| Specifications | |
|---|---|
| ***Output Signal*** | 4-20mA loop-powered (sinking) |
| ***Output Limit*** | 112% of standard output range maximum value |
| ***Monitored Circuit*** | 600VAC line-to-line max. 0-2000A |
| ***Frequency Range*** | 40-400Hz |
| ***Response Time*** | 600ms (to 90% step change) |
| ***Accuracy*** | 1.0% FS (10-100% of range) |
| ***Output Loading*** | 500Ω maximum |
| ***Power Supply*** | 24VDC Nominal, 12-36 VDC<br>Use Class 2 power supply or limitied power supply only |
| ***Isolation Voltage*** | UL Listed to 3,500VAC |
| ***Coil Aperture and Cable*** | 5.5" (139.7 mm) OD, 4.5" (114.3 mm) ID, 15.8" (401.3 mm) length |
| ***Case*** | UL 94 V-0 Flammability Rating |
| ***Environmental*** | Operating temperature: -4 to 122°F (-20 to 50°C) |
| | Relative Humidity: 0-95% RH, Non-condensing |
| | Pollution Degree 2 |
| | Altitude to 2000 meters |
| ***Agency Approvals*** | UL/cUL (E197592), CE |

For products intended for the EU market, the following is applicable to the CE compliance of the product:

The ATCR series comply with EN61010-1 CAT III 300Vrms max line-to-neutral measurement category. If insulated cable is used for the primary circuit, the voltage rating can be improved according to the insulation characteristics given by the cable manufacturer. Use 24V input power and fuse at 5 amps. Power source overvoltage category I as defined per EN 61010-1.

***WARNING! RISK OF DANGER:***
***SAFE OPERATION CAN ONLY BE GUARANTEED IF THE SENSOR IS USED FOR THE PURPOSE FOR WHICH IT HAS BEEN DESIGNED FOR AND WITHIN THE LIMITS OF THE TECHNICAL SPECIFICATIONS. WHEN THIS SYMBOL IS USED, IT MEANS YOU MUST CONSULT ALL DOCUMENTATION TO UNDERSTAND THE NATURE OF POTENTIAL HAZARDS AND THE ACTION REQUIRED TO AVOID THEM.***

***WARNING! RISK OF ELECTRICAL SHOCK:***
***WHEN OPERATING THE SENSOR CERTAIN PARTS MAY CARRY HAZARDOUS VOLTAGE (E.G. PRIMARY CONDUCTOR, POWER SUPPLY). THE SENSOR SHOULD NOT BE PUT INTO OPERATION IF THE INSTALLATION IS NOT COMPLETE.***

## Part Number Key

**ACT R - 500 - 42L - S**

**COIL:**
S - Flexible Split Core

**VOLTAGE:**
24VDC

**OUTPUT:**
4-20 mA loop-powered

**RANGE:** 500 - 0-500A input
1000 - 0-1000A input
2000 - 0-2000A input

**MEASUREMENT:**
R - True RMS

**TRANSDUCER TYPE:**
ACT - Flexible Coil AC Current Transducer

| Maximum Input Amps | | |
|---|---|---|
| Continuous | 6 Sec. | 1 Sec. |
| 4000 | 4400 | 5000 |

AUTOMATIONDIRECT.com
AutomationDirect.com (ADC)
3505 Hutchinson Road, Cumming, GA 30040
Phone: (800) 633-0405 or (770) 889-2858
Fax: (770) 889-7876

ACTR - Inst - Rev 2 0523 P-N 292280004

ACUAMP®

# ACTR SERIES INSTALLATION INSTRUCTIONS


## Quick Start Guide

1. **Wrap the sensing coil around the conductor you are monitoring and snap the loose end into the connector.**
2. **Mount the base integrator to DIN rail or similar method.**
3. **Connect output wiring.**
   - **A. Use 24AWG (0.2mm²) up to 14AWG (2.5mm²) copper wires, 60/75°C copper conductors only.**
   - **B. Make sure output load does not exceed 500Ω.**
   - **C. Connect proper power supply and load in series.**
   - **D. Tighten screw terminals to 4 in lbs (0.45 Nm).**

## Description

ACTR Series sensors utilize a flexible coil to surround the conductor, connected as a matched set with a factory calibrated integrating signal conditioner. This provides high accuracy, lower wiring costs, easier installation and saves valuable panel space. ACTR Series products have a flexible core with 4-20mA output.

