

L3B series



Linear encoder with small reader head, air purge and connector at both ends, with threaded head for different mounting options without the need for nuts.

Its special mechanical extrusion design, protective lips and securing points on the linear encoder, the high quality optical components and powerful FPGA-based electronics using advanced embedded algorithms allow for the reduction of errors to ensure the accuracy and repeatability of linear encoders. From 4 meters onwards the module ends machining design together with an outstanding rubber seal allow for an easy installation and ensure the protection against liquids in the joints.

This results in linear encoders especially suited for hostile work environments in settings requiring high speed and vibration standards.

Measuring lengths in millimeters

Available in measuring lengths from 440 mm to 50 m in 200 mm increments. Contact Fagor Automation for custom solutions if your application requires longer lengths.

Model description:

- L3B: Absolute linear encoders with SSI protocol for FAGOR and others.
- L3BS: Absolute linear encoders with SSI protocol for SIEMENS® (Solution Line).
- L3BF: Absolute linear encoders with FANUC® (α and αi) protocol.
- L3BM: Absolute linear encoders with MITSUBISHI® CNC protocol.
- L3BP: Absolute linear encoders with PANASONIC® (Matsushita) protocol.
- L3BD: Absolute linear encoders with FeeDat® protocol for FAGOR and others
- L3BD + EC-PA-DQ1-M: Absolute linear encoders with DRIVE-CLiQ® protocol, for SIEMENS® (Solution Line and Sinumerik One).
- L3BBC: Absolute linear encoders with BiSS® C protocol.

Characteristics

	L3B/L3BS		L3BF		L3BM L3BP		L3BD		L3BD + EC-PA-DQ1-M		L3BBC	
Measurement	Incremental: By means of a 40 μ m-pitch graduated stainless steel tape Absolute: Optical reading of sequential binary code											
Steel tape thermal expansion coefficient	α_{therm} : 11 ppm/K approx.											
Measuring resolution	0.1 μ m	1 μ m	Interface α 0.05 μ m 0.01 μ m	Interface αi 0.0125 μ m 0.00125 μ m	0.01 μ m	0.05 μ m	0.01 μ m	0.05 μ m	0.01 μ m	0.05 μ m	0.01 μ m	0.05 μ m
Output signals	~ 1 Vpp		-		-		-		-		(**)	
Incremental signal period	40 μ m		-		-		-		-		-	
Limit frequency	< 75 kHz for 1 Vpp		-		-		-		-		-	
Maximum cable length	75 m (*)	100 m	30 m		30 m		100 m		30 m		(***)	
Supply voltage	5V \pm 10%, < 250 mA (without load)											
Accuracy	\pm 5 μ m/m											
Maximum speed	180 m/min											
Maximum vibration	Profile: 200 m/s ² (55 ... 2000 Hz) IEC 60068-2-6 Reader head: 300 m/s ² (55 ... 2000 Hz) IEC 60068-2-6											
Maximum shock	300 m/s ² (11 ms) IEC 60068-2-27											
Maximum acceleration	100 m/s ² in the measuring direction											
Required moving force	< 5 N											
Operating temperature	0 °C ... 50 °C											
Storage temperature	-20 °C ... 70 °C											
Weight	1.5 kg + 5 kg/m											
Relative humidity	20 ... 80 %											
Protection	IP 53 (standard) IP 64 (DIN 40050) using pressurized air at 0.8 \pm 0.2 bar in linear encoders											
Reader head	With built-in connector Connection at both ends of the reader head											

