

# SC-Series Refrigerant Leak Detector

## Wiring and Controller Setup

### General

The SC refrigerant leak sensor is a series of transmitters for measuring concentration of different gases. The transmitter is available in the Standard Room Type. The sensor heads are semi-conductive, which provides a long lifetime and stability, but with limited selectivity.

The transmitter gives a non-linear output signal (4 to 20mA or 0 to 10V DC) proportional to the gas concentration. For long wiring installations, it is recommended to use the current output signal to minimize the risk of interference. Output signal mode is set by jumper (JP1).



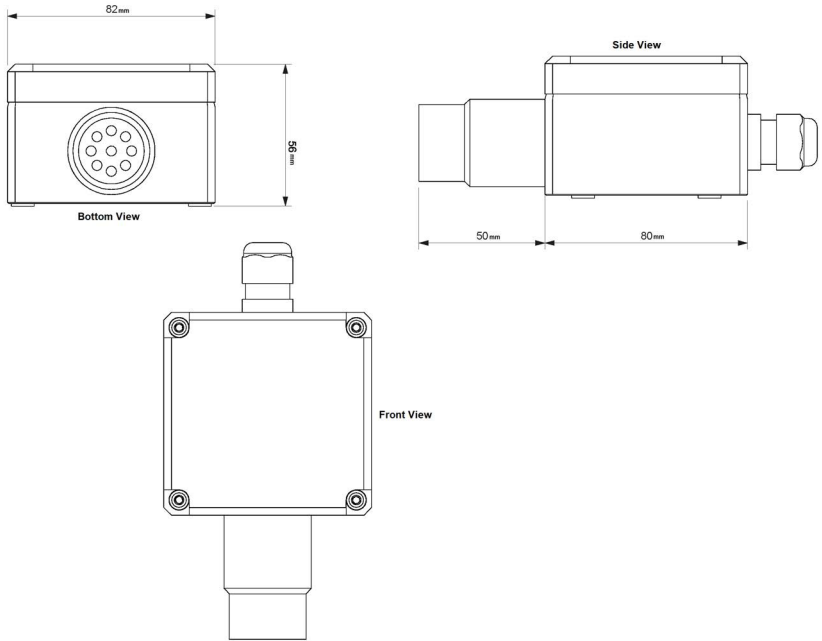
### \* Technical Data

Table 1: Sensor Technical Specs

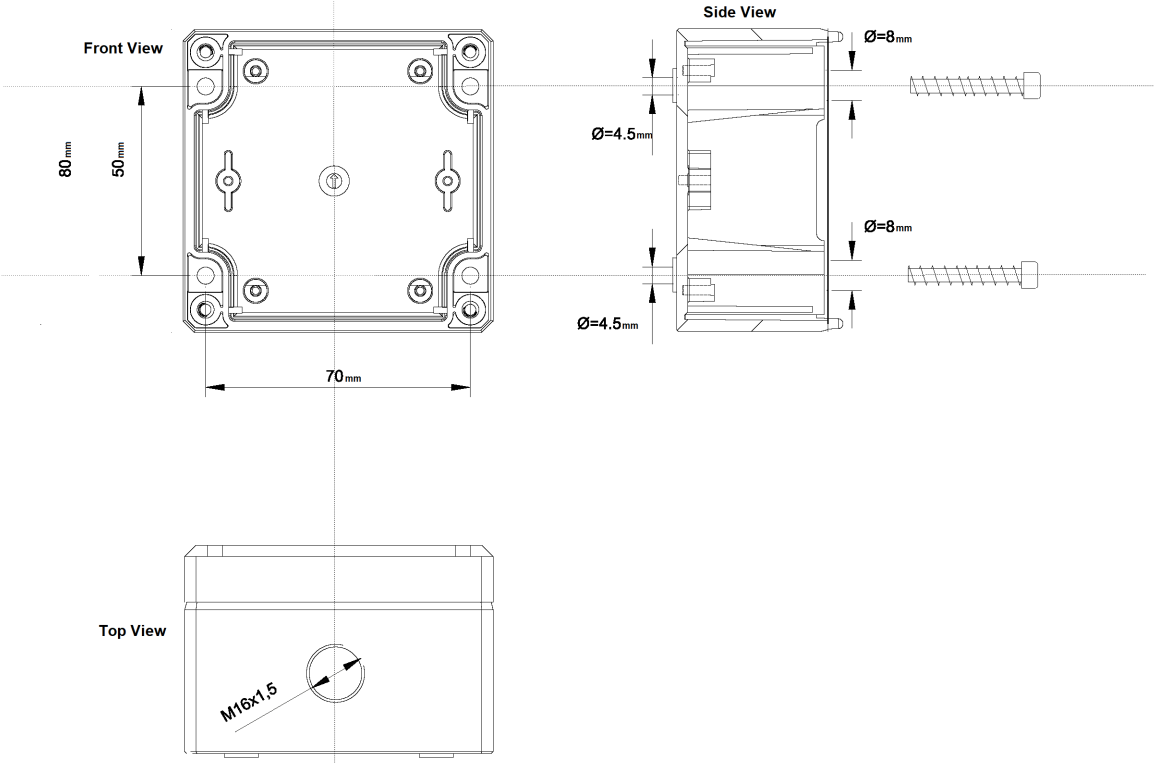
Sensor Type	Semiconductor
Response Time (T90)	< 10 seconds
Operating Temperature	-40°F to 122°F (-40°C to 50°C)
Operating Humidity	10 to 90% Rh (non condensing)
Dimensions	130x82x56 mm
Housing	Polycarbonate / ABS
Output Signal	4 to 20mA (max 500 ohm) or 0 to 10V DC
Calibration	Zero/span ≥ once per year
Lifetime Sensor	> 5 years (replacement recommended every 5 <sup>th</sup> year or when unit cannot be calibrated)
Power Supply	12 to 30V DC (Recommended 24VDC @ 15W, 120V, DIN Rail mount P/N 250-2541)
Cable gland	1 x M16

