Tailor-made field instrumentation, solutions and services

Discover your options

Endress+Hauser
People for Process Automation

The Endress+Hauser Group

For over 70 years, Endress+Hauser has been a reliable partner of the process industry. We help customers around the world to sustainably improve their processes, and thus their products.

Matthias Altendorf
CEO of the Endress+Hauser Group

Our heart beats for measurement. This passion drives us every day to support our customers in improving their products and in manufacturing them even more efficiently. In this way, we contribute to the careful use of resources and the supply of a growing world population. At the same time, we create sustainable jobs at our company, as well as at our customers and suppliers.

We are close to our customers worldwide. With a tight network of own sales centers and selected representatives, we safeguard competent support around the globe. We know our customers' applications and the special requirements of their industries. That's how, over many years, we have become what we are today: the People for Process Automation.

Production centers in Europe, Asia and the Americas ensure that we can supply our customers fast and flexibly, wherever they are. The use of innovative technologies has advanced the development of our company from the very beginning. Step by step, we have strengthened and expanded our portfolio for process measurement and analysis. Our offering today is unique in variety and depth.

Unique corporate culture As a family-owned company, we foster a strong corporate culture, characterized by responsibility and trust. We are convinced that customers, employees and shareholders will achieve the most through close and faithful collaboration. For us, profit is not the ultimate aim, but the result of good management. Profits predominantly flow back into the company – thus helping us to secure our success and our independence for the long term.

Endress+Hauser was founded in 1953 by Georg H. Endress and Ludwig Hauser. Ever since, the company has been pushing ahead with the development and use of innovative technologies, today helping to shape the industry's digital transformation.

Discover your options

Tailor-made field instrumentation, solutions and services supporting you to sustainably improve your processes and products.

All industries strive to optimize their processes to make them safe, reliable, efficient and environmentally friendly. However, each industry balances these goals differently and is subject to differing application and regulatory requirements. At Endress+Hauser, we know that the best support and industry partnerships are achieved by not only being experts in process measurement but also in your specific industry requirements. This is why we aim to continuously enhance the knowledge we have gained over the decades through daily contact with our customers. What we learn about your industry trends, applications and regulations feeds back into our innovation process resulting in new and updated field instrumentation, services and solutions tailor-made for your industry.

Field instrumentation, system components and data managers Depending on your industry and application, field instruments are required to fulfill different demands whether it be precision, robustness, hygiene or functionality. Endress+Hauser products measure and monitor flow, level, pressure and temperature. They analyze solids, liquids and gases and visualize and record measured values. Our instruments use different measurement principles to operate reliably and accurately in any situation so that we can offer you a wide range of products for almost any requirement and specification.

Digital communication and software We also offer IIoT solutions and software tools for all industries and support the seamless integration of our field devices into many different automation systems. This guarantees you freedom of choice and the best possible functionality at optimal cost.

Solutions Dedicated solutions combine our offering for specific applications in your industry: inventory management, fluid metering, energy and analytical solutions including gas analysis. They are complemented by our field network engineering and plant asset management capabilities.

Services Whether you need support in emergency situations, services to complement your own capabilities or want to optimize your processes, we can help. Endress+Hauser provides competent, local service across our customer base the world over.

Browse this brochure, discover your options and get in touch with us. Our People for Process Automation will be delighted to support you in sustainably improving your processes and thus your products.

Food & Beverage

Chemical

Oil & Gas / Marine

Water & Wastewater

Mining, Minerals & Metals

Life Sciences

Power & Energy

Endress+Hauser
www.endress.com

Level

Continuous level measurement and point level detection in fluids and bulk solids

Visionary concepts in the development of new products produce innovative solutions that meet the challenges of tomorrow yet can be integrated into the new automation systems of today.

Since 1953, Endress+Hauser has been manufacturing level measurement devices for industrial use in fluids and bulk solids of all kinds. As a pioneer we developed new measuring principles like vibronic, established different methods for level measurement and point level detection and constantly optimized them.

Our complete level instrument portfolio amounts to several billion variants when you consider all the combinations of order options. You find the best fitting instrument for your specific needs with our online selection tools and our sales force. All instruments have trade-specific and safety-relevant certificates and approvals.

Level website:
www.endress.com/level

Radar
Continuous non-contact Time-of-Flight measurement in fluids and bulk solids, even under extreme conditions such as changes of medium, gas formation, vapor, vacuum.
Temperatures:
up to 450 °C (842 °F).
Pressures:
up to 160 bar (2320 psi).

Ultrasonic
Continuous non-contact Time-of-Flight measurement in fluids and bulk solids. Independent of specific medium properties.
Temperatures:
up to 150 °C (302 °F).
Pressures:
up to 4 bar (58 psi).

Guided radar
Continuous Time-of-Flight measurement in fluids and bulk solids. Independent of product properties such as humidity, density, dielectric constant etc.
Reliable and safe interface measurement even with emulsion layers.
Temperatures:
up to 450 °C (842 °F).
Pressures:
up to 400 bar (5800 psi).

Radiometry
Non-contact and non-invasive level measurement and point level detection for liquids and solids.
Highest safety even under extreme process conditions.
Independent from process pressure and temperature.

