

Compressed air & drying

/ MEASURING MOISTURE IN AIR



VAISALA



Quality compressed air – a vital factor

Compressed air is a vital component of many industrial processes. It affects the quality of both the process and the end product. What's more, compressed air often comprises the largest use of electricity in a plant. Since the importance of clean, dry compressed air – and the cost associated with it – is so high, carefully managing and monitoring of it becomes a crucial task for any plant. One of the most important parameters associated with the quality of compressed air is dewpoint.

Dewpoint measurement for quality and reduced energy consumption

Dewpoint is often measured on the supply side of a compressed air system. Measurement values can be shown directly in a display or on the control panel of the dryer. These values indicate a dryer's performance and quality – and can also control desiccant





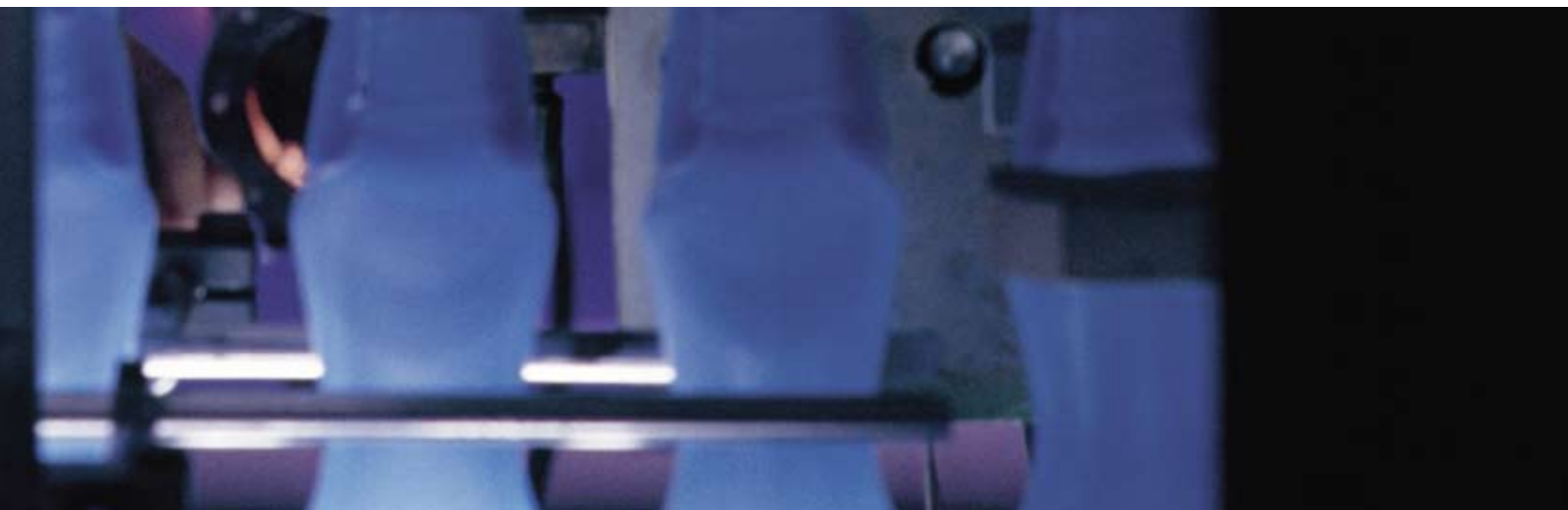
tower regeneration to reduce energy consumption.

On the demand side, dewpoint instruments are installed throughout the distribution network and before critical end-use applications to give operators and plant personnel a quick assessment of the moisture conditions at specific points in the system. These instruments confirm

that the produced compressed air has been kept dry enough throughout the entire facility.

For the best measurement performance, a good dewpoint sensor must withstand a number of contaminants common to most compressed air systems. These include water spikes, ambient humidity, entrained compressor oil and chemical impurities.

A high quality sensor with a wide measurement range, combined with easy installation and the possibility of field calibration, provides the user with superior measurements.





