



A3 REFRIGERANT SENSOR FROM TE CONNECTIVITY

IEC 60335-2-40 COMPLIANT R-290 LEAK SENSOR TO SUPPORT EXPLOSION RISK MITIGATION SYSTEMS

TE Connectivity (TE)'s A3 refrigerant sensor is a solution for HVAC/R OEMs using the R-290 refrigerant (propane) and looking to incorporate robust leak mitigation systems to help reduce explosion risk. The sensor uses photoacoustic spectroscopy (PAS) technology to meet all IEC 60335-2-40 Annex LL leak requirements, detecting R-290 at 15% LFL* with $\pm 2.5\%$ accuracy and a 20s response time. With integrated temperature and humidity sensors for environmental compensation, the module can operate at temperatures ranging from -40°C to $+85^{\circ}\text{C}$ and up to 100% relative humidity. The sensor is resistant to poisoning by typical interference gases and uses automated self-calibration (ASC) to maintain performance for up to 15 years without recalibration.

PERFORMANCE

- Gas Type(s): R-290
- Detection Range: 0-100% LFL*
- Detection Threshold: 15% LFL*
- Detection Accuracy: $\pm 2.5\%$ LFL*
- Response Time: 20s (typ.), 25s (max)
- Operating Temp: -40°C to $+85^{\circ}\text{C}$
- Operating Humidity: 0-100%RH
- Lifetime: up to 15 years

ELECTRICAL

- Supply Voltage: 5V - 17V DC
- Max Current: 150mA
- Power Consumption: 0.5W
- Communication: RS485 Modbus RTU

MECHANICAL

- Approx. Dimensions: 52x37x18mm
- I/O: 4 Pin Sealed Signal Double Lock Connector
- Ingress Protection: IP54

STANDARDS & SPECIFICATIONS

- TUV tested : CB certification to 60335-2-40
- Application Specification: 114-161910

KEY FEATURES

- PAS R-290 gas sensor with temperature and humidity compensation
- RS485 Modbus RTU communication protocol with Pulse Width Modulation (PWM) or Universal Asynchronous Receiver-Transmitter (UART) options
- Locking connector interface supporting customized harnessing (optional IP67 connection)
- Easy installation with compact enclosure design and multiple mounting bracket options
- Enclosed module meeting IP54 and salt spray corrosion testing standards
- Integrated anti-condensation heater
- Certified to meet IEC 60335-2-40 Annex LL standards

APPLICATIONS



HVAC
Equipment



Air
Conditioning



Water
Heater



Major Home
Appliances



Commercial
Refrigeration



Refrigerated
Vending

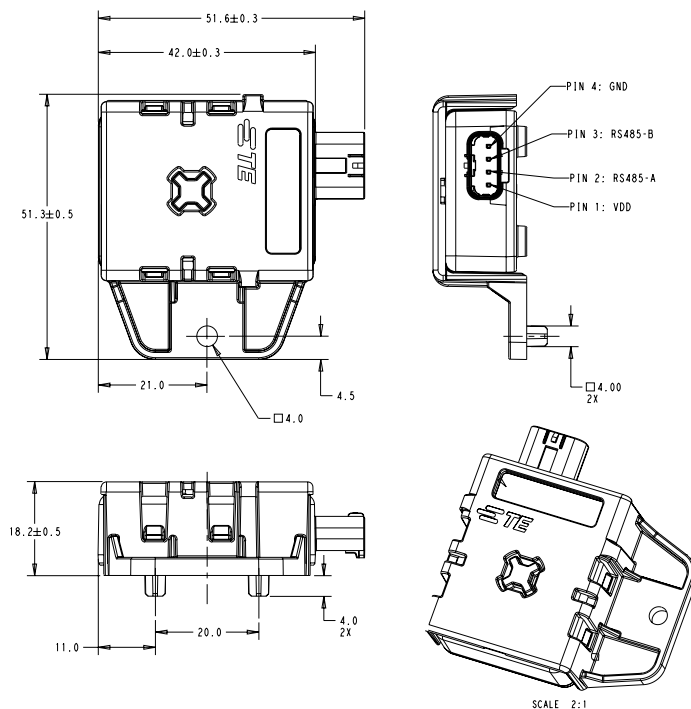
*LFL = lower flammability limit

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A3 REFRIGERANT SENSOR MODULE

Gas	Bracket Style	Part Number
R-290	1-Hole Mount w/ Alignment Pins	2539601-1

ENCLOSURE WITH BRACKET¹



PN 2539601-1 shown. Dimensions in mm. (check customer drawing for details)

¹Additional bracketing options with alternate mounting configurations are available upon request

Part Description	Part Number
Sealed Signal Double Lock Plug Housing	2443729-4
Receptacle Terminal	2321921-1
Perimeter Seal	2321920-4
Rear Wire Seal	2321922-4

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We make it easy to connect with our experts and are ready to provide all the support you need.

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