

Fewer failures, more customer satisfaction: smart plastics make railway equipment maintenance easy

At Innotrans 2018, igus showcased intelligent e-chains and cables for trains, trams and high-speed suburban rail vehicles

Increasing digitisation in railway technology offers great potential for increasing reliability and therefore more punctual operation of trains. At Innotrans 2018, igus showcased its smart plastics to demonstrate how intelligent cables and energy chains that enable predictive maintenance can help trains, trams and high-speed suburban rail vehicles operate more punctually.

Thousands of commuters depend on a punctual rail service. But defective trains are often a hindrance to this. Unhappy customers and economic losses are the consequence. "Digitisation can change this", says Thorsten Mersch, Industry Manager Railway Technology at igus. In order to be part of this digital transformation in rail transportation, the Cologne company develops, intelligent cables and energy chains under the name of "smart plastics", which are monitored in real time and whose service life can therefore be predicted.

Trains can be monitored in real time

Trains, trams and high-speed suburban vehicles are subjected to continuous wear and tear. One example is doors, which open and close hundreds of times every day. A common problem is that if a safe edge, which offers protection against people getting injured by closing doors, becomes defective the door in question is usually immediately disabled. Boarding and alighting times are therefore longer and the timetable is thrown into disarray with delays being a consequence. A solution for transportation companies is to equip the safe edges with CF.Q modules from the isense range from igus. The modules monitor the condition of the cables and send the status data to the control centre of the operating company by means of the igus mobile Communication Module (icom). In the control centre, employees use dashboards to monitor the condition of the safe edges in all trains. The system manages all limits and gives advance notice of the imminent failure of a safe edge. Thanks to this advance information, operators can plan preventive replacement centrally and carry it out during

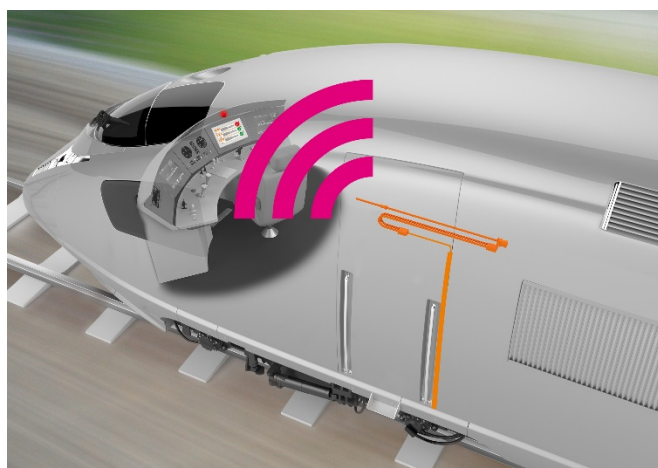
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scheduled stops. The principle of predictive maintenance also applies to other components such as energy chains and linear units that are used as part of a train's interior equipment. Railway technology companies using smart plastics have a precise basis to plan their maintenance and servicing. Parts are only repaired or replaced when really necessary – and this happens before any failures or delays occur.

A reliable planning basis for maintenance

There is a great deal of interest in these solutions. "The expectations of train manufacturers and operators when it comes to digitisation are just as high as those of industry", says Thorsten Mersch with conviction. At Innotrans 2018 Siemens Mobility presented, among other things, the new possibilities of high-performance plastics from igus which enable intelligent monitoring, analysis and prediction of failures. The planned collaboration is based on the Siemens "Railigent" application suite, which offers a wide range of digital services, in the area of predictive maintenance for example.

Caption:



Picture PM5518-1

smart plastics provide information on the status of components in real time. This enables the proactive maintenance of trains and helps to prevent delays. (Source: igus GmbH)

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ABOUT IGUS:

igus GmbH is a globally leading manufacturer of energy chain systems and polymer plain bearings. The Cologne-based family business has offices in 35 countries and employs 3.800 people around the world. In 2017, igus generated a turnover of 690 million euros with motion plastics, plastic components for moving applications. igus operates the largest test laboratories and factories in its sector to offer customers quick turnaround times on innovative products and solutions tailored to their needs.

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