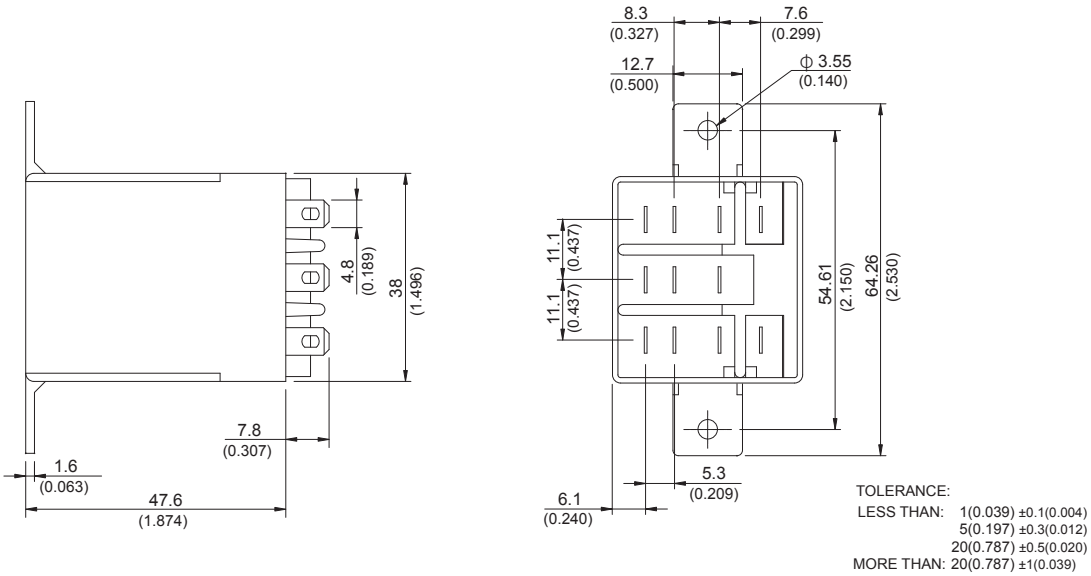


◆731 C1





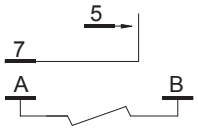
◆731 C3



Wiring Diagram

BOTTOM VIEW

SPNO



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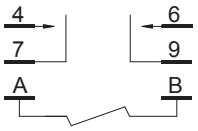

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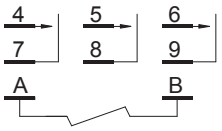
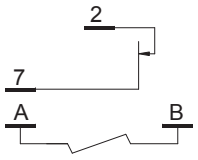
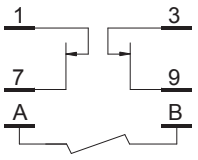


