

# Train with Endress+Hauser

## Develop your skills to work smarter





# Training by the experts

As the number one supplier of process instrumentation in the UK, Endress+Hauser recognises the need to provide high quality skills training in order to help you optimise the effectiveness of your instruments over a long working life.

Whether it's helping your staff understand the measurement principles or teaching advanced diagnostics and long-term asset management, we have the facilities and the expertise to work with you to meet all your training requirements.

In today's competitive marketplace, it's vital to have a well trained and motivated workforce. Investing in employees ensures the continued success of the company. Endress+Hauser has developed a suite of courses and content designed to help at all levels to ensure your staff are knowledgeable and competent to work on the valuable asset represented by your instruments and control equipment.

Our training team can come to you and deliver bespoke courses or you can visit us in our state-of-the-art training centre in Manchester.

## Our facilities in Manchester include:

- A 12-seater classroom fitted with state-of-the-art audiovisual (AV) equipment to ensure a modern and comfortable environment for learning. Interactive software and AV equipment allow all participants to actively take part in the training.
- A purpose-built workshop allows you to get hands on with the equipment. All power supplies, test equipment and measurement evaluation tools are close to hand. In this environment you can learn to maintain, fault-find, repair and reprogramme instruments at your own pace. A central training area is supported by seven individual work benches.
- A central training and process area.

The main training area is designed to simulate a real process environment and comprises:

- A gas flow rig equipped with all common flowmeters, Rockwell Automation PLC and HMI, supporting PROFIBUS PA/Ethernet IP communication protocol.
- A pressure rig for PID loop tuning using PROFIBUS PA protocol.
- A batch control rig for liquid dosing, with traditional loop powered/HART protocol.
- A large process rig with various measuring techniques, drives, valves and process control.
- Commonly used networks including PROFIBUS, Ethernet IP, 4-20mA HART and wirelessHART.
- Central control room featuring Rockwell Automation HMI and PLC with process control and plant asset management facilities for all instruments in the training centre.

# Instrumentation training

As the leading manufacturer of process instrumentation, Endress+Hauser has more than 60 years' experience in measurement technology and process automation. Our courses are designed to help us pass on this knowledge in a structured way and are segmented so that you can easily decide the best one for your requirements.

## Basic instrumentation courses

**Target audience** New starters, apprentices, process operators, engineers from other disciplines.

**Content** Typical content will include our suite of online learning modules, videos to show how instruments work, theory and practical work to demonstrate the physical and chemical principles of operation, product ranges and basic application of instruments. The course will be supported by a range of practical exercises and hands-on working with instruments to understand the functions they perform. Product training can be arranged for all measurement types including flow, level, pressure, analysis, temperature and system components.

## Instrumentation: product and application training

**Target audience** Year 2 and 3 apprentices, project engineers, installers and contract installers.

**Content** Typical content will include in-depth training on measurement principles, how to apply instruments, installation guidelines, connections and outputs, and set-up and programming, both on the instrument and via a laptop. We will teach you how to follow a structured process to achieve a smooth installation and start-up. Performed on site or in our workshop training area, these courses have a significant practical element working with live equipment. We will investigate common start-up problems and try to pre-empt some avoidable issues.







### Instrument maintenance and breakdown recovery

**Target audience** On-site maintenance engineers and contract maintenance personnel.

**Content** Typical content will cover safe working on the instrument, compliance with regulations, product construction, components and spares interchangeability, fault-finding, programming, reprogramming, downloading, storing and uploading programmed data, handling device drivers, mapping, calculating and setting up pulse outputs and linearisation functions.

### Instrument verification

**Target audience** Senior on-site maintenance personnel.

**Content** Typical content will include tooling and software for verification (including Fieldcheck), hotblocks, RTD simulators and pressure sources. Training will include safety, standard operating procedures, a step-by-step approach to verifying instrument performance and recording and storing the calibration data in a traceable manner. Endress+Hauser Fieldcare and W@M tools are key components of the course.

### Application workshop

**Target audience** Plant and project engineers who want a detailed knowledge of instrument applications.

**Content** In the form of a workshop, this course will cover a measurement topic, e.g. level, pressure, flow, pH, turbidity, etc and provide you with an in-depth understanding of how to apply, install, commission and set up measuring devices. We will explore typical applications and product selection in the classroom and then move on to the rigs to examine installation, start-up and management of the instrument.

