

General

- Magnetic-absolute length measuring system to facilitate manual adjustment procedures
- Intended for use with the GEL SEPODL position display.

Features

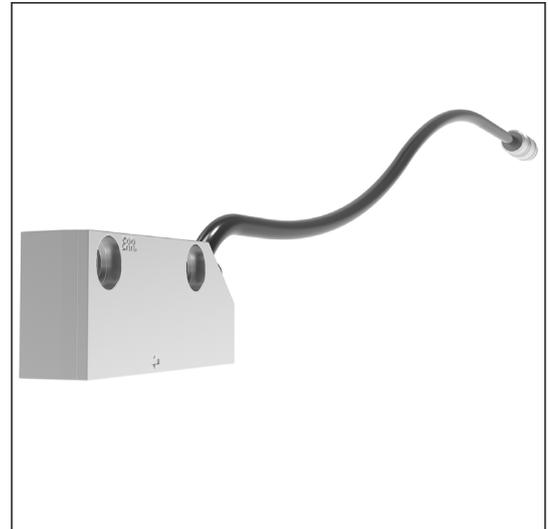
- Material: Zinc die casting
- Operating temperature: -10 °C to +70 °C
- Degree of protection: IP 65; as per DIN EN 60529:2014-09
- Communication interface: **SG**: SSI Gray

Advantages

- Not sensitive to EMC interference
- Simple cabling
- Ready for use directly after switching on the power due to absolute position detection
- Wear-free scanning
- Maintenance-free electrical parts

Fields of application

- Packaging machines
- Food and bottling lines
- Wood and plastic processing machines
- General mechanical and systems engineering



Description of SeGMO system

SeGMO-System

The SeGMO-System is suitable for efficient integration of several positioning drives and positioning displays in a machine or a system. The system comprises the following components:

- SeGMO-Positioning:
Positioning drive for fully automatic format setting
- SeGMO-Motion:
Positioning drive for cyclic operation
- SeGMO-Box:
Decentral control unit for up to 5 positioning drives
- Modular SeGMO-Box:
decentral control unit for up to 17 positioning drives or up to 48 positioning displays
- SeGMO-Assist:
Position display for manual adjustment procedures
- SeGMO-Connect:
Single cable concept (hybrid cable suitable for drag chain)
- SeGMO-Lib:
Prefabricated function blocks for integration in the higher level control system
- SeGMO-Support Tool:
Software for extended commissioning and configuration
- SeGMO-Web:
Software for real-time transmission of the modular SeGMO-Box
- SeGMO-ImgConv Tool:
Tool for converting image files into pictograms for SeGMO-Assist

SeGMO-Positioning:

The positioning drives are complete mechatronic systems with a batteryless multiturn encoder, gear and motor as well as integrated power and control electronics. We also offer these items for standalone use. With nominal torques of up to 18 Nm, they cover the typical power range for secondary axes.

SeGMO-Motion:

The positioning drives are complete mechatronic systems with gear and motor as well as integrated power and control electronics for cyclic operation.

SeGMO-Box:

Up to 5 positioning drives can be connected to the SeGMO-Box. The connection of position displays is not provided. The SeGMO-Box supports all common fieldbus and Industrial Ethernet communication interfaces.

Modular SeGMO-Box:

Every modular SeGMO-Box comprises a basic housing with individually equippable plug-in modules. By combining basic housings, up to 17 positioning drives or up to 48 position displays can be connected. A combination of positioning drives and position displays on a modular SeGMO-Box is possible. The power supply can be provided separately for each equipped plug-in module. The modular SeGMO-Box supports all common Industrial Ethernet communication interfaces.

SeGMO-Assist:

The position displays facilitate manual adjustment procedures by displaying nominal and actual positions. Variants are available for rotary and linear applications. Another variant without a measuring system supports the operator, for example, when changing format parts or tools.

