

Your process measurement project partner





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Endress+Hauser Overview

Endress+Hauser is a global supplier of process automation solutions. The company develops, manufactures and sells sensors and systems for production and logistics in the process industry. These products acquire, transmit and use process information. Endress+Hauser is committed to providing products with excellent performance and price; and services that are groundbreaking. The goal is to contribute to customers' competitiveness with a maximum of quality, safety and efficiency.

To complement its own strengths appropriately, Endress+Hauser collaborates with universities and research institutes, as well as with other business partners and competitors. In parallel, the company continues to expand its industry know-how, and ensures the competence of Sales, Service, and Project Engineering Support. A tight network of production and sales companies, together with representatives gives Endress+Hauser a very strong presence across global markets.

The company owes its good reputation to employees' competence, creativity and commitment. The financially strong and independent family owned company stands for continuity, the broadest range in its industry, and active relationships.

Innovation

Innovation is the driving force behind our products. The fact that we make 43% of our sales on products which are younger than 3 years proves this.

Last year, our specialists for instrumentation and automation solutions applied for 157 patents – more than Endress+Hauser has ever applied for in the past. Endress+Hauser currently holds over 3000 active patents.

More than 10% of our annual revenue is reinvested in research and development.

Whether you are engineering a petrochemical or biochemical process, a utilities or energy reduction unit, or an ethanol or biodiesel project, Endress+Hauser seeks to be a your preferred partner throughout the world.

Your Global Partner

Our company has developed in 51 years from a niche provider of capacitance level instruments to an international provider of solutions with a broad product program of instruments for process engineering worldwide – our customers say.

Endress+Hauser provides the largest sales force worldwide in the area of process instrumentation with 37 sales and service companies. Whether you are executing a project in Europe, America, Asia, Africa or Australia – there is always an Endress+Hauser support group to work with you.



Competence you can trust



Engineering organizations like yours seek to fulfill their customers' needs and meet their own financial goals in an increasingly challenging environment. There are demands to meet environmental compliance, design quality, equipment specification, personnel and plant safety, project milestones, commissioning and procurement demands to name a few. You seek to safely address all these demands with partners who work to contribute what they can to meet these demands.

Endress+Hauser has the financial strength and global resources to support you today and into the future. With over 50 years of experience supplying instrumentation into the process industry, Endress+Hauser gives you access to a wealth of process measurement application knowledge.

Endress+Hauser brings innovation tempered with safe implementation into the temperature, pressure, flow, level, analysis and recording device solutions offered to chemical operations worldwide.

Endress+Hauser wants to be your safe choice for your process measurement instrument engineering needs.

We can

- Help protect your client personnel and plant
- Help to safeguard the quality of your engineered solutions
- Provide measurement information that your designers and client operators can trust
- Contribute to optimized availability and false trip management of Safety Instrumented Systems (SIS) you design
- Provide trend-setting innovations to optimize your support services and design efforts
- Help simplify instrument integration by continuing our support of open standards
- Provide solutions to safely optimize your procurement processes
- Continued improvement to your clients' total cost of ownership and life cycle optimization

Help protect client personnel and plant

It is imperative for your clients that your contributions to their manufacturing operations maintain a safe working environment for their people and protect plant assets. Endress+Hauser pioneers measurement offerings that contribute to personnel safety. For example:

- Process measurement information that your designers and process control systems can rely on
- High visibility backlit temperature transmitter displays allow operators to easily see measurements from a distance
- Pressure transmitters with secondary barriers between the process and the environment ensure a safer working environment for plant personnel
- Safely transfer complete configuration of one pressure transmitter to another in seconds with innovative data key, called HistoROM®
- Galvanic isolation of 2kV on temperature transmitters, to eliminate ground loop currents and other grounding-related interference

Help to safeguard the quality of your engineered solutions

Effective product quality control heavily depends on reliable measurement information. Incorrect measurement information due to temperature effects, non linearity or stability can result in out-of-spec performance. Endress+Hauser provides you with more than a measurement transmitter:

- You can rely on Endress+Hauser products to perform to their published specifications
- Diagnostic information to trap measurement quality problems
- Factory calibrations with appropriate traceable certifications to guarantee stated performance
- Customized startup packages, including training for your people

Measurement information that designers and client operators can trust

Engineering a process automation project successfully depends on reliable process measurement information and availability right at startup. Endress+Hauser designs process measurement products to minimize commissioning time. Examples:

- Innovative abrasion and chemically resistant ceramic pressure cells with active health monitoring and fill fluid temperature compensation can withstand abuse at the site greater than traditional pressure transmitters
- Unique gold plated temperature transmitter terminal connections and continuous temperature sensor integrity monitoring contribute to measurement reliability and reliable startup
- Unique plug and play modular pH measurement architecture supports quick installation without high skill requirements giving high measurement reliability

Contribute to SIS availability and false trip management

Endress+Hauser provides a range of measurement products Safety Integrity Level (SIL) certified for use in Safety Instrumented System (SIS) designs.

