



Current Loop 1 & 2 (RMA-CL1-SEN & RMA-CL2-SEN) Installation Note

AVTECH's Current Loop monitors the electrical current flowing through a single-phase powered cable. It outputs a signal of 0 to 5 VDC (volts of direct current), which your built-in or external Room Alert Analog Sensor then converts into an amp (A) reading. By pairing a Current Loop with your Room Alert monitor, you can easily determine the power consumption of an electrical appliance / device.

Current Loop Package Contents

- One (1) Current Loop
- Two (2) #8 x 3/4" TEK mounting screws
- One (1) 25' speaker wire
- One (1) Installation Note (You're reading it now.)



Select An Input Range

Your Current Loop arrives with its jumper set on the largest input amperage range: 0 to 50 A on Current Loop 1, and 0 to 250 A on Current Loop 2. You may select the High, Middle or Low range to match the power draw of the appliance / device being monitored. This is important to get the most accurate readings possible.

Current Loop 1

High (H)..... 0 to 50 A
 Middle (M)..... 0 to 20 A
 Low (L)..... 0 to 10 A



Current Loop 2

High (H)..... 0 to 250 A
 Middle (M) 0 to 200 A
 Low (L)..... 0 to 100 A



To change the setting, pull the jumper up to detach it from the “H” pins; then push it back down onto the “M” or “L” pins.

Install Your Current Loop

The Current Loop has a split core which opens to wrap around a single insulated conductor running into an electrical box or to an appliance / device.



- Consult with a qualified electrician before you begin.
- Disconnect power to the equipment and cable before you begin.
- Do not insert an exposed wire into the Current Loop.
- Do not use this sensor in hazardous (classified) locations or life safety applications.

Insert A Single Insulated Conductor Into Your Current Loop

1. Disconnect power to the insulated cord that you intend to monitor.
2. Open the Current Loop by either prying open the latch with a flat-tip screw driver or pressing down on the two side tabs with your fingers to release the cover.

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3. Wrap the Current Loop around a single insulated conductor. Examples are shown here.
4. Before you close the Current Loop, check the surfaces of the magnetic core to be sure they're clear. They need good contact for the Current Loop to operate correctly.
5. Lock the Current Loop closed by pressing the cover down firmly and listening for the click.



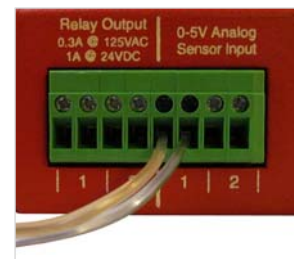
Connect Your Current Loop To Room Alert



Your Current Loop comes with one end of the 25' speaker wire already attached to its + / - contacts.

Follow these steps to attach the other end of the 25' speaker wire to the input ports on your built-in or external Room Alert Analog Sensor:

1. Separate and strip the free ends of the speaker wire. Expose about 1/4" of wire.
2. Look at the + / - contacts on the Current Loop and note which wire is attached to each contact.
3. Insert the negative (-) wire into the RIGHT (-) contact of the Analog Sensor Input port.
4. Insert the positive (+) wire into the LEFT (+) contact of the Analog Sensor Input port.



Early versions of the Room Alert 12E have this polarity reversed: LEFT = negative (-), and RIGHT = positive (+). If you observe your voltage value flipping back and forth from "0" to "5," it's likely that the speaker wires simply need to be inserted in the opposite contact.

Room Alert models 32W, 32E and 12E have built-in analog input ports; other models can interface with analog sensors through AVTECH's Temperature & Analog Sensor, which connects to Room Alert's Digital Port. For more information about AVTECH's Temperature & Analog Sensor, please see its Installation Note, visit AVTECH.com or contact a Product Specialist.



Do not connect the analog inputs on AVTECH products or other electrical appliances to live circuits of over 5 VDC.
Use only low-voltage 2-wire cable to connect dry contacts.