Vibronics for fluids
Point level switch for all fluids even in the presence of build-up, turbulence or air bubbles. Independent of the electrical properties of the medium.
Temperatures:
up to 280 °C (536 °F).
Pressures:
up to 100 bar (1450 psi).

Vibronics for solids
Point level detection in all kinds of bulk solids up to a maximum grain size of approx. 10 mm.
Calibrationfree, maintenance-free.
Temperatures:
up to 280 °C (536 °F).
Pressures:
up to 25 bar (362 psi).

Hydrostatic
Level optimized pressure sensor cell for measurement in fluids, pastes and sludges.
Independent of foam formation and changing product properties.
Temperatures:
up to 400 °C (752 °F).
Pressures:
up to 40 bar (580 psi).

Differential pressure
Level measurement in closed, pressurized vessels.
Not affected by dielectric constant, foam, turbulences or obstacles.
Temperatures:
up to 400 °C (752 °F).
Pressures:
up to 420 bar (6090 psi).

Capacitance
Point level detection and continuous level measurement in fluids and bulk solids. Even with aggressive media and heavy build-up; condensate-proof.
Temperatures:
up to 400 °C (752 °F).
Pressures:
up to 100 bar (1450 psi).

Conductive
Easy, cost-effective level limit detection in conductive fluids such as water, wastewater, liquid foodstuffs etc.
Temperatures:
up to 100 °C (212 °F).
Pressures:
up to 10 bar (145 psi).

Paddle switch
Low-cost point level switch for bulk solids of all kinds up to a grain size of 50 mm, solid weight > 100 g/l.
Temperatures:
up to 80 °C (176 °F).
Pressures:
up to 1.5 bar (22 psi).

Electromechanical level system
Robust, mechanical system for measurement in bulk solids for applications in high vessels (up to 70 m).
Unaffected by heavy dust formation.
Temperatures:
up to 230 °C (446 °F).
Pressures:
up to 3 bar (43.5 psi).

Pressure

Process and differential pressure measurement in acids, sludges, gases or vapors

Pressure is one of the most important measured variables in process automation. For Endress+Hauser this is an incentive to forge ahead with advances and improvements in the development and production of high quality pressure instrumentation. What does that mean in everyday work? Thanks to digital functions, for example, diagnostic and process information is always available in real time. Also, they enable an app-based, guided device verification including documentation, without interrupting the process.

Endress+Hauser's wide range of devices for pressure measurement enables us to offer a pressure transmitter with ultra-modern technology and high quality materials for every application and every budget.

Whether acids, sludges, gases or vapors – a pressure device is generally located where all the action is. Sensors have to satisfy the high specific requirements of the applications from the initial development phase to final finished production. It takes more than just an understanding of physics to develop and produce the most important link with the process.

For more than 30 years, Endress+Hauser has been constantly developing and manufacturing pressure measurement and sensor technology for a wide variety of applications. Many of these solutions have set the standard and are unique to the market.

Pressure website:
www.endress.com/pressure

Pressure Transducer
A compact pressure transducer with preset measuring range. The Cerabar product family offers robust ceramic sensors up to 40 bar (580 psi) or metal sensors up to 400 bar (5800 psi) for absolute and overpressure measurements.

Pressure switch
For safe measurement and monitoring of absolute pressure and gauge pressure in gases, vapors and fluids. Smooth operation with display and on-site operation as well as a modular adapter system for easy connection.

Analog and digital pressure transmitters
Flexible device platform for universal application in your processes. This includes FDA-compliant materials and aseptic connections that are especially suitable for hygienic applications. The analog digital transmitters are available with the following electronics variants: PROFINET over APL, 4 to 20 mA, HART®, PROFIBUS® PA or FOUNDATION™ Fieldbus.

High performance digital transmitters
These high-end pressure transmitters offer you the availability of diagnostic and process information in real time, thanks to Heartbeat Technology. You can access the devices very easily via Bluetooth. This connectivity enables enormous time- and cost-savings. The digital transmitters are developed, constructed and manufactured in compliance up to SIL 3/IEC 61508.

Endress+Hauser
979.23
mbar

Flow

High-performance flowmeters for liquids, gases and steam

Consistent product quality, safety, process optimization and environmental protection – these are only a few reasons why industrial flow measurement is becoming more important all the time. Wastewater, water, beverages, mineral oil, chemicals, natural gas or steam are only some examples of fluids that have to be measured day in, day out.

For over 40 years, Endress+Hauser has been providing one of the most comprehensive product portfolios for measuring the flow of fluids, gases and steam. During this time, about 5 million flowmeters have been installed successfully across a wide range of industry sectors.

A significant contribution to this success has been made by the Proline product family. The latest generation of Proline flowmeters offers numerous innovations, such as WLAN or Bluetooth as well as an outstanding operation concept via web server or touch screen. Furthermore, Proline provides a solid data management with HistoROM and offers added value for operational safety with Heartbeat Technology.

Flow website:
www.endress.com/flow

Electromagnetic
Universal measuring principle for all conductive liquids. Virtually independent of pressure, density, temperature, viscosity and flow profile. Even liquids with solids can be measured, e.g. ore slurry or cellulose pulps.
Over 3 million Endress+Hauser magmeters installed since 1977!
Sizes: DN 2 to 3000 (1/12 to 120").

