



Instrumentation Solutions

| Temperature | Pressure | Density | Level | Flow |



INDEX

About Us

Heritage & Experience	06
Served Industries	07

Mechanical & Electronic Recorders

Circular Chart Recorders	11
--------------------------	----

Flow Measurement & Restriction

Flow Restriction	13
DP Flow Measurement	14
Flow Applications / Projects	15

Level & Density Measurement

Level Measurement	17
In-Line Measurement	20
Beverage Industry Specific Products	21

Temperature Assemblies

Probes	23
Thermowells	24
Temperature Assemblies without Thermowells	25
Temperature Assemblies with Thermowells	25
Transmitters	26
Accessories	26
RTD Elements & Slot RTDs	27
Custom Designs	27

Switches & Minifolds

Temperature Switches	29
Minifolds	29
Pressure Switches	30

Temperature & Pressure Gauges

Defence Standard Gauges	33
Process Gauges	33
Digital Pressure Gauges	33
Differential Pressure Gauges	34
Accessories	34
Filled System Thermometers	34
Bi-metallic Thermometers	35
Digital Thermometers	35

Services

Calibration	36
Instrument Repairs and Modification	37
Training Courses	37
Eurotherm Partnership	38
Loma Systems/Lock Inspection Partnership	39



OUR MISSION

“Our mission is to provide world class customer service, giving our customers the right solutions for their applications in the fastest possible way, delivered through a simple and lean operation, and maintained by continuous development of our employees’ skills and knowledge.”





Excellence the World can Measure

Rotherm Group is a global leader in providing process instrumentation solutions to a variety of industries including energy, defence, beverage, water, transport and pharmaceutical.

With over 170 years of experience in process measurement, we understand that a small change in measurement accuracy can have a big impact on profitability. That's why Rotherm Group is committed to helping our customers measure and control efficiently and accurately.

The Rotherm name is synonymous with quality, industry expertise and innovation. Our understanding of your process and application ensures that we are able to design and provide a solution that will work in any area of Temperature, Flow, Pressure, Level, Density and Recording & Control.



Heritage & Experience



World's first Steam Pressure Gauge designed by Sydney Smith in 1847

Rototherm's heritage dates back to the 1840s with the invention of the steam pressure gauge by Sydney Smith Dennis.

The first bi-metallic thermometer was invented by the company in the early 1900s. This basic design still reigns in many mechanical temperature measurement applications today.

Rototherm Group has grown both organically and through strategic acquisitions and now supplies measurement and control solutions to customers in over 90 countries around the world. At the core of everything we do is exceptional customer service. We design our products, processes and training to ensure we provide an excellent and consistent service.

We are an ISO 9001 certified, privately owned advanced manufacturing company. The global success of our product lines is due to the commitment, expertise and customer communication of our team.

Rototherm Group employs Lean Principles throughout its manufacturing sites and operations, and our employees are all trained in Lean Principles, enabling us to provide products of the highest quality on time and cost effectively.



003

Served Industries

Rototherm Group supplies the following products to the industries below:



Oil & Gas

Mechanical & Electronic Recorders (p.8), Orifice Plates/Multi Stages (p.11), Canongate Technology Products (p.14), Temperature Assemblies (p.20), HNL Switches & Minifolds (p.26), Pressure & Temperature Gauges (p.30) and Eurotherm Paperless Recorders/Indicators (p.36)



Heat Treatment

Mechanical & Electronic Recorders (p.8), Temperature Assemblies (p.20), HNL Switches & Minifolds (p.26), Pressure & Temperature Gauges (p.30) and Eurotherm Paperless Recorders/Indicators (p.36)



Power Generation

Mechanical & Electronic Recorders (p.8), Orifice Plates/Multi Stages (p.11), Temperature Assemblies (p.20), HNL Switches & Minifolds (p.26), Pressure & Temperature Gauges (p.30) and Eurotherm Paperless Recorders/Indicators (p.36)



Food & Beverage

Mechanical & Electronic Recorders (p.8), Orifice Plates/Multi Stages (p.11), Canongate Technology Products (p.14), Temperature Assemblies (p.20), Pressure & Temperature Gauges (p.30) and Eurotherm Paperless Recorders/Indicators (p.36)



Waste/Water

Mechanical & Electronic Recorders (p.8), Orifice Plates/Multi Stages (p.11), HNL Switches & Minifolds (p.26), Pressure & Temperature Gauges (p.30) and Eurotherm Paperless Recorders/Indicators (p.36)



Defence

Pressure & Temperature Gauges (p.30) according to Def-Stan 66-2 Approval



Refining & Petrochemical

Mechanical & Electronic Recorders (p.8), Canongate Technology Products (p.14), Temperature Assemblies (p.20), HNL Switches & Minifolds (p.26), Pressure & Temperature Gauges (p.30) and Eurotherm Paperless Recorders/Indicators (p.36)



Transport

Canongate Technology Products (p.14)



Pharmaceutical & Medical

Canongate Technology Products (p.14), Temperature Assemblies (p.20) and Loma Systems/Lock Inspection: Metal Detection, Checkweighing and X-Ray Systems (p.37)



Dairy

Mechanical & Electronic Recorders (p.8), Pressure & Temperature Gauges (p.30) and Eurotherm Paperless Recorders/Indicators (p.36)



Aerospace

Pressure & Temperature Gauges (p.30)







Mechanical & Electronic Recorders

“Rototherm has an unparalleled reputation and heritage within recording and control solutions, both with mechanical and electronic devices. We continue to invest and develop our products to ensure that our customers have the information and control they require.”

Talk to the experts...

