# maintenance today

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# Competent calibration: no more, no less



# maintenance today

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For more information on any of our services, please visit www.uk.endress.com/services

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# Don't get caught out... calibrate!

Regular calibration of your measuring instruments is undoubtedly important to the operation of your plant. Failing to calibrate can have a serious impact on your process that can go unnoticed for years until it starts to affect performance and your bottom line. It's just a matter of time before you get caught out.

At Endress+Hauser we understand the importance of highly accurate calibration. We maintain more calibration facilities worldwide than any other flowmeter manufacturer, so if you choose to send your instruments to us, you can rest assured they're in expert hands. At our UK headquarters we have dedicated facilities for flow, pressure, temperature and analytical calibration – all of which are traceable to national standards and meet the requirements of ISO 17025.

More than 4,000 UK customers trust us to calibrate their instruments in our laboratories, guaranteeing the best calibration uncertainty and the widest calibration ranges. It's worth noting that we offer a local collection and delivery service for your devices and can calibrate at your premises if you'd prefer. Our service includes third party devices, so whatever your requirements we have a solution that can work for you!

Christian

Christian Blood Calibration Engineer





For more information on our calibration competence, see pages 4-5.



Above: Our air flow calibration rig in Manchester. Below: Flowmeter calibration.



### 10% off calibration!

When you buy a new device from Endress+Hauser, our Start Up package offers extended warranty, free commissioning and a 10% discount on your first calibration. Ask our Service Department for details.



# Factory calibration: compliant and cost-effective

Endress+Hauser performs and advises on all aspects of calibration from in-situ testing through to fully accredited factory calibration. In the last issue of *Maintenance Today* we introduced you to our wet flow calibration rig, which incorporates the very latest developments in flow technology for maximum accuracy. But we also have a range of other calibration facilities that are all traceable to national standards and meet the requirements of ISO 17025. All are operated by our trained and experienced service technicians.

### Air flow calibration

Endress+Hauser is one of very few companies in the UK to offer air flow calibration. We are very proud of our dedicated air flow calibration rig because, as a leading manufacturer of gas flow equipment, we know that testing your instruments with the right medium is important. So if your flowmeter is primarily used to measure gas, calibrating that device with air is more representative than a water flow calibration. You can rest assured that whatever type of calibration you choose, it will be carried out by highly skilled technicians with expertise in instrumentation and process applications.

Another advantage of the air flow calibration rig is speed: as there's less demand for this specialist service we can offer a faster turnaround, meaning you get your device back in the process as quickly as possible. We also offer very competitive pricing due to having our own in-house facility. An average competitive price for air flow calibration is in the thousands, yet our standard cost is just £510.

The air flow rig can calibrate vortex, Coriolis and thermal flowmeters in the following ranges:

- Sizes: 8mm up to 80mm
- Mass rates: 1.5 850kg/hr
- Volume rates: up to 600m<sup>3</sup>/hr (nominal pressure 1.5 barg - 3 barg)

The need to regularly check, calibrate and adjust instruments is a critical activity within every qualitycontrolled organisation. By sending your devices to Endress+Hauser for factory calibration you can be assured of the highest levels of accuracy and a fast turnaround. As well as flow calibration we offer calibration of pressure and temperature in a controlled environment.

#### Pressure

Pressure calibrations are carried out by one of our highly trained technicians, dedicated to calibrating your pressure instruments to your own metrological specifications in our laboratory. We can calibrate device ranges from 20 mbarA up to 50 barg to a certified uncertainty of  $\pm 0.015$  mbar in the range of 20 mbarA to 10 barg or  $\pm 0.05$  bar in the range 10 barg to 50 barg.

### Temperature

Temperature measurement is a vital factor in the quality control of your final product. In our in-house laboratory we will calibrate your temperature instrument to your specific requirements (from  $-15^{\circ}$ C up to  $650^{\circ}$ C).

### Analytical

We now offer a calibration service for your Memosens digital sensors, either on site or in our laboratory. A final report would include all of the sensor's calibration and operation history, including a chart showing historical slope and zero point - vital aids for predictive maintenance. We can also carry out conductivity and pH calibrations traceable to national and international standards.

For more information or to book a calibration, please
contact the Service Department on 0161 286 5150
or email info@uk.endress.com

## **Applicator:** Green light your next investment

Do you want to guickly find the 'best fit' product for your application? Applicator is a convenient tool for selecting and sizing the appropriate measuring instrument. Simply enter your known parameters and Applicator will determine a reliable selection of suitable devices from Endress+Hauser's product portfolio for level, flow, density, pressure, analysis and temperature measurement, as well as recorders and system components.