Coriolis
Universal measuring principle for liquids and gases. Multivariable sensors: simultaneous and direct measurement of mass flow, density, temperature and viscosity.
Independent of the physical fluid properties.
Sizes: DN 1 to 400 (1/24 to 16")
[max. 4100 t/h].

Ultrasonic
Volume flow measurement of liquids and gases, regardless of electrical conductivity with either clamp-on or inline sensor types.
Ultrasonic measurement enables cost-effective and reliable flow metering anywhere in the process: volume, corrected volume, mass flow, sound velocity. Retrievable diagnostic values. Special devices for measuring wet or dirty gases at low pressures, e.g. biogas or landfill gas.
Sizes: DN 15 to 4000 (½ to 160").

Thermal
Direct mass flow measurement of gases with low process pressure up to 40 bar. Measuring principle with a high operable flow range (100:1) and an excellent low-end sensitivity. Patented bidirectional flow measurement and drift-free sensor. Short inlet runs with integrated flow conditioner.
Negligible pressure loss.
Sizes: DN 15 to 1500 (½ to 60").

Vortex
Universally applicable for the measurement of liquids, gases and steam.
Extremely robust with regard to external vibrations, dirt, water hammer and temperature shocks.
High long-term stability, no zero point drift. Efficient steam plant operation thanks to the worldwide unique measurement of dryness fraction.
Multivariable thanks to integrated pressure and temperature compensation.
Sizes: DN 15 to 300 (½ to 12").

Differential pressure (DP)
Universally applicable for liquids, gases and steam up to 420 bar (6092 psi) and 1000 °C (1832 °F). Robust primary element as it is completely mechanical with no moving parts.
The transmitter can be replaced during operation, e.g. for maintenance or modernization of the measuring point without interrupting the process.
Sizes: DN 10 to 12000 (3/8 to 480").

Temperature

Sensors and transmitters for temperature measurement in the process industry

Temperature is the most frequently measured variable in process engineering. For years now Endress+Hauser has been at the forefront of leading international companies in industrial temperature measurement with its own development and production centers in Europe, the USA and Asia.
Our products comply with international standards and specifications such as ATEX, FM, CSA, IEC, NEPSI, SIL, NAMUR NE 21, NE 43, NE 89, NE 107, DNV GL, 3-A, EHEDG, ASME BPE, FDA, EAC and INMETRO. They are suitable for use in all sectors of industry.

As a full-range supplier for temperature measurement, we provide a high degree of quality, reliability and safety which – compared on an international level – only few producers can offer.
To this end we operate our own DAkkS/Accredia certified and EC accredited calibration and testing laboratories for temperature measurement.

Temperature website:
www.endress.com/temperature

Temperature transmitter Choose between head, DIN rail or field mounting among the freely programmable temperature transmitters with RTD thermometer or thermocouple entry. Whether analog output or HART® protocol, FOUNDATION Fieldbus™ or PROFIBUS PA interfaces, Endress+Hauser offers you the right solution for every application.

Head transmitters
Mounting in all terminal heads form B.

DIN rail transmitters
Mounting on top-hat rail TH35.

Field transmitters
With on-site display (optional) for optimum safety and reliability requirements. Diverse housing versions for mounting directly in the field (at the process).

Temperature sensors With our broad, globally available portfolio of RTD thermometers and thermocouples for every application we as Endress+Hauser are one of the leading full-service providers in temperature for process automation. Innovative temperature sensors like iTHERM, TrustSens, iTHERM QuickSens and iTHERM StrongSens increase the economic efficiency of your processes. Our products convince with self-calibration technology, very fast response times and an extreme vibration resistance. Those advantages mean perfect conditions for an exact and safe process control.

Resistance thermometers
Modular or compact design for hygienic, industrial or heavy duty applications. Resistance thermometers are suitable for measuring ranges from -200 to +600 °C (-328 to 1112 °F).

Thermocouples
For measurements at high temperatures even under the most difficult conditions. Thermocouples are suitable for measuring ranges from -270 to +1800 °C (-454 to 3272 °F).

Temperature switches
For monitoring, display and regulation of process temperatures. Available with various process connections (standard and hygienic).
Temperature switches are suitable for measuring ranges from −50 to +200 °C (−58 to +392 °F).

Liquid analysis

Comprehensive product range for all analytical parameters

Environmental protection, consistent product quality, process optimization and safety – just a few reasons why liquid analysis is becoming increasingly important. Liquids such as water, beverages, dairy products, chemicals and pharmaceuticals have to be analyzed day in and day out. We support you in fulfilling all these measuring tasks with application know-how and cutting-edge technologies. Discover our comprehensive portfolio and choose the product best suited to your process needs.

From single measuring points composed of sensor, process connection and transmitter to fully automatic measuring systems and application-specific engineering combined with ultra-modern communication technology – all products are available from a single supplier.

The outstanding feature of these products is the innovative Memosens digital technology. With Memosens non-contact digital sensors, all calibration and operation data is stored in the sensor head, allowing offline calibration of sensors. This simplifies the maintenance process and extends sensor lifetime.

