

EDITORIAL

"The future belongs to those who recognize the opportunities before they become obvious."



Digitalization. A buzzword that everyone knows and that accompanies us every day.

Everything is getting more digital. Everything is getting more networked. Everything is getting easier. But is that really the case, or aren't a lot of things also getting more complex?

At Testo, we believe that digitalization always makes sense when it simplifies work processes. Making products more "digital" simply because you can has no added value and only creates unnecessary complexity.

We are particularly proud of two specific implementations:

- The testo Smart App as a digital data centre that digitally for all HVAC/R applications
- Our networked complete system for all applications on refrigeration systems and heat pumps

Both are the result of close cooperation between you as the user and us as the manufacturer. Through continuous exchange with you, the professionals on site, we can ensure that our products are not only technologically up to date, but also practical and user-friendly. This is exactly the right amount of "digitalization".

We will continue to consistently pursue this path in the future. Together with our idea providers – you.

Enjoy reading.

Yours, Dirk Göpfert
Director Product Management
Instrumentation



THE DAWN OF A DIGITAL ERA.

Where analog instruments were the standard just a few years ago, digital tools are now indispensable: Digitalization has changed the HVAC/R world - it presents the industry with new challenges, but also tablets, smartphones, specialized apps offers great opportunities and competitive

Recognizing and using potential

Even though many companies already recognize the potential of digitalization, implementation often lags far behind. Digitalization not only enables more efficient business processes, but also new forms of customer acquisition and retention. The clever use of data becomes a real competitive advantage and even opens up new business models.

Smart specialists are in

Where new technologies and systems are on the rise, the demands on HVAC/R technicians are also increasing. Systems and technologies are merging and are increasingly controlled via digital platforms tools. and apps. For specialists, this means that in addition to the necessary technical know-how, they also need skills for dealing with digital technologies to successfully install and maintain modern and energyefficient building systems.

Digital tools simplify everyday life

At the same time, digital tools such as and Testo's smart measuring instruments simplify everyday work processes - from automated measurement programs to quick and easy documentation. Digitalization ensures that complex tasks are solved more easily and quickly, which is also an advantage in view of the shortage of skilled workers. Digital tools also help to inspire talented young people for jobs in the HVAC/R industry. This is - through the use of AR (augmented reality) and VR (virtual reality) as well as

To ensure that you benefit directly from the advantages of digitalization and remain competitive, we at Testo do everything we can every day to support you in your work in the digitalized HVAC/R world, with innovative, smartly networked professional



also revolutionizing education and training digital learning platforms that enable more flexible and efficient learning. And generate interest in a future in the HVAC/R industry.

81%

of SMEs are convinced of the benefits of digitalization (France)



use digital tools in everyday HVAC/R work (USA)



of HVAC/R companies have a medium level of digitalization (Spain)

of the skilled trades use at least one digital technology (Germany)



The most important advantages of digitalization - and how you can use them for yourself and your job with Testo.

Time savings

Automating and simplifying routine tasks and processes helps to save time and costs and increase efficiency.

- ► More on automated applications on p. 12
- ▶ More on fully automatic PRO measuring programs

Increased customer satisfaction

Faster response times, personalized solutions and proactive customer service improve the customer experience.

More about digital documentation via testo Smart App on p. 7

Continuous optimization

The centralization of data offers valuable insights for the continuous optimization of systems and work processes.

- ► More on intelligent error analysis p. 7
- More on the testo Smart World p. 7

Flexibility and scalability

Digital tools are easier to adapt to new systems and technologies and help you to remain agile and competitive.

- More about our digital manifolds on p. 10 & 18
- More about the digital smart probes on p. 9 & 19

Environmental benefits

Precise and more efficient tools enable data-based optimization and reduce energy consumption.

▶ More ideas for saving energy on p. 12



USING THE OPPORTUNITIES OF DIGITALIZATION.

In conversation with Michael Holl, Head of Mobile APPs, Cloud & Mobile Software at Testo.



Michael, you have been responsible for mobile Apps for many years. What fascinates you when you think about the developments of recent years?

Over the last few years, I've been able to accompany and help shape many developments, from writing PC software for our thermal imagers to developing our own apps, such as for our first generation

What are outstanding milestones from your point of view?

They certainly include the development of our testo Smart Probes in 2015. These measuring instruments, without their own display, can be operated in conjunction with the testo Smart Probes App on the user's mobile device, for example a smartphone. This makes them small, cost-effective and easy to integrate into everyday life. They into his personal workflow.

