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WENGART TBT7-C1

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1. PRODUCT OVERVIEW

The Wengart TBT7-C1 Delay Time Relay is a control component designed for industrial automation and building electrical control systems. It provides a delay function, activating a control signal after a preset time. This flexible delay control enhances system automation and reliability in various applications requiring timed operations.

Product introduction

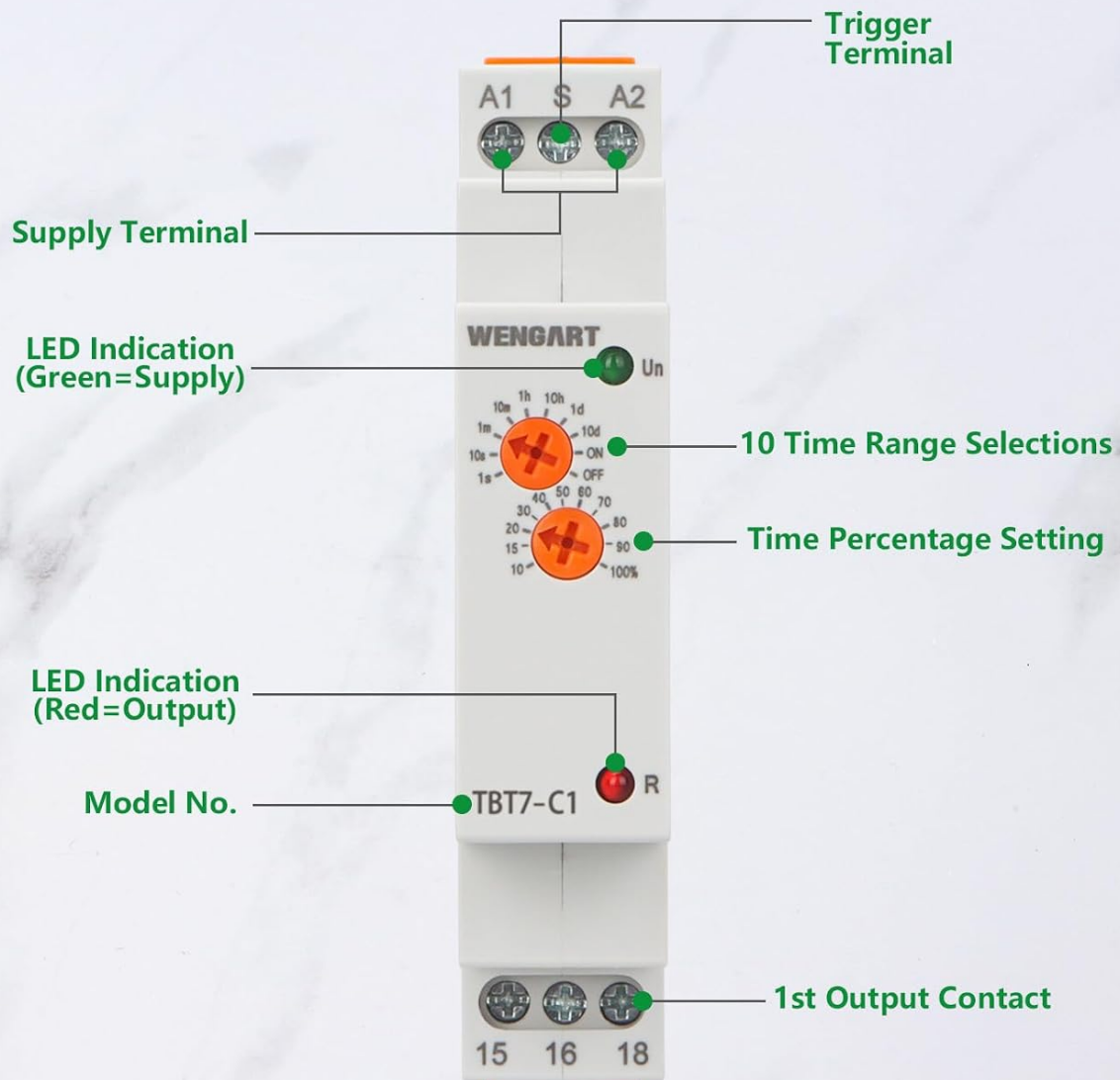


Image 1: Front view of the Wengart TBT7-C1 Delay Time Relay with key components labeled, including trigger terminal, supply terminal, LED indications (green for supply, red for output), time range selections, time percentage setting, model number, and output contacts.

