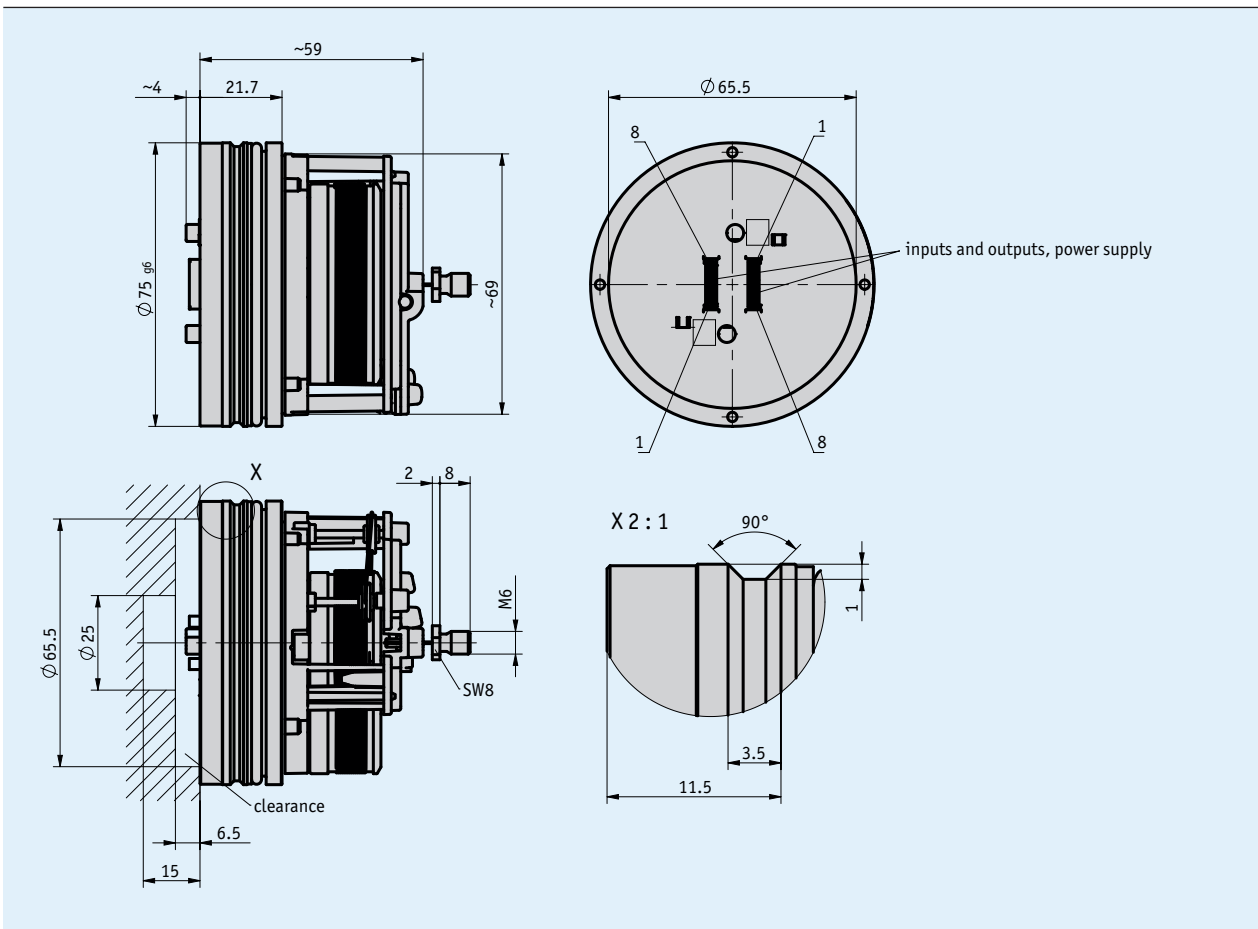
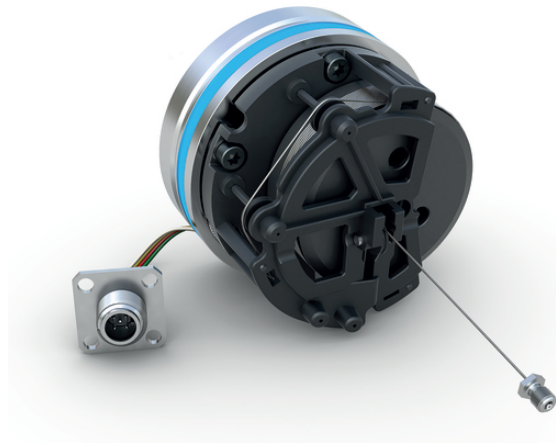


