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## Dwyer CCT40/50, CCT50-200

# Dwyer CCT40/50 Current Transformer User Manual

Model: CCT40/50, CCT50-200

## Introduction

The Dwyer Series CCT40/50 Current Transformers offer a cost-effective solution for measuring electrical power and monitoring the operational status of equipment such as fans, pumps, and other machinery. Designed for integration into existing installations, the split core models facilitate installation without the need to disconnect existing cables. Each model provides three jumper-selectable ranges and a choice of three distinct output types, enhancing versatility for various applications.



This image displays the Dwyer CCT40/50 Current Transformer. It is a black, rectangular device with a circular opening in the center, indicating its solid core design. At the top right, two green terminal blocks are visible for electrical connections. The device also features

mounting tabs at the bottom.

## Features

- **Temperature Limits:** -22 to 158ºF (-30 to 70ºC).
- **Power Requirements:** Self-powered or 15 to 42 VDC loop powered (depending on model).
- **Humidity Limits:** 0 to 95% (non-condensing).
- **Response Time:** 250 ms to 90%.
- **Enclosure Rating:** UL, 94 V-O flammability rated, ABS plastic housing.

## Specifications

| Specification | Value |
|---|---|
| Item Weight | 4.8 ounces |
| Date First Available | September 25, 2013 |
| Manufacturer | Dwyer Instruments, Inc. |
| ASIN | B00FEYHITI |

## Setup and Installation

**Safety First:** Always ensure power is disconnected before attempting any installation or wiring. Consult local electrical codes and standards for proper installation procedures.

1. **Mounting:** Securely mount the current transformer in the desired location using the integrated mounting tabs. Ensure it is stable and free from excessive vibration.
2. **Cable Routing:** For solid core models, the conductor carrying the current to be measured must pass through the central opening of the transformer. For split core models, open the core, place it around the conductor, and securely close the core. Ensure the conductor is centered within the opening.
3. **Wiring Connections:** Connect the output terminals of the current transformer to your monitoring device (e.g., PLC, data logger, display) according to the wiring diagram provided with your specific model. Pay close attention to polarity for 4-20 mA output signals.
4. **Range Selection:** If your model features jumper-selectable ranges, configure the jumpers to match the expected maximum current of the circuit being monitored. Refer to the product's specific datasheet for jumper settings.
5. **Power Up:** Once all connections are verified and secure, restore power to the circuit.

## Operation

The Dwyer CCT40/50 Current Transformer operates by sensing the magnetic field generated by current flowing through a conductor. It then converts this measurement into a proportional output signal, typically 4-20 mA, which can be read by compatible control systems or meters.

- **4-20 mA Output:** This standard industrial signal represents the measured current. A 4 mA output typically corresponds to the minimum measured current (often 0 A), while a 20 mA output corresponds to the maximum current range selected.
- **Monitoring:** The output signal can be used to monitor the real-time current draw of equipment, detect overcurrent

conditions, or verify equipment operation (e.g., if a motor is running, current will be detected).

- **Calibration:** While these devices are factory calibrated, periodic verification with a known current source and a calibrated meter is recommended for critical applications.

## Maintenance

The Dwyer CCT40/50 Current Transformer is designed for long-term, maintenance-free operation. However, periodic checks can help ensure continued reliability:

- **Visual Inspection:** Periodically inspect the unit for any signs of physical damage, discoloration, or loose connections.
- **Cleanliness:** Ensure the unit is free from excessive dust, dirt, or moisture buildup, which can affect performance or lead to insulation breakdown. Clean with a dry, soft cloth if necessary.
- **Connection Integrity:** Verify that all electrical connections remain tight and free from corrosion.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity limits.

## Troubleshooting

If the current transformer is not performing as expected, consider the following:

- **No Output Signal:**
  - Verify power to the circuit being monitored.
  - Check wiring connections for proper polarity and secure contact.
  - Ensure the conductor is correctly routed through the transformer's opening.
  - Confirm the monitoring device is correctly configured to read a 4-20 mA signal.
- **Incorrect Output Reading:**
  - Verify the selected current range (jumper settings) matches the expected maximum current.
  - Ensure the monitoring device is calibrated and configured for the correct input range.
  - Check for external electrical interference.
  - Confirm the conductor is centered within the transformer opening.
- **Intermittent Readings:**
  - Inspect for loose wiring connections at both the transformer and the monitoring device.
  - Check for unstable power supply to the monitored circuit.

If issues persist after performing these checks, contact Dwyer Instruments, Inc. technical support.

## Warranty and Support

Specific warranty information for the Dwyer CCT40/50 Current Transformer is not provided in this document. For detailed warranty terms, technical support, or service inquiries, please contact Dwyer Instruments, Inc. directly through their official website or customer service channels. It is recommended to have your product model number and purchase date available when contacting support.

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