With the Memosens 2.0 sensor generation, our Liquiline transmitter and the Memobase Plus sensor and data management tool, we offer a future-proof basis for predictive maintenance and enhanced IIoT services. All you need to increase your process availability and streamline your work.

We constantly focus on research and development in close cooperation with customers, research institutes and universities to make liquid analysis as simple, reliable and safe as possible. Throughout our plants we employ state-of-the-art production technologies that feature a high level of automation. Our production philosophy, calibration concept and certification are standardized across all production facilities worldwide – so no matter where you are, you always get the same high quality, innovative devices.

Liquid Analysis website:
www.endress.com/analytics

pH/ORP
Glass and glass-free Memosens sensors, transmitters and assemblies for standard, hygienic and hazardous applications; fully automated measuring, cleaning and calibration systems.

Conductivity
Conductive and toroidal Memosens sensors and transmitters for all measuring ranges in standard, hygienic and hazardous applications; compact measuring devices, calibration and verification systems.

Turbidity/solids
Optical Memosens sensors and transmitters for all measuring ranges from lowest turbidity in drinking water to solids in wastewater applications; ultrasonic sludge level measurement.

Oxygen
Amperometric and optical Memosens sensors, transmitters and assemblies for all applications, including hazardous areas, hygienic processes and trace measurement.

Disinfection
Amperometric Memosens sensors for monitoring of free or total chlorine, chlorine dioxide, free bromine or ozone in drinking and process water, wastewater, swimming pools and seawater; modular flow assembly for simultaneous measurement of up to 6 variables.

Analyzers
Colorimetric analyzers, optical and ion-selective sensors and spectrometers for monitoring of nutrients, organic load and metals; Liquiline System analyzers and sample preparation systems available with Memosens technology.

Transmitters
Liquiline transmitters featuring all common fieldbuses; suitable for all applications including hazardous areas and hygienic processes; multichannel and multiparameter devices for field or DIN rail installation.

Process photometers
Process photometers for accurate concentration measurement by determining UV absorption, NIR absorption, color, turbidity and cell growth; suitable for hygienic applications and hazardous areas.

Samplers
Portable and stationary samplers with Memosens technology for automatic sampling, defined distribution and safe preservation of liquid samples.

Optical analysis

Laser-based technologies for monitoring chemical composition and concentration in gases, liquids, and solids from laboratory to process applications

Optical analysis technologies provide access to real-time monitoring of critical parameters and enable process transparency.

Endress+Hauser offers a range of analyzers and probes which can be used with all phases of matter in any installation environment. These products are designed to take research and development projects from lab-to-process in record time, optimize industrial processes, ensure safety, and more reliably monitor product quality.

With over 40 years of experience, the depth and breadth of our optical analysis offerings allow us to support multiple fields of applications across the Life Science, Oil & Gas, Chemical, and Food & Beverage industries.

Key technologies in our portfolio include Raman spectroscopy, tunable diode laser absorption spectroscopy (TDLAS), and quenched fluorescence (QF). Spectroscopic technologies have the advantages of requiring less maintenance and generating faster response times; they do not have moving parts or require complex and time-consuming sample preparation.

Optical Analysis website:
www.endress.com/optical

Raman spectroscopy Raman analyzers deliver real-time, *in situ* chemical composition analysis of a material without needing to extract, prepare, or destroy the native sample. Raman spectroscopic components and systems are designed to enable full scalability from laboratory to process. Known for offering sampling flexibility, our Raman Rxn analyzers pair seamlessly with a full suite of fiber optic probes for use with gases, liquids, solids, or slurry media in a wide range of process conditions.

Tunable diode laser absorption spectroscopy (TDLAS) TDLAS gas analyzers are used for on-line, real-time measurement of contaminants such as moisture (H_2O), hydrogen sulfide (H_2S), carbon dioxide (CO_2), ammonia (NH_3), and acetylene (C_2H_2) in process gas streams. The technology is capable of measuring percent (%) levels down to trace (sub-ppm) levels thanks to patented differential spectroscopy.

Quenched fluorescence (QF) QF technology is selective and specific for oxygen measurement in natural gas and hydrocarbon streams. It is unaffected by the presence of H_2S and other compounds which cause interferences and measurement biases in electrochemical oxygen sensors. Quenching of the fluorescent light emitted from the sensor occurs instantaneously, providing a fast response to changes in oxygen concentration.

Interface level measurement

Suitable measuring principles for your individual interface application

Your application is of prime significance because the instrument serves the application and is only selected once the general setting is known. You get the optimum interface measurement solution in relation to your process requirements from us.
Precise interface measurement is important in continuous and dynamic processes. Is the overall level constant or variable, and if so, in which range? Should the overall level be available as a measured value in addition to the interface measurement. Does emulsion occur during measurement?
The answers to such questions have a strong influence on the correct selection of instrumentation. We offer you transparency in relation to options, application limits and commissioning of the individual measuring principles.

Radiometry
Non-invasive measuring method which determines the interface layer by measuring the medium density. When using several detectors even multiphase interface layers can be measured.
If the transmitter has been calibrated to the media by wet calibration, a correlation to the measurement of the interface results automatically. This non-invasive measuring method is suitable for extreme process conditions and is unaffected by build up of sticky media.