\*Specifications subject to change

# Enclosure Dimensions

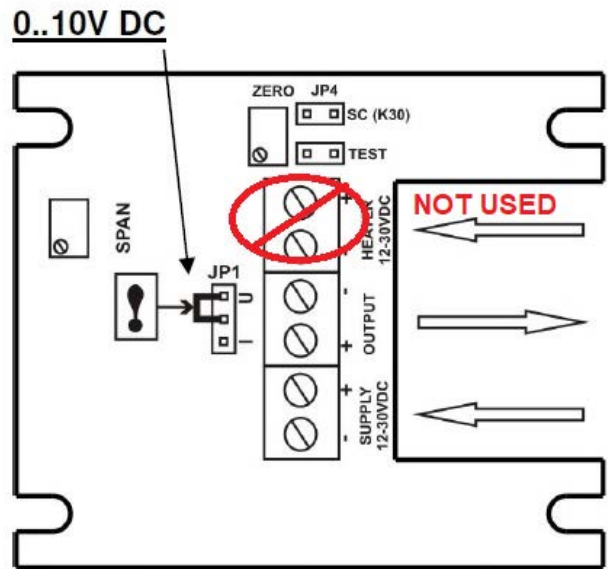
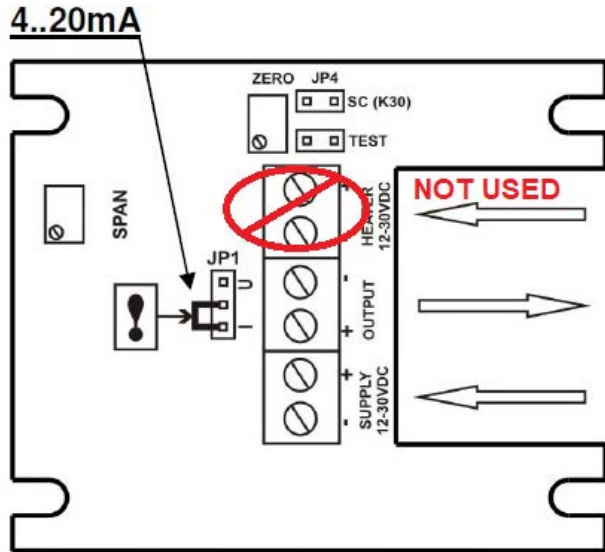


# Mounting



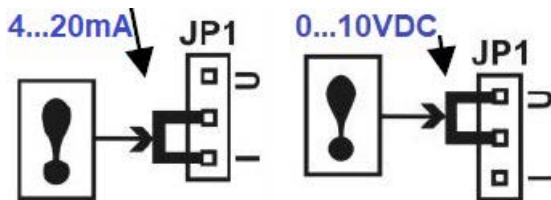
# Wiring

Note: [!] indicates jumper positions.



