

LF 183

Incremental linear encoders for measuring steps of 1 µm to 0.1 µm
(0.00005 in. to 0.000005 in.)

- Thermal behavior similar to steel or cast iron
- High vibration rating
- Horizontal mounting possible

Specifications	LF 183
Measuring standard Grating period Thermal expansion coefficient	DIADUR phase grating on steel 8 µm $\alpha_{\text{therm}} \approx 10 \text{ ppm/K}$
Accuracy grade	$\pm 3 \text{ µm}$ ($\pm 0.00012 \text{ in.}$) $\pm 2 \text{ µm}$ ($\pm 0.00008 \text{ in.}$)
Measuring length ML in mm inches	140, 240, 340, 440, 540, 640, 5.5, 9.5, 13.4, 17.3, 21.3, 25, 740, 840, 940, 1040, 1140, 1240, 29, 33, 37, 41, 44, 48, 1340, 1440, 1540, 1640, 1740, 1840, 52, 56, 60, 64, 68, 72, 2040, 2240, 2440, 2640, 2840, 3040 80, 88, 96, 104, 112, 120
Reference marks	LF 183 LF 183C Selectable every 50 mm by magnet Standard: 1 ref. mark at midpoint Distance-coded; absolute position value available after max. 20 mm traverse
Max. traversing speed	60 m/min (2360 ipm)
Vibration (55 to 2000 Hz) Shock (11 ms)	$\leq 200 \text{ m/s}^2$ (IEC 60 068-2-6) $\leq 300 \text{ m/s}^2$ (IEC 60 068-2-27)
Required moving force	$\leq 4 \text{ N}$
Protection (IEC 60529)	IP 53 when installed as per instructions IP 64 with compressed air
Operating temperature	0 to 40 °C (32 to 104 °F)
Weight	1.1 kg + 3.8 kg/m measuring length
Power supply	5 V \pm 5% / < 150 mA (with terminating resistor $Z_0 = 120 \text{ }\Omega$)
Output signals/Signal period	$\sim 1 \text{ V}_{\text{pp}}/4 \text{ }\mu\text{m}$
Electrical connection Cable length to subsequent electronics	Sep. adapter cable (1 m/3 m/6 m/9 m) for mounting block (see <i>Electrical Connection</i>) 150 m (492 ft) max.

Dimensions

in mm



DIN ISO 8015
ISO 2768 - m H

- ⓪, ①, ② = Mounting options
- F = Machine guideway
- P = Gauging points for alignment
- Ⓧ = Required mating dimensions
- ③ = Compressed air inlet
- ④ = Reference mark position LF 183
- ⑤ = Reference mark position LF 183C
- ⑥ = Beginning of measuring length (ML)