

For new designs refer to T72.



T70 series

Low Cost, 10 Amp Printed Circuit Board Relay

File E29244

File LR15734

Features

- 10 amp switching in SPDT arrangement.
- Choice of gold flashed silver or silver cadmium oxide contacts.
- Class B coil insulation (130°C).
- Immersion cleanable[§], plastic sealed case.

§ For more details, refer to application note 13C265, *Mounting, Termination and Cleaning of PC Board Relays.*

Contact Data @ 23°C

Arrangements: 1 Form C (SPDT).

Material: Code 31 – Gold flashed silver.
Code 64 – Silver-cadmium oxide.

Expected Mechanical Life: 10 million operations, typical.

Expected Electrical Life: See Contact Ratings chart.

Contact Ratings @ 23°C

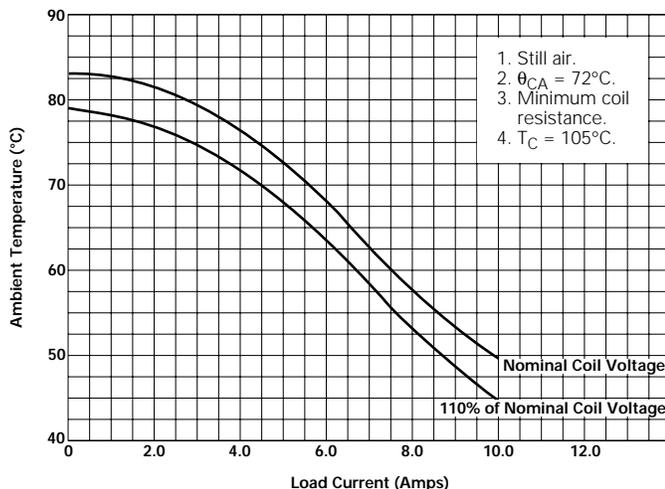
Contact Material	UL/CSA Ratings	Type	Operations
(31) Gold plated silver	3A, @ 28VDC	Resistive	250,000
	5A, @ 28VDC	Resistive	150,000
	10A, @ 28VDC	Resistive	50,000
	1/4 HP, @ 120VAC	Motor	25,000
	3A, @ 120VAC	Resistive	100,000
	5A, @ 120VAC	Resistive	75,000
	8.5A, @ 120VAC	Inductive	25,000
	10A, @ 120VAC	Resistive	50,000
(64) Silver-cadmium oxide	2A, @ 240VAC	Resistive	50,000
	3A, @ 120VAC	Tungsten	25,000
	10A, @ 28VDC	Resistive	75,000
	1/4 HP, @ 120VAC	Motor	50,000
	8.5A, @ 120VAC	Inductive	75,000
	10A, @ 120VAC	Resistive	75,000
	5A, @ 240VAC	Resistive	75,000
	5A, @ 120VAC	Tungsten	25,000

All tests are at 23°C, 20-50% RH, 29.5 ± 1" Hg; nominal coil voltage; 7 operations per minute with a 50% duty cycle; cover vented.

Minimum Load: Code 31 & Code 64 – 100mA @ 12VDC.

Initial Contact Resistance: 100 milliohms, max., @ 100mA, 6VDC.

Max. Allowed Ambient Temp. vs. Load Current



Initial Dielectric Strength

Between Open Contacts: 1,000V rms, 60 Hz.

Between All Other Conductors: 1,500V rms, 60 Hz.

Initial Insulation Resistance

Between Mutually Insulated Elements: 10^8 ohms, min., @ 500VDC.

Coil Data @ 23°C

Voltage: 3 to 48VDC.

Nominal Power: 360 milliwatts.

Maximum Coil Power: 1.4 Watts ($I_L=0$); .81 Watt ($I_L=10A$).

Maximum Coil Temperature: Class B coil; 130°C.