Mount Your Current Loop

Mount the base of the Current Loop on a surface using the included self-drilling mounting screws or snap it directly on to a 35 mm DIN rail.

Leave a minimum of 1" between the Current Loop and any other magnetic device(s).

Configure Your Current Loop

With Room Alert's Built-In Web Interface

Navigate to **Settings** → **Sensors** in your Room Alert web interface. Scroll down to “Analog Sensor Settings” when using Room Alert models that have a built-in analog input port. The options shown below vary depending on the model.

Status	Settings	Help																									
MAC Address: XX-XX-XX-XX-XX-XX	Version: X.X.X																										
Network	<h3>Analog Sensor Settings</h3> <hr/> <p>Analog Sensor 1 Alarm Configuration</p> <table border="1"><thead><tr><th>Sensor Label</th><th>High</th><th>Low</th><th>Adjust</th><th>Enabled</th></tr></thead><tbody><tr><td>Analog Sensor 1</td><td>0</td><td>0</td><td>0</td><td><input type="checkbox"/></td></tr></tbody></table> <p>Use Alarm Profile: Profile 1 ▼</p> <table border="1"><thead><tr><th>Enable</th><th>High</th><th>Low</th></tr></thead><tbody><tr><td><input type="checkbox"/></td><td>5</td><td>0</td></tr><tr><td>Reference</td><td>5</td><td>0</td></tr><tr><td>Scale</td><td>5</td><td>0</td></tr><tr><td>Units</td><td>V</td><td></td></tr></tbody></table>		Sensor Label	High	Low	Adjust	Enabled	Analog Sensor 1	0	0	0	<input type="checkbox"/>	Enable	High	Low	<input type="checkbox"/>	5	0	Reference	5	0	Scale	5	0	Units	V	
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WISH Options																											
Security																											
Advanced																											

1. Using the set of fields to the left of the screen, configure your alarm thresholds:

Sensor Label	High	Low	Adjust	Enabled
AC Power Draw	6	1	0	<input checked="" type="checkbox"/>

Use Alarm Profile: Profile 1 ▼

- First, select “Enabled” to enable the sensor on the Room Alert web interface and Device Manager software.
- In “Sensor Label,” you may leave the default, “Analog Sensor 1,” or enter a descriptive name of up to 15 alphanumeric characters, such as “Fan Tray 15” or “AC Power Draw,” as shown above.
- You may leave the “High” and “Low” for “Analog” at the default, 0—which means no alarm is configured—or enter values of up to 6 characters. These values must be within the range you enter in “Scale” in the next step, and cannot contain decimal points. Your Room Alert monitor generates alerts based on those thresholds.
- In “Adjust,” you may leave the default, 0, or enter a value between 12.7 and -12.7 to adjust the reading up or down if it differs from a known value.

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- For models with the “Use Alarm Profile” feature: if you have configured Alarm Profiles in the Alarm Options screen, you may choose one from the drop-down menu. The default is “Profile 1.”
2. Using the set of fields on the right, configure your Room Alert (or external Analog Sensor) to calculate your Current Loop’s output signal to the scale. Below are 2 sample configurations:

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Enable <input checked="" type="checkbox"/></td> <td style="width: 35%;">High</td> <td style="width: 35%;">Low</td> </tr> <tr> <td>Reference</td> <td style="text-align: center;">5</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Scale</td> <td style="text-align: center;">50</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Units</td> <td colspan="2" style="text-align: center;">A</td> </tr> </table> <p style="text-align: center;">Current Loop 1 Jumper on high Conversion to 0-50 amps</p>	Enable <input checked="" type="checkbox"/>	High	Low	Reference	5	0	Scale	50	0	Units	A		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Enable <input checked="" type="checkbox"/></td> <td style="width: 35%;">High</td> <td style="width: 35%;">Low</td> </tr> <tr> <td>Reference</td> <td style="text-align: center;">5</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Scale</td> <td style="text-align: center;">250</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Units</td> <td colspan="2" style="text-align: center;">A</td> </tr> </table> <p style="text-align: center;">Current Loop 2 Jumper on high Conversion to 0-250 amps</p>	Enable <input checked="" type="checkbox"/>	High	Low	Reference	5	0	Scale	250	0	Units	A	
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Reference	5	0																							
Scale	50	0																							
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Enable <input checked="" type="checkbox"/>	High	Low																							
Reference	5	0																							
Scale	250	0																							
Units	A																								

