World's first for long travels: 40 percent lighter cables for e-chains

Reduce weight and driving force with igus single core motor cables made of copper-coated aluminium

The new chainflex motor cables CF430.D and CF440 (unshielded and shielded) from igus save significant system weight for long travel applications using energy chains. In this way, the use of smaller e-chains can reduce cost and enhance both the energy efficiency and the service life of energy chain systems. As for all chainflex cables, igus offers a unique 36-month warranty for its durability.

Whether in plant construction, mechanical engineering, cranes, ships or conveyor technology, the travel distances in dynamic applications are becoming increasingly longer whilst speeds and number of movements are rising. This leads to everincreasing stress on cables that are constantly in motion. The motion plastics specialist igus has developed extremely lightweight single core motor cables for energy chains for long travels, the chainflex types CF430.D and CF440. By the use of a special stranded conductor, the cables are up to 40 percent lighter than standard copper cables. Depending on the cable length and cross-section, the savings potential of the new motor cables can be up to several tonnes, offering a considerable saving on required drive force.

Material combination gives numerous advantages

"This weight reduction is possible by the use of a stranded conductor made of the special material CCA," explains Rainer Rössel, head of the chainflex cables division at igus. "Here, the cable core is made of lightweight aluminium coated with copper, known as copper-clad aluminium or CCA." The combination of these two metals has a number of advantages. Compared to solid copper cables, the CCA cable benefits from the lower density and thus the lower weight of aluminium. When compared to a pure aluminium conductor this one offers the big advantage that the cross-contacting is ensured by the copper coating. Furthermore, the copper layer also contributes enormously to the durability of the entire conductor with a stranding structure optimised for the constant bending in the energy chain.

Developed for use in e-chains

igus has created a special stranding method for its CCA lightweights, and the insulation jacket material has been further enhanced for use in energy chains. igus has already demonstrated the long service life in operation in their own test lab. The chainflex CF430.D and CF440 types have already completed more than 17 million strokes without failure in continuous movement. And the marathon test continues to run. The outer jacket is made of a high-quality mix of thermoplastic elastomers (TPE) makes them extremely resistant to abrasion and bending, making them ideal for extremely high loads even at low temperatures and for outdoor use. These cables, designed for very long travel lengths outdoors, can be ordered as shielded or unshielded options. The cables are also resistant to UV and ozone.

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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 36 countries and employs around 2,700 people around the world. In 2014, igus generated a turnover of 469 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.

Captions:

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The two "lightweights" chainflex CF430.D and CF440 offer up to 40 percent weight saving in moving energy chain applications. (Source: igus GmbH).