

Interfaces are no longer an issue

Motor feedback One single platform, less motor variants and a single-cable solution: Kübler responds to the trends in drive technology with the open interface SCS Open Link and a new motor feedback encoders family.

Michael Scalet

Always more compact, more efficient, more powerful, these are the demands posed on the drive manufacturers. The drive technology is undergoing radical change, and this entails a new challenge also for the sensors. The communication between a motor feedback system and the drive controller is considered as a decisive factor for the performance of the drive system, in particular in case of dynamic axes, smooth speed control and positioning accuracy.

So far, the choice of the components was imposed by the

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proprietary interfaces and not by the requirements placed on the applications.

But the drive manufacturers are increasingly following a second-source strategy in order to minimize costs and risks - and to make proprietary interfaces open. This will lead in the future to more flexibility and improved cost-efficiency.

The single-cable solution, which belongs today without doubt to the main developments, is another trend in the electrical drive technology. It allows further cost savings and at the same time simplifies the drive system, thus also offering benefits to the user.

And another development is becoming apparent: machinery and plant operators increasingly demand preventive maintenance by means of intelligent data analysis in order to

improve the availability and reliability of production facilities. Intelligent sensors allow fast error diagnosis, which significantly contributes to the reduction of unscheduled downtimes and production outages. The drive manufacturers confront this task with the development of Smart Motor concepts.

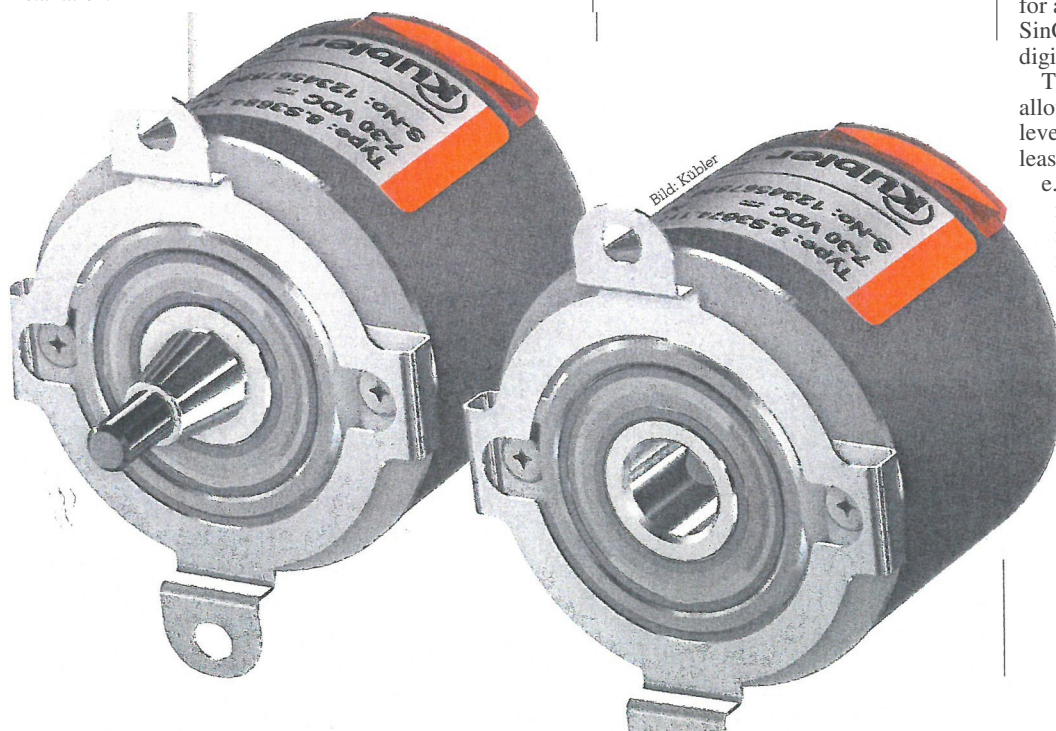
One platform for all: motor feedback encoders

Within this context, Kübler presents its new product family of motor feedback encoders, developed in close cooperation with other servomotor and servo inverter manufacturers. They are based on a platform that offers a wide range of possibilities and advantages for servomotors.

The particular feature of the new Sendix S36 Motor-Line encoders is their compact size of only 36.5 mm for a maximum resolution of 2048 SinCos/revolution or 24 bits fully digital.

