

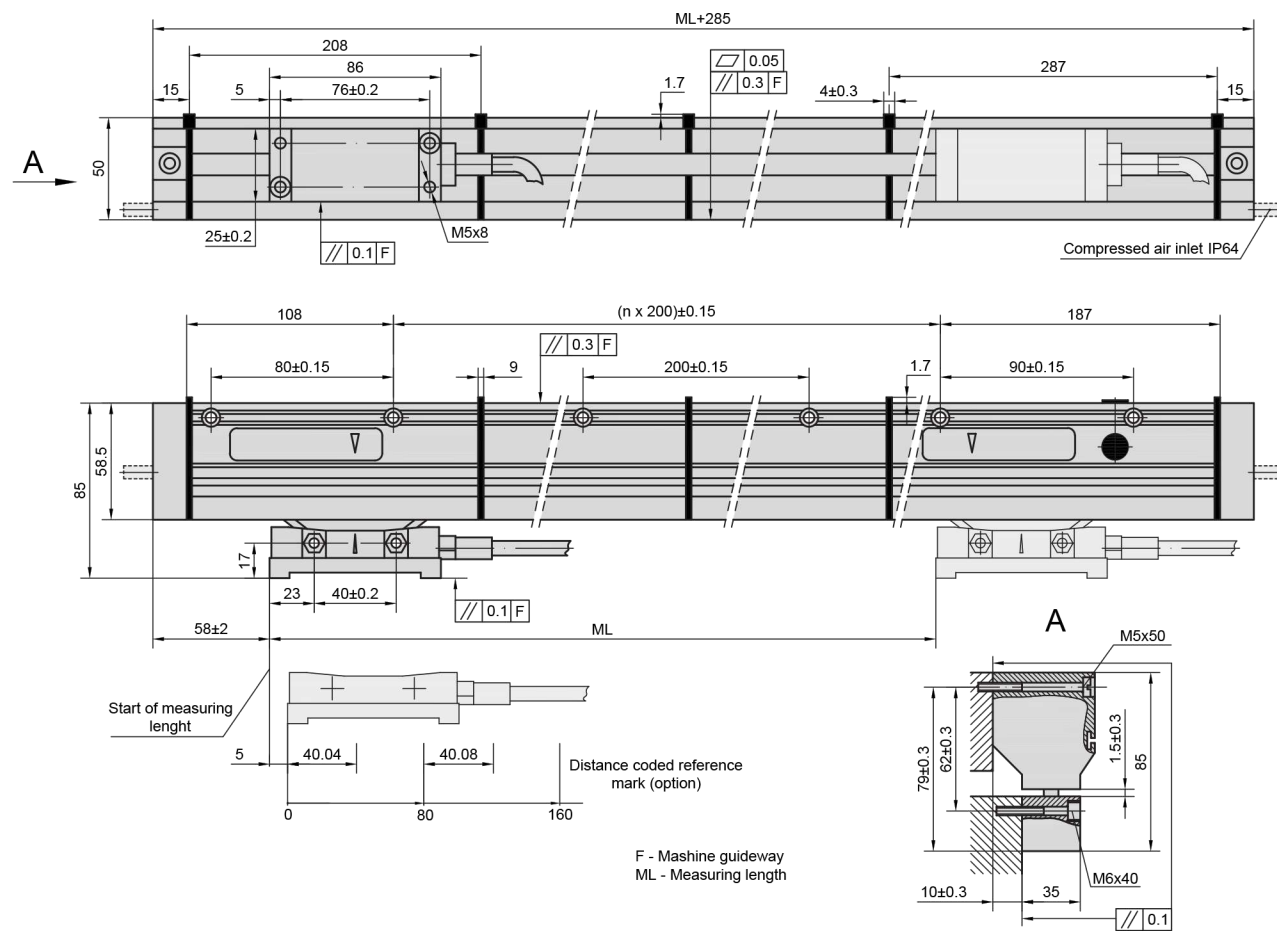
PHOTOELECTRIC LINEAR ENCODER

L50



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.



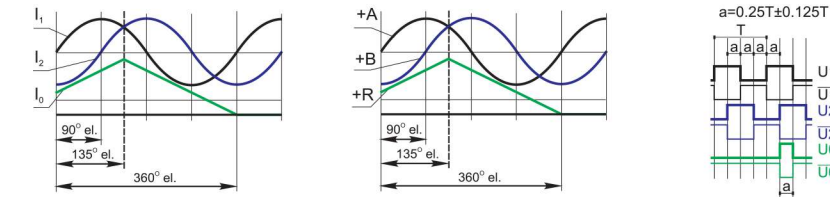
MECHANICAL DATA

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