



# T7N series

## 10 Amp Miniature PC Board Relay

File E22575

File LR48471

### Features

- Low cost, reduced height, 10A relay.
- 1 Form A and 1 Form C contact arrangement.
- Plastic materials employ UL 94V-0 flammability.
- UL class F (140°C) coil standard.
- Immersion cleanable, sealed package.
- Applications include appliance, HVAC, security system, garage opener light, emergency lighting.
- European "white goods" version available by special order.

### Contact Data @ 20°C

**Arrangements:** 1 Form A (SPST-NO) and 1 Form C (SPDT).

**Material:** Silver-cadmium oxide.

**Max. Switching Rate:** **Mechanical:** 300 operations/min.

**Electrical:** 30 operations/min.

**Expected Mechanical Life:** 10 million operations min. (no load).

**Expected Electrical Life:** 100,000 operations min. (at rated coil voltage).

**Minimum Contact Load:** 10mA @ 5VDC.

**Initial Contact Resistance:** 100 milliohms, max. @ 1A, 6VDC.

**UL Contact Ratings @ 20°C with relay properly vented. Remove vent nib after soldering and cleaning.**

Contact Arrang.	UL/CSA Ratings	Type	Operations
1 & 5	1/4HP @ 240VAC	Motor	1,000*
	1/3HP @ 120VAC	Motor	6,000
	1/3HP NO @ 120VAC	Motor	6,000
	1/3HP NO @ 240VAC	Motor	6,000**
	5A/5A @ 240VAC	Resistive	6,000*
	10A NO @ 240VAC	Resistive	6,000
	10A/5A @ 240VAC	Gen. Purpose	6,000
	8A NC @ 240VAC	Resistive	6,000
	1/6HP NC @ 240VAC	Motor	6,000**
	1/4HP NO @ 240VAC	Motor	6,000**
	1/10HP NO @ 120VAC	Motor	6,000**
	10A/5A @ 240VAC	Resistive	6,000**
	TV-3 NO @ 120VAC	Tungsten	25,000
	6A NC @ 240VAC	Resistive	25,000**
	10A/5A @ 240VAC	Resistive	30,000
	10A/5A @ 28VDC	Resistive	30,000
	10A NO @ 240VAC	Resistive	30,000**
	10A NO @ 240VAC	Gen. Purpose	30,000**
	34.8LRA/6FLA NO @ 120VAC	Motor	100,000
	10A/5A @ 120VAC	Resistive	100,000
5A/5A @ 240VAC	Resistive	100,000	
10A/5A @ 28VDC	Resistive	100,000	

\*Denotes test at 70°C ambient temperature.

\*\*Denotes test at 85°C ambient temperature.

### Initial Dielectric Strength

**Between Open Contacts:** 750VAC, 50/60 Hz. (1 min.)

**Between Coil and Contacts:** 2,000VAC, 50/60 Hz. (1 min.)

### Initial Insulation Resistance

**Between Mutually Insulated Elements:** 10<sup>8</sup> ohms, min. @ 500VDC.

### Coil Data

**Voltage:** 3 through 48VDC.

**Nom. Power:** 360mW.

**Coil Temp. Rise:** See Figure 1.

**Max. Coil Power:** 150% of nominal.

**Duty Cycle:** Continuous.

### Coil Data @ 20°C

Rated Coil Voltage (VDC)	Coil Resistance ±10% (Ohms)	Must Operate Voltage (VDC)	Must Release Voltage (VDC)
3	25	2.1	.15
5	70	3.5	.25
6	100	4.2	.30
9	225	6.3	.45
12	400	8.4	.60
18	900	12.6	.90
24	1,600	16.8	1.20
36	3,600	25.2	1.80
48	6,400	33.6	2.40

### Operate Data @ 20°C

**Operate Time:** 10 ms, max. (excluding bounce).

**Release Time:** 5 ms, max. (excluding bounce).

### Environmental Data

**Temperature Range:**

**Storage:** -40°C to +130°C.

**Operating:** -40°C to +85°C. (no water condensation and no water drop).

**Vibration:** 10-55 Hz., .063" (1.6mm) double amplitude;

10-55 Hz., .079" (2.0mm) double amplitude.

