

# Split-Core Current Transformers

## Features

- Split core for easy installation; ideal for retrofit
- No exposed metal parts when assembled
- 0.333 VAC output at rated current
- Safer to install and use than CTs with a current secondary
- UL and CE recognized, and RoHS compliant

## Description

These split-core current transformers (CTs) from Continental Control Systems offer an easy, safe, and inexpensive method for monitoring electrical energy usage.

Ideal for retrofit applications, the split core makes it possible to attach the CT without disturbing existing wiring. Just open the CT, slip it over the wire, and snap the CT closed. Once assembled, the CTs have no exposed metal parts.

The 0.333 VAC output of these CTs is low, making them much more safe to install and use than CTs with current secondaries. These CTs are also less expensive.

Part numbers with ACT in the middle (ACT series) are accurate to  $\pm 0.75\%$  from 1% to 120% of rated primary current. They also have exceptionally low phase angle error, which is essential for accurate power and energy measurements. ACT series CTs comply with the linearity and accuracy requirements of IEEE/ANSI C57.13 for tenant submetering and billing. These CTs swing open for one-handed operation.

Part numbers with CTS in the middle (CTS series) are accurate to  $\pm 1\%$  from 10% to 130% of rated current. This level of accuracy is suited to most energy monitoring applications.

Each CT has an internal precision burden resistor across the secondary. Each CT includes 8 ft (2.4 m), twisted-pair, 22 AWG leads.

See specifications and dimensions on the following pages.

## Monitoring Energy

These split-core CTs are recommended for use with the **OptoEMU Sensor™** 3V energy monitoring unit.

The OptoEMU Sensor 3V is a simple appliance that monitors the electrical energy used in your facility and then uses your existing wired or wireless Ethernet network to deliver that data to online software applications. You can see real-time and



Split-Core Current Transformer, ACT Series

historical use, eliminate guesswork, and pinpoint problem areas to reduce energy costs.

You can also use energy data from the OptoEMU Sensor in control systems and company databases. For more information, see form 1936, the [OptoEMU Sensor 3V Data Sheet](#).

These CTs are also recommended for use with the **SNAP-AIPM-3V** analog input module, which monitors power from a 3-phase load. The module measures voltage and current from each phase; it calculates watts and volt-amps for each phase plus true power sums for all phases.

Part of the SNAP PAC System, the SNAP-AIPM-3V mounts on a rack with other analog, digital, and serial modules and an I/O processor. For more information, see the [Power Monitoring Modules Data Sheet](#), form 1453.

## Part Numbers

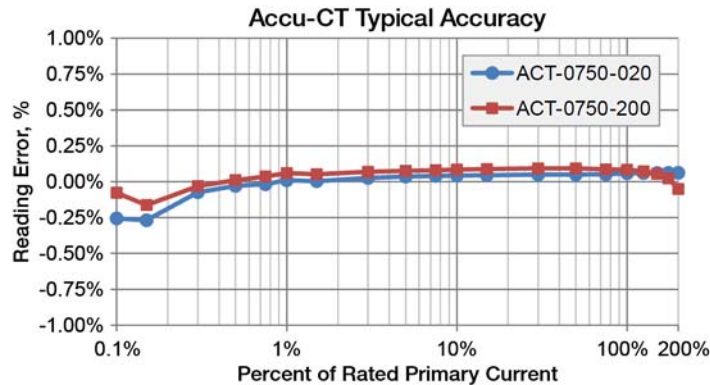
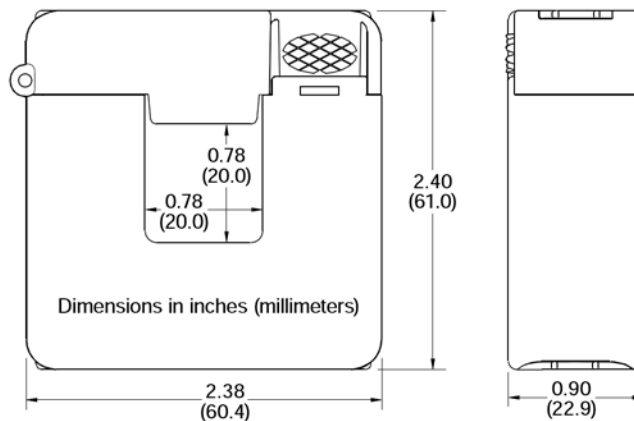
Part	Description
OPTOEMU-ACT-0750-050	Current Transformer, Split Core, 50 A, 0.333 VAC, 0.75 inch (1.91 cm) Inner Diameter
OPTOEMU-ACT-0750-100	Current Transformer, Split Core, 100 A, 0.333 VAC, 0.75 inch (1.91 cm) Inner Diameter
OPTOEMU-ACT-0750-250	Current Transformer, Split Core, 250 A, 0.333 VAC, 0.75 inch (1.91 cm) Inner Diameter
OPTOEMU-CTS-1250-400	Current Transformer, Split Core, 400 A, 0.333 VAC, 1.25 inch (3.18 cm) Inner Diameter
OPTOEMU-CTS-2000-600	Current Transformer, Split Core, 600 A, 0.333 VAC, 2 inch (5.08 cm) Inner Diameter

