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, which your built-in or external Room Alert Analog Sensor then converts into an amperage (A) reading. By pairing a Current Loop with your Room Alert, you can easily determine the power consumption of an electrical appliance, device or facility.

Current Loop Package Contents

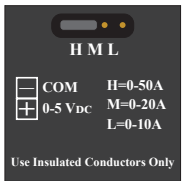
- One (1) Current Loop
- Two (2) #8 x ¾" TEK mounting screws
- One (1) 25' speaker wire

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. Select the High, Middle or Low range to match the power draw of the appliance / device being monitored for the most accurate readings.

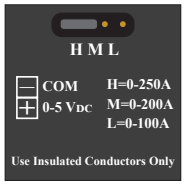
Current Loop 1

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

Do not use this sensor in hazardous (classified) locations or life safety applications.

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.

Step 1: Mount your Current Loop.

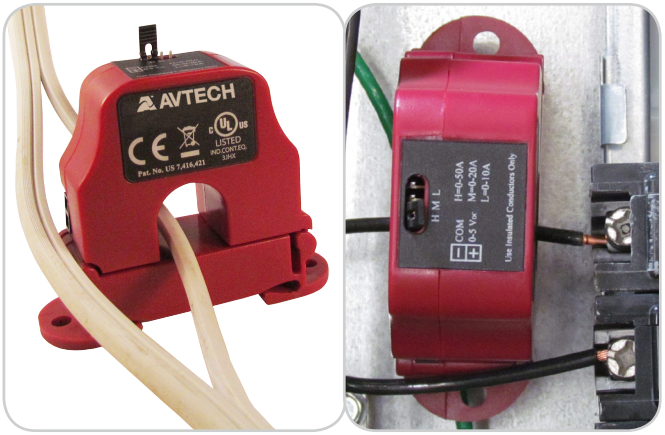
Mount the base of the Current Loop on a surface using the included self-drilling mounting

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).

Step 2: Insert a single insulated conductor into your Current Loop.

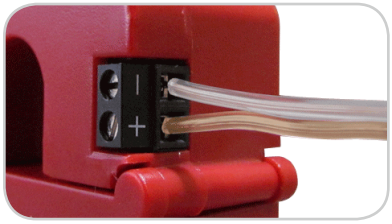
1. Disconnect power to the insulated cord that you intend to monitor.
2. Open the Current Loop by either prying open the latch with a flat-tip screw driver or pressing down on the two side tabs with your fingers to release the cover.
3. Wrap the Current Loop around a single insulated conductor. Examples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

Step 3: Connect your Current Loop to Room Alert.

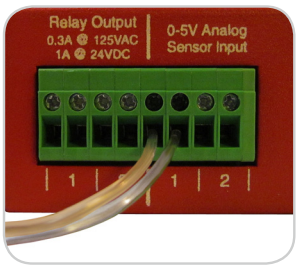
Do not connect the analog inputs on AVTECH products to live circuits of over 5 VDC.
Use only low-voltage 2-wire cable to connect analog inputs.



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 ¼" 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 32E and 12E have built-in analog input ports; Room Alert models 32E, 24E, 12E, 4E & 3E can also 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.

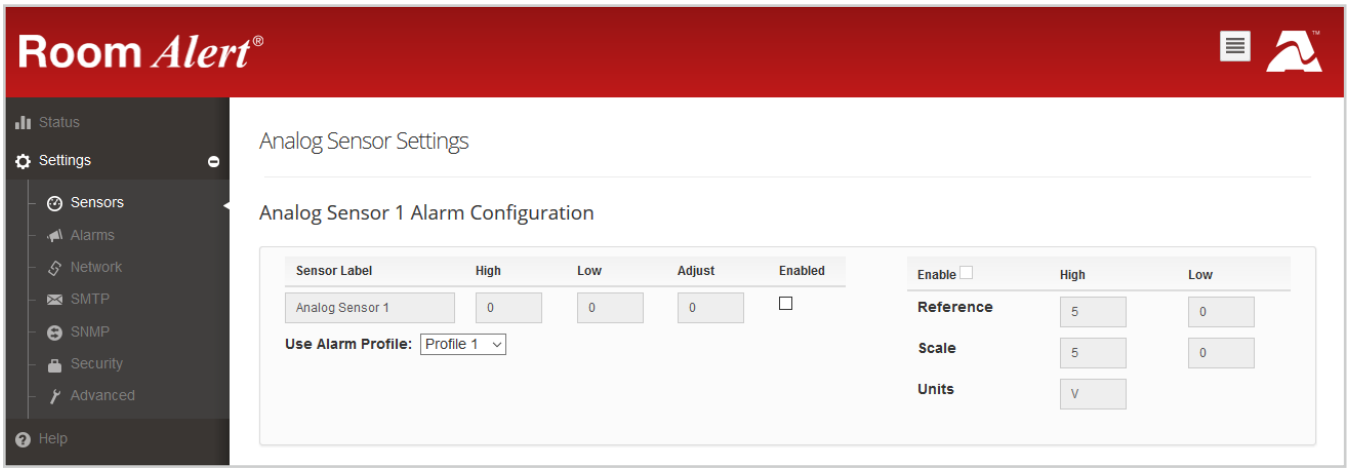
Sensor Features & Specifications

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
Apeture (Hole) Size	0.75" (Accepts cables up to 350 MCM)
DIN Rail Size	35 mm
Operating Temperature	-15 to 40º C (5 to 104º F)
Operating Humdity	0 to 95% RH, non-condensing
Enclosure Rating	UL94-5VB
Compatible Products	Room Alert 32E/W & 12E *Through the built-in Analog Input Port(s),* Room Alert 32E/W, 24E, 12E, 4E & 3E *With a Temperature & Analog Sensor*

