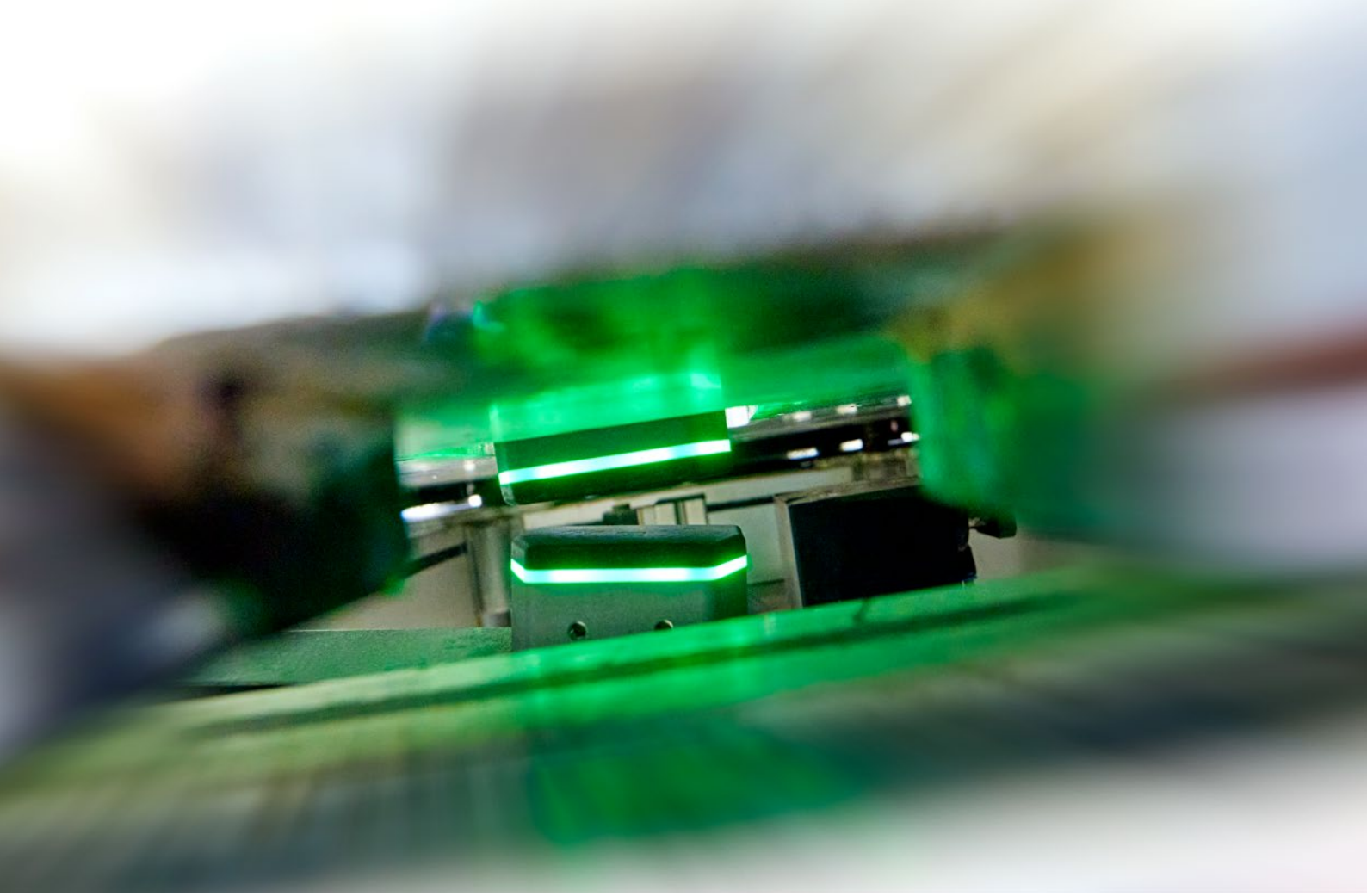


Reference

# NearFi in use with workpiece carriers

## Contactless power and data transmission

# Workpiece carriers

Workpiece carriers are components in automation technology applications. These are carriers on which one or more workpieces are attached or inserted in order to transport them by a workpiece conveyor along several production lines or production stations. The workpiece is usually processed directly on the workpiece carrier by robots or employees.