- IEC 61506 SIL-2 pressure and temperature transmitters are provided as a standard offering by Endress+Hauser as another commitment to safety
- SIL ratings for pressure and temperature transmitters only partially address safety considerations. In addition, Endress+Hauser provides:
 - application and installation expertise not addressed by SIL evaluations
 - provision of appropriate technologies for multiple sensor service (i.e. 2oo3 - two out of three voting sensors)
 - condition monitoring solutions for SIL service instruments to optimize availability and false trip management

Commitment to open systems instrument integration

Endress+Hauser pioneered open fieldbus and plant asset management technologies, playing a leading role in the practical implementation of open standard HART®, PROFIBUS-PA, Foundation™ Fieldbus technologies and FDT (Field Device Tool)/DTM based asset life cycle optimization and cost reduction solutions.

- Our certified network engineers have experience in field bus based measurement technologies and their integration requirements in process monitoring and control applications
- We provide wired and wireless pressure, level and temperature monitoring solutions that interface with enterprise applications directly via XML from the field or through central server platforms
- We conduct integration testing and evaluation of the major automation and plant asset management platforms in our accredited multi-vendor automation laboratory
- We have partnerships with selected leading automation suppliers

Innovations to optimize your design efforts and support requirements

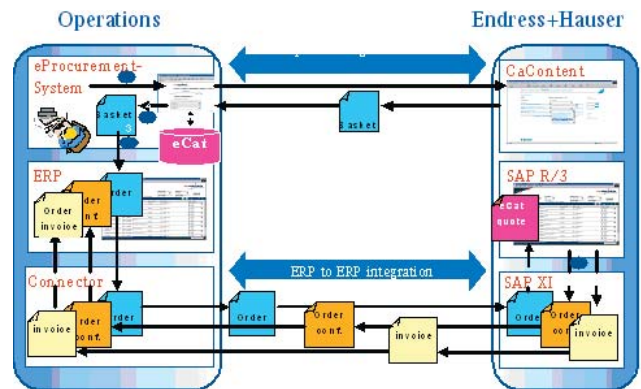
Reducing your project instrument costs and support requirements goes beyond acquisition costs. Even some of the "little" innovations and characteristics of the proper instrument can make a significant contribution. Some examples:

- Cost saving hermetically sealed head-mounted temperature transmitters that outperform most traditional "field" process temperature transmitters
- 2-wire magnetic flowmeters with a broad application envelope that reduce wiring costs as much as 20%
- Improved terminal block design on temperature transmitters incorporates larger terminals and a laser etched graphic on the terminal block to facilitate ease of wiring
- pH loop field support costs can be reduced as much as 40% using the E+H Memosens program compared to the traditional pH loop field implementation program

Solutions to optimize your procurement processes

Reliable procurement and logistics processes can provide significant savings and ensure required availability of equipment on site. Endress+Hauser addresses a broad range of procurement solutions with its partners.

- In addition to a strong network of knowledgeable application engineers, Endress+Hauser provides standalone tools that allow one to accurately select the right product configuration and pricing themselves
- Support for Procurement card transactions is also provided by Endress+Hauser and continuously upgraded with releases from AMEX
- Support for third party e-procurement platforms (i.e. Ariba, CC-Hubwoo, Traderanger) to help reduce transactional costs and improve order handling quality
- Endress+Hauser can support several fully integrated selection, order development and invoicing solutions including full SAP to SAP integration



Total cost of ownership and life cycle optimization

- Endress+Hauser works to address the visible and “hidden” levels of instrumentation
 - Visible short term product costs
 - Hidden change and support costs
 - Hidden health, safety, and environmental costs
 - Instrumentation and support solutions that can reduce TCO by 40%
- The Web Asset Management (W@M) elements projected by Endress+Hauser support “cradle to grave” life cycle management of devices through web based tools
- Securely associate correct documentation, history, spare parts and calibration automatically with individual measurement devices you have in the field

W@M — web-enabled asset management

W@M is an open information management system designed to enhance information availability along the complete life cycle of a project. W@M utilizes internet portal technology to ensure information is available 24/7.