### Profile

- Measuring range 0 ... 2500 mm (98.42 inches)
- Absolute measuring system
- Pressure-resistant up to 350 bar, pressure peaks up to 450 bar
- High degree of flexibility, adjustable to all measuring lengths thanks to teach-in
- Redundant interfaces (CAT3) available
- Safety version usable up to Performance Level d
- Analog, CANopen, SAE J1939, CANopen Safety interfaces



### Mechanical data

| Feature         | Technical data       | Additional information    |
|-----------------|----------------------|---------------------------|
| Flange          | aluminum             | sealing ring (HNBR)       |
| Housing         | synthetic            | PA66                      |
| Wire design     | ø0.45 mm             | rustproof stainless steel |
| Extension force | ≥3.9 N               |                           |
| Acceleration    | ≤24 m/s <sup>2</sup> |                           |
| Weight          | ~0.35 kg             |                           |

### Electrical data

#### ■ Analog interface

| Feature                 | Technical data         | Additional information   |
|-------------------------|------------------------|--|
| Operating voltage       | 9 ... 32 V DC          | ambient condition MH,<br>at output 0 ... 5 V, 0.5 ... 4.5 V,<br>0.25 ... 4.75 V, 1.0 ... 4.9 V, reverse polarity protected |
|                         | 12 ... 32 V DC         | ambient condition MH,<br>at output 0 ... 10 V, reverse-polarity protected  |
|                         | 12 ... 32 V DC         | ambient condition MH,<br>at output 0 ... 20 mA, 4 ... 20 mA,<br>but UB > Uload +2.0 V, reverse-polarity protected          |
|                         | 24 V DC ±20 %          | ambient condition CE, reverse polarity protected   |
| Current consumption     | <40 mA                 | at 24 V DC, per encoder  |
|                         | <80 mA                 | at 12 V DC, per encoder  |
| Power input             | <1 W                   | without load, per encoder  |
| Parameter storage       | 10 <sup>5</sup> cycles | also applies to calibration operations   |
| Digital inputs          | 4                      | limit inputs (redundant)   |
|                         | 2                      | limit inputs (not redundant)   |
| Input signal level high | >8.4 V                 |  |
| Input signal level low  | <2.8 V                 |  |
| Output voltage          | 0 ... 10 V             | load current <1 mA   |
|                         | 0 ... 5 V              | load current <1 mA   |
|                         | 0.5 ... 4.5 V          | load current <1 mA   |
|                         | 0.25 ... 4.75 V        | load current <1 mA   |
|                         | 1 ... 4.9 V            | load current <1 mA   |
| Output current          | 0 ... 20 mA            | load ≤500 Ω  |
|                         | 4 ... 20 mA            | load ≤500 Ω  |
| Linearity tolerance     | ±0.25 %                | 2500 mm measurement length, ±0.5% output value range ≤15 mV  |
| Settling time           | <150 ms                |  |
| Type of connection      | plug connection system | KV1H accessory   |