Guided radar
As the pulses impact the medium surface, only part of the sending pulse is reflected. The other part penetrates the medium. As the signal enters the lower medium with a higher dielectric constant (dc) it is reflected once more. Taking the delayed Time-of-Flight of the pulse through the upper medium into consideration the distance to the interface is determined in addition.
Applications up to 450 °C (842 °F); 400 bar (5800 psi).

Multiparameter
The name of the innovation in interface measurement is FMP55 Multiparameter. This instrument combines the advantages of the capacitance and guided radar measuring principles. Emulsion layers may cause signal losses in interface detection in guided radar measurements. Only Levelflex FMP55 Multiparameter can guarantee safe measured values for both the interface and the overall level with this unique, redundant measuring system.
Applications up to 200 °C (392 °F); 40 bar (580 psi).

Capacitance
Media with a small dielectric constant (dc) cause very small changes of the capacitance value. Media with a high dc produce large capacitance changes. In many interface applications, the medium with the smaller dc value is on top, e.g. in hydrocarbon on water. The upper medium merely provides a minimum contribution to the overall capacitance value – the issued level thus only refers to the water level (the interface).
Applications up to 200 °C (392 °F); 100 bar (1450 psi).

Servo Technology
The density of the medium can be determined by immersing the displacer inside the product. The sensor evaluates jumps of 0.1 g/cm³ (6.24 lb/ft^3) in the density measurement as a separating layer. The sensor can determine up to 3 separating layers within the tank. Thus, the sensor can reliably and at any time determine the water level inside an oil tank in order to calculate the real amount of the usable product in the tank.

Density and concentration

Quality measurement in liquids

Blending of preliminary, interim and final products, determining the exact density or concentration, monitoring quality and controlling process – all these activities constitute a reason for the density measurement of the fluid. Therefore, Endress+Hauser offers a wide variety of different methods for accurately measuring the fluid density and concentration in a simple and fast manner across industries.

Vibronic – Liquiphant
Suitable for hygienic applications with a large number of process connections to choose from. Units of density: norm density, °Brix, °Baumé, °Plato, % volume, concentration, etc. with 2D and 3D tables. Formula editor to calculate customer-specific units. Up to five Liquiphant density sensors can be connected to the density computer FML621. Direct installation in tanks and pipes.

Coriolis – Promass
Maximum process dependability because density, concentration, temperature and mass flow are all measured simultaneously. Approval for custody transfer applications.
No maintenance necessary. Units for density: standard density, standard volume flow and totalizing, % mass, % volume, alcohol tables (for mass and volume), target flow and carrier flow, °Brix, °Plato, °Baumé, °API, etc. Direct measurement in the pipe.

Ultrasonic – Teqwave
Smart and flexible concentration measuring device for up to three liquid components. Teqwave can be used to measure multiple liquid parameters simultaneously by means of ultrasonic signals.
Direct measurement and display of disturbance variables such as particles and gas bubbles. Flexible range of application: Inline version (pipes), insertion version (vessels, large pipes) and portable device versions (for various measuring points).

Radiometric – Gammapilot
Non-invasive measurement of density changes through the pipe walls without process interruption. Suitable for abrasive and aggressive fluids as the measuring system is typically clamped onto the pipe externally. Density measurement inside a process vessel with a special arrangement of the devices possible. In addition, the rate of flow may be determined using an electromagnetic flowmeter.

Servo Technology
The density of the medium can be determined by immersing the displacer inside the product. The servo technology enables level and density measurement with just one device, with the creation of density profiles over the entire tank height.

System products and data managers

Visualize, process and monitor measured values

Nowadays the requirements on measurement technology go far beyond the mere recording of measurement values.

Thus the measuring devices are to be supplied with power and to be protected against overvoltage, the measurement value is to be visualized or processed, limit values have to be monitored as well as the data has to be tamper-proof archived. These tasks are covered by the system products and data managers from Endress+Hauser.

System products and data managers website
www.endress.com/systemproducts

Benefits

- Easy installation and user friendly setup and operation
- Real-time plant information on-site
- Increased plant availability due to proactive diagnostics and protection of the measurement devices
- Flexibility in application based on various housing versions, all important communication protocols and worldwide approvals
- Safe and tamper-proof data handling
- Complete portfolio around the measurement point from one supplier

System products

Indicator portfolio
Loop powered indicators are powered via the current measuring loop. They improve the process overview, since measured values are indicated where they are needed.

Process indicators with control unit combine several functionalities in one device like an active barrier, transmitter and relay. Fieldbus indicators display the values that are communicated by PROFIBUS PA or FOUNDATION Fieldbus devices.

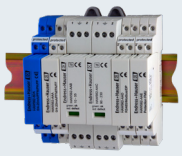
System products

Wireless portfolio
Endress+Hauser's WirelessHART and Bluetooth® Adapters and Gateways perfectly fit for asset health monitoring. They are also suitable for energy (process) monitoring tasks, for process data collection from rotating or mobile installations and remote applications with limitations to cabling, e.g. electromagnetic fields or limited accessibility.

Reliable signal processing and conditioning
Power, condition, isolate and protect your analog signal loop

Series of interface, signal processing and conditioning modules powers the foundation of analog measurement instruments loop and intrinsic safety infrastructure.