- Provides data flow and archiving for technical and operational management of instruments completely and conveniently down to the serial number level of each individual instrument
- Encompasses the processes from planning and initial design, engineering, configuration, procurement, installation and commissioning, of your instruments.
- On-site service events such as startup and calibration will be reflected in the W@M database to maintain a complete life cycle history of the installed base.

To find out more visit www.us.endress.com/W@M

We're close by and ready to work with you

Manufacturing Capabilities in the USA

Endress+Hauser is continuously investing in manufacturing excellence. Here in the United States we have ISO 9001 certified manufacturing facilities and ISO 17025 certified calibration capability to help us deliver our core competency – the most innovative, highest quality measurement devices.

Coriolis, electromagnetic, vortex, ultrasonic – Endress+Hauser has local production to serve the needs of our customers throughout North and South America. Local production is critical in giving us the flexibility to assist our customers with special needs – like quick delivery, at times within 24 hours.

Our production facilities utilize state-of-the-art production techniques and manufacturing technologies to ensure the quality of the instrumentation produced, as well as the safety of employees and the environment.

Continuous investments in the design and development of computer driven test and assembly equipment allows for quality validation directly in the work cell, while maintaining rapid delivery.

We have the capability to provide solutions ranging from a single custom component, to an entire product portfolio. This unequalled breadth of instruments allows our customers to reduce overall costs by partnering with us as a single source supplier.

Manufacturing excellence delivers confidence

- Electronic production, welding, logistics and calibration – all in the production center near you
- Calibration accredited according to ISO/IEC 17025 NIST traceable
- Sophisticated robotics systems in a fully automated processing center
- Electron beam welding means all process parameters are computer controlled and monitored
- KANBAN logistics enables reduction in stock cost and streamlined delivery times



To add to existing manufacturing capability in central Indiana, Endress+Hauser broke ground in April 2006 beginning construction of a 92,000 square foot electromagnetic flowmeter manufacturing facility. The new facility houses the most accurate calibration rig, and only one of its kind, in North America.



Analysis automated test system



Analysis sensors during calibration, 10 sensors mounted to sensor holder



TIG Welding system
Level and pressure instruments may be subjected to extreme conditions, each step in their manufacture has to lead to the highest quality product



Magmeter assembly
Different liner materials are required, depending upon the application. Liner materials range from PTFE, PFA, polyurethane, hard rubber, soft rubber and natural rubber



Promass I end connection welder
Single straight tube design in five sizes, plus three full bore versions to optimize accuracy versus pressure drop. Coriolis flow tubes are constructed of 904L, 316L, Alloy C22, titanium or zirconium



Achieving a high level of production efficiency requires high-tech equipment and an educated, skilled workforce.

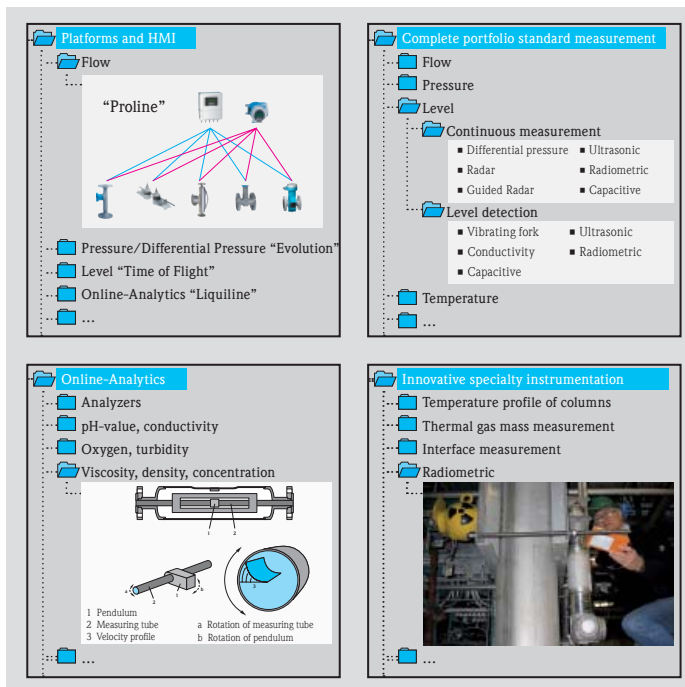
With production and warehousing facilities in Indiana and California, Endress+Hauser provides local support for all products – which is the key to responding to demands that can come up during execution of a project.