What other developments, particularly in the HVAC/R sector, stand out for you?

It all started with the integration of mobile devices in the measuring instrument itself, such as our testo 300 or testo 400. This combined two advantages. The user has a large Smart-Touch display in the instrument and can operate it intuitively, just like their own smartphone. Then came separate apps for each product group. However, given the diversity of our measuring instruments and the speed of our developments, something new and bigger soon had to be created: the testo Smart App.

What exactly is behind the testo Smart App?

In 2018, we succeeded for the first time in bringing together all functionalities for all product groups and measurement dimensions in one app, the testo Smart App. This means that all measuring instruments, measurement data and customer data for all areas of application are available and operable in one app. And that's not all: Measuring instruments from previously different divisions and target groups can be used not only in an app, but also in a measurement application.

Are there any other advantages of the testo Smart App?

In addition to the important main application, the measurement of relevant parameters and their calculation, as well as data management, the user also receives regular firmware updates

directly via the app on their measuring instrument. Thy can call up innovations for their products, make in-app purchases and thus individualize their product according to their personal needs.

Can you give us an example of a possible in-app purchase?

Our new PRO measurement programs "Air balancing" or "Multisite measurement" are a great advantage, for example. Here, the user has the opportunity to save a lot of time in the field of air conditioning and ventilation technology, as the app provides suggestions for adjustment per measurement round. Its measuring activities are thus supported and measuring rounds can be reduced. The documentation of the individual measuring points can also be summarized in a single report via the app. The special feature here is that this application is an important but not so frequent one. It is important to us to also consider these areas of application in order to offer individual support. Here, too, we were on site with customers, discussed the best possible operation with application experts using click dummies, optimized the functionality based on feedback and then, before release, tested everything several times with some users in order to best meet customer requirements. That is what's great about our work and what makes our development so special! We always see the customer benefit directly.

Does that mean you are also heavily involved in product development?

Yes, we work closely together. We monitor market and user needs together and focus closely on customer feedback. Digital features and options are becoming increasingly important here. It's particularly important to us to combine our proven Testo quality with digital progress, and thus offer even better support for the entire provide the user with a large colour display and ideal data integration range of applications in addition to precise measurement technology, and thus the solution for all challenges. We can confidently say that Testo is the leading, strong partner in a rapidly changing HVAC/R world. We're constantly changing with it. Together with our

How do you see your work at Testo in the past as well as the

It is extraordinary and makes me proud to work with such a great team and to develop such attractive products and app-based solutions together, while always seeing the direct user benefit. It is an exciting process and an important subject area that needs to be developed further and further. Both technologically, in the implementation within Testo, and with users on site. When I think about Testo's future in the area of digitalization, I am overwhelmed by how big the steps are.

How would you summarize the topic of digitalization and Testo in one sentence?

We use the opportunities of digitalization together with our customers and develop with this trend - quickly, confidently and



As a pioneer in digitalization, we at Testo are thinking ahead in terms of heating measurement technology. Away from individual analog instruments and towards digitally networked solutions for all applications. In this way, we

enable more and more simplicity and efficiency in day-to-day work despite increasingly complex requirements. With simple, digital tools that are fully networked and easy to use. Simply go fully digital with heating measurement technology from Testo.





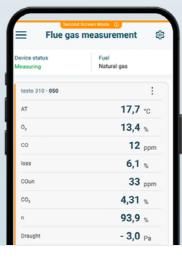


with printer Order no. 0564 3002 71

testo SMART PROBES in HVAC kit Order no. 0563 0010

EASY, SMART AND WIRELESS.

measurement – with the testo Smart Probes in the practical HVAC Kit. Together with the testo Smart App, all measured values are sent directly to your smartphone or tablet and can be sent by e-mail from there in no time at all. Easy!







Perfect for flow and return temperatures, with a Bluetooth® range of up to 100 m: the **testo 115i** clamp thermometer with smartphone operation.

Versatile and flexible thanks to a large selection of probes: the testo 915i thermometer with smartphone operation.



SINGLY: REALLY FAST.

Simply shop for the testo Smart Probes HVAC kit online





More to make your heating world even simpler.



QUICK TIP: Discover all



- 1 Endoscope testo 318 Order no. 0563 3185 XXX.XX €
 - 2 Thermal imager testo 883 Order no. 0563 8830 XXX.XX € 3 Thermal imager testo 868s Order no. 0560 8681 XXX.XX €
 - Sound level measuring instrument testo 816-1 Order no. 0563 8170 **XXX.XX** €

Multimeter testo 760-1 Order no. 0590 7601 XXX.XX € Voltage tester testo 750-1 Order no. 0590 7501 XXX.XX €

Parallel measurement made easy:

With the fully efficient testo 300 NEXT LEVEL and our checklist for flue gas measurement.

