

# SA series

LINEAR



Specially designed for high performance environment requiring high speed and accuracy. Ideal for limited mounting spaces.

### Measuring lengths in millimeters

70 • 120 • 170 • 220 • 270 • 320 • 370 • 420 • 470 • 520  
570 • 620 • 670 • 720 • 770 • 820 • 870 • 920 • 1 020  
1 140 • 1 240

### Model description:

- SA: Absolute linear encoders with SSI protocol for FAGOR and others.
- SAS: Absolute linear encoders with SSI protocol for SIEMENS® (Solution Line).
- SAF: Absolute linear encoders with FANUC® (01 and 02) protocol.
- SAM: Absolute linear encoders with MITSUBISHI® CNC protocol.
- SAP: Absolute linear encoders with PANASONIC® (Matsushita) protocol.
- SAD: Absolute linear encoders with FeeDat protocol for FAGOR and others.
- SAD + EC-PA-DQ: Linear and absolute encoders with DRIVE-CLiQ® protocol , for SIEMENS® (Solution Line).

## Characteristics

	SA / SAS	SAF	SAM	SAP	SAD	SAD+ EC-PA-DQ
Measurement	Incremental: By means of a 20 µm-pitch stainless steel tape Absolute: Optical reading of sequential binary code					
Glass thermal expansion coefficient	$\alpha_{\text{therm}}$ : 8 ppm/K aprox.					
Measuring resolution	0.1 µm	0.01 µm   0.05 µm	0.01 µm   0.05 µm	0.01 µm   0.05 µm	0.01 µm   0.05 µm	0.01 µm   0.05 µm
Output signals	~ 1 Vpp	-	-	-	-	-
Incremental signal period	20 µm	-	-	-	-	-
Limit frequency	< 100 KHz for 1 Vpp	-	-	-	-	-
Maximum cable length	100 m	30 m	30 m	30 m	100 m	30 m
Supply voltage	5V ± 10%, 250 mA (without load)					
Accuracy	± 5 µm/m ± 3 µm/m	± 5 µm/m ± 3 µm/m	± 5 µm/m ± 3 µm/m	± 5 µm/m ± 3 µm/m	± 5 µm/m ± 3 µm/m	± 5 µm/m ± 3 µm/m
Maximum speed	120 m/min	180 m/min   120 m/min	180 m/min   120 m/min	180 m/min   120 m/min	180 m/min	180 m/min
Maximum vibration	10 g without mounting plate					
Maximum shock	30 g (11 ms) IEC 60068-2-27					
Maximum acceleration	10 g in the measuring direction					
Required moving force	< 4 N					
Operating temperature	0 °C ... 50 °C					
Storage temperature	-20 °C ... 70 °C					
Weight	0.20 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					

