



HELUKABEL®

**THE ENHANCED TOPSERV® FAMILY –
NEW and IMPROVED**



TOPSERV

 Drive Technology

TOPSERV®

Enhanced servo cable
capabilities

TOPSERV® Hybrid PVC and PUR - Single-Cable Solution for Servo Motors

In the drive technology field, single-cable solutions have been the hot topic among engineers for months. Some drive manufacturers have already tested this system so that it is ready for market, others are in the process of implementing this solution in their own systems, while others are only now evaluating if a single servo cable solution is feasible.

Until now, the servo motor and the servo controller have been connected by two cables, one servo cable for the power supply to the motor and one sensor cable for the transmission of location information. In the single-cable solution, the wires for the transmission of the sensor signal are integrated into the power cable, in other words, two cables are joined together to form a hybrid cable.

The prerequisite for using a single-cable solution between the servo motor and the servo controller is the use of a hardware-based encoder designed for this purpose. Since the encoder is permanently connected to the servo motor, this system must be made available to the end customer by the manufacturer of the servo motor. As part of this redesign, HELUKABEL®'s task as a cable manufacturer was to **develop a functioning, long-lasting cable and produce it at their factory in Windsbach/Germany.** The issue of EMC, in

particular, made this a big challenge, since the data pair integrated into the servo cable must be protected from interference created by the wires.

To this end, HELUKABEL® expanded its power cable program with two new families:

TOPSERV® HYBRID PUR

TOPSERV® HYBRID PVC

The hybrid cables from HELUKABEL® have been operating for over a year in the drag chain system at the test centre and have reached the five million cycle limit. The most important finding of this test is that even after five million cycles in a highly dynamic application, the data transmission quality remains excellent having successfully transmitted all the data packets in order for the motor to continue to function properly.

With the successful engineering and testing of the hybrid cables, HELUKABEL® remains on the cutting-edge of technological development and is the source for customers when it comes to single-cable solutions.



For additional information, please contact our
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The enhanced TOPSERV® family - new and improved!

What is new?

- **TOPSERV® 109 SINGLE:** shielded, halogen-free, highly flexible, single core, suitable for use in drag chains
- **TOPSERV® HYBRID PUR:** highly flexible, servo cable, suitable for use in drag chains, with an additional shielded signal pair for transmission of encoder signals where single-cable solutions are required
- **TOPSERV® HYBRID PVC:** cost-effective alternative to TOPSERV® HYBRID PUR, where flexibility and limited use in drag chains is required

What has been improved?

We have optimised our family of servo cables for use in drag chains in terms of both their design and performance:

- Optimised **overall diameter**
- **Low capacitance** (for cables used in fixed installations up to 6 mm²)
- Compatible with **all drive manufacturers**, uniform core marking
- **Harmonised drag chain suitability**

		Single core	4 cores (3+g/y) without additional signal pair	4 cores (3+g/y) + 1 additional signal pair	4 cores (3+g/y) + 2 additional signal pair
HIGHLY FLEXIBLE e.g. for use in drag chains	without UL / CSA			TOPSERV® 110 according to Siemens standard 6FX2008	TOPSERV® 120
	UL / CSA	NEW TOPSERV® 109 Single Screened single core for screw drives	IMPROVED TOPSERV® 109 according to Siemens standard 6FX8008Plus	IMPROVED TOPSERV® 113 according to Siemens standard 6FX8008Plus, Lenze standard etc.	IMPROVED TOPSERV® 121 according to Bosch Rexroth standard
FLEXIBLE limited use in drag chains	UL / CSA		IMPROVED TOPSERV® 108 according to Siemens standard 6FX5008	IMPROVED TOPSERV® 112 according to Siemens standard 6FX5008, Lenze standard	IMPROVED TOPSERV® Hybrid PUR (for motors with single-cable solution)
					NEW TOPSERV® Hybrid PVC (for motors with single-cable solution)

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Want to know more?
See details of all motor, servo and encoder cables at www.helukabel.de/drivetechnology

**Regularly tested
and globally approved**

Tested until failure in our own test centres



40 m drag chain test facility



18 m drag chain test facility



3 m drag chain test facility



6 m drag chain test facility for larger cross sections

Fax reply to: 07150 9209-5501

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