Anybus Baking machines User Guide

Case study:
Baking machines

Effects:

- Wireless communication between the main machine and cabinet.
- No need for expensive slip rings.
- No wear and tear.

“We have saved quite a bit of money on not having to use expensive slip rings and we did not have to run a single cable.”
Andreas Kisch
General Manager
Softtek

Wireless technology makes life easier in the bakery

How Austrian machine builder Softtec got rid of cables and cut down costs when building an automation system at a bakery in Sweden.
The Swedish bakery Östras bröd has been baking bread since 1899. But just because you have long traditions doesn’t mean you can’t use new technology. The bakery’s brand new baking machine has a state-of-the-art controlling system built on Siemens controls – and wireless technology from HMS Industrial Networks. The machine builder is Austrian Softtec who specializes in innovative automation solutions for bakeries.
The problem
The baking machine consists of several large cylinder-shaped containers which hold the dough during the process. The cylinders are slowly spinning around like a carousel which makes it possible to fill them with flour and water, but it also makes wiring cumbersome. Also, the controlling cabinet is on the other side of the room which complicates wiring even further.
The solution
To solve this issue, Softech installed the Anybus Wireless Bolt solution from HMS. The Anybus Wireless Bolt establishes a very reliable wireless connection via Bluetooth or Wireless LAN for up to 100 meters. The top part of the Wireless Bolt is mounted onto the exterior, while the bottom is on the inside connecting to the machine (via Ethernet).

From Bolt to Bolt. An Anybus Wireless Bolt is mounted on the top of the baking machine (left) and communicates via Bluetooth to another Wireless Bolt on the top of the controlling cabinet (right). communicates via Bluetooth to another Wireless Bolt on the top of the controlling cabinet (right).

In the case of Softtec's baking machine, the Wireless Bolt is used as cable replacement from the machine to the main controlling cabinet on the other side of the room. Softtek has mounted one Wireless Bolt on the top of the baking machine, and another Wireless Bolt on the top of the control cabinet, about 10 meters away.
"The alternative to using wireless communication here, would be to use slip rings," says Andreas Kisch at Softtek. "But everything that moves and turns wears its own after a while so we decided to go with a wireless solution that does not require any maintenance."

Bluetooth communication
Data is sent between the two Wireless Bolts via Bluetooth. Softtek first tried using WLAN but found out that the busy environment in the bakery (with lots of other radio traffic and stainless steel to reflect radio waves) was better suited for Bluetooth communication.
As Bluetooth uses narrow frequency band channels and

On the inside. The Wireless Bolt communicates with the machine via Ethernet (PROFINET).

actively switches frequency to find a good connection, it is often best if a robust and stable connection is needed, while WLAN is better for large data transfer.
Since it is a Siemens-based control system, the communication is handled using PROFINET I/O. Bluetooth is the preferred choice for I/O communication via ROFINET so that was also another reason to use Bluetooth. The I/O data cycle time was set to 64 milliseconds.

A reliable solution for future use

Soon, the new baking machine will be making bread for the citizens of Southern Sweden. And Softtec has found a wireless solution that they can definitely rely n on their future installations around the world.
“The installation process was pretty much plugged and play,” says Andreas Kisch. “We got a little bit of help from HMS, they walked us through the process, and it as uite easy. In the end, we have saved quite a bit of money on not having to use expensive slip rings and we did not have to run a single cable.”

HMS Industrial Networks develops and manufactures state-of-the-art hardware and software for industrial communication. Products are marketed under the brand names Anybus, Ewon and Ixxat. HMS was founded in 1988, is headquartered in Halmstad, Sweden and is listed on the NASDAQ OMX Nordic Exchange n Stockholm, ISIN-code: SE0002136242.

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