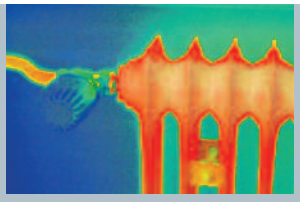
We measure it. testo

Measurement Solutions for Heating, Refrigeration, Air Conditioning and Ventilation


°C/°F
m/s
Pa
bar/psi
%RH
kPa
pH
CO
MPa
Lux
CO_2
hPa
micron
O_2
inch HG

A good climate can be measured before it becomes noticeable.

With measurement solutions from Testo, you can ensure a comfortable room climate and keep energy consumption under control.

When it comes to energy, a building is a self-contained system, which can only be optimised as a whole. The balance depends on the right interplay of system technology and variables relating to the physics of construction. Any intervention brings about interaction. Energy efficiency plays an important role, as does the prevention of building damage, due in some cases to increased humidity. Experts who understand their air conditioning trade are responsible for this. Testo measuring technology supports HVAC tradesmen, facility managers, architects, supply engineers, experts and energy consultants.

Whether you are measuring temperatures, air flow rates dew points, pH values, illuminance or sound levels, carrying out flue gas analyses or using one of our innovative thermal imagers to detect thermal bridges and weak points in buildings and installations: measuring and analysis instruments from Testo give you quick, reliable and accurate access to all necessary measurement parameters.

You can produce a clear analysis of your results and test reports whenever required on site. Thanks to a wide range of accessories and specially developed software, you can customise your Testo measuring instrument individually to suit your requirements. This saves valuable time, enabling you to focus on your actual work.

Testo offers you everything you need for a good building climate:

- Maximum system efficiency
- Measurement, analysis and documentation with one instrument
- Time savings thanks to simple operation
- Quick, effective service and support worldwide

Whether during commissioning or maintenance, with measurement solutions from Testo, you can adjust heating, air conditioning, refrigeration and ventilation systems to optimum effect. For comfort level measurements too, you will find an extensive selection of measuring instruments and probes at Testo. All Testo instruments are robust, handy and easy to use.

At the UN Framework Convention on Climate Change in Rio de Janeiro, the community of states undertook in 1992 to introduce measures for climate protection. In existing buildings, there is huge potential for the reduction of energy consumption and harmful greenhouse gases. Around the world, regulations therefore prescribe the efficient use of energy.

Comfortable heat for cosy rooms.

Testo is your reliable measuring technology partner for an energy-efficient, reliable heat supply.

When it comes to heating, your customers are specialists because they know their system and any quirks it may have. However, as a qualified expert, you have to be able to work with all kinds of complex heating systems. Your industry is continually changing as a result of advancements in technology, the use of renewable energy sources, and legislation, standards and directives. The focus is increasingly on climate protection, emissions and energy efficiency.

Testo measuring technology makes it easier for your to set up heating systems so that they comply with standards and are energy-efficient. Our flue gas analysers with exchangeable, precalibrated gas sensors measure, analyse and document whether the system complies with flue gas values. Pipelines and components of supply and disposal systems must be installed correctly. There should not be any gas escaping from anywhere.

In refrigeration technology, digital manifolds from Testo make it easier to service, commission and maintain refrigeration system and heat pumps: a glance at the clear display tells you the pressure, temperature or vacuum on one instrument.

With calibrated, reliable Testo measuring technology, you can offer your customers added value. As a competent energy consultant, you can highlight weak points and possibilities for improvement – services you could offer. By the way, the follow-up costs for the robust, long-life Testo instruments are limited.

Advantages of Testo in heating and sanitation:

- Wide range of measuring instruments, probes and accessories
- State-of-the-art flue gas analysers with exchangeable, precalibrated gas sensors
- Gas pipe test and solid fuel measurement
- Maximum robustness and optimum measuring convenience

Flue gas analyser
testo 330-2 LL v2010

Is everything OK with the heating system? With measuring technology from Testo, you will know immediately. The testo 830 IR thermometer (Fig. on the left) with 2-point laser sighting carries out extremely accurate temperature measurements. With one of our handy pressure gauges, you can check the stress resistance and leak-tightness of gas and water installations.