# Installation/Positioning

To change the output type, move the JPI jumper as shown:



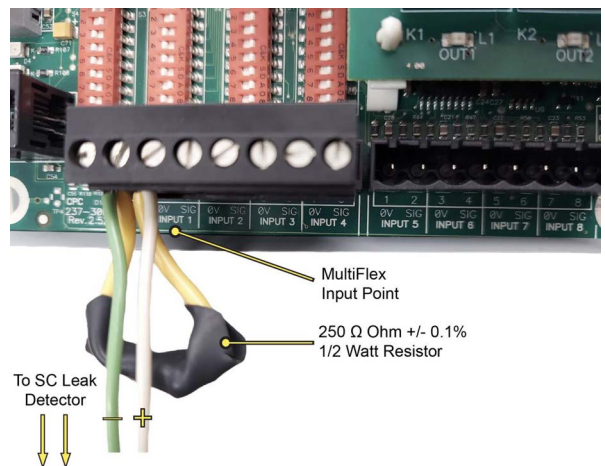
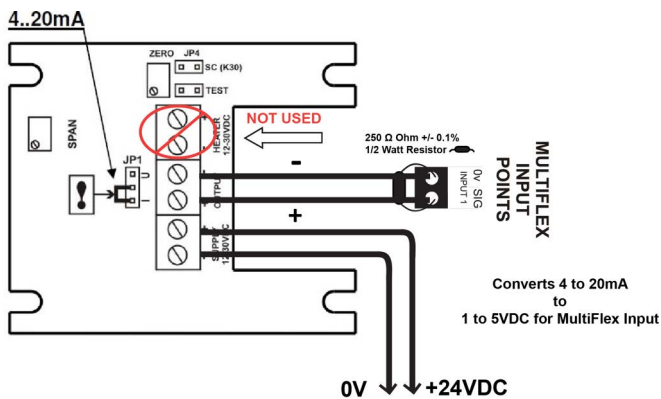
**NOTE**

Before moving the JPI jumper:

