TEXCELL

Miniature High Power Latching Relay	THL

Features

● Latching relay
● Low height: 15.7mm
● 20A switching capability (1 pole)
  10A switching capability (2 pole)
● 5kV dielectric strength
  (between coil and contacts)
● Creepage distance: 11mm-NO/10mm-CO version
● Meeting VDE 0700, 0631 reinforce insulation
● Product in accordance to IEC 60335-1 available
● UL insulation system: Class F

c **UL** US
(File No.:E134581)

DVE
(File No.: 40038122)

1. COIL DATA (at 23℃)

1) 1 coil latching

Nominal Voltage (VDC)	Set Voltage (VDC) max.[1]	Pulse Width (ms)		Reset Voltage (VDC) max.[1]	Max.Voltage (VDC)	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) min.		Reset Voltage (VDC) max.[1]	Max.Voltage (VDC)	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		1A, 1C	2A, 2C
Contact Resistance[1]		100mΩ max. (at 1A 6VDC)	
Contact Material		AgSnO$_2$	
Contact Ratings (Resistive load)		16A 250VAC	8A 250VAC
Typical applicable load		Incandescent lamp: 1500W 277VAC Standard ballast: 8A 277VAC Electronic ballast: 5A 120VAC	Tungsten lamp: 3A 277VAC Standard ballast: 3A 277VAC
Max. Switching Voltage		480VAC / 300VDC	440VAC / 300VDC
Max. Switching Current		20A	10A
Max. Switching Power		4000VA	2000VA
Life Expectancy	Electrical	50,000 operations	2A: 50,000 operations 2C: 10,000 operations
	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	1000VAC 1min
	Coil and Contacts	5000VAC 1min
	Contact Sets (2pole)	2500VAC 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℃
Shock Resistance*	Functional	98m/s^2
	Destructive	980m/s^2
Vibration Resistance*		10 ~ 150Hz 10g/5g
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 in relay length direction.

4. SAFETY APPROVAL

UL / cUL	1 Pole	16A/20A 250VAC at 85℃
		1HP 240VAC at 40℃
		TV-8 240VAC at 40℃
		TV-12 120VAC at 40℃ (1 Form A)
		Tungsten 360W 125VAC at 40℃ (1 Form A)
		Tungsten 1920W 8A 240VAC at 40℃
		Tungsten 12A 120VAC at 40℃
		Standard ballast 16A 120VAC at 40℃
		Standard ballast 8A 277VAC at 40℃
		Standard ballast 5A 347VAC/480VAC at 40℃
		Electronic ballast 5A 120VAC at 40℃
	2 Poles	10A/8A 250/277VAC General use at 85℃
		1/2 HP 240VAC at 40℃
		Standard ballast 3A 277VAC at 40℃
		Tungsten lamp 3A 277VAC at 40℃
VDE	1 Pole	16A 250VAC at 85℃
		AC-15 240VAC at 85℃
	2 Poles	8A 250VAC at 85℃

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

THL 1 - E 12 S L1 F T
① ②   ③ ④ ⑤ ⑥ ⑦ ⑧

① Relay Model	THL
② Contact Arrangement	11: 1 Form A
	1: 1 Form C
	22: 2 Form A
	2: 2 Form C
③ Contact Current	Nil: 8A (5.0mm pinning, 2pole)
	E: 16A (5.0mm pinning, 1pole)
④ Coil Voltage	5=5VDC, 6=6VDC, 9=9VDC, 12=12VDC, 24=24VDC
⑤ Construction	S: Sealed type
⑥ Sort	L1: 1 coil latching
	L2: 2 coils latching
⑦ Insulation Standard	F: Class F
⑧ Contact Material	T: AgSnO$_2$

