TRA1 Power PCB Relay

TBO ELECTRONICS TRA1 Power PCB Relay Instructions

Contents

TBO ELECTRONICS TRA1 Power PCB Relay

Specifications

- 10A switching capability
- Plastic sealed type
- Class B/F available
- Conform to RoHS, ELV directive
- Contact Arrangement: 1H/1Z
- Contact Material: Silver Alloy
- Load: Resistive load (cos=1)
- Contact Ratings: 10A 240VAC, 10A 30VDC
- Insulation Resistance: 100M Min. at 500VDC
- Dielectric Strength:
  - Between Open Contacts: 1000VAC (50/60Hz 1 min)
  - Between Contacts and Coil: 5000VAC (50/60Hz 1 min)
- Operate Time: 20ms
- Release Time: 10ms
- Ambient Temperature: -40°C to +85°C

Product Usage Instructions

Contact Data:
The relay has a contact arrangement of 1H/1Z with silver alloy material suitable for resistive loads. It can handle up to 10A at 240VAC or 10A at 30VDC.

Characteristics:
The relay offers insulation resistance of at least 100M at 500VDC and operates within an ambient temperature range of -40°C to +85°C. It has an operate time of 20ms and a release time of 10ms

Coil Data:
The coil operates at different voltage and current ratings, ensuring proper functioning of the relay. Refer to the manual for specific coil data and ratings.

Safety Approved Ratings:
The relay meets safety standards with specified ratings for various parameters like voltage, power, and contact rating. Ensure compliance with these safety ratings for safe operation.

- 10A switching capability
- Plastic sealed type
- Class B/F available
- Conform to RoHS, ELV

CONTACT DATA

- **Contact Arrangement:** 1H/1Z
- **Contact Material:** Silver Alloy
- **Load:** Resistive load (cosΦ=1)
- **Contact Ratings:**
  - 10A 240VAC
  - 10A 30VDC
- **Min. Contact Load:** 100mA 5VDC
- **Max. Switching Voltage:** 250VAC / 30VDC
- **Max. Switching Current:** 12A
- **Max. Switching Power:** 2500VA / 300W
- **Contact Resistance:** ≤100mΩ (6VDC 1A)
- **Electrical Endurance:** 1×10^5 OPS (at 6 OPS/min)
- **Mechanical Endurance:** 5×10^6 OPS (at 300 OPS/min)

CHARACTERISTICS

- **Insulation Resistance:** 100MΩ Min. at 500VDC
- **Dielectric Strength:**
  - **Between Open Contacts:** 1000VAC (50/60Hz 1 min)
  - **Between Contacts and Coil:** 5000VAC (50/60Hz 1 min)
- **Operate Time:** ≤20ms
- **Release Time:** ≤10ms
- **Ambient Temperature:** -40℃ to +85℃
- **Shock Resistance:**
  - **Functional:** 10G 11ms
  - **Destructive:** 100G 6ms
- **Vibration Resistance:** 10~55Hz, 1.5mm DA
- **Humidity:** 20~85%
- **Unit Weight:** Approx. 14g

COIL DATA

Rated Voltage (VDC)	0.54W Coil Resistance (Ω ±10%)	0.54W Rated Current (mA)	0.72W Coil Resistance (Ω ±10%)	0.72W Rated Current (mA)	Max. Operate Voltage (VDC)	Min. Release Voltage (VDC)	Max. Voltage (VDC)
3	17	180	13	240	2.4	0.15	3.9
5	46	108	35	144	4.0	0.25	6.5
6	67	90	50	120	4.8	0.3	7.8
9	150	60	110	80	7.2	0.45	11.7
12	270	45	200	60	9.6	0.6	15.6
24	1050	22.5	800	30	19.2	1.2	31.2
48	4250	11.3	3200	15	38.4	2.4	62.4

Remark: Max. Voltage refers to the maximum voltage which relay coil could endure in a period of time.

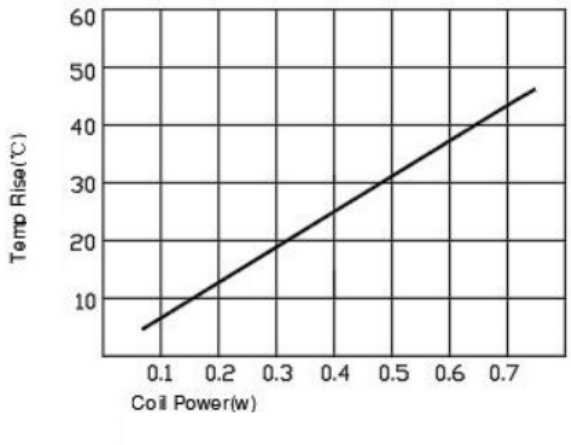
SAFETY APPROVED RATINGS

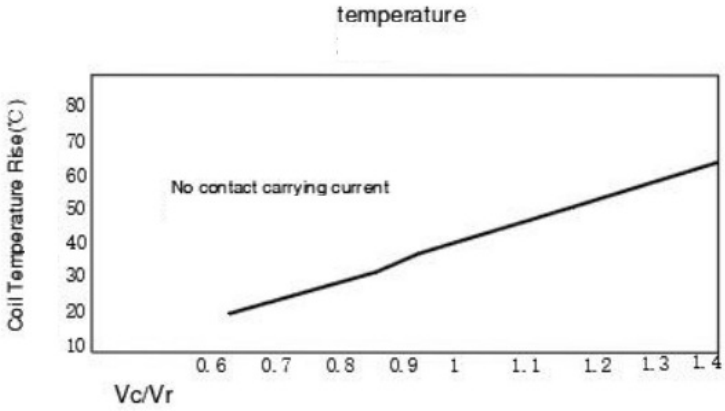
Model	Coil Voltage (VDC)	Safety Standard	Contact Rating
TRA1	3 to 48VDC	TÜV	10A 240VAC, 10A 30VDC
		UL/cUL	10A 240VAC, 10A 30VDC
		CQC	10A 240VAC