#### ■ CANopen interface

| Feature             | Technical data                           | Additional information                           |
|---------------------|--|--|
| Operating voltage   | 9 ... 32 V DC                            | ambient condition MH, reverse polarity protected |
|                     | 24 V DC ±20 %                            | ambient condition CE, reverse polarity protected |
| Current consumption | <40 mA                                   | at 24 V DC, per encoder                          |
|                     | <60 mA                                   | at 12 V DC, per encoder                          |
| Power input         | <1 W                                     | per encoder                                      |
| Parameter storage   | 10 <sup>5</sup> cycles                   | also applies to calibration operations           |
| Linearity tolerance | ±0.25 %                                  | 2500 mm measurement length                       |
| Interface           | ISO 11898-1/2, not galvanically isolated | CANopen, CiA 301, CiA 305, CiA 406               |
| Address             | 1 ... 127                                | Node ID, via SDO or Layer Setting Service (LSS)  |
| Baud rate           | 20 kbit/s                                |  |
|                     | 50 kbit/s                                |  |
|                     | 125 kbit/s                               |  |
|                     | 250 kbit/s                               |  |
|                     | 500 kbit/s                               |  |
|                     | 800 kbit/s                               |  |
| Cycle time          | typical 1.5 ms                           |  |
| Settling time       | <150 ms                                  |  |
| Type of connection  | plug connection system                   | KV1H accessory                                   |

### ■ CANopen Safety interface

| Feature             | Technical data                            | Additional information                               |
|---------------------|---|--|
| Operating voltage   | 9 ... 32 V DC                             | ambient condition MH, reverse polarity protected     |
|                     | 24 V ±20%                                 | ambient condition CE, reverse polarity protected     |
| Current consumption | <40 mA                                    | at 24 V DC, per encoder                              |
|                     | <60 mA                                    | at 12 V DC, per encoder                              |
| Power input         | <1 W                                      |  |
| Parameter storage   | 10 <sup>5</sup> cycles                    | also applies to calibration operations               |
| Linearity tolerance | ±0.25 %                                   | 2500 mm measurement length                           |
| Interface           | ISO 11898-1/2, not galvanically insulated | CANopen Safety, CiA 301, CiA 305, CiA 406, EN50325-5 |
| Address             | 1 ... 127                                 | Node ID, via SDO or Layer Setting Service (LSS)      |
| Baud rate           | 20 kbit/s                                 |  |
|                     | 50 kbit/s                                 |  |
|                     | 125 kbit/s                                |  |
|                     | 250 kbit/s                                |  |
|                     | 500 kbit/s                                |  |
|                     | 800 kbit/s                                |  |
|                     | 1 Mbit/s                                  |  |
| Cycle time          | typical 1.5 ms                            |  |
| Settling time       | <150 ms                                   |  |
| Type of connection  | plug-in connection system                 | KV1H accessory                                       |

### System data

| Feature         | Technical data | Additional information  |
|-----------------|----------------|---|
| Scanning        | magnetic       |   |
| Resolution      | 12 bit         | analog output   |
|                 | 0.1 mm         | CANopen, SAE J1939, CANopen Safety                              |
| Repeat accuracy | ±0.15 mm       | unidirectional  |
| Measuring range | 0 ... 2500 mm  | measurement area can be used flexibly between 0 ... 2500 mm     |
| Travel speed    | ≤2 m/s         |   |
| Failure rate    | 290 year(s)    | analog output not redundant, at 40° C (MTBF)<br>SN29500         |
|                 | 240 year(s)    | CANopen not redundant, at 40° C (MTBF)<br>SN29500               |
|                 | 540 year(s)    | analog redundant, at 40° C (MTBF)<br>SN29500                    |
|                 | 460 year(s)    | CAN redundant, at 40° C (MTBF)<br>SN29500                       |
|                 | 170 year(s)    | CAN Safety redundant, at 40° C (MTBF)<br>SN29500                |
|                 | 730 year(s)    | CANopen Safety, at 60° C (MTTFd value)                          |
|                 | 156 FIT        | CANopen Safety, at 60° C (PFH) 1 FIT = 1.0 E-09 1/h             |
|                 | 84 %           | CANopen Safety, at 60° C (DCavg value), IS13849-1, Appendix E.2 |
| Approval        | E1 compliant   | UN ECE R10 Approval number:<br>E1 10 R - 05 8507                |