Download now



75 RECOMMENDED BY THE PROS

The combination of the testo 300 NEXT LEVEL and the testo App is user-friendly and time-saving. I need half an hour less time per custome

Jovany David Owner, Certify Plus



Tips and tricks for flue gas analysis:

Everything you need to know now in our new practical guide for free download.











TOOL TIP

THE UPGRADE FOR HEATING CONTRACTORS.

Install and maintain heat pumps with the digital heat pumps kits from Testo.



New times. New toolkits. New possibilities. Times are more challenging than ever for heating technicians and fitters. With heat pumps and hybrid systems, more and more technologies are being added to classical gas heating - at the same time, more and more new regulations

must be adhered to. It's time for an upgrade in the toolbox: with the new smart heat pump kits from Testo. They are fully networked, guaranteed to be up to date and already perfectly adjusted to the modern heating world

- Large graphic display
- Maximum precision even at low pressures
- Intelligent error analysis feature in the testo Smart App
- ► Measurement, charging & documentation
- easier than ever

testo 570s

Heat pump professional kit Order no. 0564 5002

XXX.XX €

SIMPLY FOR EVERYONE.

For beginners, for allrounders, for pros: The digital manifolds from Testo

Wireless measurement, digital documentation and all measurement results at a glance in the large graphic display. Enter the digital age with the smart digital heat pump kits.

JUST EASY

Simply shop for Testo heat pump kits online







Heat pump allrounder kit **testo 557s** Order no. 0564 5001 **XXX.XX € •** Heat pump beginner's kit **testo 550s** Order no. 0564 5000 **XXX.XX €**

More from the digital world of Testo.



QUICK TIP: Discover all



- 1 DIGITAL refrigerant scales testo 560i Order no. 0564 1560 XXX.XX €
- 2 SMART vacuum pumptesto 565i Order no. 0564 5652 XXX.XX €
- 3 Gas leak detector testo 316-3 Order no. 0563 3163 XXX.XX €
- 4 Bluetooth clamp meter testo 770-3 Order no. 0590 7703 XXX.XX € Download now 5 Vacuum probe testo 552i Order no. 0564 2552 XXX.XX €

77 RECOMMENDED BY THE PROS

Testo's tools solve real problems and make work much easier.



As we place a very high value on quality, we only use the latest technology in measuring and testing equipment. Testo is our perfect partner for all service assignments in the field of heating & cooling solutions.

Field Support Engineer Teamleader Technical Service, Panasonic Heating & Ventilation Air-conditioning







FIND OUT MORE:

THE BEST **EXPERT TIPS**

Download the complete heat pump know-how













Digitalization worldwide.



Germany

The world of work is changing, and new skills, technical application know-how and comprehensive knowledge of data protection and security are in demand. In addition, new ways of working and tools such as consulting, planning and assistance apps are making work increasingly flexible and efficient.



Spain

The national association FENIE presented the technician of the future at REBUILD 2024:
A specialized company that is familiar with new technologies and has a high degree of adaptability to offer innovative solutions that meet the needs of a constantly evolving market.



Italy

Customers expect trained specialists who are familiar with the latest technologies, but who are also able to adapt and implement them in a wide variety of environments. Companies and technicians also recognize the potential of digitalization to reduce operational risks such as litigation, security and administration

FIND OUT MORE:

White paper

"Simpler and more efficient thanks to digitalization"

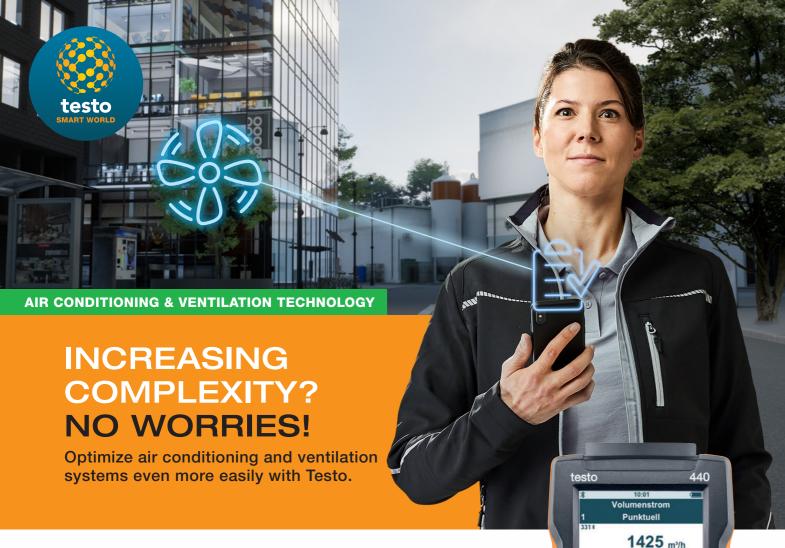
Find out all about the major trends and benefits of the digital future in our free white paper.

