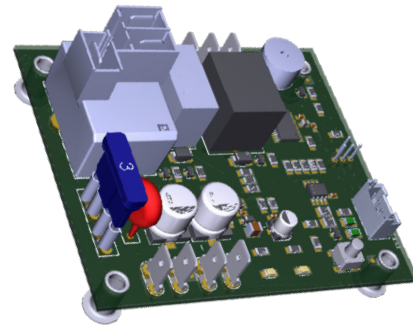


OEM REFRIGERANT LEAK DETECTION  
SYSTEM SOLUTIONS



## A2L Mitigation Control & Sensor On-Boarding Program



## THERM<sup>o</sup>DISC A2L GAS SENSOR



# NEED A SENSOR?

## THERM O DISC

### A2L Gas Detection Sensor

The **Therm-O-Disc®** A2L Gas Detection Sensor, enabled by patented **NevadaNano\* Technology**, is an all-in-one sensing solution for accurate refrigerant detection systems to save development time and effort while providing high system reliability.

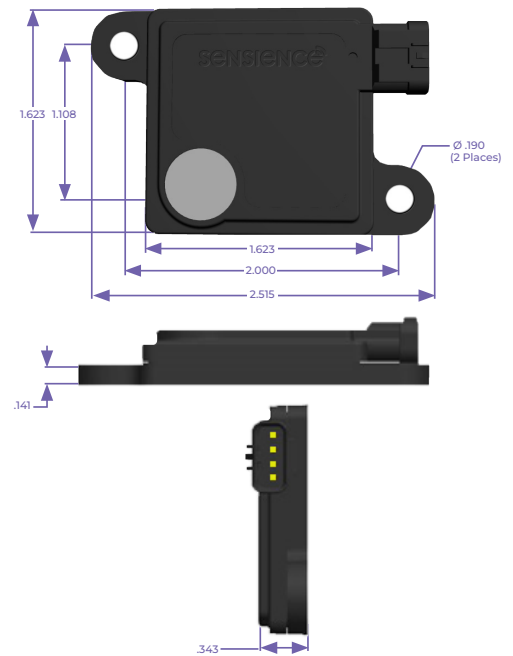
#### The Operating Principle

The Molecular Property Spectrometer refrigerant gas sensor's transducer is a micro-machined membrane with a precision nano-calorimeter. The transducer continually samples the air to determine if a gas is present that matches the molecular properties of the refrigerant of interest. Sensor data are processed by patented algorithms to accurately report concentration, across a wide environmental range from -40°C to +80°C and 0 to 100%RH condensing conditions.

#### Technical Specifications

<b>Refrigerant</b>	<ul style="list-style-type: none"> <li>Refrigerant</li> <li>R-32</li> <li>R-454 Blends</li> </ul>
<b>Communication Interface</b>	<ul style="list-style-type: none"> <li>RS-485 Modbus® RTU</li> <li>Digital serial UART (3.3V OR 5V)</li> <li>Analog (0-3.3V)</li> </ul>
<b>Supply Voltage/Current</b>	<ul style="list-style-type: none"> <li>5Vdc ± 10%</li> <li>30mA max</li> </ul>
<b>Agency/Compliance</b>	<ul style="list-style-type: none"> <li>UL 60335-2-40 Annex LL</li> </ul>
<b>Operating Temperature</b>	<ul style="list-style-type: none"> <li>-40 TO 80°C</li> </ul>
<b>Storage Temperature</b>	<ul style="list-style-type: none"> <li>-40 TO 85°C (unpowered)</li> </ul>
<b>Operating Humidity Ranges</b>	<ul style="list-style-type: none"> <li>0 to 100% RH Condensing</li> </ul>
<b>Operating Pressure Ranges</b>	<ul style="list-style-type: none"> <li>65 TO 110 kPa</li> </ul>
<b>Measurement Range</b>	<ul style="list-style-type: none"> <li>0-100% LFL</li> </ul>
<b>Resolution</b>	<ul style="list-style-type: none"> <li>0.1% LFL</li> </ul>
<b>Response Time</b>	<ul style="list-style-type: none"> <li>&lt;10 seconds to 100% LFL step change</li> </ul>
<b>Lifetime</b>	<ul style="list-style-type: none"> <li>15+ years with no calibration required</li> </ul>