Process transmitter with control unit
With quick setup and simple on-site operation via three keys, LC display for limit values as well as bargraph and pluggable screw terminals.

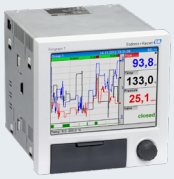


Overvoltage protection
For limitation of excess voltage in signal and supply lines in Ex and non-Ex versions, available for field our DIN rail mounting.

System products

Fieldgates
Gateways with Ethernet interface to HART, HART over PROFIBUS and to PROFIBUS signals allow plant access to device parameters.
Applications include monitoring, device diagnostics and Plant Asset Management.

Data managers



Universal data manager
Ecograph T is a state-of-the-art solution to multi channel displaying, recording, monitoring and communication needs. The unit is easy to use and comes with a host of convincing features to save costs and simplify data acquisition. It offers an unbeatable price/performance ratio. Tamper-proof archiving of measured values with 100% recall/ retrace function.

Advanced data manager
The Memograph M is perfectly suitable to memorize, visualize, analyze and communicate process values. The innovative device is impressive because of its high functionality, modular construction and its intuitive operator concept.
As a stand-alone system or as an efficient system component, Memograph M is the ideal solution for every task. Common fieldbuses (MODBUS, PROFIBUS DP, PROFINET, EtherNet/IP) for fast integration into different systems are supported.

Special application packages are available: mathematics package, tele alarm, batch, wastewater and storm overflow and energy software.

Process solutions tailored for optimal plant performance

Dedicated to improving your productivity and efficiency while lowering your costs

At Endress+Hauser we understand the unique challenges of your industry. Combining our portfolio and technologies with expert consulting and requirements analysis, design and engineering capabilities, and seamless data integration to your systems, we partner with you to provide the optimal industrial process solutions for unlocking the highest levels of performance of your plant. Endress+Hauser offers plant-wide process solutions focused to your applications needs:

- Optimize your transfer and storage facilities with our 'Zero Loss' quantitative measurement approach
- Meet your quality and compliance monitoring constraints with our 'Clean' approach
- Maximize your assets via operational digital enhancements with a 'Lean' process management approach

Is it your goal to improve loading and offloading operations?

Our transfer and storage applications focus on unaccounted losses and support the supply chain. This “Zero-Loss” quantitative approach, targets the movements of products, “In, Through & Out” of the facilities.

You need to maintain your quality while complying with international regulations?

Applications around “Quality & Compliance” allow our customers to verify product composition or physical properties of liquids, gases, and solids for the process industry. This “Clean” qualitative method,”, enables product compliance with customer requirements.

Do you want to save time and money by improving specific business operations?

Our Operational Digital Enhancements applications strive to improve efficiency by applying digital transformation. Automation and automated workflows are key to exploring enhancements in operational efficiency. This is a “Lean” approach.

Services

Committed to improving plant performance for your success

By your side, with total commitment, today and into the future, Endress+Hauser will help you both meet and surpass your specific industry challenges. It is what drives us; it is what defines us. As the globalized, 24/7 economy in which you compete brings unprecedented margin pressure, we de - liver the incremental OPEX reductions and plant availability gains to make the difference.

As new regulations to protect people and the environment demand rethinking of processes, we help you comply while remaining competitive. Moreover, we are here to ensure that relentless technological progress does not become a threat but an opportunity. With Endress+Hauser Services, you give yourself every chance of success.

Reduce Opex

Every organization that wants to stay competitive has to strive to increase its profit. When it comes to process industries, reducing operational costs is crucial and always in focus of Endress+Hauser service people.

Increase plant availability

Digitization is a core aspect in the effort to achieve efficient and resource-saving operation. With Endress+Hauser you can keep your process reliable and running at maximum capacity.

Remain compliant

In a globalized world, the number and complexity of rules, regulations and laws increases. We can help optimize important operational management tasks while working in compliance with the rules.

Access technical expertise

It is increasingly challenging to recruit and retain talented employees with technical know-how around process measurements. With new digital channels, we enable you to access knowledge and expertise remotely to save you time and cost.

Commissioning services

With in-depth planning and highly controlled working procedures, we provide complete industrial commissioning services for your instrumentation, automation solutions, and field networks, delivering a seamless transition to operations and benefits into the long term.

- Avoid false starts with measuring point performance confirmed to system level and future malfunction risks minimized
- Save time, efforts and costs thanks to qualified service technicians providing on-site commissioning support, reducing burden on your staff, accelerating setup and start-up.

Calibration services

From on-site to fully accredited laboratory calibration, we provide timely, traceable, and cost-effective calibration services to ensure both high performance and compliance of your quality critical instruments.

- Trust in a global calibration provider delivering calibration excellence worldwide with metrology trained service engineers using harmonized operating procedures
- Benefit from ISO 17025 accreditation available for many parameters in many regions.

Maintenance services

We combine in-depth process and instrumentation know-how, on-site verification, and preventative maintenance, to deliver comprehensive and cost-effective maintenance services that ensure accurate and available measurement instrumentation vital to your processes.

- Build your measurement confidence from rigorous diagnostic testing with on-site verification and pass/failed reporting
- Prevent problems before they arise with adequate maintenance plans based on each technology specificity.

