

Centre of Competence

Experience and expertise





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Endress+Hauser is a global leader in measurement instrumentation, services and solutions for industrial process engineering. The Group has production centres in 11 countries, manufacturing sensors and instruments for level, flow, pressure, temperature and analytical measurement as well as devices for data acquisition.



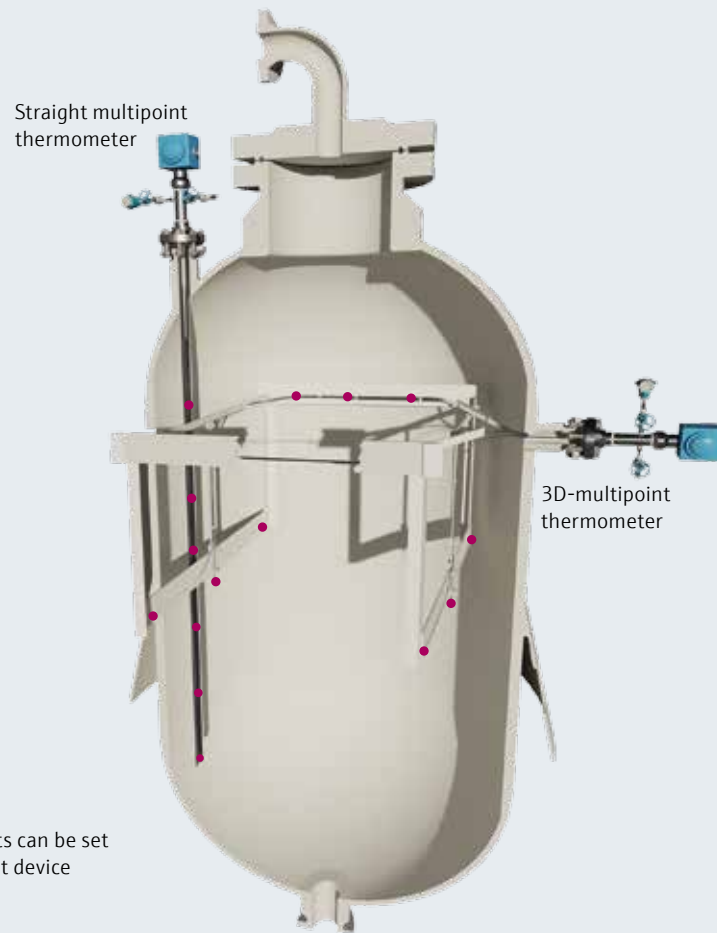
The Group also supports its customers with automation engineering, logistics, services and solutions.

Established in Manchester in 1968, Endress+Hauser Ltd is a sales, service and solutions centre employing more than 200 people. Our facilities boast a temperature assembly centre supplying tailor-made engineered solutions from specialists in the design and manufacture of industrial temperature sensors and associated equipment.

Our UK Centre of Competence in Manchester offers a wealth of knowledge in the engineering design, procurement of materials, project management, manufacture and inspection of equipment destined for high-end applications found in the oil & gas industry.

With extensive experience of major projects around the globe, all delivered successfully from our Centre of Competence, Endress+Hauser brings together complete solutions borne from 'best fit' products, unrivalled support and expertly executed bespoke engineering.