ACTR Series products feature a True RMS output designed for applications on distorted current waveforms such as VFD outputs, or non-sinusoidal waveforms.

## Installation

Wrap the flexible sensing coil around the conductor, once and reconnect the open end to the connector on the cable.

ACTR Series sensors are designed for use in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures.

Mount ACTR sensor using a standard DIN rail, taking care to maintain at least one-inch clearance in all directions between the sensing coil and other magnetic devices for proper operation.

**Note:** The sensor is not sensitive to current flow direction, so the sensor label side can face either the source or the load, and the sensor base can be mounted in any position.

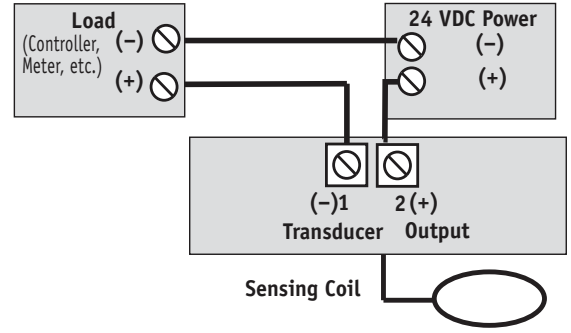
***IT IS NOT RECOMMENDED TO WRAP THE SENSING COIL AROUND THE CONDUCTOR MORE THAN ONCE. MULTIPLE WRAPS OF THE COIL AROUND THE CONDUCTOR WILL DECREASE THE SENSOR ACCURACY, AND MAY PRODUCE AN UNRELIABLE OUTPUT SIGNAL.***

## Notes

The protection provided by this device may be impaired if it is used in a manner not specificed.

## Output Wiring

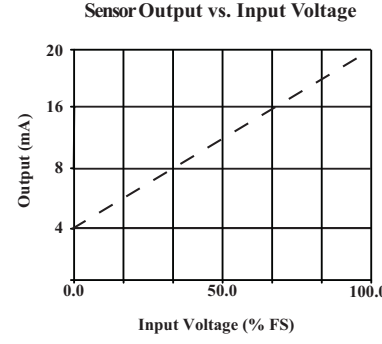
Connect control or monitoring wires to the sensor. Use 24AWG (0.2mm²) up to 14AWG (2.5mm²) copper wire and tighten terminals to 4.0 in lbs (0.4 Nm) torque.




Connection Notes:

- Captive screw terminals.
- 14-22 AWG (2.5 - 0.33 mm²) solid or stranded.
- Observe Polarity of Output Connections.
- See label for range limitations

**Note:** The coil and the signal conditioner are matched and calibrated at the factory.




## Range Select

ACTR Series sensors feature a single, factory calibrated range. There is no need for time consuming and inaccurate field setting of zero or span.

1. Determine the normal operating amperage of your monitored circuit.
2. Select the model with a range that is equal to or higher.

## Troubleshooting

1. Sensor has low or no output
   - A. Power Supply is not properly sized.
     ***Check power supply voltage and current rating.***
   - B. Polarity is not properly matched.
     ***Check and correct wiring polarity.***
   - C. Monitored load is not AC or is not on.
     ***Check that the monitored load is AC and that is actually on.***
2. Output Signal too low
   - A. Range may be too high for the current being monitored.
     ***Select model carefully.***
   - B. Input load (monitored current) is below minimum required..
     ***Loop the monitored wire several times through the aperature until the "sensed" current rises above minimum. Sensed Amps = (Actual Amps) x (Number of Loops). Count loops on the Inside of the aperature.***
3. Output Signal is constant at 20mA
   - A. Range may be too low for current being monitored.
     ***Select different ACTR model with higher range.***
4. Output Signal is constant at 4mA.
   - A. Double check the output wiring. Reversed polarity may cause this result.