**Shock: Mechanical:** 100g minimum.

**Operational:** 10g minimum.

**Operating Humidity:** 45 to 85% RH.

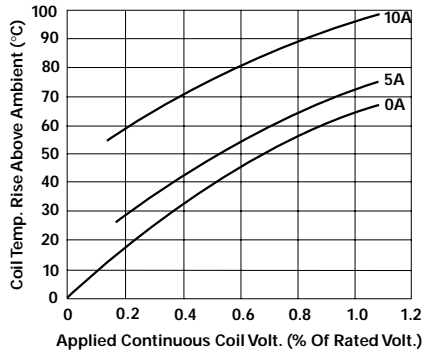
### Mechanical Data

**Termination:** Printed circuit terminals.

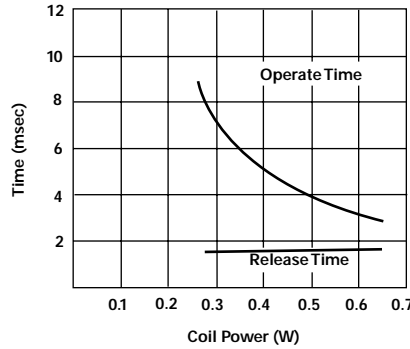
**Enclosure (UL 94V-O Flammability Ratings):** Immersion cleanable case with knock-off nib for ventilation.

**Weight:** 0.38 oz. (11g) approximately.

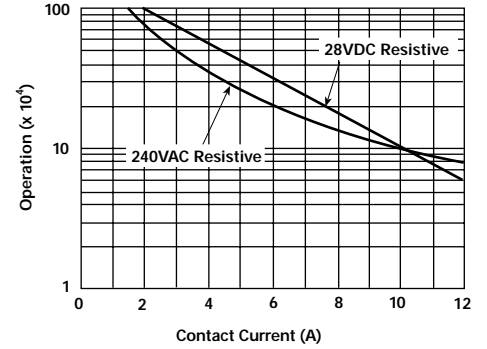
Figure 1 – Coil Temperature Rise



Operate Time



Life Expectancy



Note: Graphical data should not be used as a substitute for specific application verification. To be used for estimates only.

Ordering Information

Typical Part Number ▶ T7N S 5 D 1 -24

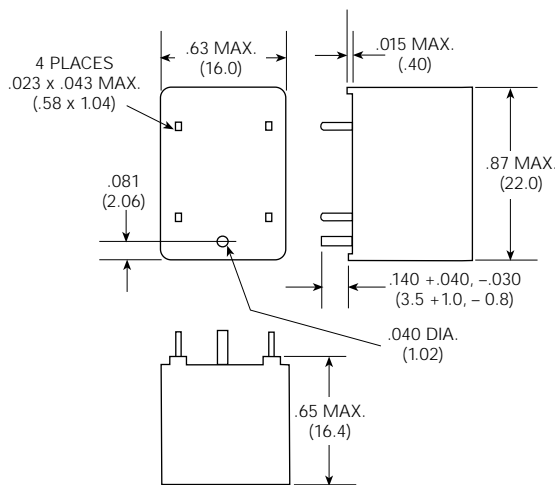
1. **Basic Series:**  
T7N = Miniature, printed circuit board relay.
2. **Enclosure:**  
S = Immersion cleanable case with knock-off nib.
3. **Contact Arrangement:**  
1 = 1 Form A (SPST-NO)    5 = 1 Form C (SPDT)
4. **Coil Input:**  
D = DC Coil.
5. **Contact Material:**  
1 = Silver-cadmium oxide contacts.
6. **Coil Voltage:**  
03 = 3VDC    06 = 6VDC    12 = 12VDC    24 = 24VDC    48 = 48VDC  
05 = 5VDC    09 = 9VDC    18 = 18VDC    36 = 36VDC

Stock Items – The following items are normally maintained in stock for immediate delivery.

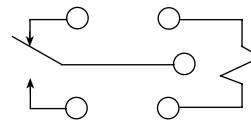
- T7NS1D1-12
- T7NS1D1-24
- T7NS5D1-05
- T7NS5D1-12
- T7NS5D1-24
- T7NS5D1-48

Outline Dimensions

Tolerance (unless otherwise noted): 3 decimal: ±.010 (±.254); 2 decimal: ±.015 (±.381).



Wiring Diagram (Bottom View)



Suggested PC Board Layout (Bottom View)