# Split-Core Current Transformers

## Specifications: ACT Series

	OPTOEMU-ACT-0750-050	OPTOEMU-ACT-0750-100	OPTOEMU-ACT-0750-250
Rated Current (primary)	50 amps	100 amps	250 amps
Output (secondary)	0.333 VAC	0.333 VAC	0.333 VAC
Dimensions	2.38 x 2.40 x 0.90 in. (6.04 x 6.10 x 2.29 cm)	2.38 x 2.40 x 0.90 in. (6.04 x 6.10 x 2.29 cm)	2.38 x 2.40 x 0.90 in. (6.04 x 6.10 x 2.29 cm)
Inner Diameter	0.78 in. (2.0 cm)	0.78 in. (2.0 cm)	0.78 in. (2.0 cm)
Leads	8 ft (2.4 m), 22 AWG, twisted pair	8 ft (2.4 m), 22 AWG, twisted pair	8 ft (2.4 m), 22 AWG, twisted pair
Accuracy	± 0.75% from 1% to 120% of rated primary current	± 0.75% from 1% to 120% of rated primary current	± 0.75% from 1% to 120% of rated primary current
Phase Angle	± 0.5 degrees (30 min) from 1% to 120% of rated current	± 0.5 degrees (30 min) from 1% to 120% of rated current	± 0.5 degrees (30 min) from 1% to 120% of rated current
Agency Approvals	UL, CE, RoHS	UL, CE, RoHS	UL, CE, RoHS
Warranty*	5 years*	5 years*	5 years*

\* Original manufacturer's warranty applies. See <http://www.ccontrols.com/w/Warranty>



All diagrams courtesy of Continental Control Systems LLC

# Split-Core Current Transformers

## Specifications: CTS Series

Refer to dimensional diagram below.

	OPTOEMU-CTS-1250-400	OPTOEMU-CTS-2000-600
Rated Current (primary)	400 amps	600 amps
Output (secondary)	0.333 VAC	0.333 VAC
Dimension A (width)	3.25 in. (6.45 cm)	4.75 in. (12.1 cm)
Dimension B (depth)	3.35 in. (8.51 cm)	5.00 in. (12.7 cm)
Dimension C (height)	1.00 in. (2.54 cm)	1.20 in. (3.05 cm)
Inner Diameter (D, E)	1.25 in. (3.18 cm)	2.00 in. (5.08 cm)
Leads	8 ft (2.4 m), 22 AWG, twisted pair	8 ft (2.4 m), 22 AWG, twisted pair
Accuracy	± 1% from 10% to 130% of rated current	± 1% from 10% to 130% of rated current
Agency Approvals	UL, CE, RoHS	UL, CE, RoHS
Warranty*	5 years*	5 years*

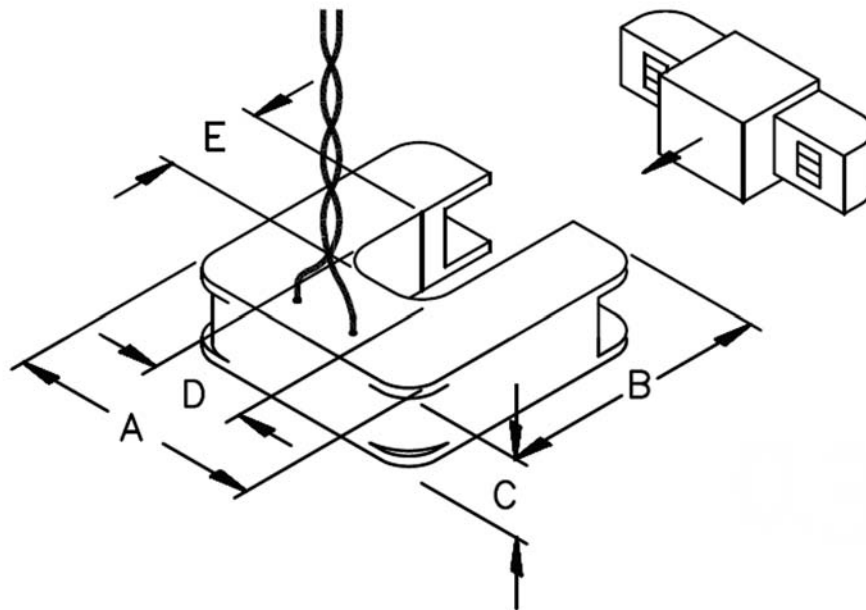
\* Original manufacturer's warranty applies. See <http://www.ccontrols.com/w/Warranty>

## Wiring Notes

Install CTs on the phase conductor that corresponds to the voltage input phase.

