302



Features

- 20A miniature PCB Power Relay.
- 1 form A contact configuration with quick terminal type.
- 5KV dielectric strength, 10K surge voltage between coils to contact.
- Ideal for high rating Home Appliances of heating element control.
- Complies with RoHS-Directive 2011/65/EU.

Type List

◆Standard Type

Terminal style	Contact form	UL Insulation system approval	Designation (provided with) Flux tight
P (PCB terminal)	1A (SPNO)	----------	302P-1AB-C
		----------	302P-1AH-C
		----------	302P-1AC-C
		F	302P-1AB-F-C
		F	302P-1AH-F-C
		F	302P-1AC-F-C
WP (PCB terminal & Quick terminal)	1A (SPNO)	----------	302WP-1AB-C
		----------	302WP-1AH-C
		----------	302WP-1AC-C
		F	302WP-1AB-F-C
		F	302WP-1AH-F-C
		F	302WP-1AC-F-C
WP1 PCB terminals (2 coil terminals & 1 NO terminal) & Quick terminals	1A (SPNO)	----------	302WP1-1AB-C
		----------	302WP1-1AH-C
		----------	302WP1-1AC-C
		F	302WP1-1AB-F-C
		F	302WP1-1AH-F-C
		F	302WP1-1AC-F-C
WP2 PCB terminals (2 coil terminals & 2 stationary support terminals) & Quick terminals	1A (SPNO)	----------	302WP2-1AB-C
		----------	302WP2-1AH-C
		----------	302WP2-1AC-C
		F	302WP2-1AB-F-C
		F	302WP2-1AH-F-C
		F	302WP2-1AC-F-C

◆ High Sensitivity Type

P (PCB terminal)	1A (SPNO)	---------	302NP-1AB-C
		---------	302NP-1AH-C
		---------	302NP-1AC-C
		F	302NP-1AB-F-C
		F	302NP-1AH-F-C
		F	302NP-1AC-F-C
WP (PCB terminal & Quick terminal)	1A (SPNO)	---------	302NWP-1AB-C
		---------	302NWP-1AH-C
		---------	302NWP-1AC-C
		F	302NWP-1AB-F-C
		F	302NWP-1AH-F-C
		F	302NWP-1AC-F-C
WP1 PCB terminals (2 coil terminals & 1 NO terminal) & Quick terminals	1A (SPNO)	---------	302NWP1-1AB-C
		---------	302NWP1-1AH-C
		---------	302NWP1-1AC-C
		F	302NWP1-1AB-F-C
		F	302NWP1-1AH-F-C
		F	302NWP1-1AC-F-C
WP2 PCB terminals (2 coil terminals & 2 stationary support terminals) & Quick terminals	1A (SPNO)	---------	302NWP2-1AB-C
		---------	302NWP2-1AH-C
		---------	302NWP2-1AC-C
		F	302NWP2-1AB-F-C
		F	302NWP2-1AH-F-C
		F	302NWP2-1AC-F-C

Ordering Information

302 □ WP - 1A H - □ - C □ □

1 2 3 4 5 6 7 8 9

1. 302 -- Basic series designation

2. Blank -- Standard type
   N -- High sensitivity type

3. P -- PCB terminals
   WP -- PCB terminals and Quick terminals
   WP1 -- PCB terminals (2 coil terminals and 1 NO terminal) and Quick terminals
   WP2 -- PCB terminals (2 coil terminals and 2 stationary support terminals) and Quick terminals

4. 1A -- Single pole normally open

5. B -- Contact material AgCdO
   C -- Contact material AgNi
   H -- Contact material AgSnO

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

7. C -- Flux tight

8. Blank -- Standard type
   E1 -- Comply with IEC 60335-1

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

Contact Rating

Resistive load	17A 240VAC
Max. switching current	20A
Max. switching voltage	277VAC
Max. switching capacity	4080VA

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 85°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
3	176	17	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.53W
5	106	47				
6	88	68				
9	59	153				
12	44	272				
15	35	425				
18	29	611				
21	25	832				
24	22	1,087				
36	15	2,445				
48	11	4,347				
60	8.8	6,792				
100	5.3	18,868				
110	4.8	22,830				

