AC Current Transmitters, High Current, Solid Core — CTX-AC-3S, -AC-4S, -ACR-3S, -ACR-4S Series

Input: 0-375 Amps AC to 0-2000 Amps AC
Output: 4-20 mADC

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

Applications

- *Convert Amps to a DC Process Signal*
- *Monitor Current Ranges and Overload Protection*
- *Monitor Large Motors, Pumps, Heaters*

AC Current Input Ranges
Three position slide switch for range selection

Output
Loop-powered, 4-20 mA DC, 23 mA DC over-range limit

$V_L = 12\ VDC + (R_L \times 0.020\ A)$
$R_L = (V_L - 12\ VDC) \div 0.020\ A$
Where: V_L = Loop Voltage (40 VDC max.)
R_L = Loop Resistance

Loop Power
12 VDC to 40 VDC max.
800 Ohm max. load

Accuracy
±1% full scale

Response Time
600 milliseconds (to 90% step change)

Frequency Range
CTX-AC 50 to 60 Hz sinusoidal
CTX-ACR 10 to 400 Hz

Isolation Voltage
3000 VAC

Housing
UL 94V-0 flammability rated

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

Model	Range	Maximum Current		
		Cont.	6 Sec	1 Sec
CTX-AC-3S	0-375 A	750 A	1500 A	3750 A
	0-500 A			
	0-750 A			
CTX-ACR-3S True RMS	0-375 A	750 A	1500 A	3750 A
	0-500 A			
	0-750 A			
CTX-AC-4S	0-1000 A	2000 A	4000 A	10000 A
	0-1333 A			
	0-2000 A			
CTX-ACR-4S True RMS	0-1000 A	2000 A	4000 A	10000 A
	0-1333 A			
	0-2000 A			

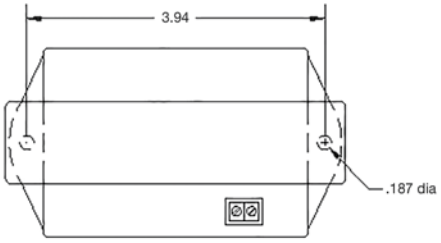
Description
The solid-core CTX-AC and CTX-ACR series transmitters measure AC current in ranges up to 2000 Amps AC and convert it to an isolated, loop-powered, 4-20 mA DC output. These two-wire transmitters consist of a current transformer and a signal conditioner in one compact package.

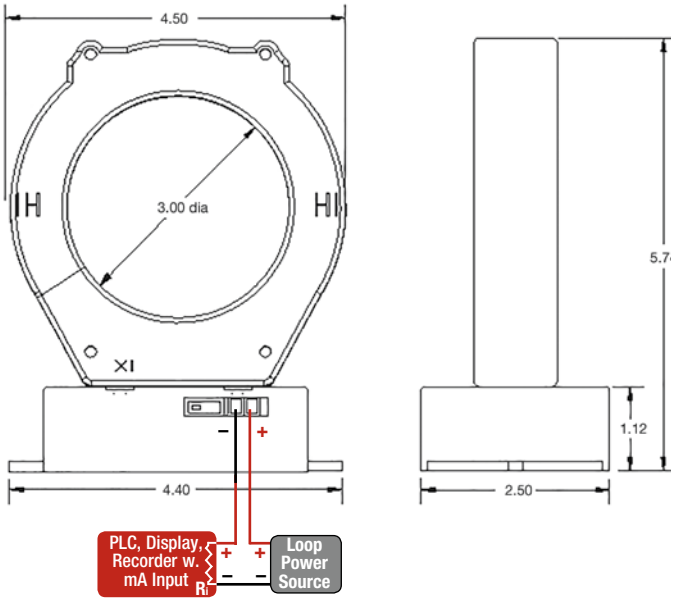
The CTX-AC is an economical solution for sinusoidal or undistorted wave forms, such as resistive loads.

The true RMS output CTX-ACR can be used for both linear (sinusoidal) or non-linear (distorted) waveforms. The CTX-ACR integrates the AC current waveform over time and provides a true RMS output allowing accurate measurements in electrically noisy power environments and in applications such as variable frequency drives (VFDs) or SCRs.

The transmitters are designed to withstand harsh industrial environments and can be mounted in virtually any position. They can be panel mounted using the built-in mounting bracket or hung directly on the wire and secured with a wire tie.

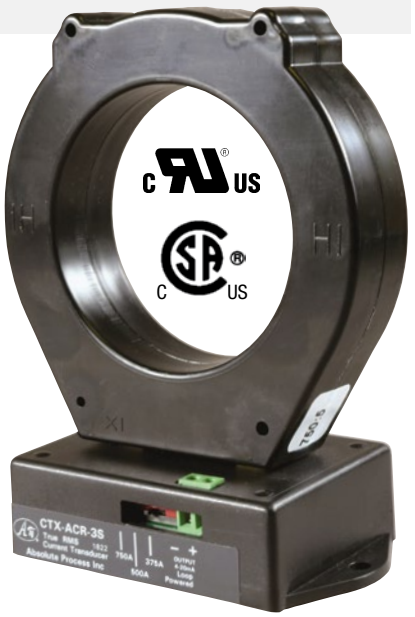
Only a two wire connection is necessary for the 4-20 mA DC output. Power is derived from the output loop eliminating the need for additional power wiring.





Quick Link
api-usa.com/current

MADE IN USA



Instructions

Range Selection
A three postion switch selects the range. The ranges are factory calibrated.

1. Determine the normal operating amperage of your monitored circuit.
2. Move the range selector switch to the appropriate position selecting a range that is equal to or slightly higher than the normal operating amperage.

Installation
WARNING! Turn all power off before connecting or disconnecting wiring, or removing or installing transmitter. All wiring must be performed by a qualified electrician or instrumentation engineer. See wiring diagram or consult factory for assistance.

Run wire to be monitored through the sensing aperture.

The transmtter should 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. Just leave at least one inch distance between sensor and other magnetic devices.

Output Wiring
Connect wires to the sensor being careful to observe correct wiring polarity as shown in the wiring diagram.

Use up to 14 AWG solid or stranded copper wire and tighten terminals to 3.5 inch-pounds torque.

Be sure the output load does not exceed 800 ohms.

The output load or loop power requirements are determined by the formula in the specifications.

Troubleshooting
1. **No 4-20 mA output**
   Loop power supply is not properly sized. Check loop power supply voltage and current rating.

   Wiring polarity is incorrect. Check and correct wiring polarity according to diagram above.
2. **Output signal too low**
   The switch may be set in a range that is too high for current being monitored. Set switch to the correct range.

   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 signal is always at 4 mA**
   Monitored load is not AC or is not on. Check that the load is AC and that it is actually on.
4. **Output signal is always at 20 mA**
   The switch may be set in a range that is too low for current being monitored. Set switch to a higher range.

ABSOLUTE PROCESS INSTRUMENTS
1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502
api-usa.com