6. DIMENSIONS (Unit: mm)

Outline Dimensions

1 coil latching, Form A
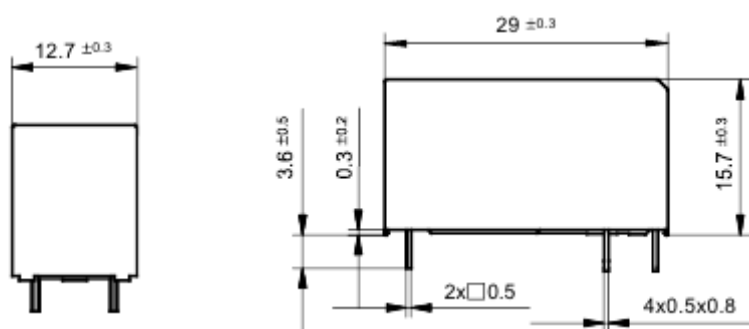
2 coils latching, Form A
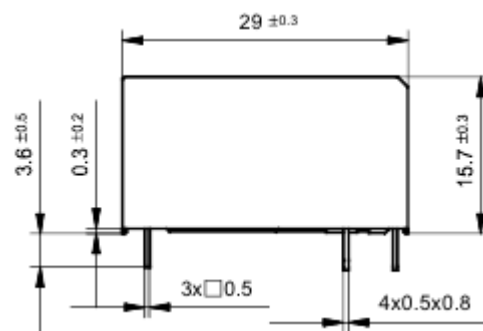
1 coil latching, Form C
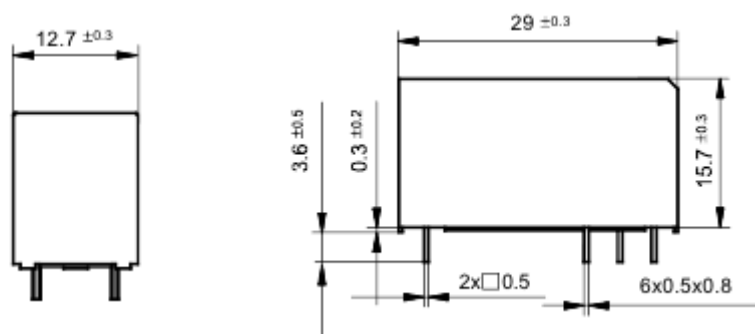
2 coils latching, Form C
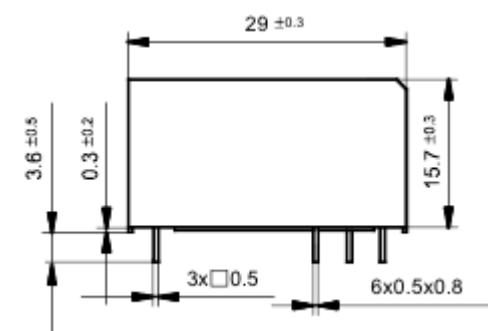
Wiring Diagram (Bottom View)
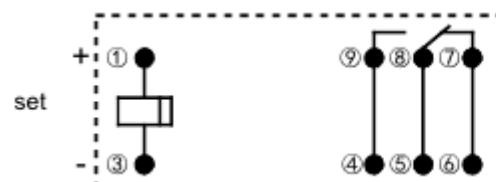
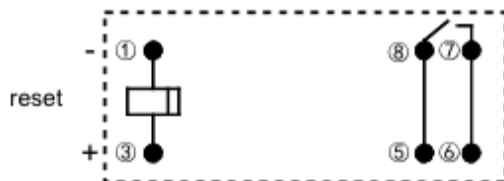**1 coil latching (Reset Status)**
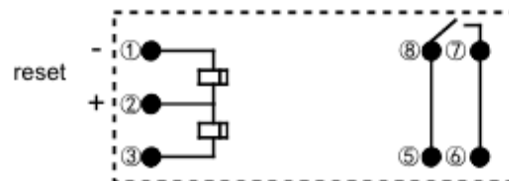
2 coils latching (Set Status)
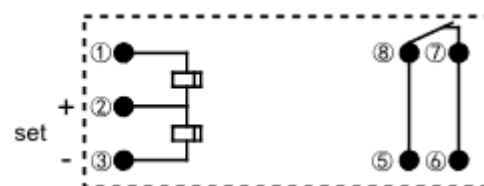
1 Form A
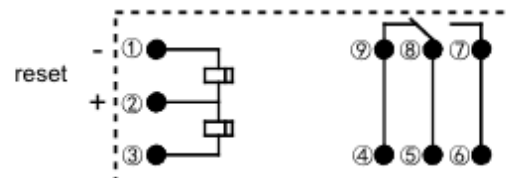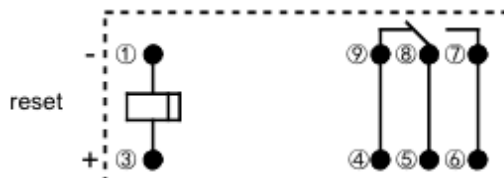

