

AcuCT A Series

Revenue Grade Split-Core Current
Transformer Installation Guide



Copyright © 2026 v1.0.0

All Accuenergy brands and trademarks in this document are the property of Accuenergy Inc. All other brands and trademarks may be the property of the respective owners of these rights.

This instruction may not be altered, copied or reproduced in whole or in part by any means without the expressed written consent of Accuenergy.

Please read this installation guide carefully before installation, operation, and maintenance of the AcuCT A Series current transformers.

The information contained in this document is believed to be accurate at the time of publication, however, Accuenergy assumes no responsibility for any errors which may appear here and reserves the right to make changes without prior notice as part of continuing improvements. Please ask the local representative for the latest product specifications before ordering.

The following symbols appear throughout this documentation and on the AcuCT A Series, in addition to the electrical warning of danger or safety risk during the installation and operation of the current transformers.



Electrical Shock Hazard: Contains information about procedures which must be followed to prevent the risk of electric shock and danger that can result in personal injury or death.



Safety Warning: Contains information about circumstances which if not considered may result in personal injury or death.



Info: An advance notice to provide additional information before an action is taken by the user.

Installation and maintenance of the AcuCT A Series shall only be performed by qualified, competent professionals who have received training and have experience with high voltage and current devices.

Accuenergy shall not be responsible or liable for any damage caused by improper installation and/or operation.

Table of Contents

| | |
|--|-----------|
| Safety and Critical Handling Requirements | 5 |
| Current Transformer Installation Safety..... | 5 |
| Installation Requirements and Operating Limits..... | 6 |
| Pre-Installation Safety Checks..... | 6 |
| Introduction..... | 7 |
| Overview | 7 |
| CT Orientation, Polarity, and Wiring Identification | 8 |
| Standard Split-Core Installation..... | 9 |
| Recommended Tools and Materials..... | 9 |
| CT Mounting Procedure | 10 |
| Split-Core CT Installation..... | 10 |
| Mounting Bracket Installation (If Applicable) | 12 |
| Busbar Clamp Installation (If Applicable)..... | 13 |
| Bolt and DIN Rail Mounting..... | 14 |
| Warnings and Installation Considerations | 16 |
| Incorrect Installation Risk | 16 |
| Common Installation Errors | 16 |
| Best Practices | 17 |
| Accuracy Optimization | 17 |
| Wiring Practices..... | 17 |
| Installation Consistency | 17 |
| Commissioning Checklist..... | 18 |

Safety and Critical Handling Requirements



Electrical Hazard

Do Not Leave the Secondary Current Transformer Circuit Open on Energized Conductors.

For 80 mA and 100 mA output of the CTs, the secondary circuit must be connected to a compatible meter or safely short-circuited before the primary conductor is energized. An open secondary can develop hazardous voltage and may damage equipment or create a shock hazard.

Current Transformer Installation Safety

- Disconnect power before installing or servicing the CT. If live work is necessary, follow site-approved live-work procedures.
- Use lockout / tagout, arc-flash PPE, insulated tools, and required safety controls for the enclosure and voltage class.
- Confirm that the CT rated current, output type, rated voltage, burden, and environmental ratings are suitable for the installation.
- Inspect the CT before installation. Do not use a CT with cracked housing, damaged lead wires, loose latch mechanism, contaminated surfaces, or signs of overheating.
- Ensure the maximum conductor current does not exceed the CT rated current.
- Install indoors only unless the datasheet for the exact model and configuration states otherwise.
- Do not modify the CT housing, hinge, latch, mounting holes, lead wires, insulation system, or clamping hardware.
- Ensure CTs installed around conductors do not occupy more than 75% of the available wiring-space cross-sectional area, in accordance with applicable electrical codes.