Product Offering Range

The demands on instrumentation in modern chemical and renewable fuels operations are high. Resistant materials, flexible instrumentation techniques, simple commissioning, a high degree of instrument availability, a long serviceable life are needed. Endress+Hauser offers you a wide range of "best fit" measurement technologies to address these needs.

The synergy of a full-range standard and special field measurement instrument supplier

- Endress+Hauser has employed technology platforms for many years to reduce costs and give our customers advantages such as, simpler commissioning, uniform operator interfaces and common spare parts programs.
- We have over 43 sensor technologies in our portfolio of process measurements. The possible product variations range from less than two up to several million. We can cost-effectively respond to the demands of our chemical operations customers through our sophisticated manufacturing capabilities.
- Based on rugged, proven process sensor designs, existing as well as new on-line instruments (i.e. multivariable, viscosity and density) profit from this experience and can make a decisive contribution to optimization of existing plants.



Continuous Level

- Capacitance (RF)
- Ultrasonic
- Radar
- Guided radar (TDR)
- Hydrostatic



Point Level

- Mechanical
- Vibration



Pressure

- Gauge/absolute
- Differential pressure
- Hydrostatic



Flow

- Electromagnetic
- Vortex shedding
- Coriolis mass flow
- Ultrasonic



Temperature

- Temperature transmitters
- RTDs/thermocouples



Liquid Analysis

- Conductivity
- pH/ORP
- Chlorine
- Dissolved oxygen
- Turbidity
- Chemical analyzers
- Nitrate/organic sensors
- Sludge level



Recorders

- Paperless recorders
- Visual data managers
- Safety data managers



Components

- Displays
- Active barriers
- Process transmitters
- Power supplies



Service

- Startup
- Training
- Calibration
- Maintenance Contracts
- Instrument Management Solutions



Temperature

Temperature measurement is a critical factor in maintaining quality and controlling operational costs. Endress+Hauser temperature instrumentation provides accurate and reliable measurement, plant availability and improved production times. From temperature sensors and transmitters to thermowells and accessories such as power supplies, displays, recorders, etc., can be purchased from one source.

Endress+Hauser's temperature sensors have a reputation for long term accuracy and reliability under the most adverse environmental conditions. Endress+Hauser's line of temperature sensors are designed to provide accurate and repeatable operation, using superior hardware designs compatible with installations worldwide.

iTEMP® transmitters are an installation-ready solution to improve the functionality of temperature measurement by increasing accuracy and reliability when compared to direct wired sensors. Overall installation costs are lower than with direct wired sensors, since inexpensive two-conductor 4–20 mA signal wire can run over long distances instead of expensive extension or compensation wires for thermocouples. Each transmitter can be configured for a variety of sensor inputs: RTD, thermocouple, millivolt or ohm. All iTEMP® transmitters provide long term stability $\leq 0.05\%$ per year.



Liquid Analysis

Endress+Hauser is a leader in pH, conductivity, DO and other liquid analyzers for the monitoring and automation of water treatment plants and industrial processes. In accordance with established and standardized colorimetric procedures, the Stamolys CA71 registers environmentally relevant parameters such as ammonium, nitrite and phosphate. Silicate and metals such as iron, aluminum, chrome, copper and manganese have also just been added to the palette. Furthermore, the variable analytical component enables the implementation of many other parameters for applications in industry and water treatment.

Systems, Components, and Recorders

Endress+Hauser has led the industry in the development of system components such as controllers, digital communications, displays, power supplies, barriers, samplers, recorders and isolators.

We offer a comprehensive range of hardware and software products that enable its measuring devices to be quickly and economically integrated into process automation systems. These include:

- Power supplies and barriers
- Gateways to bus systems
- Indicators and registration devices
- Recorders
- Process management software
- Asset management software



Level

Endress+Hauser offers an extensive range of systems for level measurement or point level detection. In solids or liquids – our level measurement principles meet your needs: Radar, guided radar, ultrasonics, vibration systems, hydrostatic pressure, differential pressure, capacitance as well as conductive probes, electromechanical level procedures, and paddle switches.

Flow

Endress+Hauser flow measurement systems offer optimum solutions to match your individual requirements for applications in gases, vapors, conductive or non-conductive liquids, for mass or volumetric flow measurement.

