Miniature High Power Latching Relay	THLS

Features

- Latching relay
- Special contact structure
- Incandescent lamp load: 3500W 277VAC
- 5kV dielectric strength
  (between coil and contacts)
- Creepage distance: 11mm
- Low height: 15.7mm
- Meeting reinforce insulation
- Product in accordance to EN60669-1 available
- Product in accordance to IEC 60335-1 available
- UL insulation system: Class F

c US
(File No.:E134581)

(File No.: 40038122)

1. COIL DATA (at 23°C)

1) 1 coil latching

Nominal Voltage (VDC)	Set Voltage (VDC) max.[1]	Pulse Width (ms)		Reset Voltage (VDC) max.[1]	Max.Voltage (VDC)[2]	Coil Resistance (Ω)	Coil Power (mW)
		Typical	Min.				
5	3.50	≥50	30	3.50	6.00	62 x (1±10%)	Approx. 400
6	4.20	≥50	30	4.20	7.20	90 x (1±10%)	
9	6.30	≥50	30	6.30	10.8	202 x (1±10%)	
12	8.40	≥50	30	8.40	14.4	360 x (1±10%)	
24	16.8	≥50	30	16.8	28.8	1440 x (1±10%)	

2) 2 coils latching

Nominal Voltage (VDC)	Set Voltage (VDC) max.[1]	Pulse Width (ms)		Reset Voltage (VDC) max.[1]	Max.Voltage (VDC)[2]	Coil Resistance (Ω)	Coil Power (mW)
		Typical	Min.				
5	3.50	≥50	30	3.50	7.50	42 x (1±10%)	Approx. 600
6	4.20	≥50	30	4.20	9.00	55 x (1±10%)	
9	6.30	≥50	30	6.30	13.5	135 x (1±10%)	
12	8.40	≥50	30	8.40	18.0	240 x (1±10%)	
24	16.8	≥50	30	16.8	36.0	886 x (1±10%)	

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

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

2. CONTACT DATA

Contact Arrangement		1 Form A
Contact Resistance[1)]		100mΩ max. (at 1A 6VDC)
Contact Material		W + $AgSnO_2$
Contact Ratings		Resistive: 16A 250VAC Incandescent lamp: 3500W 277VAC Inrush current: 165A / 20ms LED(Electronic ballast): 492A/1.5ms
Max. Switching Voltage		480VAC
Max. Switching Current		16A
Max. Switching Power		4000VA
Life Expectancy	Electrical	12,000 operations (3500W 277VAC, Tungsten lamp, at 40℃, 1s on 59s off) 6,000 operations (16A 250VAC, Resistive load, at 85℃, 5s on 5s off)
	Mechanical	2,000,000 operations

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

3. CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)
Dielectric Strength	Open Contacts	1250VAC 1min
	Coil and Contacts	5000VAC 1min
Surge voltage (between coil and contacts)		10kV (1.2 / 50μs)
Set Time (at nominal voltage)		10ms max.
Reset Time (at nominal voltage)		10ms max.
Temperature Range		-40℃ ~ 85℃
Temperature Rise (at nominal voltage)		55K max.
Shock Resistance*	Functional	98m/s^2
	Destructive	980m/s^2
Vibration Resistance*		10 ~ 150Hz 10g
Humidity		5 ~ 85% RH
Termination		PCB
Weight		Approx. 13.5g
Outline Dimension (L x W x H)		29.0 x 12.7 x 15.7mm

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

2) *Index is not that of relay length direction.

3) This contact resistance value is tested under the normal voltage.

4. SAFETY APPROVAL

UL/cUL	16A 250VAC General use at 85℃ Standard ballast 2A 347/480VAC at 60℃ Standard ballast 5A 277VAC at 40℃ Electronic ballast 2A 347/480VAC at 60℃ Electronic ballast 16A 120VAC at 40℃ Electronic ballast 16A 277VAC at 40℃ 3500W 277VAC Tungsten Lamp at 40℃ TV-15 120VAC 40℃ Tungsten 15A 120VAC 40℃
VDE	16A 250VAC Resistive at 85℃ EN60669: 16A 250VAC COSΦ=0.6 16A 250VAC 140μF

Notes: 1) All values unspecified are at room temperature.

2) Only typical loads are listed above. Other load specifications can be available upon request.