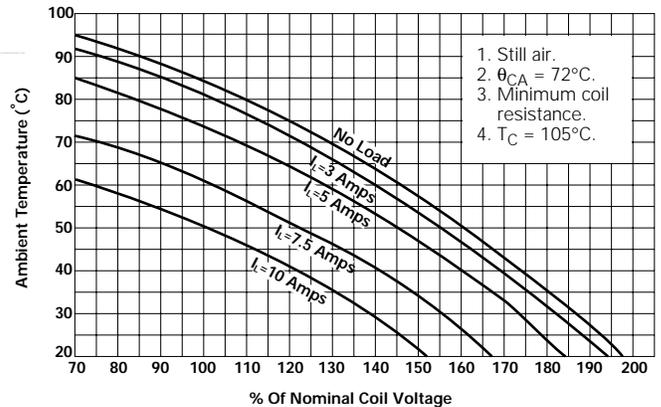
Coil Temperature Rise: 72°C per Watt, typical.

Duty Cycle: Continuous.

Coil Data @ 23°C

Nominal Voltage (VDC)	Resistance $\pm 10\%$ (Ohms)	Nominal Power (mW)
3	25	360
5	70	360
6	100	360
9	225	360
12	400	360
24	1,600	360
48	6,400	360

Max. Allowed Ambient Temp. vs. Applied Coil Voltage



Operate Data @ 23°C

Must Operate Voltage: 75% of nominal voltage or less.

Must Release Voltage: 10% of nominal voltage or more.

Operate Time (Excluding Bounce)[†]: 13 ms, max.

Operate Bounce Time[†]: 1 ms, typ.

Release Time (Excluding Bounce)[†]: 9 ms, max.

Release Bounce Time[†]: 4 ms, typ.

[†] At or From Nominal Coil Voltage

Environmental Data

Temperature Range: -40°C to +75°C @ 3 amps.

-40°C to +65°C @ 5 amps.

-40°C to +45°C @ 10 amps.

Vibration, Operational: 0.032" (.81mm) max. excursions from 10-50 Hz.

Shock, Operational: 10 g for 11 milliseconds.

Mechanical Data

Termination: Printed circuit terminals.

Enclosure Type: PBT polyester case, 94V-0 flammability rating.

Weight: 0.42 oz. (12g) approximately.

Ordering Information

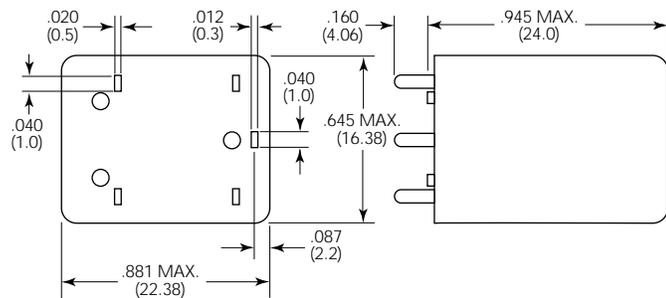
Typical Part Number ▶	T70	L	5	D	1	31	-24
1. Basic Series: T70 = Miniature, printed circuit board relay.							
2. Enclosure: L = Immersion cleanable, tape sealed case.							
3. Contact Arrangement: 5 = 1 Form C (SPDT).							
4. Coil Input: D = DC Voltage							
5. Terminals: 1 = Printed circuit terminals, wiring diagram A. 2 = Printed circuit terminals, wiring diagram B.							
6. Contact Material: 31 = Gold plated silver contacts. 64 = Silver-cadmium oxide contacts.							
7. Coil Voltage: 3 = 3VDC 6 = 6VDC 12 = 12VDC 48 = 48VDC 5 = 5VDC 9 = 09VDC 24 = 24VDC							

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

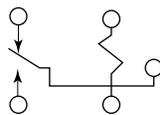
T70L5D131-5	T70L5D164-5
T70L5D131-6	T70L5D164-9
T70L5D131-9	T70L5D164-12
T70L5D131-12	T70L5D164-24
T70L5D131-24	T70L5D164-48

Outline Dimensions

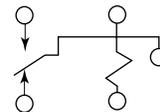


Wiring Diagrams (Bottom Views)

Wiring Diagram A



Wiring Diagram B



Suggested PC board Layout (Bottom View)

