

## Features

- 20A switching capability
- Can supply the product of highly efficient magnetic circuit for high sensitivity: 250mW
- Can supply the product meet the standards of IEC60335-1、IEC60730-1、IEC62368-1
- Dielectric strength 5KV (between coil and contacts)
- Creepage distance and Air distance≥15mm
- We can provide the product with ambient temperature is 105°C
- UL insulation system: Class F
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (28.8×12.5×15.7) mm
- Main application: Home appliance、Smart home、Industrial Control



**TV-8** c  <sup>®</sup> US

## CHARACTERISTICS

Specifications	Item		
Contact Data	Contact arrangement		1A、1B、1C
	Contact resistance(initial)		100mΩ(6VDC 1A)
	Contact material		AgSnO <sub>2</sub>
Rated value	Rated load(Resistance load)		16A 250VAC/30VDC
	Max.switching voltage		400VAC/30VDC
	Max.switching current		20A
	Max.switching capacity		4000VA/480W
	Min.allowing load		5VDC 100mA
Electrical performance	Insulation resistance(initial)		1000MΩ (500VDC)
	Dielectric strength (initial)	Between open contacts	1000VAC, 1 min
		Between coil&contacts	4000VAC, 1 min
	Operate time		≤15ms
	Release time		≤10ms
Mechanical performance	Shock resistance	Functional	98m/s <sup>2</sup> (10g)
		Destructive	980m/s <sup>2</sup> (100g)
	Vibration resistance		10Hz~55Hz 1.5mm DA
Endurance	Mechanical		1×10 <sup>7</sup> ops
	Electrical	20A 250VAC/30VDC	5×10 <sup>4</sup> ops (ON/OFF=1s/9s)
		16A 250VAC/30VDC	1×10 <sup>5</sup> ops (ON/OFF=1s/9s)
Operate condition	Ambient temperature		-40°C ~ 85°C
	Humidity		5% to 90%
Termination			PCB
Unit weight			Approx.12g
Construction			Plastic sealed、Flux proofed

## COIL DATA(23°C)

### Standard Type

Nominal Voltage	Pick-up Voltage VDC	Drop-out Voltage VDC	Rated Current (±10%)	Coil Resistance (±10%)	Nominal Power	Max Voltage
DC 3V	≤2.25	≥0.15	133.3mA	22.5Ω	400mW	130%Nominal Voltage
DC 5V	≤3.75	≥0.25	80mA	62.6Ω		
DC 6V	≤4.50	≥0.30	66.7mA	90Ω		
DC 9V	≤6.75	≥0.45	44.4mA	202.5Ω		
DC 12V	≤9.00	≥0.60	33.3mA	360Ω		
DC 15V	≤11.25	≥0.75	26.7mA	562.5Ω		
DC 18V	≤13.50	≥0.90	22.2mA	810Ω		
DC 24V	≤18.00	≥1.20	16.7mA	1440Ω		
DC 48V	≤36.00	≥2.40	8.3mA	5760Ω		

### Sensitive Type

Nominal Voltage	Pick-up Voltage VDC	Drop-out Voltage VDC	Rated Current (±10%)	Coil Resistance (±10%)	Nominal Power	Max Voltage
DC 3V	≤2.4	≥0.15	83.3mA	36Ω	250mW	130%Nominal Voltage
DC 5V	≤4.0	≥0.25	50mA	100Ω		
DC 6V	≤4.8	≥0.30	41.7mA	144Ω		
DC 9V	≤7.2	≥0.45	27.8mA	324Ω		
DC 12V	≤9.6	≥0.60	20.8mA	576Ω		
DC 15V	≤12.0	≥0.75	16.7mA	900Ω		
DC 18V	≤14.4	≥0.90	13.9mA	1296Ω		
DC 24V	≤19.2	≥1.20	10.4mA	2304Ω		
DC 48V	≤38.4	≥2.40	5.2mA	9216Ω		

## ORDERING INFORMATION

**W15 -1A 1 S T L -XXX DC12V**

① Type

② Contact arrangement(1): 1A=1 open contacts、  
1B=1 close contacts、 1C=1 switched contacts

③ PCB mounting(2): 1=1 type 1、 2=2 type 2

④ Construction: Nil=Flux proofed, S=Plastic sealed

⑤ Contact material: T=AgSnO<sub>2</sub>

⑥ Coil power: Nil=Standard、 L=Sensitive

⑦ Customer special code: numbers or letters denote customer's requirements

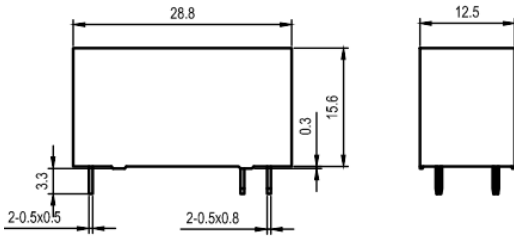
⑧ Coil specification: DC3/5/6/9/12/15/18/24/48/60/110V

Notes:(1)If need the contact arrangement is 1B,please contact with the salesman to ask for the outline dimensions,wiring diagram and PC board layout.