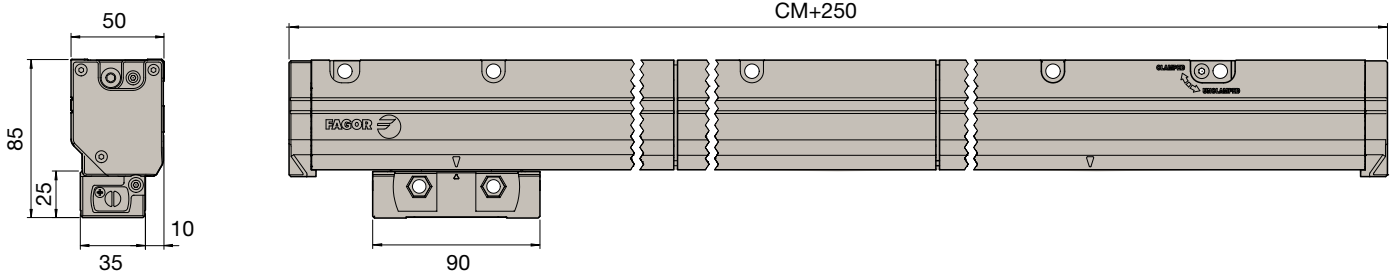
(*) Contact Fagor Automation for other lengths.

(**) Consult Fagor Automation for analog output signals.

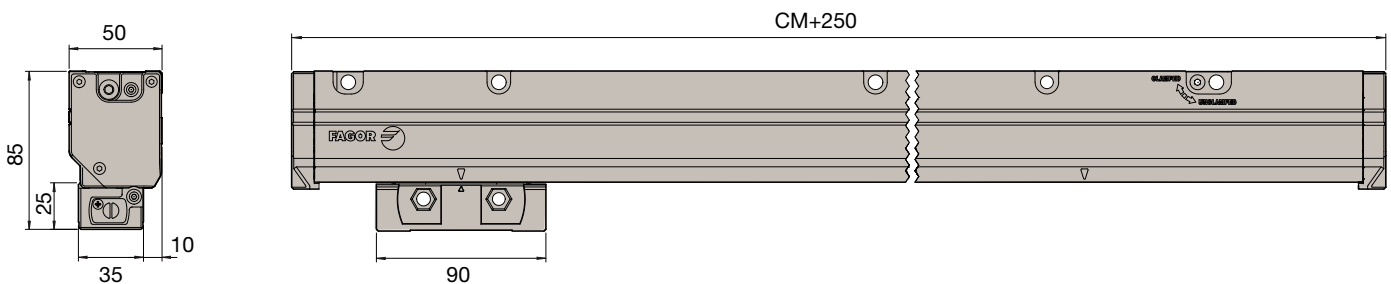
(***) Contact Fagor Automation for maximum cable length.

Modular L3B model

Dimensions in mm



Single L3B model



Additional information can be found in the technical documentation and installation manual available on the website www.fagorautomation.com

Order identification

Example of Linear Encoder: L3BF10-4640

L3	B	F	10	4640			
Type of profile for long space	Letter identifying the absolute encoder	Type of communications protocol (1):	Resolution (2):	Measuring lengths in millimeters:	Accuracy of the linear encoder:	Version:	Threaded head:
		<ul style="list-style-type: none"> Blank space: SSI protocol (FAGOR) D: FeedDat® protocol (FAGOR) (*) S: SSI SIEMENS® (SL) protocol F: FANUC® (α and ci) protocol M: MITSUBISHI® CNC protocol P: PANASONIC® (Matsushita) protocol BC: BiSS® C protocol 	<ul style="list-style-type: none"> Blank space: (**) 50: 0.05 μm 10: 0.01 μm 	In the example (4640) = 4 640 mm	<ul style="list-style-type: none"> Blank space: ± 10 μm/m 5: ± 5 μm/m (***) 	<ul style="list-style-type: none"> Blank space: standard M: mirror 	<ul style="list-style-type: none"> Blank space: M8 T: M6

(1): contact Fagor Automation for availability.

(2): not all combinations of protocol and resolution are possible.

The characteristics table indicates the resolutions available for each protocol.

(*) plus EC-PA-DQ1-M with DRIVE-CLiQ® protocol for SIEMENS® (Solution Line and Sinumerik One).

(**) only for SSI models SSI: Up to 0.1 μm FAGOR;

Up to 1 μm SIEMENS® (Solution Line and Sinumerik One).

(***) only for single module models.