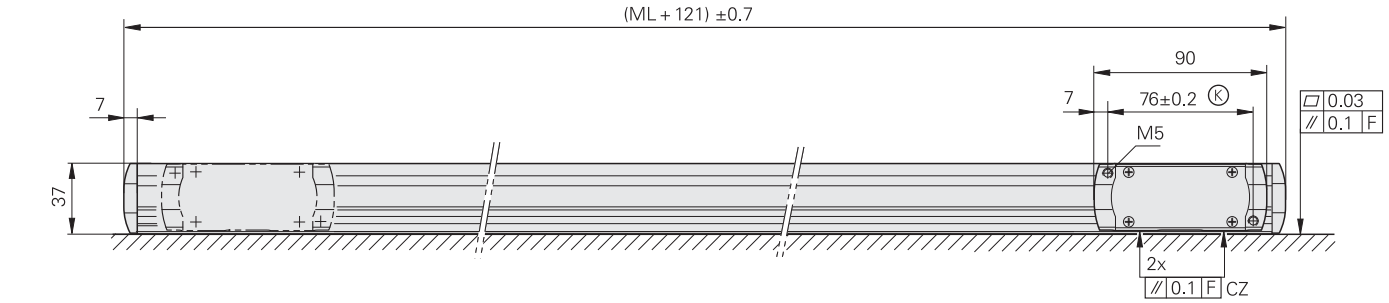
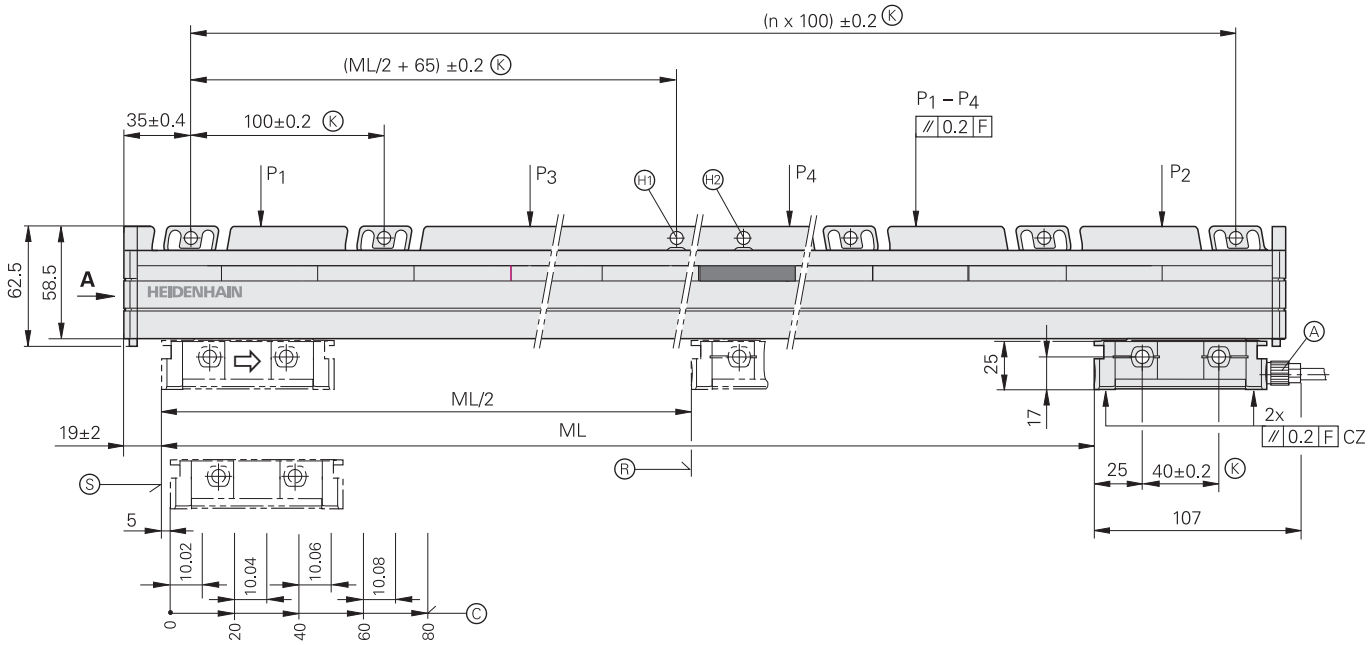
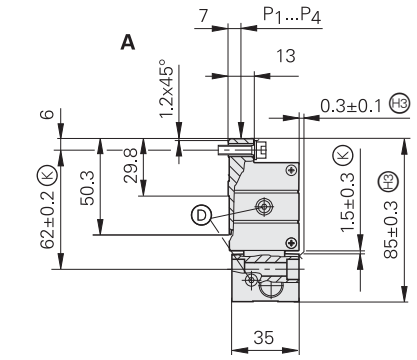
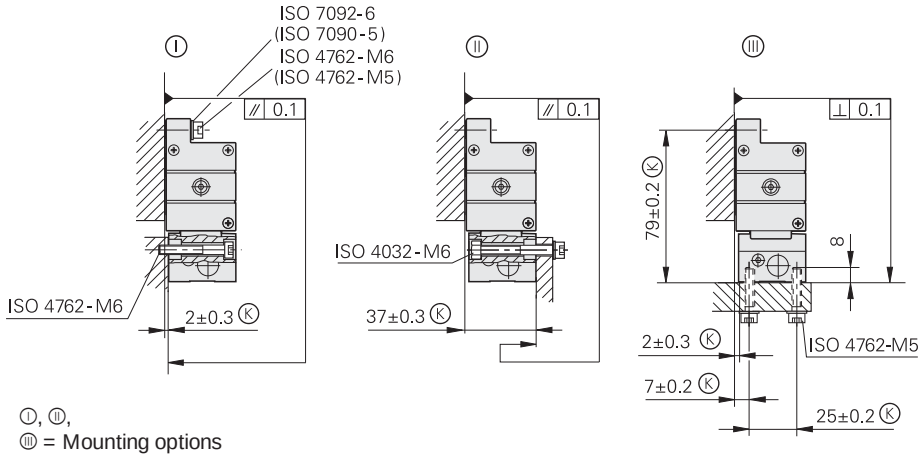
LS 100 Series