(2)If need the single PCB mounting 5 mm,please contact with the salesman to ask for the outline dimensions,wiring diagram and PC board layout.

# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT (Unit: mm)

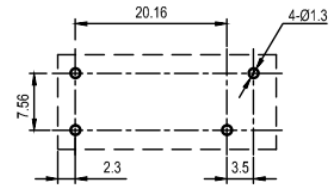
**1A1** Outline Dimensions



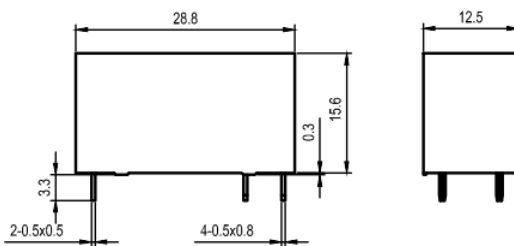
Wiring Diagram  
(Bottom view)



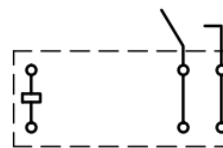
PCB Layout  
(Bottom view)



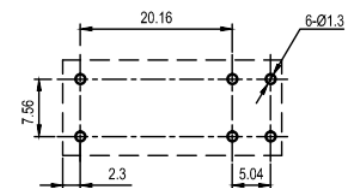
**1A2** Outline Dimensions



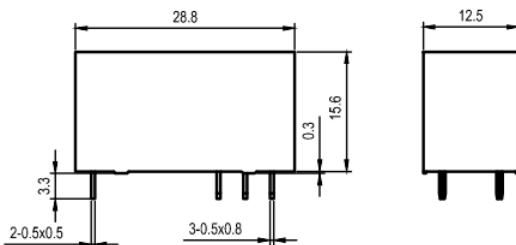
Wiring Diagram  
(Bottom view)



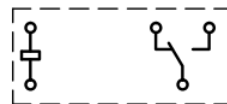
PCB Layout  
(Bottom view)



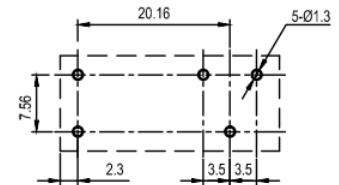
**1C1** Outline Dimensions



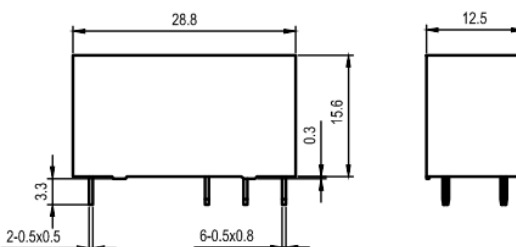
Wiring Diagram  
(Bottom view)



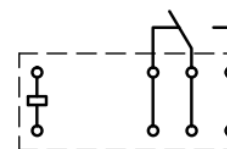
PCB Layout  
(Bottom view)



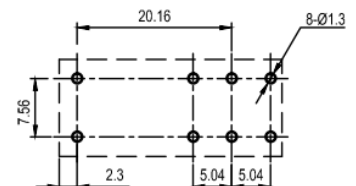
**1C2** Outline Dimensions



Wiring Diagram  
(Bottom view)



PCB Layout  
(Bottom view)



Remark: (1) In case of no tolerance shown in outline dimension: outline dimension  $\leq 1$  mm, tolerance should be  $\pm 0.2$  mm; outline dimension  $> 1$  mm and  $< 5$  mm, tolerance should be  $\pm 0.3$  mm; outline dimension  $\geq 5$  mm, tolerance should be  $\pm 0.5$  mm.