Key Features:

- **Wide Time Range:** Adjustable delay from 0.1 seconds to 10 days.
- **LED Indicators:** Green LED for power supply status, Red LED for output status, aiding in quick troubleshooting.
- **DIN Rail Mounting:** Standard 18mm width for easy installation on 35mm DIN rails.
- **Universal Power Supply:** Operates with AC/DC 12-240V.
- **SPDT Output:** Single Pole Double Throw (SPDT) potential-free switching output (Normally Open, Normally Closed, Common).

2. SETUP AND INSTALLATION

2.1. Mounting

The TBT7-C1 relay is designed for easy installation on a standard 35mm DIN rail. Its compact 18mm width saves space in control panels.

Rail mounting



Image 2: The Wengart TBT7-C1 Delay Time Relay securely mounted on a standard DIN rail, demonstrating its compact design and ease of installation.

2.2. Wiring Diagram

Refer to the wiring diagram below for proper connection. Ensure all connections are secure and comply with local electrical codes. The relay supports a wide voltage range of AC/DC 12-240V.

Wiring diagram

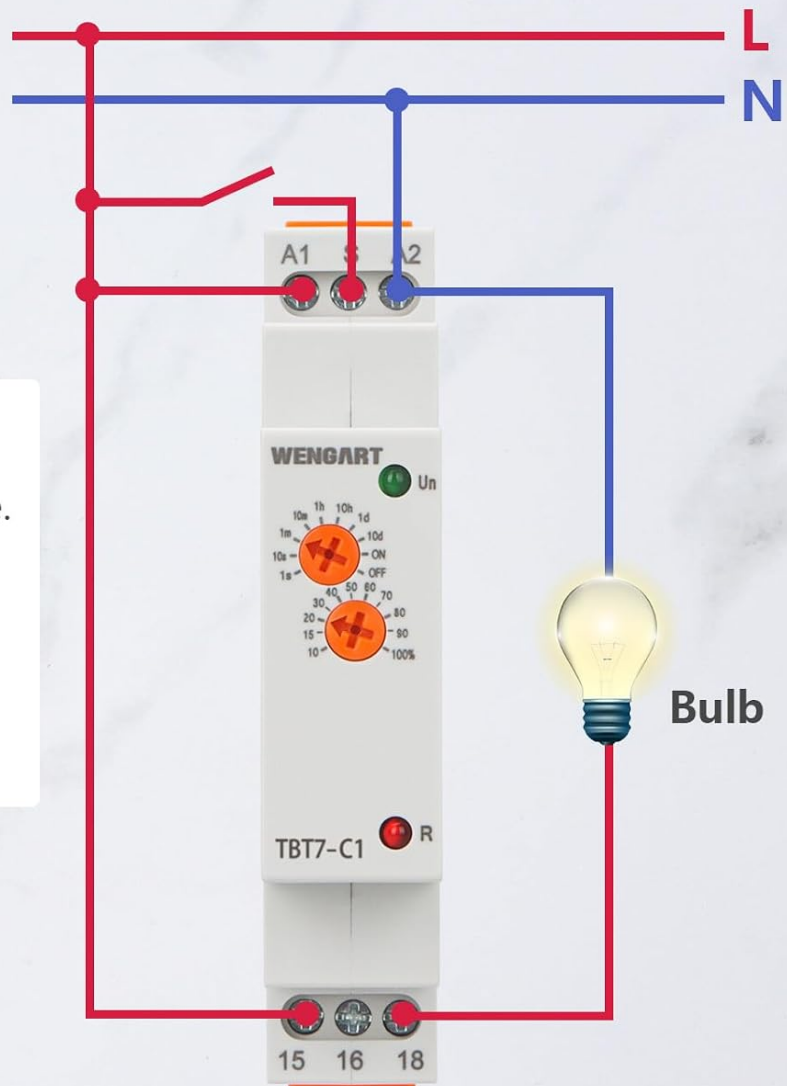


Image 3: A wiring diagram illustrating how to connect the TBT7-C1 relay to a power supply (L and N) and a load (e.g., a bulb). It also shows the 'S' terminal for reset functionality. For example, with a 220V supply, connecting 'S' can reset the bulb.