Installation Requirements and Operating Limits

| Parameter | Specifications | Operating Limits |
|-----------------------|--|--|
| Rated Voltage | 600VAC | Do not use above the approved circuit voltage rating. |
| Measurement Category | CAT IV, PD3 | Verify the model datasheet before installation. |
| Frequency Range | 50 - 400 Hz | Confirm the monitored system frequency is within the model rating. |
| Operating Temperature | -25 °C to 70 °C (-13°F to 158°F) | Confirm ambient temperature inside the enclosure. |
| Humidity | Non-Condensing, 5% to 95% RH | Prevent condensation and water ingress. |
| Current Range | 1% - 120%; 5% - 120% of Rated Current, as per model | Select CT ratio suitable for the expected operating current. |
| Secondary Output | 80 mA, 100 mA, 250 mV, or 333 mV, depending on model. | Use only with compatible meter inputs and meter ratio settings. |

Pre-Installation Safety Checks

| Condition | Current Transformer Secondary Output | |
|-----------------------|--|--|
| | 80 mA and 100 mA | 250 mV and 333 mV |
| Open-Circuit Risk | High open-circuit risk. Do not leave secondary circuit open while primary current is present. | Low compared with current-output CTs; still keep wiring terminated and protected. |
| Shorting Requirement | Yes. If the meter is disconnected while the primary conductor is energized, the CT secondary should be shorted. | No. Follow the wiring instructions provided by the manufacturer of the meter. |
| Installation Priority | Terminate the secondary leads to the meter or shorting block before energizing the primary conductor. | Terminate the secondary leads to the meter before or during installation to avoid wiring errors. |

Introduction


Overview

The AcuCT A Series is a revenue-grade split-core current transformers intended for metering and power monitoring applications. Typical installation is required at locations where the current transformer must be installed around an existing conductor or busbar without disconnecting the primary cable. The AcuCT A series supports current-output and voltage-output options depending on the model.

| Model | Rated Primary Current Options | Rated Secondary Output Options | Window Size | Exterior Dimensions | Optional Accessory |
|-------------|---|--------------------------------|---------------------------------|--|--|
| AcuCT-050A | 20A, 30A, 50A, 60A, 80A, 100A, 150A | 80mA, 100mA, 250 mV, 333mV | Ø13.0mm (0.51") | 83mm x 83mm x 45mm (3.27" x 3.27" x 1.77") | ACUBRAC - SP5 |
| AcuCT-075A | 50A, 75A, 80A, 100A, 125A, 150A, 200A, 250A | 80mA, 100mA, 333mV | 19mm x 19mm (0.75" x 0.75") | 77mm x 85mm x 32mm (3.03" x 3.35" x 1.26") | ACUBRAC - SP7 |
| AcuCT-100A | 100A, 125A, 150A, 200A, 250A | 80mA, 100mA, 333mV | 25.5mm x 32.0mm (1.00" x 1.26") | 79.5mm x 81mm x 28mm (3.13" x 3.19" x 1.10") | ACUBRAC - SP6 Bolt Mounting Kit; ACUBRAC-SP6 DIN Rail Mounting Kit |
| AcuCT-142A | 200A, 250A, 300A, 400A, 500A, 600A | 80mA, 100mA, 333mV | 36mm x 36mm (1.42" x 1.42") | 89mm x 96mm x 32mm (3.50" x 3.78" x 1.26") | ACUBRAC - SP7 |
| AcuCT-200A | 400A, 500A, 600A, 750A, 800A, 1000A, 1200A, 1500A | 80mA, 100mA, 333mV | 51mm x 51mm (2.01" x 2.01") | 111mm x 115mm x 32mm (4.37" x 4.53" x 1.26") | ACUBRAC - SP7 |
| AcuCT-3337A | 600A, 750A, 800A, 1000A, 1200A, 1250A, 1500A, 2000A | 80mA, 100mA, 333mV | 85mm x 95mm (3.35" x 3.74") | 160mm x 151mm x 32mm (6.30" x 5.94" x 1.26") | ACUBRAC - SP6 / Busbar Clamping Screws |
| AcuCT-4153A | 1000A, 1200A, 1250A, 1500A, 1600A, 2000A, 2500A, 3000A, 3500A, 4000A, 5000A | 80mA, 100mA, 333 mV | 105mm x 135mm (4.13" x 5.31") | 215mm x 185mm x 45mm (8.46" x 7.28" x 1.77") | ACUBRAC - SP8 / Busbar Clamping Screws |

CT Orientation, Polarity, and Wiring Identification

Proper orientation is required for positive real power, correct power factor sign, and correct phase relationship between current and voltage inputs.



