4 MINI CASE STUDIES
RFID SOLUTIONS
SICK SENSOR INTELLIGENCE

Radio Frequency Identification (RFID) can address numerous manufacturing challenges, including security, quality control, production execution genealogy and asset management

> OUR PRODUCTION LINE NEEDED ACCURATE AND RELIABLE SECURITY PROCESSES. TODAY, EACH WORKER HAS A TRANSPONDER ON A KEY RING. IF THE INDIVIDUAL WANTS ACCESS TO THE CONTROL PANEL OF A MACHINE, THE PERSON'S TRANSPONDER MUST BE VERIFIED. WE HAVE REDUCED INPUT ERRORS AND PROTECTED SENSITIVE SYSTEM DATA WITH SICK RFID.
>
> **—JOE G**, *Director of Security, Newport, Virginia*

SICK
Sensor Intelligence.

SECURITY

A car manufacturer in Europe uses SICK RFID to solve security issues. Its production process requires that systems and computers be specially configured via about 650 programs to initiate different production steps. Today, each worker has a glass transponder on a key ring. The glass shell protects against dirt, moisture, impact and temperature. If an individual wants access to the control panel of a particular machine, the person's transponder must be verified by the reader before new data can be entered.

Using SICK RFID, the company achieved its goals of reducing input errors, monitoring and logging security and task information, and protecting sensitive system data. Changes are time- and date-stamped with the tag ID, creating a historical log for root cause analysis in the event of problems.

QUALITY CONTROL

A pharmaceutical company uses SICK RFID for process monitoring and validation. During production, 1,000 bottles are loaded onto metal racks, which are moved into an autoclave for sterilization at 120 C. If there is any doubt about correct time or temperature of sterilization, the complete batch must be destroyed. Previously, product tracking and control measures were done manually, which allowed room for error.

To solve this problem, the company installed a conveyor system to automatically move the racks. RFID tags are used to track and validate each rack through sterilization, operating within various environmental constraints including high heat, line of sight and stainless steel racking.

> WE HAVE FOUND ENORMOUS SUCCESS WITH RFID TAGS AND PACKAGING. QUITE A FEW YEARS AGO, WE EXPERIENCED A MAJOR E. COLI OUTBREAK THAT MADE HUNDREDS OF CUSTOMERS SICK FROM EATING CONTAMINATED FOOD. BY IMPLEMENTING RFID TECHNOLOGY TO TRACK OUR FOOD SUPPLY CHAIN. WE IMPROVED THE ABILITY TO TRACE FOOD PRODUCTS AND TO MAKE SURE THE FOOD REMAINED SAFE AND UNCONTAMINATED.
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> —**XAVIER M.**, *Quality Control Manager, Richmond, VA*

PRODUCTION EXECUTION

A European car manufacturer needed flexible automobile assembly in a plant where every car is assembled according to the purchaser's custom order. With varying options for color, engine, trim and tires, there could be hundreds of variations in the line.

The solution the manufacturer is using is to attach RFID tags, programmed with each vehicle's specifications, to the skid that carries each car. As the skid moves through each station, the operator or robot reads the information on the tag and manages the steps according to the data received.

GENEALOGY

A food manufacturer of processed meats and cheeses, uses SICK RFID for raw material and product tracking. Operators install RFID tags on the pallets or containers of raw ingredients when they are received from each supplier. The tags are integrated into a data tracking system that indicates which containers are to be used and when, with alerts if any container is nearing expiration. SICK RFID is also used for their work in process (WIP) requirements. Once the ingredients are mixed, batches are placed in racks for cooking, chilling and aging. Tags are applied to these racks to automatically read and record at each production step, give information for the next step, and alert when the duration of a particular step is not correct.

ASSET MANAGEMENT

Manufacturers pursue lean manufacturing and just-in-time methodologies to obtain the benefits of reduced inventory. Some manufacturers, however, build up inventory to handle unforeseen circumstances, or because they do not have an accurate representation of WIP. SICK RFID can improve inventory visibility and tracking within the manufacturing operation.

Another driver for equipment efficiency in highly automated facilities is through maintenance, repair and overhaul activities. RFID-enabled data can fulfill CMMS requirements of providing detailed, accurate and timely data. With RFID, many types of data can be ascertained, including location on the floor, usage or maintenance history, information on cleaning and sterilization, and validation for use for particular lines or ingredients.

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