The international "Technology Roadmap" for energy-efficient buildings works on the assumption that the energy demand for building heating and cooling will increase at the current rate of development to 4,500 million tonnes of oil by 2050. By taking countermeasures, the demand solely in terms of heating and DHW in buildings can be reduced by approx. a third.

Controlled ventilation of living spaces and comfort level measurement safely in hand.

Whether at home or at work – with measuring technology from Testo, you have a solid handle on modern air conditioning.

Room air quality depends primarily not on oxygen, but rather on the CO_2 level. A reasonable ratio is max. 1 litre of CO_2 in 1000 litres of air, or: 1000 parts per million (ppm). If the CO_2 level in rooms exceeds this limit for a long period, people may suffer from headaches or poor concentration.

Testo is used for a good working climate: with the compact testo 417 anemometer, you can determine the flow speed and volumetric flow parameters quickly and easily. And with the testo 435 multi-function measuring instrument (Fig. on the right), you can measure the CO_2 level, the air temperature and the humidity to assess the quality of the air in the room.

A naturally pleasant climate and air of a high hygienic quality are key to a healthy working environment. In the home, controlled ventilation of living spaces increases comfort and reduces energy consumption. The air and climate in a room are only comfortable if physical, chemical and biological limit values are strictly observed.

That is why air technology system (VAC system) experts measure and evaluate climate and air quality. Testo measuring technology for all relevant parameters helps you to carry out this work efficiently, safely and with time savings.

Values for flow, temperature, humidity, pressure, illuminance, radiated heat, turbulence and CO_2 concentration can be recorded with our high-end testo 480 climate measuring instrument in a single step. Its intelligent probes give you accurate measuring values, with deviations being automatically eliminated after calibration.

The robust multitaskers from Testo enable you not only to carry out measurements in compliance with standards, but also to produce professional reports quickly using PC software. You can offer advice for a perfect climate in all rooms in the case of new builds, renovations or complaints. This extra service gives you an advantage over the competition.

Vane anemometer
testo 417

Advantages of Testo in air conditioning and ventilation:

- Time-saving testing of all room air parameters
- VAC systems set up in compliance with the standards
- Extensive instrument and probe selection for VAC and comfort level measurements, as well as controlled ventilation of living spaces
- Efficient room climate analysis with just one instrument

Digital technology has found its way into all areas of life and the refrigeration industry is no exception. Analogue manifolds are also still widely used. However, numerous studies show that up to three quarters of all refrigeration systems are set up incorrectly. A digital manifold can give customers energy cost savings of up to 12.5%.

Advantages of Testo for refrigeration technology:

- Optimum set-up of refrigeration systems and heat pumps
- Long-term monitoring for detailed error analysis
- Integrated vacuum measurement and leak test for easy and time-saving commissioning
- Convenient PC analysis software “EasyKool”

Digital manifolds make professionals even better.

Testo measurement solutions for refrigeration technology tackle routine tasks as reliably as error analysis.

Refrigeration engineers can be traditionalists. They swear by analogue technology, which has proven to work reliably in the long term during the commissioning, servicing and maintenance of refrigeration systems. However, there is talk among some about innovations. In the foreseeable future, it may be that only digital manifolds will be used for day-to-day tasks. Various operating parameters can be measured with just one instrument, saving time and ensuring reliability compared with analogue technology.

Testo measuring technology provides reliable support for your routine checks and quick error analysis. The testo 570 digital manifold is an efficient, robust tool, which tackles all conceivable measuring tasks at once. 40 refrigerants are already stored. Various probes can be connected for extensive analysis of temperature, flow and oil pressure. You can also calculate system superheating or subcooling simultaneously.

Thanks to the integrated, electronically recorded proof of all measurements, correct system maintenance can be documented. Extensive analyses can be produced on the PC with our “EasyKool” software. Your customers benefit from reliability, a high level of system availability and efficient operation.