Reactor with alternative multipoint designs



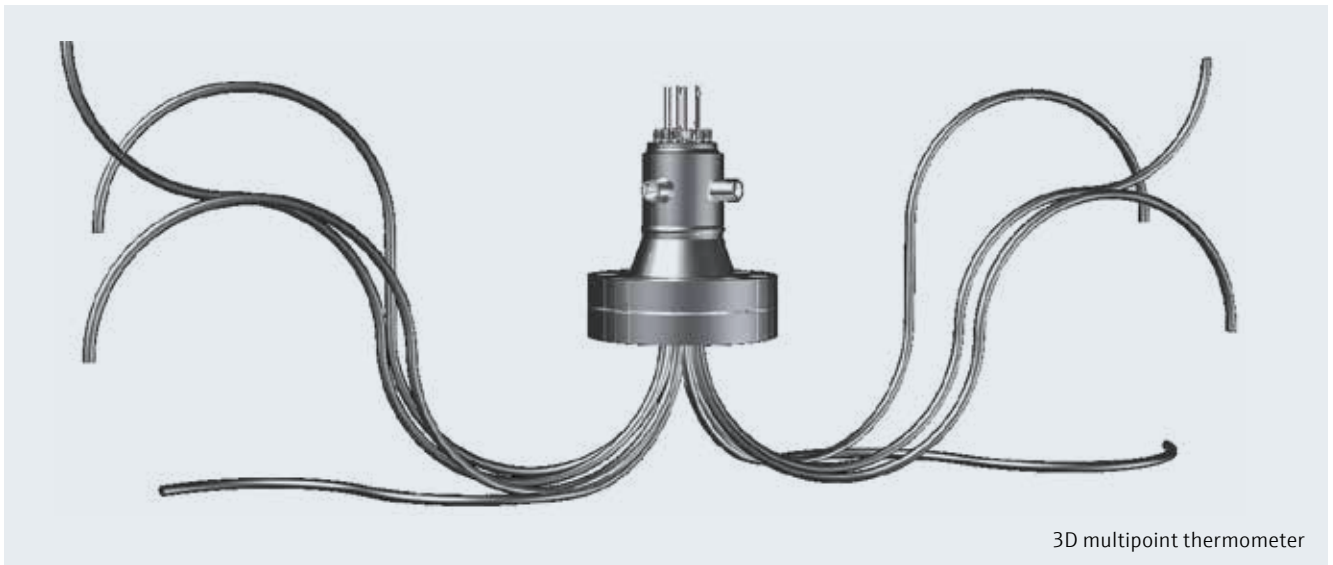
- Several measuring points can be set up on a single multipoint device



Dual spindle gun drill

Temperature engineering

Our Centre of Competence has been designing and manufacturing temperature assemblies – including solid drilled thermowells and RTD assemblies – for decades. Because of our wealth of experience, Endress+Hauser is considered one of the few competent global suppliers for critical temperature applications.



With the high cost of energy, improved technology and an increased number of critical process applications, sensors that can measure accurately to within 0.1°C are often requested.

Our speciality lies in the fact that we are well-versed in the design and manufacture of highly complex bespoke engineered temperature solutions and our expertise has been widely used for multipoint temperature measurement devices including:

- Semi-flexible coaxial multipoint
- 3D vessel profile multipoint

For processes involving high temperatures, pressures and flows in combination with aggressive and corrosive media, we offer tailor-made solutions.

Applications such as hydrogen desulphurisation, hydrocrackers, diverse reactors, storage tanks and vessels can be managed without compromising on reliability and accuracy.

Working to internationally recognised standards, we supply a wide range of materials, including ceramic, hastelloy, titanium, tantalum and all grades of stainless steel.

The correct construction and design of a thermowell requires exact calculations to proven methods. An example of this is the wake frequency calculation that is performed to guarantee process conditions do not induce excessive vortices with the potential to cause the thermowell to fail/shear. Design standards include ASME PTC 19.3TW-2010 and DIN 43772.

Flow engineering

Measuring the flow rate of liquid, steam and gas is one of the most important areas of application.



Orifice plates



Venturi tube

Complementing our existing flow portfolio of electromagnetic, Coriolis, vortex and thermal meters, Endress+Hauser offers a range of primary devices from orifice plates and orifice carriers to flow nozzles and Venturi tubes – all designed and manufactured in accordance with BS EN ISO 5167. Further to these standardised primary devices, we also offer averaging pitot tubes.

The square-edged orifice plate is one of our most popular low-cost flow measurement solutions. It can be used for general purpose flow measurement and is economical, easy to install and versatile. The scope of supply can include the plate, carrier, flanges, accessories or the full metering run.

Flow nozzles machined from a single forging can be provided for metering high velocities, high temperatures and high pressures, including superheated steam.

The Venturi tube, either machined from a single forging or fabricated from rolled plate, is ideal for reliable flow measurement, with the additional benefit of low pressure loss and minimal piping requirements. It is used extensively in arduous metering applications such as those found in subsea processes, where space and energy conservation is at a premium.



Above: Pitot tube

Where upstream and downstream lengths are limited a pitot tube may be the best available technology. Pitot tubes fabricated from tubing can be retrofitted to existing pipelines and ducting providing a repeatable economic solution within larger pipe diameters with negligible pressure loss.