◆High Sensitivity Type

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 85°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
3	133	22.5	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.4W
5	80	62.5				
6	67	90				
9	44	202.5				
12	33	360				
15	27	563				
18	22	810				
21	19	1,103				
24	17	1,440				

◆High Sensitivity Type

Rated voltage (V)	Rated current ±10 % at 23°C (mA)	Coil resistance ±10 % at 23°C (Ω)	Max. continuous voltage at 85°C	Pick up voltage(Max.) at 23°C	Drop out voltage(Min.) at 23°C	Power consumption at rated voltage
36	11	3,240	160 % of rated voltage	75 % of rated voltage	10 % of rated voltage	approx. 0.4W
48	8.3	5,760				
60	6.7	9,000				
100	4.0	25,000				
110	3.6	30,250				

Specification

Contact material	AgSnO / AgNi / AgCdO alloy	
Contact resistance (1)	50mΩ Max. (at 1A/6VDC by 4-wire resistance measurement)	
Operate time (1)	20ms Max.	
Release time (1)	10ms Max.	
Vibration resistance	Operating extremes	10～55Hz , amplitude 1.5 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 1,800 ops./hr)
Operating ambient temperature	-40～+85°C (no freezing)	
Weight	Approx. 17 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.

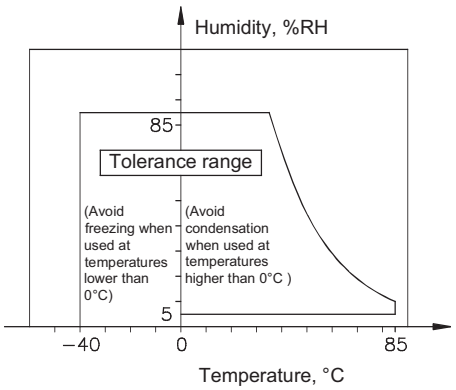
(6) To assure optimum performance, avoid the relay from dropping, hitting, or other unnecessary shocks.

(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：
17A type：Min. 3.0 mm^2

(9) Usage, transport and storage conditions

- 1. Temperature: -40～+85°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 (1)	1000 MΩ Min. (DC 500V)	
Dielectric strength (1)	Between open contact	: AC 1000V , 50/60Hz 1 min.
	Between contact and coil	: AC 5000V, 50/60Hz 1 min.
Insulation of IEC 61810-1		
Clearance / creepage distances	Between coil to contact	: Reinforce, ≧ 6.0mm / ≧ 8.0mm
	Between open contact	: Functional
Rated insulation voltage	250V	
Rated impulse withstand voltage	4000V	
Pollution degree	3	
Rated voltage	230 / 400V	
Overvoltage category	II	

Note：(1) Initial value.

Safety Approval

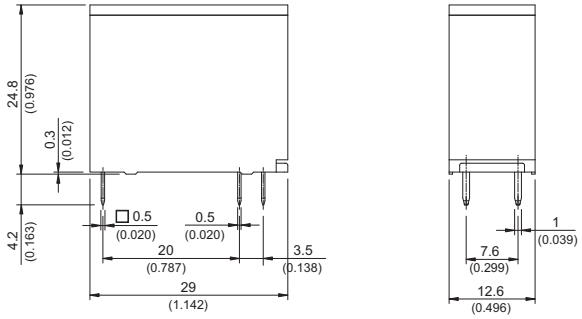
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File No.	E88991	R 50025929