Connection Terminals:

- **A1, A2:** Power Supply Terminals (AC/DC 12-240V)
- **S:** Trigger Terminal (for reset function, if applicable)
- **15:** Common (COM) Output Contact
- **16:** Normally Closed (NC) Output Contact
- **18:** Normally Open (NO) Output Contact

Caution: Always disconnect power before performing any wiring to prevent electrical shock.

3. OPERATING INSTRUCTIONS

3.1. Time Adjustment

The delay time is set using two rotary knobs on the front panel:

- **Knob 1 (Top):** Selects the time range (e.g., 1s, 10s, 1m, 10m, 1h, 10h, 1d, 10d).
- **Knob 2 (Bottom):** Sets the percentage of the selected time range (10% to 100%).

Knob adjustment

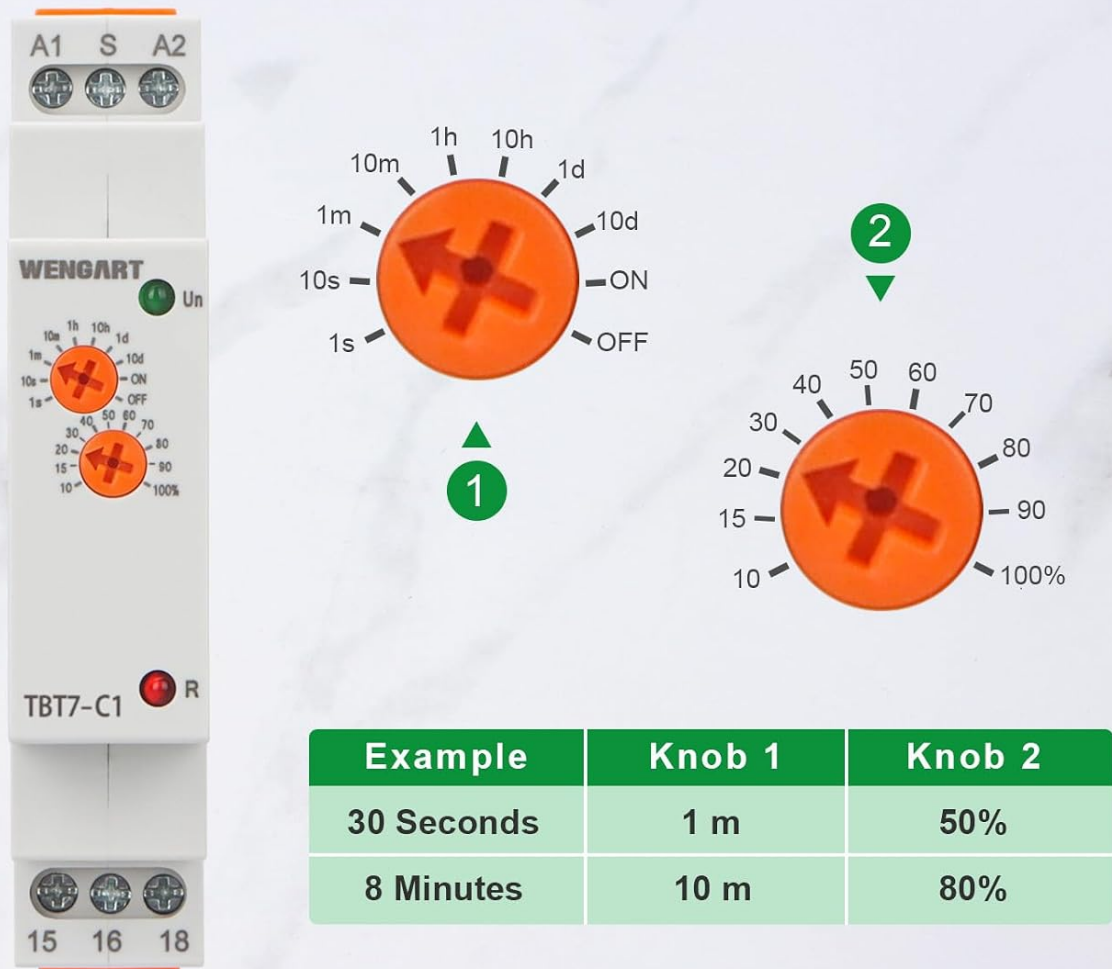


Image 4: Illustration of the two adjustment knobs on the TBT7-C1 relay. Knob 1 selects the time unit (seconds, minutes, hours, days), and Knob 2 sets the percentage within that range. An example table shows how to achieve 30 seconds (1m range, 50%) and 8 minutes (10m range, 80%).