Accessories such as valves, manifolds, condensate pots and panels are available along with the differential pressure measuring cell to complete the volumetric flow metering solution. We also offer a mass flow solution by supplying static pressure and temperature measurements together with a flow computer.

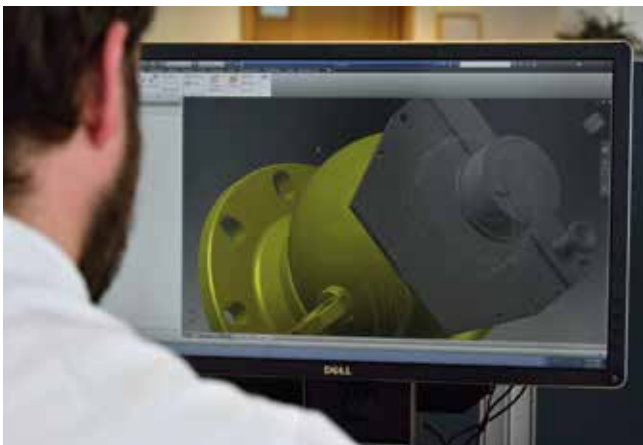
All equipment is designed and manufactured in accordance with the requirements of the Pressure Equipment Directive 97/23/EC. DP flow stands out as a solution that can be fitted within your process, even in the most arduous applications.



Differential pressure transmitter with manifold

Level solutions

Our extensive level product range spans a wealth of different technologies to ensure you get the ideal solution for your application. Going above and beyond simple instrument sales, our devices are complemented by a range of mechanical components, designed specifically to suit your application in a variety of materials.



We offer a bespoke design service using standard or exotic materials to manufacture level accessories such as:

- Bridles
- Stilling wells
- Dry wells
- Bypass chambers

all in accordance with PED and piping requirements.

Many of our level devices are designed in accordance with IEC 61508/IEC61511-1 for installation and integration into safety systems, conforming to SIL2/3. We also offer CAD design drawings in 2D and 3D.

Panel solutions

Our panel solutions service includes the design and build of panels to house a wide variety of instrumentation including displays, alarms, data collection, process control and liquid analysis equipment.



From the most simple yet vital indicator panels through to complete tank farm control panels and fully serviced, stand-alone analyser kiosks, Endress+Hauser has the capability to provide panels and enclosures that are designed to complement your project architecture perfectly.

Our design engineers take an intelligent approach to your panel design in order to ensure that it meets your exact specifications. We'll consider the final location of the panel to ensure that the most suitable housing materials are used and will recommend solutions to deal with problems that are particular to your site. We have the capability to deliver panels for hazardous areas and to incorporate safety controls for critical systems. Site and factory acceptance tests (FAT & SAT) will be carried out as and when required.

From concept to delivery: a complete professional service

Following order placement, a qualified Endress+Hauser project engineer will be assigned to you. They are responsible for the design, in line with your requirements. After undergoing an internal review, the design documents are sent to you for further comment. If necessary, changes are made before resubmission and final approval.

As an ISO 9001 accredited company, you can rest assured that our quality procedures are followed throughout the complete design and build process.

Mechanical design and services

Our engineering team has a wealth of experience and a thorough understanding of current industry standards, specifications and regulations.





Materials

Endress+Hauser offers expertise in both the application and manufacture of devices from exotic materials with full traceability including:

- Duplex
- Super Duplex
- Hastelloy
- Monel
- Inconel
- Titanium
- 6Mo
- Tantalum
- Incoloy
- Stellite

Design/detail engineering

- ASME design codes
- NACE materials
- NORSOK standards for materials, welding, painting and material suppliers
- PED 97/23/EC design requirements
- Thermowell design to ASME PTC 19.3-2010
- Primary flow element design and sizing to ISO 5167
- Restriction plate design and sizing to RW Miller and noise calculations to IEC 60534-8-3
- Pressure vessel design codes

In-house testing facilities

- PMI – XRF analyser
- Ferritescope
- Hydrotest



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NORSOK STANDARD

UK

Endress+Hauser Ltd
Floats Road
Manchester
M23 9NF
Tel: 0161 286 5000
Fax: 0161 998 1841
info@uk.endress.com
www.uk.endress.com

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