Digital manifold
testo 570

With measurement solutions from Testo, e.g. the testo 550 digital manifold (Fig. in the centre), the proper functioning of your refrigeration systems and heat pumps is always guaranteed. Our electronic analysers and leak detectors provide you with optimum support both with routine servicing and maintenance and with quick error analysis.

Managing air conditioning efficiently.

Always the perfect building climate:
with measurement solutions from Testo, your systems are always set up for optimum performance.

By 2050, the International Energy Agency in Paris expects a global increase of more than 300% in building areas, –which will have to be heated, ventilated and cooled. This makes the efficient and environmentally sound use of energy even more important. Current and future legislation prescribes strict measures to reduce consumption. Companies are optimising energy control in order to lower costs. The job of the Facility Manager is now becoming “Facility Energy Manager”.

Testo offers you, as specialists, accurate, quick and easy-to-use measuring instruments to ensure thermal comfort when it comes to air conditioning in work areas. That way, you ensure a constantly controlled climate in store rooms and cold rooms, in production halls and server rooms.

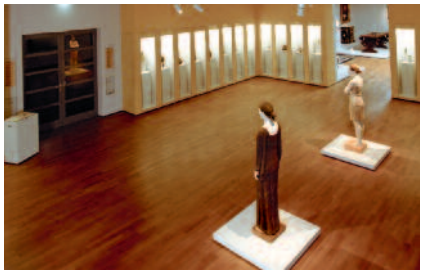
The testo 480 multitasker records air conditioning parameters such as flow, temperature, humidity, radiated heat and CO_2. You get extremely reliable measurement results, as deviations are automatically eliminated after calibration of the probes. For a thermographic inspection, Testo offers high-resolution thermal imagers, which can be used to identify hidden structural defects, as well as leaks in pipelines that are difficult to access.

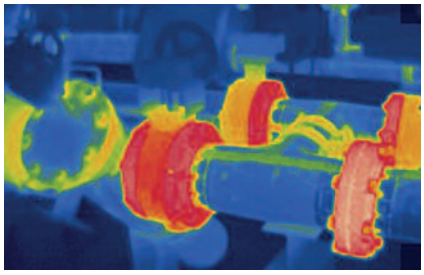
Cutting-edge technology from Testo makes an energetic inspection of buildings and plants easier. This will also make you a competent partner when it comes to energy efficiency in future.
“Time saving + customer satisfaction = no complaints”.

Advantages of Testo for building technology:

- Wide range of measuring instruments for greater energy efficiency
- Compact handheld instruments for mobile climate measurements
- Remote monitoring of store rooms and cold rooms
- High-resolution thermal images to detect hidden structural defects and leaks