SeGMO-Connect:

By using the positioning drives with a SeGMO-Box the cabling effort is considerably reduced by SeGMO-Connect. Instead of the usual two separate cables for internal bus communication and a third cable for power supply to the positioning drives, only **ONE** hybrid cable is connected. In combination with the SeGMO-Box and 5 connected positioning drives, the SeGMO-Connect typically reduces the number of cables from 15 to 5.

The hybrid cable is designed for moveable use in drag chains. Its variants are food grade quality, halogen-free and available as a cULus recognized component.

SeGMO-Motion



SeGMO-Positioning



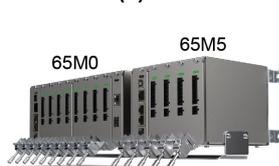
SeGMO-Assist



SeGMO-Box



Modular(e) SeGMO-Box



Description of GEL SELIN

Description

The magnetic absolute length measuring system, consisting of a GEL SELIN linear sensor and an absolute coded ZB SELINL magnetic tape, detects position changes of linear adjustment processes without contact and is intended for use with the GEL SEPODL position display.

The linear sensor is fastened to a mounting fixture with two cylinder head screws. The magnetic tape must be glued to a smooth surface on a linear axis at a maximum distance of 1.5 mm from the linear sensor. A sensor distance of up to 2.0 mm is also possible with reduced measuring accuracy. The maximum measured length is 10 meters.

The linear sensor is connected to the position display via the cable. The sensors of the linear sensor scan the magnetic tape, determine the absolute value and send it to the position display via the communication interface. The position display supplies power to the linear sensor and communicates with the higher level system control system.

When the supply voltage is applied, the linear sensor measures the sensor distance. If the maximum sensor distance is exceeded, the linear sensor sets the power failure bit to "high" and the LED of the linear sensor lights up red.

The measuring system detects changes in position even in de-energized state.

