

Miniature High Power Relay

TNC

Features

- 40A switching capability
- 2.5kV dielectric strength
(between coil and contacts)
- Heavy load up to 7,200VA
- UL insulation system: Class F available



cULus
(File No.:E134581)

1. COIL DATA (at 23°C)

1) DC Type

Nominal Voltage (VDC)	Pick-up Voltage (VDC)	Drop-out Voltage (VDC)	Max Allowable Voltage (VDC)	Coil Current (mA)(±10%)	Coil Resistance (Ω)	Coil Power (mW)
5	3.75	0.5	6.50	180	27 x (1±10%)	Approx. 900
6	4.50	0.6	7.80	150	40 x (1±10%)	
9	6.75	0.9	11.7	100	97 x (1±10%)	
12	9.00	1.2	15.6	75.0	155 x (1±10%)	
15	11.25	1.5	19.5	60.0	256 x (1±10%)	
18	13.50	1.8	23.4	50.0	380 x (1±10%)	
24	18.00	2.4	31.2	37.5	660 x (1±10%)	
48	36.00	4.8	62.4	18.8	2560 x (1±10%)	
70	52.50	7.0	91.0	12.9	5500 x (1±10%)	
110	82.50	11	143	8.18	13450 x (1±10%)	

2) AC Type

Nominal Voltage (VAC)	Pick-up Voltage (VAC)	Drop-out Voltage (VAC)	Max Allowable Voltage (VAC)	Coil Current (mA)(±10%)	Coil Resistance (Ω)	Coil Power (VA)
12	9.60	2.4	15.6	167	25 x (1±10%)	Approx. 2
24	19.2	4.8	31.2	83.3	100 x (1±10%)	
120	96.0	24	156	16.7	2500 x (1±10%)	
208	166.4	41	270.4	9.62	11000 x (1±10%)	
220	176	44	286	9.1	13490 x (1±10%)	
240	192	48	286	8.3	13490 x (1±10%)	
277	220	54	360.1	7.22	15000 x (1±10%)	

Note: 1) When requiring pick-up voltage <80% of nominal voltage, special order allowed.

2) The data shown above are initial values at 50Hz. When requiring 60Hz, special order allowed.

3) The data shown above are initial values.

4) Max allowable 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	1 Form C	
			NO	NC
Contact Resistance ¹⁾		50mΩ max. (at 1A 24VDC)		
Contact Material		AgSnO ₂		
Max. Switching Voltage		277VAC / 28VDC		
Max. Switching Current		40A ²⁾	20A	10A
Max. Continuous Current		≤25A		
Max. Switching Power		7200VA / 560W	4800VA / 560W	2400VA / 280W
Contact rating		30A 240VAC 20A 28VDC	20A 240VAC 20A 28VDC	10A 240VAC 10A 28VDC
Life Expectancy	Electrical	100,000 operations		
	Mechanical	10,000,000 operations		

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

2) Long time current –carrying under 40A condition is prohibited.

3. CHARACTERISTICS

Insulation Resistance		1000MΩ (at 500VDC)	
Dielectric Strength	Open Contacts	1500VAC 1min	
	Coil and Contacts	2500VAC 1min	
Operate Time (at nominal voltage)	DC type	15ms max.	
Release Time (at nominal voltage)	DC type	10ms max.	
Temperature Range	DC type	-55℃ ~ 85℃	
	AC type	-55℃ ~ 60℃	
Shock Resistance	Functional	98m/s ²	
	Destructive	980m/s ²	
Vibration Resistance		10 ~ 55Hz, 1.5mm DA	
Humidity		5 ~ 85% RH	
Termination		QC	
Construction		Plastic sealed type	
Weight		Approx. 36g	
Outline Dimension (L x W x H)		50.0 x 27.2 x 27.8mm	

Note: 1) For plastic sealed type, the venting-hole should be opened in test.

2) The data shown above are initial values.

3) Please find coil temperature curve in characteristic curves below.

4) UL insulation system: Class F, Class B

4. ORDERING INFORMATION

<u>TNC</u> ①	<u>11</u> ②	-	<u>D12</u> ③	<u>K</u> ④	<u>F</u> ⑤
① Coil Voltage	TNC				
② Contact Arrangement	11: 1 Form A (SPST-NO) 1: 1 Form C (SPDT)				
③ Coil Voltage	DC: D5=5VDC, D6=6VDC, D9=9VDC, D12=12VDC, D15=15VDC, D18=18VDC, D24=24VDC, D48=48VDC, D70=70VDC, D110=110VDC AC: A12=12VAC, A24=24VAC, A120=120VAC, A208=208VAC, A220=220VAC, A240=240VAC, A277=277VAC				
④ Coil Terminal Width	Nil: 2.8mm K: 4.8mm				
⑤ Insulation Standard	Nil: Class B F: Class F				

