Made in Germany

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Technical Information

GEL SELIN

SeGMo-Assist

Linear Sensor for the Position Display GEL SEPODL

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Finding solutions. Founding trust.

Motion sensors and integrated drive technology

SeGMo-System

The SeGMo-System is designed for the efficient integration of multiple positioning drives and position indicators into a machine or system.

The system consists of the following components:

- SeGMo-Positioning:
  Positioning drive for fully automatic format adjustment
- SeGMo-Assist:
  Position indicator for manual adjustment operations
- SeGMo-Lib:
  Pre-built function blocks for integration into the system control
- SeGMo-Support Tool:
  Software for advanced commissioning and configuration
- SeGMo-ImgConv Tool:
  Tool for converting image files into pictograms for SeGMo-Assist
- SeGMo-Service Tool:
  Software for advanced commissioning and configuration of Industrial Ethernet interfaces

SeGMo-Positioning

The positioning drives are complete mechatronic systems featuring a battery-free multiturn encoder, gearbox, and motor, as well as integrated power and control electronics. We also offer these for standalone use. With rated torques of up to 18 Nm [13.28 ft•lbf], they cover the performance range typical for secondary axes.

SeGMo-Assist

The position displays facilitate manual adjustment processes by showing target and actual positions. Products are available for rotary and linear applications. Another product without a Measuring system assists the operator, for example, during format or tool changes.

SeGMo-Positioning

6109 6110 6113



6008 6009 6013



SeGMo-Assist

SEPODR SEPODL SEHMI



SEROT SELIN



PROFIBUS CANopen EtherNet/IP EtherCAT POWERLINK PROFINET sercos the automation bus Modbus IO-Link

Overview Linear Sensor

General

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



Features

- Housing material: Zinc die casting
- Operating temperature range: -10 °C to +70 °C [+14 °F to +158 °F]
- Degree of protection: IP65 as per DIN EN 60529:2014-09
- Communication interface: SSI Gray

Advantages

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

Applications

- Packaging Machinery
- Food and Filling Systems
- Wood and plastic processing machinery
- General machinery and plant engineering

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Type code

SELIN	Product type				
	Measuring system				
	L0 Linear measuring system				
		Design			
		N Standard			
			Communication interface		
			SG SSI Gray		
				Design of the measuring system	
				0 Standard (linear magnetic tape sensor)	
					Connection type
					05 0.5 m [19.69 in] cable with male connector M12
					10 1.0 m [39.37 in] cable with male connector M12
					25 2.5 m [98.43 in] cable with male connector M12
▼	▼	▼	▼	▼	▼
SELIN	_ _	_	_ _	_	_ _ ◄ **Product code**

Assembly Accessories

Designation	Item number
ZB SELINL magnetic tape 10 m [32.81 ft]	ZBSGX10

Technical Data Magnetic Tape

Magnetic tape ZBSGX10	
Coding	Absolute, two-track system
Pole division	5 mm [196.85 mil]
Operating temperature range processed	-20 °C to +65 °C [-4 °F to +149 °F]
Storage temperature range unprocessed	Short-term: -10 °C to +60 °C [+14 °F to +140 °F] Medium-term: 0 °C to +40 °C [+32 °F to +104 °F] Long-term: +18 °C [+64.4 °F]
Bonding temperature range	+18 °C to +30 °C [+64.4 °F to +86 °F]
Maximum relative air humidity	95 %, non-condensing
Accuracy at 20 °C in µm [+68 °F in mil]	± 150 + 20 × L [m] or ± 5.91 mil + 1.98×10^{-5} × L [mil] (L = measured length)
Dimensions (W×H) with backing tape and adhesive tape, without protective film	10 mm× 1.5 mm [0.39 in× 59.06 mil]
Length	10.24 m [33.6 ft]
Weight (including adhesive tape and masking tape)	≈62 g/m [0.06 oz/in]
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.

Description

General 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. The GEL SELIN is intended for use exclusively with the GEL SEPODL position display. The system, consisting of the GEL SELIN linear sensor and the GEL SEPODL position display, is UL-certified, even though the linear sensor itself does not have its own UL certification.

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 [59.06 mil] from the linear sensor. A sensor distance of up to 2.0 mm [78.74 mil] is also possible with reduced measuring accuracy. The maximum measured length is 10 meters [32.81 ft]. 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.

