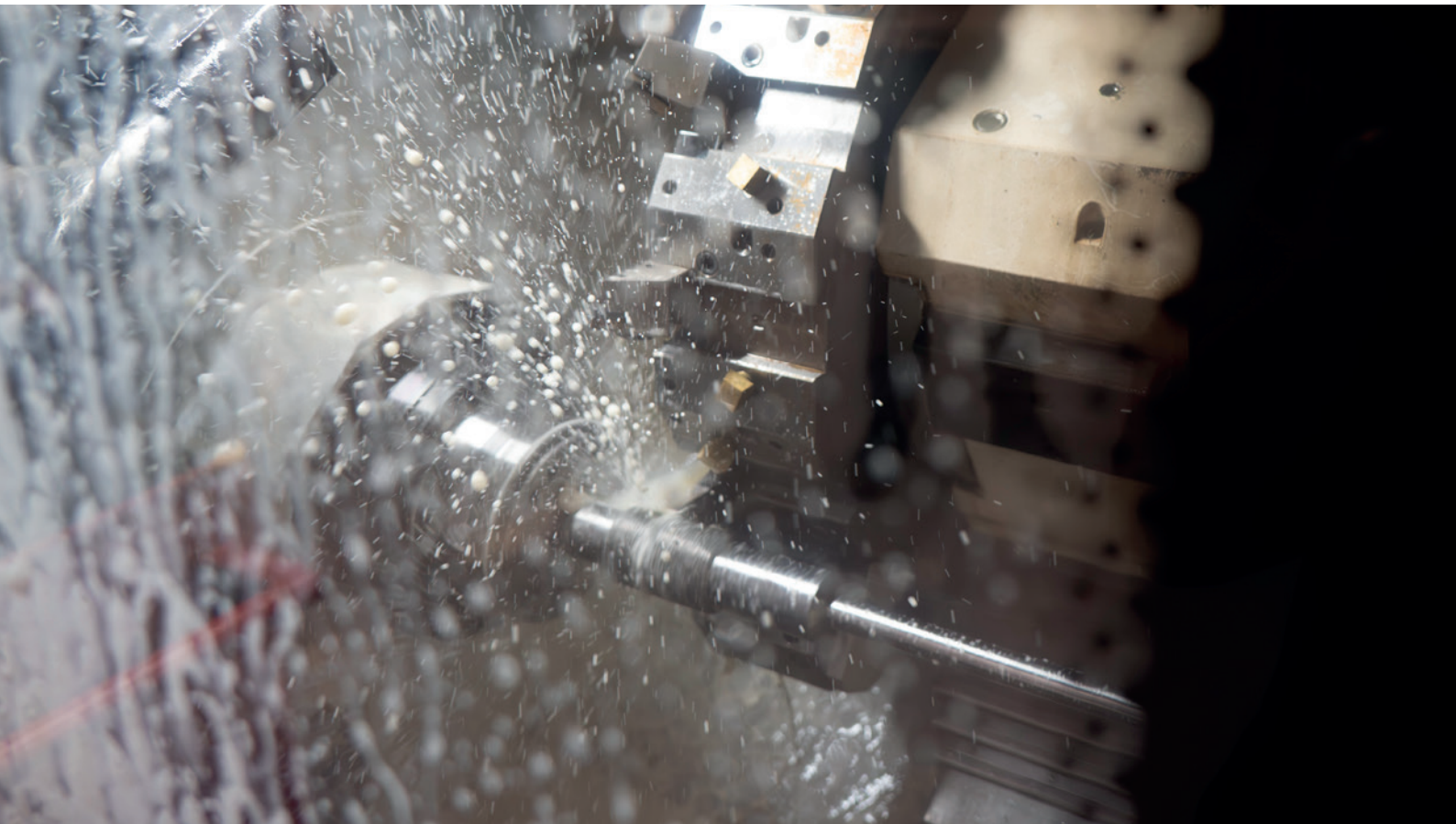


# YOUR PARTNER IN TEMPERATURE



**THERMOWELLS & POCKETS**



## Thermowells & Pockets For Sensor Protection

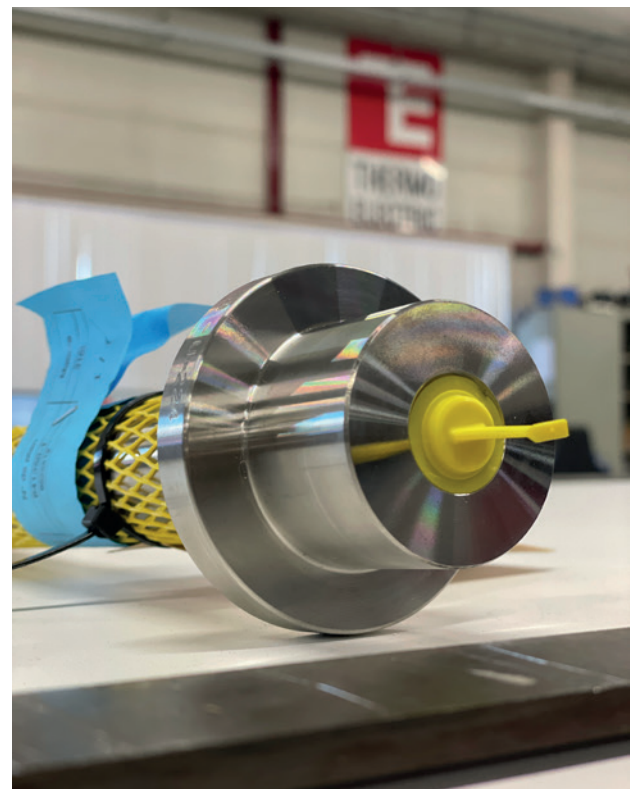
Thermo Electric Instrumentation's Thermowells and Pockets are an essential component of high-accuracy temperature measurement in harsh environments. Our Thermowells and Pockets ensure that temperature sensors are properly protected, extending their lifespan and providing a consistent barrier against challenging conditions, such as high-pressure steam or corrosive media. Whether