5. SAFETY APPROVAL RATINGS

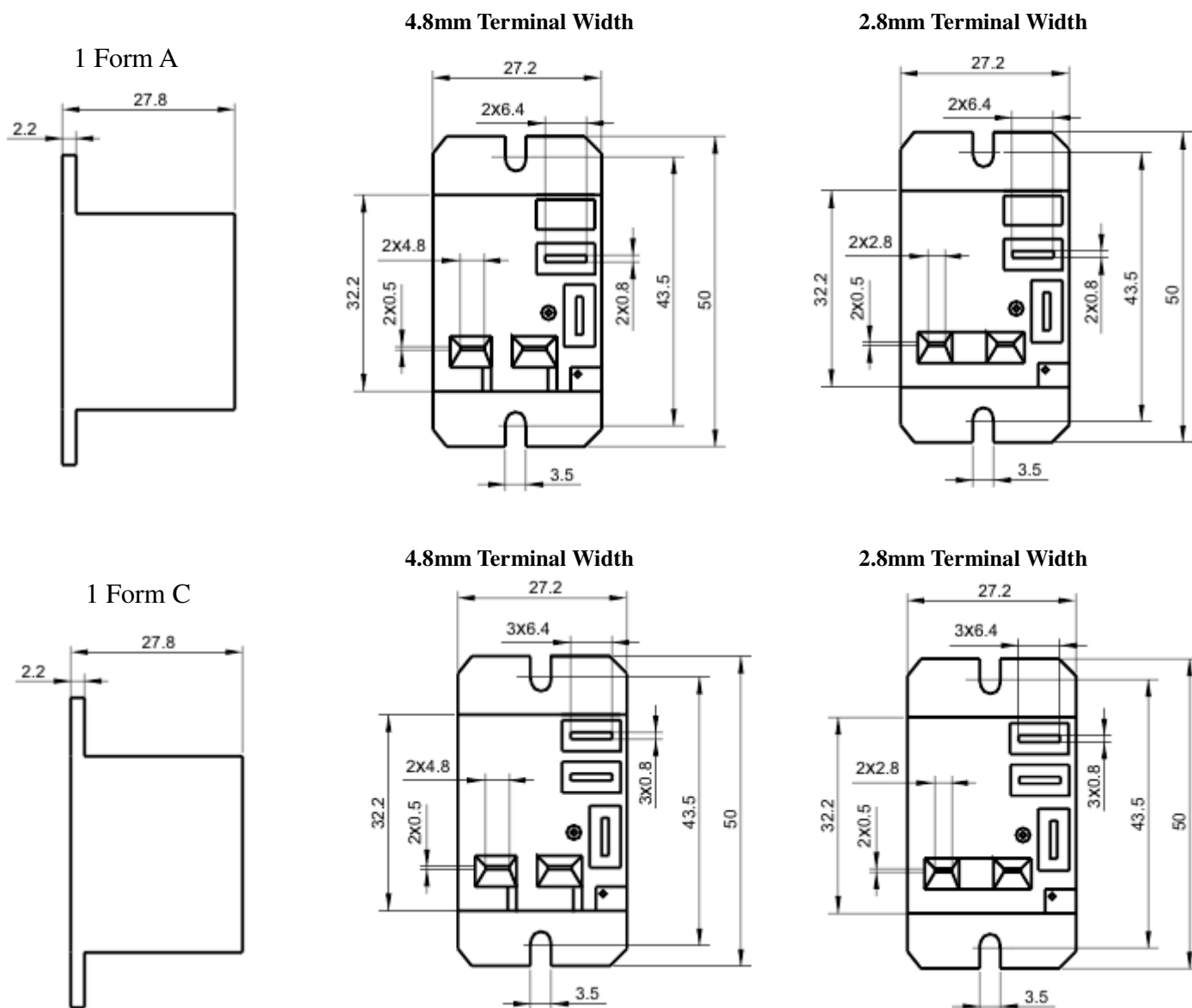
UL/cUL	1 Form A		30A 277VAC 30A 240VAC 40A 277VAC 2HP 250VAC 1HP 125VAC
	1 Form C	NO	30A 277VAC 30A 240VAC 2HP 250VAC 1HP 125VAC
		NC	20A 277VAC 1/2HP 250VAC 1/4HP 125VAC

Notes:

- 1) All values unspecified are at room temperature.
- 2) Only typical loads are listed above. Other load specifications can be available upon request.
- 3) The parameters in the table are for DC coil certification.
For AC coil certification, please contact us.

6. DIMENSIONS (Unit: mm)

Outline Dimensions



Wiring Diagram (Bottom View)



Remark:

In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.

7. CHARACTERISTIC CURVES

