

PRESS RELEASE

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Witzenmann presents IoT expansion joint study at the Achema.

Industry is changing. Digitization or Industry 4.0 are the catchwords here. The fact that these topics are now also relevant for system components can be seen – and tested at the Achema 2018.

With their IoT expansion joint study, the Witzenmann Group presents flexible pipeline components that can be digitally integrated into pipeline network monitoring for the first time.

What is the added value of such a component?

In the field of process plants, the ongoing operating costs represent up to 70% of the total costs. This is generally caused by a lack of information on the operating condition of the individual plant components, the interaction of which guarantees the plant reliability. Up to now it has not been sufficiently possible to continuously monitor the operating condition of important functional components, with the effect that the risk of an unexpected plant failure increases and the overall cost-effectiveness thus decreases. Expansion joints are among the most important safety elements in the pipeline network of industrial plants.

For the first time, the IoT expansion joint study allows a continuous evaluation of the operating condition in real time due to intelligently linked sensors. The operator can now directly call up all relevant data of the expansion joint and put it in context with the entire plant.

The following innovations were realised in the study:

Condition monitoring in real time

An FEM model of the expansion joint that provides information on and visualises the current load situation of the bellows is generated continuously in real time via a dashboard. At the same time, the remaining service life of the component is continuously calculated from the actual operating data. Overall, this makes the plant safer and more economical, since an unexpected component failure can be largely excluded. The degree of damage can therefore be estimated much more precisely, and any regular replacement or inspection intervals can be planned more effectively in the plant revision cycle.

Digital type plate

The complete component documentation at a glance. From the specific design parameters, the technical drawing, to the typing of the component or the contact person at the manufacturer's. This makes it possible to easily access all relevant data, even decades later. The dynamic data of the component can be directly read out via the digital data plate, in order to request an identical component or engineering consultation from the manufacturer if necessary in a fast and uncomplicated way. In addition to the pure provision of operating data, the IoT expansion joint offers a further exciting highlight: predictive maintenance

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Predictive maintenance

Not only is the current operating data recorded but the entire load history of the component is saved. The expansion joint records all relevant data, even effects that are not planned for the system, such as, e.g., pressure shocks or unplanned temperature courses. When a component is replaced, the manufacturer can therefore precisely evaluate its load for the plant operator.

The added value results from this precise cause analysis, which makes it possible to design subsequent components exactly for the plant requirements. The knowledge and availability of detailed operating data are reflected in a higher operating efficiency and longer service life of the entire plant here as well.

The IoT expansion joint study makes it clear how Witzemann customers can profit from the possibilities of Industry 4.0. They receive a comprehensive, integrated service. Flexible metal elements become an integral component of a digitized process delivery chain with new, individualized service and engineering offers.

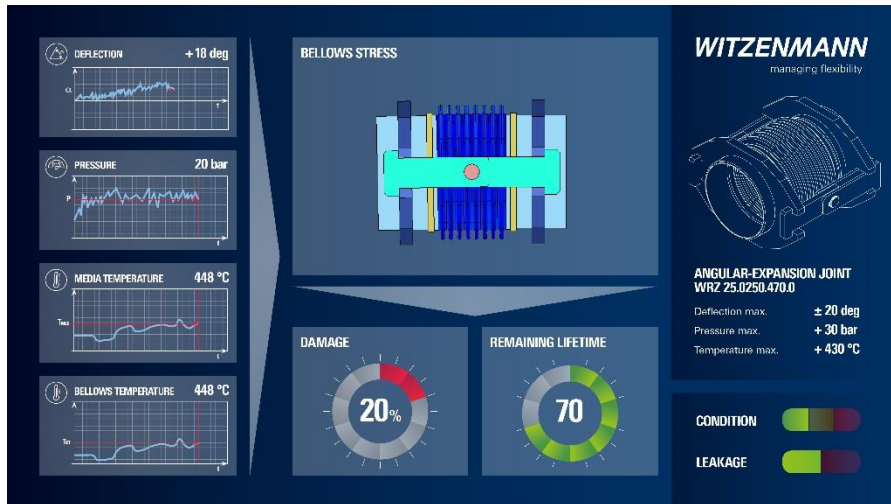
Photo 1:



Witzemann-IoT-Expansion Joint-Study

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Photo 2:



Witzenmann Sensorik Screen

Photo 3



Witzenmann Sensorik Kompensator

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The Witzenmann Group

The Witzenmann Group is the world's leading manufacturer of flexible metal tubes, expansion joints, metal bellows and automotive components. Over 4,300 employees at 24 companies in 19 different countries develop and produce tailor-made solutions for customers from all branches of industry. Witzenmann is a global technological leader within its sector and offers both an extensive product range and broad expertise in the field of flexible metallic pipeline elements.