Temperature Assemblies

"We provide expertise and a wide range of solutions to meet your temperature sensing needs"

Talk to the experts...

- · Advanced machine shop with CAD/CAM functionality
- In-house machining, testing and welding
- Bespoke designs to meet your requirements
- Fully traceable certification for high quality materials, testing and inspection
- In-house testing equipment
- Extensive documentation packages
- Compliance to International Standard IEC 60751:2008 and BS EN 60584/2
- ATEX approval for specific applications

Industries:

- Power
- Oil & Gas
- Petrochemical
- Refining
- Food
- Medical
- Automotive
- Pharmaceutical
- HVAC/Refrigeration

Applications:

Temperature monitoring for all applications including:

- Generators & Transformers & Engines
- Pumps & Compressors & Turbines
- · Pipeline systems
- · Exhaust gas systems
- Steam drums
- Tank farms
- Surfaces
- Chemical distillation
- Hygienic processes

Probes

General Purpose Probes

1RPT, 1PRS, 1RIP, 1TPT, 1TPS, 1TIP



- RTD probes for stable, repeatable measurements and excellent performance in high levels of shock/vibration - Sensor PT100 class A, B, AA, 1/5, 1/10 DIN
- Thermocouple probes for wider temperature ranges sensor inputs type K, J, T and N
- Field bendable, Inconel or stainless steel sheath
- Measuring range minimum -200°C to +1200°C

Spring Loaded Probes

1RSP, 1TSP



- Spring loaded, tip sensitive RTD and thermocouple probes
- Sensor PT100 class A, B, AA, 1/5, 1/10 DIN. Thermocouple inputs type K, J, T and N.
- Measuring range dependant on sensor selection minimum -200°C to +1200°C
- Insulated or bonded junction hot end and a selection of cold end seals and terminal blocks to suit application

Fast Response Probes





- Fast response probe with low mass element to react quickly to temperature changes
- Sensor PT100 class A, B, AA, 1/5, 1/10 DIN. Thermocouple inputs type K, J, T and N.
- Measuring range dependant on sensor selection minimum -200°C to +1200°C

Bayonet Mount Probes

1RBM, 1TBM, 1RBF, 1TBF



- Easy and inexpensive spring loaded installation of probes in solids
- Lock cap and spring for twist-and-release spring loading
- Thermocouple or RTD probes options
- Accurate sensing from -50°C to +260°C

Bearing RTD

1RBS, 1RBO



- High precision RTDs for fast, stable, repeatable measurements where there are space limitations
- RTD sensor Pt100 Class, B, A, AA, 1/10 DIN
- Measuring range of -200°C to +260°C
- Field bendable
- Moisture proof and oil seepage proof

Conduit Style

1RSD, 1RBS, 1 RBC, 1TSD, 1TBC



- Armoured cable protects the leads of thermocouples types E, J, K, N & T
- Well suited for industrial environments where unprotected probes may be cut or broken
- Metal sheaths made to your required length

Magnetic Mounted RTD

High Temperature Probes Miniature Embedded Probes

1MN1

1RMM



- Magnet Mount Thermocouples can be utilised on any ferrous metals as an easy means to measure surface temperature of an object
- Provide a portable means of surface measurement that takes the hassle out of mounting a surface probe to a metal object

ITCL, ITPG



- Thermocouple probes type R, S and B
- Measuring range up to 1700°C

- Small, rugged RTDs to withstand rough handling and harsh environments
- Sensor Pt100 Class AA, A, B
- Measuring range from -50°C to +260°C

Thermowells

Solid Drilled

4WSS, 4WSF, 4WSW, 4WSV



- Drilled from solid bar for process pressure
- Wide Range of Materials including Stainless Steels and exotic materials
- Parallel or tapered stems
- Flat, domed or round tips
- Choice of Process
 Connections: Flanged,
 Screwed, Weld-In
- One piece Forgings
- ASME IX Coded Welding
- Special Coatings
- Non Destructive Testing

Fabricated

4WFS, 4WFF



- Fabricated thermowells manufactured from pipe, tube or bar which are then sealed by a solid welded tip
- Low cost alternative to solid drilled construction when high pressure not a design consideration
- Wide Range of Materials
- Choice of process connections
- ASME IX Coded Welding
- Special Coatings
- Non Destructive Testing

Velocity Collar

4WVF, 4WVV

- Range of solid drilled thermowells constructed with the addition of a velocity collar which is a metal ring machined onto profile of thermowell
- Reduces the unsupported length of the thermowell
 Deduces uitretion
- Reduces vibration