### Ambient conditions

| Feature              | Technical data                        | Additional information  |
|----------------------|---------------------------------------|---|
| Ambient temperature  | -40 ... 105 °C                        | electronics   |
|                      | -30 ... 100 °C                        | mechanics, optionally to 105° C   |
| Storage temperature  | -40 ... 85 °C                         |   |
| Relative humidity    | 100 %                                 | condensation admissible in the mounted and plugged condition                |
| Operating pressure   | <350 bar                              | P <sub>n</sub> based on ISO 19879   |
| Overload pressure    | <450 bar                              | P <sub>max</sub> based on ISO 19879   |
| Test pressure        | 650 bar                               | P <sub>static</sub> based on ISO 19879                                      |
| EMC                  | EN 61326-1                            | ambient condition CE, industry immunity requirement, class B emission limit |
|                      | ISO 11452-1, -2, -3, -4, -5           | ambient condition MH, interference radiation EUB                            |
|                      | 7637-1, -2                            | ambient condition MH, transient pulses                                      |
|                      | ISO 10605                             | ambient condition MH, electrostatic discharge (ESD)                         |
| Protection category  | IP67                                  | EN 60529, installed with KV1H and suitable mating plug                      |
|                      | IP6K9K                                | ISO 20653, fitted with KV1H and suitable mating connector                   |
| Shock resistance     | 1000 m/s <sup>2</sup> , 11 ms         | EN 60068-2-27   |
| Vibration resistance | 70 m/s <sup>2</sup> , 10 Hz ... 2 kHz | EN 60068-2-64   |

### Order

#### Ordering information

One or more system components are required:

Cable extension KV1H

[www.siko-global.com](http://www.siko-global.com)

#### Ordering table

| Feature            | Ordering data     | Specification          | Additional information |
|--------------------|-------------------|------------------------|------------------------|
| Measuring range    | ... <b>A</b>      | 1500, 2000, 2500 in mm |                        |
| Ambient conditions | <b>MH</b>         | mobil hydraulics       |                        |
|                    | <b>CE</b>         | industrial hydraulics  |                        |
| Interface          | <b>0/5V</b>       | 0 ... 5 V              | voltage output         |
|                    | <b>0/10V</b>      | 0 ... 10 V             | voltage output         |
|                    | <b>0.25/4.75V</b> | 0.25 ... 4.75 V        | voltage output         |
|                    | <b>0.5/4.5V</b>   | 0.5 ... 4.5 V          | voltage output         |
|                    | <b>1.0/4.9V</b>   | 1.0 ... 4.9 V          | voltage output         |
|                    | <b>0/20mA</b>     | 0 ... 20 mA            | current output         |
|                    | <b>4/20mA</b>     | 4 ... 20 mA            | current output         |
|                    | <b>CAN</b>        | CANopen                |                        |
|                    | <b>CANs</b>       | CANopen Safety         |                        |
| Redundancy         | <b>NR</b>         | not redundant          |                        |
|                    | <b>R</b>          | redundant              |                        |

#### Order key

SGH25 - A - GW6 - B - C - D - M1 - DS - S

**Scope of delivery:** SGH25, Quick Start Guide

#### Accessories you can find:

Programming Tool ProTool.SGH [www.siko-global.com](http://www.siko-global.com)

Wire extension piece SVH [www.siko-global.com](http://www.siko-global.com)

Installation tool ZB4005 [www.siko-global.com](http://www.siko-global.com)

Socket wrench ZB4008 [www.siko-global.com](http://www.siko-global.com)

rope swivel ZB4009 [www.siko-global.com](http://www.siko-global.com)