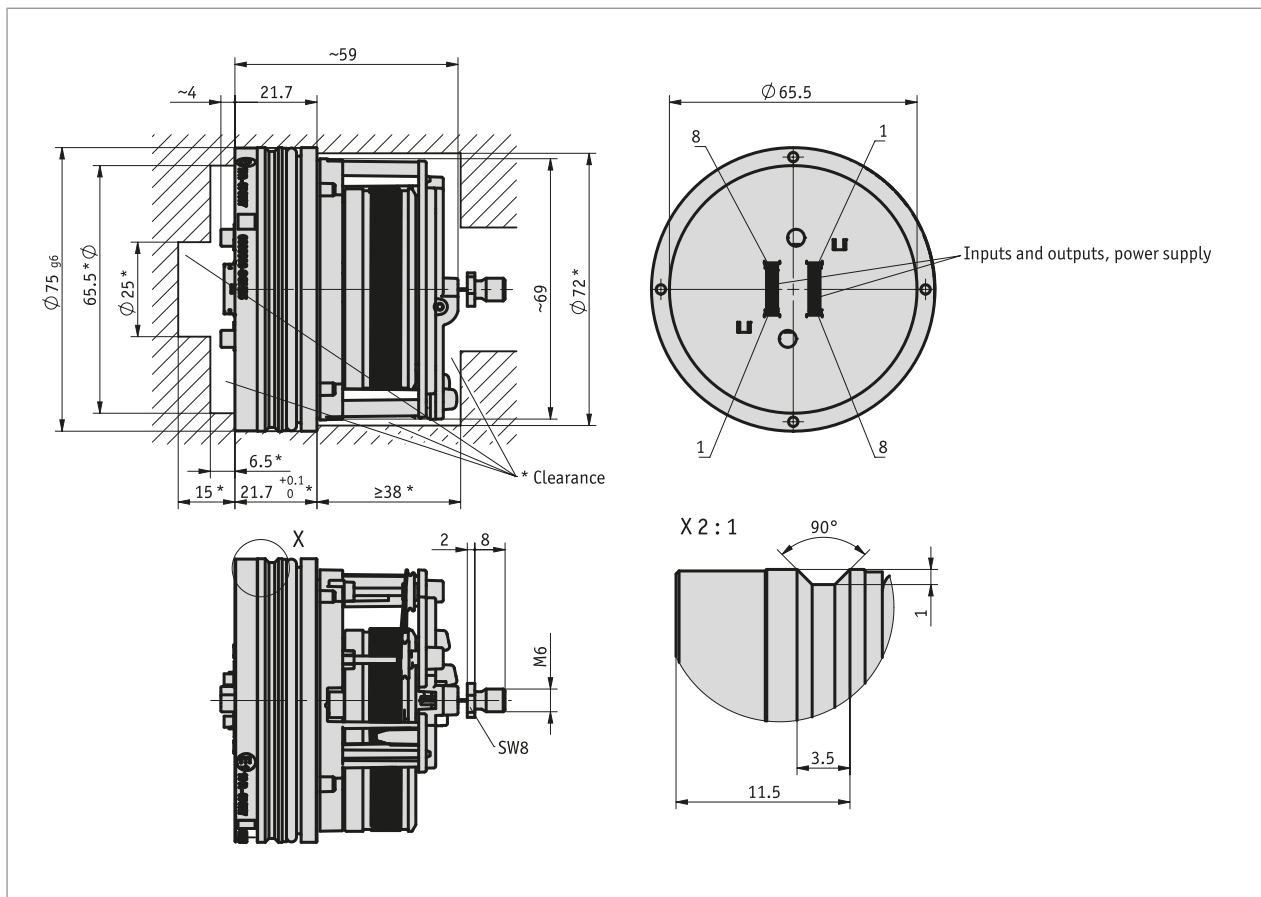
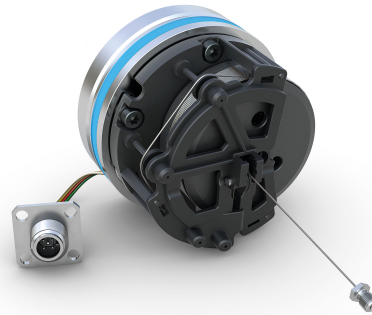


