

PHOTOELECTRIC LINEAR ENCODER

L50



Distance Coded reference mark



Analog output signals



Long measuring distance

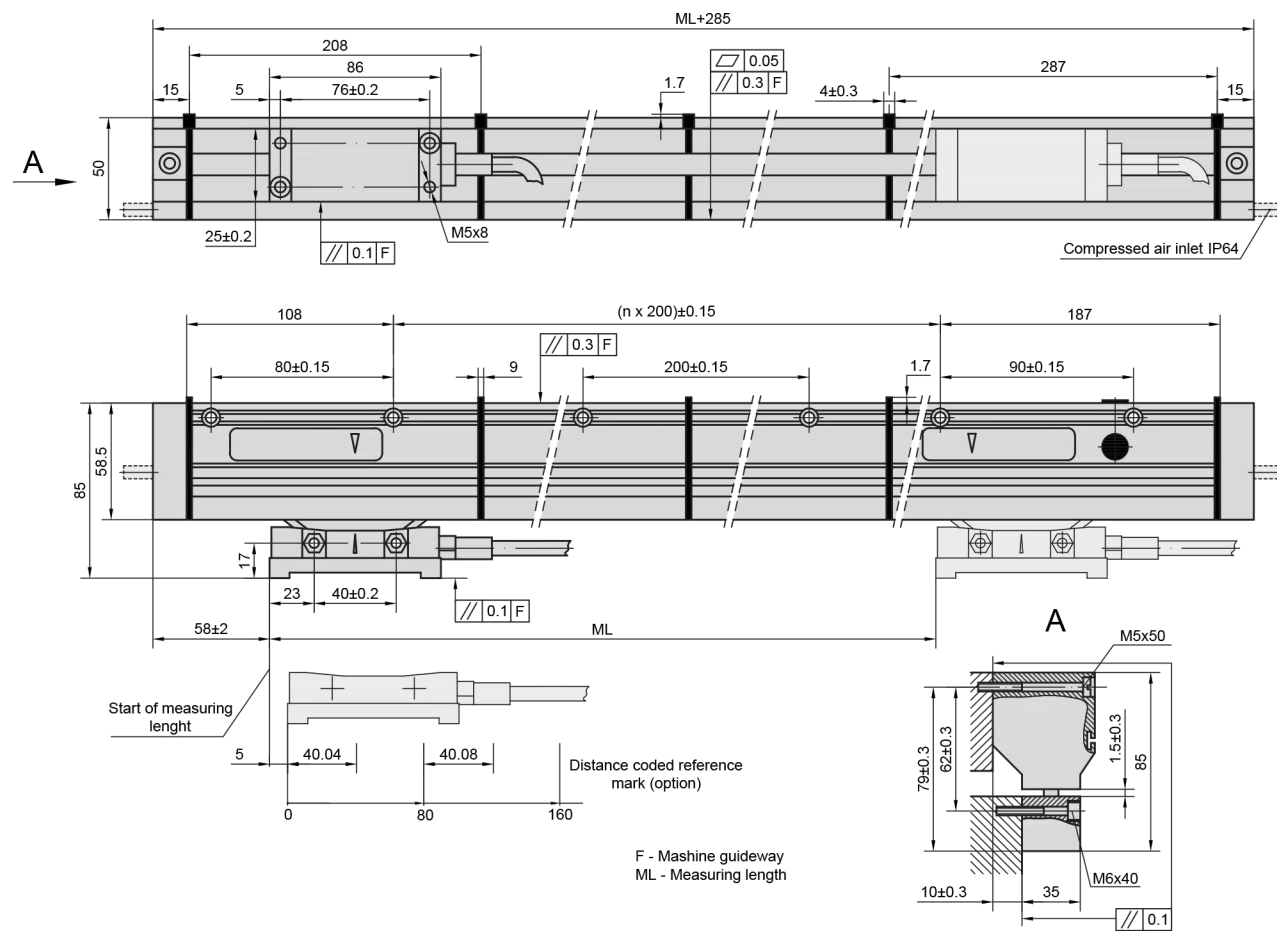


Modular



Photoelectric modular linear encoder L50 is an incremental encoder and has the measuring length from 3.240 up to 30.040 mm, grating

period of 40 μ m and accuracy of any meter within the ML of up to $\pm 10 \mu$ m.



