



INSIDERS KNOW MORE

GET TO THE HEART OF THINGS WITH SMART MOTOR SENSORS

Smart Motor Sensors

SICK
Sensor Intelligence.

INSIDER KNOWLEDGE FOR EXPERTS

Smart Motor Sensors turn their users into insiders. You could not get any closer to the action! With its Smart Motor Sensors, SICK provides information directly from the center of production. This is information about the status of machines and servomotors that helps to detect malfunctions earlier, solve them more quickly or to avoid them entirely.

SICK has once again applied its entire knowledge base to allow customers this insight and to therefore facilitate predictive maintenance procedures. The Smart Motor Sensors go far beyond the possibilities of conventional motor feedback systems. We have also succeeded in bundling together additional sensor data with the globally established HIPERFACE DSL® one-cable interface for motor feedback systems. This allows true sensor fusion, which is an essential condition for real smart feedback.

Decades of experience coupled with advanced digitization for a functioning application. The best condition for reliable condition monitoring in real time and the implementation of systems in the Smart Factory of the future.



Facts made transparent

The servomotor drives the process. Motor feedback systems supply data for regulating and operating motors and therefore ensure a smooth and efficient process.

But motor feedback systems are more than simple data providers. During operation, intelligent sensor technology not only checks parameters such as speed, safe positioning, acceleration, temperature, and the number of revolutions. Predictive maintenance and permanent process condition monitoring are also made possible with additional functions such as the electronic type label, histograms, and user-defined warnings in particular.

This transforms the motor feedback systems from SICK into Smart Motor Sensors.

What is measured?

Servomotors have a lot to tell us. To enable our customers to understand everything that is happening inside the motor, motor feedback systems measure a variety of parameters:



Speed



Acceleration



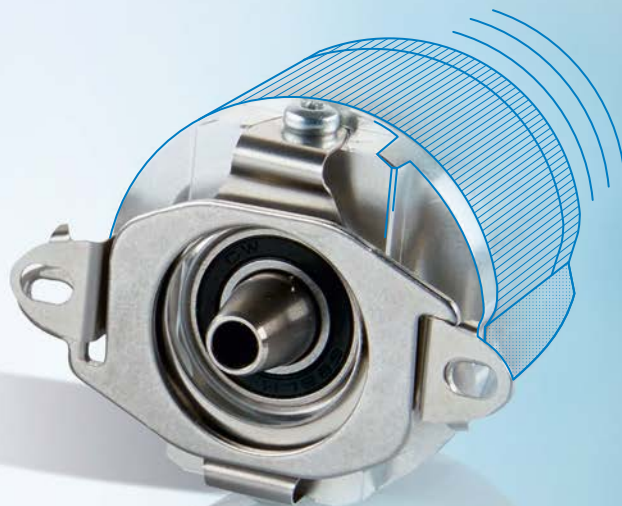
Angles



Temperature



Number of revolutions



THE INTELLIGENT INTERFACE

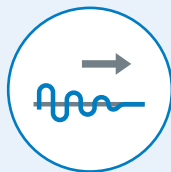


HIPERFACE DSL® – the digital evolution

Launched in 2011 by SICK, HIPERFACE DSL® was the first one-cable interface for servomotors on the market. Since then, it has become an established product among manufacturers of motors and drives around the world. This purely digital interface offers a direct connection to the future. The innovative and interference-free HIPERFACE DSL® protocol enables communication using just two wires that are integrated into the motor cable – ensuring an extremely reliable process. This interface is therefore the most important factor in the evolution from a traditional motor feedback system to a smart solution.



