



RFID TECHNOLOGY FOR LOW-MAINTENANCE ACCESS CONTROL

Open sesame!

Whether in intralogistics or retail: There are areas that may only be entered by authorized personnel. These are often secured by high-speed doors. Access should ideally be automatic and without major procedures, because any interruption in the operational process costs time and thus money. Unfortunately, so do proprietary systems that incur high operating costs. A solution that is based on rugged components and an industry standard and incurs hardly any costs during operation is therefore promising.

There is a warehouse in every branch of a discounter or retailer. Here, the goods are sorted after delivery and prepared for sale. High-speed doors separate the warehouse from the sales area. If employees are in the area of the gates, these have to open safely at all times and, ideally, automatically, so that operating processes are not interrupted unnecessarily.

While the path from the warehouse to the sales room can easily be opened up by means of light barriers, the reverse route poses challenges for the store operators: The ware-

The advantages of the solution:

- Increased protection for warehouses against unauthorized access and manipulation
- Reliable and virtually maintenance-free operation
- No running costs
- Personnel do not have to interrupt workflows to open gates
- Simple handling and control of multiple access points
- Long-term availability of spare parts

house may only be entered by authorized persons such as sales or cleaning personnel.

Various technological solutions can be used to identify personnel. For example, some stores rely on voice control integrated into the call system or on active RFID (radio-frequency identification) or Bluetooth transponders. The latter can be worn on the body and send signals permanently. As soon as they reach the detection area of the reader installed on the gate, the gate opens automatically.

Successful co-creation

Wolfgang Kratz has been a specialist in automatic door systems since 1979. His company, PAT Deutschland GmbH, is a Siemens partner and serves numerous retailers, retail companies and discount chains in Germany and other European countries. "Automatic doors, high-speed doors and passage gates are indispensable in retail", the Managing Director says. "Despite their apparent banality, they often pose problems for my customers. Personnel do not have time to deal with cumbersome access restrictions. At the same time, these gates have to open and close safely".

Mr. Kratz can report on many solution approaches that have proven to be either too cumbersome, too unreliable or even dangerous: "Imagine a pallet truck loaded with mineral water ramming into a roller door because the employee was relying on automatic opening as usual, but the system does not work reliably".

In order to develop and implement a robust and reliable solution with the lowest possible operating costs, PAT Deutschland GmbH cooperated closely with Siemens: After Managing Director Wolfgang Kratz reported on his experiences with active RFID systems and the challenges of his customers during a trade fair visit to the Siemens booth, it took less than four weeks to get the test system in Erlangen up and running.

There were modifications according to his specifications and, after another two months, a first test installation could be put into operation in one of his customer's branches. With the support of two Siemens engineers, Mr. Kratz and his colleagues were able to put the access control system into operation within half a day and immediately make an impact on the market. "I am very impressed by the support from the Siemens team", the Managing Director of PAT Deutschland GmbH says: "It only took a little over a year, from the initial contact to the signing of a framework agreement for the system, for us to develop a robust system tailored to the retail sector."

Solution using standard components

The system for controlling high-speed doors, which is based on SIMATIC RF600, works through an external antenna by detecting passive UHF transponders (i.e. battery-free transmitter units) that employees carry with them. As soon as the reader registers an authorized transponder, a relay is activated, which opens the corresponding gate or door.



SIMATIC RF620T transponder

Neither direct interaction with the transponder nor visual contact is necessary. Since the transponders are passive, they do not require a battery and never need to be charged. In addition, the system is fully glued, which prevents the penetration of liquids and detergents and ensures reliable operation, even in harsh industrial environments. A central control unit allows the connection of several readers and gates.

Nevertheless, it is ensured that only the specific gate whose antenna has detected a transponder opens.

Reliable and cost-effective access control

The access control system offers the user numerous advantages. It ensures that doors and gates are protected from unauthorized access, as manipulation by third parties is prevented. Up to four doors or gates can be controlled via a central control unit, enabling efficient management of multiple access points.



SIMATIC RF650A antenna

Thanks to an international industry standard, the system is future-proof and offers long-term access to spare parts and new transponders. Commissioning is low-cost and additional transponders can be retrofitted easily.

Since the system does not require batteries, a high level of reliability when opening doors and gates is ensured. Furthermore, there is no need for regular maintenance or adjustment, which simplifies operation and reduces costs: "Our customers are impressed with this solution: It is easy to use, absolutely reliable and has virtually no operating costs. Employees can rely on trouble-free operation



SIMATIC RF690R reader

without having to interrupt their workflows or manually enter access codes. Warehouses and goods are thus effectively protected against unauthorized access", Mr. Kratz says.

PAT Deutschland GmbH

PAT Deutschland GmbH, based in the East Frisian town of Hage, is an innovative and agile company that specializes in the development and distribution of solutions for the retail sector. The range of products and services extends from voice control systems and cash register report systems to transponder systems for access monitoring, all the way to the sale and servicing of automatic doors.

Problem solver for PAT Deutschland: SIMATIC RF600

The SIMATIC RF600 UHF RFID system from Siemens is a modern solution for industrial and logistics applications that enables precise and reliable identification of objects. Especially in the field of access control in retail, the system impresses with its long range, easy installation and the possibility of detecting several transponders in parallel. Technologically, the SIMATIC RF600 system is based on the EPCglobal standard, which enables flexible use in different applications.

Readers and transponders that have been developed for different areas of application are at the core of the SIMATIC RF600 system. The readers are available in variants with an integrated antenna for compact installations. Alternatively, models are available with connection options for external antennas to ensure maximum range and flexibility.

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