

Input: 0-50 Amps DC to 0-400 Amps DC
Output: 4-20 mADC

Quick Link
api-usa.com/current

- Low Voltage AC/DC Powered
- Isolated Output
- Hall-Effect Sensor
- Jumper Selectable Ranges

Applications

- Convert DC Amps to a Process Signal
- Monitor DC Motors and Drives
- Monitor Battery Banks, Welders, Solar Panels

DC Current Input Ranges

See table at right, ranges are jumper selectable

Output

Sourcing 4-20 mA DC, 23 mA DC over range limit
 Maximum loop resistance 650 Ohms

Accuracy

±2% FS, ±0.01%/°C thermal error, ±0.75% linearity error

Response Time

100 milliseconds (to 90% step change)

Frequency Range

DC only

Power Supply

20-45 VDC or 22-38 VAC, 2VA max. power consumption
 Power and output signal are not isolated. Caution: Connecting AC supply to output negative may damage output.

Isolation Voltage

Tested to 3000 V

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

Listings

UL & CUL 508 industrial control equipment,
 CE certified

Model	DC Input Ranges		
	Low	Mid	High
CTX-DC-0	50 A	75 A	100 A
CTX-DC-1	100 A	150 A	200 A
CTX-DC-2	150 A	225 A	300 A
CTX-DC-3	200 A	300 A	400 A

Description

The CTX-DC series transmitters convert DC current as high as 400 Amps DC to an isolated 4-20 mA DC output. The design consists of a hall effect sensor and a signal conditioner in one compact split core package. Typical applications include measuring battery loads or battery charging currents, heater loads, or other DC currents, for preventive maintenance, overload protection, or control.

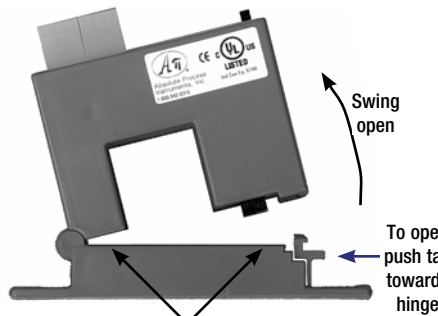
The built-in hall effect sensor physically isolates the high DC current from the 4-20 mA output making this product much safer to use than other products or methods. In addition, the non-intrusive design eliminates the insertion loss that exists when DC shunts are used.

Installation, wiring and configuration are simple. The transmitters are designed to withstand harsh industrial environments. They can be mounted in virtually any position and either panel mounted using the built-in mounting bracket or hung directly on the wire and secured with a wire tie. Due to the split core design, these models are easily and quickly installed in existing or new circuits by snapping the core shut around the wire to be measured.

Four different models are available, each configurable by the user to one of three specific ranges by changing a jumper.

The transmitter can be powered by either 22 to 38 VAC or 20 to 45 VDC. Due to internal power regulation, it will work well with an unregulated power source. The transmitter also powers the 4-20 mA current loop simplifying installation.

Instructions



IMPORTANT!
 Keep contact areas clean!

Electrical Connections

WARNING! Turn all power off before connecting or disconnecting wiring, or removing or installing transmitter.

See wiring diagrams. All wiring must be performed by a qualified electrician or instrumentation engineer. Consult factory for assistance. Polarity must be observed for input wire and output wiring connections. If the output does not function, check wiring and polarity.

Range Selection

CTX-DC series transducers feature field selectable ranges. The sensing range is jumper configurable as indicated on the product label. The ranges are factory calibrated.

1. Determine the normal operating amperage of your monitored circuit.
2. Select the range that is equal to or slightly higher than the normal operating amperage.
3. Place the range jumper in the appropriate position as indicated on the product label



Installation

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

Place wire to be monitored through opening in the sensor. Be sure the monitored current flows in the same direction as indicated by arrow on the transmitter housing.

Press the hinged portion firmly downward until a definite click is heard and the tab pops out fully.

Mounted in any position or hang directly on wires with a wire tie. Leave at least one inch distance between sensor and other magnetic devices.

KEEP SPLIT-CORE CONTACT AREAS CLEAN!

Silicone grease is applied to the core mating surfaces to prevent rust and improve performance. Keep contact area free of grit or dirt. Operation can be impaired if the mating surfaces do not have good contact. Check visually before closing.

Output Wiring

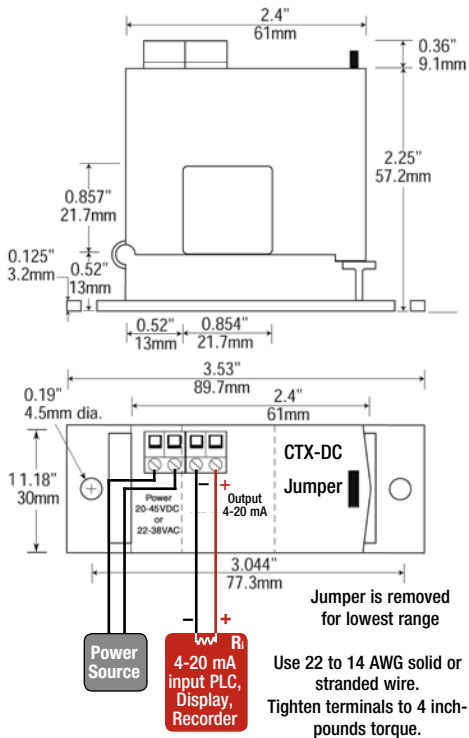
Connect wires to the sensor being careful to observe correct wiring polarity as shown in the wiring diagram.

Caution: Do not connect grounded AC supply to output negative terminal. This may damage sensor output circuitry.

Be sure the output load or loop power requirements are met according to the specifications. The CTX-DC provides power to the current loop.

Troubleshooting

1. **No 4-20 mA output**
 - A. Input power supply problem. Check wiring and voltage.
 - B. Output wiring polarity is incorrect. Check and correct wiring polarity according to diagram above.
 - C. The core contact area may be dirty. Open the sensor and clean the contact area.
 - D. Make sure the device receiving the 4-20 mA signal is not powering the loop. Only one device can power the loop.
2. **Output signal too low**
 - A. Too much burden on output loop. Make sure loop does not exceed 650 ohms.
 - B. The jumper may be set in a range that is too high for current being monitored. Move jumper to the correct range.
 - C. 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.
 - D. Check power supply to make sure it is of sufficient voltage with all loads at maximum.
 - E. The core contact area may be dirty. Open the sensor and clean the contact area.
3. **Sensor is always at 4 mA**
 - A. Monitored load is not DC or is not on. Check that the load is DC and that it is actually on.
4. **Output Signal 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.



API maintains a constant effort to upgrade and improve its products. Specifications are subject to change without notice. Consult factory for your specific requirements.