Vaisala unrivalled measurement

Long-term accuracy

The DRYCAP® polymer sensor technology invented by Vaisala delivers a dewpoint reading you can trust – and a sensor requiring almost no maintenance. It has a recommended two-year calibration interval made possible by its stable polymer material and advanced auto-calibration and purge features.

Wet-to-dry in record time

Vaisala's sensor technology provides the fastest wet-to-dry response time on the market.

Thanks to its unique material and active sensor warming function, a step change from ambient humidity to a -40 °C (-40 °F) dewpoint takes just minutes to reach an accurate and stable reading – not hours or days.

Stable readings – more uptime saves time and money

Since its active sensing material is composed of an inert, stable polymer layer, the DRYCAP® sensor can be fully immersed in water without affecting its stability or accuracy. This means that during an occasional water spike or high humidity condition in the line, no service or recalibration of the sensor is required.

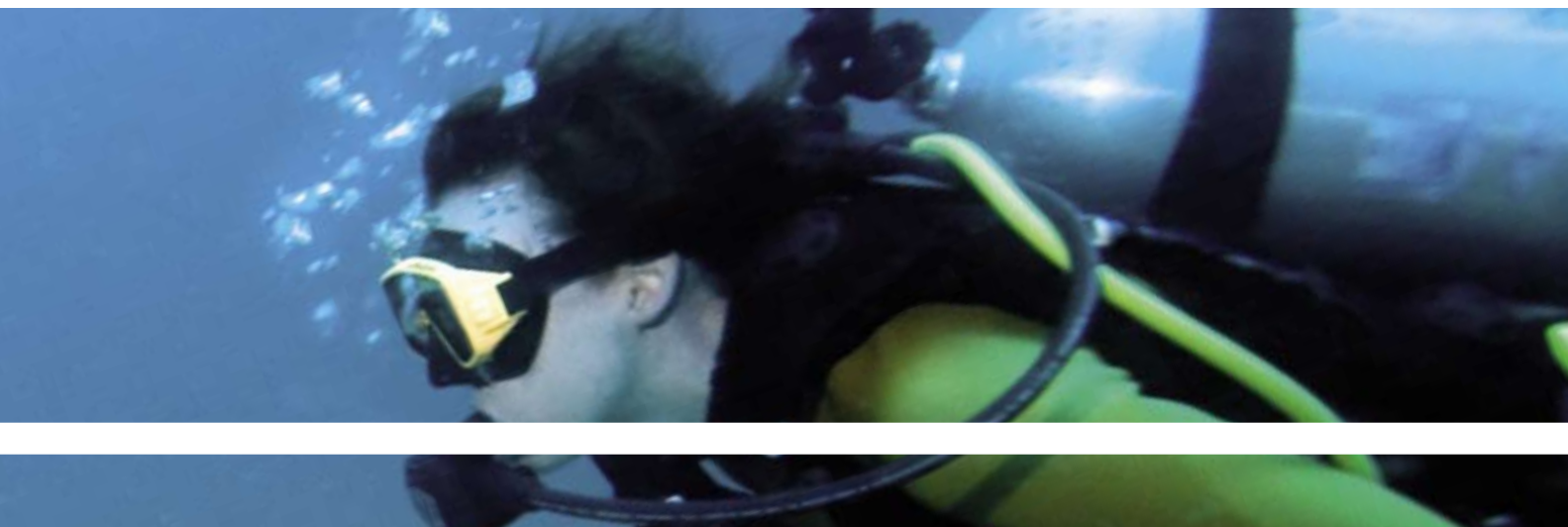
Just water vapor – nothing else

The sophisticated design of the DRYCAP® sensor means it measures only water vapor – with no cross sensitivity to particulate contamination, entrained oil, or many other chemicals. The technology incorporates an automatic purge function that evaporates most chemical contaminants from the sensor material.