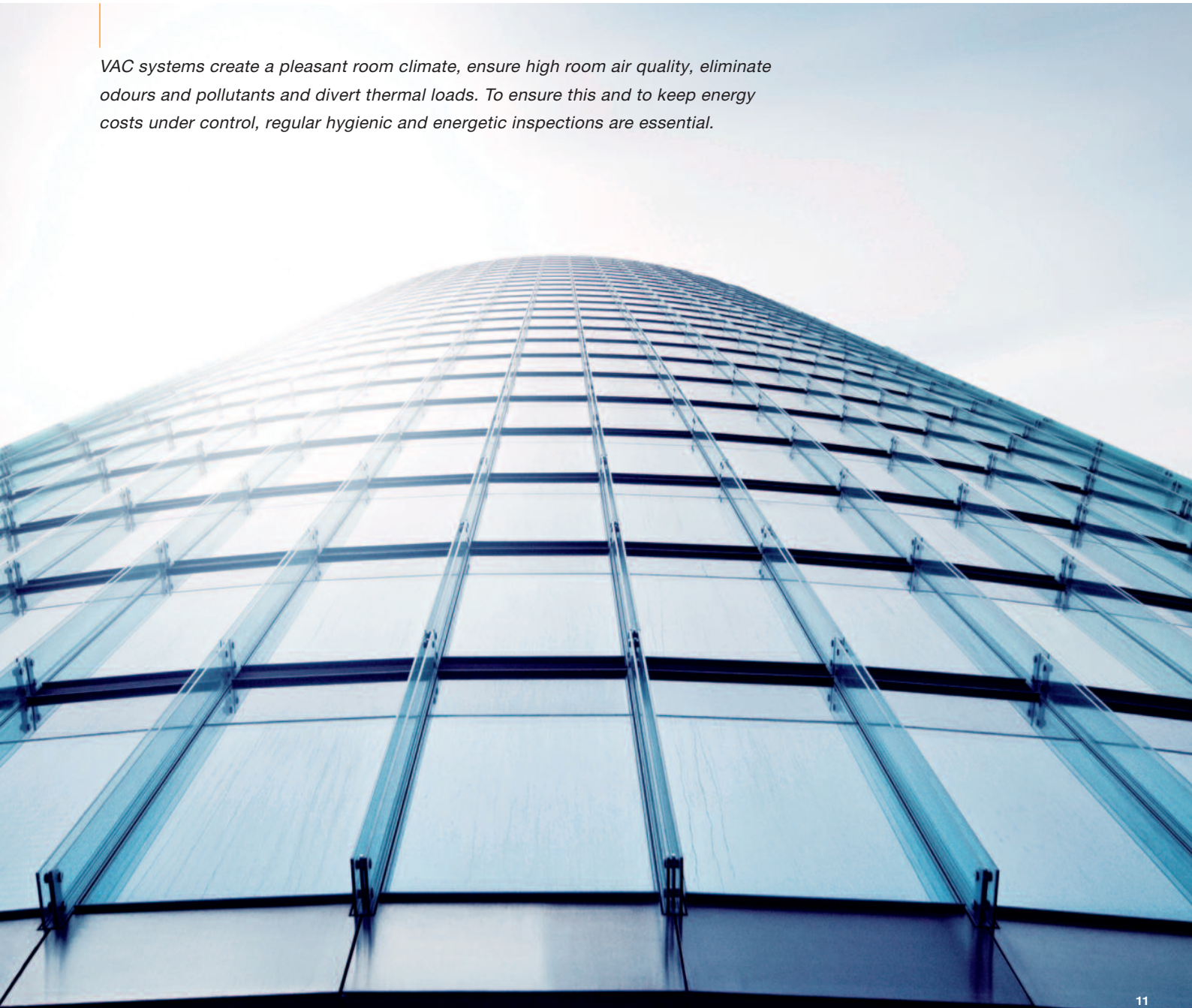
Climate measuring instrument
testo 480





A controlled room climate is just as important for people as it is for sensitive instruments and products or exhibits in exhibition halls and store rooms. With modern climate measuring instruments from Testo, you can determine all relevant room air parameters quickly and conveniently, and use our high-resolution thermal imagers (Fig. on the right) to check that systems and installations are working properly.