- Leading manufacturer and supplier of process recorders, mechanical and electronic
- Product design and installation expertise
- Presence in over 90 countries
- Wide ranges for pressure, temperature & flow measurement
- Interchangeable parts/accessories with other manufacturer's recorders
- Easy installation and maintenance
- Durability for all types of environments: From Saudi Arabian deserts to jungles in Malaysia

Industries:

- Oil & Gas
- Refining
- Petrochemical
- Food & Dairy
- Plastics
- Textile
- HVAC

Applications:

Temperature, pressure, flow & humidity monitoring for all processes including:

- Heat Treatment
- Gas Transmission/Distribution
- Industrial Ovens/Furnaces
- Pharmaceutical Process Lines
- Dairy Pasteurisation
- Hydrostatic Pressure Testing

Circular Chart Recorders

Mechanical Recorder (12")

Clearscan



- Any Combination of Temperature, Pressure and Flow: 1, 2 or 3 pen
- 1% measurement accuracy
- 12 inch chart sizes
- Panel, wall, pipe mounting or portable options available
- Battery or mechanical chart drive
- Very robust and proven design
- Light weight construction (<10kg)
- Standard Steel Epoxy coated case or Stainless Steel case available for harsh environments
- Simple installation and maintenance

Mechanical Recorder (9")

RPO/RTO



- Any combination of pressure and temperature recording: 1,2 or 3 pen
- Small tough compact Steel Epoxy coated case
- 1% measurement accuracy
- 9 inch chart sizes
- Panel, wall and pipe mounting or portable options available
- Battery or mechanical chart drive
- Very robust and proven design
- Low cost solution for chart recording

Electronic Recorder

Sentinel



- Any Combination of Temperature, Pressure, Flow and Humidity: 1, 2 or 3 pen
- IP66 construction
- Panel or surface mounting
- Configurable via front panel keypad
- 0.1% measurement accuracy
- Weight: 7 kg (Single Pen), 7.7 kg (3 pens)
- Alarms available
- Steel case
- Transmitter model SME162 required for humidity measurement

Pens, Charts & Accessories

For Rototherm Chart Recorders



A complete range of charts, pens and accessories suitable for all Rototherm recorders are kept in stock, many of our accessories are interchangeable with other manufacturer's recorders.



Flow Measurement & Restriction

“Rotothem has experience developed over 40 years in the design and manufacture of DP FLOW devices. Our facilities are tailored to meet the highest standards required across the energy industry”

Talk to the experts...

- Over 40 years of specialist experience endorsed by an extensive reference list of projects for the key industry players
- Wide range of tailored solutions in standard and exotic materials
- Fully traceable certification for high quality materials, testing and inspection
- Extensive documentation packages
- Highly professional project management
- Fast track delivery to meet production requirements
- Manufacture according to EN ISO 5167 and AGA 3 (American Gas Association)
- Compliance, where applicable, with the European Pressure Equipment Directive (PED) and CE mark

Industries:

- Oil & Gas
- Chemical
- Pharmaceutical
- Nuclear
- Coal Fired Power Stations
- LNG

Applications:

- Offshore Platforms
- Gas blow down
- Water recycle lines
- Cooling wastewater
- Pipeline Flow Measurement
- Restriction Control

Flow Restriction

Restriction Orifice Plates

ROs



- Most common and widely used differential pressure producer
- Suitable for a wide range of flow restriction measurement applications in line sizes of 50mm and above
- Wide range of materials including exotics such as monel, hastelloy, as well as ceramic
- Orifice sizing on request
- Proven technology
- Range of Orifice Types
 - Concentric Square Edge
 - Conical Entrance
 - Quarter Circle
 - Segmental
 - Eccentric

Multi-Stage & Multi-Hole Restriction Orifice Assemblies

MSROs



Flanged assembly consisting of a series of orifice plates to produce a specified reduction in line pressure or to create a critical flow, giving controlled flow rate regardless of changes in downstream conditions. In-house expertise covers all aspects of design and manufacture associated with restriction of pressure for control purposes.

Flow Restriction Benefits:

- Cavitation Elimination
- Preventing flashing in liquid flows
- Choked flow in gases
- Noise/Vibration Reduction
- Permanent Pressure Reduction
- Feed & Vent Flow
- Pressure drop
- Preventing cavitation and flashing in liquid flows
- Choked flow in gases
- Excessive noise/ vibration

Project Management & Testing Capabilities:

Rototherm team is experienced and set-up to handle flow based projects. Our large team of project engineers handle all aspects of project management, design, documentation, testing and communications with our customers to allow for projects to be delivered 100% to scope of supply and on-time. We pride ourselves on meeting this.

Our testing services typically include:

- Hydrostatic Pressure Test
- X-Ray (Welds)
- PMI
- Dye Penetrant Inspection
- Ultrasonic examination
- Magnetic Particle Inspection
- Charpy Impact Testing
- Hardness Survey
- Independent 3rd Party Inspection

DP Flow Measurement

Orifice Carrier Assemblies

Orifice Carrier Assemblies



- Orifice carriers are supplied for applications where existing pipework has no facilities for tappings
- Wide range of materials
- Suitable for 1" lines and above
- Range of Carrier Types:
 - Single Ring, Corner Tappings
 - Double Ring, Flange Tappings
 - Double Ring, Corner Tappings
 - Double Ring, Annular Chambers
- Orifice sizing on request

Orifice / Flange Union

Orifice Assemblies



- Orifice flange assemblies consist of a pair of flanges, studs, nuts, gaskets, jacking screws and plugs (where requested)
- Orifice flanges ensure best flow measurement accuracy with an economic solution
- Wide range of materials, including ASTM A105N Carbon Steel, ASTM A350 LF2 Carbon Steel , ASTM A182 F316L Stainless Steel as standards
- Exotic materials used depending on application
- Ratings from 300 lb to 2500 lb
- Sizes from 1" Nominal Bore
- Corner Tapping Versions Available

Meter Runs

Orifice Flange Meter Run



- Typically consisting of a factory assembled section of pipe with an orifice plate mounted between two flanges near the bottom third of the run, terminated with a flange at each end connected to the process
- Can be supplied with temperature pockets if required
- Building the assembly in the factory allows us to control all the variables which can lead to inaccuracies which can arise if the system is assembled by untrained personnel on site

Venturi

Classical Venturi Tubes



- Classical Venturi Tubes - used on applications where a low permanent pressure loss is required
- Can be used on clean and dirty fluid in line sizes from 1" to 60"
- Calculation, design and manufacture to BS EN ISO 5167:1
- Fabricated from plate or machined from bar/ forgings
- Flanged or weld-in construction
- Wide range of material grades
- Calibration service on request

Flow Nozzle

Flow Nozzle



- If high temperatures and velocities are present, the flow nozzle may provide a better solution than an orifice plate
- Its construction makes it substantially more rigid and flow coefficient data at high Reynolds number is better documented
- The inlet is contoured, and may be either radius entrance (ISA1932) or elliptical entrance (ASME long radius)
- The flow nozzle has about 65% greater flow capacity than an orifice with the same diameter
- Flow nozzles are also suitable for erosive fluids where the sharp edge of an orifice plate could quickly deteriorate

Flow Applications / Projects

Multi-Stage Restriction Orifice (RO) Assembly for High Pressure Gas Blowdown

Rototherm has a significant offshore installation base across the North Sea, Middle East, South East Asia and Australia, working with key industry players, such as Shell, ExxonMobil and BP, demonstrating success in our designs and meeting the necessary process requirements. We ensure that the mechanical integrity of our systems are never compromised, which is why we maintain 100% record of successful operation and, in many occasions, this results in our team being brought in to replace malfunctioning RO designs that can lead to significant safety and cost implications for the user.