1 Form C

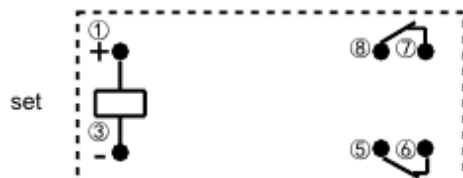**1 coil latching (Reset Status)**
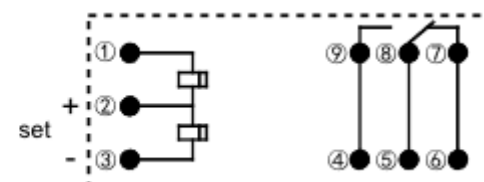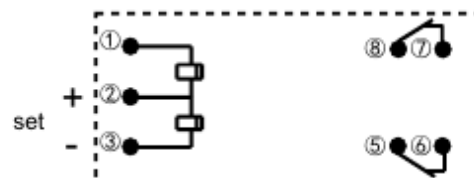
2 coils latching (Reset Status)

1 Form A
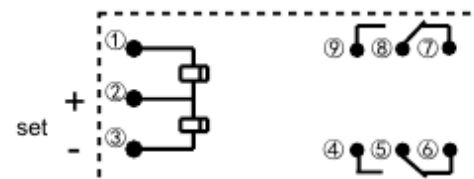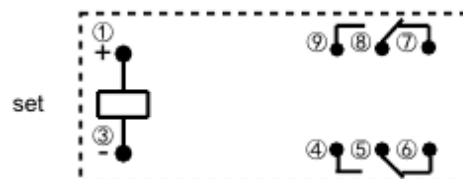
1 Form C

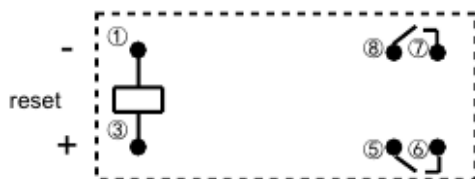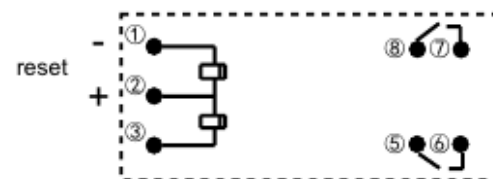**1 coil: Two groups 8A (Reset Status)**

2 coils: Two groups 8A (Set Status)

2 Form A

2 Form C

1 coil: Two groups 8A (Reset Status)
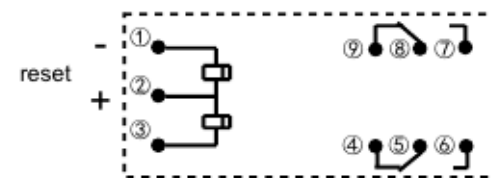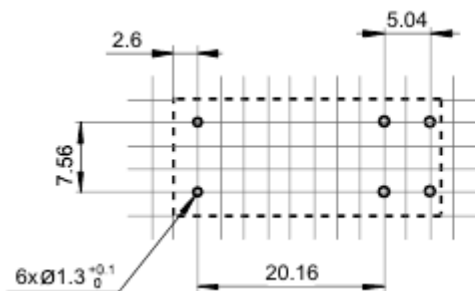
2 coils: Two groups 8A (Reset Status)