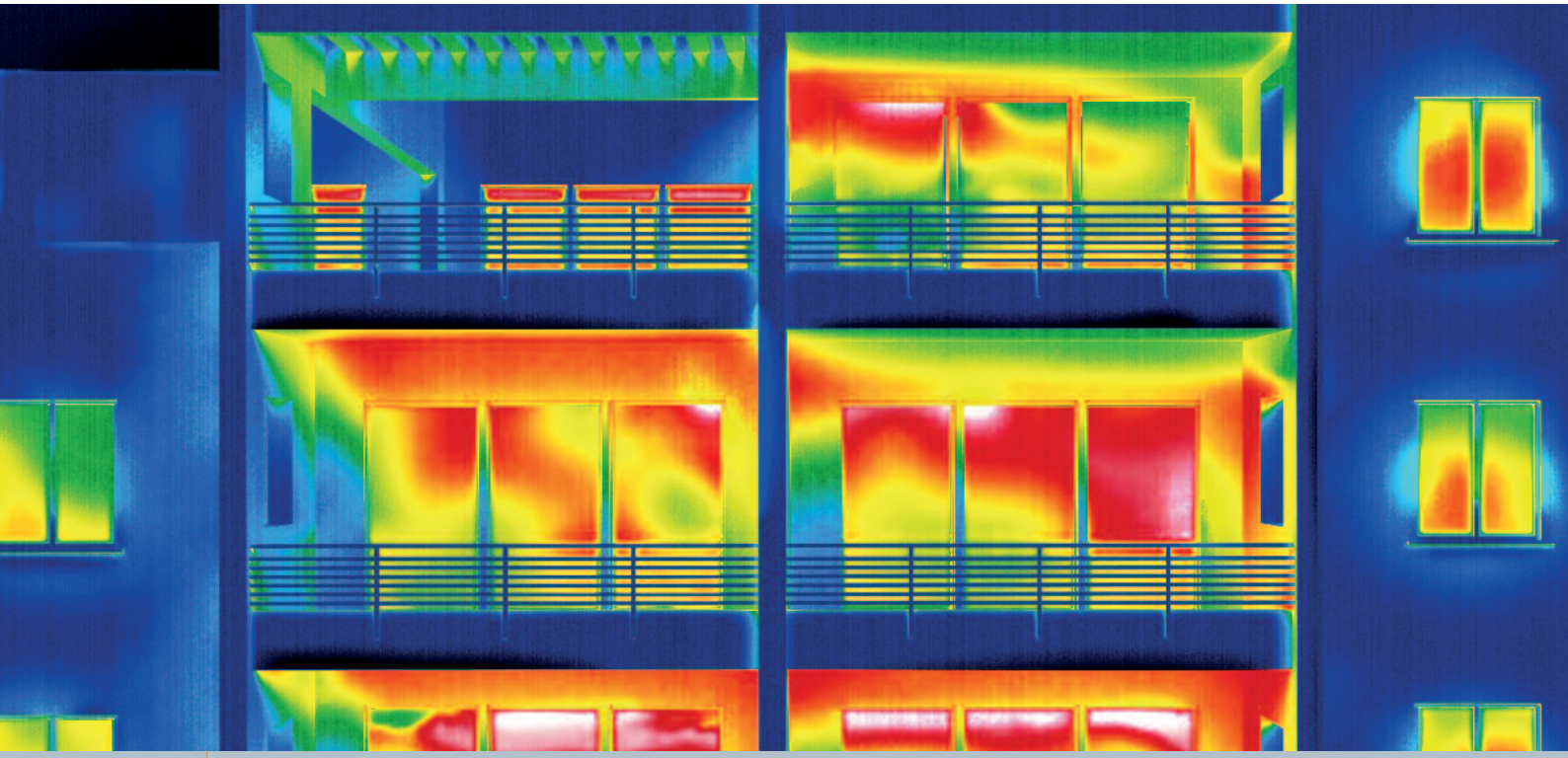
VAC systems create a pleasant room climate, ensure high room air quality, eliminate odours and pollutants and divert thermal loads. To ensure this and to keep energy costs under control, regular hygienic and energetic inspections are essential.



No chance of thermal bridges.

Now with SuperResolution:

Testo thermography identifies structural defects reliably.



Any object with a temperature higher than minus 273 degrees Celsius, absolute zero, emits thermal radiation in the IR range. Thermal imagers convert this radiation into electrical signals and make them visible to the human eye.

Due to previous architectural mistakes, the operation and maintenance of buildings now involves considerably higher follow-up costs than originally planned. “State of the art” now means sustained, climate-neutral building and renovation. Visible characteristics are airtight building shells, thermally optimised components with a low U-value, and energy-efficient heating systems that utilise renewable energy or ventilation systems with heat recovery. Only the precise interaction of all these components rules out building damage.

Thanks to excellent image quality and innovative technologies, Testo thermal imagers reliably identify inadequate building elements. The display of surface moisture for localisation of areas at risk of mould is unique in building thermography.

The new SuperResolution technology improves your imager’s image quality by one class: four times as many measuring values and a geometric resolution that is effectively doubled means even greater detail and greater measurement reliability. Along with the thermal image, the integrated digital camera always saves a real image and makes analysis and documentation considerably easier.