Multi-Stage ROs are typically required to reduce pressure down to atmospheric. This solution is increasingly common on offshore platforms where higher pressure drops and flow rates exist and control valves are expensive to install and maintain. For example, a multistage restriction orifice assembly is installed at the downstream of blow down valves. When blowdown valve opens to release the high pressure on its upstream, the RO at its downstream ensures that the flow is not excessive to overload the flare header. Usually the pressure drop in a blowdown circuit across an RO can be very high.



When designing a solution, Rototherm engineers always consider four critical factors:

- High pressure drop – ensuring that the required pressure drop is achieved with proven design
- Noise – achieving the lowest noise level (<85dBA according to international noise standards)
- Joule-Thompson Effect – considering the change in temperature across the assembly and subsequent impact on bore size and plate thickness
- Length – meeting the process requirements in the shortest overall length, especially when space is tight and limited

Multi-Hole Restriction Orifice (RO) Assembly for Cooling Water Recycling Lines

Multi-hole ROs are typically used in LNG terminals, LNG producing plants, chemicals, petrochemicals and refineries. This type of solution is a cost effective method for managing pressure within the water system. For example, a multi-hole restriction orifice assembly is used to manage a constant recirculation flow.

The recirculation ensures that cavitation and starvation cannot happen in the pump, as well as ensuring noise levels are kept to a safe level (<85dBA).



Rototherm designs' also account for the impact of Acoustic Induced Vibration (AIV), which can cause significant damage to surrounding equipment if such resonance levels are reached as a result of the process flow. Material selection and manufacturing capability is another critical factor to ensure the long-term success of a solution in the field. Our engineers always work in depth with process design teams to ensure successful solutions can be implemented.



Level & Density Measurement

“Our unique non-invasive ultrasonic technology has been developed and built upon over the last 35 years, and is proven throughout the world across a vast number of installations”

Talk to the experts...

- Ultrasonic technology with wide ranging and unique applications for several industries
- Heritage deeply rooted in the brewing and distilling industry, with an illustrious reputation across the Scotch Distilleries market
- The world's only 100% non-invasive liquid level measurement:
 - Zero modifications to your vessels
 - No downtime for installation and commissioning

Industries & Applications:

Beverage:

- CO₂ control/monitoring in beer & sparkling wine
- Alcohol strength measurement
- Beer, water, spirit vat level measurement

Petrochemical:

- Chemical treatment process automation
- Acid bath strength, level and batching
- Chemical manufacture/production

Oil & Gas:

- Fuel storage tank level measurement (LPG, gasoline, diesel, kerosene...)
- Liquid level/interface detection in oil processing

Transport:

- Truck cargo monitoring
- Offloading fuel identification systems
- Fuel tank theft prevention

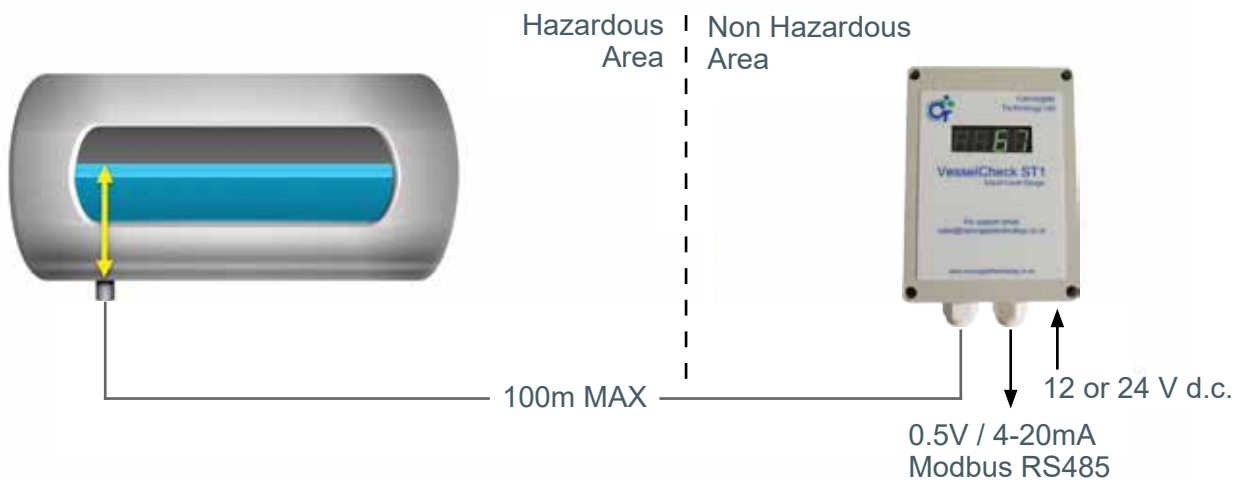


Level Measurement

Non-Invasive Tank Level Gauge

VesselCheck ST1

- Used extensively across Oil & Gas, Beverage, Chemical and Pharmaceutical industries
- Truly non-invasive
- Sensors bonded to outside of tank
- Fits tank of most shapes and sizes
- Output to Telemetry system – various options
- Low cost, reliable & accurate tank gauging
- Not affected by pressure
- Easy installation – no tank break-in
- Simple retrofit to existing tanks
- No down-time during installation
- No moving parts – no maintenance
- Temperature integrated sensors available