Profile

- Measuring range 0 ... 2500 mm (98.42 inches)
- Absolute measuring system
- Pressure-resistant up to 350 bar, pressure peaks up to 450 bar
- Redundant interfaces (CAT3) available
- High flexibility, thanks to teach-in to any measuring length
- 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	plastic	PA66
Wire design	$\varnothing 0.45$ mm	rustproof stainless steel
Extension force	≥ 3.9 N	
Acceleration	≤ 24 m/s ²	
Weight	~ 0.35 kg	

Electrical data

■ Analog interface

Feature	Technical data	Additional information
Linearity tolerance	±0.25 %	2500 mm measurement length, ±0.5% output value range ≤15 mV
	±0.5 %	500 mm measurement length
Settling time	<150 ms	
Type of connection	connector system	KV1H accessory
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
	<40 mA at 24 V DC	per encoder
Current consumption	<80 mA at 12 V DC	per encoder
	<1 W	without load, per encoder
Power input	<1 W	
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 <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

■ 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 electrically 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	
	1 Mbit/s	
Cycle time	1.5 ms, typical	
Settling time	<150 ms	
Type of connection	connector system	KV1H accessory

■ CANopen Safety interface

Feature	Technical data	Additional information
Operating voltage	9 ... 32 V DC 24 V ±20%	ambient condition MH, reverse polarity protected ambient condition CE, reverse polarity protected
Current consumption	<40 mA at 24 V DC <60 mA at 12 V DC	per encoder per encoder
Power input	<1 W	
Parameter storage	10 ⁵ cycles	also applies to calibration operations
Linearity tolerance	±0.25 %	2500 mm measurement length
Interface	ISO 11898-1/2, not electrically isolated	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	
Type of connection	connector system	KV1H accessory
Cycle time	1.5 ms, typical	
Settling time	<150 ms	

System data

Feature	Technical data	Additional information
Scanning	magnetic	
Resolution	12 bit 0.1 mm	analog output 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) 240 Year(s) 540 Year(s) 460 Year(s) 170 Year(s) 730 Year(s) 156 FIT 84 %	analog output not redundant, at 40° C (MTBF)SN 29500 CANopen not redundant, at 40° C (MTBF)SN 29500 analog redundant, at 40° C (MTBF)SN 29500 CAN redundant, at 40° C (MTBF)SN 29500 CAN Safety redundant, at 40° C (MTBF)SN 29500 CANopen Safety, at 60° C (MTTFd value) CANopen Safety, at 60° C (PFH) 1 FIT = 1.0 E-09 1/h CANopen Safety, at 60° C (DCavg value), ISO13849-1, Appendix E.2
Approval	E1 compliant	UN ECE R10 approval No: E1 10 R - 05 8507

Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-40 ... 105 °C -30 ... 100 °C	electronics 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 ISO19879
Overload pressure	<450 bar	P _{max} based on ISO 19879
Test pressure	650 bar	P _{static} based on ISO 19879
EMC	EN 61326-3.1 ISO 11452-1, -2, -3, -4, -5 ISO 7637-1, -2 ISO 10605	ambient condition CE, industry immunity requirement, class B emission limit ambient condition MH, interference radiation EUB ambient condition MH, transient pulses ambient condition MH, electrostatic discharge (ESD)
Protection category	IP67 IP6K9K	EN 60529, installed with KV1H and suitable mating plug ISO 20653, fitted with KV1H and suitable mating connector
Shock resistance	1000 m/s ² , 11 ms	EN 60068-2-27
Vibration resistance	70 m/s ² , 10 ... 2 kHz	EN 60068-2-64

Order

■ Ordering information

One or more system components are required:

Cable extension KV1H

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■ Ordering table

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

■ Order key

SGH25

-

A

-

GW6

-

B

-

C

-

D

-

M1

-

DS

-

S

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

 **Accessories you can find:**
Wire extension piece SVH
Installation tool ZB4005
Programming tool ProTool SGH
Rope swivel ZB4009
Socket wrench ZB4008

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