1. Disconnect power
2. Move jumper
3. Cycle power to save the new setting

# Leak Sensor Setup (4-20 mA to 1-5 VDC) Connected to MultiFlex Boards

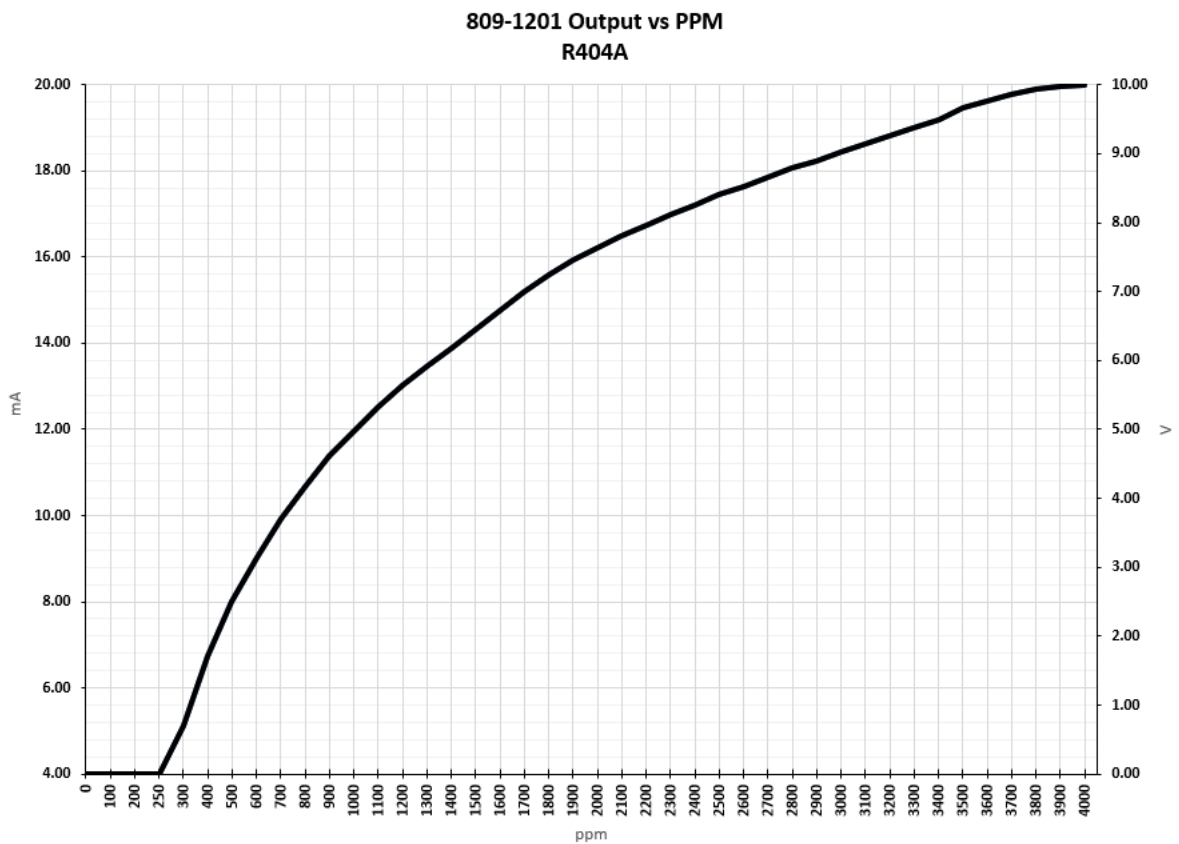
Need 250-ohm Resistor Required



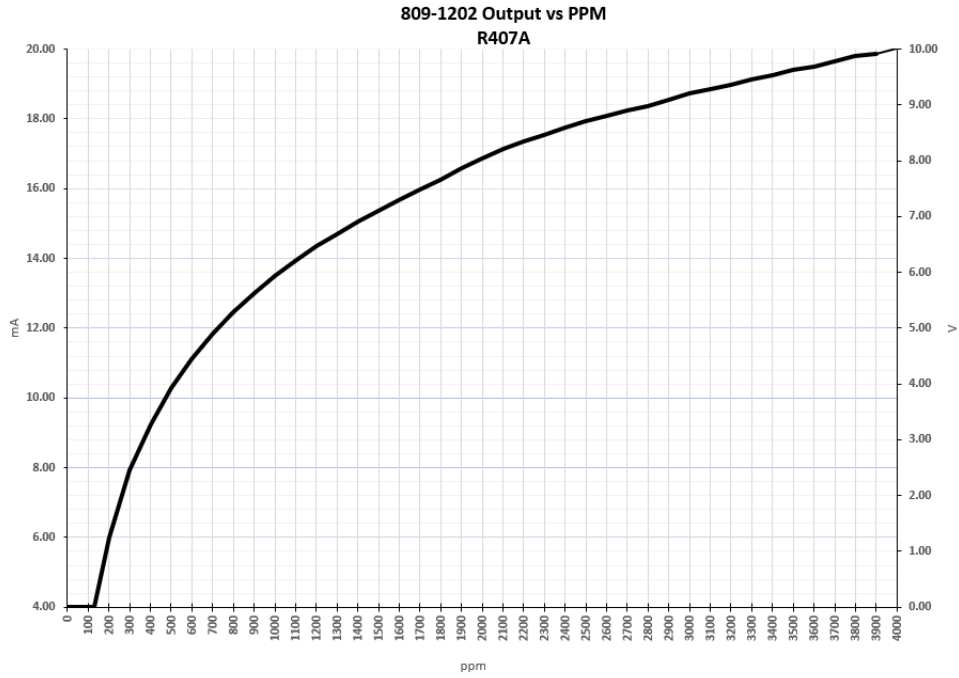
# Outputs

Part Number	Refrigerant	Low End Point - High End Point	Low End EU - High End EU	Voltage - 1000 PPM
809-1201	R404a	0-5	0-2000	2.5 V = 1000 PPM
809-1202	R407a	1-5	0-2000	3.0 V = 1000 PPM
809-1203	R448a	.5-6.5	0-2000	3.5 V = 1000 PPM