Specifications

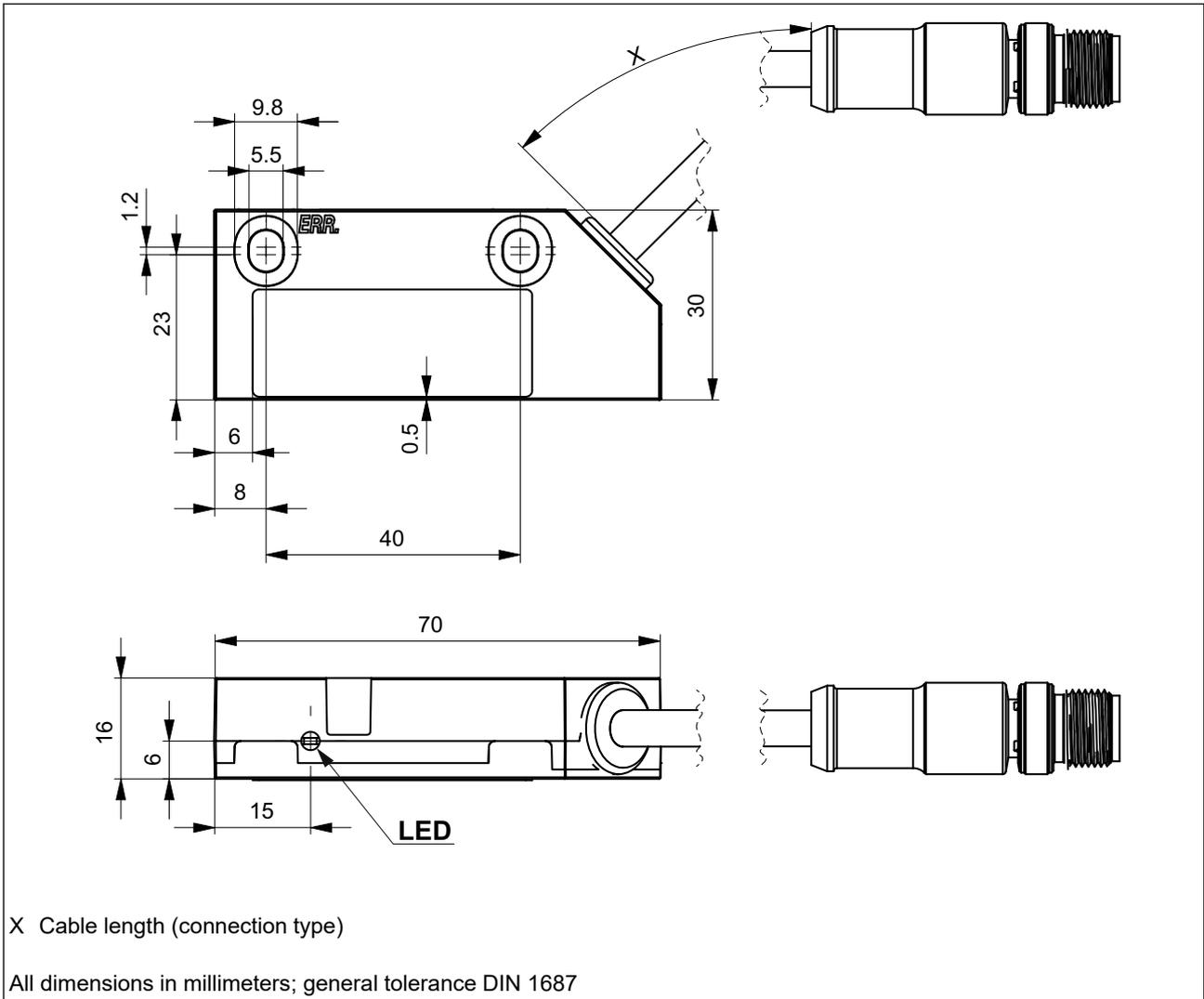
Technical data

Electrical data	
Supply voltage U_B (polarity reversal protection, overvoltage protection)	+20 V to +30 V DC
Maximum current consumption	150 mA
Communication interface	SG: SSI Gray
Mechanical data	
Housing material	Zinc die casting
Housing dimensions (not including connector)	70 mm × 16 mm × 30 mm
Weight (without cable, without connector)	≈ 50 g
Cable data	
Cable material	TPE-U (PUR)
Cable diameter	6.4 mm ± 0.2 mm
Core cross section	6 × 0.25 mm ² [24 AWG]
Minimum bending radius static/dynamic	5 ×/10 × cable diameter
Connections	
Sensor connection	8-pin male connector M12, A-coded
Ambient data	
Operating temperature range	-10 °C to +70 °C
Storage temperature range	-20 °C to +85 °C
Maximum relative air humidity	95 %, non-condensing
Degree of protection	IP 65; as per DIN EN 60529:2014-09
Dielectric strength	500 V AC; as per DIN EN 61439-1:2012-06
EMC	EN 61000-6-2:2005, EN 61000-6-4:2007
Vibration resistance	1 to 100 m/s ² , (5 to 15 Hz); 1 to 100 m/s ² , (15 to 159 Hz); as per DIN EN 60068-2-6:2008-10
Shock resistance	800 m/s ² , 6 ms, as per DIN EN 60068-2-27:2010-02
Approvals	
European Economic Area	Conformity in accordance with EMC Directive 2014/30/EU CE
Data measuring system (linear sensor and magnetic tape)	
Measuring method	contactless, magnetic-absolute
Resolution	10 µm
Maximum measuring range	10 m
Maximum positioning speed	4 m/s
Sensor distance ⁽¹⁾	1.5 mm

⁽¹⁾ At reduced measuring accuracy, a sensor distance of 2 mm to the magnetic tape is also possible.