**Example of workpiece carriers for automated test beds**
By means of type identification, the workpiece at the test station is married to the carrier. At another test station, the workpieces are tested for leaks by using a water circuit. The entire test stand consists of several stations, where several workpieces are tested simultaneously at each one. Each workpiece carrier is equipped with sensors, actuators, and hydraulics. PROFINET I/O modules are used for acquiring the sensor data and controlling the actuators. Valve islands control the hydraulic cylinders to clamp the tools. The components forward the data between the mobile and fixed part of the system via the PROFINET protocol.

# Viessmann Group

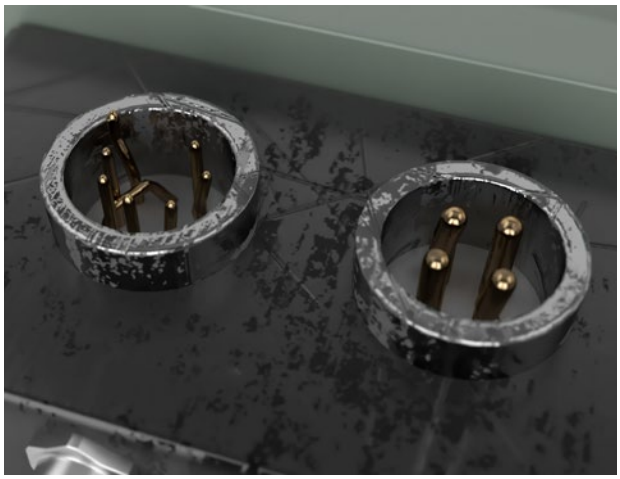
**Application**
The Viessmann Group has been producing heating technology products as well as air conditioning and cooling systems for more than a hundred years. Automated testing of the end products requires workpiece carriers that transport the manufactured condensing boilers through the test stands. A physical connection for the Profinet-based transmission of sensor data in moving applications is prone to interference. This is why Viessmann uses the NearFi contactless real time Ethernet solution from Phoenix Contact for wear-free and maintenance-free communication.



*A NearFi coupler for contactless data transmission is installed on each workpiece carrier*

**The challenge**

In the past, connectors were used to transmit PROFINET data between the workpiece carrier and the controller. Due to the frequent docking and use of water during the tightness check of the boilers, the connectors are susceptible to interference and require high levels of maintenance. In the meantime, data exchange has been switched over to WLAN systems. Initially, the wireless solution worked. But in the course of the plant's automation, more and more WLAN networks were installed. Due to the resulting increased downtimes and service times caused by communication problems, a new data transmission solution had to be found.

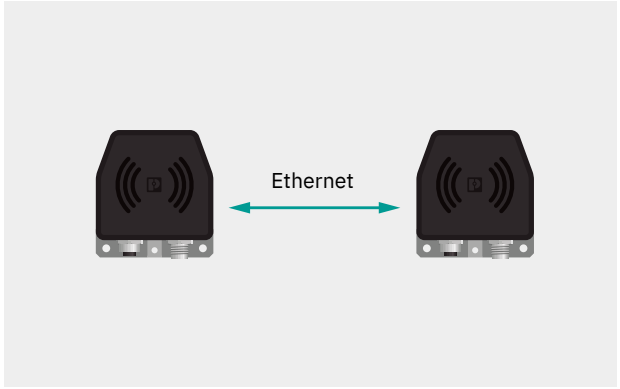


*Faulty connectors can cause production downtimes*

**The solution**

A NearFi coupler is installed on each workpiece carrier. The counterpart is located in front of each test station below the workpiece carrier.

Each of the workpiece carriers is equipped with sensors, actuators, and hydraulics. The Axioline E remote I/O system is used to acquire the sensor data and control the actuators. Valve islands control the hydraulic cylinders to clamp the tools. The NearFi couplers forward the PROFINET data without any latency or wear across an air gap to the controller.




*Contactless data transmission with NearFi technology*

"I quickly realized that our communication problems could be solved with NearFi. It is impressive that the devices simply need to be connected with a 24 V and PROFINET cable and the connection is established in just a few milliseconds".

*Manuel Kluge, Testing Technology, Viessmann Climate Solutions SE*

## Recommended products

With NearFi couplers, power (50 W, 24 V DC/2 A) and real-time Ethernet data (100 Mbps, full duplex) can be transmitted across an air gap of a few centimeters.

1433050 NEARFI 2200 B
1433049 NEARFI 2200 R



*NearFi couplers for contactless power and data transmission*

# Contact

Do you have any further questions about the NearFi couplers or our NearFi technology? Contact us for more information, we will be glad to advise you.

Find out more about our NearFi products:

› phoe.co/NearFi-coupler

Found out more about our NearFi technology:

› phoe.co/NearFi



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