2 Form A

2 Form C
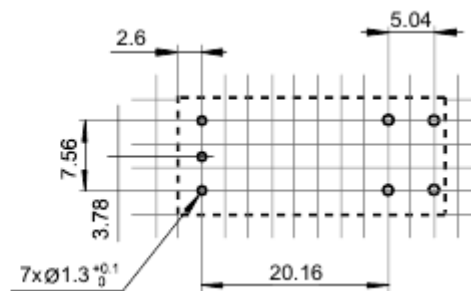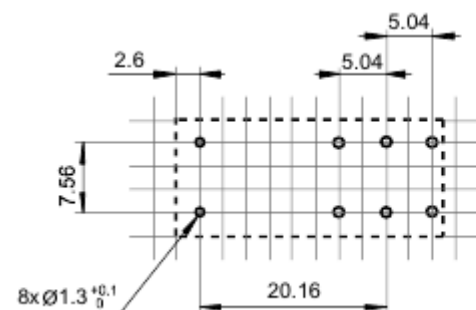
PCB Layout (Bottom view)
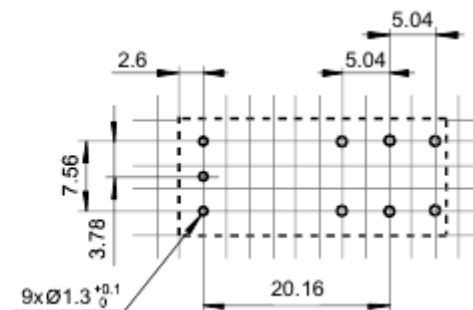
1 coil latching, 1 Form A
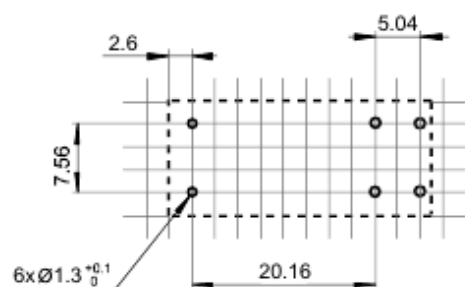

2 coils latching, 1 Form A

1 coil latching, 1 Form C
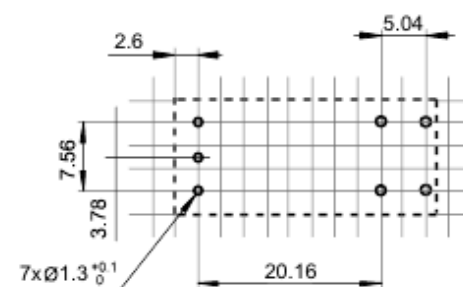

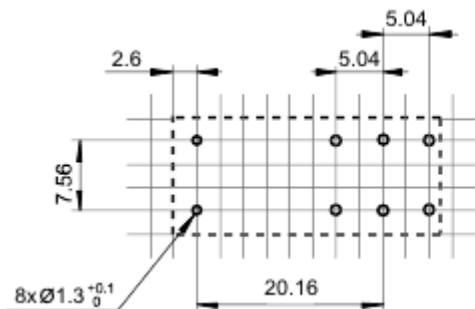### 2 coils latching, 1 Form C

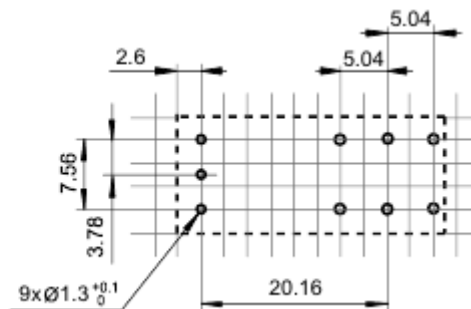### 1 coil latching, 2 Form A

2 coils latching, 2 Form A

1 coil latching, 2 Form C

2 coils latching, 2 Form C

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.