Hazardous Area Non-Invasive Tank Level Gauge

VesselCheck ST1AD

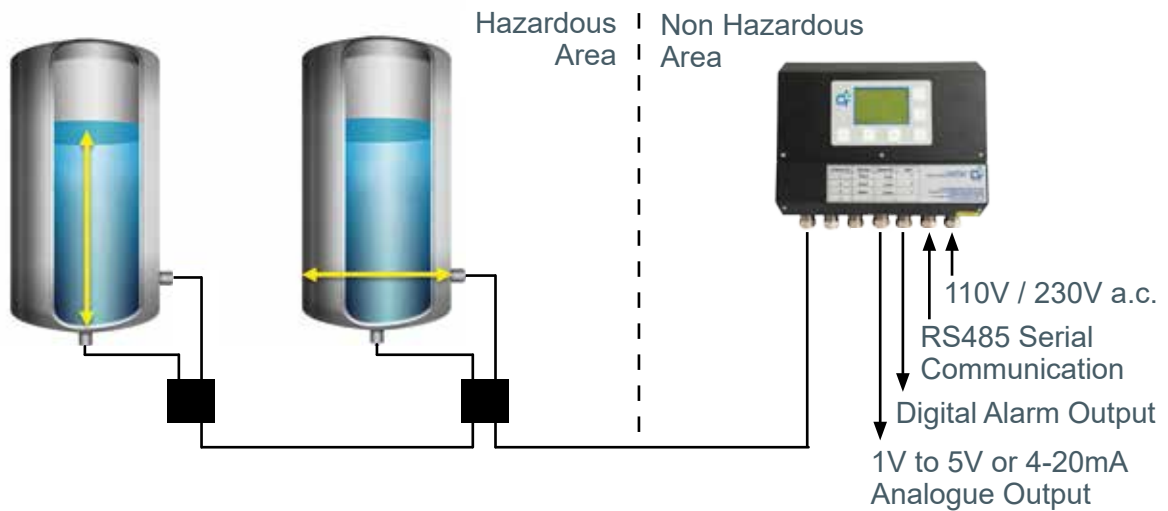
- Approved for hazardous area
- Used extensively across Oil & Gas, Beverage, Chemical and Pharmaceutical industries
- Truly non-invasive
- Transceiver bonds to outside of tank
- No tank break-in
- Easy installation
- Ambient temperature compensated (temperature measurement in display unit)
- No down-time during installation
- Suitable for tanks of most shapes and materials
- Not affected by pressure
- No moving parts – no maintenance
- Low cost & reliable tank gauging



Non-Invasive Tank Level Measurement System

VesselCheck ST2

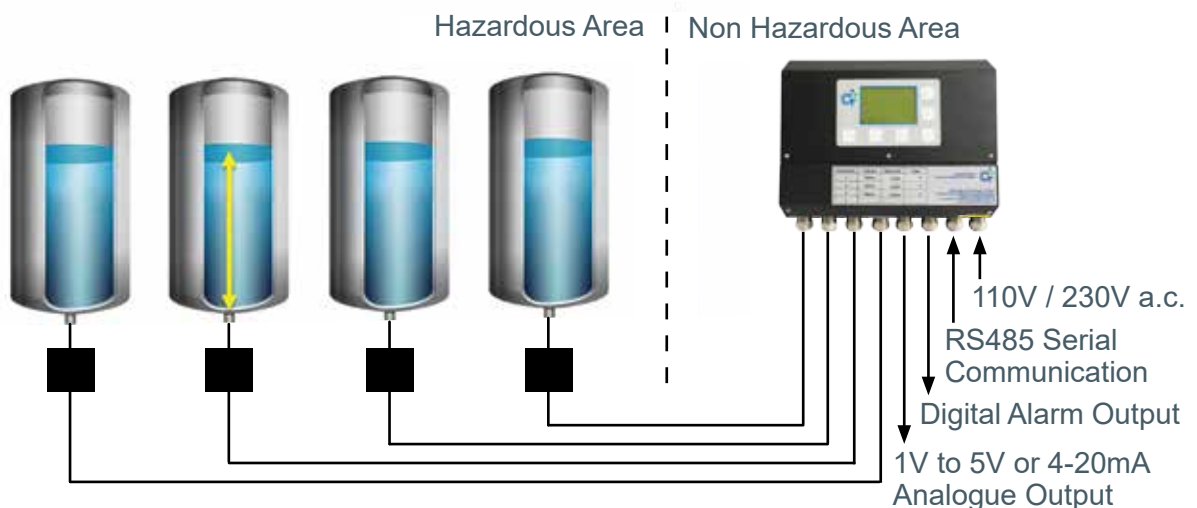
- Level measurement for 2 tanks
- Truly non-invasive technique
- Sensors bonded to outside of tank base and side wall
- 20 point calibration table
- 4 - 20mA / 1.5 V analogue outputs
- RS485 / 232 Modbus serial communications
- ATEX/ IECEx approved sensors for hazardous areas available
- Optional local display keypad
- Fast, reliable and accurate tank contents measurement
- Easy installation – no tank break-in
- Easy retrofit to existing tanks
- No down-time during installation
- No moving parts – little or no maintenance required



Non-Invasive Tank Level Measurement System

VesselCheck ST4

- Level measurement for up to 4 tanks
- Truly non-invasive technique
- Sensors bonded to outside of tank base and side wall
- 20 point calibration table
- 4 - 20mA/ 1 - 5V analogue outputs
- RS485 / 232 Modbus serial communications
- ATEX / IECEx approved sensors for hazardous areas available
- Optional local display & keypad
- Fast, reliable and accurate tank contents measurement
- Easy installation – no tank break-in, easy retrofit to existing tanks
- No down-time during installation
- No moving parts - little or no maintenance required



Non-Invasive Point Level Detector for Tanks & Pipes (Hi-Lo Alarm)

SpotCheck 1000/4000

- Non-invasive liquid level switch for use in applications where avoiding contact is vital
- Uses ultrasonic “footprint” to determine presence or absence of liquids inside a tank or pipe
- Sensor is clamped externally to the wall of the pipe or vessel
- Enables tank high / low level alarm
- Response time of 1 second

Applications include:

- Pump run dry protection
- Pig detection
- Tanker off-load pump control
- Overfill alarm
- Hygienic level switch for foodstuffs, liquids, pharmaceuticals and chemicals



Pneumatic and Electronic Level & Pressure Transmitter

CT Hollege

- Suitable for hygienic applications
- High accuracy
- Long term proven reliability
- Rugged construction
- Simple installation and set-up
- Standard and bespoke units
- Pneumatic systems for hazardous areas
- Liquid and slurry continuous level measurement
- Continuous pressure monitoring
- Low cost, reliable & accurate tank gauging
- Not affected by pressure
- Easy installation – no tank break-in
- Simple retrofit to existing tanks
- No down-time during installation
- No moving parts – no maintenance



Graphic Colour Operator Interface

HMI

- 5. 7" TFT Colour LCD
- 5 Button Keypad
- Resistive Analogue Touchscreen
- RS232/422/485 Comms port
- Integrated Ethernet & web server
- USB Port
- Configured to your application
- High Performance Core
- Integrated Functionality
- To be used with the Canongate VesselCheck series for level measurement



