

## Press Release

### Connected Automation without limits

Electromechanics, hydraulics and linear motion technology: new i4.0 showcase shows the connection of machine tools across different technologies

PI 035/17  
2017-08-02

- ▶ Overall Equipment Effectiveness (OEE) increased by simple means
- ▶ IoT Gateway and Data Analytics Server create the necessary transparency
- ▶ Live demo with Pfiffner: visualization of several machines and modules



At EMO Bosch Rexroth illustrates how machine tool manufacturers increase the Overall Equipment Effectiveness (OEE) of their solutions by simple means. The tools: IoT Gateway, Data Analytics Server and Bosch IoT Cloud. The new i4.0 showcase connects two measuring machines and a production facility of the rotary transfer machine manufacturer Pfiffner. (Photo source: K.R. Pfiffner AG)

**How can machine builders increase the Overall Equipment Effectiveness (OEE) and make use of machine data analytics for development, sales and service? Bosch Rexroth answers questions like these with a new i4.0 showcase, which among other things connects machines of Pfiffner, the leading global manufacturer of rotary transfer machines, and a production facility. The live demo also shows that "Connected Automation" has no technological limits. Because with its showcase Bosch Rexroth connects not only electrical components but also hydraulics and linear motion technology. The relevant software for condition-based monitoring and maintenance is formed by the new Data Analytics Server (DAS) and the IoT Gateway. A secure connection to the**

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### **Bosch IoT Cloud allows performance monitoring across different locations.**

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Visitors get to see the live demonstration of status and machine condition and performance monitoring both at Bosch Rexroth and at the Fair Friend Group (FFG) which Pfiffner is part of (hall 14, booth G02). The connected RT and PT rotary transfer machines of the OEM partner are designed for mass production and they are controlled by the high-performance, individually scalable CNC system IndraMotion MTX advanced. The Data Analytics Server, installed on a standard industrial PC, gathers machine data in real time, such as operating mode, cycle time, unit counts or motor temperatures. The Data Analytics Server uses the OPC UA protocol to communicate with the machines and the superior IT systems.

At Bosch Rexroth's booth the IoT Gateway also collects sensor and machine data for the showcase. This cost-effective tool enables existing equipment in particular to be made transparent without interfering with the automation infrastructure. In addition to the DAS, the IoT Gateway also supports numerous cloud services at the evaluation level.

In a Pfiffner machine module displayed at the Rexroth booth and equipped with an IndraMotion MTX advanced control system, the IndraDrive spindle drive with a Sercos connection also supplies real-time data to the Data Analytics Server, just like the CytoPac compact power module controlled by PROFINET. The data recorded includes rotational speed and pressure as well as the oil level and temperature and the filter condition.

Based on all the collected data, the live demo DAS calculates, analyzes and visualizes the state and use of the machines. The locally stored data is available to the machine manufacturer via remote diagnostics as required for further development and targeted troubleshooting, in particular to ensure that the efficiency and productivity is as expected by the end user.

For performance monitoring across different locations, the DAS streams preprocessed data via a secure connection to the Bosch IoT Cloud – for subsequent evaluation by the Production Performance Manager from Bosch Software Innovations. In addition, numerous data are transmitted and processed from the Rexroth booth. For the Linear Motion Technology product range this typically includes position and acceleration data from the IMS-A integrated measuring system. This enables, for example, quality-related collisions to be revealed.

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Bosch Rexroth at EMO: hall 25, booth D94

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