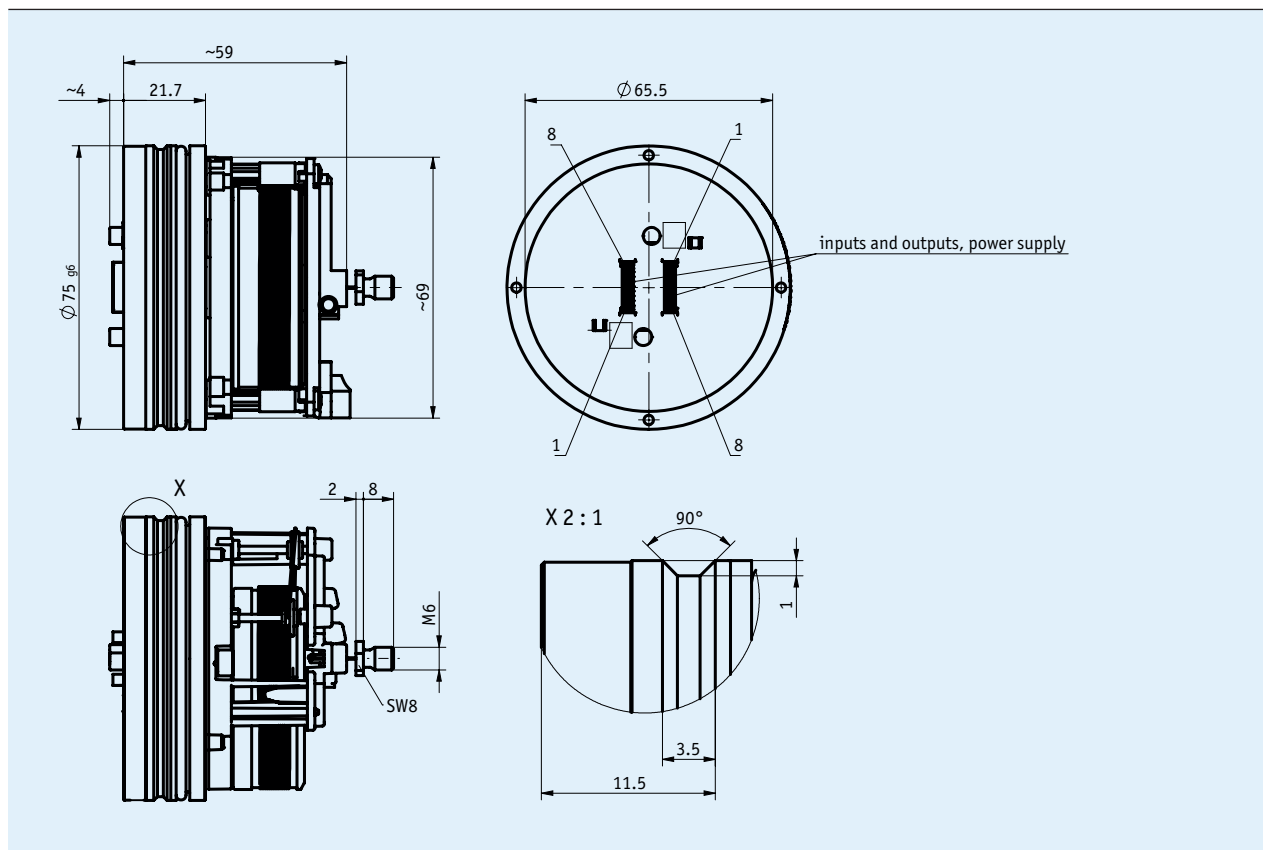
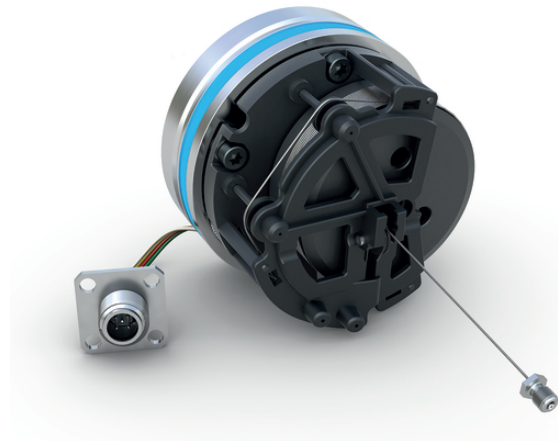


Profile

- 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	$\varnothing 0.45$ mm	steel rope (stainless)
Extension force	≥ 3.9 N	
Acceleration	≤ 24 m/s ²	
Weight	~ 0.35 kg	

Electrical data

■ Analog interface

Feature	Technical data	Additional information
Operating voltage	9 ... 32 V DC	ambient condition MH, at output 0 ... 5 V, 0.5 ... 4.5 V, 0.25 ... 4.75 V, 1.0 ... 4.9 V, reverse polarity protected
	12 ... 32 V DC	ambient condition MH, at output 0 ... 10 V, reverse-polarity protected
	12 ... 32 V DC	ambient condition MH, at output 0 ... 20 mA, 4 ... 20 mA, 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 ⁵ 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 <10 mA
	0 ... 5 V	load current <10 mA
	0.5 ... 4.75 V	load current <10 mA
	0.25 ... 4.75 V	load current <10 mA
	1 ... 4.9 V	load current <10 mA
Output current	0 ... 20 mA	load ≤500 Ω
	4 ... 20 mA	load ≤500 Ω
Linearity tolerance	±0.25 %	2500 mm measurement length
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 ⁵ 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 \pm 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 ⁵ cycles	also applies to calibration operations
Linearity tolerance	\pm 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	\pm 0.15 mm	unidirectional
Measuring range	0 ... 2500 mm	measurement area can be used flexibly between 0 ... 2500 mm
Travel speed	\leq 2 m/s	
Failure rate	290 year(s)	analog output not redundant, at 40° C (MTBF) SN29500
	240 year(s)	CANopen not redundant, at 40° C (MTBF) SN29500
	540 year(s)	analog redundant, at 40° C (MTBF) SN29500
	460 year(s)	CAN redundant, at 40° C (MTBF) SN29500
	170 year(s)	CAN Safety redundant, at 40° C (MTBF) 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

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 _n based on ISO 19879
Overload pressure	<450 bar	P _{max} based on ISO 19879
Test pressure	650 bar	P _{static} 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
	IP69K	built in the cylinder (IP69K), with KV1H and suitable mating connector

Order

Ordering information

One or more system components are required:

Cable extension KV1H

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Ordering table

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

Order key

SGH25 - - **GW6** - - - - - **M1** - **DS** - **S**

A
B
C
D

Scope of delivery: SGH25, Quick Start Guide

Accessories:
Programming Tool ProTool SGH

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