

New: Condition monitoring for industrial Energy Chain equipment

In many areas of mechanical engineering energy chain systems are indispensable for energy and data supply to mobile consumers. On construction cranes, transporting equipment in power stations and chemical plants - i.e. sensitive plants with long distances to travel - requirements concerning operational safety are particularly important since unscheduled downtimes can cause extremely high costs. igus (Cologne) has now presented a remote condition monitoring system for industrial energy chain equipment. The new diagnosis tool, PPDS (Push Pull Force Detection System) monitors the shifting force of energy chains and helps to prevent damage to energy supply systems and breakdowns by means of preventive maintenance or remote corrective action.

Push-pull force detection system

Online and up-to-the-minute information

Data on the push-pull force of an energy chain system are compared online every four seconds with a calculated target setting. Calculation of the target force depends, among other things, on the position of the moving end of the chain. In the event of malfunction, messages, for example as an email which is generated automatically or as an SMS, can be sent immediately to any required location and then processed. Data stored internally can be analyzed retroactively for a three-month period (in the case of a main memory capacity of 128 MB).



Picture PM1405-01: igus GmbH, Cologne

Fully harnessed, ready-made energy supply system ("ReadyChain"). In order to avoid plant breakdowns, malfunctions can immediately be reported anywhere in the world by means of email or SMS.

Already in use in Asia and Europe

The newly-developed Condition Monitoring System is already being used in several ports throughout the world. For example, it is currently in use in a large port in Asia, where twelve cranes are being monitored (four cranes each for travels of 300, 400 and 500 metres). All of the signals are processed within the system, a "stand-alone" solution. Recording data, calculating data and erroneous behaviour are automatically processed by the PPDS. Another large-scale unloading project for ships is also currently in operation on the North Sea coast. Here igus has integrated the diagnosis tool in the Siemens crane control system, so that signals received can also be processed there.

120 metre crane simulation test stretch

For around two years now, igus has also been testing its PPDS system on a crane simulation

120 metres long at its in-house test facilities. These tests subject energy supply systems (chains, cables and guide troughs) to driving speeds of up to 300 m/min. Others monitor behaviour in the event of power failure or sea damage.

Complex systems

For a total of eight years now, igus has been running projects and selling ready-made, pre-assembled, fully harnessed systems under the name "ReadyChain" for increasingly long travels in mechanical engineering. Condition Monitoring (CM), which featured at a major specialist VDMA show at the Hanover Trade Fair, is opening up new possibilities when it comes to maintenance and false diagnoses. Experts agree that such CM systems need to be integrated into machinery, plants and company networks in order to support short reaction times worldwide.

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