Testo also offers modern technology for all other building tasks. With our material humidity measuring instruments, you can control building drying, detect moist areas or evaluate when screed is ready for laying in accordance with DIN 18365. Testo measuring technology helps save you time and money.

Thermal imager
testo 875

Advantages of Testo for the construction trade:

- High-resolution thermography (NETD < 80 mK)
- Reliable, non-destructive detection of structural defects
- Early detection of areas at risk from mould
- Long-term monitoring during building drying

Testo offers you suitable measuring technology for checking defects and damage in buildings, e.g. long-term stable humidity sensors and material humidity measuring instruments such as the testo 616 (Fig. in the centre). With our high-resolution thermal imagers, you are reliably on top of even hidden problems thanks to “SuperResolution”.

Your energy system fully in hand.

With Testo measuring technology, you can always make the right diagnosis.

IR technology in thermal imagers is ideal for effective and extensive energy consultancy. The thermal image enables you to see, in detail, energy losses while heating or air conditioning buildings, as well as inadequate insulation on external windows and roller blind casings or thermal bridges on the roof structure and building shell.

Energy consultants will find an extensive range of special measurement solutions at Testo for building analysis, e.g. high-resolution thermal imagers for thermographic analyses of the building shell (Fig. on the right) or the testo 175-T3 temperature data logger (Fig. in the centre) for parallel temperature monitoring at two measuring points, for example at the flow and return of a heating system.

For air conditioning and the supply of hot water in buildings, large quantities of energy are generated and consumed. New builds therefore have a low-energy level as early on as the construction stage, and old buildings are brought to the same standard through subsequent renovation. Insulation of the building shell or the installation of a modern heating and ventilation system enable considerable energy savings. The prerequisite for this is professional evaluation of the structural condition. This prevents expensive damage.

With mobile measuring technology from Testo, you can monitor all relevant measurement parameters comprehensively. You can prepare the results for your customers in a clear way. Based on an energy diagnosis, you can recommend concrete measures and carry out a profitability analysis to check whether they are worthwhile.

We open doors to old buildings in need of complete renovation with the new Testo thermal imager testo 885. It delivers thermal images with a high resolution, making every detail visible. This means that you can identify weak points in the building shell reliably, and detect mould. And with solar mode, you can even detect photovoltaic system malfunctions. A glance at the thermal image clearly shows the energetic quality of the building and makes it easier for the owner to make renovation decisions. With building thermography as an added value service, you are guaranteed a tidy return. A smart investment!

Thermal imager
testo 885

Advantages of Testo for energy consultancy:

- Efficient measurement solutions for building analysis
- Handheld measuring instruments for temperature, humidity, U-value
- High-resolution thermal imagers including surface moisture indicator, real image mode and exchangeable lenses
- Professional reporting with Testo software

A good climate can be measured.

Take a look at the world of Testo measurement. Here is a small selection of measurement solutions for heating, refrigeration, air conditioning and ventilation.

Heating & sanitation

IR temperature measuring instrument
for non-contact measurement of the surface temperature

testo 830-T4

The testo 830 is a quick, universally applicable IR thermometer, which can measure the surface temperature of even small objects at a safe distance thanks to 2-point laser sighting and a 30:1 lens.

°C °F

Flue gas analyser
with memory for 500,000 measuring values

testo 330-2 LL v2010

The main advantages of the testo 330-2 LL v2010 are its high-resolution colour display for graphical representation of the measurement data and advanced measurement menus for extensive analysis of your heating system.

% hPa CO O_2 CO_2

Air conditioning & ventilation

Vane anemometer
with integrated vane

testo 417

Through integral measurement with the 100 mm vane, the testo 417 anemometer is ideal for measurements at the air outlet and inlet. The flow direction is visible in the display.

°C m/s

Humidity/temperature measuring instrument
The multitasker for ventilation and room air quality

testo 435-4

The testo 435 multi-functional measuring instrument is a reliable tool for the evaluation of room air quality – for example, it shows CO_2, relative humidity and air temperature parameters, as well as absolute pressure, Lux, U-value and surface temperature.

