

Standard Linear Encoders LS 107, LS 107 C – with sectional machine error compensation

Incremental, sealed linear encoder

2 mounting attitudes

Measuring lengths up to 3040 mm (120 in.)

Grating period 20 μm

Accuracy grades $\pm 5 \mu\text{m}/\pm 3 \mu\text{m}/\pm 2 \mu\text{m}$

($\pm 0.00020 \text{ in.}/\pm 0.00012 \text{ in.}/\pm 0.00008 \text{ in.}$)

Recommended measuring steps 1 $\mu\text{m}/0.5 \mu\text{m}$

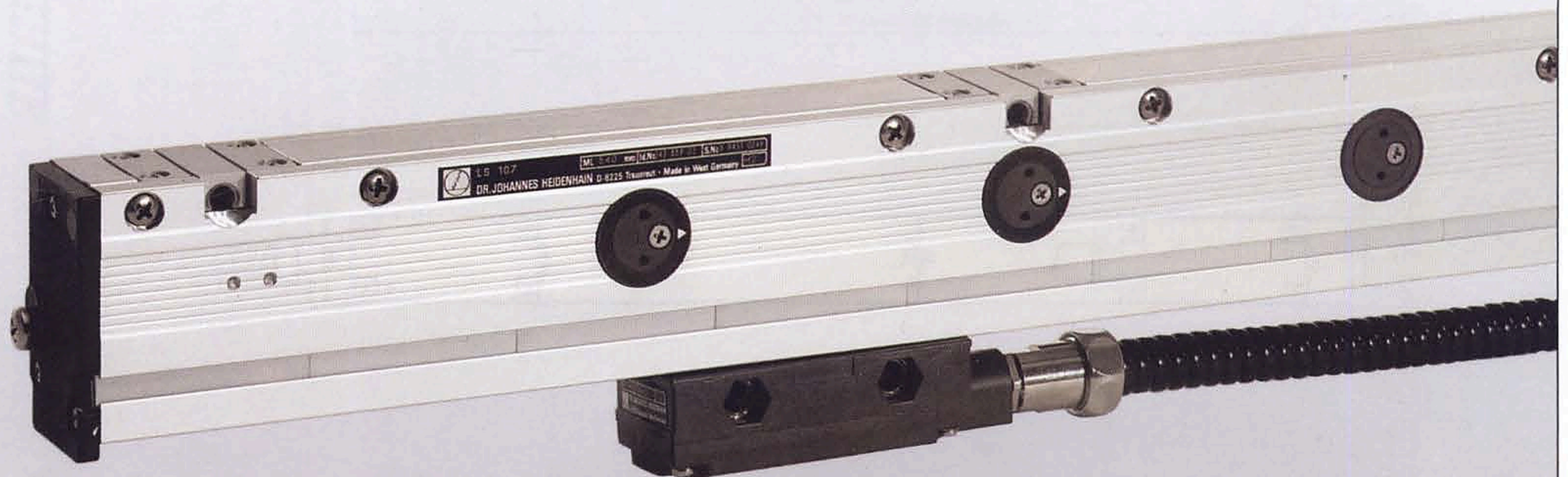
(0.00005 in./0.00002 in.)

