



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Calibration services

A complete range of calibration services
to suit your requirements

We fulfill the needs of all industries ...

Does the instrumentation that controls your critical quality processes need regular checking, validation and calibration? Do you need a cost-effective service that is fast, high quality, traceable and accredited? Do you need clear and concise calibration certificates?

Endress+Hauser covers all these critical aspects, and can perform and advise on all aspects of calibration from in-situ testing through to fully accredited factory calibration. We calibrate your equipment at just the right time. This ensures optimal process performance at minimum cost.



Oil & gas industries

- On-site flow calibration rigs up to DN150
- Calibration of all kinds of custody transfer devices
- Calibration of flowmeters up to DN2000

Environmental industry

- Calibration of all kinds of measurement equipment
- Verification of flowmeters
- Calibration of custody transfer instruments
- Calibration of flowmeters up to DN2000

Life sciences industry

As a compliant partner, we:

- Perform calibration of any kind of process measuring point according to cGMP regulations and universal guidelines
- Document any service provided
- Prove traceability by ensuring the conformity to Standard Operating Procedures
- Keep service staff trained to GxPs.

Food & beverage industries

- Calibration within HACCP requirements
- Calibration management strategies to support production costs concepts

Chemical industries

- On-site flow calibration rigs up to DN150
- Calibration of all kinds of safety relevant measuring points
- Calibration of flowmeters up to DN 2000

Renewable fuels industry

- On-site flow calibration rigs up to DN150

On-site calibration of temperature measurement sensors



... offer you the benefits of a true partnership ...

Thanks to our numerous calibration laboratory and primary facilities, we have carried out more than one million calibrations.

Above all we see our calibration service as part of your repair and maintenance planning. Our aim is to provide you with complete calibration management solutions. At the forefront of this is the tuning of calibration cycles, planning dates for carrying out calibration work, the co-ordination of personnel and certified calibration equipment.



Discussion around the metrology plan



SOPs, calibration certificates, labels and electronic recordings

1 Calibration specification

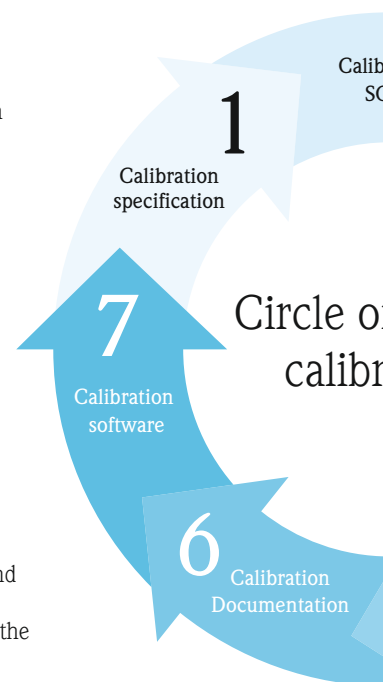
Endress+Hauser will help you to establish your metrology plan by fixing your calibration specifications per parameter (maximum permissible errors, periodicities) or by defining the right reference tools according to their uncertainty. Together, we will work out which parameters have to be calibrated on site and, in the case of high accuracy requirements, which need calibrating in the laboratory.



On-site calibration of temperature instruments

7 Calibration management software
CompuCal™ is a high performance scheduling and electronic software tool that help to control the scheduling activity around your installed base, providing traceable and auditable records.

6 Calibration documentation
We support our service with certified and traceable documentation. A calibration certificate compliant with the ISO 17025 standard is issued. It details all required data in form that is easy to understand. Importantly, it also satisfies all relevant authorities.



“We not only want to determine the flow, but also want to know whether the device measures correctly in the production line concerned. That is much more beneficial to us. It also means that the whole measuring path as far as the process control system is calibrated. In the end we have to decide what we can do with our own staffing resources and what services have to be subcontracted. Thus our technical manager Kurt Pfäffli arranged for on-site calibrations by Endress+Hauser. That kind of work should be done by specialists as our own people are too involved in the day-to-day running of the business.”



Peter Roth
KNF production manager
Wander (a Swiss subsidiary
of Associated British Foods)

“The basis of all production processes in the pharmaceutical industry is calibration. Calibrating is not an easy business, especially in view of the requirements of biotechnology (...) One should assume that anyone offering such services would know his business well. This is very definitely not so.” Originally, the strategy of Strathmann Biotec was that every equipment supplier calibrated their apparatus themselves. “One day we were sitting here discussing things and we remembered that Endress+Hauser offer a manufacturer-independent calibration service ...” Endress+Hauser took over the calibration of all measurement installations including those from other manufacturers.



Dr. Wolf-Rüdiger Klein
Plant manager
Strathmann Biotec (Germany), a specialist
for contract manufacturing of plasmid
DNA and recombinant proteins for the
clinical study phases 2 and 3

... and complete calibration services.



