Please Read Instructions Carefully Before Installation!

■ **Safety**

- **This product is not intended to be used for Life or Safety applications.**
- **This product is not intended for use in any hazardous or classified locations.**
- **Disconnect and lock out all power sources before installation as severe injury or death may result from electrical shock due to contact with high voltage wires.**

■ **Installation**

Make sure that all installations are in compliance with all national and local electrical codes. Only qualified individuals that are familiar with codes, standards, and proper safety procedures for high-voltage installations should attempt installation. The current sensor is a 2-wire, 4 to 20 mA Loop Powered device that requires a regulated +12 to 30VDC external power source.
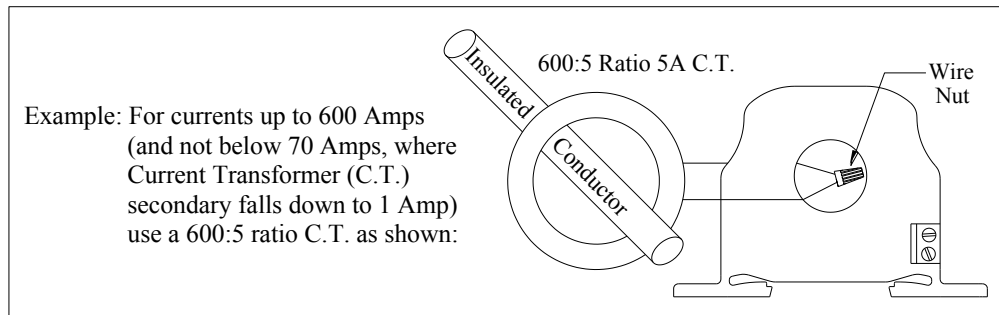

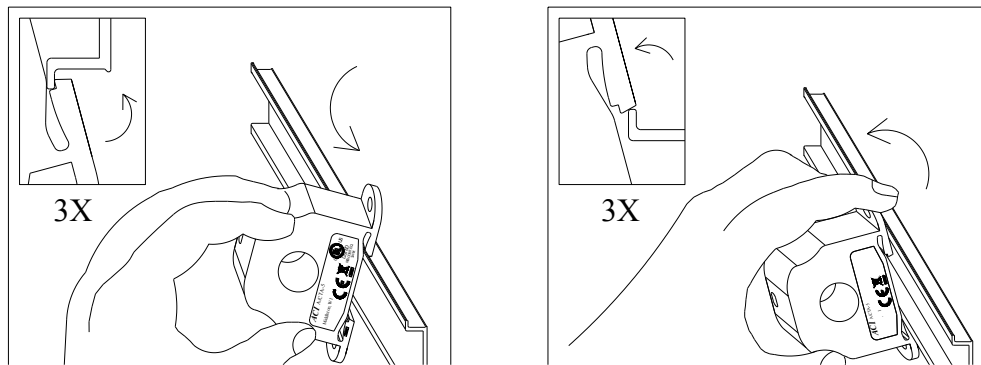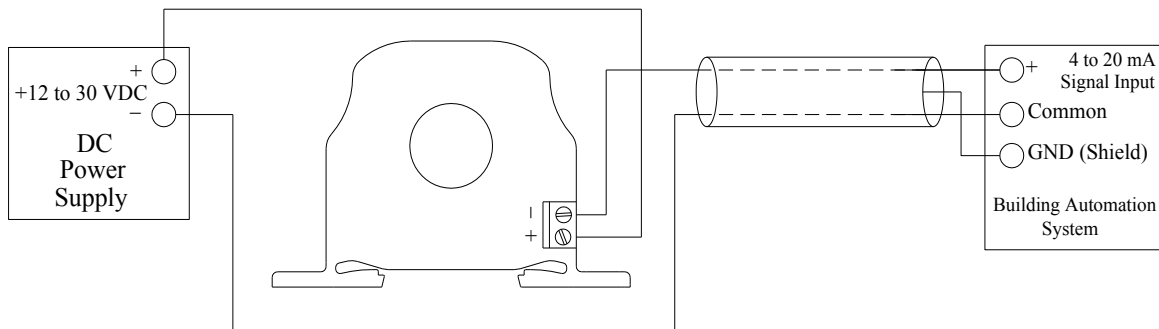

Example: For currents up to 600 Amps (and not below 70 Amps, where Current Transformer (C.T.) secondary falls down to 1 Amp) use a 600:5 ratio C.T. as shown:

600:5 Ratio 5A C.T.

