



## AC Current Transmitters, Split Core

**Input:** 0-2 Amps AC to 0-200 Amps AC  
**Output:** 4-20 mADC Loop Powered

- 4-20 mA Powered, Isolated Output
- CTX-ACR True RMS for Distorted Waveforms
- CTX-AC for Sinusoidal Waveforms
- Jumper Selectable Ranges

### Applications

- Convert Amps to a DC Process Signal
- Monitor Current Ranges
- Monitor Motors, Pumps, Heaters

### AC Current Input Ranges

See table at right, ranges are jumper selectable

### Output

Loop-powered, 4-20 mA DC output, 800 Ohm max. load

CTX-AC 32 mA DC over-range limit

CTX-ACR 23 mA DC over-range limit

### Loop Power

12 VDC to 40 VDC max.

Use Class 2 or limited power source supply only

$V_L = 12 \text{ VDC} + (R_L \times 0.020 \text{ A})$

$R_L = (V_L - 12 \text{ VDC}) \div 0.020 \text{ A}$

Where:  $V_L$  = Loop Voltage,  $R_L$  = Loop Resistance

### Accuracy

±0.8% full scale

### Response Time

600 milliseconds (to 90% step change)

### Frequency Range

CTX-AC 20 to 100 Hz (sinusoidal)

CTX-ACR 10 to 400 Hz (all waveforms)

### Isolation Voltage

UL listed to 1270 VAC, tested to 5000 VAC

### Sensing Aperture

0.85" x 0.85" square (21.5 mm x 21.5 mm)

### Housing

UL 94V-0 flammability rated

### Environmental

-4 to 122 °F (-20 to 50 °C), 0-95% RH, non-condensing

For use in Pollution Degree 2 Environment

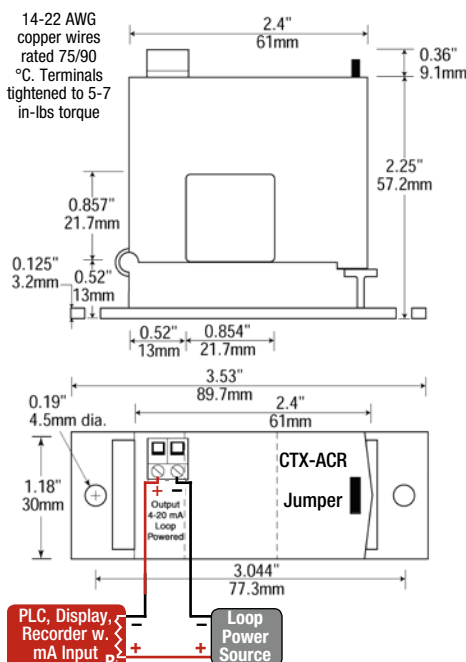
Protect from weather, water, condensation, corrosion

Max. altitude 2000 meters

### Listings

UL & CUL 508 industrial control equipment

CE certified



Models	Jumper	Ranges	Overload Current		
			Cont.	6 Sec	1 Sec
CTX-AC-0	Mid	0-2 A	80 A	125 A	250 A
CTX-ACR-0	High	0-5 A	100 A	125 A	250 A
CTX-AC-1 CTX-ACR-1	None	0-10 A	80 A	125 A	250 A
	Mid	0-20 A	110 A	150 A	300 A
	High	0-50 A	175 A	215 A	400 A
CTX-AC-2 CTX-ACR-2	None	0-100 A	200 A	300 A	600 A
	Mid	0-150 A	300 A	450 A	800 A
	High	0-200 A	400 A	500 A	1000 A

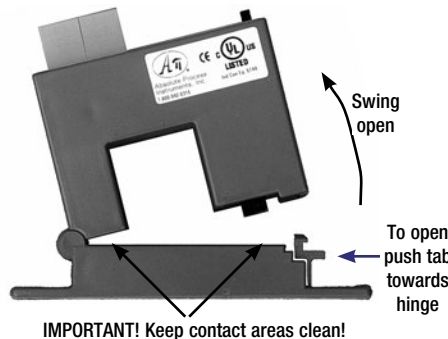
### Description

The split-core CTX-AC and CTX-ACR series transmitters measure AC current in ranges up to 200 Amps AC and convert it to an isolated, loop-powered, 4-20 mA DC output. These two-wire transmitters consist of a current transformer and a signal conditioner in one compact package.