The advantage: one single size allows realizing several performance levels, which until now required at least two different encoder sizes, e. g. 36 mm and 58 mm.. The mechanical connection between motor and encoder is independent of the required performance level. The Sendix

S36 encoder combines this in one compact size and therefore allows a reduction of the number of motor variants. This leads to the standardization of the mechanical connection.



▼ A compact motor feedback encoder such as the Sendix S36 in 36.5 mm size is suitable for all performance levels and standardizes the mechanical installation.

SINGLE-CABLE SOLUTION WITH SCS OPEN LINK

Drive manufacturers cooperate for an open interface

And this is new too: The encoder manufacturers Baumer, Hengstler and Kübler will in the future offer a common open-source interface - SCS Open Link. Connector and cable manufacturers are participating too.

Context: cables and connectors are one of the main cost drivers in every automation architecture. Often, space for routing cables is anyway very limited in industrial applications. Realizing power supply and data transmission with one single cable helps saving material costs, installation work and space. According to Kübler, this is decisive above all for servomotors in the 40 mm-size.

SCS Open Link allows serving also another trend: the single-cable solution for servomotors with the new motor feedback encoders will be predestined for Smart-Motor concepts.

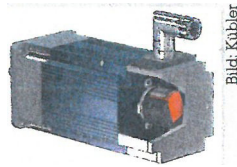


Bild: Kübler

A tapered or a blind hollow shaft and various torque stops are available for standardization. This ensures higher flexibility for the drive manufacturer when selecting the mechanical connection, providing him the suitable encoder for servomotors. The choice is also broader in terms of functional safety. According to his preference for a tapered or for a blind hollow shaft, the drive manufacturer can select freely the suitable mechanical connection for his safety concept.

The platform concept allows a wide range of possible electrical interfaces. Kübler offers the Sendix S36 Motor-Line encoders with the following interfaces: RS485 + Sin/Cos, BiSS, BiSS Safety, BiSS Line (single-cable solution), SCS Open Link (single-cable solution). The electrical interface is therefore no longer the limiting factor.

Drive technicians know that the connection technology must imperatively be considered too in applications with servomotors. In case of high shock or vibration values, the plug connection on the encoder can become loose - a potential source of errors. Kübler has therefore developed a connector concept against connector loosening on the encoder, even in harsh and rough environments. Kübler also developed further the mechanical gear for the MFB. Focus has been set

on compactness, reliability and long service life. The decisive point for servomotors is that a multiturn encoder has the same dimensions as a singleturn encoder, allowing to leave the motor design unchanged.

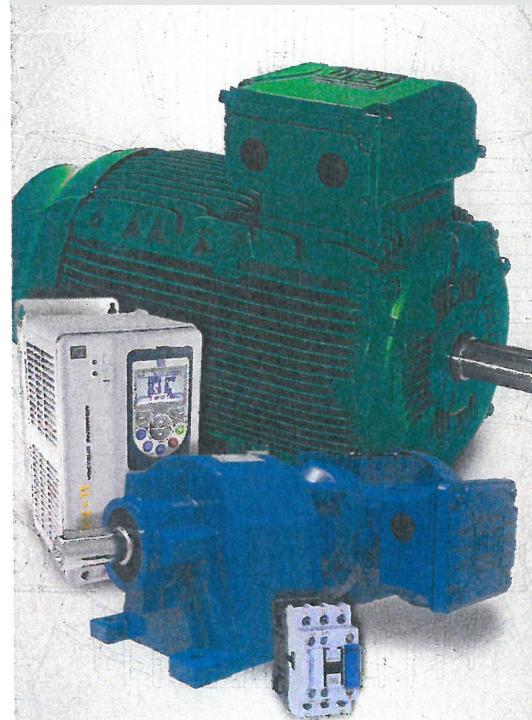
The motor feedback encoders offer a stable and robust bearing structure. Encoders with the so-called Safety-Lock have interlocked and positively blocked bearings and a special assembly technique. They withstand installation errors and shaft loads due for example to temperature expansion or vibrations.

Encoders with extras make motors smart

And, relating to the Smart Motor trend: The new motor feedback encoders provide, besides the usual information such as position and speed, also functions such as the electronic data sheet (EDS) and condition monitoring. Connecting additional sensors such as e.g. temperature sensors used for measuring the winding temperature and transmitting it to the servo inverter via the fully digital protocol of the single-cable technology is possible too. The Sendix S36 Motor-Line encoders with single-cable solution are ideally equipped for the requirements of IIoT and of the Smart Motor. [pf]

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