installed in high-temperature reactors or exposed pipelines, our Thermowells are built to perform.

### WHY THERMOWELLS MATTER

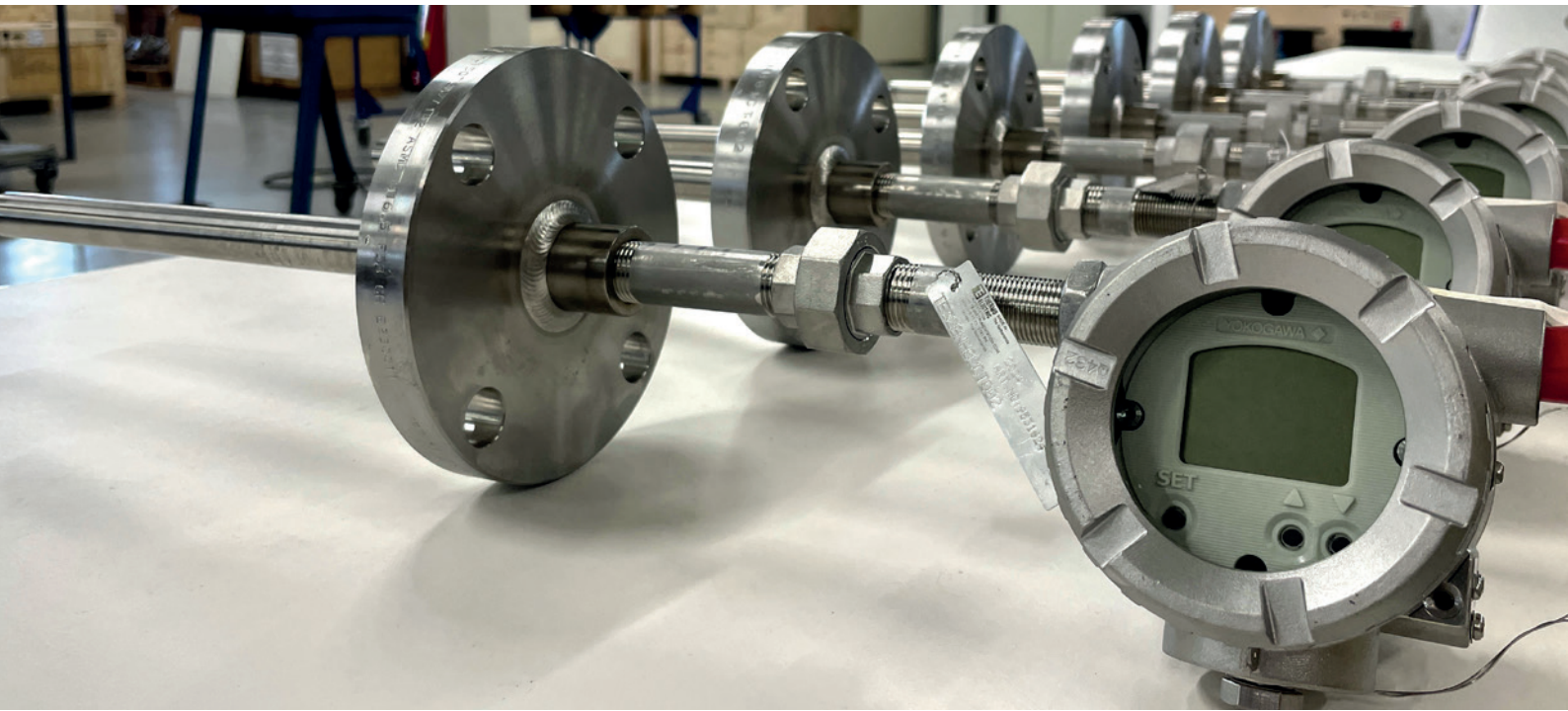
Thermowells are critical to protect temperature sensors from direct exposure to process conditions, such as pressure, flow-induced vibrations, or chemical corrosion. Without a Thermowell, a sensor can degrade quickly, leading to inaccurate readings and frequent replacements. Our Thermowells ensure sensors operate reliably over long periods, reducing maintenance costs and enhancing safety.