Info

CT Polarity Should Not be Inferred.

If commissioning shows negative power, reversed power factor, or an unexpected phase angle, verify both CT orientation and voltage phase assignment. Only swap X1/X2, S1/S2, or reverse the CT after confirming the wiring diagram and meter configuration.

| Marking / Feature | Interpretation During Installation |
|-------------------------------|--|
| P1-K or H1 / Source Side | For AcuCT-100A, P1-K points toward the source. For AcuCT-050A, AcuCT-075A, AcuCT-142A, AcuCT-200A, AcuCT-3337A, and AcuCT-4153A, primary conductor enters from the H1 side. |
| P2-K or H2 / Load Side | For AcuCT-100A, P2-L points toward the load. For AcuCT-050A, AcuCT-075A, AcuCT-142A, AcuCT-200A, AcuCT-3337A, and AcuCT-4153A, primary conductor exits towards the H2 or load side. Maintain consistent orientation across all phases. |
| X1 or S1 / Positive Secondary | Connect the white lead to the positive / high CT input of the meter or relay. |
| X2 or S2 / Negative Secondary | Connect the black lead to the negative / return CT input of the meter or relay. |
| Single Phase Conductor | Install one current transformer around single phase conductor only. Do not pass multiple phase conductors through the same CT for normal metering. |
| Lead Routing | Route the leads of CT away from sharp edges, moving parts, hot surfaces, and high-noise conductors. Keep secondary wiring as short as practically possible. |

Standard Split-Core Installation

Recommended Tools and Materials

- Use appropriate insulated hand tools for the enclosure and voltage class.
- Approved shorting terminal or CT shorting block for 80 mA and 100 mA current-output models, if required by site practice.
- Cable ties or clamps should be used for secondary lead strain relief.
- Mounting brackets, bolt-mount kit, DIN rail kit, clamping screws, panel screws, nuts, and washers as required by the selected mounting method.
- Multimeter and commissioning meter or software for final verification.

CT Mounting Procedure

AcuCT A Series mounting accessories are optional and purchased as per requirement. Mounting hardware is used to secure the CT to a panel, DIN rail, cable, or busbar support surface. Mounting hardware for attaching the brackets to the CT are included with the mounting accessories.

| Model | Bracket-to-CT Hardware | Optional Mounting Kit and Installation Notes |
|--------------------------|--|--|
| AcuCT-050A | M4 x 55 mm Screw with M4 Nut | ACUBRAC - SP5 Recommended Bracket Torque: 0.5-0.8 N.m. |
| AcuCT-075A | M4 x 40 mm Screw with M4 Nut | ACUBRAC - SP7 Recommended Bracket Torque: 0.5-0.8 N.m. |
| AcuCT-100A | Mounting clips to be placed in the slots located by the removable top section. | ACUBRAC - SP6 for Bolt Mounting or ACUBRAC - SP6 - DIN for 35 mm DIN Rail Mounting |
| AcuCT-142A or AcuCT-200A | M4 x 40 mm Screw with M4 Nut | ACUBRAC - SP7 Recommended Bracket Torque: 0.5-0.8 N.m. |
| AcuCT-3337A | M4 x 45 mm Screw with M4 Nut | ACUBRAC - SP6 Busbar or Cable Clamp Installation |
| AcuCT-4153A | M4 x 55 mm Screw with M4 Nut | ACUBRAC - SP8 Busbar or Cable Clamp Installation |

Split-Core CT Installation

Step 1: System Preparation


De-energize the circuit where possible, apply lockout/tagout, and verify absence of voltage according to site procedures.