You have the choice of the following measurement principles: electromagnetic, Coriolis mass measurement, thermal mass measurement, vortex meter, ultrasonics or differential pressure.



Pressure

Our gauge, absolute, and differential pressure measurement systems in gases, vapors and liquids have been successfully employed in the market for over 15 years. A wide variety of versions are available; depending on process conditions, you can choose ceramic or metal based sensors.



A partner who adds to your peace of mind

Your task is to design and execute a project on time in a safe and profitable way. Our task is to support you with the right balance of services and resources to ensure you achieve this.

To be successful, we know you have to increase your competitiveness. As a safe and reliable partner, Endress+Hauser can support your engineering activities in a cost-effective way. This begins with the optimization of our field instrumentation to your application, combined with engineering of specific solutions to your exact needs. It continues with a range of innovative tools and services to support you during procurement, installation and startup.

Whether your project is in the planning stage or is underway, the right Endress+Hauser people are there to support you.



Support Structure

Endress+Hauser has a network of sales and service personnel throughout the U.S. and around the world. Your first point of contact will typically be your Endress+Hauser sales representative. Your local representative is supported by Endress+Hauser Regional Centers, our project management team and a network of service providers. The Endress+Hauser team provides the support you need throughout the project life cycle.

Regional Center Locations

Endress+Hauser Regional Center supports your salesperson and you

Your Endress+Hauser salesperson has an engineering support team behind him. We have designed our regional centers to provide improved support around the U.S. We have staffed them with experts to support you and the Endress+Hauser salesperson in your area.

Our Endress+Hauser Regional Centers have:

- Inside customer service support staff to handle questions and process orders
- Application engineers on staff to ensure questions are answered quickly and correctly
- Resources dedicated to supporting your local salesperson and you
- More service technicians for faster response and proactive maintenance, including start-up assistance and training for your maintenance technicians
- Product business drivers, specialists with selected products, to ensure more product experts are available and closer to better support you and your applications



Project Management team

Single point-of-contact for seamless coordination

Endress+Hauser's Project Management Team is designed to support our customers' project requirements throughout the project life cycle providing a single point-of-contact for:

Proposal coordination

Providing quotations with consistent pricing, commercial terms and product types.

Applications engineering

Being a single point-of-contact helps both the customer and project manager to work together to find the best technology and instrument solutions for each process. Project managers are also available to provide on-site assistance for engineers, supervisors, buyers or contract engineers to develop instrument definitions for any project, regardless of size or scope.

Order management

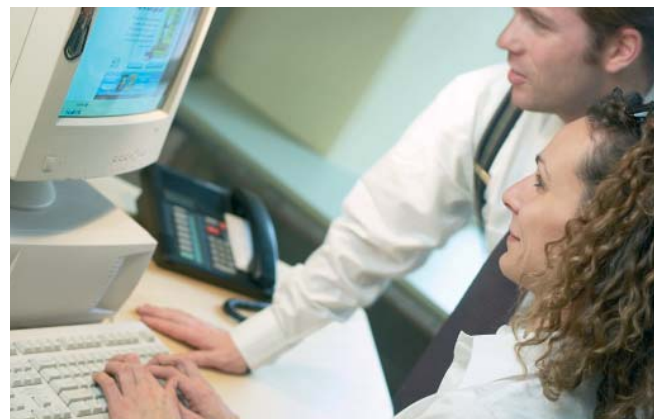
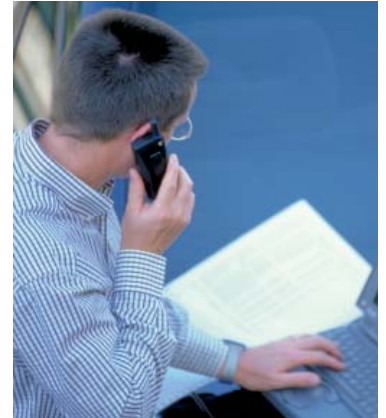
With one specific point-of-contact, costly errors and miscommunications are eliminated or quickly resolved. Order tracking and scheduling functions are enhanced. In addition, having a single project manager assigned to your order, any needed additions or corrections will be handled accurately and in a timely manner.

Documentation

Drawings, manuals, certificates, installation operations manuals, CD-ROMs, or specialized documents can be provided by a project manager upon request.