In-Line Measurement

Liquid Concentration Sensor & Transmitter

DensiCheck TX

- Economic measurement of liquid concentration and density through use of ultrasound technology
- Available as non-invasive and invasive formats
- ATEX hazardous area approved
- Zero drift and no re-calibration
- No moving parts
- Lower installation and maintenance costs
- Increased process efficiency
- Improved quality monitoring
- High accuracy and repeatability



Oxygen Measurement

OxyCheck

- Designed for hygienic applications to measure dissolved oxygen content (DO₂) reliably and accurately
- Uses photodiode technology
- Measurement range from 4ppm to 25ppm (0.05% - 300% saturation)
- Low maintenance required
- Electrolyte free and no fragile membrane
- Quick response and not affected by flow rate
- Integrated RS485 Modbus RTU interface



Carbon Dioxide Measurement

CarboCheck

- Accurate monitoring and control of dissolved CO₂ levels in carbonated beverages
- +/-0.02 CO₂ (+/-0.04 g/l)
- Hygienic fitting, can be cleaned in-place
- No sampling or product by-pass lines
- Available as single/ dual channel controller or up to 4 channel monitor
- Low maintenance requirement
- No moving parts
- Improved 'right first time' carbonation figures in-line or in-tank
- More efficient process control



Multi-measurement Controller & Analyser

MultiCheck

- Allows for multiple control & measurement of Carbon Dioxide, Oxygen and Alcohol/Plato
- Comprises of central control unit and sensors, providing a "one-system" measures all approach
- Ensures fast identification of products outside specification
- Very low maintenance required
- +/- 0.05 g/l for CO₂
- +/- 0.02 Plato
- +/-0.05% alcohol by volume
- +/- 5ppb O₂



Beverage Industry Specific Products

Rapid Staining Tests on Seeds

GrainStain

- Rapid Staining test on seeds, particularly barley and wheat
- Precision control of temperature, vacuum and time allows carrying out staining under reproducible and standardised conditions, ensuring optimum staining performance
- Completely self-contained unit with own integral vacuum pump.
- Two and four place versions available
- Independent vacuum gauge and control or each tube
- Integral pump adjustable to 380mm Hg
- Individual tube drain system
- Audible alarm system
- Illuminated mains power on/off switch
- Vacuum pump switch plus indicating LED
- Timers adjustable up to 30 minutes each with indicating LEDs
- Audible alarm system with push button cancel facility
- Heater indicating LEDs
- Individual adjusters for each sample tube temperature measurement



Mashing Bath for Extract Measurement

CT4 Mashing Bath

- Mashing bath for measurement of extract by IOB, EBC and ASBC procedures
- Stainless steel bath with integral pump for circulation of water through heater box and bath
- Beakers in the bath are stirred using magnetic followers and all samples are mashed and cooked together
- Bath is designed to be fully automatic, and manual control is possible if required
- PLC Control
- Colour graphics with touch display
- Programmable delayed start
- Audible alarm
- Bath temperature controlled by internal attemperation unit
- Temperature measured and controlled to $\pm 0.2^{\circ}\text{C}$
- Low level water cut out
- Accurate water dispense ($\pm 5\text{ml}$) to all beakers in less than 2 minutes
- Simple touch screen access to volume calibrations
- Real time trending of machine sequence
- Remote servicing available via modem
- Two automatic pre-programmed mashing sequences
- Data storage of last 30 processes
- Overview screen to monitor all control I/O operations





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

Fast Response Probes

1RFR, 1TFR



- 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

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

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

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

High Temperature Probes

ITCL, ITPG



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

Miniature Embedded Probes

1MN1



- 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
- 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: -200OC to +300OC

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 sensor selection: -200OC to +1200OC

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
- 7T24: Configurable with Windows ® PC without sensor stimulation
- 7T32: Hart Protocol, ATEX Approved
- 7T12: Universal use within process industry and configurable with Windows ® PC

Accessories

Enclosures

8EAL, 8EPO, 8EPT



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

Components & Wire

Accessories



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

Terminal Blocks

8PBT, 8PBE, 8BRY, 8BCE



- 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

Connection Heads

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

5REW



- 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

Elements & Extensions

5REL



- 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

Slot RTDs

6SR1



- Install between stator winding for continuous protection of motors and generators
- Sensor Element: Pt100, Class B, A, AA

Custom Designs

Multipoint Assembly

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



Switches & Minifolds

“We design and manufacture one of the widest ranges of pressure and temperature switches in the world”

Talk to the experts...

- Over 50 years expertise
- Quick delivery turnaround
- Wide variety of types, materials, wetted parts, etc.
- Available to NACE standard MR-0175 for corrosive environments
- Fully traceable certification for high quality materials, testing and inspection

Industries:

- Oil & Gas
- Heat Treatment
- Chemical/Petrochemical
- Refining
- Nuclear
- Power
- Water & Wastewater
- HVAC
- Automotive

Applications:

Temperature & Pressure monitoring for all applications including:

- Wellhead Control Panels
- Construction Equipment
- Dry Gas Seal
- Lube Oil Systems
- Air Distribution Lines
- Generators & Transformers & Engines
- Pumps & Compressors & Turbines
- Pipelines



Temperature Switches

Heavy Duty Standard

Series 700 Standard



- Ranges from 50°C to +400°C
- Sensor element: Filled systems
- Ingress protection: IP66
- Switch: 1 or 2 SPDT
- Wide range of output switches available

Heavy Duty Explosive

Series 700 Explosive



- Provides the switching of a compressed gas supply (generally air) at a predetermined temperature
- Sensor element: Filled systems
- Temperature Range: -50°C to + 400°C
- Ingress protection: IP66
- Switch: Precision Pilot Value

Heavy Duty Pneumatic

Series 700 Pneumatic



- Designed to provide electrical output switching for Potentially Explosive Atmosphere applications
- Sensor element: Filled systems
- Temperature Range: -50°C to +400°C
- Ingress protection: IP66
- Certification: Exd, ExnC, ExtD, Exia, I.S

Minifolds

Aluminium Air Minifolds

Series 900 Minifolds



- Replaces complex assemblies of valves and fittings
- 5, 10 or 20 outlets
- Corrosion resistant
- Available for distribution of gaseous and liquid media also
- Ideal for use in panels and confined spaces