Step 2: Verify the CT and conductor

Confirm the current transformer model, current ratio, secondary output type, conductor phase, conductor direction, and available window clearance.

Step 3: Connect CT Secondary Leads

Connect the CT secondary leads to the appropriate CT terminals on the meter or relay.



Info

Ensure proper secondary lead routing. Route CT secondary leads away from sharp edges, moving parts, high-temperature surfaces, and high-noise conductors. Avoid unnecessary lead extensions as additional lead resistance may increase burden and affect the current-output of the CT.

Step 4: Open the Split-Core CT

Simultaneously press the two side buttons or latch mechanism on the CT housing. Secure the CT using the required mounting method, such as mounting bracket kit, bolt mounting kit, DIN rail kit, or busbar / cable clamping hardware, as applicable to the model.

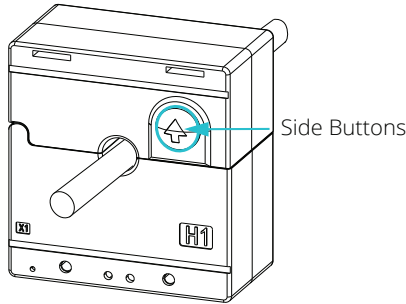


Figure 1 Open the CT

Step 5: Conductor Position

1. Place the current transformer with H1 facing the source side of circuit as depicted in Figure 2.
2. For AcuCT-100A, orient P1-K toward the source. Keep the same orientation convention across all phases.

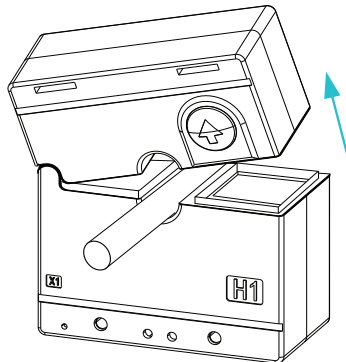


Figure 2 Installation with H1 Facing the Source

Step 6: Center the Conductor

Keep the conductor or busbar centered in the CT window where practical. Avoid mechanical stress on the CT body, terminals, hinge, latch, or secondary leads.

Step 7: Close the CT

Close the CT core until it fully latches. A small air gap can reduce measurement accuracy, so verify the core faces are clean and fully closed.

Mounting Bracket Installation (If Applicable)**Step 1: Choose Mounting Screws**

1. The mounting base plate includes 6.2 mm elongated holes.
2. The mounting slots accommodate either M5, M6 screws or bolts.
3. Use M5 or M6 based on the site standard and available mounting surface.

Step 2: Position the Mounting Brackets

1. For AcuCT-050A, AcuCT-075A, AcuCT-142A, AcuCT-200A, AcuCT-3337A, and AcuCT-4153A, position the mounting brackets on the current transformer body.
2. Fasten the brackets using screws and nuts from the mounting accessories and tighten until secure and flush, without over-tightening.
3. For AcuCT-100A, position the mounting clips to be placed in the slots located by the removable top section.

Step 3: Panel or Backplate CT Mount

1. Place the CT with the mounting bracket onto the mounting surface and insert the M5 or M6 screws through the elongated slots.
2. Insert all screws loosely first to allow alignment as depicted in Figure 3.
3. For fine alignment, adjust the current transformer position using the elongated holes, then tighten all panel screws firmly so the CT cannot move, without over-tightening.