### PARTNERING WITH INDUSTRY LEADERS

For over 60 years, we have partnered with global industry leaders to provide tailored temperature solutions. Our Thermowells are trusted by professionals across the oil and gas, power generation, and chemical industries, meeting the specific needs of each application with high precision and reliability.







## Features And Benefits

### FEATURES

- **Customizable Designs:** Available in straight, tapered, and stepped profiles to suit specific application needs and minimize wake frequency issues as per ASME PTC 19.3 TW-2016 guidelines. Our helical strake design Thermowells are specifically manufactured to mitigate vortex-induced vibrations, enhancing stability and reliability in high-flow applications.
- **Durable Materials:** Manufactured from high-quality stainless steel, Inconel®, Hastelloy®, and other exotic materials to withstand extreme temperatures and corrosion.
- **Pressure Resistant:** Built to endure high-pressure environments, providing a safe and reliable barrier for temperature sensors.
- **Advanced Testing:** All thermowells undergo rigorous testing, including wake frequency calculations according to ASME PTC 19.3 TW-2016 standards, to ensure performance under dynamic conditions.

### BENEFITS

- **Extended Sensor Lifespan:** Thermowells shield sensors from direct exposure, preventing wear and prolonging operational life.
- **Increased Safety:** By providing a protective barrier, Thermowells prevent hazardous process media from

coming into direct contact with sensors, reducing the risk of leaks and ensuring process integrity.

- **Reduced Maintenance Costs:** Reliable protection reduces sensor replacement frequency, leading to lower maintenance costs and fewer disruptions.
- **Application Versatility:** Custom-designed Thermowells provide optimal performance across a variety of industries, ensuring compatibility with different sensors and process conditions.





## Applications And Customization

### APPLICATIONS

Our Thermowells are essential for a wide range of industrial applications that require reliable temperature measurement in harsh conditions. Typical applications include:

- High-Pressure Steam Lines: Providing a protective barrier for sensors in steam lines, preventing sensor damage from pressure surges.
- Chemical Reactors: Ensuring reliable temperature monitoring in environments with corrosive or reactive chemicals.
- Power Generation: Used in boilers and heat exchangers to protect sensors from high temperatures and pressure fluctuations.
- Oil & Gas Pipelines: Offering protection in offshore and onshore pipelines, ensuring reliable temperature monitoring under harsh conditions.

### OPTIMAL PERFORMANCE THROUGH CUSTOMIZATION

We offer fully customizable Thermowell and Pocket solutions to ensure compatibility with your specific process requirements. Our customization options include:

- Material Selection: Choose from a range of materials, including stainless steel, Inconel®, Hastelloy®, and other exotic alloys to suit the chemical properties of your process.

- Design Profiles: Available in straight, tapered, and stepped designs, as well as helical strake designs, each optimized for different applications to minimize stress and avoid resonance in accordance with ASME PTC 19.3 TW-2016 standards.
- Mounting Configurations: Flanged, threaded, and welded options to provide secure and leak-free installation.

### CUSTOMIZATION FOR YOUR NEEDS

Our engineering team can work closely with you to design Thermowells and Pockets that match your specific operational requirements, ensuring optimal sensor performance and reliability.