Startup services/commissioning/training

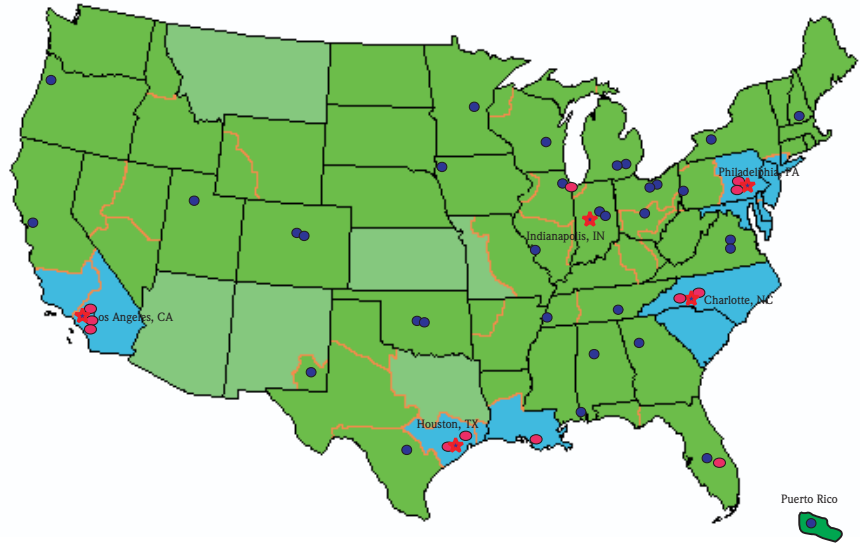
Once the order is executed, project managers coordinate with field service technicians who will confirm installation, review process conditions to ensure optimal setup, train users and inform stake holders of any future maintenance requirements.



Project field support

Commissioning the field instrumentation at a site is the job of a specialist. Perhaps your organization has the competence, but if need be, our skilled personnel can help you. We can propose different ways to complement your people: startup, calibration services, tailor-made training sessions.

Our intent is to provide the support that fits your requirements.



Endress+Hauser certified service network for the USA

Startup

Successful startup has a strong impact on the performance and operation of your client's plant and your project completion. So it has to be performed in the right way and with the correct tools. Our approach includes a check of the application mounting and cabling of your installed instrument. We power up the instrument, perform its complete configuration and give the users hands-on training to achieve optimum operation. Finally, everything is documented in a detailed report.



Training

Leading you to greater autonomy in the engineering of Endress+Hauser instrumentation, our tailor-made seminars can take place on your site or in our dedicated facilities. They are the best way to transfer our know-how to your designers. We cover common theory followed by hands-on labs with instruments that are identical or similar to your own equipment. At the end of the seminar, you will be supplied with product documentation as well as a certificate of completion.



Calibration Services

The performance of a measuring instrument, its ability to work accurately and its repeatability within a process environment is crucial and directly linked to the calibration quality.

Endress+Hauser Calibration Services cover requirements from on-site verification to calibration in our accredited laboratories. They apply to most measurement principles you might use in a process. Furthermore, they can include advice for the definition of your metrological testing and the associated frequency.

Endress+Hauser also offers specialized software tools to enable efficient management of your calibration activities.

Resources when you need them

It wouldn't make sense to offer you a whole range of value added services if we weren't able to support you in case of trouble or emergency!

You can count on our experts to answer your requests for assistance – technical phone support, field service and factory repair services. All are available with different levels of support and response time to match your needs.



Technical support

Our technical support team answers your technical questions around the clock. Our telephone support specialists offer knowledge and advice so that the diagnosis is clear.

A dedicated phone system to manage all calls ensures reliability, traceability and efficiency.



Field Service

Our team of field service technicians are located throughout the U.S. Many of our customers appreciate the peace of mind Endress+Hauser's startup assistance provides them, eliminating risk and guaranteeing a smooth startup.



Factory repair

At our production facilities, we offer technical checks, preventative maintenance and repair followed by functional tests and calibration in our accredited laboratories. Many schemes are possible (with fixed prices known in advance) which also help you to save time on administration.

We also offer 'Expedited Repair and Calibration' services that provide a quicker turnaround.



On-line support

Help is never more than a few clicks away. On-line support provides the following support services:

- Order status
- Shipment tracking
- Product selection
- Help from our technical support team
- Start-up assistance
- Return authorizations for factory repair

To access these services, simply visit:

[www.us.endress.com/
us_assistance](http://www.us.endress.com/us_assistance)

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