Support services

The Global Endress+Hauser support network of technical experts is on call to guide and to support you remotely with diagnostics and troubleshooting as well as with proactive alerts to optimize your plant's availability and performance, reduce outages, and minimize disruption.

- Obtain guided service operations, remote diagnostic and troubleshooting support from dedicated experts
- Receive proactive alerts thanks to remote health monitoring of your installed base
- Access to our knowledge-based platform to resolve issues autonomously and broaden your instrumentation expertise.

Training services

By combining theoretical courses with hands-on training, our educational packages will help your staff to operate instruments properly and apply the appropriate techniques for corrective and preventative maintenance.

- Increased instrumentation and application knowledge with experienced instructors enabling your staff to enhance and refine their operating and maintenance knowledge
- Access to fully customized training programs enabling you to ensure training outcomes meet your needs.

Optimization services

Our instrumentation maintenance experts will partner with you to design and implement the optimal maintenance strategy for your process requirements, continuously enhancing the long-term reliability of your installed base.

- Improve process efficiency thanks to our process consultants bringing in-depth analysis and recommendations to optimize your maintenance processes and long-term asset management strategy
- Optimize your calibration intervals with proven methods while balancing costs and risks.

Digital communication and software

Optimum integration of field measurement technology into your system world

Endress+Hauser is a pioneer of fieldbus technology and works actively in various technology organizations and standardization committees. We continuously strive to simplify these technologies in order for our customers to retrieve the optimal benefits.

We support the seamless integration of our field devices into the automation systems of many manufacturers. This guarantees our customers freedom of choice and the best possible functionality at optimal cost.

Apart from all relevant measuring and system technologies, we also offer appropriate software tools for all branches of industry. Our comprehensive portfolio spans a range of software solutions

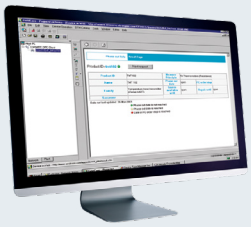
- for asset management improving plant availability and maintenance efficiency,
- for inventory management optimizing your inventories and supply chain,
- for device calibration and configuration through to condition monitoring by providing valuable asset information over the entire life cycle,
- for energy management and monitoring to reduce costs.

Software website:
www.endress.com/software

Fieldbus technology
Endress+Hauser is a leading supplier of fieldbus and Ethernet instrumentation. Practically all of our instruments can be equipped with a HART®, PROFIBUS® or FOUNDATION Fieldbus interface, selected ones with a serial MODBUS, IO-Link, PROFINET or EtherNet/IP interface. With Ethernet-APL, Ethernet-based devices can also be installed in process plants with explosion hazardous areas including intrinsic safety. As intelligent instruments, fieldbus and Ethernet-based devices carry additional information from the field, e.g. instrument status, maintenance and diagnostics. They save operational costs by increasing plant availability and are significantly cheaper to install and commission.

WirelessHART
For applications where accessibility or installation costs rule out the use of a fieldbus as communication medium, WirelessHART offers an economical solution.

Fieldbus technology
www.endress.com/fieldbus-technology



FieldCare
FieldCare is a state-of-the-art configuration software for configuration out of a central location. There is no need to spend a lot of time in the field anymore. You can either remotely access your devices from your maintenance station or prepare the configuration changes in advance and transfer them point-to-point fast and easily.

Your benefits
- One tool to access all field devices regardless of FDT or EDD technology
- All major communication protocols supported
- Fast commissioning and device replacement
- Open for 3rd party drivers and hardware
- Performs device configuration management when combined with life cycle management
- Diagnosis of devices according to NAMUR NE 107

Field Xpert
Field Xpert* is an industrial Tablet PC for mobile device configuration. It allows efficient configuration of Endress+Hauser and third-party devices using common protocols. Everything comes out of the box, which makes the Field Xpert unique. The Field Xpert is always up-to-date regarding DTM files and software applications. In combination with our IIoT offering and the connection to the Netilion cloud, the Field Xpert is the best solution for Plant Asset Management. The well-known OS Windows allows also the installation of 3rd party software.

* Field Xpert SMT50 (non-ex),
Field Xpert SMT70 (Class 1 Div 2) and
Field Xpert SMT77 (Class 1 Div 1 area)

Field Data Manager
Field Data Manager (FDM) is a software package offering central data management and visualization of stored data. This allows complete documentation of the data from a measuring point, e.g.:
- Measurement values
- Diagnostics events
- Protocols

Your benefits
- Secure management and visualization of historical process data
- Automatic services for easy data handling
- Visualization of instantaneous values

SupplyCare
SupplyCare is a web-based information system for remote monitoring of tank and silo inventory at multiple site locations. Current measurement values of on-site assets can be accessed via fieldgates company-wide in the Intranet or worldwide via public telephone networks and the Internet. SupplyCare software for the collection and processing of data can either be installed on your premises or hosted by Endress+Hauser. Conventional web browsers allow information to be called up by authorized materials administration and logistics personnel – at any time and from any workplace. Secure access via the Internet can be provided for external partners and service providers. As an alternative or supplementary option, measured data can be integrated into existing systems at logistics, enterprise and management levels.

Unlock knowledge with Netilion, the IIoT ecosystem of Endress+Hauser

We make your field data accessible and turn them into valuable knowledge – no matter which industry.