Temperature Assemblies with Thermowells

Standard Assembly

3AFR, 3AFT, 3ASR, 3AST



- Standard assemblies fitted with available MI probes (specified in Probe Section)
- Numerous connection head & transmitter options available
- Options for explosion proof and flameproof rating for hazardous areas
- RTD or Thermocouple assemblies Sensor PT 100 class, A, B, AA, 1/5, 1/10 DIN Thermocouple inputs type K, J, T, and N
- Measuring range dependant on sensor selection: -200°C to +1200°C

High Temperature Ceramic

3AHC



- High temperature ceramic assemblies
- Measuring range up to +1700°C
- Options for explosion proof or flame proof rating for hazardous areas

Temperature Assemblies without Thermowells

Pipe Clamp

2RSM, 2PBR, 2TPR



- Easily fitted to pipe No need for thermowell in pipe
- Accuracy and response is similar to immersed thermowell assembly
- Numerous connection head and transmitter options available
- Options for explosion proof and flameproof rating for hazardous areas
- RTD or Thermocouple sensors available
- Sensor PT100 class A, B, AA, 1/5, 1/10 DIN
- Thermocouple inputs type K, J, T and N
- Measuring range dependant on sensor: -2000C to +3000C

General Purpose

2GPR, 2GET, 2GER, 2GGR, 2GPT, 2GGT



- Standard assemblies fitted with available MI probes (specified in Probe Section)
- Numerous connection head and transmitter options available
- Options for explosion proof and flameproof rating for hazardous areas
- RTD or Thermocouple assemblies Sensor PT 100 class, A, B, AA, 1/5, 1/10 DIN
- Thermocouple inputs type K, J, T, and N
- Measuring range dependant on senor selection: -2000C to +12000C

Transmitters

Fixed Range Transmitter

7T48



- · Manufactured to a high specification
- Fixed range for RTDs, Thermocouples, Resistance - sensor, mV
- Easily adjustable zero and span potentiometers
- Analogue output 4 ... 20mA, invertible, 2 wire design
- 7T48: ATEX Approved, EExia (fixed in H70 Head), Thermocouple and RTD Inputs

Programmable Tx

7T24, 7T32, 7T12





- Programmable for RTDs, Thermocouples, Resistance - sensor, mV
- Output linear to temperature with input signal from RTDs and Thermocouples
- Analogue output 4 ... 20mA, 2 wire design
- Signal configurable for sensor burnout and sensor short circuiting
- sensor stimulation
- 7T32: Hart Protocol, ATEX Approved
- 7T12: Universal use within process industry and configurable with Windows ® PC

Accessories

Terminal Blocks Enclosures **Components & Wire** 8EAL, 8EPO, 8EPT Accessories 8PBT, 8PBE, 8BRY, 8BCE

- Wide range available
- Wall or panel mount
- Industrial, heavy duty, clean room options
- Polyester, aluminium or stainless steel materials
- Suitable for range of transmitters



- Range of glands
- Range of olives Numerous plug &
- socket connectors Various extension cable wire for both thermocouple and **RTD** probes
- Extensions barrel nipple, nipple-unionnipple, hex nipple and nipple-union-hex available



- · Range of materials options
- Heavy duty / flameproof, EExde, EExe & EExn Certified.
- Weatherproof
- General Purpose • Selection of cable and
- process adapters 1/2 BSP, 3/4 BSP,
- M24 instrument connections



8HH7, 8HBZ, 8HBS, 8HKE, 8HKN, 8HTD



- PBT, PET, Ryton or ceramic materials available depending on application
- Configuration up to 8 terminals
- Spring loaded baseplate if required



RTD Elements & Slot RTDs

Elements	Elements & Extensions	Slot RTDs
5REW	5REL	6SR1
 Ceramic wire wound elements manufactured in-house Class B, A, 1/3, 1/5 and 1/10 DIN 2 wire, 3 wire or 4 wire options Range of sizes to suit application -200°C to +660°C Many items held ex-stock 	 Fitted with extension wire to allow for fast installation into application Extension wire type and length to suit requirement Class B, A, 1/3, 1/5 and 1/10 DIN Range of sizes to suit application -200°C to +660°C Many items held ex-stock 	 Install between stator winding for continuous protection of motors and generators Sensor Element: Pt100, Class B, A, AA

Custom Designs

Multipoint Assembly





- Typically used for temperature profiling in furnaces, chemical reactors and process lines.
- Lower installed cost with up to 60 independent measuring points
- · Replaceable inserts for easy measurement
- Custom designs for any application by one of our specialist engineers
- Can be supplied as just the probe or as a 'package solution' including transmitters/ controllers for implementing into on-site control systems

Bespoke Designs

Custom Solutions



- For non-standard designs, Rototherm's temperature engineers can analyse your temperature measurement needs and design a bespoke solution that can be manufactured at our extensive UK facility
- The engineers will typically work with you through the design process to ensure all needs are met
- Our large service team can be available for installation, commissioning and operation to ensure success