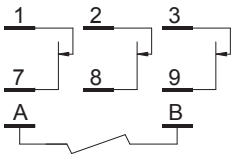
SPNC



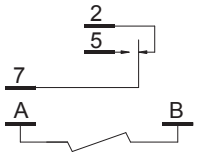
DPNC



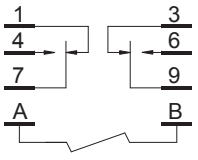
TPNC



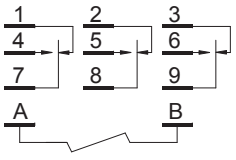
SPDT



DPDT



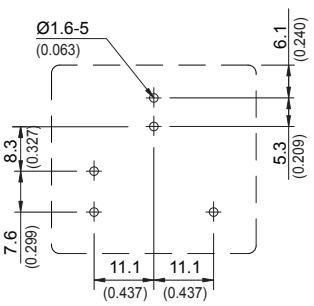
TPDT



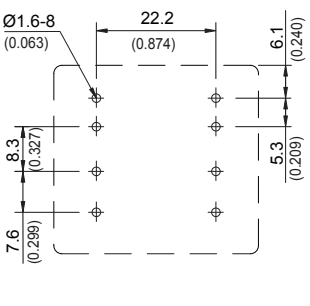
PC Board Layout

BOTTOM VIEW

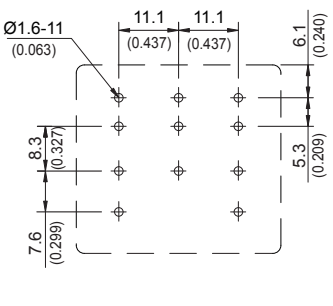
1P SPDT



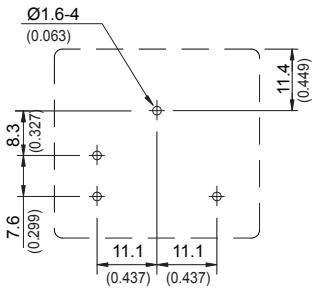
2P DPDT



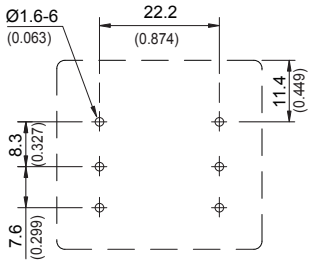
3P TPDT



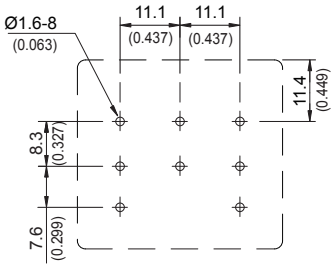
1P SPNO



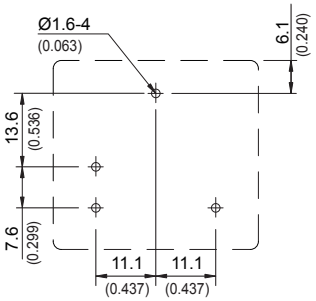
2P DPNO



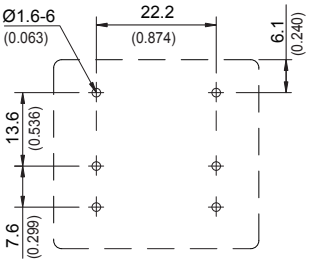
3P TPNO



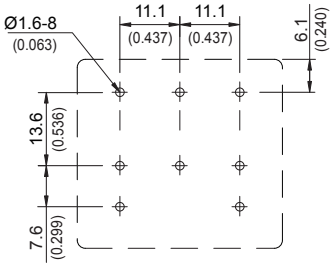
1P SPNC



2P DPNC



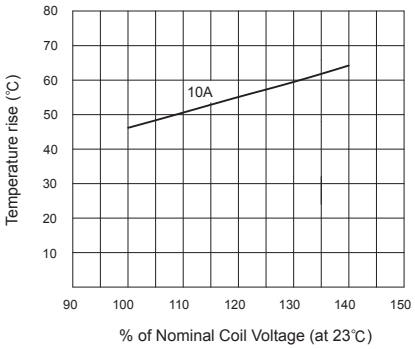
3P TPNC



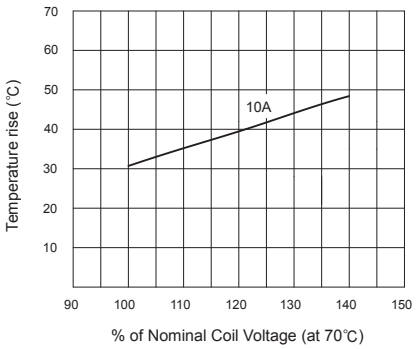
Engineering Data

◆731 (DC coil)