Wide dewpoint measurement range

Our DRYCAP® product line covers applications from -80 to 80 °C (-112 to 176 °F) dewpoints, operating temperatures from -40 to 350 °C (-40 to 662 °F) and pressure up to 50 bars.





Vaisala's dewpoint measurement

Customized for you, when you need it

Vaisala can build your customized instrument to specification on a schedule that meets your deadlines. The standard delivery time for a custom-built product from our factory is just three days.

Hand-held for spot-checking

We also offer a hand-held dewpoint meter for spot-checking and validation on site. Its probe can be inserted directly into pressurized processes, and it responds rapidly in both ambient and process conditions.

Local support – globally

Understanding measurements from an application perspective is important when developing products with features that meet specialized needs. Vaisala supports all of our instruments with highly qualified application engineers and technical support staff who are easily accessible and always ready to answer your most difficult questions.

Whether you need service or purchasing support, or simply would like to discuss your measurement needs, we are there for you locally – across the globe.

A sales force that understands much more than sales

Our customers often let us know that they appreciate the expertise of our sales professionals. Our teams are well trained in the field of water vapor measurement in order to help you solve your process optimization needs – and in fact have strong backgrounds in science and engineering. We excel in combining superior sensor technology with comprehensive application expertise.





High performance – optimized to your needs

For desiccant dryer applications that generally produce air in the -40 °C (-40 °F) dewpoint range and lower, our DRYCAP® sensor technology is the optimal choice for high accuracy, dry end conditions.

For refrigerant dryer applications that have higher dewpoints we've developed HUMICAP® sensor products. This sensor provides all the performance benefits of the DRYCAP® but is optimized for higher humidities and is the result of over 35 years of field experience. Vaisala's core expertise in manufacturing these industry-leading sensors provides you with products you can truly rely on, year in and year out.

Lower costs – with higher quality

Vaisala's accurate and stable measurements help you to assure high quality in your process, enabling

you to reduce the maintenance and energy costs of your compressed air system. The excellence of our solutions is based on committed research and development resources. We have in-house sensor development and production in our own cleanrooms. For you, this offers the benefit of lower life cycle costs.

A lifetime of measurement accuracy

Our factory calibration lab employs the highest calibration equipment standards and procedures available today to ensure the quality of every new instrument leaving our facility. To certify this, each new unit comes standard with a NIST traceable certificate. For recalibrations, our local service labs are also ISO and NIST compliant, which mean they're able to replicate the original factory

calibration accuracies on units coming back from the field. Upon request, accredited calibrations can also be performed that are compliant with ISO17025.

Widespread uses, significant challenges

Here are just some of the applications where our measurement solutions are beneficial:

Industrial compressed air systems

Vaisala sensors help to ensure the reliable operation of your pneumatic instruments and prevent corrosion and icing in compressed air lines.

Plastics drying

By ensuring proper dryer performance you can avoid wasted material and costly production downtime – as well as assure end





product quality. Our portable devices are a great way to spot-check dryers and hoppers, while our fixed mount units can be integrated directly into dryer control systems.

Medical gas and breathing air

Dewpoint monitoring is required for compliance with most medical gas and breathing air regulations. Stringent controls guarantee safe breathing conditions for hospital patients and firefighters.

Fluid bed dryers

Vaisala's HUMICAP® and DRYCAP® sensor technology both offer humidity measurement solutions for demanding fluid bed dryers where particulate contamination and various solvents are typically present.

Vaisala – right at the heart of it.

Curiosity, the desire to meet challenges and an extraordinary ability for innovation are at the heart of the company – both past and present. Through the years our expertise has grown to include three business areas:

Controlled Environments serving industrial customers whose primary interests are in operational quality, productivity and energy savings.

Meteorology serving national meteorological and hydrological institutes whose primary interests are the safety and well being of people and the safeguarding of property.

Weather Critical Operations serving operators and authorities whose primary interest is the safety and effectiveness of operations under all weather conditions.

Curious? Learn more about Vaisala at vaisala.com





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