Example Settings:

- To set a 30-second delay: Set Knob 1 to "1m" (1 minute) and Knob 2 to "50%" (50% of 1 minute = 30 seconds).
- To set an 8-minute delay: Set Knob 1 to "10m" (10 minutes) and Knob 2 to "80%" (80% of 10 minutes = 8 minutes).

3.2. Delay Function (Type C1 - Delay OFF)

The TBT7-C1 model operates as a "Delay OFF" timer. This means:

1. Upon power-up, the output immediately turns ON.
2. The relay then begins its countdown for the set delay time.
3. After the delay time expires, the output turns OFF.

Example: If set for a 30-second delay, upon power application, the connected load (e.g., light) will turn on instantly. After 30 seconds, the light will turn off.

B Type & C Type



B DELAY ON

Example(30s): to control a light. after power up. relay begins to delay on. 30 seconds later, light will turn on.

C DELAY OFF

Example(30s): to control a light. after power up. light turns on and relay begins to delay off at the same time. 30 seconds later, light will turn off.

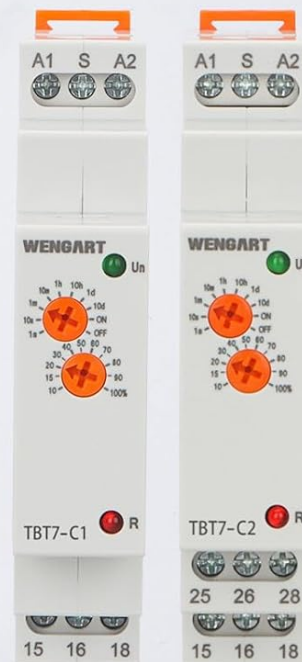


Image 5: A visual comparison between TBT7-B1 (Delay ON) and TBT7-C1 (Delay OFF) relay types. For the TBT7-C1, it illustrates that the output turns on immediately upon power-up and turns off after the set delay time (e.g., 30 seconds).

4. MAINTENANCE

The Wengart TBT7-C1 Delay Time Relay is designed for reliable operation with minimal maintenance. To ensure optimal performance and longevity:

- **Keep Clean:** Periodically inspect the relay for dust or debris accumulation. Clean with a soft, dry cloth if necessary.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and

humidity ranges. Avoid exposure to excessive moisture or corrosive substances.

- **Connection Integrity:** Periodically check wiring connections to ensure they remain tight and secure. Loose connections can lead to intermittent operation or damage.
- **LED Indicators:** Monitor the green (supply) and red (output) LEDs for normal operation. Any deviation may indicate a fault.

Warning: Do not attempt to open or repair the relay. Refer to qualified personnel for any service beyond basic cleaning and inspection.

5. TROUBLESHOOTING

If the relay is not functioning as expected, consider the following:

- **No Power (Green LED OFF):**
 - Check the power supply connections (A1, A2) for proper voltage and secure contact.
 - Verify the power source is active.
- **Output Not Activating/Deactivating (Red LED):**
 - Ensure the time range and percentage knobs are set correctly for the desired delay.
 - Check the load connections (15, 16, 18) for secure contact and correct wiring according to the diagram.
 - Confirm the load itself is functional.
 - For TBT7-C1 (Delay OFF), remember the output is ON immediately and turns OFF after the delay.
- **Inconsistent Operation:**
 - Inspect for loose wiring connections.
 - Ensure the operating environment is stable and free from excessive electrical noise or extreme temperatures.

If issues persist after checking these points, contact customer support.