The CTX-AC is an economical solution where sinusoidal or undistorted wave forms are encountered, such as resistive loads.

The true RMS output CTX-ACR series transmitters can be used for both linear (sinusoidal) or non-linear (distorted) waveform applications. The CTX-ACR incorporates a mathematical algorithm that integrates the AC current waveform over time and provides an output equal to the true RMS value of the waveform. The true RMS output ensures accurate measurements in electrically noisy environments and distorted sine waves from variable frequency drives (VFDs) or SCRs.

### Instructions



### Range Selection

The sensing ranges are jumper-selectable. It is often easier to set ranges before installation. See product label for ranges. The ranges are factory calibrated.

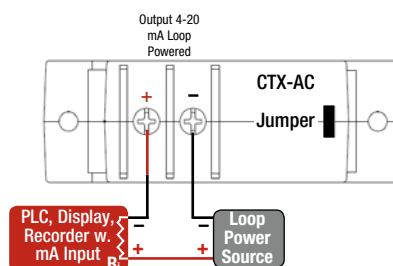
Determine the desired amperage to be monitored. Depending on your application this may be normal or maximum amperage.

See the product label and place the range jumper in the appropriate position that is equal to or slightly higher than the desired amperage.

### Installation

**WARNING!** Turn all power off before connecting or disconnecting wiring, or removing or installing this device. All wiring must be performed by a qualified electrician or instrumentation engineer.

This device must be protected from the environment or mounted in an enclosure. It can be mounted in any position or hung directly on wires with a wire tie. Leave at least one inch distance between sensor and other magnetic devices.



## CTX-AC, CTX-ACR Series

Quick Link [api-usa.com/current](http://api-usa.com/current)



The transmitters are designed to withstand harsh industrial environments and can be mounted in virtually any position.

Only two wire connections are necessary for the 4-20 mA DC output. Power is derived from the output loop eliminating the need for additional power wiring.

If this equipment is not used as specified, safety and reliability may be impaired.

Press the tab in the direction as shown to open the sensor.

Place wire in opening, press the hinged portion firmly downward until a definite click is heard and the tab pops out fully.

**KEEP SPLIT-CORE CONTACT AREAS CLEAN!**

Silicone grease is factory applied on the mating surfaces to prevent rust and improve performance. Be careful not to allow grit or dirt onto the grease in the contact area. Operation can be impaired if the mating surfaces do not have good contact. Check visually before closing.

### Wiring Connections

For the connections use 14-22 AWG copper wires rated 75/90 °C. Terminals should be tightened to 5-7 in-lbs torque.

See wiring diagram. Polarity must be observed for wiring connections. If the output does not function, check wiring and polarity.

Be sure the output load or loop power requirements are met according to the formula in the specifications.

### Troubleshooting

#### 1. No 4-20 mA output

A. Loop power supply is not properly sized.  
Check loop power supply voltage and current rating.

B. Wiring polarity is incorrect. Check and correct wiring polarity according to wiring diagram.

C. The core contact area may be dirty.  
Open the sensor and clean the contact area.

#### 2. 4-20 mA output signal too low

A. The jumper may be set in a range that is too high for current being monitored. Move jumper to a lower range.

B. Monitored current is below minimum required.  
Loop the monitored wire several times through the aperture until the sensed current rises above minimum.

Sensed Amps = (Actual Amps) x (Number of Loops)  
Count loops on the inside of the aperture only.

#### 3. Output is always at 4 mA

A. Monitored load is not AC or is not on.  
Check that the load is AC and that it is actually on.

#### 4. Output is always at 20 mA

A. The jumper may be set in a range that is too low for current being monitored. Move jumper to the correct range.