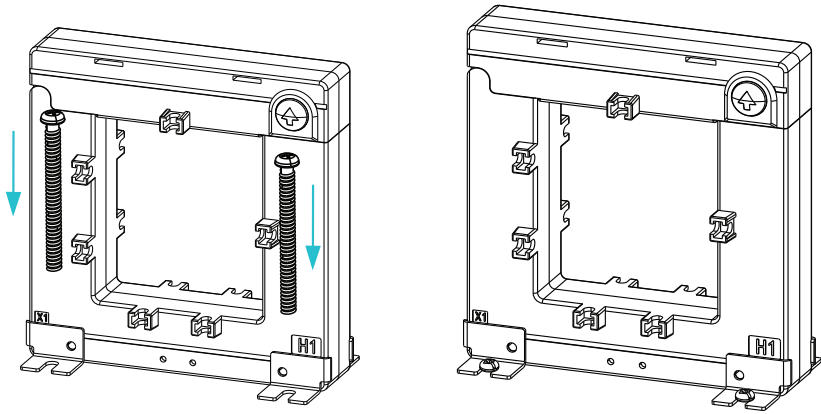


Figure 3 Mounting Screw in AcuCT-3337A to Panel

Step 4: Final Verification

1. Confirm the assembly is stable, flat against the surface, and does not wobble.
2. Energize the primary conductor only after the CT secondary circuit is terminated or safely shorted for current-output CTs.
3. Ensure the CT, latch, lead wires, and terminals remain accessible for wiring and service.
4. Repeat steps 1-6 for the remaining phases if required.

Busbar Clamp Installation (If Applicable)

For AcuCT-3337A and AcuCT-4153A, clamping hardware is used to secure the busbar or cable inside the current transformer window. For clamp installation, use the clamping screws, pressure washers or retainers.

1. Position the CT around the busbar or cable as the conductor passes through the CT window and centered if practical.
2. Insert the clamping screws through the current transformer and ensure the pressure washers or clamp retainers are seated correctly against the conductor or busbar.
3. Tighten the clamping screws evenly until the conductor or busbar is secure and the CT cannot rock, slide, or twist as depicted in Figure 4.
4. Verify that the secondary leads are protected from strain and abrasion.

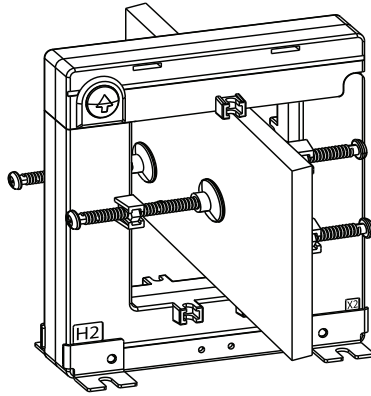


Figure 4 Busbar Clamped to AcuCT-3337A



**Safety
Warning**

Avoid mechanical stress. The CT must not carry the weight of unsupported busbars or cables. Provide independent mechanical support for the conductor or busbar where required. Excess mechanical stress may loosen connections, cause insulation damage, or result in conductor movement under fault conditions, which can lead to electric shock or arc-flash.



Info

For normal metering, install each CT around only one phase conductor. Routing the supply and return conductors, or multiple different phases, through the same current transformer can cancel or distort the measured current.

Bolt and DIN Rail Mounting

AcuCT-100A has two optional mounting kits for installation, bolt mounting kit and DIN rail mounting kit.

Bolt mounting kit, as depicted in Figure 5, is used for secure installation and DIN rail mounting kit is used with standard 35mm DIN rail for enclosure installations as depicted in Figure 6.

After installation, verify the current transformer is fully seated, stable, and accessible for wiring and service.