5. ORDERING INFORMATION

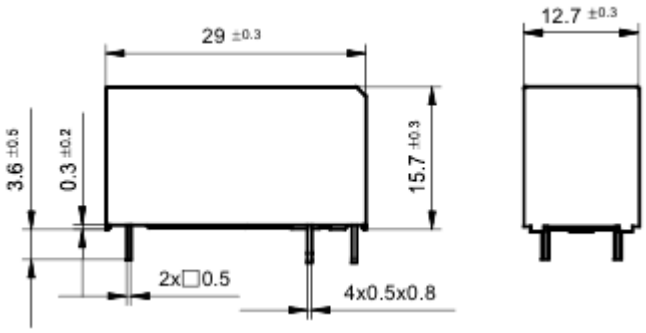
THLS ①	11 ②	-	12 ③	S ④	L1 ⑤

① Relay Model	THLS
② Contact Arrangement	11: 1 Form A
③ Coil Voltage	5=5VDC, 6=6VDC, 9=9VDC, 12=12VDC, 24=24VDC
④ Construction	S: Sealed type
⑤ Sort	L1: 1 coil latching L2: 2 coils latching

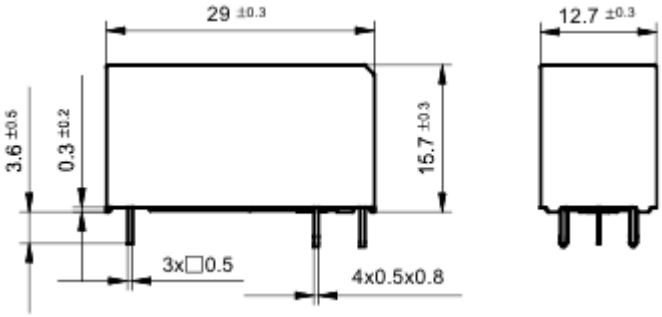
6. DIMENSIONS (Unit: mm)

Outline Dimensions

1 coil latching

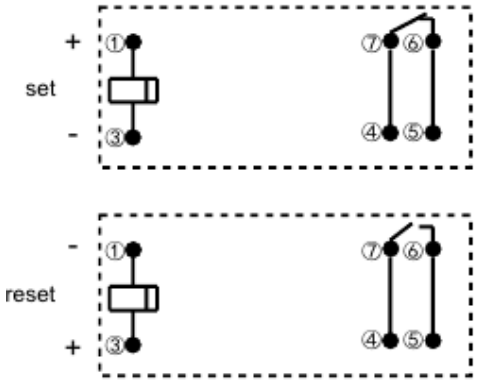


2 coils latching

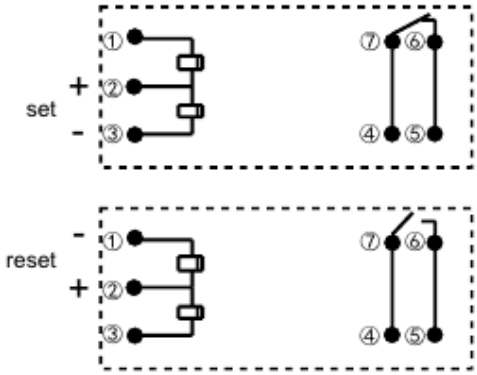


Wiring Diagram (Bottom View)

1 coil latching

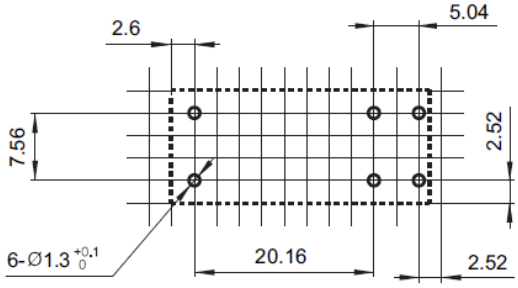


2 coils latching

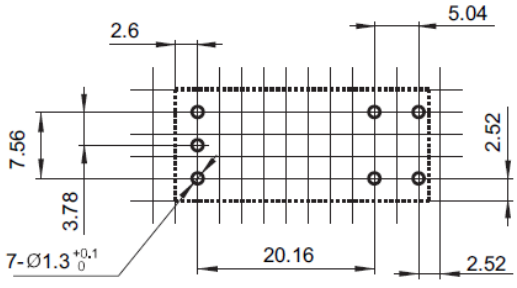


PCB Layout (Bottom view)

1 coil latching



2 coils latching



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) The width of the gridding is 2.52mm

Notice:

1. Relay is on the “reset” or “set” status when being released from stock, with the consideration of shock risen from transit and relay mounting, relay would be changed to “set” or “reset” status, therefore, when application (connecting the power supply), please reset the relay to “set” or “reset” status on request.
2. In order to maintain “set” or “reset” status, energized voltage to coil should reach the rated voltage, impulse width should be 5 times more than “set” or “reset” time. Do not energized voltage to “set” coil and “reset” coil simultaneously. And also long energized time (more than 1 min) should be avoided.
3. Keep the product away from strong magnetic field during transportation, storage and application, to avoid change of set/reset voltage.