## Why Choose Us

We are committed to delivering high-quality Thermowells and Pockets that exceed industry standards and perform reliably in the most challenging environments. Our decades of experience, technical expertise, and dedication to customer satisfaction set us apart from the competition.

- **Extensive Industry Experience:** With over 60 years of experience in temperature sensing technology, we serve a wide range of industries, including oil and gas, power generation, chemical processing, and more. Our Thermowells are trusted by industry professionals worldwide for their reliability and precision.
- **Certified Excellence:** We adhere to the highest standards of quality and safety. Our Thermowells comply with international standards, such as ASME PTC 19.3 TW-2016. Our quality and management systems are certified according to ISO9001, ISO14001, ISO45001 and ISO80079. Additionally, we have several Ex certificates such as IECEx, ATEX, CSA, CCC, CCOE ensuring compliance within different hazardous areas.
- **Tailored Solutions:** We understand that each process is unique, which is why we offer fully customized Thermowell designs to meet your specific needs. Whether you require specialized materials, unique mounting configurations, or specific design profiles, we work closely with you to create the ideal solution.
- **Focus on Innovation:** Our commitment to research and development allows us to incorporate the latest advancements in materials science and engineering. This focus on innovation enhances the durability, performance, and safety of our Thermowells, making them suitable for even the most demanding environments.

## CUSTOMER-CENTRIC APPROACH

Our approach is centered around understanding your specific needs and delivering solutions that improve efficiency, safety, and reliability. From the initial design phase to manufacturing, testing, and ongoing support, we are dedicated to providing exceptional service and quality products that exceed expectations.

## Commitment To Quality

Our rigorous quality control processes ensure that every Thermowell and Pocket we manufacture meets the highest standards of precision and reliability. With certifications that include ISO9001, ISO14001, and ISO45001 we are committed to delivering products that offer both safety and performance, giving you confidence in your temperature measurement systems.



## Manufacturing Facilities

Our production and engineering facilities are centrally located in the Netherlands and manned by our highly skilled employees. This setup is essential for upholding our high standards and best practices in engineering and design. The expertise of our personnel, coupled with state-of-the-art facilities, guarantees the efficient manufacture of Thermo Electric temperature sensors and their consistent high-quality performance in the field.

### CALIBRATION FACILITIES

Our laboratory holds ISO17025 accreditation for temperature measurements ranging from  $-200\text{ }^{\circ}\text{C}$  to  $1,500\text{ }^{\circ}\text{C}$ , as well as for evaluating electrical parameters including millivolts (mV), milliamperes (mA), ohms ( $\Omega$ ), and volts (V).



### SERVICES

- Wake frequency calculations for Thermowells as per ASME PTC19.3
- Cleaning for oxygen services
- Customized drawings
- Customized Inspection and test plans / procedures

### CERTIFICATIONS

- Material certificate as per EN10204 3.1 or 3.2 and NACE
- Welding procedure specification (WPS) including procedure qualification records (PQR) and Welder performance qualifications (WPQ) as per ASME IX and ISO15614
- Certificate of conformance (EN10204 2.1)
- Certificate of origin

