



## »» Features

- 20A/25A general purpose Power Relays.
- SPDT, DPDT, TPDT contact configurations.
- DC & AC coils are both available.
- Optional for flange covers, tapped core w/anti-rotation tab, indicator lamp, push-to-test button, PCB terminals.
- Complies with RoHS-Directive 2011/65/EU.

## »» Type List

### ◆ Standard Type

Terminal style	Contact form	Enclosure style				
		Open type	Dust cover	Ears on cover	Antirotation-tab	Ears on top
Quick terminal	1A (SPNO)	735-1A	735-1A-C	735-1A-C1	735-1A-C2	735-1A-C3
	1B (SPNC)	735-1B	735-1B-C	735-1B-C1	735-1B-C2	735-1B-C3
	1C (SPDT)	735-1C	735-1C-C	735-1C-C1	735-1C-C2	735-1C-C3
	2A (DPNO)	735-2A	735-2A-C	735-2A-C1	735-2A-C2	735-2A-C3
	2B (DPNC)	735-2B	735-2B-C	735-2B-C1	735-2B-C2	735-2B-C3
	2C (DPDT)	735-2C	735-2C-C	735-2C-C1	735-2C-C2	735-2C-C3
	3A (TPNO)	735-3A	735-3A-C	735-3A-C1	735-3A-C2	735-3A-C3
	3B (TPNC)	735-3B	735-3B-C	735-3B-C1	735-3B-C2	735-3B-C3
	3C (TPDT)	735-3C	735-3C-C	735-3C-C1	735-3C-C2	735-3C-C3
PCB terminal	1A (SPNO)	-----	735-1A-C-T	-----	-----	-----
	1B (SPNC)	-----	735-1B-C-T	-----	-----	-----
	1C (SPDT)	-----	735-1C-C-T	-----	-----	-----
	2A (DPNO)	-----	735-2A-C-T	-----	-----	-----
	2B (DPNC)	-----	735-2B-C-T	-----	-----	-----
	2C (DPDT)	-----	735-2C-C-T	-----	-----	-----
	3A (TPNO)	-----	735-3A-C-T	-----	-----	-----
	3B (TPNC)	-----	735-3B-C-T	-----	-----	-----
	3C (TPDT)	-----	735-3C-C-T	-----	-----	-----

### ◆ High Power Type

Terminal style	Contact form	Insulation system	Enclosure style	
			Dust cover	Ears on cover
Quick terminal	1A (SPNO)	F	735H-1A-F-C	735H-1A-F-C1
	1B (SPNC)		735H-1B-F-C	735H-1B-F-C1
	1C (SPDT)		735H-1C-F-C	735H-1C-F-C1
	2A (DPNO)		735H-2A-F-C	735H-2A-F-C1
	2B (DPNC)		735H-2B-F-C	735H-2B-F-C1
	2C (DPDT)		735H-2C-F-C	735H-2C-F-C1

# 735

## »» Ordering Information

735  - 2C -  -  -

1 2 3 4 5 6 7

- 1. 735 -- Basic series designation
- 2. Blank -- Standard type  
H -- High power type
- 3. 1A -- Single pole normally open  
1B -- Single pole normally closed  
1C -- Single pole double throw  
2A -- Double pole normally open  
2B -- Double pole normally closed  
2C -- Double pole double throw  
3A -- Three pole normally open  
3B -- Three pole normally closed  
3C -- Three pole double throw
- 4. Blank -- Standard type  
F -- Class F
- 5. Blank -- Open type  
C -- With cover  
C1 -- With mounting ears on cover  
C2 -- With accessible mounting hole with anti-rotation tab  
C3 -- Mounting ears on top of cover
- 6. Blank -- No special feature  
M -- With manual operator  
T -- Printed circuit board terminals  
L -- Pilot lamp
- 7.  -- Coil voltage (please refer to the coil rating data for the availability)