F - Machine guideway
ML - Measuring length

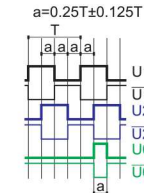
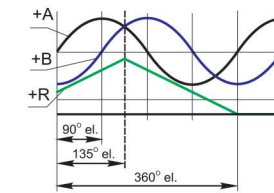
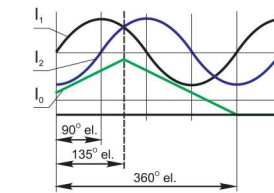
MECHANICAL DATA

Measuring lengths (ML), mm	from 3240 up to 30040 (length of each module with steps 200 mm)	Protection (IEC 529): -without compressed air -with compressed air	IP53 IP64
Accuracy grades to any metre within the ML (at 20°C)	$\pm 10 \mu$ m/m	Weight	1.8 kg + 3.3 kg/m
Grating period	40 μ m	Operating temperature	0...+50°C
Reference marks (RI): - C - P - E	at coded distance 80 mm at constant step 50 mm selectable through magnet	Storage temperature	-20...+70°C
Max. traversing speed	60 m/s	Permissible vibration (10...2000 Hz)	$\leq 100 \text{ m/s}^2$
Required moving force	< 6 N	Permissible shock (11 ms)	$\leq 300 \text{ m/s}^2$
		Coefficient of thermal expansion	$10.6 \times 10^{-6} \text{ } ^\circ\text{C}$

ELECTRICAL DATA

Version	L50-A $\sim 11 \mu$ App	L50-AV $\sim 1 \text{ Vpp}$	L50-F Γ TTL
Power supply	+5 V $\pm 5\%$ / 100 mA (120 Ω)	+5 V $\pm 5\%$ / 100 mA (120 Ω)	+5 V $\pm 5\%$ / 150 mA (120 Ω)
Light source	LED	LED	LED
Resolution	Depends on external subdividing electronics	Depends on external subdividing electronics	10; 5; 2; 1 μ m (after 4-fold dividing on subsequent electronics)
Incremental signals	Two sinusoidal I1 and I2 Amplitude at 1 k Ω load: - I1 = 7-16 μ A - I2 = 7-16 μ A	Differential sine +A/-A and +B/-B Amplitude at 120 Ω load: - A = 0.6-1.2 V - B = 0.6-1.2 V	Differential square-wave U1/ $\overline{U1}$ and U2/ $\overline{U2}$. Signal levels at 20 mA load current: - low (logic "0") $\leq 0.5 \text{ V}$ - high (logic "1") $\geq 2.4 \text{ V}$
Reference signal	One quasi-triangular I ₀ . Signal magnitude at 1 k Ω load: - I ₀ = 2-8 μ A (usable component)	One quasi-triangular +R and its complementary -R per revolution. Signals magnitude at 120 Ω load - R = 0.2-0.8 V (usable component)	One differential square-wave U0/ $\overline{U0}$. Signal levels at 20 mA load current: - low (logic "0") $\leq 0.5 \text{ V}$ - high (logic "1") $\geq 2.4 \text{ V}$
Direction of signals (displacement from left to right)	I ₂ lags I ₁ at reading head displacement from left to right	B+ lags A+ at reading head displacement from left to right	U ₂ lags U ₁ at reading head displacement from left to right
Standard cable length	3 m, without connector	3 m, without connector	3 m, without connector
Maximum cable length	20 m	150 m	50 m

Output signals



ACCESSORIES

CONNECTORS FOR CABLE	B12 12-pin round connector	C12 12-pin round connector	D9 9-pin flat connector	D15 15-pin flat connector	RS10 10-pin round connector	ONC 10-pin round connector
DIGITAL READOUT DEVICES		CS3000			CS5500	

ORDER FORM

L50 - X1 - X2 - X3 - X4/X5

Output signals And resolution (X1):	Measuring length (X2):	Reference marks (X3):	Cable length (X4):	Connector type (X5):
AV - Sinusoidal F10 - TTL 1 μ m F20 - TTL 2 μ m F50 - TTL 5 μ m F100 - TTL 10 μ m	3240 - 3240 mm 5240 - 5240 mm ... 30400 - 30400 mm	C - at coded distance (80mm) P - at constant step (50mm) E - selectable through magnet	01 - 1m 02 - 2m 03 - 3m ...	W - without connector B12 - round, 12 pins C12 - round, 12 pins D9 - flat, 9 pins D15 - flat, 15 pins RS10 - round, 10 pins ONC - round, 10 pins

ORDER EXAMPLE: 1) L50-AV-30400-C-04/C12