6. SPECIFICATIONS

Product Size

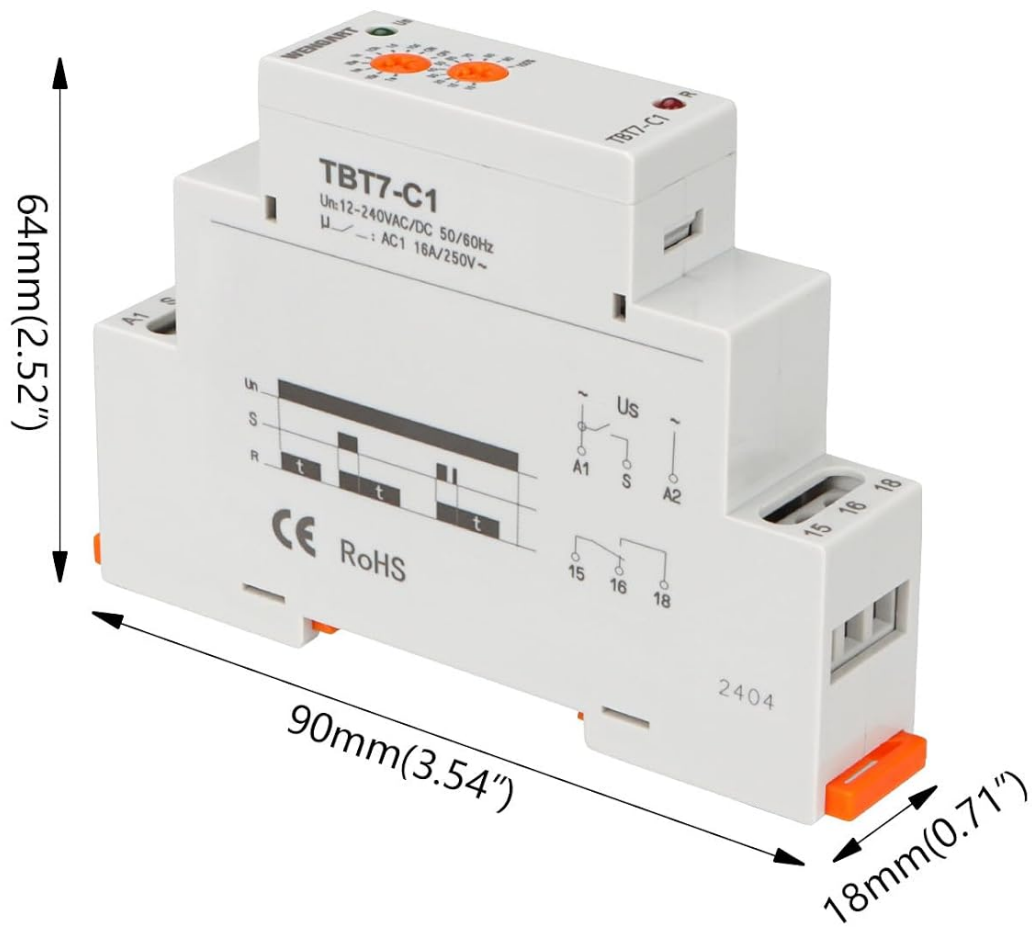


Image 6: Detailed dimensions of the Wengart TBT7-C1 Delay Time Relay, showing its length (90mm / 3.54"), width (18mm / 0.71"), and height (64mm / 2.52").

Parameter	Value
Model	TBT7-C1
Rated Voltage	AC/DC 12-240V
Output Type	1 SPDT (Single Pole Double Throw)
Time Setting Range	0.1 seconds - 10 days
Rated Current	16 A (AC1)
Mechanical Life	10 million cycles

Parameter	Value
Electrical Life (AC1)	100,000 cycles
Dimensions (L x W x H)	90 x 18 x 52 mm (approx. 3.54 x 0.71 x 2.05 inches)
Weight	77 grams
Mounting	35mm DIN Rail
Contact Material	Metal
Operating Mode	Delay OFF
Compliance	CE
Max. Operating Temperature	55°C (131°F)

7. SUPPORT

For further assistance, technical inquiries, or if you encounter issues not covered in this manual, please contact Wengart customer support. Please have your product model number (TBT7-C1) available when contacting support.
Note: Warranty information is not available in the provided product data. Please refer to your purchase documentation for warranty details.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

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