## »» Contact Rating

TYPE	735		735H
	1A, 1B, 1C, 2A, 2B, 2C	3A, 3B, 3C	
Resistive load	20A 240VAC 15A 28VDC	20A 120VAC 15A 240VAC/28VDC	30A 240VAC 15A 28VDC
Max. switching current	25A	20A	30A
Max. switching voltage	277VAC	277VAC	277VAC
Max. switching capacity	4800VA	2400VA	7200VA

## »» Coil Rating (DC)

### ◆Standard Type

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 50°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
SP	6	188	130 % of rated voltage	80 % of rated voltage	10 % of rated voltage	approx. 1.2W
	12	100				
	24	51				
	48	27				
DP	110	10,000				
	125	12.5				
TP	6	250				approx. 1.5W
	12	125				
	24	63				
	48	31				
	110	11.5				
	125	13				

**◆ High Power Type**

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 55°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
6	188	32	100 % of rated voltage	80 % of rated voltage	10 % of rated voltage	approx. 1.2W
12	100	120				
24	51	472				
48	27	1,800				
110	11	10,000				
125	12.5	10,000				

**»» Coil Rating (AC)**
**◆ Standard Type**

Rated voltage (V)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 50°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage	
SP DP	6	4.2	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 3.0VA
	12	18				
	24	72				
	110	1,580				
	120	1,700				
	220	5,850				
TP	240	7,200	110 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 3.4VA
	6	3.9				
	12	14.5				
	24	64				
	110	1,450				
	120	1,540				
220	5,850					
240	6,750					

**◆ High Power Type**

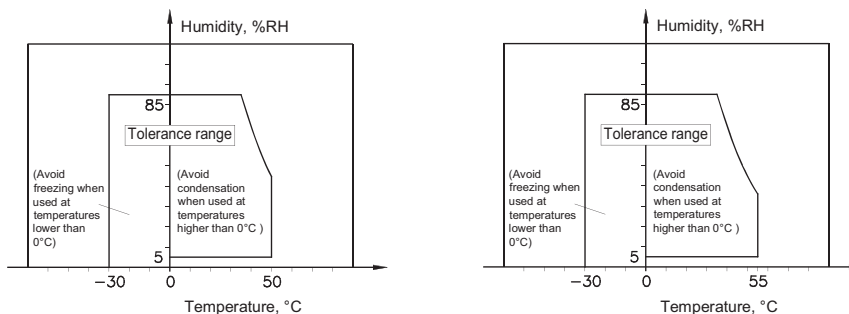
Rated voltage (V)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 55°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
6	4.2	100 % of rated voltage	85 % of rated voltage	30 % of rated voltage	approx. 3.4VA
12	18				
24	72				
110	1,580				
120	1,700				
220	5,850				
240	7,200				

## »» Specification

Contact material	AgSnO alloy	
Contact resistance <sup>(1)</sup>	50 mΩ Max. (for 735) ; 100 mΩ Max. (for 735H) (at 1A/6VDC by 4-wire resistance measurement)	
Operate time <sup>(1)</sup>	25 ms Max.	
Release time <sup>(1)</sup>	20 ms Max.	
Vibration resistance	Operating extremes	10~55Hz, amplitude 2.0 mm
	Damage limits	10~55Hz, amplitude 2.0 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 735)
		NO: 30,000 ops. ; NC: 10,000 ops. (frequency 360 ops./hr) (for 735H)
Operating ambient temperature	-30~+50°C (no freezing) (for 735) -30~+55°C (no freezing) (for 735H)	
Weight	Approx. 80 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) Do not switch the contacts without any load as the contact resistance may become increased rapidly.
- (8) Use suitable harnesses and bus bars according to the current as below :  
 20A type : Min. 3.0 mm<sup>2</sup>  
 30A type : Min. 6.0 mm<sup>2</sup>
- (9) Usage, transport and storage conditions
  - 1. Temperature: 735 : -30~+50°C 735H : -30~+55°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.



- (10) Please contact Song Chuan for the detailed information.

