ENCODERS

Incremental encoders, absolute encoders, safety encoders, linear encoders, wire draw encoders
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Content</th>
</tr>
</thead>
</table>
| **A**   | GENERAL INFORMATION  
About SICK |
| **B**   | INDUSTRIAL COMMUNICATION |
| **C**   | PROGRAMMING SOLUTIONS |
| **D**   | TYPICAL APPLICATIONS |
| **E**   | ENCODER SELECTION GUIDE |
| **F**   | INCREMENTAL ENCODERS  
DBS36, DBS50, DKS40, DBS60, DFS60, DGS34/DGS35, DKV60, DFV60 |
| **G**   | ABSOLUTE ENCODERS  
AHS36/AHM36, AFS60/AFM60, A3M60, ATM60, ATM90, ARS60, ACS36/ACM36, ACM60 |
| **H**   | SAFETY ENCODERS  
DFS60S Pro |
| **I**   | WIRE DRAW ENCODERS  
EcoLine, Compact, HighLine |
| **J**   | LINEAR ENCODERS  
KH53, TTK70 |
| **K**   | ACCESSORIES |
| **L**   | APPENDIX  
Glossary |
Industrial communication
Innovation is our driving force

With customer-oriented products and innovations, SICK has for five decades been a trendsetter and indispensable partner for industry. The complex, high-tech encoders and motor feedback systems measure angles, positions and speeds all over the world.

With the SSI interface and universal HIPERFACE® and HIPERFACE DSL® interfaces for motor feedback systems, SICK sets global standards.
2011 – HIPERFACE® goes digital: With HIPERFACE DSL®, technology leader SICK presents a purely digital protocol that uses a minimum of connection cables between the frequency converter and motor feedback system.

The result: HIPERFACE DSL®. This “digital servo link” interface enables an entirely new architecture for the servo drive with completely new options, as it is now purely digital instead of hybrid (analog/digital).

With SSI and HIPERFACE® we have succeeded in setting new industry standards. And HIPERFACE DSL® is currently in the process of establishing itself as a premium system.

In the open world of bus technology as well, our encoders offer a complete range.

The trend in the market is moving more and more towards industrial Ethernet-based fieldbus systems – rapid technical developments such as fast Ethernet, dual-port switches and full-duplex transmission have turned the original Ethernet into a powerful communication system. The advantages resulting from the use of industrial Ethernet-based fieldbuses will make these networks a future standard in factory, logistics and process automation.

As a trendsetter, SICK has therefore expanded its tried and tested AFS60/AFM60 absolute singleturn and multiturn encoders with the three most popular Ethernet variants - PROFINET, EtherCAT® and EtherNet/IP.

In addition to a wide range of diagnostic functions, the Ethernet-based encoders are also equipped with a web server and an FTP server. This enables users to make simple parameter settings and update all Ethernet encoders with the latest device firmware.

Expertise with interfaces is part of our tradition – SICK has regularly been setting trends in this field for many years:

1985 – With the patented synchronous serial interface (SSI), SICK-STEGMANN GmbH created an interface which established itself as an undisputed standard in industrial environments.

With the innovative universal HIPERFACE® interface, SICK-STEGMANN set another global standard in 1996: There was now only one interface on the speed controller for all applications and only one type of signal line between the speed controller and feedback system.
In addition to its own industry standards SSI, HIPERFACE® and HIPERFACE DSL®, SICK also supports standardized Ethernet and fieldbus systems.

**SSI** – With the patented synchronous serial interface (SSI), SICK-STEGMANN GmbH has created an interface which offers users a range of advantages. This synchronous serial interface is used in both single-turn and multiturn encoders.

**HIPERFACE®** motor feedback systems are used as a standard interface by almost all well-known manufacturers of drive technology. The HIPERFACE® interface offers motor manufacturers, amongst other things, unprecedented savings on cabling and connectors.

**HIPERFACE DSL®** – With HIPERFACE DSL®, technology leader SICK presents a strictly digital protocol. The absence of motor feedback connections achieves significant cost savings and increased performance.

**DeviceNet** – is a fieldbus specified by ODVA, based on the CIP protocol, which is used in international markets. As a global player, SICK offers DeviceNet in various different devices.

More detailed information about DeviceNet can be found at www.odva.org

**PROFIBUS** – is a fieldbus specified by the PNO and is used in global automation markets. SICK offers PROFIBUS devices in PROFIBUS DP.

More detailed information about PROFIBUS is available at www.profibus.com

**CANopen** – is a communication protocol based on CAN. It is mainly used in automation technology and for networking within complex devices.

More detailed information about CANopen is available at www.can-cia.org