#### Basic Dimensions

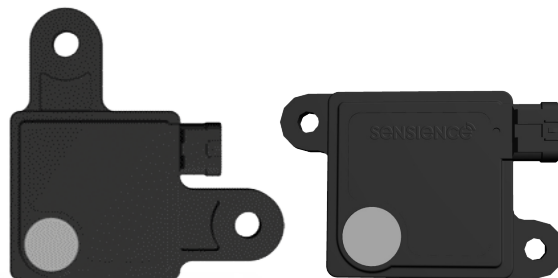


#### 30G A2L Refrigerant Sensor



Custom Mounting Configurations Available

#### Flexible Options, Easy to Apply



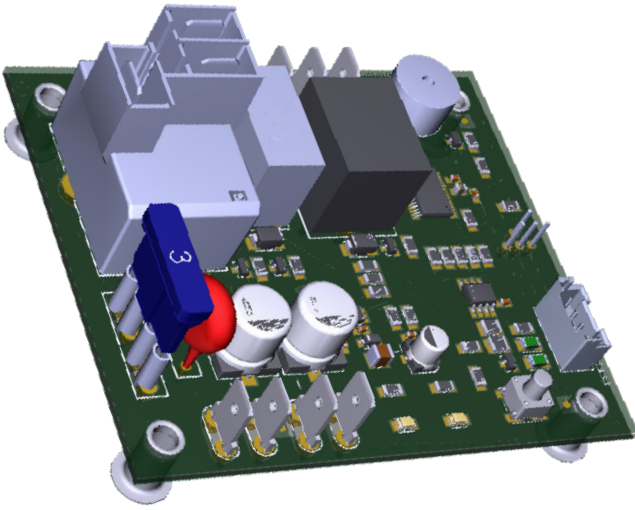
**R32**    **R454B**    **R454C**

**RS-485 Modbus RTU** Best for Longer Distances; Temperature, RH, Absolute Pressure also Available.

**UART Serial** Good for Engineering Development Testing

**3.3V Analog** Short to Medium Distance; Only LFL% and Status Codes.

## MITIGATION BOARD



The ICM A2L Mitigation Board controls a system's CC output based on readings from the A2L refrigerant sensor. It provides MODBUS communication and an alarm contact to alert the system controller of any fault conditions. Additionally, it activates the system's fan during a fault state.

The ICM A2L Mitigation Board is configurable to meet any OEM's needs.

### OPTIONAL FEATURES

- ✓ Fault Monitoring
- ✓ Status, Power LED Indicators
- ✓ Dry Contact Alarm Output
- ✓ Dry Contact Fan Output (optional)
- ✓ Dry Contact CC Output
- ✓ MODBUS Communication to A2L Refrigerant Sensor
- ✓ Common 1/4" Quick Connect Terminations
- ✓ Support multiple leak detection sensors
- ✓ MODBUS communication to system control board
- ✓ Daisy chain to support multiple inputs and outputs

### CONFIGURABLE SETTINGS

- ✓ Alarm Mode (optional)
- ✓ Pulsed Alarm Off, On and Dead Time (optional)
- ✓ Buzzer Mode - On/Off (optional)
- ✓ BAUD Rate
- ✓ LFL Percentage Trip Point
- ✓ LFL Percentage Recovery Point
- ✓ Lockout Initiate Time
- ✓ Lockout Time

### SPECIFICATIONS

- **Input Voltage:** 24VAC +/-25%, 24VDC, or 115-230V
- **Frequency:** 50/60Hz
- **Output:**
  - 100mA @ 5VDC for A2L sensor
  - CC Output: dry contact SPST, C300 pilot duty rating
  - Alarm Output: dry contact SPDT, 10A @ 250VAC/30VDC resistive rating
  - Fan Output: dry contact SPDT, 2HP @ 277VAC, 1HP @ 125VAC
- **Operating Temperature:** -40°C to 70°C
- **Storage Temperature:** -40°C to 85°C (unpowered)
- **Relative Humidity:** 0-95% RH
- **Dimensions:** 3 x 4"