THE NEW WHITE PAPER Download here free of charge.









More parameters, more measuring points, smart homes and digitally controlled systems. However, the requirements for energy efficiency, increasing manufacturer requirements and demanding customer requirements are not making it easy for air practical know-how to make your work on conditioning and ventilation technicians. We at Testo are! With measurement technology that offers the right solution

for a wide range of requirements and systems and is easy to operate. With digital functions and connection to the testo Smart App for easy measurement and documentation. And with plenty of air conditioning and ventilation systems



testo 440 multifunction air velocity &

3.71 m/s

24.6 °c

•

- Intuitive measurement menus for all IAQ applications
- ▶ Wireless Bluetooth® probes for maximum convenience
- ▶ Internal memory for up to 7,500 measured values
- ► Versatile and expandable with extensive probe portfolio and accessories

Order no. 0560 4401 XXX.XX €





More about testo 440

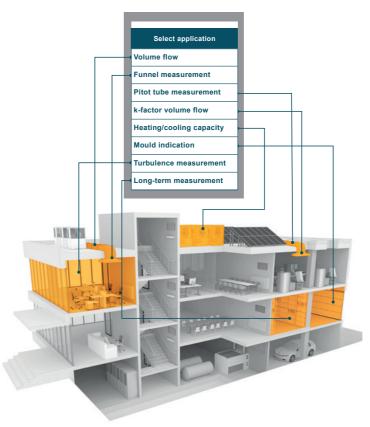
TOOL TIP

SIMPLY

UNBEATABLY VERSATILE.

The climate measuring instrument testo 440 for all climate-related parameters.

As multifaceted as your challenges themselves: With the multi-functional climate measuring instrument testo 440, you can measure all climaterelevant parameters quickly, intuitively and extremely conveniently. Thanks to an extensive range of probes and the right measurement program for every situation, you have all applications in air conditioning and ventilation systems efficiently under control -- in ducts, on filters and at all kinds of vent.



CLEAR FOR TAKE OFF.

With our practical ready-to-start kits, you are quickly and easily optimally equipped for any measurement application.



testo 440 flow ComboKit 1 Order no. 0563 4406 XXX.XX €

testo 440 dP flow ComboKit 2 Order no. 0563 4410 XXX.XX €







FIND OUT MORE:

Practical guide air flow measurement in ducts.

Everything you need to know about easy air flow measurements in ducts in accordance with DIN EN 12599 - in our free practical guide.

PRACTICAL GUIDE







FOR EVERY APPLICATION

MADE TO MAKE IT EASY.

The compact climate measuring instruments simple, fast and precise.

Easy to handle, precise results: With the compact, digital climate measuring instruments, the precise complex measurements easier measurement of specific climate parameters is quick and easy. Connection to the testo Smart App document the measurement data.

makes configuration, measurement and analysis child's play and even than ever. The testo Smart App also makes it easy to save and



testo 417 Digital 100 mm vane anemometer - ideal for balanced ventilation systems At outlets



Funnel/flow straightener kit - ideal for balanced ventilation systems At outlets



MODERN. **UP-TO-DATE** SMART APP FEEL

Our ultimate goal is for our customers to enjoy their work and feel a real reduction of workload. This is why customer feedback and user experience tests are an integral part of our development processes right from the start. Like the testo Smart App, all the new, intuitive measuring instruments have a modern, up-todate Smart App feel. This results in an optimal user experience - all instruments can be easily operated, combined and networked. Testo is a real pioneer here!

Jane Stoicheski

Technical Team Lead UX/UI, Cloud & mobile software at Testo



Digital 16 mm vane anemometer



Digital differential pressure measuring instrument In ducts



Digital hot wire anemometer

testo 417 Order no. 0563 0417 XXX.XX €

testovent 417 Order no. 0554 4173 XXX.XX € • testo 416 Order no. 0563 0416 XXX.XX € testo 512-1 Order no.0563 1512 XXX.XX € • testo 425 Order no. 0563 0425 XXX.XX €

THE EVEN EASIER WAY TO

OPTIMUM INDOOR AIR QUALITY.