Dimensional drawing

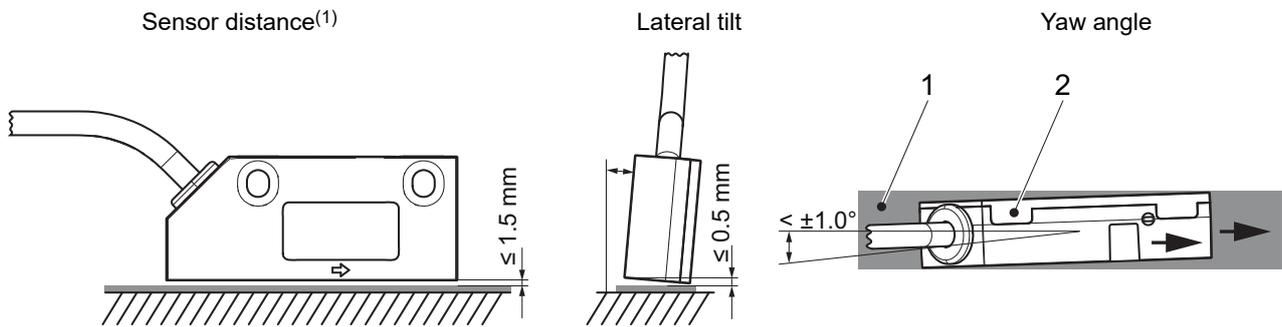
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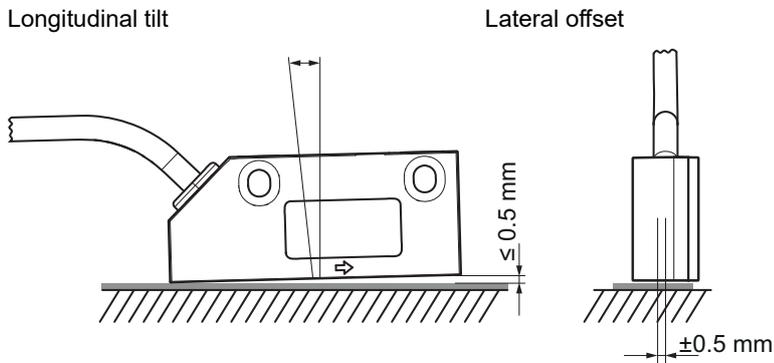
Specifications

Mounting tolerances

Mounting tolerances



- 1 Magnetic tape
- 2 Linear sensor



(1) At reduced measuring accuracy, a sensor distance of 2 mm is also possible.

NOTICE The maximum permissible sensor distance (longitudinal tilt and lateral tilt) must not be exceeded at any point.

Assignment

Sensor connection, communication interface SG

Male connector, M12 A-coded (plug-in view)	Pin	Signal identifier
	1	GND
	2	U_B
	3	CLK+
	4	CLK-
	5	DAT-
	6	DAT+
	7	unallocated
	8	unallocated
	Connector housing	Functional ground

Type code and assembly accessories

Type code

SELIN	L0	Measuring system Linear measuring system
	N	Design Standard
	SG	Communication interface SSI Gray
	0	Design of the measuring system Standard (linear magnetic tape sensor)
	05 10 25	Connection type 0.5 m cable with male connector M12 1.0 m cable with male connector M12 2.5 m cable with male connector M12

Assembly accessories

Designation	Item number
ZB SELINL magnetic tape 10 m	ZBSGX10

Technical data magnetic tape ZBSGX10

Magnetic tape	
Coding	Absolute, two-track system
Pole division	5 mm
Operating temperature range processed	-20 °C to +65 °C
Storage temperature range unprocessed	short-term: -10 °C to +60 °C medium-term: 0 °C to +40 °C long-term: +18 °C
Bonding temperature range	+18 °C to +30 °C
Maximum relative air humidity	95 %, non-condensing
Accuracy at 20 °C in µm	± 150 + 20 × L [µm] L = measured length
Dimensions (W×H) with backing tape and adhesive tape, without protective film:	10 mm × 1.5 mm
Length	10.24 m
Dimensions (including adhesive tape and masking tape)	≈ 62 g/m
External magnetic field effect	NOTICE External magnetic fields on the magnetic tape surface may not exceed 64 mT (640 Oe; 52 kA/m), as this can damage or destroy the magnetic tape coding.

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