

Safety at work: Elettric80 launches a wearable device that increases the reliability of Industry 4.0

A patented collision avoidance system based on Ultra-Wide Band technology (UWB) enables the automated guided (AGV) and laser-guided (LGV) robotized systems to interact with special devices worn by the operators, increasing the safety level of the entire system.

Reducing and often eliminating any type of risk associated with man-machine interaction, keeping people safe and, at the same time, ensuring the maximum functionality and reliability of the industrial plants: **Elettric80**, a multinational with headquarters in Viano (Reggio Emilia) that specializes in tailor-made intralogistics solutions for large consumer-product manufacturers – predominantly in the food, beverage and tissue sectors – launches a wearable system that further increases the safety standard inside factories and distribution centers.

For Elettric80 safety is a priority and is closely linked to its way of designing, installing and maintaining over time its systems all over the world in an increasingly sustainable perspective. For this reason, it has always been committed to training staff and to researching and developing smart systems that raise the safety standards inside the plants, meeting and exceeding the international standards established by the regulations in force.

The handling systems with automated guided vehicles (AGV) and laser-guided vehicles (LGV), the core business of the Italian multinational, ensure maximum integration and efficiency of the intralogistics operations inside the factories, handling products and raw materials in a large area where operators and manually guided vehicles can also transit.

The international safety regulations provide that the automated guided vehicles must be equipped with people and object detection devices, alarm systems and protection mechanisms.

Elettric80's AGVs/LGVs have always been equipped with additional technological protection systems above and beyond those required by these regulations.

Integrated within the plants, they are also managed by a single software platform SM.I.LE80, developed by Elettric80, which dialogues with the customer's Enterprise Resource Planning system (ERP), ensuring the remote continuous supervision of the entire intralogistics solution and guaranteeing the total traceability of the operations, from the entrance of the raw materials, to the storage, up to shipments.

With the aim of further improving the safety standards inside factories and distribution centers, while maintaining the highest levels of efficiency over time, Elettric80 has recently developed and patented worldwide a collision avoidance system that innovatively uses the Ultra-Wide Band technology (UWB), increasing the ability of AGVs/LGVs to detect operators and manually guided vehicles moving in the surrounding area. This reduces and often avoids any risk related to potentially dangerous situations caused by incorrect or unforeseen behaviors.

In fact, each vehicle is fitted with antennas that communicate in real time with the tags worn by the operators and placed on manually guided vehicles.

The system allows each AGV/LGV to detect the tags, tracking their position, speed, and direction of movement.

Therefore, the AGV/LGV, by detecting the tag in the surrounding area, can tell if there is a potential danger of collision with the moving element and, consequently, slows down to a stop or continues on its path, if all is clear.

At the same time, the wearable device provides feedback to the operator in the form of vibration, flashing light or sound to warn him of a possible approaching danger.

The system greatly increases the ability of the AGVs/LGVs to detect what is moving inside the plant and shares the information with all the other LGVs in the area.

Since it is not classified as “safety rated”, it must always be used in combination with the other certified safety devices already operating on all the automated guided vehicles.

The device is only the last link of an integrated approach to safety that permeates the phases, from design to production up to installation, of all Elettric80’s solutions, within which the continuous skills training process of the operational staff represents an essential part of the constant support guaranteed to the customer.

Thus, the system made by Elettric80 has enhanced the widespread and versatile technology of UWB networks, to permit increasingly refined robotic behavior patterns in managing events that do not comply with rules and contingencies. With this innovation developed by its in-house Research and Development department, Elettric80 confirms its commitment to providing customers with solutions capable of guaranteeing over time the maximum reliability and efficiency of increasingly safe systems, looking towards a sustainable and regenerative future.