More performance



Smoother operation



SIL3-compliant



Connection costs and cable variance reduced by 50%



Diagnostic function



Remote diagnostics



Predictive maintenance



Increased safety in functions and investments

1.5

Millions of meters closer to customers

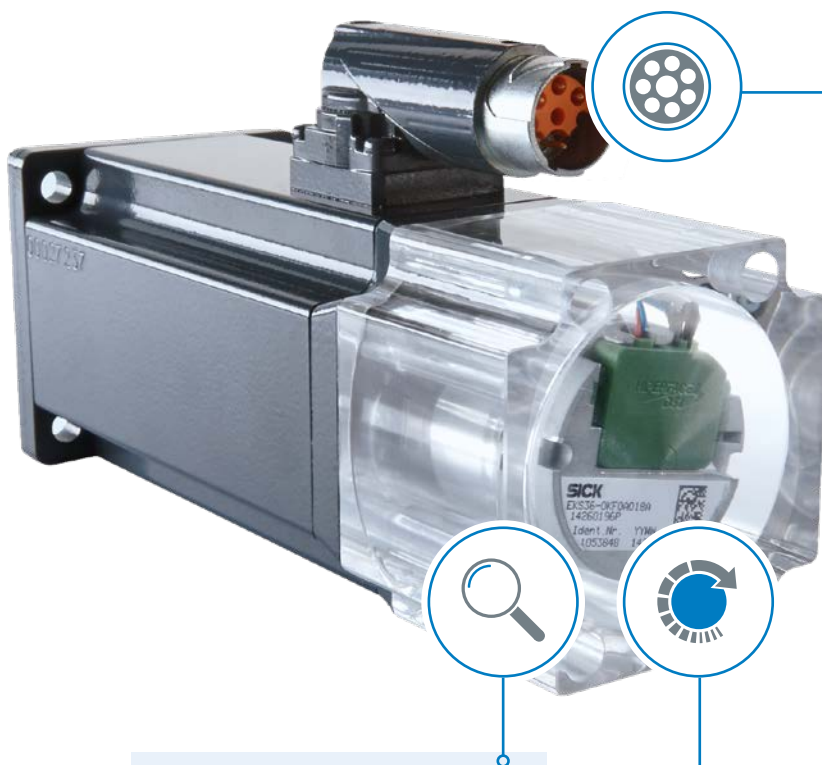
With an average motor cable length of 5 m and around 300,000 servo drives, which are built into packaging machines each year, machine and plant manufacturers save around 1.5 million meters of cable when using HIPERFACE DSL®.

MAKING SUCCESS POSSIBLE

Smart sensor technology + globally established interface = Smart Motor Sensors

Smart motor sensors keep production running

Smart motor sensors are more than just a data source from the center of the drive. Smart Motor Sensors ensure efficient monitoring at any point when something is moving in a process. In many ways, Smart Motor Sensors are therefore the enablers of the future. And the future is here. With HIPERFACE DSL[®], Smart Motor Sensors are already enabling condition monitoring and predictive maintenance. Moreover, they transmit reliable speed and position values for intelligent Safe Motion monitoring on the machine. The machine design is more compact thanks to the lack of a second motor connector and a separate encoder cable.



One-cable interface

HIPERFACE DSL[®] minimizes cabling, as sensor data is transmitted via the motor cable.

Sensor data

providing information on speed, position, acceleration, temperature, and revolutions

Control

High integrity speed and position information, the enabler for safe machine controllers.

INDUSTRIES

Performance boost for mechanical engineering

Smart Motor Sensors are at home in all industries. At first glance, this is often not apparent – and yet the intelligent sensors and innovative interfaces from SICK are used in countless servomotors produced by different manufacturers. This provides a wide variety of industries with an important impulse for success in production.

Depending on the industry, the specified requirements can vary. However, in general, overall downtimes and production losses are reduced or even prevented by using Smart Motor Sensors. This saves money and increases productivity. In robotics or in the packaging industry, cables must also be encapsulated for reasons of safety or hygiene. The fact that the HIPERFACE DSL® allows the amount of cabling to be halved is particularly beneficial here.



Robotics



Material handling

- Packaging
- Robotics
- Material handling
- Semi-conductor machines
- Electronics

The cooperation with SICK was excellent and we had an expert contact who was ready to answer any questions we had at any time. With Smart Motor Sensors, we are perfecting the use of our robots for handling and pick-and-place tasks. The one cable technology of the HIPERFACE DSL® and compact design save us a lot of space.

Felix Herrling, Product Manager, HIWIN GmbH

THE FUTURE IS NOW

Smart Motor Sensors in Industry 4.0

Smart Motor Sensors meet all the requirements for successful application in Industry 4.0 applications. The most important requirement in this case is HIPERFACE DSL® – the purely digital interface that sends measurement data directly via the servo controller to the cloud or the Ethernet. On this basis, production processes will be able to network with one another in the future in such a way that they will also work independently.



sHub® - Sensor hub for intelligent servo motors that “say” when maintenance is required



Additional vibration and temperature data of the sHub® enables high-precision access monitoring – and increases the availability of servo motors



The sHub® and EDS/EDM35 make a powerful team; they ensure the integration of relevant safety functions and therefore high-precision and safe servo drives



With the digital HIPERFACE DSL® communication interface, status monitoring of servo motors can be done in real time – with the highest level of safety

sHub® – progress with combined force

The development continues. At SICK, the sensor hub is known as sHub® and is the expansion stage for Smart Motor Sensors. It bundles the data from Smart Motor Sensors and other sensors that are built into the motor. This enables a true sensor fusion. The sHub® “collects” data from Smart Motor Sensors, such as information on safe position and speed, as well as data from other sensor technology, such as temperature, shock, vibrations, and moisture. The sHub® transmits this bundled mass of data via the existing HIPERFACE DSL® data cable synchronized with the drive cycle. Smart Motor Sensors and sHub® are therefore important components as we move towards the Smart Factory in Industry 4.0. They form the foundation for leaner processes and reduce the time and effort required to build production lines. And they also save money thanks to less downtime, improved functional safety and increased efficiency.

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,000 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

That is “Sensor Intelligence.”

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → www.sick.com