

Accu-CT[®] ACTL-0750 Series

Split-Core Current Transformer Installation Guide



Danger: Hazardous Voltages

Potential shock hazard from dangerous high voltage exists.

The ACTL-0750 series Accu-CT current transformers measure AC line current in circuits up to 600 Vac and nominal currents up to 250 Amps. They are split-core (opening) for ease of installation.

They may be field installed within distribution and control equipment such as panelboards, switchboards, industrial control equipment, energy-monitoring, and energy management equipment, to measure current on the service entrance or branch circuit conductors.

The Accu-CT is used with electric energy meters, like the WattNode meters, or for other current monitoring purposes.

Precautions

- ⚠️ **WARNING:** This product can expose you to chemicals including antimony trioxide, which is known to the State of California to cause cancer. For more information go to: www.P65Warnings.ca.gov.
- Only qualified personnel or **licensed electricians** should install the current transformer (CT). The line voltages of 120 Vac to 600 Vac can be lethal!
- Install in accordance with ANSI/NFPA 70, "National Electrical Code" (NEC). Follow all local electrical codes.
- The NEC prohibits installation of CTs in equipment where they exceed 75% of the wiring space of any cross-sectional area.
- Do not install CTs where they block ventilation openings.
- Do not install CTs in the area of breaker arc venting.
- The Accu-CT lead wires are considered Class 1 wiring (as defined by the NEC) and must be installed accordingly. They are not suitable for Class 2 wiring methods and should not be connected to Class 2 equipment.
- Verify that the line currents will not exceed the "Maximum Amps" (see the Models table below) under normal operation.
- Do not install the CT where it may be exposed to temperatures below -30°C or above 80°C (-22°F to 176°F), excessive moisture, dust, salt spray, or other contamination.
- The Accu-CT can be damaged by impacts or by being dropped. This can result in reduced accuracy or damage to the enclosure. To meet IEC 61869-1 requirements, install the Accu-CT in a panel or an enclosure to protect it from impacts.
- The current transformer cannot measure direct current (DC), and excessive DC will degrade the AC accuracy.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Pre-Installation Checklist

- The CT's rated current should normally be greater than or equal to the maximum current of the measured circuit. Ensure that the fuse or circuit breaker's rating does not exceed the CT's maximum continuous current rating.
- It is preferable to install the CT and meter or monitoring device close to each other. However, you may extend the CT wires by

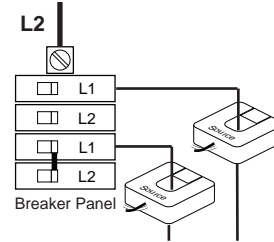
300 feet (100 m) or more by using shielded twisted-pair cable and by running the CT wires away from high current and line voltage conductors.

- For highest accuracy, try to separate the CTs on different phases by 1.0 inch (25 mm) to minimize magnetic interference.

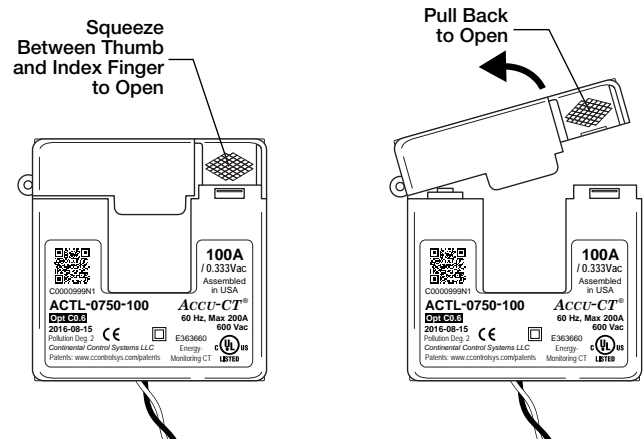
Connecting the Current Transformer

- WARNING:** To reduce the risk of electric shock, always open or disconnect the circuit from the power-distribution system (or service) of the building before installing or servicing current transformers.
- Point the SOURCE arrow toward the current source: the utility meter or the circuit breaker for branch circuits.

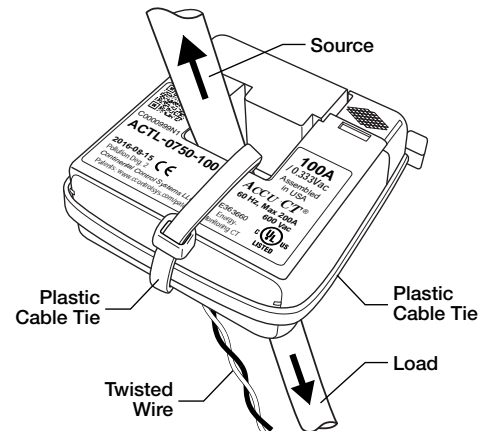
Note: If the CT is mounted backwards, the measured power will be negative.



- To open the CT, squeeze the knurled panels, then pull and rotate the top open.



- Make sure the mating surfaces are clean. Debris will increase the magnetic gap, decreasing accuracy.
- Place the CT around the conductor and close the CT.



- Optional:* Secure the CT to the conductor with a cable tie.
- Optional:* For added security, wrap a cable tie around the outside of the CT.

- 8) Route the twisted black and white wires from the CT to the meter or monitoring device. **Secure the CTs and route the lead wires so that they do not directly contact live terminals or busses.**
- 9) Connect the white and black wires to the terminals on the meter or monitoring device.

Note: If the white and black wires are reversed, the measured power will be negative.

