Why Wireless Readers are the Future of RFID

Pushing Performance

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One of the biggest misconceptions about RFID is that it is a fully wireless solution. While it is true that the transponders / tags are wireless, for a long time, the RFID reader processed the tag data needed to be physically connected to a network. This anchored the RFID system to one physical location. In an increasingly mobile world, stationary RFID readers with the capability to transmit the tag data over WiFi has become a requirement. This article explores the benefits of wireless RFID readers in Industrial applications.

1. **Wireless RFID Readers Enable Remote Access to Data without Additional Components**

   In the past, there were two ways to access the data on an RFID reader. Option one was to physically connect the reader to a device that could store and process the information. This could be PC, for example. In applications like machinery, RFID readers could be connected directly to the machine's PLC. Either way, a physical connection between the reader and some other computer system was required.

   Option two was to connect the reader to a device, such as a wireless access point, that can transmit the data from the reader over WiFi to be accessed remotely. This required additional components as well as configuration and Ethernet infrastructure.

   By using a wireless RFID reader, additional PCs or a wireless access point is not needed.

2. **Wireless RFID Readers Enable More Efficient Collection and Visualization of Data**

   When RFID readers are not connected to either WiFi or a device that can transmit the data to the network, it is very time consuming to collect information on the

   RFID reader. Using a device, like an USB, collect information means that a person needs to go from reader to reader and pull the latest information.

   Some readers don't have storage capabilities, so they need to be connected to a place for data storage. Sometimes, an USB drive acts as the storage device. Collecting that data then must be a manual process.

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Then, they need to collate the data in a program on their computer. This is time-consuming and prone to error. To replace this process with an automatic process, the readers must be connected to a larger network.

The option is to do this over wired or a wireless connection. If an RFID reader is integrated to a network localized to an application, a wired choice may be best. For example, a packaging machine may use RFID on different stations. All the RFID readers may be connected to the PLC. Using wires in this instance may be a better option.

However, if the application takes place in a larger space—say you want to track forklifts as they move around a warehouse, using cables to connect the reader to a network is not a possibility. This is where a wireless reader's benefit truly shines.

3. **Wireless RFID Readers Enable More Mobile and Flexible Applications.**

In modern industries, applications and needs are becoming increasingly mobile. Modular machines that are reconfigured frequently are replacing older static machines. Others are looking for ways to digitally track vehicles or items being moved by vehicles.

The means that the RFID reader's "read zone" may need the ability to be changed or relocated. If using a wired solution, the network cables anchor the system to a specific location. By using a wireless system, that read zone is no longer anchored to a singular location but can move.

Wireless RFID Readers for Industry

Stationary RFID readers with wireless capabilities are relatively new to the market–especially regarding RFID readers for Industrial markets.

Recently the FCC approved HARTING's new MICA RF-R300 Wireless reader for the US. This new wireless RFID reader is IP67 rated making it suitable for industrial applications. It has also been rated for shock and vibration so it can be used in applications where there is a lot of movement.

The HARTING MICA RF-R300 wires has all the capabilities of HARTING MICA. These features include:

- Open source architecture that allows for software customization
- Integrated storage
- Ability to process, compute, and manipulate data directly on the MICA.

RFID4Logistics Forklift Package

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HARTING has developed several starter packages for IIoT and RFID applications. The RFID4Logistics - Forklift. The RFID4Logsitics - Forklift is the starting point for quickly and easily turning a vehicle into being a moving RFID reader. Instead of the usual practice of installing fixed reading points and recording the movements of goods, as previously done, the forklift truck itself has now become a mobile reader. Mobile versions of the proven RFID reader Ha-VIS RF-R300 have made this possible. Its power is supplied by the vehicle and its connection to the company network is via wife or LTE. This results in a versatile RFID system that combines the advantages of a mobile reader with the reliability and power of a stationary one.

HARTING uses this solution in their own European distribution center. Learn more about this case study here: https://tecnews.digital/en/rfid-in-logistics

For more information on HARTING's RFID technologies, visit our webpage at https://www.harting.com/US/en/rfid

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