SS Distribution Minifolds

Series 900 Minifolds



- Replaces complex assemblies of valves and fittings
- 5, 10 or 20 outlets
- Reduction in space / costs
- Available for distribution of gaseous and liquid media also
- Ideal for use in panels and confined spaces

Air Horn

Pneumatic Audible Alarm Horn



- Choice of 3 frequencies enabling different alarms to be identified by own unique sound
- 118 dBA output
- Designed for site mounting or within enclosure

Pressure Switches

Industrial Standard

Series 300 Standard



- Compact design (130mm x 93m x 70mm) suited for limited space
- Comprehensive range – ranges available from -1 to 600 Bar
- Wide range of output switches
- High overload ratings
- Simple maintenance
- Proven performance – long established reputation – providing good value without compromising accuracy and reliability

Industrial Explosive

Series 300 Explosive



- Exd, ExnC, ExtD, Exia, I.S. - the certificates available on this range enables them to be used in most hazardous area applications
- Compact design (130mm x 93m x 70mm) suited for limited space
- Comprehensive range – ranges available from -1 to 600 Bar
- Wide range of output switches
- High overload ratings
- Simple maintenance
- Proven performance

Industrial Pneumatic

Series 300 Pneumatic



- Compact design (130mm x 93m x 70mm) suited for limited space
- Comprehensive range – ranges available from -1 to 600 Bar – compatibility between the 'wetted parts' of the switch and your process can be assured with a number of options available
- Low switching differentials
- High overload ratings
- Simple maintenance
- Proven performance

Heavy Duty Standard

Series 700 Standard



- Ranges from 16 mBar to 600 Bar
- High overload ratings
- Simple maintenance
- Safety vent ring
- Design includes venting and isolation chamber
- 40 pressure and DP ranges
- Wide selection of output switches, diaphragm and pressure chamber materials, and process connections (including flanges)

Heavy Duty Explosive

Series 700 Explosive



- Exd, ExnC, ExtD, Exia, I.S.
- Ranges from 16 mBar to 600 Bar
- High overload ratings
- Simple maintenance
- Safety vent ring
- For switches fitted with metallic diaphragms, a PTFE ring is incorporated on some ranges to provide additional sealing

Heavy Duty Pneumatic

Series 700 Pneumatic



- Ranges from 16 mBar to 600 Bar
- High overload ratings
- Simple maintenance
- Safety vent ring
- Design includes venting and isolation chamber
- Makes extensive use of the HNL PVV as the prime sensing device to detect the process diaphragm movement

Compact Switch

Series 100



- Non-bleed in either switched state
- Configurable for N.O. or N.C. output
- Scale range: 0.1 to 100bar
- Aluminium or stainless steel construction
- Accuracy class: $\pm 0.1\%$
- Designed for use on monitoring systems associated with natural gas transmission
- Used to protect a system or pipeline from an abnormally high or low pressure which might result in the discharge of gas

Pressure/DP Switch

Series 300 & 700



- Exotic materials for wetted parts
- Non-standard process connections
- Wide range of flanges
- Process isolated flange option
- Available with a wide range of process option

Flow Regulators

Series 1721 & 1735



- Integral variable area flow meters & Bubbler flow indicators
- Supply pressure up to 8 bar
- 0.5 to 300 NI/hr
- Robust & reliable
- Stainless steel or aluminium
- Range of material grades
- Calibration service on request

Electronic Pressure Switch & Transmitter

Series 800 Smartstat



- Microprocessor controlled pressure switch, transmitter and indicator, which enables several instruments to be replaced with a single device
- Pressure Range: -1 to 1000 bar
- Differential Pressure Range: 15 mbar to 4 bar
- Certification: EExiallC
- Ingress Protection: IP65
- Switch: 2 x SPDT
- Differential pressure not available for hazardous areas

Electronic Temperature Switch & Transmitter

Series 800 Smartstat



- Microprocessor controlled temperature switch, transmitter and indicator, which enables several instruments to be replaced with a single device
- Ranges from -40°C to 400°C
- 24VDC Supply, 4- 20mA Loop Powered
- High Accuracy and Reliability
- Standard Electrical and I.S. Certified Versions Available
- Reduce Costs



Temperature & Pressure Gauges

“Rototherm is proud of its pressure gauge heritage, it designed and built the first ever steam gauge back in 1847. We invented the bi-metallic thermometer in 1924 and continue to build on this culture of innovation”

Talk to the experts...

- Great heritage in pressure and temperature gauges
- Wide variety of ranges, materials, sizes, connections, etc.
- Pressure gauges available to NACE standard MR-0175 for corrosive environments
- Temperature gauges available with Thermowells suitable to your process requirements
- Gauges available to Defence Standards, manufactured according to NATO Stock Numbers (NSN)
- Accurate, reliable and durable gauges for all types of industries and applications

Industries:

- Defence
- HVAC
- Food & beverage
- Oil & gas/Offshore
- Chemical/petrochemical
- Hydraulics & pneumatics
- Medical
- Pumps & compressors
- Water & Wastewater
- Paper mills
- Agriculture plants
- Power generation
- Injection Molding Machines
- Automotive

Applications:

Temperature & Pressure monitoring for all processes, commercial and industrial applications including:

- Generators & Transformers & Engines
- Pumps & Compressors & Turbines
- Pipeline systems
- Exhaust gas systems
- Distillation columns
- Steam drums
- Extraction vessels
- Tank farms
- Surfaces
- Chemical distillation
- Hygienic processes
- Leak detection

Defence Standard Gauges

Defence Standard Gauge

SPGA

- Nominal Size: 63 - 300mm
- Def Stan 66.2 Issue 4
- Low range capsule pressure
- Class 1 Accuracy to EN837 (63mm dial Class 1.6)
- Simple installation and low maintenance
- Scale Range: -1 to 600 bar; 30"Hg VAC to 10,000 psi
- Full Safety Pattern Gauge
- Painted in Admiralty Grey to BS381C
- Manufactured to NSN specification



Process Gauges

Process Gauge (SS)

RPG, RCG (Stainless Steel)



- Nominal Size: 63 - 150mm
- Adjustable micrometer pointer as standard (not 63mm)
- Liquid fillable
- Low range capsule pressure
- Class 1 Accuracy to EN837
- Scale Range: -1 to 600 bar; 30"Hg VAC to 10,000 psi

Safety Pattern (Al)

SPGA (Aluminium Case)



