

SENSORS



Gaurav Bawa
Senior Vice President,
WIKA India.

Energy-efficient HVAC instrumentation with smart sensor technology

“Mr. Gaurav Bawa, Senior Vice President of WIKA India, talks about WIKA’s product line for HVAC instrumentation, including temperature, humidity, air quality, airflow, and differential pressure. Bawa explains how WIKA uses sensors in its products to enable smart instrumentation for the industry and offers insights into the importance of precise temperature control in HVAC instrumentation.”

What industries does WIKA India serve, and which major companies are among its customers?

WIKA India is present for last 25 years, addressing requirements of precision machine tools of various industries like Oil & Gas, Chemical and Petrochemical, Food and Pharmaceuticals, Transport and Infrastructure, Power Engineering and many others. WIKA is one of the most recalled name in the instrumentation market. WIKA addresses the need of process-oriented industries and also industrial requirements. HVAC need is there for every industry that you can think of and we customise our products for each of their requirements. Most of the big brands are our clients.

By using the most versatile of materials, we enable precise measurement under the widest range of external influences. Our measuring instruments guarantee, at all times, the maximum safety for people, processes and the environment. As a reliable partner in



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process instrumentation, we can support you through all project and investment phases, from planning, through the realisation and implementation of the project to technical inspections, logistics solutions, on-site support and after-sales service.

What HVAC instrumentation does WIKA produce, and how does the company maintain quality and variety in its product line?

WIKA offers a complete range of instrumentation for the HVAC industry, including heating systems, solar thermal systems, heat pumps, and more. Within each category, the company provides a variety of measurement equipment, such as a comprehensive portfolio of high-quality dial thermometers for industrial HVAC temperature measurement. WIKA offers optimal analogue or digital dial thermometers, including glass, solar, bimetal, and non-toxic liquid-filled glass thermometers. The company’s extensive product range ensures customers can choose the best product, considering accuracy, measuring range, size, mounting, materials, ingress protection, and other factors.

How does WIKA use sensors in its products to enable smart instrumentations for the industry?

WIKA provides smart instrumentation

products integrated with sensors for various industries. The product range includes differential pressure gauges with pressure switches that can monitor air filters, industrial cooling circuits, flows in ventilation ducts, and control air and fire shutters using sensor-driven technology. These products can predict the heating and cooling requirements of the surroundings and adjust themselves. Additionally, the system’s software can signal the maintenance department in case any issues need to be addressed. This helps with predictive maintenance and leads to greener manufacturing. WIKA is also prepared to integrate with the Industrial Internet of Things (IIoT) in all fields and environmental conditions.

How does IoT integration affect HVAC systems, and what are examples of sensors used for industrial temperature control?

Digitisation and the Internet of Things (IoT) have provided a growing opportunity for Heating, Ventilation and Air Conditioning (HVAC) systems. The market has shifted towards Smart HVAC, where various sensors have replaced the traditional thermostat. With the integration of IoT, the output of measurements has become more refined and customised for each industry. Efficient thermal control heavily depends on sensors, with different industrial temperature sensors

available such as surface mount RTDs, thermocouples, and smart probes.

CO2 Alarm Sensors are the most important as they detect gas leakages that can cause harm. Fire protection sensors are also necessary for industrial manufacturing spaces to detect unnecessary increases in heat. Low voltage sensors are crucial in defining limits for voltage fluctuation to prevent fires and sparks. Thermographic testing and inspection, which measures surface temperatures using infrared video and still cameras, is essential for machines that work round the clock to ensure fixed downtime for both the machine and the safety of workers.

WIKA's HVAC product line deals with differential pressure, airflow, temperature, humidity, and air quality. They offer a smart sensor portfolio for energy and cost-efficient automation and control of air-handling units.

How vital is precise temperature control in HVAC instrumentation, and what are some typical outputs of temperature measurement and control devices?

Maintaining precise temperature control is crucial for effective HVAC instrumentation, as it allows for immediate analysis and reaction. Accurate temperature measurement is essential for protecting the quality of the final product, as any temperature mismatches in metalworks can compromise quality and workplace safety.

A temperature measurement and control device typically generates alarms for overheating or cooling beyond a certain point. It is essential to set effective alarms and limit settings that can react immediately to changes and offer automated adjustments where possible. The alarm should warn and request human intervention if the readings and output vary significantly beyond an acceptable margin.

Temperature measurement and control are crucial for industries

beyond metalworks, including food, beverages, and plastics. WIKA offers comprehensive technological competence and automated precision instrumentation in these fields as part of its complete HVAC instrumentation lineup.

How is WIKA addressing improper installation and lack of maintenance in HVAC units and prioritising sustainability, cost efficiency, and comfort in future HVAC technology?

WIKA believes that the HVAC technology of the future should prioritise sustainability, cost efficiency, and comfort through smart, environmentally friendly automation. This will require significant investment, as with any green technology. To reduce energy consumption and environmental impact, future HVAC systems may incorporate geothermal heat pumps, solar power, smart thermostats, and even ice-powered air conditioning.



In addition to technological advances, improper installation and maintenance are major challenges for HVAC units. WIKA aims to support customers in addressing these issues. The company emphasises the importance of quality in reducing resource consumption and maintenance costs, advising customers on the best instruments to install and training them to identify sensor malfunctions.

WIKA also provides predictive maintenance services and on-site calibration through mobile vans, recognising that servicing HVAC instruments can be challenging due to

their weight. The company has brought calibration services to customers' doorsteps to make maintenance easier and more accessible.

How is WIKA Global working towards achieving a zero-carbon footprint in its operations by 2030?

WIKA is committed to sustainability across all aspects of its products, policies, and future planning. The company recognises the importance of fine instrumentation, digitisation, and technology in driving sustainable businesses and processes. It ensures that all smart products and sensors are of the best quality to help clients adhere to their sustainability planning.

As part of its policy, WIKA Global aims to achieve a zero-carbon footprint in its operations by 2030, aligning with global SDG goals and emphasising green energy. The company is also focusing on the emerging segment of green hydrogen, developing solutions for this industry, and contributing to India's goal of becoming a leader in green hydrogen in the future. WIKA is also exploring innovative solutions for the solar industry, expanding its presence in the renewable energy space.

WIKA is fully aligned with India's recently established framework for the voluntary carbon market and has outlined a pathway towards the Cap-and-Trade System or the action advisory of the International Carbon Action Partnership (ICAP).

How is WIKA India planning to double its turnover by 2025 and transform India into a localisation and distribution hub for the global markets?

WIKA India aims to double its turnover by 2025 and become a localisation and distribution hub for global markets. Taking advantage of affordable labour, the company plans to increase cost-effective production and supplement WIKA Global's production through exports from its current plant. A strong supply chain and distribution channel will be crucial to achieving these goals. ❁