Safety Approval Rating

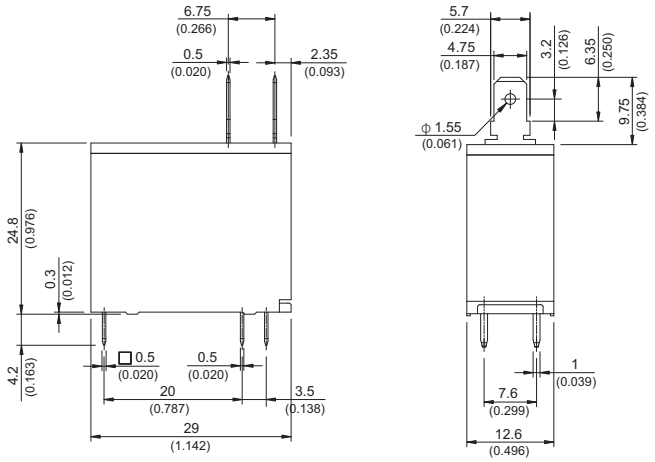
UL / CUL		TUV
B、BA / C、CA	H、HA	
20A 277VAC 1 1/2HP 250VAC 1HP 125VAC	20A 277VAC 1 1/2HP 250VAC 8A 120VAC Tungsten	17A 250VAC 20A 250VAC 12A 250VAC cos ϕ 0.4