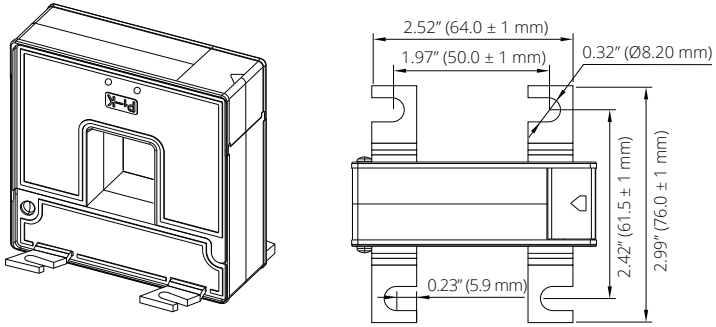


Figure 5 Dimensions of Bolt Mounting Kit

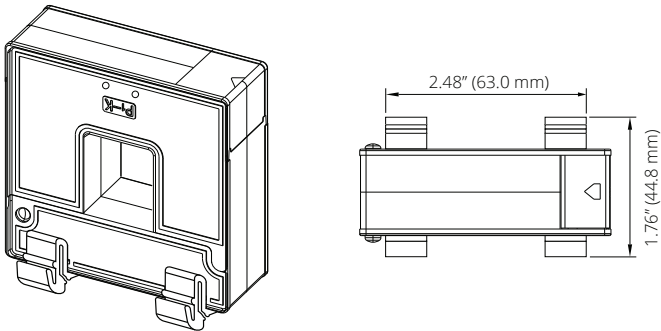


Figure 6 DIN Rail Mounting of AcuCT-100A

Warnings and Installation Considerations

Incorrect Installation Risk

Improper installation may result in inaccurate measurements, negative or reverse readings, reducing system reliability.

Common Installation Errors

Frequent errors observed are installing the CT backwards with incorrect polarity or simultaneously clamping the CT around multiple different phase conductors or mixing current and voltage phases. If the latch is not properly closed, it leaves the CT partially open leading to incorrect readings.

Best Practices

Accuracy Optimization

To achieve optimal performance, keep the CT core clean and fully closed. The AcuCT A Series meets accuracy specifications but place the conductor in center within the window to ensure maximum accuracy. Use cable ties to hold the CT in position and align the conductor. Maintain correct phase alignment with voltage inputs.

Wiring Practices

Route the CT secondary leads away from high-voltage conductors and avoid unnecessary lead extensions. To avoid noise interference, use twisted shielded wiring.

Installation Consistency

Maintain a consistent CT orientation across all measured phases and clearly label the CT, such as Phase A, B, C or R, Y, B. If possible, complete the wiring prior to CT installation.

CT Secondary Safety

| Condition | 250 mV, 333 mV Secondary | 80 mA, 100 mA Secondary |
|-----------------------------------|--------------------------|-------------------------|
| Open-Circuit Risk | Low | High |
| Shorting Required | No | Yes |
| Connect Leads Before Installation | Recommended | Recommended |

Commissioning Checklist

| Check | Acceptance Criteria | Result |
|-------------------------|--|-------------|
| Mechanical Installation | CT is stable, correctly mounted, and not carrying conductor/ busbar mechanical load. | Pass / Fail |
| Core Closure | Split-core is fully closed and latched; no visible air gap is present. | Pass / Fail |
| Orientation | H1 / Source side or P1-K / Source side is facing the source; orientation is consistent across phases. | Pass / Fail |
| Secondary Polarity | White lead is connected to positive current input of the meter. Black lead is connected to negative current input of the meter. | Pass / Fail |
| Secondary Circuit | Current-output current transformers are terminated to the meter or shorting terminals before energizing. | Pass / Fail |
| Meter Configuration | CT ratio, secondary output type, phase assignment, and scaling are configured correctly. | Pass / Fail |
| Phase Association | Current input phase matches the corresponding voltage phase at the meter. | Pass / Fail |
| Initial Readings | Current, real power, power factor, and phase angle readings are reasonable for the known load direction. | Pass / Fail |
| Lead Routing | Secondary leads are protected from sharp edges, heat, strain, and high-noise conductors. | Pass / Fail |

For current transformers with mA output, verify the meter reading with a known load or calibrated test source. For mV output, verify the voltage-output values using a compatible high-impedance meter input.

ACCUEENERGY

MAKE ENERGY USAGE SMARTER

For additional help please reach out to:

Accuenergy Sales

Email: marketing@accuenergy.com

Tel: 416-497-4100 ext. 1

Accuenergy Technical Support

Email: support@accuenergy.com

Tel: 416-497-4100 ext. 3



ISO 9001, 14001
& 45001 Certified



ISO 27001 &
50001 Certified



Accuenergy Inc.

Los Angeles - Toronto - Pretoria

North America Toll Free: 1-877-721-8908

Web: www.accuenergy.com



Revision Date: June 2026 Version: 1.0.0
Specs Subject To Change Without Notice.