Linear encoder with small reader head, with threaded head for different mounting options without the need for nuts.

The linear encoder special mechanical extrusion design, protective lips and end caps, its high quality optical components and powerful FPGA-based electronics using advanced embedded algorithms allow for the reduction of errors to ensure accuracy and repeatability for the linear encoders.

The mounting spar has small dimensions and also a particular design of the fixing points. To ease the installation top or bottom alternatives are provided to secure the encoder.

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

Measuring lengths in millimeters

70 • 120 • 170 • 220 • 270 • 320 • 370 • 420 • 470 • 520 • 570 •
620 • 670 • 720 • 770 • 820 • 870 • 920 • 970 • 1.020 • 1.070 •
1.140 • 1.240 • 1.340 • 1.440 • 1.540 • 1.640 • 1.740 • 1.840 • 2.040

Model description:

SV3B: Absolute linear encoders with SSI protocol for FAGOR and others.

SV3BS: Absolute linear encoders with SSI protocol for SIEMENS® (Solution Line).

SV3BF: Absolute linear encoders with FANUC® (α and αi) protocol.

SV3BM: Absolute linear encoders with MITSUBISHI® CNC protocol.

SV3BP: Absolute linear encoders with PANASONIC® (Matsushita) protocol.

SV3BD + EC-PA-DQ1-M:
Absolute linear encoders with DRIVE-CLiQ® protocol for SIEMENS® (Solution Line and Sinumerik One).

SV3BD-FS + EC-PA-DQS-M:
bsolute linear encoders with DRIVE-CLiQ® protocol for SIEMENS® (Solution Line and Sinumerik One) with Functional Safety.

SV3BD: Absolute linear encoders with FeeDat® protocol for FAGOR and others.

SV3BBC: Absolute linear encoders with BiSS® C protocol.

Characteristics

|	SV3B / SV3BS	SV3BF		SV3BM / SV3BP / SV3BD+ EC-PA-DQ1		SV3BD-FS+ EC-PA-DQS-M		SV3BD		SV3BBC	
Measurement	**Incremental:** By means of a 20 µm-pitch graduated glass **Absolute:** Optical reading of sequential binary code										
Glass thermal expansion coefficient	α_{therm}: 8 ppm/K aprox.										
Measuring resolution	0.1 µm	Interface α 0.05 µm 0.01 µm	Interface αi 0.0125 µm 0.00125 µm	0.001 µm	0.01 µm	0.01 µm	0.05 µm	0.001 µm	0.01 µm	0.001 µm	0.01 µm
Output signals	∿ 1 Vpp	–		–		–		–		(**)	
Incremental signal period	20 µm	–		–		–		–		–	
Limit frequency	< 150 kHz for 1 Vpp	–		–		–		–		–	
Maximum cable length	75 m (*)	100 m	30 m	30 m		30 m		100 m		(***)	
Supply voltage	5V ± 10 %, < 250 mA (without load)										
Accuracy	± 5 µm/m ± 3 µm/m										
Maximum speed	180 m/min										
Maximum vibration	Reader head: 200 m/s² (55 ... 2000 Hz) IEC 60068-2-6 Housing with mounting support and cable outlet right 150 m/s²; or left 100 m/s² (55 ... 2000 Hz) IEC 60068-2-6										
Maximum shock	300 m/s² (11 ms) IEC 60068-2-27										
Maximum acceleration	100 m/s² in the measuring direction / 60 m/s² [for **SV3BD-FS** model]										
Required moving force	< 4 N										
Operating temperature	0 °C ... 50 °C										
Storage temperature	-20 °C ... 70 °C										
Weight	0.25 kg + 1.55 kg/m										
Relative humidity	20 ... 80 %										
Protection	IP 53 (standard) IP 64 (DIN 40050) using pressurized air at 0.8 ± 0.2 bar in linear encoders										
Reader head	With built-in connector										

(*) Contact Fagor Automation for other lengths.

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

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

SV3B model

Dimensions in mm

28.25

48.1

13

10

CM+105

92
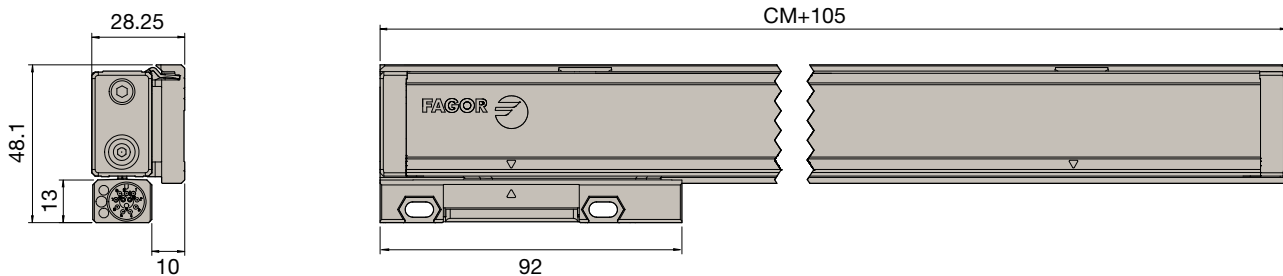
■ *Additional information can be found in the technical documentation and installation manual available on the website **www.fagorautomation.com***

Order identification

Example of Linear Encoder: SV3BF10-320-3-T + B3-320

SV3	B	F	10	320	3	T	FS
Type of profile for reduced space and securing to the mounting spar	Letter identifying the absolute encoder	Type of communications protocol (1): • Blank space: SSI protocol (FAGOR) • D: FeeDat® protocol (FAGOR) (*) • S: SSI SIEMENS® (SL) protocol • **F: FANUC® (α and αi) protocol** • M: MITSUBISHI® CNC protocol • P: PANASONIC® (Matsushita) protocol • BC: BiSS® C protocol	Resolution (2): • Blank space: up to 0.1 µm (**) • 01: 0.001 µm • 50: 0.05 µm • **10: 0.01 µm**	Measuring lengths in millimeters: In the example (320) = 320 mm	Accuracy of the linear encoder: • 5: ± 5 µm • **3: ± 3 µm**	Threaded head: • Blank space: No • **T: M4**	Safety: • **Blank space: No** • FS: Functional Safety (***)

(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.

(***) only SV3BD + EC-PA-DQS-M with DRIVE-CLiQ® protocol for SIEMENS® (Solution Line and Sinumerik One) with Functional Safety.

Example Spar: B3-320

B3	320
Mounting spar	Measuring length of the linear encoder in milimeters: In the example (320) = 320 mm