

S series

LINEAR



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

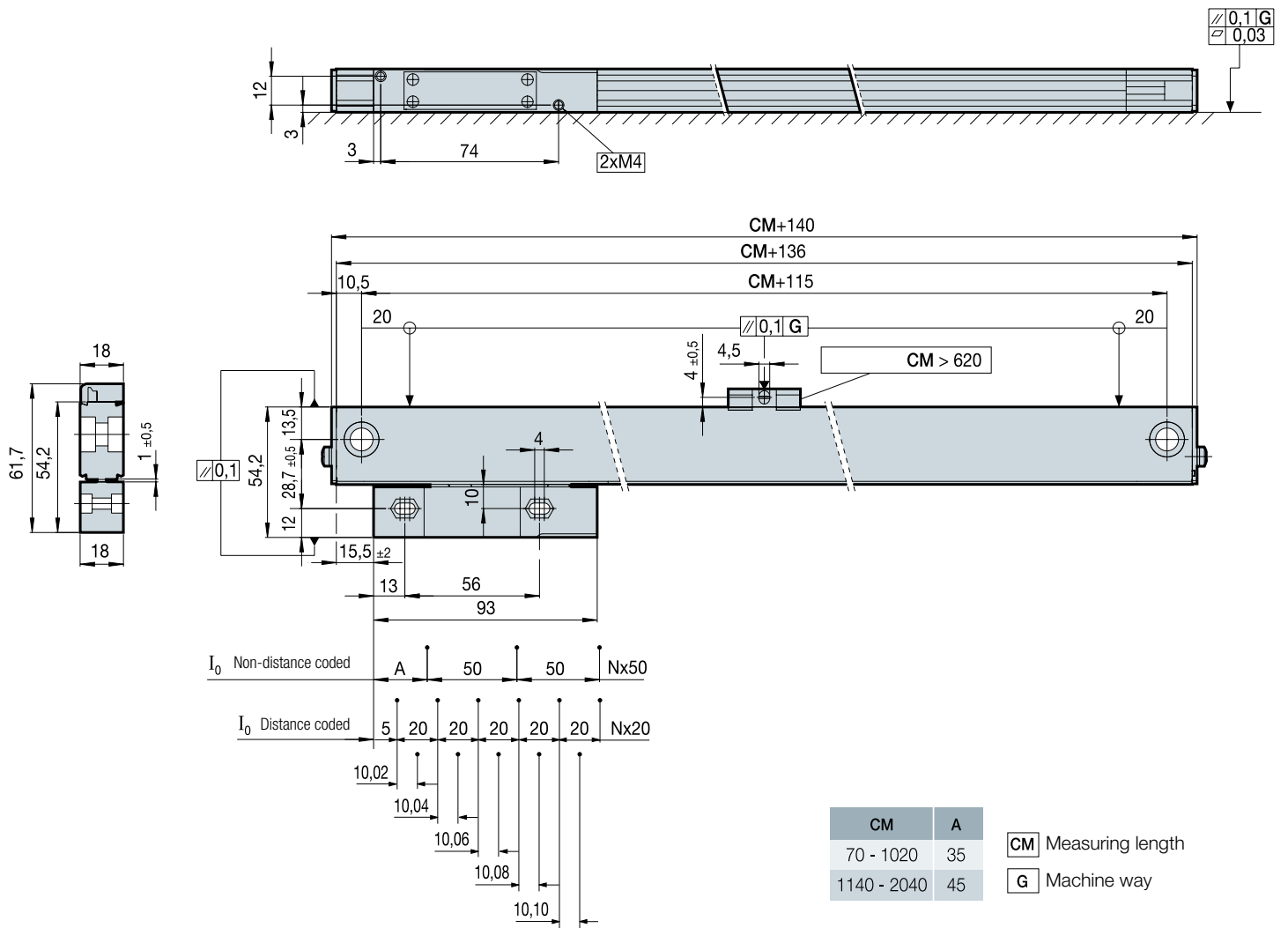
Measuring lengths in millimeters

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

Characteristics

	SX	SY	SW	SZ	SP
Measurement	By means of a 20 µm-pitch graduated glass				
Glass thermal expansion coefficient	α_{therm} : 8 ppm/K aprox.				
Measuring resolution	1 µm	0.5 µm	0.1 µm	0.05 µm	Up to 0.1 µm
Output signals	□□ TTL differential	□□ TTL differential	□□ TTL differential	□□ TTL differential	~ 1 Vpp
Incremental signal period	4 µm	2 µm	0.4 µm	0.2 µm	20 µm
Limit frequency	500 KHz	1 MHz	1.5 MHz	500 KHz	100 KHz
Maximum speed	120 m/min	120 m/min	36 m/min	6 m/min (*)	120 m/min
Minimum distance between flanks	0.5 microseconds	0.25 microseconds	0.1 microseconds	0.3 microseconds	-
Reference marks I_0	SX, SY, SW, SZ and SP: every 50 mm SOX, SOY, SOW, SOZ and SOP: distance-coded I_0 SSX, SSY, SSW, SSZ and SSP: selectable I_0				
Maximum cable length	50 m	50 m	50 m	50 m	150 m
Supply voltage	5 V ± 10%, < 150 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
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	With built-in connector				

(*): contact FAGOR for higher speed.



Order identification

Example of Linear Encoder: **SOP - 420 - 5 - A**

S	O	P	420	5	A
Type of profile for wide space	Type of reference mark I_0: <ul style="list-style-type: none"> Blank space: Incremental, one mark every 50 mm O: Distance-coded marks S: Selectable reference marks 	Type of signal: <ul style="list-style-type: none"> X: 1 μm resolution differential TTL Y: 0.5 μm resolution differential TTL W: 0.1 μm resolution differential TTL Z: 0.05 μm resolution differential TTL P: 1 Vpp sinusoidal 	Measuring lengths in millimeters: In the example (420) = 420 mm	Accuracy of the linear encoder: <ul style="list-style-type: none"> 5: $\pm 5 \mu$m 3: $\pm 3 \mu$m 	Air intake on the reader head: <ul style="list-style-type: none"> Blank space: Without air intake A: With air intake