## »» Insulation Data

Insulation resistance <sup>(1)</sup>	1000 MΩ Min. (DC 500V)
Dielectric strength <sup>(1)</sup>	Between open contact : AC 1000V, 50/60Hz 1 min. (for 735) : AC 1500V, 50/60Hz 1 min. (for 735H)
	Between contact and coil : AC 1600V, 50/60Hz 1 min. (for 735) : AC 3000V, 50/60Hz 1 min. (for 735H)
	Between contact circuits : AC 1600V, 50/60Hz 1 min. (for 735) : AC 3000V, 50/60Hz 1 min. (for 735H)
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	735		735H
	UL / CUL	CSA	UL / CUL
File No.	E88991	1664125	E88991

## »» Safety Approval Rating(UL / CUL 、 CSA)

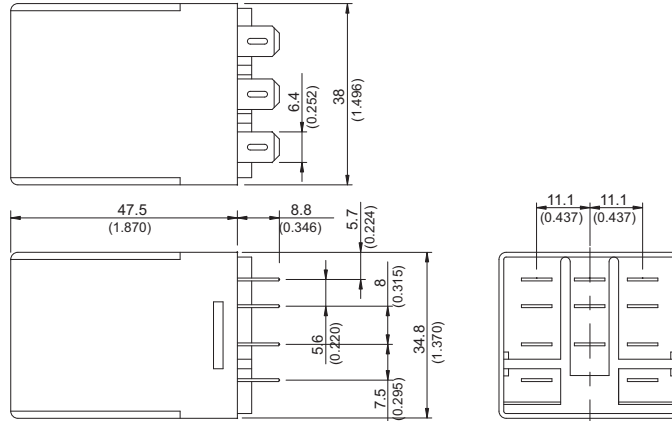
UL / CUL			CSA		
735 1A, 1B, 1C	735 2A, 2B, 2C	735 3A, 3B, 3C	735 1A, 1B, 1C	735 2A, 2B, 2C	735 3A, 3B, 3C
25A 28VDC	20A 28VDC	15A 28VDC	30A 277VAC	25A 277VAC	20A 277VAC
25A 277VAC	25A 277VAC	20A 277VAC	10A 600VAC	10A 600VAC	15A 28VDC
10A 600VAC	10A 600VAC	3/4HP 120VAC	25A 28VDC	20A 28VDC	3/4HP 120VAC
1.5HP 240VAC	1.5HP 240VAC	1HP 240VAC	1.5HP 240VAC	1.5HP 240VAC	1HP 240VAC
1HP 120VAC	1HP 120VAC		1HP 120VAC	1HP 120VAC	

UL / CUL	
735H 1A, 1B, 1C	735H 2A, 2B, 2C
30A 277VAC	30A 277VAC
25A 28VDC	20A 28VDC
10A 600VAC	10A 600VAC
1.5HP 240VAC	1.5HP 240VAC
1HP 120VAC	1HP 120VAC