Technical Data

Linear Sensor

Electrical data	
Supply voltage U_B (polarity reversal protection, overvoltage protection)	20 to 30 V DC
Maximum current consumption	50 mA
Communication interface	SSI Gray
Mechanical data	
Housing material	Zinc die casting
Housing dimensions (not including connectors)	70 mm × 16 mm × 30 mm [2.76 in × 0.63 in × 1.18 in]
Weight (without cable, without connector)	≈50 g [1.76 oz]
Cable data	
Cable material	TPE-U (PUR)
Cable diameter	6.4 mm ± 0.2 mm [0.25 in ± 7.87 mil]
Core cross section	6× 0.25 mm² [6× 24 AWG]
Minimum bending radius static/dynamic	5 ×/10 × cable diameter
Connection elements	
Sensor connection	8-pin male connector M12, A-coded
Ambient data	
Operating temperature range	-10 °C to +70 °C [+14 °F to +158 °F]
Storage temperature range	-20 °C to +85 °C [-4 °F to +185 °F]
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/s² [3.28. to 328.08 ft/s²], 5 to 15 Hz; 1 to 100 m/s² [3.28. to 328.08 ft/s²], 15 to 159 Hz; as per DIN EN 60068-2-6:2008-10
Shock resistance	800 m/s² [2624.67 ft/s²], 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

Measuring System

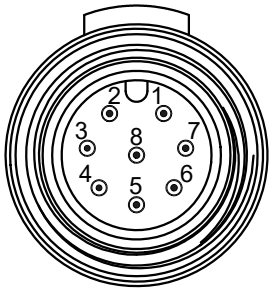
Measuring system (linear sensor and magnetic tape)	
Measuring method	Contactless, magnetic-absolute
Resolution	10 [0.39 mil]
Maximum measuring range	10 m [32.81 ft]
Maximum positioning speed	4 m/s [8.95 mi/h]
Sensor distance(1)	1.5 mm [59.06 mil]

(1) At reduced measuring accuracy, a sensor distance of 2 mm [78,74 mil] to the magnetic tape is also possible.

Assignment

Sensor connection

M12 A-coded



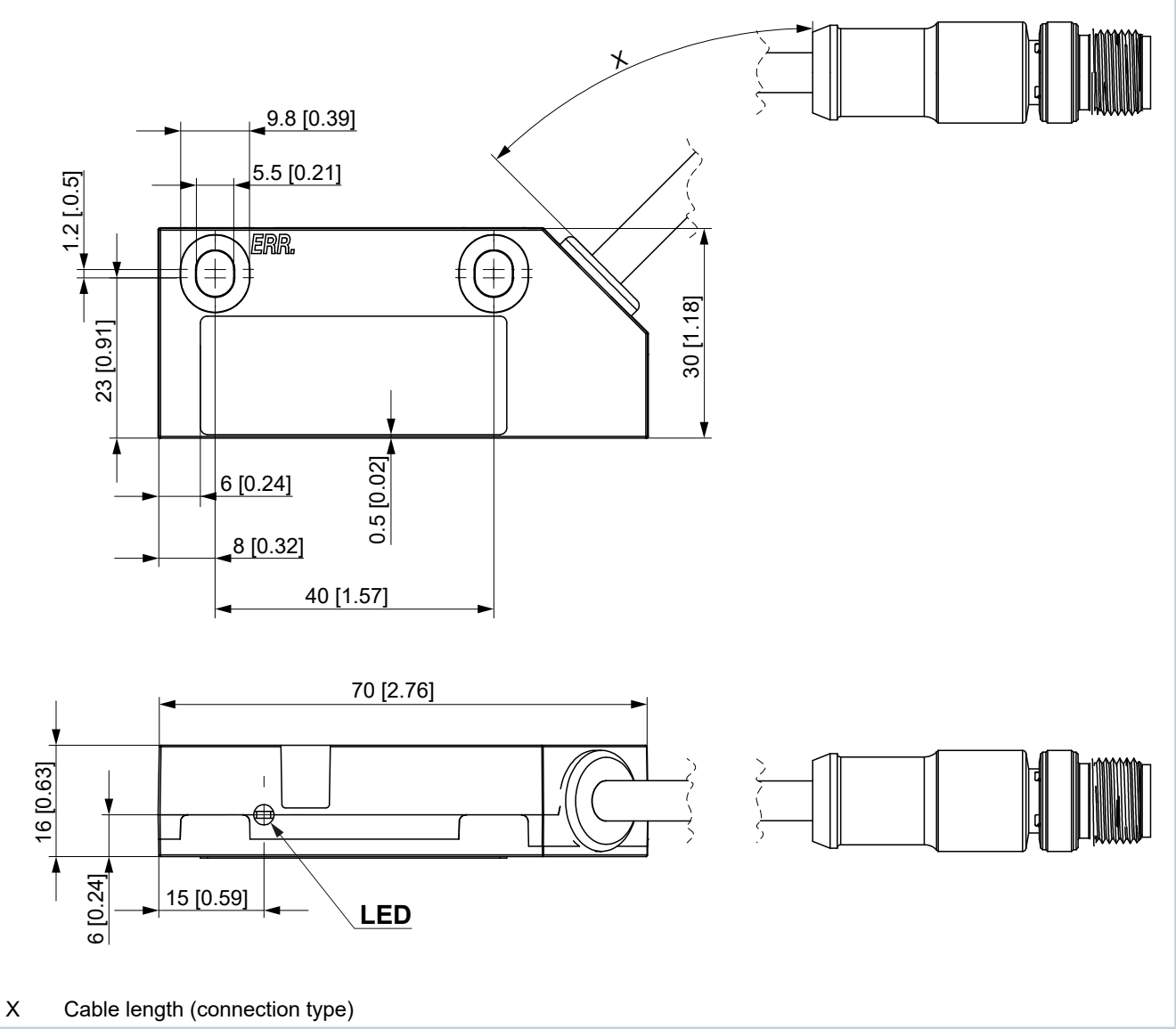
Male contact
(plug-in view)

