

CAT6_A in abrasion-proof TPE sheathing

State-of-the-art: igus Ethernet technology

The Cologne-based tribopolymer company igus GmbH has qualified its Ethernet cable for moving applications from CAT6 to CAT6_A standard after eight years: With a stranded conductor comprising numerous fine wires, a close-mesh copper wire braiding of the shield and outer sheathing made of highly abrasion-resistant TPE, igus is marking the "state of the art" in Ethernet cable technology.

igus is a specialist for the construction of energy chain systems: cables for permanently moving applications, so-called chainflex cables, and e-chains are provided from a single source. The igus bus cable CAT6 has been on the market for moving applications in Ethernet technology for eight years. Now, igus has qualified its CAT6 cable to the CAT6_A standard.

The CAT6_A has been developed and produced for a data rate of ten gigabytes despite permanent movement. This means it has the ten-fold capacity of the CAT6. In order to provide sufficient protection for the 500 MHz frequency required, the wire pairs and the whole cable are equipped with the special igus braid shield with more than 90 percent optical cover. The bending factor of the new CAT6_A from igus is particularly low at only 12.5 x cable diameter. This reduces machine design space.

A shield braid that couldn't be denser

The high cable quality can be seen immediately on the basis of the igus CAT6_A structure: Numerous fine wires make the stranded conductor permanently resistant to bending. A close-mesh, homogeneous copper wire braiding protects both the wire pairs twisted with short pitch lengths and the complete shield from breaking - even with small bending radii. Furthermore, the shielded braid increases the electromagnetic compatibility of the cable. The shielded pairs are stranded using an optimised pitch length in such a way that they can cope with the high mechanical requirements on the one hand, and meet the electrical requirements concerning data transmission on the other.

CAT6_A available in three types

igus has decades of experience in cable production: billions of test cycles in energy chains and complex series of trials, many of which last years, in the igus laboratory in Cologne form the basis for the development of abrasion-proof, highly bend-resistant and thus particularly durable igus chainflex cables. The CAT6_A also has a long service life coupled with full bus characteristics at the same time. The tribologically optimised materials from igus make a particular contribution here: In order to protect the shield braid, igus is supplying the new CAT6_A with sheathing made of highly abrasion-proof TPE ex stock. Variants with PUR and PVC sheathing are also available.



Picture PM1713-01:
igus GmbH, Cologne
igus Ethernet cable CAT6_A
(catalogue: CFBUS.050):
high-quality shield structure



Evaluation of the test results and decades of experience mean that igus can make the durability of its cables transparent: Thanks to the chainflex online configurator, anyone can calculate the service life of the required bus cable by entering customised parameters such as travel, bending radius and speed.

Alongside cable and energy chain expertise, igus offers users a further service: with the readychain business unit for pre-assembling cables, igus can supply the cable including the optimum connector. In other words, igus can offer customers the exact solution they need. This means that igus customers also have several possibilities of receiving high-quality CAT6_A cables: either off the roll from lengths of one metre, or ready to use, pre-assembled with the required connector.

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