To make the right decisions, you need the right knowledge. Netilion makes this possible and supports you in optimizing your processes and quickly making fact-based decisions.

Creating knowledge from data
Netilion is a cloud-based IIoT ecosystem, designed for industrial processes. It connects the physical and digital worlds to send valuable information from the field straight to your phone, tablet or other device. Netilion empowers you to improve efficiency and drive innovation.

Multi-brand ecosystem
You have equipment from various vendors in your installation. An IIoT solution should provide data from as many assets as possible, and Netilion can do that. With this multi-brand approach, you have all the information in one place and the more partners there are in Netilion, the bigger the benefits.

Security and privacy
Your facility's information is valuable and needs protection. Netilion allows you to access data digitally because it meets internationally recognized standards of cloud-platform security. It's a safe harbor for your data.

Best users experience
Every tool's benefits stand and fall with its usability. When developing Netilion, we always aim at making it easy to use. The initial implementation is simple, Netilion is based on the latest internet technologies and does not require any on-site installations. All your data is a few taps away.

Turn data into knowledge with the following Netilion Digital Services
We designed Netilion Services to trace and use all kinds of data from the field. Increasing data access will increase your knowledge of your installation and ease operations.

Netilion Value acts as digital monitoring service that connects you to your measurements wherever you are, letting you see what's happening in your facility at any time.

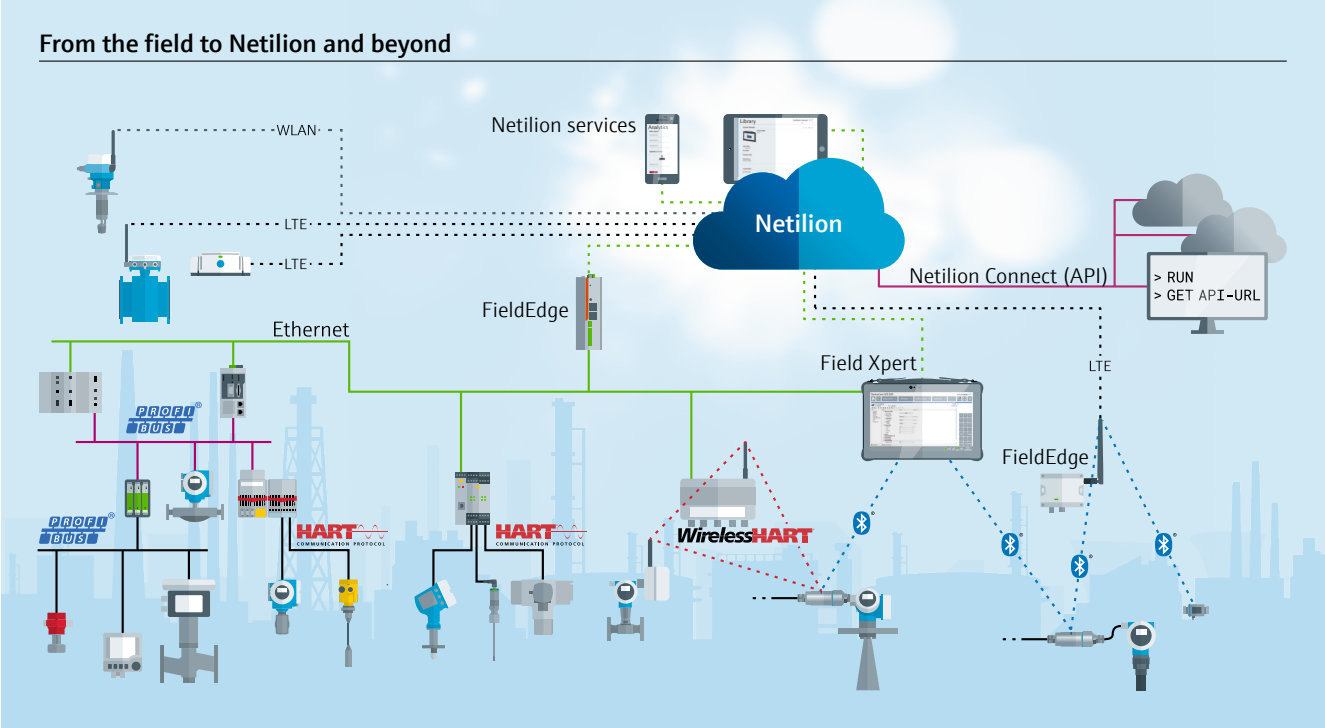
Netilion Health is a digital asset-health management service that puts your maintenance team a step ahead of problems.

Netilion Analytics lets you manage all the devices in your plant. Use their data to eliminate obsolescence.

Netilion Library serves as file manager designed to organize documents related to your plant's instrumentation.

Netilion Connect integrates data and knowledge into your infrastructure and target systems. Netilion can help you by transferring collected data into your own systems. You can do this with the aid of the API that Netilion Connect provides.

Netilion
www.netilion.endress.com



Netilion, Endress+Hauser's IIoT ecosystem

Eco-friendly produced and printed on paper from sustainable forestry.

www.addresses.endress.com

FI00001Z/00/EN/25.21

Endress+Hauser

People for Process Automation