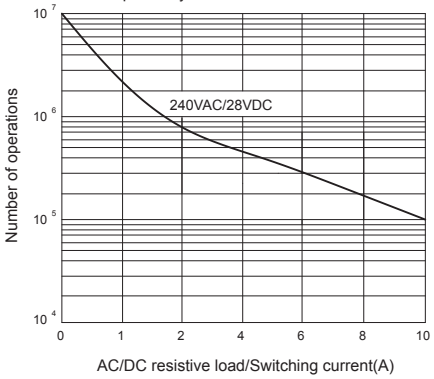
Coil temperature rise



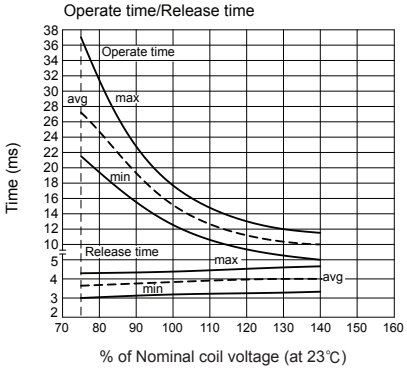
Coil temperature rise



Life expectancy

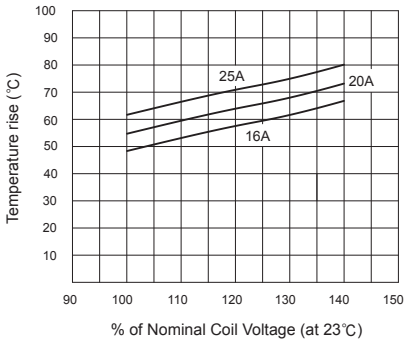


Operate time/Release time

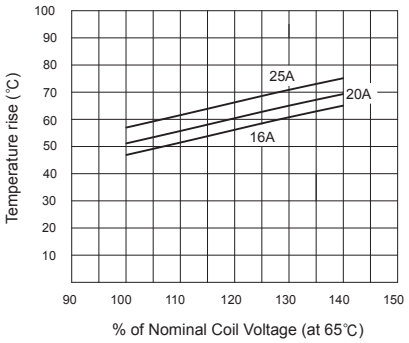


◆731H (DC coil)

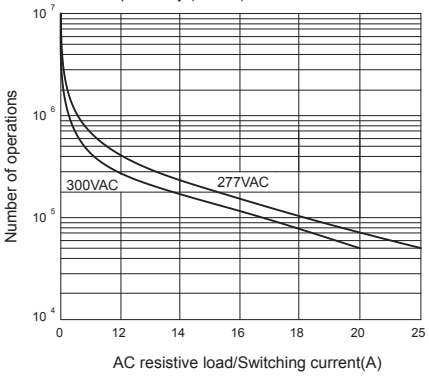
Coil temperature rise



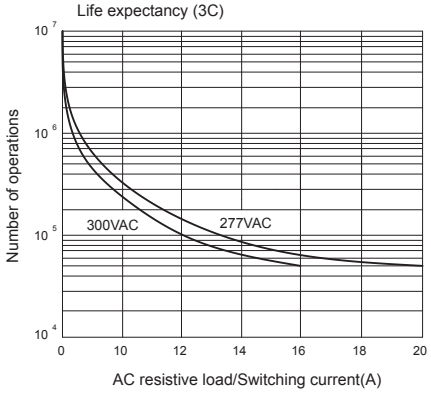
Coil temperature rise



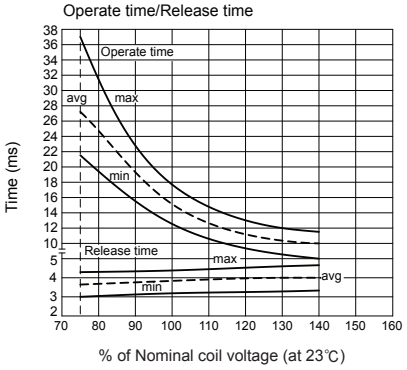
Life expectancy (1C/2C)



Life expectancy (3C)



Operate time/Release time



All specifications subject to change. Please contact Song Chuan for update.