

# Modular, compact, smart: **TECNOSENS'** quality control solution

Having evolved from a simple final check into a lever for optimizing the entire production process, quality control plays an increasingly strategic role in today's industrial context. The same applies to such traditionally 'conservative' sectors as hollow glass, where **TECNOSENS'** automation is reshaping both standards and methodologies.

## **A MEASUREMENT REVOLUTION IN THE GLASS INDUSTRY**

The industrial glass sector -particularly glass containers- has always relied on experienced operators to carry out such essential quality checks as dimensional verification and defect detection. However, the growing need for precision, repeatability and traceability is driving the industry towards automated solutions. Modern plants now integrate systems capable of acquiring multiple types of data and processing them in real time, ensuring rapid and reliable responses. This paradigm shift calls for tools that are not only high-performing but also modular, easy to integrate, and equipped with intuitive operator interfaces.

## **THE CONTRIBUTION BY TECNOSENS**

Tecnosens, an Italian company with over thirty years of experience in electronics, automation and sensing technologies, fits perfectly into this context. Active in the import/export market since 1994, the company has built strong expertise in industrial measurement, leading to the development of specific solutions for quality control in glass. Among these, the *Oktilab* system is a synthesis of innovation and practicality: a highly compact and flexible multi-parameter measurement system designed to





meet growing demands for automation, accuracy and ease of use. The system can automatically inspect a wide range of characteristics in glass containers, including:

- Dimensional measurements
- Wall thickness
- Residual stress
- Weight
- Labelability
- Volume
- Colour

These inspections are performed without stopping the conveyor belt, ensuring continuous productivity. The software interface allows operators to set up customized 'recipes' for each product type, simplifying interaction and minimizing error margins.

## MODULARITY AND TRACEABILITY: SYSTEM CORNERSTONES

One of the most distinctive features of TecnoSens' solution

is its modular architecture. The system is designed to grow with the production plant: additional measurement modules or auxiliary functions can be integrated as needed, allowing for flexible configuration. Another key strength is complete traceability of each sample, achieved through automatic mold number reading and integration with LIMS (Laboratory Information Management Systems), increasingly common in industrial environments. The result is a system that not only performs measurements but also collects, organizes, and presents data in a functional way - transforming quality control into a strategic production management tool.

## OPERATOR CENTRALITY AND THE IMPORTANCE OF TRAINING

Despite the high level of automation achieved, TecnoSens emphasizes the ongoing importance of the human operator. Robotics does not replace human intelligence - it enhances it. The goal is to empower the operator by relieving them of repetitive, low-value tasks and equipping them with intuitive tools for process monitoring and intervention. The interface has been designed with this in mind: to provide full control without requiring advanced programming skills. In this context, training becomes essential: to supervise automated processes, operators must evolve into informed supervisors capable

of understanding and optimizing human-machine interaction.

## SMART AUTOMATION AND THE IMPACT OF NEW TECHNOLOGIES

The increasing use of collaborative robots and artificial intelligence in industrial measurement is opening new opportunities in the glass sector as well. Robots can autonomously handle sample collection, rejection and positioning - improving process continuity and reducing human error. AI, for its part, can assist with data analysis and automatic defect recognition, making the system capable of learning and adapting to production changes. TecnoSens welcomes this evolution while maintaining a pragmatic approach: the goal is not to replace humans but to foster the synergy between human expertise and machine efficiency.

## IN SUM

TecnoSens' approach to quality control in hollow glass is a virtuous example of a new generation of measurement systems: modular, compact, intelligent and user-friendly. Automation is not an end in itself, but a means to make production more efficient, traceable and customizable. In a sector where quality is critical, solutions like *Oktilab* prove that measurement is no longer just a checkpoint. It is also an active component of the production process that's capable of generating both value and innovation. ■





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