CO_2 CO °C %RH m/s hPa Lux

Refrigeration technology

Digital manifold
to record up to 999 h measuring values

Set testo 570-2

The testo 570 offers you all you need for your work on refrigeration systems and heat pumps. The data memory replaces manual work steps and its ease of use enables you to carry out long-term measurements without any problems.

inch HG psi MPa kPa bar °C °F hPa micron

Digital manifold
for refrigeration systems and heat pumps

testo 550-2

The robust 2-way valve block in the testo 550 is made of metal and has three connections and three hose holders, enabling quick and easy work. The stable housing reliably protects the instrument against impact.

bar psi °C/°F kPa MPa inch HG

Air conditioning in buildings

Data monitoring system (testo base)
for constant monitoring

testo Saveris™

The testo Saveris™ data monitoring system with intuitive operation measures the temperature and humidity values of sensitive goods and products in the environment, in processes and during transportation.

°C %RH

Thermal imager
in an ergonomic camcorder design

testo 890-2

The testo 890-2 thermal imager meets the highest of requirements thanks to its 640 x 480 pixel detector combined with its high-quality germanium lens. Through full radiometric video measurement, thermal processes can be recorded in real time.

°C %RH

Climate measuring instrument
with an intelligent calibration concept

testo 480

With the high-end testo 480 climate measuring instrument and its digital probes, you can record parameters such as flow, temperature, humidity, pressure, illuminance, radiated heat, turbulence and CO_2 extremely reliably using just one instrument!

°C hPa m/s
%RH CO_2 Lux

Building trade

Material humidity measuring instrument
for non-destructive and quick measurement

testo 616

The testo 616 enables a quick and non-destructive observation of the material moisture of building materials and wood and helps you to monitor the drying progress of floors, walls and surfaces.

%

Thermal imager
with integrated digital camera

testo 875-2

Thanks to a temperature resolution of < 80 mK, even the smallest temperature differences are visible with the testo 875 thermal imager. With SuperResolution technology, the image quality is improved by one class.

°C %RH

Energy consultancy

Thermal imager
in an ergonomic camcorder design

testo 885-2

In conjunction with the high-quality germanium lens, the 320 x 240 pixel detector achieves an excellent image quality. The 30° wide-angle lens immediately detects large image sections and the temperature distribution of the object to be measured.

°C %RH

Temperature data logger (2-channel)
for up to a million measuring values

testo 175 T3

The temperature often has to be monitored and recorded at two points at the same time. With two interfaces for thermocouple probes, the testo 175 T3 is ideal for this task.

°C

Precision condensed.

Working for you worldwide.

The requirements for practical measurement solutions are becoming increasingly more complex and specific. Testo has set itself the key task of identifying these customer requirements in industry and trade and translating them permanently into new technology. We carry out our own intensive research, which has given us a leading role in the market for decades. Real innovations in sensor systems, as well as advances made in microelectronics, measurement data storage or communication with other media such as a PC and mobile terminals, benefit all Testo customers.

Competent service

Testo offers professional, reliable consultation for all questions pertaining to measuring technology. We provide users with quick assistance also after the purchase is made – worldwide.

Research and development

Every year, Testo invests roughly 10% of turnover in research and development. Employees from a number of different disciplines, e.g. physics, chemistry, biology, electrical engineering and process technology, carry out applied research in sensor systems and measuring technology. Testo is in international cooperation with universities and research facilities and is represented on a variety of committees relating to innovative measuring technology for various areas.

Certified reliability

Quality assurance is serious business. Testo Industrial Services offers certified calibration in accordance with all valid directives, as well as the qualification and validation of portable and stationary measuring technology. Calibration is carried out in accredited, in-house high-tech labs or directly at the customer's premises.

Global presence

Climate protection, energy efficiency, legislation and directives play a role globally. Testo is always on hand to offer their expertise. We aim to provide support to our customers at their premises, with 31 subsidiaries and more than 80 trade partners worldwide. Testo has more than 2300 employees around the world.

We measure it. testo

Our customers around the world rely on Testo's 50 years of experience and quality.

www.testo.com

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