- **Incremental linear encoder for measuring steps to 0.5 µm**
- **High vibration rating**
- **Horizontal mounting possible**









Dimensions in mm

Tolerancing ISO 8015
ISO 2768 - m H
< 6 mm: ±0.2 mm

Ⅰ, Ⅱ,
Ⅲ = Mounting options
F = Machine guideway
P = Gauging points for alignment
Ⓐ = Cable connection usable at either end
Ⓚ = Required mating dimensions
Ⓓ = Compressed air inlet usable at either end
Ⓢ = Beginning of measuring length (ML)
Ⓡ = Reference-mark position on LS 1xx
Ⓒ = Reference-mark position on LS 1xxC
H1 = Mechanical fixed point (should be preferred)
H2 = Mechanical fixed point (coincides with the spacing interval of 100 mm)
H3 = Alternative mating dimension
⇨ = Direction of scanning unit motion for output signals in accordance with interface description

Specifications	LS 187	LS 177						
Measuring standard Expansion coefficient	Glass scale with DIADUR graduation $\alpha_{therm} \approx 8 \times 10^{-6}\ K^{-1}$							
Accuracy grade*	± 5 µm; ± 3 µm							
Measuring length ML* in mm	140 240 340 440 540 640 740 840 940 1040 1140 1240 1340 1440 1540 1640 1740 1840 2040 2240 2440 2640 2840 3040							
Reference marks* *LS 1x7* *LS 1x7C*	Selectable with magnets every 50 mm, standard setting: 1 reference mark in the center Distance-coded							
Incremental signals	⌒ 1 V_{PP}	⊓⊔ TTL x 5		⊓⊔ TTL x 10			⊓⊔ TTL x 20	
Grating period Integrated interpolation* Signal period	20 µm – 20 µm	20 µm 5-fold 4 µm		20 µm 10-fold 2 µm			20 µm 20-fold 1 µm	
Cutoff frequency –3dB	≥ 160 kHz	–		–			–	
Scanning frequency* Edge separation a	–	100 kHz ≥ 0.5 µs	50 kHz ≥ 1 µs	100 kHz ≥ 0.25 µs	50 kHz ≥ 0.5 µs	25 kHz ≥ 1 µs	50 kHz ≥ 0.25 µs	25 kHz ≥ 0.5 µs
Measuring step	0.5 µm[1)]	1 µm[2)]		0.5 µm[2)]			0.25 µm[2)]	
Traversing speed	≤ 120 m/min	≤ 120 m/min	≤ 60 m/min	≤ 120 m/min	≤ 60 m/min	≤ 30 m/min	≤ 60 m/min	≤ 30 m/min
Power supply without load	5 V ± 5 %/< 120 mA	5 V ± 5 %/< 140 mA						
Electrical connection	Separate adapter cable (1 m/3 m/6 m/9 m) connectable to mounting block							
Cable length[3)]	≤ 150 m	≤ 100 m						
Required moving force	≤ 4 N							
Vibration 55 to 2000 Hz **Shock** 11 ms **Acceleration**	≤ 200 m/s^2 (IEC 60068-2-6) ≤ 400 m/s^2 (IEC 60068-2-27) ≤ 60 m/s^2 in measuring direction							
Operating temperature	0 °C to 50 °C							
Protection IEC 60529	IP 53 when mounted according to the mounting instructions IP 64 if compressed air is connected via DA 300							
Weight	0.4 kg + 2.3 kg/m measuring length							

***** Please indicate when ordering
1) Recommended for position measurement
2) After 4-fold evaluation in the evaluation electronics
3) With HEIDENHAIN cable

Representante oficial de:

HEIDENHAIN

[Argentina – Bolivia – Chile – Colombia - Costa Rica – Ecuador - El Salvador –
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