- Nominal Size: 63 - 300mm
- Low range capsule pressure
- Class 1 Accuracy to EN837 (63mm dial Class 1.6)
- Simple installation and low maintenance
- Scale Range: -1 to 600 bar; 30"Hg VAC to 10,000 psi
- Solid front / Blow-out back

Safety Pattern (SS)

SPG (Full Stainless Steel)



- Nominal size 100-150mm
- Stainless Steel full safety pattern
- Class 1 accuracy to EN837
- Low range capsule pressure
- Scale range: -1 to 1000 bar
- Available with stainless steel or monel wetted parts
- Solid front / Blow-out back
- Liquid fillable

Digital Pressure Gauges

Digital Pressure Gauge

DG1

- Nominal Size: 100mm
- High Accuracy $\pm 0.2\%$ full scale
- Stainless steel IP67 case
- Long battery life – 1 year continuous operation from 2AA batteries
- Wide selection of pressure ranges from vacuum to 400 bar
- 4 to 20mA output option available
- Intrinsically safe versions available
- Supplied with calibration certificate traceable to National Standards
- Available with MAX and MIN pressure readings
- Transmitter version available (DG1-TX)

Certified Digital Pressure Gauge

DG1 - I.S.

- Approved to EEx ia IIC T4 (-20°C < Ta < 60°C) certification
- Covered by ATEX certificate BAS99 ATEX 1004X



Differential Pressure Gauges

Light Duty DP Gauge

200DPG, 200DGR, 300DGC, 400DGC, 600DGC

- Nominal Size: 50 - 150mm
- Suitable Steel case
- Scale Range: 0 to 600 mm H₂O: 0 to 10 bar
- Accuracy class $\pm 2.0\%$ FSD
- Maximum static pressure: up to 200 bar
- Switching option
- Various materials for wetted parts
- Multiple process connections



Heavy Duty DP Gauge

DP360, DP370, DP362

- Nominal Size: 100mm & 150mm
- Full safety pattern option to EN837 – solid front and blow-out back
- Accuracy class $\pm 1.6\%$ FSD ($\pm 1.0\%$ option)
- Scale Range: 0 to 160mbar; 0 to 25 bar
- Switching options
- Wetted parts in Stainless Steel or Monel
- Multiple process connections



Accessories

Accessories

Manifolds, Over-Range Protectors & Pulsation Dampers



- Pulsation Dampeners (Snubbers)
- Syphons – “Pigtail” and “U” pattern
- Over Range Gauge Protectors
- 2VG Series In-Line 2 Valve Manifold
- 2VR Series Remote Mounting 2 Valve Manifold
- AM413 3 Valve Manifold
- AM415 5 Valve Manifold

Diaphragm Seal Units

DSU



- Available with a wide choice of threaded or flanged process connections
- Wide choice of materials including Stainless Steel, Hastelloy, Inconel, Monel.
- Wide choice of additional protective coatings
- Welded or bolted constructions
- Suitable for wide range of process medium and conditions

Pressure Transmitter

PTx



- Stainless steel construction
- Pressure Range: -1 to 400
- DIN43650 plug for easy installation
- Choice of process connections
- Ingress protection: IP67

Filled System Thermometers

Stem Thermometer

NR1 & NR2



- Nominal size: 100mm & 160mm
- Stainless steel case (316 option)
- Available with rigid stem
- Non Toxic filling
- Scale range -30...+70 to 0 to 650°C
- Available with a wide range of thermowells
- Housed in a gasket sealed diecast aluminium case with adjustable zero

Capillary Thermometer

NC2



- Nominal size: 100mm & 160mm
- Stainless steel case (316 option)
- All stainless steel construction
- Back or bottom entry versions
- Capillary type
- Non Toxic filling
- Scale range -30...+70 to 0 to 650°C
- Available with a wide range of thermowells

Bi-metallic Thermometers

Light Duty Bi-metallic Thermometers

BL1



- Nominal size: 50mm & 63mm
- All stainless steel construction
- Scale range -30...+60 to 0 to 400°C
- Wide range of temperature ranges available
- Models available with thermowells suitable for pipelines
- Models available for use on ovens, sterilizers, cabinets

Surface Temperature Thermometers

BL3



- Nominal size: 63mm
- Spring fixing suitable for mounting to pipes (Model BL301)
- Magnetic fixing suitable for mounting to horizontal or vertical surfaces
- Stainless steel case and bezel
- Scale range -30...+60 to 0 to 400°C

Heavy Duty Fixed Stem Thermometers

BH2



- Nominal size: 63mm, 100mm & 160mm
- Stainless steel construction – case and stem
- Scale range -70...+70 to 0 to 600°C
- External zero adjustment
- No contaminants – safe for food and chemical applications
- Can be supplied with a wide range of Rototherm thermowells
- Can be fitted with electrical contact heads (100mm & 160mm sizes only)
- Available with maximum or minimum value and index pointers

Heavy Duty Any Angle Thermometers

BH3



- Nominal size: 100mm, 130mm & 160 mm
- Stainless steel construction
- Scale range -70...+70 to 0 to 600°C
- External zero adjustment Silicone filling available
- No contaminants – safe for food and chemical applications
- Can be supplied with a wide range of Rototherm thermowells

Digital Thermometers

The DigiTemp range of digital thermometers employ micro processors enabling extremely low power consumption to be achieved, thus offering extended battery life. Available with either thermocouple or RTD PT1000 sensors, DigiTemp is offered in both rigid stem and remote reading versions.

Digital Thermometers

DT1 & DT2

- Thermocouple Sensor (DT1) or RTD (DT2)
- Direct reading rigid stem or remote reading capillary versions available
- Choice of cable materials and protections
- 4 to 20mA retransmission option MAX/MIN reading options
- 2 years continuous operation from 2 x AA cells

ATEX Digital Thermometer

DT-IS

- Suitable for hazardous areas (ATEX approved)
- RTD or Thermocouple Sensor
- Direct reading rigid stem or remote reading capillary versions available
- Choice of cable materials and protections
- 2 years continuous operation from 2 x AA cells





Services

“We have a team of qualified, experienced engineers who can assist in the installation, wiring, configuration and commissioning of both new and existing instrumentation”

The configuration and operation of equipment, particularly complex electronic control systems, can sometimes be a daunting task, hence why Rototherm Group offers multiple services to our customers (on-site and in-house) ensuring that all our products work in compliance with our customers' specifications.

Our services include:

- Instrument Repairs & Modifications
- Calibration & Commissioning
- Training

We offer the services above for all products manufactured by Rototherm Group, including the portfolio of our partnerships, such as Eurotherm and Loma Systems/Lock Inspection.