A good indoor climate promotes well-being, productivity and health. With

digital tools from Testo, all the necessary parameters can be determined

"

Simply save up to 30% time:

Air balancing in the testo Smart App







FIND OUT MORE: neasuring tasks on esidential ventilation







easily, quickly and precisely.

Digital CO. measuring instrument testo 535 with app integration











SMARTER, **COMPLETELY** NETWORKED. Make work on refrigeration systems easier

New challenges every day and the constant battle against time - sounds like tough times for refrigeration and air conditioning specialists like you. Or simply the best moment to finally benefit from digitalization and take off with ease. With smart technologies

and fully automated applications. With smart networked systems that flexibly expand measurement parameters, store all measured values centrally and thus



Discover the Smart World



TOOL TIP

FULLY DIGITAL.

FULLY INGENIOUS.

The digital manifolds from Testo

This is what pioneers of digitalization look like: Testo's smart manifolds make all measurements simple, digital and wireless. Whether pressure, temperature, superheating or subcooling – the connection to the entire refrigeration portfolio and the testo Smart App ensure maximum precision in minimum time, and provide all results at a glance. Easy, isn't it?

- ▶ Automatic Bluetooth pairing
- ▶ Remote control via testo Smart App
- **▶** Guided measurement programs
- ▶ All important refrigerants stored in the system
- ► Regular updates
- ► Smart data management



Wireless vacuum probe **testo 552i** Order no. 0564 2552 **XXX.XX €**

Clamp temperature probe **testo 115i** Order no. 0560 2115 02 **XXX.XX** € • Thermohygrometer **testo 605i** Order no. 0560 2605 02 **XXX.XX** € • Thermohygrometer **testo 915i** Order no. 0563 1915 **XXX.XX** € • Wireless vacuum probe **testo 549i** Order no. 0560 2549 02 **XXX.XX** €



Clamp meter **testo 770-3**Order no. 0590 0590 7703 **XXX.XX** €

QUICK TIP: Discover all products easily online



OVERVIEW OF PRODUCTS & KITS

READY TO TAKE OFF IMMEDIATELY.



testo 570s Smart Vacuum Kit with clamp meter

Highly efficient professional kit with wireless temperature and vacuum probes as well as new clamp meter – ideal for reliable long-term and high-precision standard measurements.

Order no. 0564 5704 **XXX.XX** €

Kit with filling hoses
Order no. 0564 5703 XXX.XX €



testo 557s Smart Vacuum Kit

Practical all-rounder kit for digital, precise and completely wireless measurements. All important refrigerants stored in the system.

Order no. 0564 5571 **XXX.XX** €

Kit with filling hoses
Order no. 0564 5572 XXX.XX €



testo 550s Smart Kit

Smart beginner's kit with temperature probes for quick and easy maintenance and installation of refrigeration systems.

Order no. 0564 5502 **XXX.XX** €

Kit with filling hoses
Order no. 0564 5503 XXX.XX €

Refrigeration systems fully automatically



With the vacuum pump testo 565i.

Fully automatic evacuation with auto-stop function and self-starting vacuum hold test. Simply enter the target vacuum value and you're done.

7 CFM Order no. 0564 5652 **XXX.XX €** 10 CFM Order no. 0564 5653 **XXX.XX €**

With the digital refrigerant scale testo 560i.

Automatic and precise refrigerant charging according to target superheat, subcooling and weight thanks to intelligent valve.

Order no. 0564 2560 XXX.XX €

RECOMMENDED BY THE PROS



The significant growth of the HVAC/R market in Brazil has led to a surge in demand for the installation and maintenance of systems. This requires instruments that not only deliver precise results, but also offer intelligent measurement solutions that make daily work faster and easier. Especially for our young talents who strive for innovation, Testo products with their intelligent functions, connectivity and digital features are attractive work tools.

Diego Camargos Sales Manager, Daikin Braz

J UNIMAGINED FLEXIBILITY



Testo's cross-application product range has always been a major customer advantage. In particular, however, the easy connectivity of the instruments with each other, especially with regard to the additional functionalities of the testo Smart App, provides the customer with unprecedented flexibility, including personalization of the functional areas. The breadth of connectivity and ease of use is unique to Testo!

Hubert Mitterling

Product Owner, Cloud & mobile software at Testo





YOU TOO CAN BECOME PART OF THE TESTO SMART WORLD.

