

**measurement**  
SPECIALTIES

## TEMPERATURE SENSORS FOR HVAC, REFRIGERATION AND BUILDING MANAGEMENT APPLICATIONS



## INTRODUCTION

Measurement Specialties has a long successful history supporting the HVAC and Refrigeration sectors. We operate in the high reliability segment of the market, offering the highest quality and cost effective thermistor components and temperature probes available today. Our core competencies are sensor technology and data integrity and we focus on applications where our sensors represent mission critical components that are part of a larger system in which failure is not an option. High standards are a top priority, ensuring the quality of our products in your applications. Our goal is to manufacture safe reliable products that meet and exceed customer and regulatory requirements.

## REFRIGERATION - DOMESTIC AND COMMERCIAL

NTC Thermistor Probes represent the industry standard when it comes to refrigeration applications. At Measurement Specialties our knowledge of component selection and packaging capability means that we offer a broad range of high reliability temperature probe assemblies for commercial, supermarket and high-end consumer refrigeration applications.

### Double Insulated TPE Overmoulded Probe



- NTC Temperature probe with double insulated TPE cable & moulded TPE probe head
- Ideal for all refrigeration and HVAC applications
- Probe Head 20mm x 5mm
- IP 68 Rated

### Double Insulated TPE Overmoulded Probe with Stainless Steel Housing



- Double insulated moulded TPE NTC probe with the addition of a stainless steel housing
- Ideal for all refrigeration and HVAC applications
- Housing dimensions 50mm x 6mm
- IP 68 Rated
- Mounting Clip available to aid installation

### PVC Overmoulded Probe 8 x 30mm



- PVC overmoulded probe used extensively in "white goods" refrigeration applications
- Probe head 30mm x 8mm
- VDE approved double insulated PVC cable
- IP 68 rated
- 22 AWG PVC cable
- Probe withstands 50,000 Freeze/Thaw immersion cycles

### PVC Overmoulded Probe 6.5 x 25mm



- Ideal for lower cost applications where the superior cold environment performance of TPE insulation is not required
- Probe Head 25mm x 6.5mm
- IP 68 Rated
- 24 AWG PVC cable
- Probe tested to EN 60730-2-9 standard



## REFRIGERATION – TRANSPORT

Transport refrigeration applications impose considerable stress on components. Vibration, extremes of temperature and exposure to the elements can all have a detrimental effect on the reliability of electronic components. When failure of the temperature sensor can mean complete loss of valuable perishable cargo, you can trust MEAS who have years of experience supplying OEM components to major players in the automotive truck and off-road industries to deliver the utmost reliability.

### Immersion Probe with Integrated Connector



- Brass screw-in probe for immersion applications in transport refrigeration
- Available in a variety of plumbing thread types
- Supplied with integral automotive style shrouded connector

### Immersion Probe with Flying Leads



- Brass screw in probe for immersion applications in transport refrigeration
- Available in a variety of plumbing thread types
- Flying leads with moulded insert to give a watertight seal between cable and housing
- Available with sealed connectors

### Transition Moulded General Purpose Probe



- General purpose Stainless Steel temperature probe
- Moulded Strain Relief
- IP 68 Rated
- Ideal for harsh environments
- 22 AWG PVC Cable

### Ring Terminal Probe



- Approved for use in Railway and Underground applications
- Zero halogen materials
- Humidity tested >95% RH for 1000 hours
- Meets the requirements of the following standards
- IEC 60068-2-11 Salt Mist
- IEC1287 Vibration & Shock

## BUILDING MANAGEMENT AND SECURITY

With the high price of fossil fuels, the need for conservation and increased energy efficiency in buildings has never been more compelling. Measurement Specialties has many years of experience providing sensors for building automation, energy control, heating and air conditioning that allow you to design a system to meet the most stringent efficiency guidelines and regulations.

### Underfloor Heating Probe



- TPE Overmolded probe with probe head dimensions of 20mm x 5mm
- 2 core double insulated cable with stiff cable construction facilitating insertion in long ducting without cable "backing up"
- 20Kg breaking strain to aid removal from distorted/damaged ducting
- Reinforced cable with additional insulating layer and kevlar strength member also available

### Single Insulated TPE Overmoulded Probe



- Ideal for ambient air sensing in building management applications, heater controls, air conditioning, etc.
- Probe head 15mm x 5mm
- IP 67 Rated
- 24 AWG Zipcord wire

### Resin Probe



- Used for ambient temperature sensing in building management applications
- Single insulated PVC wire
- Low cost
- Fast Time Response

### Moisture Resistant Discretes



- Moisture Resistant NTC components for use in commercial security and building management applications
- Excellent resistance to humid & damp environments
- Ideal for integration into building fire detection systems in underground car parks
- IEC 60068-1

### Pipe Clamp Probe



- Pipe Clamp Sensor for direct mounting to heating pipework
- Available in a variety of sizes to suit most pipe diameters
- Easy 'Snap On' fitting
- Fast Time Response

## THERMOPILES

Thermopiles are used for non-contact temperature measurement. Non-contact temperature sensing is used for many HVACR applications where customisation of the optics (window or lens) allows the thermopile sensor to be individually adapted to the specific application. Thermopile precision can be tailored to meet specific accuracy requirements depending on the temperature range and application.

### Thermopile Modules TSEM & TSEV

- Completely calibrated, ambient temperature compensation and linearized output
- Different object and ambient temperature measurement ranges
- Digital interface or analogue output
- High accuracy (up to  $\pm 0.5^{\circ}\text{C}$ )
- High resolution (up to  $0.01^{\circ}\text{C}$ )
- Small size (down to 12 x 16mm possible)
- Different field of views possible



## ENGINEERED TO ORDER PROBES



In addition to supplying a range of industry standard design probes Measurement Specialties make every effort to customise probe designs for the following range of applications:

- Refrigeration: transport, supermarket, domestic
- Building Management Systems: climate control, air conditioning, ambient air sensing
- Underfloor Heating Systems
- Fire Detection
- Water heating Systems – Solar Power and Combi Boiler

## TESTING AND RELIABILITY

Measurement Specialties' range of HVAC and Refrigeration probes have been tested extensively both by our customers and at our Temperature Sensing Group Headquarters in Galway, Ireland. We provide a broad menu of electrical, environmental and mechanical tests depending upon the customer's specific application and product requirements. These tests include the following:

### ENVIRONMENTAL

Freeze-Thaw  
Thermal Shock: Liquid-to-liquid  
Thermal Shock: Liquid-Air-Liquid  
Long Term Immersion  
Low and High Temperature Storage  
Autoclave (Pressure Cooker)

### MECHANICAL

Pull Tests  
Drop Tests  
Bend Tests  
Vibration

### ELECTRICAL

Resistance  
High Voltage  
Insulation Resistance



## ABOUT US

In December 2005, Measurement Specialties acquired HL Planar, a sensor company focused on infrared thermopiles used in medical, automotive, appliance, and HVAC applications for non-contacting temperature measurement. In April 2006, Betatherm Sensors and YSI Temperature were acquired by Measurement Specialties thus creating a leading global designer and manufacturer of sensors and sensor-based products. By combining the strengths and expertise of these companies, Measurement Specialties now possesses vast experience and in-depth knowledge that will allow us to meet the unique demands of HVAC and Refrigeration as well as medical, military, aerospace, automotive, appliance and high-end industrial applications. Our combined design and manufacturing expertise makes us the leaders in developing temperature solutions for customers.

## MEASUREMENT SPECIALTIES DESIGN AND MANUFACTURING FACILITIES

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