S2A series

Linear encoder with threaded head option for different mounting options without the need for nuts.

Especially indicated for high standard environments in terms of speed and vibration.

Measuring lengths in millimeters:

70 • 120 • 170 • 220 • 270 • 320 • 370 • 420 • 470 • 520 • 570 • 620 • 670 • 720 • 770 • 820 • 870 • 920 • 1020 • 1140 • 1240

Model description:

S2A: Absolute linear encoders with SSI protocol for FAGOR and others.

S2AS: Absolute linear encoders with SSI protocol for SIEMENS® (Solution Line and Sinumerik One).

S2AF: Absolute linear encoders with FANUC® (α and αi) protocol.

S2AM: Absolute linear encoders with MITSUBISHI® CNC protocol.

S2AP: Absolute linear encoders with PANASONIC® (Matsushita) protocol.

S2AD + EC-PA-DQ1: Absolute linear encoders with DRIVE-CLiQ® protocol for SIEMENS® (Solution Line and Sinumerik One).

S2AD: Absolute linear encoders with FeeDat® protocol for FAGOR and others.

S2ABC: Absolute linear encoders with BiSS® C protocol.

S2AK: Absolute linear encoders with YASKAWA® protocol.

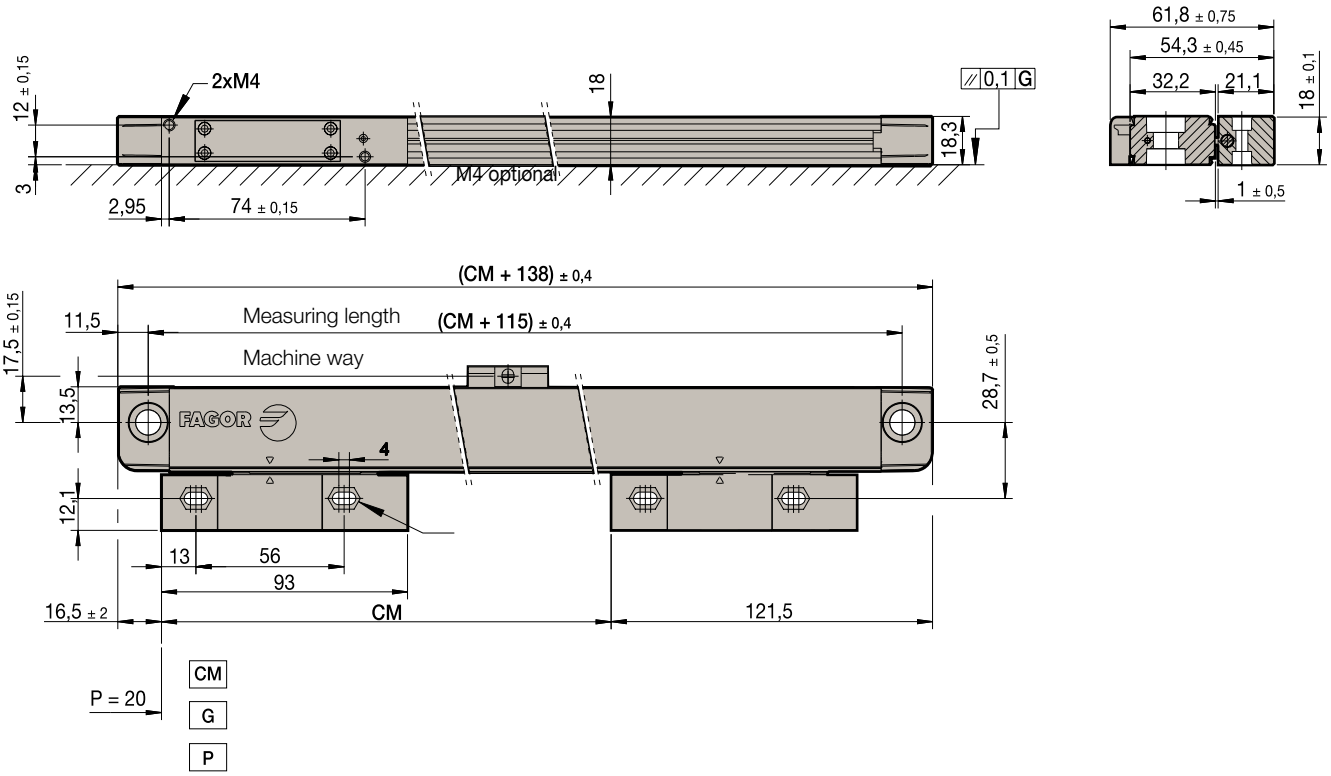
Characteristics

	S2A / S2AS	S2AF	S2AM / S2AP / S2AD + EC-PA-DQ1	S2AD	S2ABC	S2AK
Measurement	**Incremental:** By means of a 20 µm-pitch graduated glass tape **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	0.01 µm / 0.05 µm	0.01 µm / 0.05 µm	0.01 µm / 0.05 µm	0.009765625 µm / 0.078125 µm
Output signals	⁓ 1 Vpp	–	–	–	(***)	–
Incremental signal period	20 µm	–	–	–	–	–
Limit frequency	< 100 kHz for 1 Vpp	–	–	–	–	–
Maximum cable length	75 m (*) / 100 m	30 m	30 m	100 m	(**)	30 m
Supply voltage	5V ± 10 %, < 250 mA (without load)					
Accuracy	± 5 µm/m ± 3 µm/m					
Maximum speed	180 m/min					
Maximum vibration	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					
Required moving force	< 4 N					
Operating temperature	0 °C … 50 °C					
Storage temperature	-20 °C ... 70 °C					
Weight	0.2 kg + 0.50 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.
(**) Contact Fagor Automation for maximum cable length.
(***) Consult Fagor Automation for analog output signals.

S2A model

Dimensions in mm



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

Order identification

Example of Linear Encoder: S2AM10-1140-5-A-T

S2	A	M	10	1140	5	A	T
Type of profile for reduced space: • **S2: Standard mounting for vibrations of up to 100 m/s²**	***Letter identifying the absolute encoder***	***Type of communications protocol:*** • 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 • K: YASKAWA® protocol	***Resolution (1):*** • Blank space: up to 0.1 µm (**) • 50: 0.05 µm • **10: 0.01 µm** • 211: 0.009765625 µm (***) • 208: 0.078125 µm (***)	***Measuring lengths in millimeters:*** In the example (1140) = 1 140 mm	***Accuracy of the linear encoder:*** • **5: ± 5 µm** • 3: ± 3 µm	***Air intake on the reader head:*** • **A: With air intake**	***Threaded head:*** • Blank space: No • **T: M4**

(1): not all combinations of protocol and resolution are possible. The characteristics table indicates the resolutions available for each protocol.
(*): plus EC-PA-DQ1 with DRIVE-CLiQ® protocol for SIEMENS® (Solution Line and Sinumerik One).
(**): only for SSI models.
(***): only for YASKAWA® models.