Reference marks LS 107: every 50 mm (2 in.), via selector magnets

LS 107 C: distance-coded

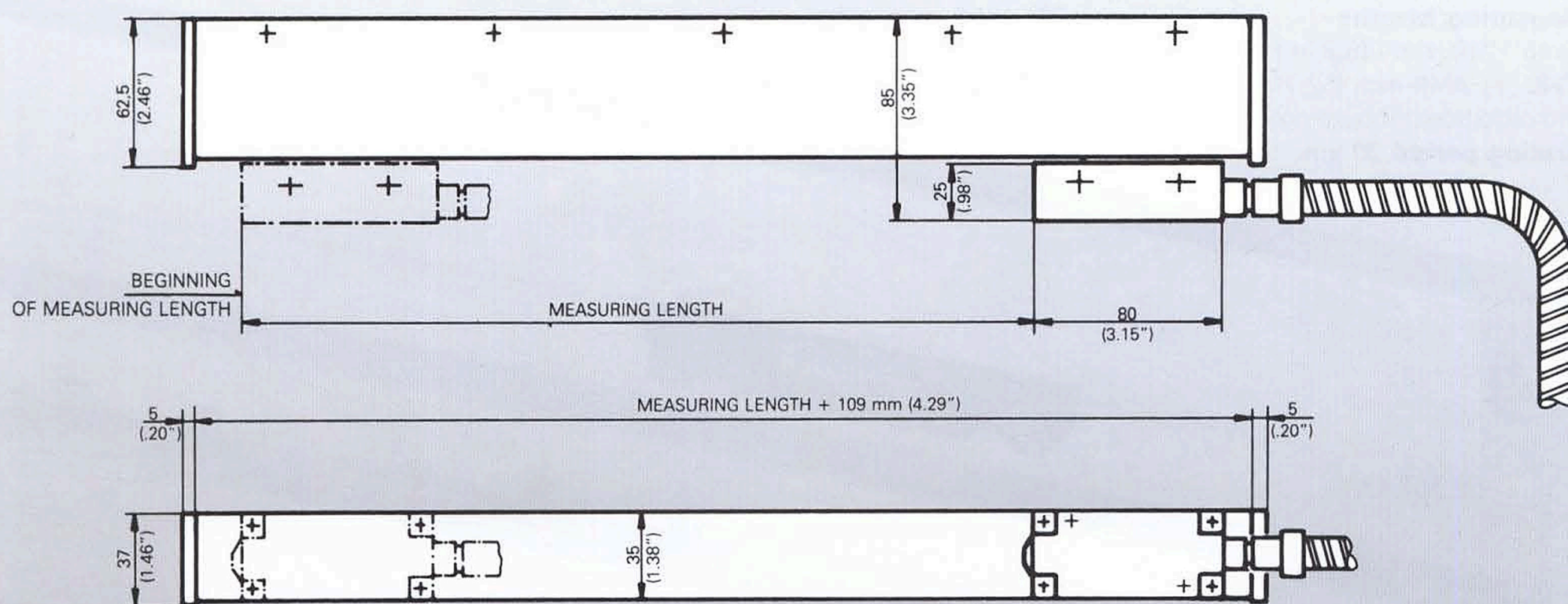
Machine error compensation

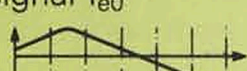
every 100 mm (4 in.) via linear guiders



Mechanical data		LS 107, LS 107 C
Measuring standard		Glass scale with DIADUR-grating Grating period 20 μm
Accuracy grades		$\pm 5 \mu\text{m}/\pm 3 \mu\text{m}/\pm 2 \mu\text{m}$ ($\pm 0.00020 \text{ in.}/\pm 0.00012 \text{ in.}/\pm 0.00008 \text{ in.}$)
Machine error compensation		every 100 mm (4 in.) via linear guiders, max. $\pm 20 \mu\text{m}$ ($\pm 0.0008 \text{ in.}$) per meas. length
Reference marks	LS 107 LS 107 C	every 50 mm (2 in.) possible (activated via selector magnets), distance-coded reference marks
Measuring lengths	mm	240/340/440/540/640/740/840/940/1040/1140/1240/1340/1440/1540/1640/1740/ 1840/2040/2240/2440/2640/2840/3040
	inch	9.5/13.4/17.3/21.3/25.2/29.0/33.0/37.0/41.0/44.9/48.8/52.7/56.7/60.6/ 64.6/68.5/72.4/80.3/88.2/96.0/104.0/112.0/120.0
Max. traversing speed		30 m/min (100 ft/min)
Permissible acceleration		
Max. vibration (50 ... 2000 Hz)		30 m/s^2
Max. shock (11 ms)		200 m/s^2
Required moving force		$\leq 5 \text{ N}$
Operating temperature		-20 ... 40°C (32 ... 104°F)
Storage temperature		-20 ... 70°C (-4 ... 158°F)
Weight		1 kg + 2.6 kg/m measuring length (2.2 lb + 1.74 lb/ft)
Connecting cable		3 m (10 ft), with connector and armored sheathing (standard)

Dimensions in mm (inch) 



Electrical data		LS 107, LS 107 C
Light source		Miniature lamp 5 V/0.6 W
Operating voltage		5 V $\pm$ 5 %/120 mA
Output signals	Incremental signals	2 sinusoidal signals I_{e1} and I_{e2}  
	Reference signal	1 signal I_{e0} 
	Signal levels with 1 k Ω load	I_{e1} approx. 7 ... 16 μ A _{pp} I_{e2} approx. 7 ... 16 μ A _{pp} I_{e0} approx. 2 ... 8 μ A (usable portion)
	Total permissible cable length	20 m (65.6 ft)