Prior to performing our services, we conduct an initial site inspection to determine which equipment will be required and the time frame of the service, allowing clear and transparent communication with our customers. We provide quick delivery of associated site reports and certification which is followed by a post service report.

Instrument Repairs and Modification

Rototherm's repair division, with its own dedicated workshop, ensures rapid customer solutions, which include not only current products, but also obsolete instruments. We keep large stocks and spares for our own manufactured products and also for our Rototherm Partners where we have agency agreements. All repairs, undertaken either on-site or workshop based, are controlled under our BS EN ISO 9001:2000 accredited Quality Procedures.



Calibration & Commissioning

Rototherm Group offers an extensive list of calibration and commissioning services (in-house and on-site) and it is available to all our customers throughout the UK. We can also offer these services for third party products.

Our calibration and commissioning services cover the following areas:

- Eurotherm products
- Loma Systems/Lock Inspection products
- Temperature
- Pressure
- Humidity
- Flow
- Level
- Density
- Liquid/CO₂/O₂ concentration
- Density



Our services range from one off calibrations to complete customer solutions and commissioning. Our UKAS traceable calibration certificates show before and after adjustment readings, which are issued for each instrument or sensor tested. These certificates can be customised to suit the customer's specific requirements.

Training Courses

Our courses, aimed at maintenance teams and engineers, are tailored to suit the individual client requirements and are carried out at the customer's premises to minimise disruption. Alternatively, we can arrange for the training to be carried out at one of the Rototherm Group's facilities.

Our courses typically cover:

- Safety procedures
- Routine maintenance
- Basic fault finding
- Basic product operation

Benefits:

- Long term product performance through correct operation
- Improved safety
- Reduced downtime



Training sessions are limited to a maximum of 6 persons and vary in time, according to the required syllabus. All training literature is supplied by Rototherm.

For Services, please contact: services@rototherm.co.uk

Eurotherm Partnership

Our partnership with Eurotherm allows us to introduce the following products to our portfolio, ensuring that we can offer a solution for all types of process control, measurement, data management and services.

Eurotherm.
by **Schneider Electric**

Digital Recorder & Controller

iTrak 200 - Entry Level



- Secure data recording
- 2 PID control loops
- Dual programmer
- 4 High accuracy universal inputs
- USB removable data storage facility
- 50MB flash memory
- Ethernet communication
- Full colour 1/4 VGA crystal clear display
- 30 virtual channels
- Relative Humidity Application
- Multiple I/O options
- Cascade with auto-tune
- Multi-language support (French, German, Italian and Spanish)
- 1/4 DIN panel mount

Digital Recorder & Controller

iTrak 300, iTrak 400



- Secure data recording
- Full colour, high resolution, touch screen display
- Up to 18 universal input channels
- Batch functionality
- Remote viewing and configuration
- Full audit trail
- USB "Plug & Play" & Local printing
- Access via LAN, Intranet or Internet
- Portable version available
- 12.1" or 5.5" XGA touchscreen display
- Ethernet and serial communications
- Email / SMS notification
- Input accuracy with a 125 ms total sample rate
- Configurable channels

Indicators

Digital Indicator

iTrak 100



- Accurate display of temperature & process measurements
- Universal input
- Simple "Quick Start" operation, very easy to use
- Strain gauge input
- Changeover relay
- PV Retransmission
- Scrolling text messages (in multiple languages)
- Parameter help text
- Modbus comms
- Additional alarm function

Loma Systems/Lock Inspection Partnership



Loma Systems/Lock Inspection is the global leader in the design and manufacture of metal detection, checkweighing and x-ray inspection systems for the food, pharmaceutical and packaging industries. Their products are uniquely engineered to facilitate compliance with international product safety standards, weight legislation and retailers' codes of practice, whilst identifying product defects and eliminating contaminants for consistent quality.

About Our Partnership

Rototherm Group's extensive knowledge and expertise regarding sterility, precision and regulations within the Pharmaceutical sector developed through our manufactured products and application understanding has enabled us to provide a full support solution for our Pharmaceutical customers with extra value added

Rototherm Group has further enhanced its offering to the Pharmaceutical sector by announcing a partnership with Loma Systems/Lock Inspection. This agreement will involve the sale of the metal detection, check weighing & X-ray inspection systems exclusively addressed to the UK Pharmaceutical market.

Rototherm Group has in-depth application knowledge, support and service experience within the Loma Systems/Lock Inspection portfolio thanks to our Irish subsidiary (Bentley Instruments) that have been supporting these products within Ireland for the past 20 years. Rototherm Group will also provide spare parts, service, commissioning and calibration support within the UK Pharmaceutical Market.

For more information, please contact: pharma@rototherm.co.uk



Metal Detection



X-Ray Inspection



Checkweighing



www.rotothermgroup.com

Follow us on [LinkedIn](#)

HEAD OFFICE & MANUFACTURING FACILITY

ROTOTHERM GROUP

Kenfig Industrial Estate, Margam,
Port Talbot, SA13 2PW, UK
Tel : +44 1656 740 551
Email : sales@rototherm.co.uk
For Services:
Email: services@rototherm.co.uk

REGIONAL OFFICES

ROTOTHERM AUSTRALIA PTY LTD

2/84 Barberry Way, Bibra Lake,
WA 6163, Australia
Tel: +61 8 9494 2855
Email: sales@rototherm.com.au

ROTOTHERM SINGAPORE PTE LTD

41 Toh Guan Road East,
ADL Building #04-01C
Singapore 608605,
Tel: +65 68714 116
Email : sales@rototherm.com.sg

UK & IRELAND OFFICES

ROTOTHERM CANONGATE

53-54 IMES Business Centre,
Dryden Rd, Bilston Glen Ind. Est.
Loanhead, EH20 9LZ, UK
Tel: +44 1314 480 786
Email: sales@rototherm.co.uk

ROTOTHERM RTD PRODUCTS

Units 10 & 11 AK Business Park,
Russel Road, Southport,
Merseyside, PR9 7SA, UK
Tel: +44 1704 507 696
Email: sales@rototherm.co.uk

BENTLEY INSTRUMENTS CO. LTD.

Unit 78 Western Parkway
Business Park,
Ballymount Roas, Dublin, Ireland
Tel: +35 314 050 100
Email: info@bentley-instruments.com
For Loma Systems/Lock Inspection:
Email: pharma@rototherm.co.uk