

Real-time monitoring is more affordable than ever: igus service life sensor starts at 248 euros

The new i.Sense EC.W sensor allows cost-effective real-time condition monitoring for gliding e-chain systems

Machine failures and downtimes are among the biggest cost drivers in industry. So it is important for maintenance personnel to prevent unplanned downtime. With the new low-cost service life sensor from igus, users can now make their e-chain smart from as little as 248 euros. Thanks to real-time condition monitoring, maintenance over the entire service life is more predictable, easier and cheaper. This not only brings decisive advantages in the area of e-chains but also offers new possibilities for condition monitoring in many other wear applications.

Internet of Things, Big Data, and autonomous robots: The transition to Industry 4.0 is in full swing. This also applies to components that work in machines and have long since become smart, for example by providing data on their condition. However, the integration of smart technologies is often complex for companies and involves external installation work. "We have also found that while online services are very popular in everyday private life, the sensitivity to external data connections is very high in the business environment. The IoT connection of a machine is often not wanted. However, the customer does not want to do without smart functionalities and the integration into existing control systems," explains Richard Habering, Head of the igus smart plastics Business Unit. This is exactly where igus comes in with the new i.Sense EC.W service life sensor for gliding e-chain systems. The low-cost sensor product allows cost-effective real-time wear detection from as little as 248 euros and thanks to integrated potential-free contacts, can be connected directly to the PLC machine control system without an internet connection. The sensor, cable and evaluation electronics are included. Users also have the option of connecting the sensor to a variety of networks and IoT systems via the i.Cee module and thus integrating it into a predictive maintenance concept. The service life sensor is

available for the E4.32, E4.42, E4.56 and E4.80 igus e-chains – more sizes for the E4Q, E2.1, and E2/000 series are already being planned.

Determine service life quickly and easily – and even remotely

The basic principle of the new low-cost sensor system is simple: Conductive elements are incorporated into the high-performance polymers of almost all igus products at the tribologically stressed areas. Clever geometric positioning of these elements allows clear statements to be made about the product service life in the event of an electrical interruption or a change in resistance. This information can simply be output to the operator via the system monitor and, for example, when the 25 percent level is reached, linked to the information about the pending chain replacement. The i.Sense EC.W sensor offers considerable added value, especially for harsh, dark, and dirty environments and highly frequented or hard-to-reach applications. It is mounted on the last crossbar on the fixed end side and records the current state of the chain's side sections. The sensor measures the distance between the crossbars, which narrows in proportion to e-chain side section abrasion. The sensor can therefore be used to monitor each machine wear part remotely – which could benefit many other motion plastics in the future.

Reduce costs by 80% with plannable maintenance

Condition-based alarm messages can prevent unplanned downtimes or unnecessary or premature chain replacement – which also offers an advantage in terms of sustainability. This means that e-chains are no longer replaced according to maintenance intervals, but only when necessary – ultimately reducing maintenance costs as well. Connecting the service life sensor directly to the plant control system can reduce costs by up to 80%. To ensure the best possible product quality, igus performs numerous tests in the test laboratory. More than three billion test cycles are recorded and analysed each year for energy chains alone. These tests are used to continuously optimise and refine igus products. For example, the development engineers have greatly reduced the size of the service life sensor to 2.5mm x 4mm so that measurements can be carried out at other points as well and clear status information generated for almost all gliding applications. In conjunction with the igus service life calculators, potential is therefore unlimited.

Caption:



Picture PM2122-1

Smart energy management starting at just 248 euros: The i.Sense EC.W sensor allows cost-effective condition monitoring and plannable maintenance – over the e-chain's entire service life. (Source: igus GmbH)

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ABOUT IGUS:

igus GmbH develops and produces motion plastics. These lubrication-free, high-performance polymers improve technology and reduce costs wherever things move. In energy supplies, highly flexible cables, plain and linear bearings as well as lead screw technology made of tribo-polymers, igus is the worldwide market leader. The family-run company based in Cologne, Germany, is represented in 35 countries and employs 4,900 people across the globe. In 2021, igus generated a turnover of €961 million. Research in the industry's largest test laboratories constantly yields innovations and more security for users. 234,000 articles are available from stock and the service life can be calculated online. In recent years, the company has expanded by creating internal startups, e.g. for ball bearings, robot drives, 3D printing, the RBTX platform for Lean Robotics and intelligent "smart plastics" for Industry 4.0. Among the most important environmental investments are the "chainge" programme – recycling of used e-chains - and the participation in an enterprise that produces oil from plastic waste.

The terms "igus", "Apiro", "chainflex", "CFRIP", "conprotect", "CTD", "drygear", "drylin", "dry-tech", "dryspin", "easy chain", "e-chain", "e-chain systems", "e-ketten", "e-kettensysteme", "e-skin", "e-spool", "flizz", "ibow", "igear", "iglidur", "igubal", "kineKIT", "manus", "motion plastics", "pikchain", "plastics for longer life", "readychain", "readycable", "ReBeL", "speedigus", "tribofilament", "triflex", "robolink", "xirodur", and "xiros" are protected by trademark laws in the Federal Republic of Germany and internationally, where applicable.