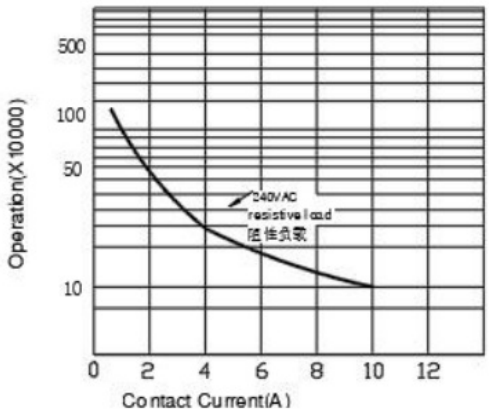
ORDERING INFORMATION

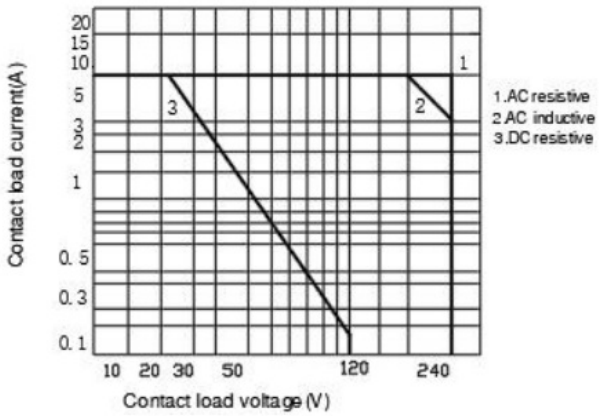
Parameter	Code/Value	Description
Model	TRA1 D -12VDC -S -HXX	Relay Model
Coil Power	D: 0.72W, L: 0.54W	Rated coil power options
Coil Voltage	03, 05, 06, 09, 12, 18, 24, 48VDC	Available coil voltage options
Construction	Plastic sealed or flux proofed	Sealed or flux-resistant type
Contact Arrangement	H: 1 Form A, Z: 1 Form C	H: Normally Open (NO), Z: Changeover (CO)
Special Code	XX	Customer special requirement
	(2)	Transparent casing
	Nil	Standard type
	IT	Compliant with IEC 60335-1 (GWT)

CHARACTERISTIC CURVES

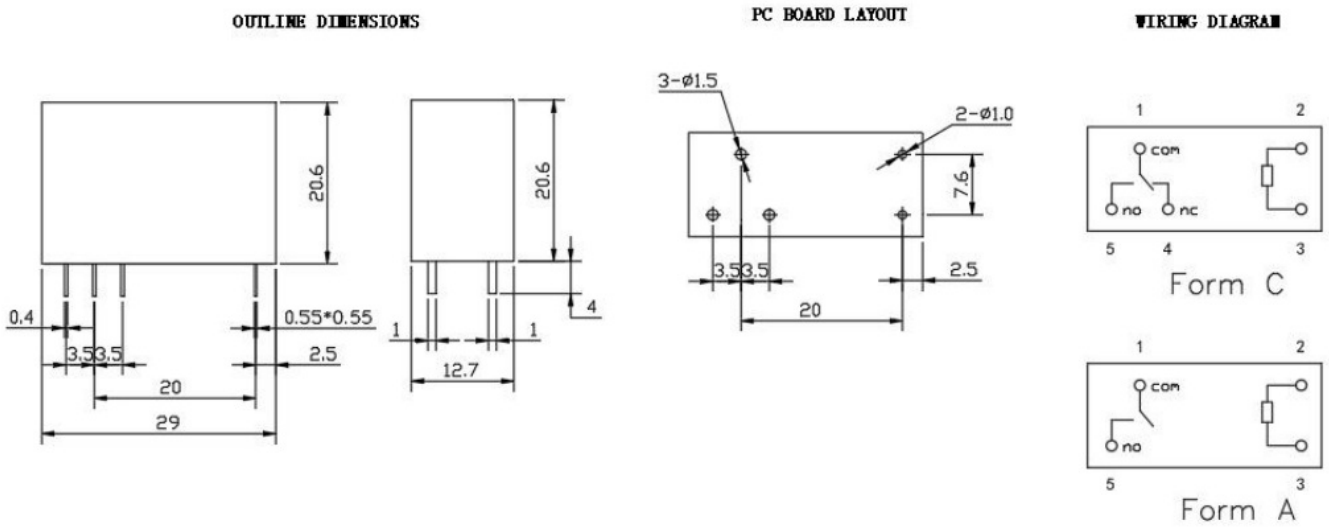








OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT



Remark:

- In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension> 1 mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
- The additional tin top is max. 1mm.
- The tolerance without indicating for PCB layout is always ±0.1mm

Disclaimer:
The specification is for reference only. Specification subject to change without notice.

FAQ

Q: What is the maximum switching capability of the relay?
A: The relay has a switching capability of 10A for both AC (240V) and DC (30V) loads.

Q: What is the insulation resistance of the relay?
A: The relay offers an insulation resistance of at least 100M at 500VDC, ensuring proper isolation between contacts.

Q: What are the ambient temperature limits for the relay?
A: The relay can operate within a temperature range of -40°C to +85°C, making it suitable for various environmental conditions.

Documents / Resources

	TBO ELECTRONICS TRA1 Power PCB Relay [pdf] Instructions TRA1 Power PCB Relay, TRA1, Power PCB Relay, PCB Relay

References

- User Manual