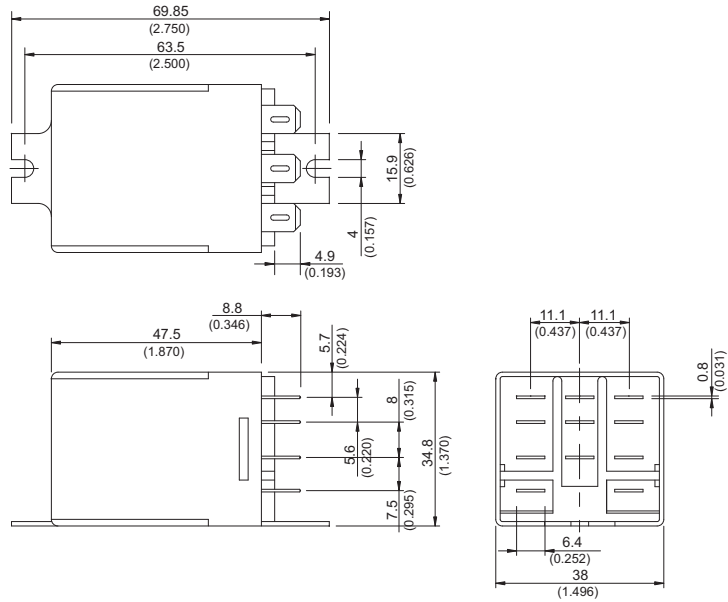
# 735

## »» Outline Dimensions

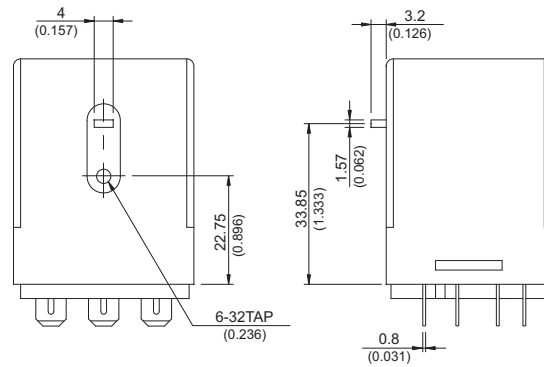
### ◆ 735 C



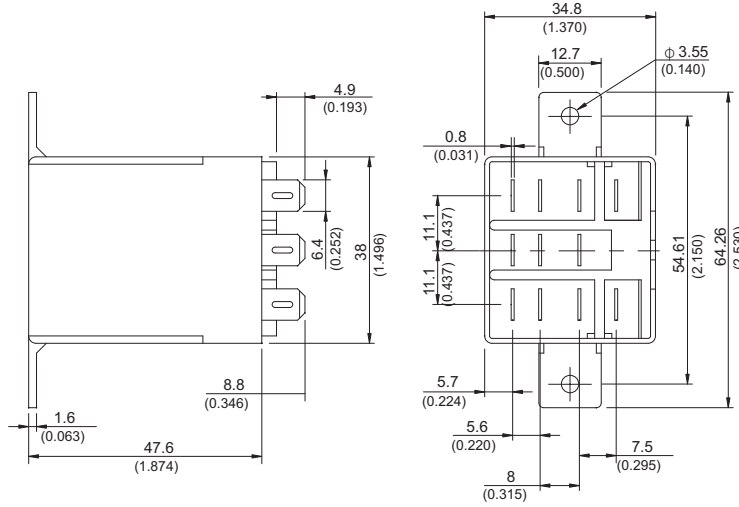
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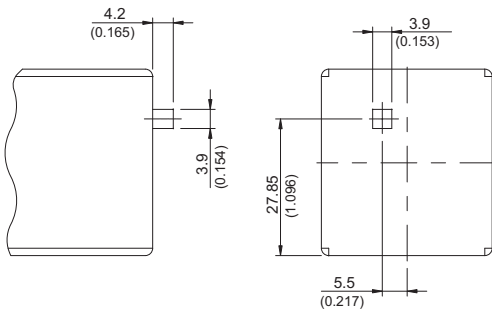
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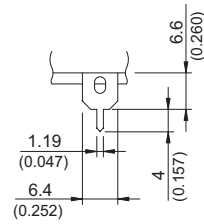
◆735 C3