- First, click “Enable” to turn on the “Reference,” “Scale” and “Units” fields.
- In “Reference,” enter the highest and lowest points of the analog sensor’s output range. For the Current Loop, the range is 0 to 5 volts, so enter 0 in “Low” and leave the default of 5 in “High.”
- In “Scale,” enter the highest and lowest points of the scale you chose on the Current Loop with the jumper.

Current Loop 1			
	With the jumper on...	In Scale, enter...	
		High	Low
High	0 to 50 A	50	0
Middle	0 to 20 A	20	0
Low	0 to 10 A	10	0

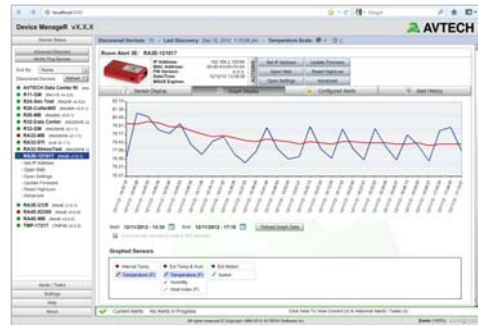
Current Loop 2			
	With the jumper on...	In Scale, enter...	
		High	Low
High	0 to 250 A	250	0
Middle	0 to 200 A	200	0
Low	0 to 100 A	100	0

- In “Units,” enter a 1 to 3-character label for the unit type that your readings will be measured in—“A” or “Amp” for amperage, for example.
3. Click **Accept Changes** at the bottom of your screen to temporarily save your settings. You may now navigate to another screen; however, if you close the web interface before the next step, you will lose your changes.
4. Click **Save Settings** in the navigation bar to the left of your screen. Your Room Alert will automatically reboot and commit your changes.

With AVTECH's Device Manager Software For Advanced Functionality

For advanced functionality and easy management of multiple units, configure your sensor with AVTECH's Device Manager, the software that comes FREE with the purchase of any Room Alert monitor.

You may download the current version from your customer account at AVTECH.com/Downloads while your Maintenance, Support & Update Service (MSUS) is current. If your service and access has lapsed, please contact your Product Specialist about reactivating them.



Current Loop Features & Specifications

Environment Condition Monitored	Electrical current (amps)
Type Of Sensor	Analog
Power Supply	Induced from monitored conductor
Sensor Cable Type	Low-voltage 2-wire speaker cable
Included	Yes
Length	25'
Maximum Extendible Length	100'
Output Voltage	0 to 5 VDC
Input Amperage Range	
Current Loop 1 (RMA-CL1-SEN).....	0 to 50 A
Current Loop 2 (RMA-CL2-SEN).....	0 to 250 A
Accuracy	+/- 1.0% (2 to 100% FSO)
Response Time	< 100 mS
Operating Frequency Range	50 to 600 Hz
Isolation Voltage	2,200 VAC
Maximum Sensing Current Voltage	600 VAC
Aperture (Hole) Size	0.75" (Accepts cables up to 350 MCM)
DIN Rail Size	35 mm
Operating Temperature Range	-15 to 40° C (5 to 104° F)
Operating Humidity Range	0 to 95% RH, non-condensing
Enclosure Rating	UL94-5VB
Compatible Products	Room Alert 32E/W & 12E (built-in Analog Input Port); Any Room Alert, with a Temperature & Analog Sensor

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