A simple traffic light system gives you the guidance you need: a green light means an instrument is recommended for the purpose you intend; amber signifies certain restrictions; and beverage industry. red denotes the instrument isn't suitable for your application. With the ability to compare products and access a wealth of

### Now even easier!

decision.

A new version of Applicator has now been launched with a number of features to make selecting and ordering products even more simple:

in-depth product information, you are sure to make the right

- New Applicator start page for direct access to the different engineering modules.
- Intuitive navigation with a fresh new look.
- New features in the selection module including industry-specific parameters, result indicator and a new segmentation of the input parameters.
- New Proline flow products added to the sizing flow module.

 New industry applications added: rectification for the chemical industry and juice production for the food &

#### **Sizing flowmeters**

Select a fluid and instrument, enter the process conditions and reference values and Applicator's Sizing Flow module will calculate a suggested diameter of the flow device for the application. The sizing results such as pressure loss, accuracy, and meter operating range are clearly presented in absolute figures and charts. Selected process connections are verified in relation to your requirements and conformity to the Pressure Equipment Directive (PED) and corrosion resistance - so you can be sure you've got everything covered!







### E-direct: fast ordering of everyday products

When it comes to purchasing everyday devices used in simple applications there's often no need to consult one of our technical engineers. In most cases you already know which device you need and simply want to place an order as quickly and easily as possible. To help with this we've introduced our new E-direct website.

### High quality, great value

E-direct covers our range of high-quality, basic instruments for the monitoring and control of liquid and solids level, flow, temperature and pressure along with field and panel-mounted system components such as process displays, power supplies and barriers, data recorders and a selection of simple analysis packages.

### Simple selection

Products are easy to select as they're all clearly grouped together by measurement type. All of the required technical information such as supply voltages, outputs and performance characteristics is readily available. Dropdown menus will help you to select the right instrument for your requirements.

### Fast, free delivery

All E-direct instruments are available on a short lead time (two or five days). Delivery times are clearly displayed next to each instrument, helping you to choose which unit to order. Prices for each device, including all carriage charges, are also displayed along with discounts, helping to save you time as there's no need to request a quotation. And, should you need further advice or can't find what you're looking for online, our technical sales engineers are always available to help.

### The right product at the right time

- Simple to select features and pricing options.
- Warranty replacement: if a device fails while under warranty, a replacement device will be sent to you quickly.
- Cost-effective pricing: E-direct offers high quality instrumentation with just the features you need so that you get the most cost-effective solution. These products are also offered with tiered discount levels for higher volume purchases.
- Quick delivery: receive products when you need them.











"Flowhire has the largest range of flowmeters and metering systems currently available for hire."

Matt Bancroft: Director at Flowhire.



### Can you tell us a bit more about Flowhire?

Flowhire was born from its sister company Flowquip Ltd, an independent supplier of flowmeters and flow measurement systems. Flowquip was founded in 1982 by my father, Roger Bancroft, who saw the opportunity for an independent flowmeter specialist. Flowquip grew and in the 1990s discovered a market for temporary flowmetering, particularly for the measurement of compressed air and steam. In 1999 Flowhire was established as a company in its own right and I joined the company to take the business further. Fifteen years on, Flowhire has the largest range of flowmeters and metering systems currently available for hire.

### What kind of products do you stock?

The measurement technologies include electromagnetic, vortex, Coriolis, thermal mass and ultrasonic. Flowhire has kept Endress+Hauser products as the main basis of the hire fleet due to the reliability, support and range of products. The hire fleet is vast, covering electromagnetic meters from 2mm to 300mm and Coriolis meters from 1mm to the 80mm Promass O suitable for aggressive media and pressures up to 258 bar. Many meters are available with options such as ATEX or hygienic fittings.