Outline Dimensions

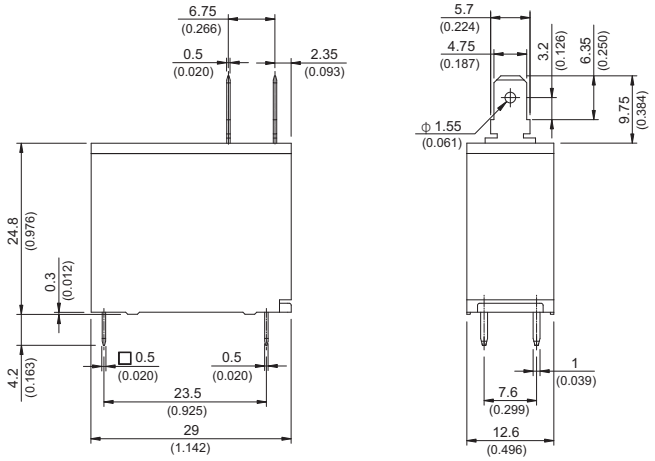
◆302P



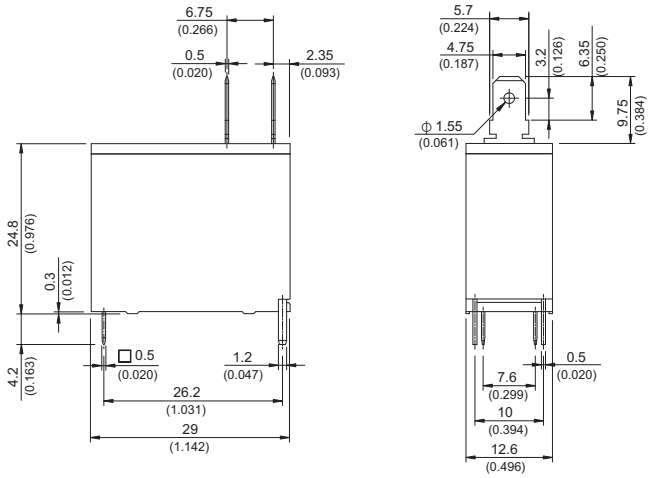
◆302WP



◆302WP1



◆302WP2



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

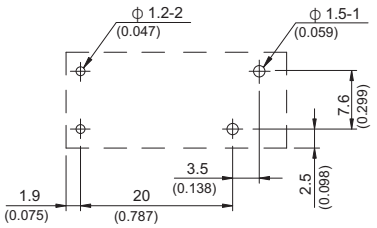
BOTTOM VIEW



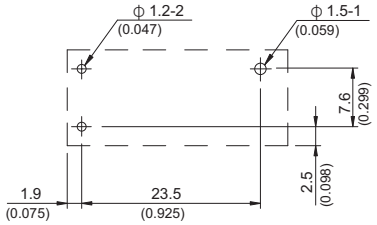
PC Board Layout

BOTTOM VIEW

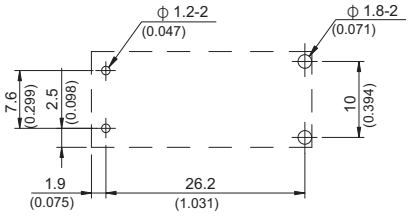
◆302P, 302WP



◆302WP1

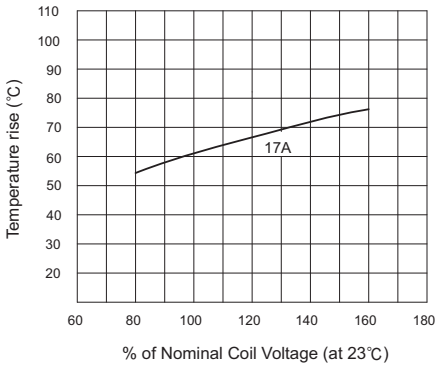


◆302WP2

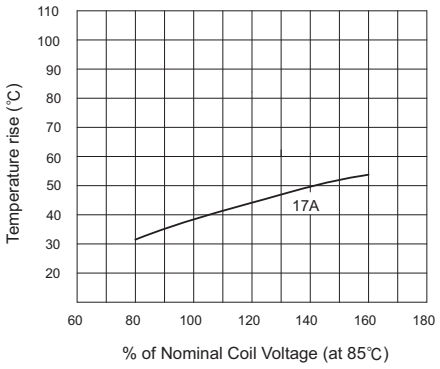


Engineering Data

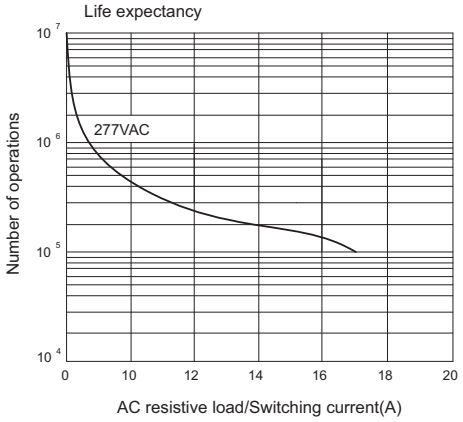
Coil temperature rise (Standard type)



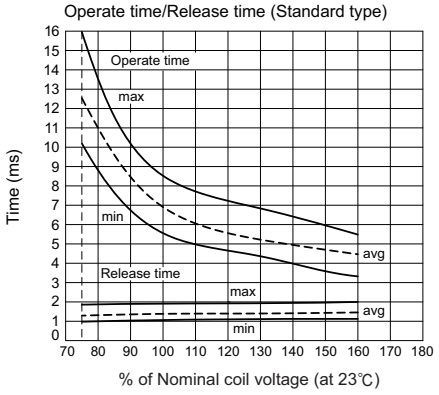
Coil temperature rise (Standard type)



Life expectancy



Operate time/Release time (Standard type)



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

Unikeyic Electronics

Global Electronic Components Distributor

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Song Chuan Precision:

898H-1AH-C-R1-U04-12VDC 303-1AH-C-12VDC 735-1C-C3-240VAC 833H-1C-C-12VDC
841P-2A-D-H-24VDC 896H-1AH-D1-12VDC 897-1AH-C-001-12VDC 871-1C-S-D1-24VDC
894H-2CH1-F-S-12VDC S14WP 841P-1A-S-100120VAC 896H-1CH-D1-12VDC 301-1C-C-D1 U05 24 Vdc
301-1C-C-R1-U01-12VDC 832A-1A-F-S-24VDC 833H-1C-S-24VDC 896H-1CH-C-R1-U24-12VDC
897-1AH-C-R1-U03-12VDC 897-1AH-C-R1-U09-12VDC 731-DPDT-C-24VDC
896H-1CH-C1S-R1-U03-12VDC 897-1AH-D1SW-R1-T-12VDC 833H-1C-S-36VDC
896H-1CH-D1SF-T-001-12VDC 896H-1CH-S-R1-12VDC SCLDWB4PDTC24VDC 833H-1C-C-24VDC
841S-2A-C1-12VDC 871-1C-C-R1-12VDC 896H-1AH-S-R1-12VDC