### Process instrumentation and control for apprentices

**Target audience** Apprentices.

**Content** This course is designed to develop a working knowledge of process instrumentation and control techniques. Covering instrumentation theory, control loops, use of tools and test equipment, this course focuses on the basic skills apprentices need in their future career. We will work with you to develop a bespoke course designed to accelerate the development of your apprentice engineers.



# Field communication training

No matter which transmission technique or digital protocol you have chosen for your plant, we have a course to help you fully understand, design, install, test and maintain your networks to provide maximum reliability and plant availability.

Courses are available for the following network types:

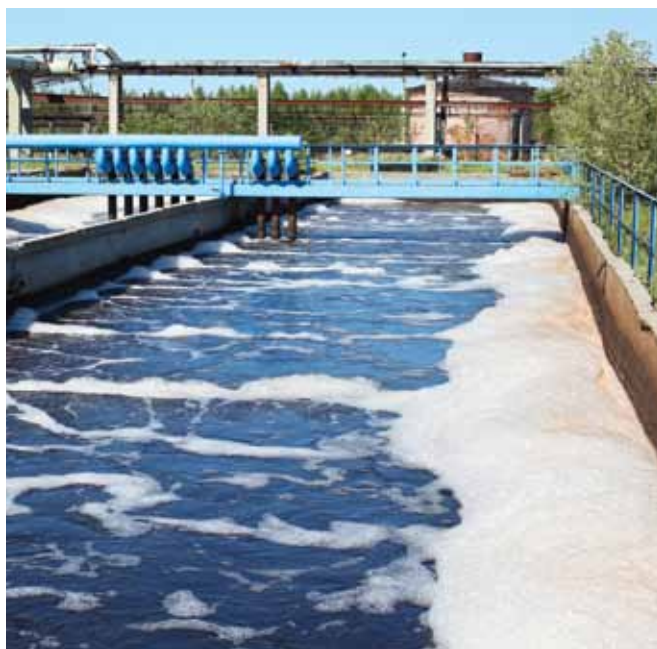
- 4-20mA HART
- WirelessHART
- PROFIBUS PA and DP
- FOUNDATION Fieldbus
- Ethernet IP
- Modbus
- AS-i

All networking courses are designed to explore the basic principles of the particular transmission type, how to design a typical network and how to set up test and maintain the resulting network. Courses are aimed at designers, commissioning engineers, maintenance technicians and installation engineers.

Courses will include the relevant regulations and standards and will advise on best practice techniques. All courses include training on the main components used, system architecture and how to integrate the protocol to the host system. Whichever network you choose, Endress+Hauser training can help you to ensure optimum efficiency.









# Process control and optimisation training

Our process control and optimisation training courses have been specially designed to help you get the optimum efficiency out of your plant and to help you manage your valuable assets effectively.

## Plant asset management

A course designed to help you to manage the valuable assets in your process control system. Covering topics such as asset information and management, device configuration management and calibration management, it combines plant asset management tools with the associated services to ensure your life cycle management needs are fully met.

## Inventory management

A course designed to help you measure and manage both in-house and remote inventories. Communication, transmission techniques and management solutions are all core to the subject.

## Energy management

A course covering the basic requirements for energy monitoring and management. It covers measuring principles, correct device selection and integration into energy monitoring software including final data analysis and improvement recommendations.

## PLC programming

This course will teach you the basics of ladder diagram programming based on the widely adopted standard IEC 61131-3. The course introduces you to the basics of Programmable Logic Controllers (PLCs) and teaches the techniques of writing programmes to deal with a range of practical problems. Blending theory and practical exercises, the course will take you through the basic techniques of ladder programming to solve combinational logic problems.

## PID control with loop tuning

Learn the theory of process control, loop tuning, single loops, cascade control and control with dead time. Classroom training covers the theory, before moving on to our working rigs for practical exercises. Starting with the basics of loop tuning on our dedicated pressure rig, you will then move on to our multi-parameter process rig. Incorporating level, flow, pressure, temperature, density and analytical loops, you will have access to several PID loops in a live working situation.

# Meet the trainers



## **David Stokes, Training Manager, Endress+Hauser Ltd**

David has worked at Endress+Hauser for over 30 years in a number of technical roles including Product Specialist for pressure, temperature, data recording and analysis. Combined with many years as Sales Office Manager, David has a wide experience of many applications in a wide range of industries. David uses this experience to develop introductory courses that combine theory and practical content to train people in basic principles and applications.