◆735 M

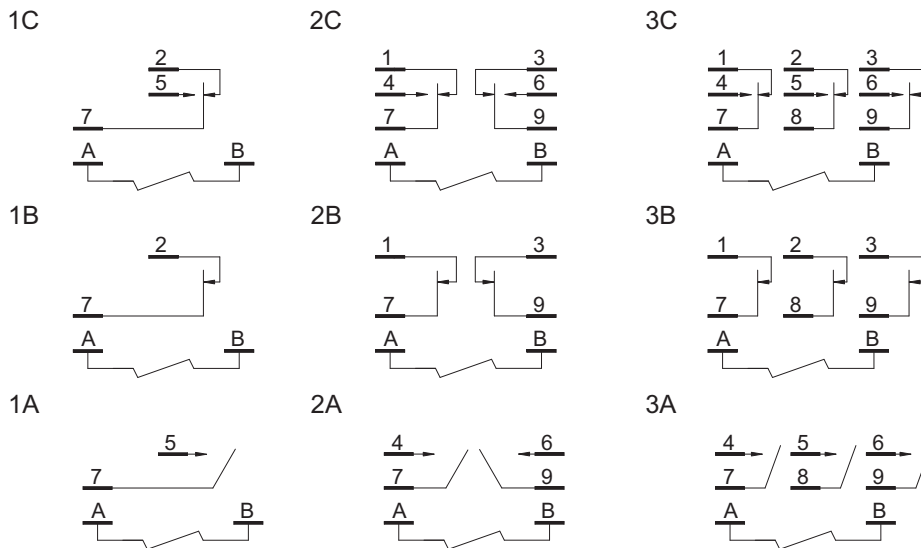


◆735 T



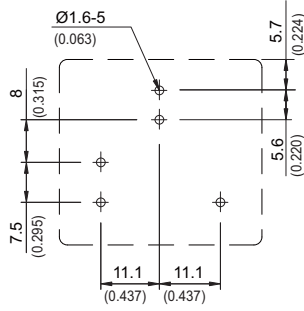
TOLERANCE:  
 LESS THAN: 1(0.039) ±0.1(0.004)  
 5(0.197) ±0.3(0.012)  
 20(0.787) ±0.5(0.020)  
 MORE THAN: 20(0.787) ±1(0.039)

»» Wiring Diagram  
 BOTTOM VIEW

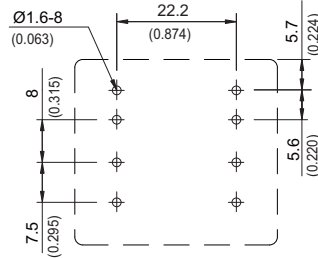


»» PC Board Layout  
BOTTOM VIEW

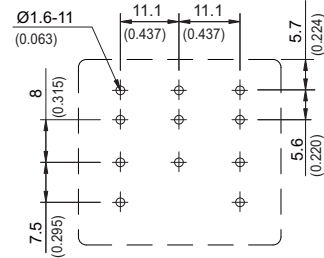
1C



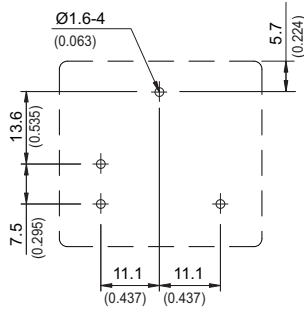
2C



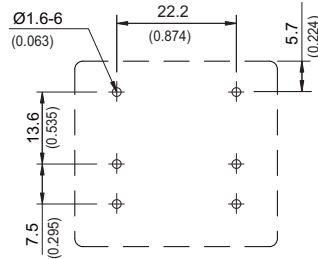
3C



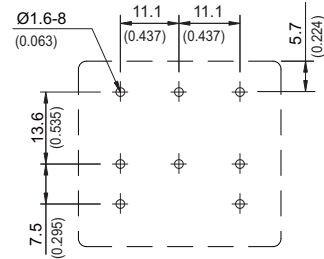
1B



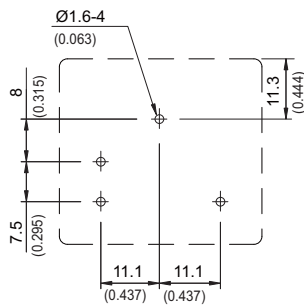
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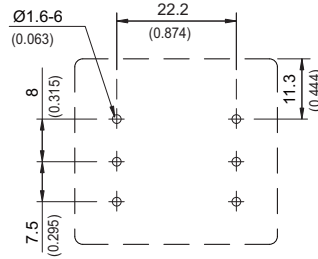
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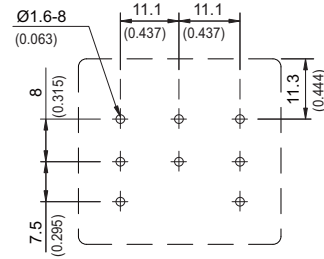
1A



2A



3A





## »» Engineering Data