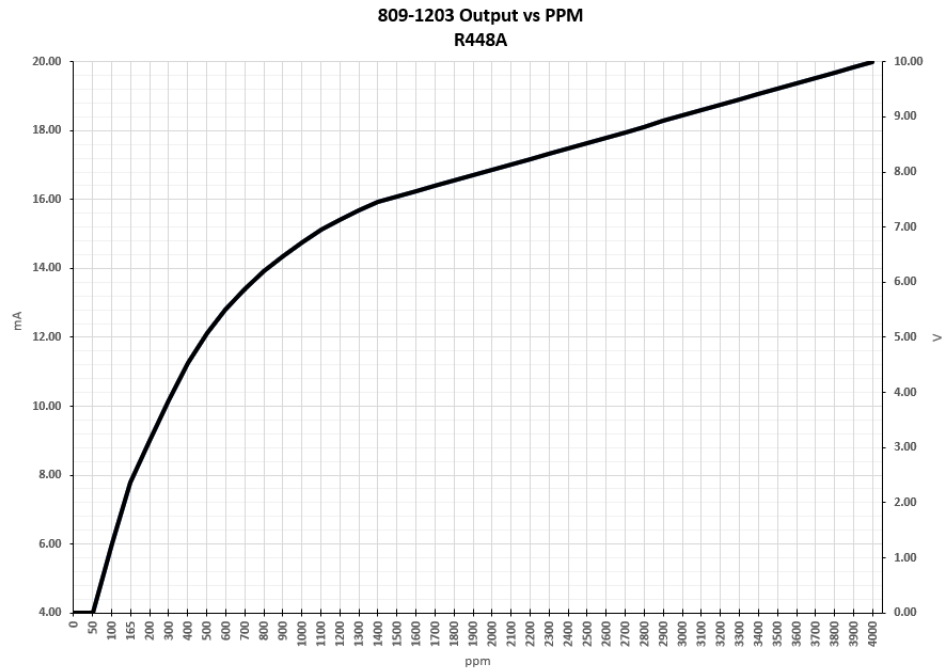
## P/N 809-1201 Output vs PPM R404A



## P/N 809-1202 Output vs PPM R407A



## P/N 809-1203 Output vs PPM R448A



# Supervisor Controller Setup

In your E3 or Site Supervisor, add a 16AI Board and go to the application page to set up the leak sensor settings.



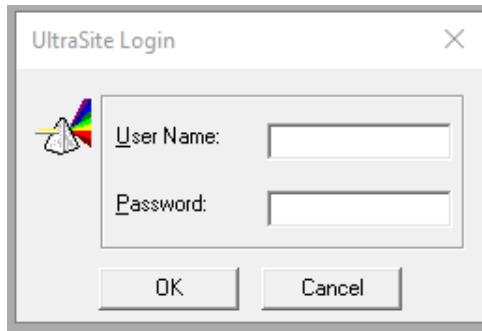
Set up the leak sensor settings as they appear on this screen:

POINT NAME	VALUE
AI01 Type	Analog
AI01 Name	Leak Sensor
Sensor Type	Linear
Setup Method	EndPoint
Mult Factor	1.00
Sensor Offset	0.00 ppm
Sensor Units	PPM
Eng Units	Concentration
Default Value	NONE ppm
Default on Open	NONE ppm
Default on Shrt	NONE ppm
Low End Point	1.00
High End Point	5.00

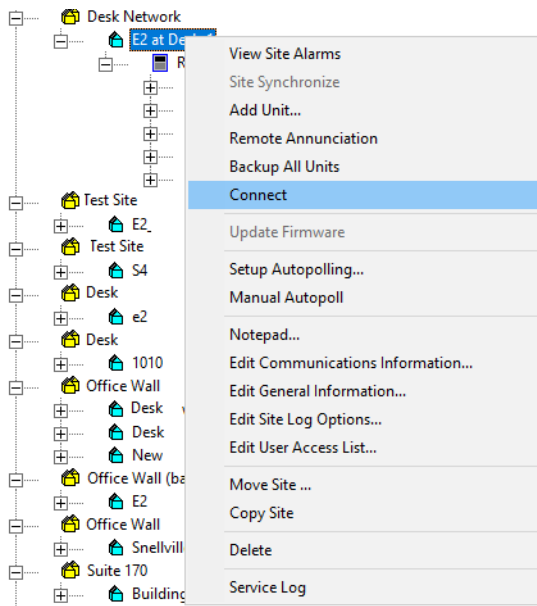
Low End Limit	-0.50
High End Limit	2500.00
Low End EU	0.00 ppm
High End EU	2000.00 ppm