Note: On a WattNode meter, the white wire should be aligned with the white dot on the label, and the black wire should be aligned with the black dot on the label.

Note: Be careful to match the CT to the voltage phases being measured. Make sure the Φ A CT is measuring the current on the Φ A conductor, and the same for phases B and C. Use colored labels or tape to identify the wires.

References

- <https://ctlsys.com/warranty-and-return-policy/> - Warranty
- <https://ctlsys.com/product/accu-ct-actl-0750-split-core-ct/>
- <https://ctlsys.com/cat/current-transformer/> - CT articles
- For information about connecting CTs to WattNode meters, see the appropriate WattNode meter manual.

Specifications

Models

| Model | Rated Amps | Maximum Amps |
|----------------------|--------------|----------------------------|
| ACTL-0750-005 | 5 A | 75 A |
| ACTL-0750-015 | 15 A | 150 A |
| ACTL-0750-020 | 20 A | 150 A |
| ACTL-0750-030 | 30 A | 200 A |
| ACTL-0750-050 | 50 A | 200 A |
| ACTL-0750-070 | 70 A | 200 A |
| ACTL-0750-100 | 100 A | 200 A |
| ACTL-0750-150 | 150 A | 300 A |
| ACTL-0750-200 | 200 A | 350 A⁽¹⁾ |
| ACTL-0750-250 | 250 A | 400 A⁽¹⁾ |

Models in **BOLD** are stock items with shorter lead times.

"Maximum Amps" are the maximum continuous currents the CTs can sustain without overheating.

⁽¹⁾For operation above 60°C, limit the maximum amps to 300.

Electrical

Overvoltage and Measurement Categories:

CAT IV (service entrance): 250 Vac

CAT III: 600 Vac

Line Frequency: 50 to 60 Hz

Standard Accuracy (% of reading)⁽²⁾

Accuracy: $\pm 0.75\%$ from 1% to 120% of rated primary current

Phase angle: ± 0.50 degrees (30 minutes) from 1% to 120% of rated current

IEEE C57.13 accuracy: class 1.2 from 1% to 120% of rated current

IEC 61869-1 accuracy: class 1.0 from 1% to 120% of rated current, temperature category -25/40°C

Revenue Grade Accuracy (% of reading)⁽²⁾

With Option C0.6, the Accu-CT is calibrated to meet IEEE/ANSI C57.13-2008 class 0.6 accuracy and IEC 60044-1 class 0.5 S accuracy and each CT is shipped with a certificate of calibration.

Accuracy: $\pm 0.50\%$ from 1% to 120% of rated primary current

Phase angle: ± 0.25 degrees (15 minutes) from 1% to 120% of rated current; ± 0.50 degrees (30 minutes) below 0°C from 1% to 10% of rated current

IEEE C57.13 accuracy: class 0.6 from 1% to 120% of rated current

IEC 61869-1 accuracy: class 0.5 and 0.5 S from 1% to 120% of rated current, temperature category -25/40°C

Available Models: Option C0.6 is available for all models except ACTL-0750-005

⁽²⁾**Note:** The ACTL-0750-250 accuracy may be degraded if operated above 40°C and continuously at or above 100% of rated current.

Type: Voltage output, integral burden resistor

Protection: includes internal clamp zener at 9 Vac

Output Voltage at Rated Amps: 0.33333 Vac (one-third volt)

Optional: 1.000 Vac (add "-1V" to the end of the model number)

Wire: 2.4 m (8 feet), 20 AWG (18 AWG prior to March 2021); custom lengths available

Polarity: the primary conductor polarity is marked on the label with P1 (source) and P2 (load), corresponding to the white (S1) and black (S2) wires respectively.

Maximum Voltage: 600 Vac

UL Listing: E363660, UL 2808, X0BA

Other Declarations: CE and UKCA according to EN 61869-1, -2

Environmental

Operating Temperature: -30°C to 80°C (-22°F to 176°F) up to 300 A; -30°C to 60°C (-22°F to 140°F) up to 400 A

Operating Humidity: Non-condensing, 5 to 95% relative humidity (RH)

IEC 60529 Rating: IP30

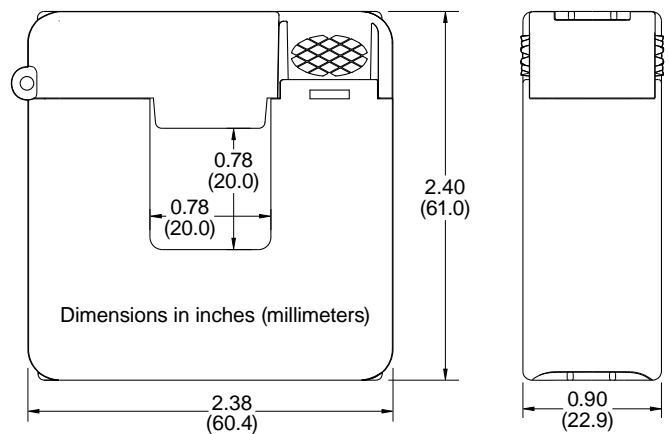
Pollution: POLLUTION DEGREE 2

Indoor Use: Suitable for indoor use.

Outdoor Use: Suitable for outdoor use when mounted in a NEMA 3R or 4 (IP 66) rated enclosure, provided the ambient temperature will not exceed 80°C (176°F).

Mechanical

Weight: 201 gm (7.1 oz)



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<https://www.ctlsys.com>

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