### What are the advantages of hiring a flowmeter?

There are three main benefits. The first is availability: our customers often require meters on a next or same day basis

# Endress+Hauser and Flowhire: A smooth-flowing partnership

Consistent product quality, safety, process optimisation and environmental protection – these are just some of the reasons why industrial flow measurement is becoming increasingly important. Water, natural gas, steam, mineral oil and chemicals are some of the fluids that have to be measured day in, day out. For that you need a reliable, accurate flowmeter, which can of course be purchased direct from Endress+Hauser. But did you know you can also hire our devices? Through a partnership with West Yorkshire-based company Flowhire, it's possible to take out a short or long-term rental of an extensive range of equipment. Flowhire's Matt Bancroft agreed to speak to *maintenance today* about the family business and that crucial relationship with Endress+Hauser...

in the event of a breakdown in a critical application or if there's a sudden change in project requirements. Because of the vast variety of metering technologies and sizes it's not always possible for customers to keep spare meters on site. The second benefit is that it allows customers to try an instrument before they buy, proving its suitability before making that investment. The final reason relates to capital expenditure considerations. With budgets for new equipment being more tightly controlled, hiring enables customers to solve their meter problem using maintenance budgets rather than having to go through the tendering processes for capital purchasing.

### Is it becoming more common to hire instruments?

Certainly with the demand to save energy along with companies feeling the pressure to keep costs down, having the option to hire is a big bonus. There are a growing number of hire companies offering ultrasonic 'clamp-on' meters that are portable and can be used on most pipe sizes but they aren't suitable for all applications. As Flowhire offers virtually every metering technology in most sizes, this enables us to supply the most suitable meter for the application rather than trying to make a standard meter fit and hoping it gives the required performance and results.

Why does Flowhire focus on Endress+Hauser devices? In the early days we had a few meters from different manufacturers and found the Endress+Hauser instrumentation to be very reliable. Furthermore, the programming matrix on the meters is simple and intuitive: this is important when configuring up to 40 different flowmeters per week!

### What if a customer isn't sure which device they need – can you offer technical support?

There are many examples of our flowmeters on our website with information on flow ranges, available sizes and typical applications. We have avoided the temptation to become an online shop as we prefer to talk to our customers and discuss the application in detail, ensuring that the meters are not only correctly specified but also fully pre-configured to the customer's requirements. We offer full technical support from our office five days a week and provide an out-of-hours support number if required, particularly where meters are being installed over a weekend or used for a critical test.





Find out more about Flowhire at: www.flowhire.co.uk

# **On-site flowmeter verification**

Is removing flowmeters from the process an obstacle to calibration in your application? Or are you interested in extending calibration intervals? Endress+Hauser's Fieldcheck verification tool could be the answer.

Fieldcheck enables checks of Proline flowmeters across a range of technologies: Coriolis, electromagnetic, vortex, ultrasonic and thermal mass. In less than 10 minutes you can perform the verification of either the sensor or the transmitter without removing it from the pipeline. In addition, Fieldcheck is capable of simulating a sensor signal to the electronics for testing the transmitter's and/ or the PLC's response to flow.

At the end of the sensor and transmitter checks you can be sure that the instrument is healthy and can then retrieve, archive and share verification results. Up to 20 verifications can be archived in the Fieldcheck internal memory and data can also be downloaded to Endress+Hauser's asset management software, Fieldcare. It allows access to the previous verification results (using the meter's serial number) to print the results and generate a verification report.

### Intermediate verifications

You can periodically measure the response of a flowmeter to reference conditions. The measured data can then be visualised and compared to the stored data. If you find no significant difference, the flowmeter is still in good health.

### What does Fieldcheck offer compared to a true calibration?

Calibration is a comparison of the complete measuring system against a known reference. In comparison, Fieldcheck performs a verification of the original calibration with checks including transmitter and ouput uncertainty and additional tests of sensor integrity.

### What about compliance to regulatory requirements?

As an external calibration reference independent from the unit under test and the application conditions, Fieldcheck offers full traceability. As regards global quality systems such as ISO 9000, which require periodic actions but do not specify which kind of verification, the use of Fieldcheck is an economically attractive and efficient solution. As regards FDA requirements for the life sciences industry, certain auditors now accept intermediate verification between calibrations.

### What about traceability?

Any verification report printed shows the serial numbers of the Fieldcheck, the simulation box and the sensor test box. Endress+Hauser can also supply the Fieldcheck's calibration certificate. Calibration of Fieldcheck itself is carried out at Endress+Hauser's accredited calibration laboratory that complies with ISO 17025.

### Skills needed

Although Fieldcheck is easy to use, flowmeter verification is a skill. We recommend the following options: either purchase the tool with training or take advantage of Endress+Hauser services that include verification.



Please contact us for more details: call 0161 286 5150 or email: info@uk.endress.com





## Device-specific information in a click!

Our free Device Viewer tool provides fast access to a wealth of device-specific information at the click of a mouse. By entering a valid serial number (found on the nameplate of your device) important device information such as order code details, date of production, product status/availability, spare parts, technical information and documentation can be quickly retrieved allowing you to keep your plant up and running at optimum.