Configure Your Analog Sensor

Use Room Alert's Built-In Web Interface

Navigate to **Settings** → **Sensors** in the web interface of your Room Alert. The options you see below will vary depending on the model.



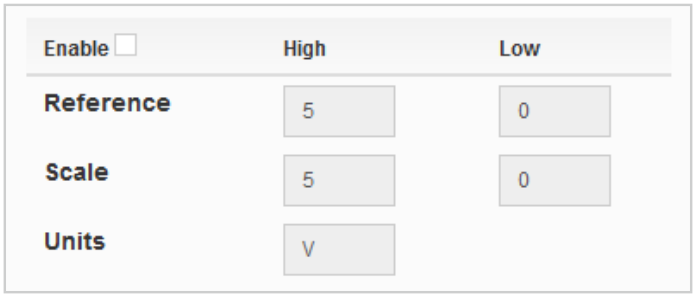
If you connected your sensor directly to your Room Alert 32E or 12E via its built-in analog port:

1. Scroll to *Analog Sensor Settings*.
2. Enable the sensor by selecting **Enabled** next to the *High*/*Low*/*Adjust* fields. The built-in analog sensor will not appear in the Room Alert web interface, Device ManageR, your RoomAlert.com account or SNMP program unless it is enabled.

If you connected your sensor to your Room Alert via a Temperature & Analog Sensor:

1. Scroll to your external digital sensor(s) and find the digital sensor you connected your Temperature & Analog Sensor to.
2. Select **Temp/Analog** from the *Sensor Type* drop-down menu. The analog sensor fields will then appear.

3. Then, configure the *Reference*/*Scale* and *Units* fields, shown below at their defaults, to calculate your analog sensor's output signal to scale.



- 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 signal range. (See Reference/Scale/Unit Settings For AVTECH Analog Sensors in this document for the correct settings.)

- In *Scale*, enter the highest and lowest points of your analog sensor's scale. (See Reference/Scale/Unit Settings For AVTECH Analog Sensors in this document for the correct settings.)

- 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 or "F" for Fahrenheit, for example. Note that this field is merely a label and does not affect any of the calculations.

4. Next, fill in the *High*/*Low* threshold fields, shown below at their defaults.

- In *Sensor Label*, you may leave the default, "Analog Sensor X," or enter something more descriptive of up to 15 characters. You may use the following characters in sensor labels: letters, numbers, spaces, hyphens (-), underscores (_) and periods (.).

- In *High* and *Low*, you may leave the default, 0—which means no alarm is configured—or enter values for high and low thresholds. These values must be within the range you entered in *Scale*, and cannot contain decimal points. Your Room Alert generates alerts based on these thresholds.

- In *Adjust*, you may leave the default, 0, or enter a value to adjust the analog reading if it differs from a known value at that location.

- In *Use Alarm Profile*, which controls light towers and relays on your Room Alert, you may leave the default, **Profile 1**, or choose another profile from the drop-down menu.

4. Select **Save Settings** at the top or bottom of the page. Your Room Alert will automatically reboot and commit your changes

Reference/Scale/Unit Settings For AVTECH Analog Sensors

AVTECH's Current Loops

Current Loop 1

	High	Low
Reference	5	0
Scale		
With the jumper on		
High (0 to 50 A)	50	0
Middle (0 to 20 A)	20	0
Low (0 to 10 A)	10	0
Units	A (or Amp)	

Current Loop 2

	High	Low
Reference	5	0
Scale		
With the jumper on		
High (0 to 250 A)	250	0
Middle (0 to 200 A)	200	0
Low (0 to 100 A)	100	0
Units	A (or Amp)	

AVTECH's Standard Extreme Temperature Sensors

The values below apply to our standard Extreme Temperature Sensors. If you ordered a customized version, please use your custom *Reference* and *Scale* instead of these values.

Standard Extreme Low Temperature Sensor

Conversion To Fahrenheit

	High	Low
Reference	5	1
Scale	32	-328
Units	F	

Conversion To Celsius

	High	Low
Reference	5	1
Scale	0	-200
Units	C	

Standard Extreme High Temperature Sensor

Conversion To Fahrenheit

	High	Low
Reference	5	1
Scale	743	-40
Units	F	

Conversion To Celsius

	High	Low
Reference	5	1
Scale	395	-40
Units	C	

AVTECH's Analog Rescaling Module (ARM)

	High	Low
Reference	5	1
Scale*	*See note below.*	
Units*		

*Scale and Units depend on the output of the analog sensor you've connected to ARM.

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