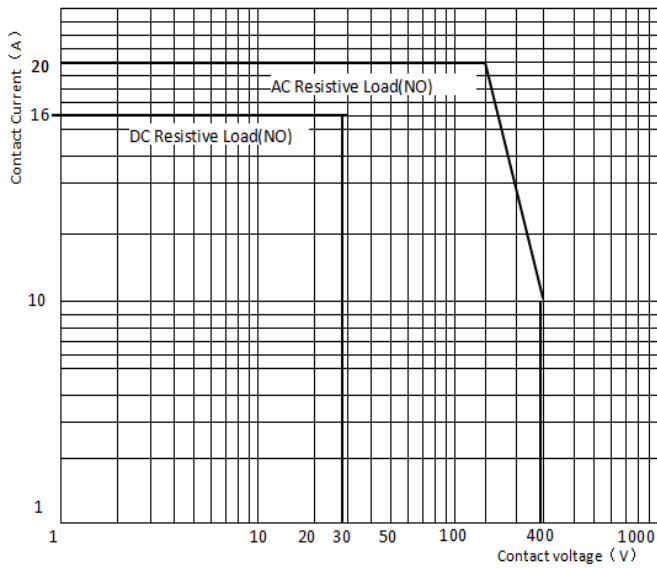
(2) The tolerance without indicating for PCB layout is always  $\pm 0.1$  mm.

## SAFETY APPROVAL RATINGS

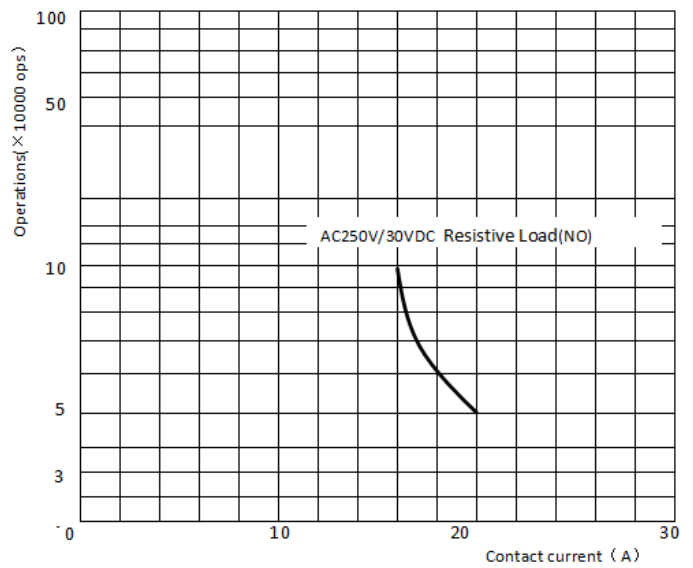
Approval	File No.	Contact arrangement	Contact material	Approved ratings
UL/C-UL	E475405	1A、1C(NO)	AgSnO <sub>2</sub>	Standard(1A1、1C1): 12A 250VAC/30VDC 85℃ Standard(1A2、1C2): 16A 250VAC/30VDC 85℃ 12A 250VAC 105℃ 5A 400 VAC 85℃ 18A 125VAC 85℃ 1HP 250VAC 85℃ 10A 250VAC (PF=0.6) 85℃ TV-8 125VAC 85℃ 2000W 250VAC (Tungsten ) 85℃ Sensitive (1A1、1C1): 12A 250VAC/30VDC 85℃ Sensitive (1A2、1C2): 16A 250VAC/30VDC 85℃
		1B、1C(NC)		Standard(1B1、1C1): 12A 250VAC/30VDC 85℃ Standard(1B2、1C2): 16A 250VAC/30VDC 85℃ Sensitive (1B1、1C1): 12A 250VAC/30VDC 85℃ Sensitive (1B2、1C2): 16A 250VAC/30VDC 85℃
TUV	R 50332875	1A(NO)	AgSnO <sub>2</sub>	20A 250VAC 85℃ 16A 250VAC 105℃ 16A 250VAC/30VDC 85℃
		1B(NC)		16A 250VAC/30VDC 85℃
		1C(CO)		10A/10A 250VAC/30VDC 85℃
CQC	CQC15002137649	1A、1B、1C	AgSnO <sub>2</sub>	16A 250VAC/30VDC 85℃

## ■ PERFORMANCE CURVES

### MAXIMUM SWITCHING POWER



### ENDURANCE CURVE



## ■ NOTICE

- ① If the relay needs to be cleaned or used in bad environment(e.g:dust or organic gas),we recommend plastic sealed type.
- ② The specification is for reference only,specifications subject to change without notice.