



Solution: Anybus Wireless Bolt
Country: Austria/Sweden
Company: Softtec GmbH

Effects:

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

Wireless technology makes life easier in 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 systems 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, Softtec 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 on to the exterior, while the bottom is on the inside connecting to the machine (via Ethernet).



"We have saved quite a bit of money on not having to use expensive sliprings and we did not have to run a single cable."

Andreas Kisch
General Manager
Softtec



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. Softtec 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 sliprings," says Andreas Kisch at Softtec. "But everything that moves and turns wears down 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. Softtec 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

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 PROFINET 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 on in their future installations around the world.

"The installation process was pretty much plug and play," says Andreas Kisch. "We got a little bit of help from HMS, they walked us through the process and it was quite easy. In the end, we have saved quite a bit of money on not having to use expensive sliprings and we did not have to run a single cable."



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



Solution: Anybus Wireless Bolt

Country: Denmark

Company: INFUSER AB



Effects:

- Wireless access from outside a contaminated room.
- Industrial-strength connection.
- Unique connection between a specific robot and controlling tablet.

Disinfection robot has robust wireless access via Anybus Wireless Bolt

STERISAFE™-Pro disinfects surfaces in any given room – for example patient rooms, operating theatres or hotel rooms – making the high level of disinfection (up to 99,9999% removal of pathogens) look surprisingly easy. The robot fills the designated room with an Ozone-based biocide agent which kills unwanted bacteria, viruses and fungi, while purifying the air from small particulate matter in the air. STERISAFE™-Pro is controlled from outside the room using wireless technology from HMS Industrial Networks.

The STERISAFE™-Pro robot from INFUSER produces Ozone (O₃) by using the oxygen (O₂) already present in the room. All that is needed is electricity and water. By diffusing Ozone and a fine mist of water, it is possible to expose all surfaces in a room. The Ozone oxidizes the membrane or shell of bacteria, viruses and fungi, leading to total deactivation of these micro-organisms.

The Ozone-saturated atmosphere in the room is sustained for a defined period of time, during which the pathogenic micro-organisms are killed on surfaces and in the air. The recommended disinfection time is two hours (for rooms of up to 150 m³). Ozone naturally turns back to Oxygen after having reacted with pathogens and other pollutants, leaving no chemical residue.

Robust wireless access needed

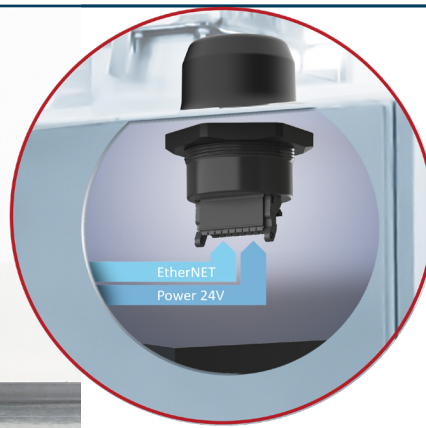
Although ozone is a naturally occurring gas, it is harmful at high concentration levels and the STERISAFE™-Pro requires that the operator is outside the sealed room while the robot runs its cycle. The operator uses a tablet which is connected wirelessly to the PLC inside the robot. INFUSER has created an app which the operator uses to control the robot. The app interfaces with the built-in webserver in the PLC.



"We had communication set up in a matter of minutes."

Thomas Clapper

Production Responsible
INFUSER



The Anybus Wireless Bolt™ is connected to the PLC inside the STERISAFE™-Pro robot using Ethernet. The Wireless Bolt can communicate via WLAN or Bluetooth up to 100 meters.

OK, so that sounds easy enough, but accessing a PLC which is inside a hermetically sealed, stainless steel machine which performs surface disinfection, demanded a wireless solution with high performance.

“When we first started developing STERISAFE™-Pro, we used a regular commercial access point, but we soon realized that we needed something more robust and advanced,” says Thomas Clapper, production responsible at INFUSER.

“We needed an access point that was omni-radiant and also 100% sealed. This is when we came across the Anybus Wireless Bolt from HMS Industrial Networks.”

The Anybus Wireless Bolt™ is a wireless access point for on-machine mounting. It can communicate via WLAN or Bluetooth up to 100 meters and is built for harsh industrial conditions both when it comes to the physical housing and the wireless communication.

It was a perfect fit for STERISAFE.

“We use WLAN to communicate between the PLC inside the robot and the tablet and really benefit from the robust communication that the Wireless Bolt offers. We also needed to design unique connections for each robot/tablet-pair, so that it is possible to run several machines in the same area without radio interference. This is also something that the Anybus Wireless Bolt allowed us to do,” says Thomas Clapper.

Tough demands

But the project has not been without challenges. One issue that INFUSER ran into was that Ozone sets tough demands on durability. Although the Wireless Bolt is IP67-classed (meaning that it is waterproof down to 1 meter's depth), INFUSER still found that the rubber washer on the Bolt was not Ozone proof.

But since the Anybus Wireless Bolt is mounted in a standard M50 hole, it was easy to find a replacement – a washer that HMS now can offer as an alternative to their offering too.

“Implementing the Wireless Bolt was very smooth indeed,” says Thomas Clapper. “We had communication set up in a matter of minutes and have really not had any issues when it comes to the wireless communication. The Wireless Bolt is simply a very reliable and sturdy wireless solution.”

Learn more on www.anybus.com or www.sterisafe.eu / www.infuser.eu



Anybus Wireless Bolt enables you to connect industrial devices to a wireless network. It is attached onto a cabinet or a machine to enable wireless access. Wireless transmission is made via Bluetooth, Bluetooth Low Energy or WLAN technology.

The Wireless Bolt is IP67-rated and has a max range of 100 meters. It can communicate with devices using Ethernet, Serial (RS232/485) or CAN. Regardless of communication method, you have the same connector (2x9p;3,5 Plug Connector) for both power and communication.