When properly oriented toward the source, the CT's black wire is positive and the white wire is neutral.

Install CTs with the arrow or label "THIS SIDE TOWARD SOURCE" facing toward the current source.



All diagrams courtesy of Continental Control Systems LLC

# More About Opto 22

## Products

Opto 22 develops and manufactures reliable, flexible, easy-to-use hardware and software products for industrial automation, energy management, remote monitoring, and data acquisition applications.

### OptoEMU Energy Management System

The easy-to-use OptoEMU Sensor monitors electrical energy use in your facility and delivers detailed, real-time data you can see and analyze. The Sensor can monitor energy data from pulsing meters, electrical panels or subpanels, and equipment. View energy data online using a software service or incorporate the data into your control system for complete energy management.

### SNAP PAC System

Designed to simplify the typically complex process of selecting and applying an automation system, the SNAP PAC System consists of four integrated components:

- SNAP PAC controllers
- PAC Project™ Software Suite
- SNAP PAC brains
- SNAP I/O™

### SNAP PAC Controllers

Programmable automation controllers (PACs) are multifunctional, modular controllers based on open standards.

Opto 22 has been manufacturing PACs for over two decades. The standalone SNAP PAC S-series and the rack-mounted SNAP PAC R-series both handle a wide range of digital, analog, and serial functions for data collection, remote monitoring, process control, and discrete and hybrid manufacturing.

SNAP PACs are based on open Ethernet and Internet Protocol (IP) standards, so you can build or extend a system easily, without the expense and limitations of proprietary networks and protocols.

### PAC Project Software Suite

Opto 22's PAC Project Software Suite provides full-featured, cost-effective control programming, HMI (human machine interface) development and runtime, OPC server, and database connectivity software for your SNAP PAC System.

Control programming includes both easy-to-learn flowcharts and optional scripting. Commands are in plain English; variables and I/O point names are fully descriptive.

PAC Project Basic offers control and HMI tools and is free for download on our website, [www.opto22.com](http://www.opto22.com). PAC Project Professional, available for separate purchase, adds

OptoOPCServer, OptoDataLink, options for controller redundancy or segmented networking, and support for legacy Opto 22 serial *mistic*™ I/O units.

### SNAP PAC Brains

While SNAP PAC controllers provide central control and data distribution, SNAP PAC brains provide distributed intelligence for I/O processing and communications. Brains offer analog, digital, and serial functions, including thermocouple linearization; PID loop control; and optional high-speed digital counting (up to 20 kHz), quadrature counting, TPO, and pulse generation and measurement.

### SNAP I/O

I/O provides the local connection to sensors and equipment. Opto 22 SNAP I/O offers 1 to 32 points of reliable I/O per module, depending on the type of module and your needs.

Analog, digital, and serial modules are all mixed on the same mounting rack and controlled by the same processor (SNAP PAC brain or rack-mounted controller).

## Quality

Founded in 1974, Opto 22 has established a worldwide reputation for high-quality products. All are made in the U.S.A. at our manufacturing facility in Temecula, California. Because we do no statistical testing and each part is tested twice before leaving our factory, we can guarantee most solid-state relays and optically isolated I/O modules for life.

## Free Product Support

Opto 22's California-based Product Support Group offers free, comprehensive technical support for Opto 22 products. Our staff of support engineers represents decades of training and experience. Support is available in English and Spanish by phone or email, Monday–Friday, 7 a.m. to 5 p.m. PST.

Additional support is always available on our website: how-to videos, OptoKnowledgeBase, self-training guide, troubleshooting and user's guides, and OptoForums.

In addition, hands-on training is available for free at our Temecula, California headquarters, and you can [register online](#).

## Purchasing Opto 22 Products

Opto 22 products are sold directly and through a worldwide network of distributors, partners, and system integrators. For more information, contact Opto 22 headquarters at 800-321-6786 or 951-695-3000, or visit our website at [www.opto22.com](http://www.opto22.com).

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