Device Viewer				
By entering a valid Endress+Hauser serial number you can access specific device details such as order code details, date of production, product status/availability, spare parts, technical information and documentation. The serial number can be found on the name plate of instruments.	Ś	Endress+Hauser CD PROMAG W Order code 50W40-UA0A1AA0AEAW Ser. No.: A8108219000 TAG No.: ABC001		
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e-mail address				

### Need your device information on the go?

Our mobile 'Operations' app offers fast access to this wealth of device-specific information on the go. Simply input your device's serial number or quickly scan the device QR code for immediate access to information such as technical information, operating manuals, order code, availability, spare parts and even replacement products. Better still, once searched, your instruments appear in a Device List – all ready for future use at a touch. You even have the option to email device details to your colleagues, so you'll always have the information you need in a flash!

Available for iPhone, iPad, Android smartphones and tablets: it's free, it's handy and it's quick to download – try it now from your app store!

### An overview of the app functions:

- Detailed device-specific information
- Device List: a list of all devices found from previous searches
- Documentation downloads: technical information, operating manuals and certificates
- Spare parts information
- Share your information with your colleagues via email
- Recommend the app via Facebook, Twitter or email!



# W@M: Reaping the benefits of good asset knowledge

Having a clear picture of your installed base is fundamental to asset performance and is proven to reduce both capital and operating expenditure. An Installed Base Audit is, therefore, an excellent starting point to begin effectively managing your assets. However, the information gathered during an IBA needs to be used effectively in order to reap its full value. That's where Endress+Hauser's W@M Life Cycle Management portfolio comes in: we have tools to help you manage your technical data and operational information that will not only reduce your workload but also improve process quality.

### Web-based asset management

After an Installed Base Audit, the information gathered will be collected and processed in either the W@M Portal or W@M Enterprise (see info boxes). Both platforms offer quick and ready access to documentation including calibration certificates. For all Endress+Hauser products, the complete documentation set is available. You can also attach your own important documents related to any registered device (e.g. CAD drawings, certificates). With a single click you may even assign a document to all devices of the same type. If Endress+Hauser repairs or calibrates an instrument, this event is logged automatically (maintenance and repair reports are also available on request). Spare part lists for Endress+Hauser instruments are automatically available, with exploded view drawings available to help identify the right parts.

### Managing obsolescence

The W@M Life Cycle Management tools are much more than just a place to store documentation. Thanks to the online connection to Endress+Hauser's product database, you automatically benefit from up-to-date information on your instruments e.g. product availability, original calibration certificates, operating manuals, etc. It's easy to identify if instruments are - or about to become - obsolete: vitally important information in the case of critical instruments! When it comes to sourcing replacements or buying new devices, our Applicator tool as part of W@M Portal and W@M Enterprise will help you to select the most suitable instruments and measurement technology that best fits your requirements. You can also check availability and prices, request quotations and order quickly online.



### Easy plant navigation

With multiple measuring points, navigating your plant can be a complicated process. We have added a plant structure to the W@M Portal and W@M Enterprise so that you can easily 'walk through' the entire plant and get a clear overview of your installed base of instruments. Any combination of locations, applications, loops and bus systems can be mapped, allowing you to reproduce the exact structure of your plant. Even third party devices (e.g. valves and pumps) can be added and are simple to manage due to the easy-to-use templates. The process criticality of your instruments is displayed in a matrix so it's easy to see where to direct your maintenance efforts. Ready access to information also helps you to manage the standardisation of your installed based, reducing training costs and improving efficiency.

### Task scheduler

The integrated task scheduler will assist you with your maintenance management activities and keeps track of routine tasks such as repair, maintenance or checking. A task can be assigned to any recorded device and user; the automatic notification (via email) will remind users of their scheduled tasks.



### W@M Portal or W@M Enterprise?

The W@M Life Cycle Management portfolio offers two platforms: W@M Portal and W@M Enterprise. Depending on factors such as IT requirements, security level and internet availability at your plant, you can choose which system works best for you.

### W@M Portal

- Hosted by Endress+Hauser no local installation is required.
- Accessible worldwide from any computer with internet access via secure login (username and password).
- You benefit from a 128-bit encrypted internet connection.
- Offers easy integration into existing computerised maintenance management systems.
- We can train you to use the portal or manage it on your behalf.