Insulated Conductor

Wire Nut

Figure 3: Current Transformer

■ Wiring

ACI recommends the use of a 2 conductor 16 to 22 AWG shielded cable, **copper wire only** for all 4 to 20mA current sensor installations. A maximum wire length of less than 30 meters (98.4 feet) should be used between the A/CTA series current sensors and the Building Management System or controller. ***Note: When using a shielded cable, be sure to connect only (1) end of the shield to ground at the controller. Connecting both ends of the shield to ground may cause a ground loop.***   When removing the shield from the sensor end, make sure to properly trim the shield so as to prevent any chance of shorting. The current sensors terminals are polarity sensitive and represent a linear and proportional 4 to 20mA output signal. The current sensors are available in either an Average or True RMS output version. The recommended torque to be used on the terminal block connections is 0.67 Nm or 5.93 in-lbs. The aperture (hole) size of the current sensor is 0.75" (1.90 cm) and will accept a maximum cable diameter of 350 MCM's.

■ Operating Specifications

ACI Model #	Range	Jumper *	Max. Sensing Current Voltage	Max. Continuous Current.	Max. Current for 6 seconds	CE Compliance
A/CTA-5	0-5 Amps	None	600 VAC	100 Amps	125 Amps	Yes
A/CTA-50	0-10 Amps	Low	600 VAC	100 Amps	125 Amps	
	0-20 Amps	Middle		150 Amps	225 Amps	Yes
	0-50 Amps	High		200 Amps	300 Amps	
A/CTA-250	0-100 Amps	Low	600 VAC	200 Amps	250 Amps	
	0-200 Amps	Middle		360 Amps	450 Amps	Yes
	0-250 Amps	High		400 Amps	500 Amps	
A/CTA-5-VFD **	0-5 Amps	None	600 VAC	60 Amps	100 Amps	No
A/CTA-50-VFD **	0-10 Amps	Low	600 VAC	60 Amps	80 Amps	
	0-20 Amps	Middle		100 Amps	200 Amps	No
	0-50 Amps	High		160 Amps	300 Amps	
A/CTA-250-VFD **	0-100 Amps	Low	600 VAC	160 Amps	200 Amps	
	0-200 Amps	Middle		320 Amps	400 Amps	No
	0-250 Amps	High		400 Amps	500 Amps	

■ Troubleshooting

Problem	Solution
No reading	- Confirm that you have +12 to 30VDC in series with the current sensor output terminals and the analog input of the control panel. - Check the polarity of the circuit. - Verify that the terminals are screwed down, wires are firmly in place. - Disconnect the input to the control panel and then insert a current meter (mA range) in series with the current sensor output to verify that the circuit is working properly.
Erratic readings	- Verify that the wires are terminated properly. - Check that the +12 to 30VDC input is clean. In areas of high RF interference, shielded cable may be necessary to stabilize signal.
Inaccurate readings	- If you suspect that the current sensor is not reading within the accuracy specifications, please contact the factory for assistance.

■ **Current Conversion Formulas**

To convert the current sensor output signal to a current reading.

4-20mA output to Current reading   (4mA = 0 Amps and 20mA = 250 Amps for A/CTA-250)

Example: 12mA current sensor output signal
Total Span = 250 Amps
Multiplier = 20mA-4mA/Total Span = 0.064
(12mA-4mA)/0.064= **125 Amps**

■ **WEEE Directive**

At the end of their useful l   ıg centre. Do not dispose of
with household waste. Dc

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