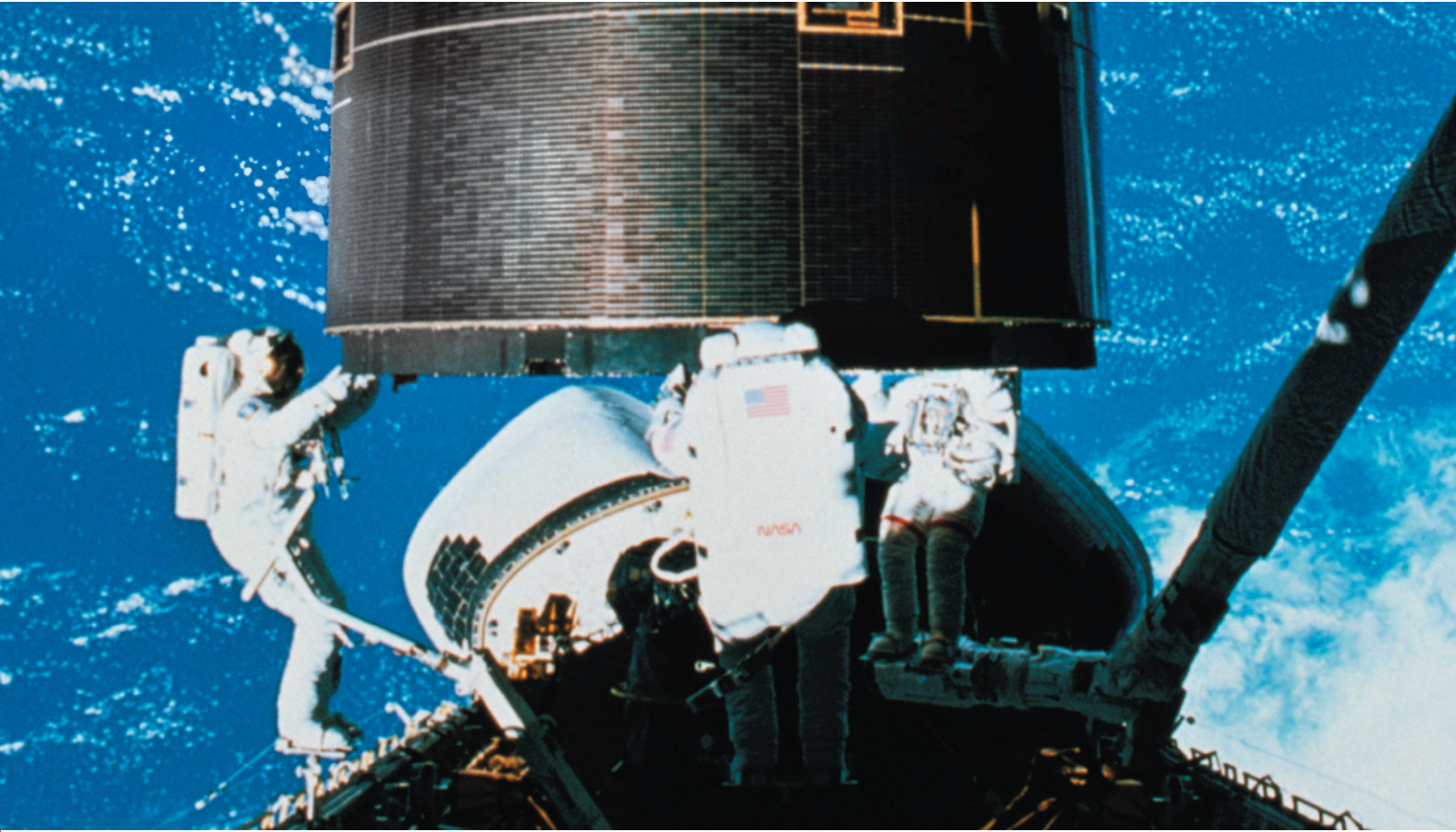
### HAZARDOUS AREA CERTIFICATES

	XPS1	XPS2	XPS3	XPS4
IECEX:	Exeb	Exia/b	Exdb	Exec
ATEX:	Exeb	Exia/b	Exdb	Exec
CSA/US:	(A)Exe	(A)Exia/b	(A)Exd	(A)ExnA
KTL:	Exe	Exia	Exd	ExnA
CCOE(PESO):	Exeb	Exia/b	Exdb	
CCC:	Exia	Exdb		

### TESTING FACILITIES

- Visual inspection
- Dimensional check
- Pressure testing (up to 1100Bar)
- High pressure testing (up to 5500Bar)
- Dye penetrant examination (DP)
- Radiographic testing (X-ray)
- Ultrasonic testing (US)
- Vacuum testing
- Helium leak testing
- Positive material identification (PMI)
- Batch calibration certificates
- Sensor calibration certificates





## Other Products and Services at a Glance

### TEMPERATURE SENSORS

- Industrial temperature sensors
- Multiple temperature sensors
- Profiling temperature sensors
- High-pressure temperature sensors
- Resistance temperature detectors
- PT100, PT1000, NTC
- Miniature temperature sensors
- Tubeskin temperature sensors

### INSTRUMENTS

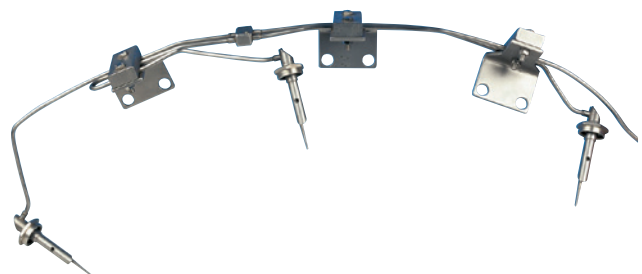
- Optical temperature meters
- Controllers
- Transmitters
- Dry well calibrators