### W@M Enterprise

- Available through a local client/server installation at your site.
- Can connect to Endress+Hauser servers for data download (pictures, product availability information, spare parts, etc).
- Newly purchased instruments and service or repair events are added automatically.
- Sensitive third party device data is stored locally. Endress+Hauser data is stored locally and remotely.

For more information on W@M Life Cycle Management, please contact the Service Department on 0161 286 5150.

## How to set up a Coriolis flowmeter

Commissioning a flowmeter can be a daunting prospect if you're not familiar with the process. However, there is a quick and simple procedure embedded within the Promass flowmeter menu structure, known as the 'Quick Setup'. This procedure enables you to commission the flowmeter for standard applications simply and quickly. This guide will help you to work your way through the selection process, choosing the option most suited to your application. Within a short space of time, your flowmeter will be configured to provide an optimum measurement.

### How to navigate the display

The + and – buttons allow you scroll through the menu options available and also to change numbers or letters, for example when setting flow values or a name tag. The E button is the 'Enter' button, allowing you to select the highlighted option. A change to the menu, such as a number or engineering unit for example, requires two presses of the E button: one to enter the change and another to accept that change as valid. By pressing both the + and – button simultaneously, you can jump out of the menu section you are currently in and return to the beginning of the 'Quick Setup' menu. Any parameters accepted and stored before then will be saved.



Accessing the Quick Setup menu.

#### Starting the commissioning process

As the Promass is capable of separately measuring liquids and gases, choosing the appropriate option available to you in the 'System Units' part of the menu is important. This guide takes you through the setup for liquid mass flow.

At the 'Home' position, press the E button to enter the menu and use the + or – key to scroll through the menu until you arrive at 'Quick Setup'. Using the E button, accept this option and you will enter the menu 'QS Commission'. Using the + or – buttons, change the word 'No' to 'Yes' to indicate you wish to commission the instrument. Press E

and you will be presented with a new screen 'Access Code', with a blinking arrow and four asterisks after it. The code (factory setting) is the same number as the flow instrument; for this example (a Promass 80E), you should enter the number '80'. Enter the first number by repeatedly pressing either the + or - key. Now press the E button and the arrow will jump to the second position. When you've entered the second digit, again using either the + or - button, press the E button once to confirm the changes and once again to accept the full access code. You are redirected to the 'QS Commission' screen: again use + or - to change the 'No' to 'Yes' and press the E button twice. Use the E button to accept the preferred language as English. At the 'Presetting' screen, accept the 'Delivery Setting' option. These are the settings configured in the factory.



The Access Code is the same number as your flowmeter.

You are now offered the option to choose within the 'System Units' menu which measured variable you wish to use, for example 'Mass Flow'.

Stepping through each part of this menu structure using the + or - buttons, make the appropriate changes to suit the application. At the end of this part of the menu, you will be asked if there is another unit you want to select and configure; for this example choose 'No'. The next selection



is to configure the current output as 'Standard' or 'Symmetry'. 'Standard' is the usual choice - this allows the flowmeter to measure the flow between the 4-20mA flow range. Any flow value outside of the range is shown on the display as 'Out of Range'. Once you choose which type of current output you require from the choice presented, you are directed to the current output setting procedure. Once that is completed, you are asked if you wish to make another output selection. For a single analogue current output, select 'No'. Now choose 'Auto Configure the Display' by selecting 'Yes'. The standard display configuration will be applied: line 1 (at the top) = mass flow and line 2 (at the bottom) = totaliser1.



Top line displays mass flow and bottom line shows totaliser 1.

Additional functions outside of the 'Quick Setup' menu allow the newly commissioned flowmeter to respond in a specific way to the fluid being measured. For example, 'Empty Pipe Detection' is switched on when measuring liquids (factory default setting) and switched off for gas applications.

Have you installed the flowmeter the wrong way round to the flow direction? There's no need to remove it from the pipeline. Simply go to 'System parameters' and select 'Installation direction sensor'. Should you need some 'damping' on the signal, then go to 'System Parameters' and make your selection (density or flow). The damping acts on all functions and outputs of the flowmeter.



Use 'Installation direction sensor' screen if you have installed the flowmeter the wrong way round to the flow direction.

The process is similar should you wish to set the flow transmitter for alternative options, such as corrected volume flow for gas applications or configuring the internal totalisers.



Download a range of operating manuals at <u>www.uk.endress.com</u> and select the 'Downloads' tab at the top of the homepage.

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