# UltraSite Setup

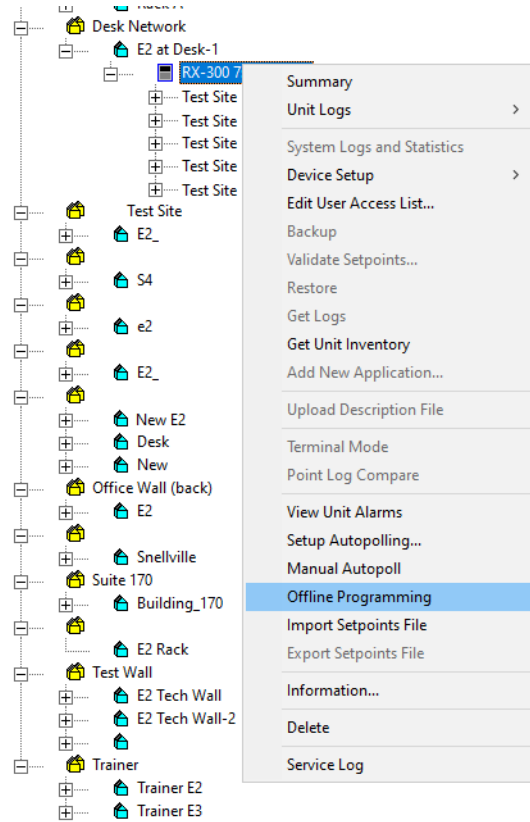
1. To set up the leak detector using UltraSite, open and login:



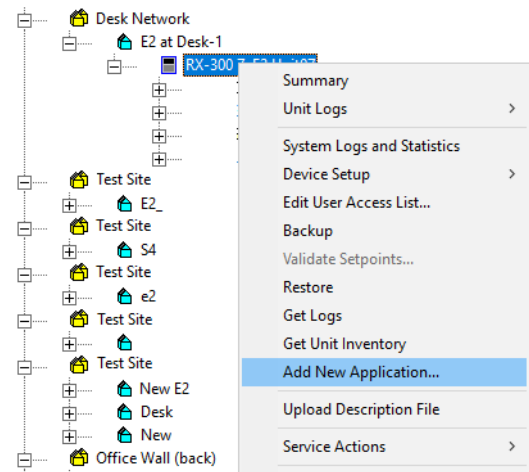
2. Right-click on the site and choose **Connect**:



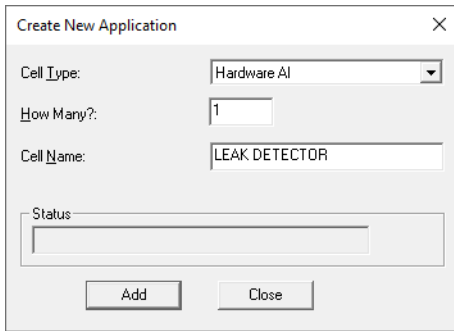
3. Or right-click on E2 and select **Offline Programming**:



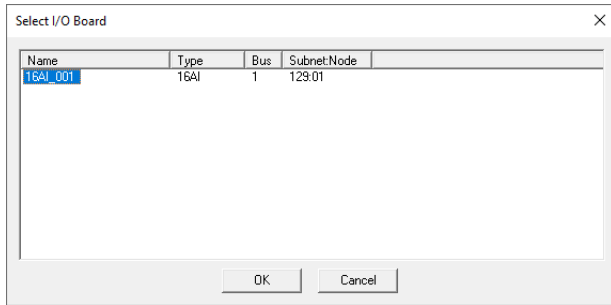
4. Right-click on E2 and select **Add New Application**:



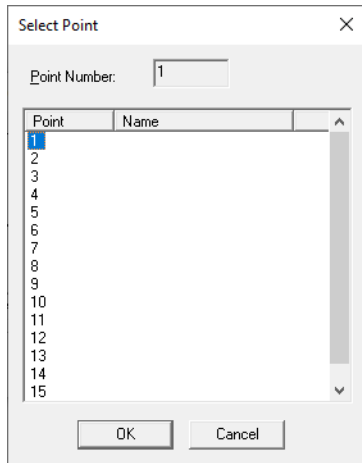
- Select **Hardware AI** for **Cell Type**, enter **How Many**, name the point and click **Add**:



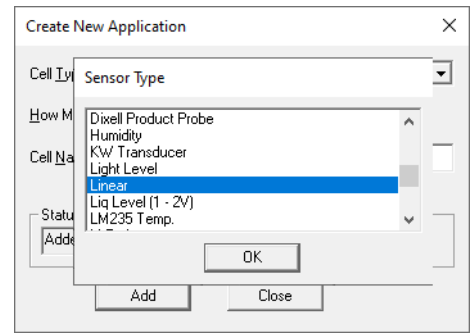
- The point is now added. Next, highlight the point and click **OK**:



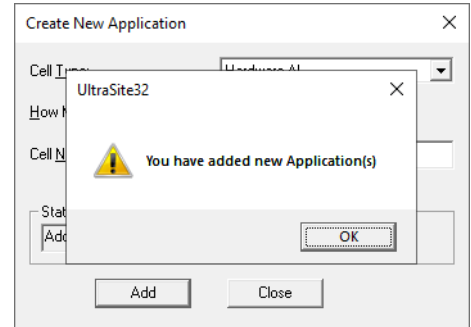
- Assign the point to the MultiFlex Board (this is the point you connect the sensor to). Highlight the point and click **OK**:



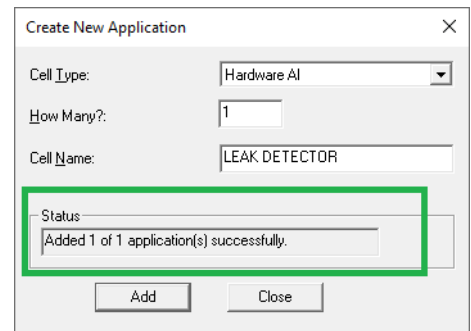
- Select **Linear** as the **Point Type** and click **OK**:



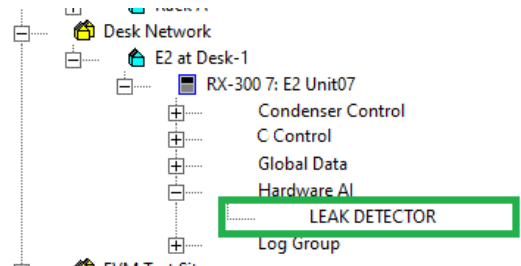
- Once this message appears, click **OK**:



- When the confirmation message appears that confirms the application has been added successfully, click **Close**:

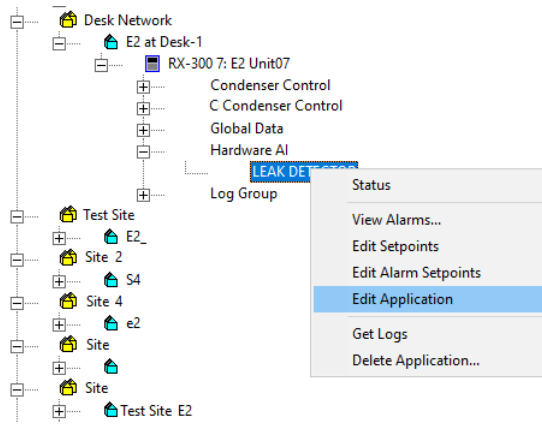


- The point is now visible in the tree:

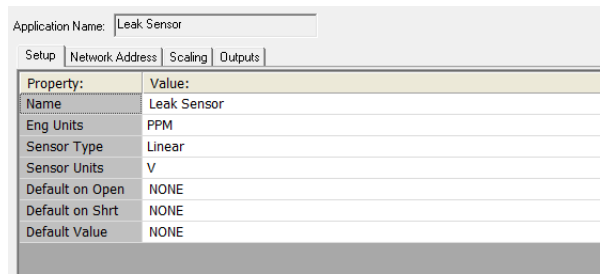




12. Right-click on the point and select **Edit Application**:

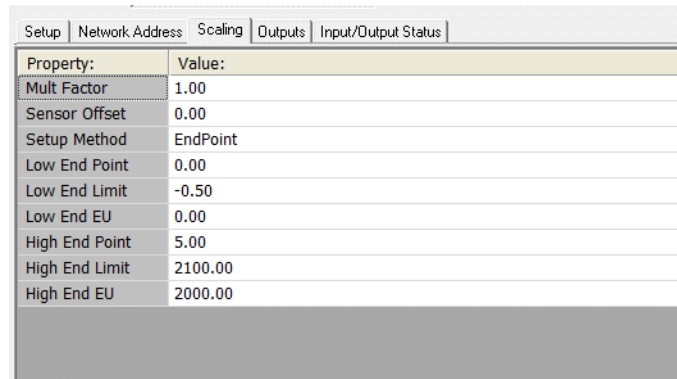


13. In the **Setup** tab, select **V** as **Sensor Units**:



14. In the **Scaling** tab, set up points based on the following chart:

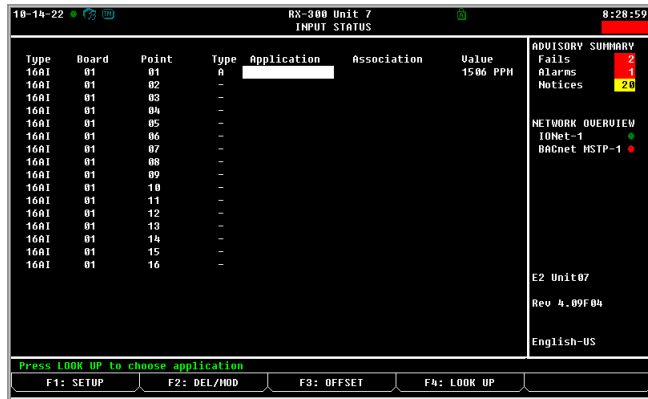
Part Number	Refrigerant	Low End Point - High End Point	Low End EU - High End EU	Voltage - 1000 PPM
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## E2 Setup

1. Log into the E2 and press , ,  (Input Status screen).

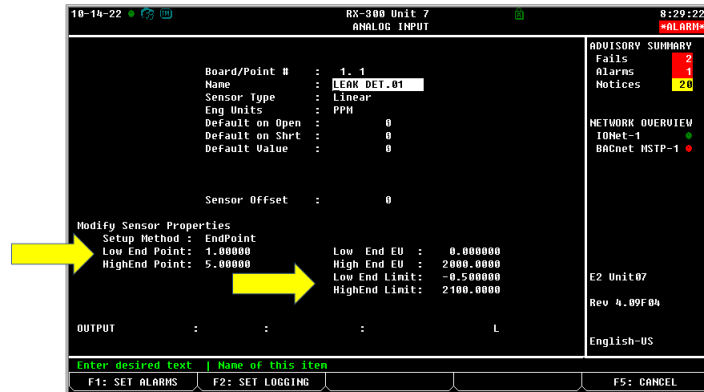
- Highlight the input point the sensor is connected to, and press **F1** (Setup).



- In the Analog Input setup screen, enter the following information in the fields listed below:

<b>Name:</b>	A description of the sensor's function and/or location (LEAK DET .01)		
<b>Sensor Type:</b>	Linear		
<b>Eng. Unit:</b>	PPM		
<b>Low End Point:</b>	1.0	<b>Low End Limit:</b>	-0.50
<b>High End Point:</b>	5.0	<b>HighEnd Limit:</b>	2100.0

- Press  to save changes and exit the Analog Input setup screen.



Visit our website at [copeland.com/en-us/products/controls-monitoring-systems](https://copeland.com/en-us/products/controls-monitoring-systems) for the latest technical documentation and updates. For Technical Support call 833-409-7505 or email [ColdChain.TechnicalServices@Copeland.com](mailto:ColdChain.TechnicalServices@Copeland.com)