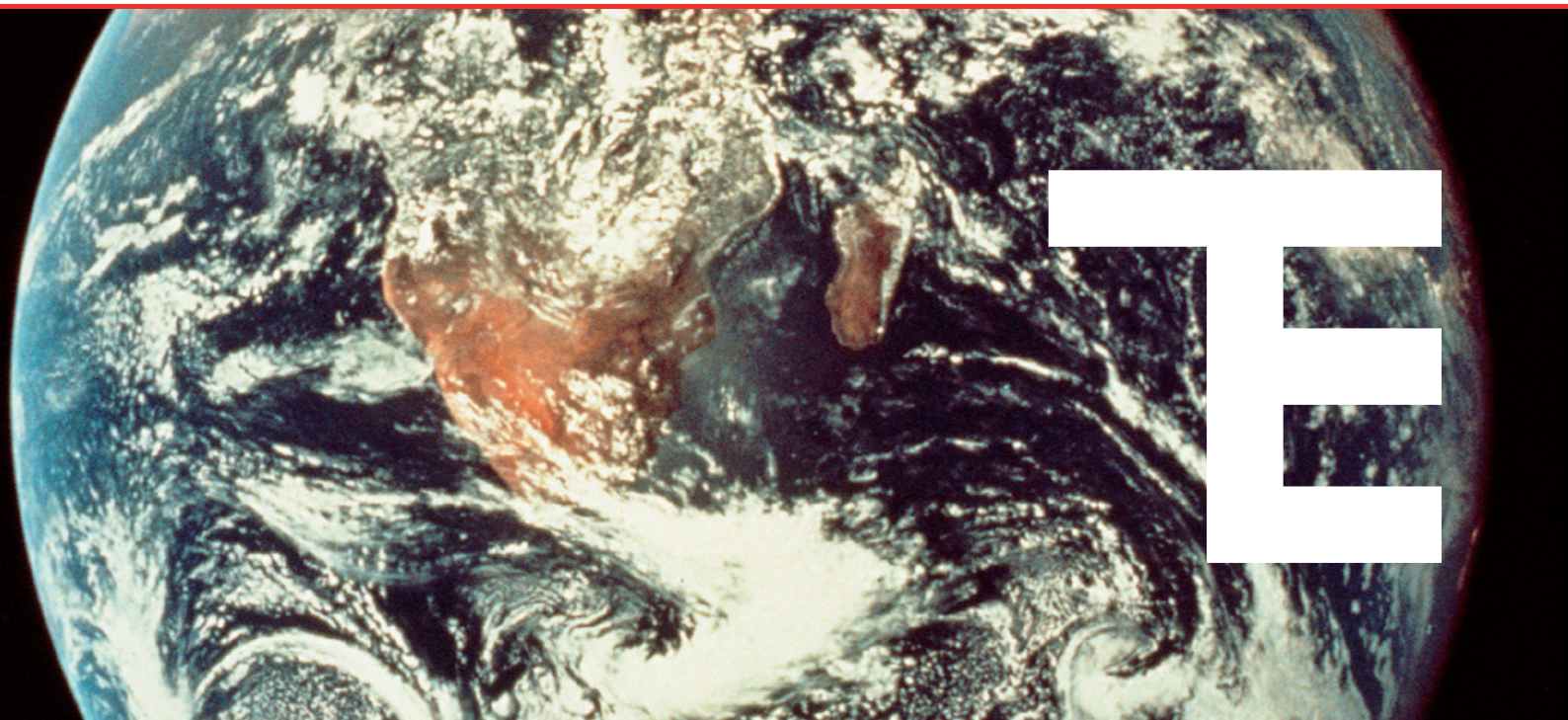
### CONNECTORS, PANELS AND WIRES

- Standard thermocouple connectors
- Miniature thermocouple connectors
- Standard thermocouple panels
- Miniature thermocouple panels
- PVC, PTFE, Kapton, Silicon, Glass Fiber

### SERVICES - RvA/ILAC ACCREDITED CALIBRATION

- Calibration of temperature sensors
- Repair of instruments





**Your trusted  
partner in the  
development and  
production  
of temperature  
measurement solutions**



**THERMO ELECTRIC INSTRUMENTATION B.V.**

| Coenecoop 71 - 73 | 2741 PH Waddinxveen | The Netherlands  
| P.O. Box 85 | 2740 AB Waddinxveen | The Netherlands  
| t. +31 (0) 85 7607300 | f: +31 (0) 85 7607301  
| info@te-instrumentation.com | [www.te-instrumentation.com](http://www.te-instrumentation.com)



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