Pin designation	Signal identifier
1	GND
2	U_B
3	CLK+
4	CLK-
5	DAT-
6	DAT+
7	unallocated
8	unallocated
Connector housing	Functional ground

Dimensional Drawing and Mounting Tolerances

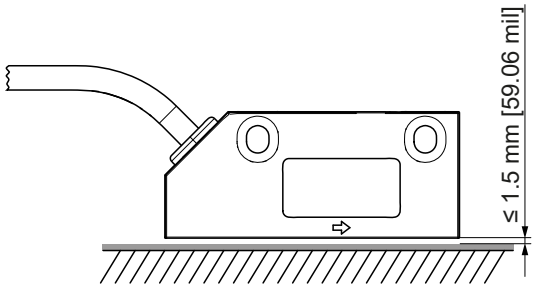
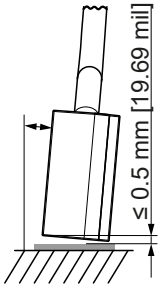
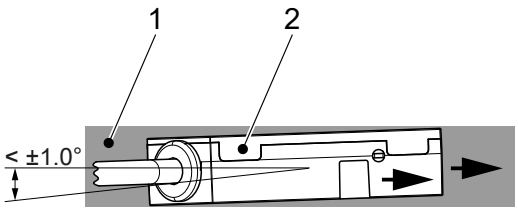
Dimension Drawing

All dimensions in millimeters [inch]; general tolerance DIN 1687

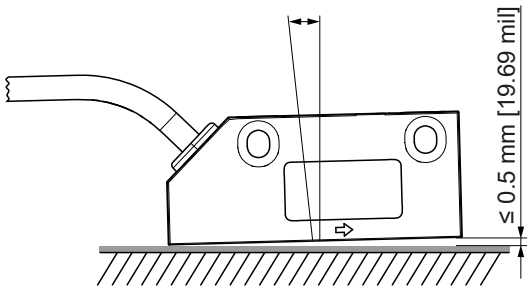
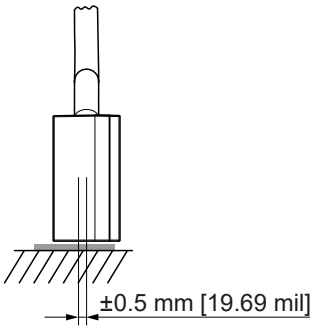


X Cable length (connection type)

Mounting Tolerances

Sensor distance (1)	Lateral tilt	Yaw angle
		

1 Magnetic tape
2 Linear sensor

Longitudinal tilt	Lateral offset
	

(1) At reduced measuring accuracy, a sensor distance of 2.0 mm [78.74 mil] is also possible.

NOTICE

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

Europe

Germany

Lenord, Bauer & Co. GmbH
Dohlenstrasse 32
46145 Oberhausen
Tel. +49 (0)208 9963 0
Email info@lenord.de
www.lenord.de

Italy

Lenord+Bauer Italia S.r.l.
Viale Famagosta 61
20124 Milan
Tel. +39 02 36536936
Email salesitaly@lenord.com
www.lenord.com

Spain

Lenord Bauer Iberica, S.L.
Carrer de Balmes, 150, 5°
08008 Barcelona
Tel. +34 603 607 499
Email info@lenord.es
www.lenord.com

North America

USA

Lenord+Bauer USA Inc.
32000 Northwestern Highway, Suite 150,
Farmington Hills, MI 48334
Tel. +1 248 446 7003
Email orders@lenord.com
www.lenord.com

Asia

China

Lenord+Bauer Automation Technology (Shanghai) Co., Ltd.
Block 42, Room 302, No. 1000,
Jinhai Road, 201206 Shanghai
Tel. +86 21 50398270
Email Info@lenord.cn
www.lenord.cn

India

Lenord+Bauer India Private Limited
417 Golden Square Prime Serviced Office
Davanam Sarovar Portico Suites
Hosur Main Road, Bengaluru 560068
Karnataka
Tel. +919901516814
Email info@lenord.co.in
www.lenord.co.in

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