## **Mick Challinor, Senior Service Engineer, Endress+Hauser Ltd**

With an eight-year stint in the RAF as an Avionics Technician, Mick joined Endress+Hauser more than 20 years ago, gaining his initial experience in a workshop before moving into field service. Mick has a wide product and application knowledge across level, flow and analytical instrumentation with a bias towards digital communication. His extensive knowledge and skill set enables Mick to support Endress+Hauser colleagues across the company and deliver product training to customers within their own environment.



## **David Ashcroft, Flow Product Specialist, Endress+Hauser Ltd**

Coming from a background of engineering and maintenance work in the oil & gas industry in Saudi Arabia, David Ashcroft returned to the UK and joined Endress+Hauser as a Product Specialist more than 17 years ago. Since then, David has been the specialist support person for the entire Endress+Hauser pressure range and latterly the flow product portfolio, offering technical support, advice and training across a range of technologies and industries.

*“We have a growing number of trainers who will apply their personal expertise across a wide range of topics to ensure we meet all of your instrument and process automation training requirements.”*

David Stokes, Training Manager, Endress+Hauser Ltd



**Andy Verwer, Director, Verwer Training & Consultancy Ltd**

Andy has over 30 years of experience working and teaching within the automation and control industry. Previously the Principal Lecturer at Manchester Metropolitan University, Andy now runs his own training and consultancy organisation specialising in courses on PROFIBUS, AS-i maintenance and commissioning and PLC programming. Andy brings a unique blend of teaching and industrial experience to the team.



**Peter Thomas C.Eng Eur.Ing MInstMC, Control Specialists Ltd**

As a Process Control Engineer working for Control Specialists Ltd, Peter has 30 years of practical experience in several areas of process automation and optimisation gained in a wide range of industries including chemical, oil & gas, life science, pulp & paper, water & wastewater, and food & beverage. His practical experience includes programmable control system software design, GAMP validation, PID loop optimisation, control system support and PROFIBUS/PROFINET support. He regularly gives process control loop optimisation training courses around the world and also delivers PROFIBUS training courses in the UK covering installation and fault-finding techniques.



# Developing engineers of the future

Endress+Hauser firmly supports the education and development of young engineers. We have our own apprentice and graduate in-house schemes, which are well proven over a number of years. As an extension to this we are now linking up with educational establishments including schools, technical colleges, universities and apprentice training schools.

Currently Endress+Hauser is working with the new University Technical College Wigan, a specialist 14-19 Academy for engineering and environmental technologies developing young people with the skills required by the food & beverage industry. We support the school's specialist curriculum with equipment and our expertise in this sector.

Reaseheath Food Centre, part of Reaseheath College, is an industry-leading academy with an international reputation in the food and drink sector. In conjunction with Arla Foods and other major players in the industry, it manages the Eden Food Technology & Engineering courses, designed to develop the engineers of the future. Endress+Hauser is heavily committed to supporting the project and is involved in a number of initiatives, including learning days, equipment supply and curriculum support.



# my | eCampus online training

Endress+Hauser's my | eCampus provides high-quality online training programs in industrial process engineering.

Technical staff and students studying towards technical qualifications can use these programs around the clock to develop their knowledge of measurement technology and automation solutions in a user-friendly way.

Measurement technologies and application solutions are presented in a practical, interactive way across a range of parameters, enabling trainees to expand their technical knowledge in the process engineering field. Courses also include industry-wide issues such as explosion protection, functional safety and calibration.



Visit my | eCampus at:

<https://endress.my-e-campus.com>



Little or no prior technical knowledge is required to complete the training courses.

Online learning with my | eCampus offers:

- Engaging and educational learning modules
- Quality-assured content from experts in the field
- Learning at your own pace - any time and anywhere!
- Savings in travel time and downtime
- Wide range of interactive program functions
- Progress indicator and certification to support your continued success

# The ideal training venue



Located in south Manchester, close to the airport and motorway links, Endress+Hauser's training centre is easily accessed from all parts of the country.

Our state-of-the-art facilities lend themselves to a wide range of events, in our modern, recently-refurbished Application, Engineering and Training Centre.

The venue is available for rental by companies, organisations, societies and groups who are looking to host an event in the Manchester area. We can provide refreshments, lunch at our in-house Restaurant Lausanne - and we even offer organisational support for the event!



For more information on hiring our training facilities, please visit: [www.uk.endress.com/training-centre](http://www.uk.endress.com/training-centre)





## UK

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