2

Calibration SOPs

We offer a full range of Standard Operating Procedures to support our on-site work. SOPs ensure that our work is repeatable all over the world. We also provide site specific SOP's noting which measuring parameters have to be calibrated on-site and in case of high accuracy requirements, which need calibrating in the laboratory.

3

Test equipment

Local service centers provide a one-stop calibration and repair service to a wide range of test, measurement and process control instrumentation. So whether you need pressure, analytical, temperature or flow calibration, look no further. All of our facilities are traceable to national and international standards. This means you are guaranteed the highest level of service compliant with the ISO 17025 standard.



On-site calibration of pressure devices



Laboratory calibration of level instruments



On-site calibration of analysis devices

3

Test Equipment

4

Trained Employees

5

Calibration Work

5

Calibration work

All of our primary calibration facilities operate and are accredited to ISO17025 and are located around the world. We own and operate more calibration laboratories than any other instrumentation supplier. As a leading supplier of field instrumentation we not only can calibrate, but also quickly and efficiently adjust, repair or replace equipment that is failing to meet the specified criteria. Our specialists have the necessary skills and equipment to calibrate all makes of instruments.

4

Trained employees

On-site calibration is performed by specialist, highly trained staff. This relieves your in-house maintenance staff from routine time consuming tasks and allows them to focus on improving plant availability. For you this means reliable advice, optimum performance of your instruments and true cost-effectiveness. Our service engineers are trained in accordance to GMP and we can offer full validation services if required.






On-site calibration of flowmeters using mobile flow rig



Measurement parameters covered

Endress+Hauser performs instrument calibrations across a variety of measuring principles. We even extend our calibration service to third party equipment to reduce time, effort and cost in terms of coordination and documentation.

| Parameter | Equipment type | Calibration location |
|------------------|--|--|
| Temperature | <ul style="list-style-type: none"> ■ Resistance thermometer ■ Probe + temperature transmitter ■ Probe + display | On site |
| | | In the laboratory  |
| Pressure | <ul style="list-style-type: none"> ■ Manometers ■ Pressure sensors ■ Pressure transmitters | On site |
| | | In the laboratory  |
| Flow | <ul style="list-style-type: none"> ■ Electromagnetic flowmeters ■ Vortex flowmeters ■ Coriolis flowmeters ■ Ultrasonic flowmeters ■ Thermal flowmeters ■ Mechanical flowmeters | On site |
| | | In the laboratory  |
| Conductivity | Conductivity measuring chain including cell, transmitter and cable | On site |
| pH | pH measuring chain including cell, transmitter and cable | On site |
| Other parameters | On request, we can calibrate other parameters. Please contact your local Endress+Hauser partner for further information. | |

Accredited facilities

Thanks to accredited laboratories installed in our factories and our service organization, we can offer the accredited calibration of:

- flow,
- pressure and
- temperature measurement devices
- moisture
- voltage, current

On-site calibration

Having also invested in mobile reference tools and in the deployment of a powerful Service organization in many countries, Endress+Hauser can also perform on-site calibration of the following parameters:

- flow
- pressure
- temperature
- weight
- viscosity
- time
- length
- speed
- conductivity
- voltage, current

We suggest that you ask your local Sales Center about any particular request.

Accredited calibration of flowmeters at Endress+Hauser facilities





Powerful solutions for calibration and documentation management



CompuCal™

If we consider on-site calibration, the needs are to schedule the activities, arrange with the production personnel to make the plant available and then plan the tools and the technician. Once the job is done, the user has to edit and archive a calibration certificate.

CompuCal, Endress+Hauser's calibration management software, is fully able to handle all these demands. Developed with key users and proven in use in the pharmaceutical and regulated industries, CompuCal allows to efficiently maintain and calibrate your on-site instrumentation.

CompuCal is a fully validated to 21 CFR Part 11 solution, used for many years by well-known pharmaceutical companies such as Roche, GlaxoSmithkline and Pfizer for the management of their quality critical devices.



CompuCal™ and life cycle management

CompuCal will dramatically improve calibration planning, improve the efficiency of your metrology department, reduce the cost of maintenance and at the same time satisfy the requirements of your auditors. CompuCal also provide links to W@M, Endress+Hauser's life

cycle management solution. This connection allows the user access to enhancement possibilities for your installed base.

According to the serial number of your equipment on the plant, the link allows the user to download the calibration certificate issued in the Endress+Hauser's laboratories, to find out technical information on status of the product, to search for the spare parts list with exploded view of the equipment and even to access to the price and delivery time of spares or a new device etc.

Additional documentation available:

CompuCal
Calibration Management System
CP012S/04/en/07.08

W@M-Life Cycle Management
Supporting your business processes
CP001Z/24/ae/08.07

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