

PHOTOELECTRIC LINEAR ENCODER

L18B



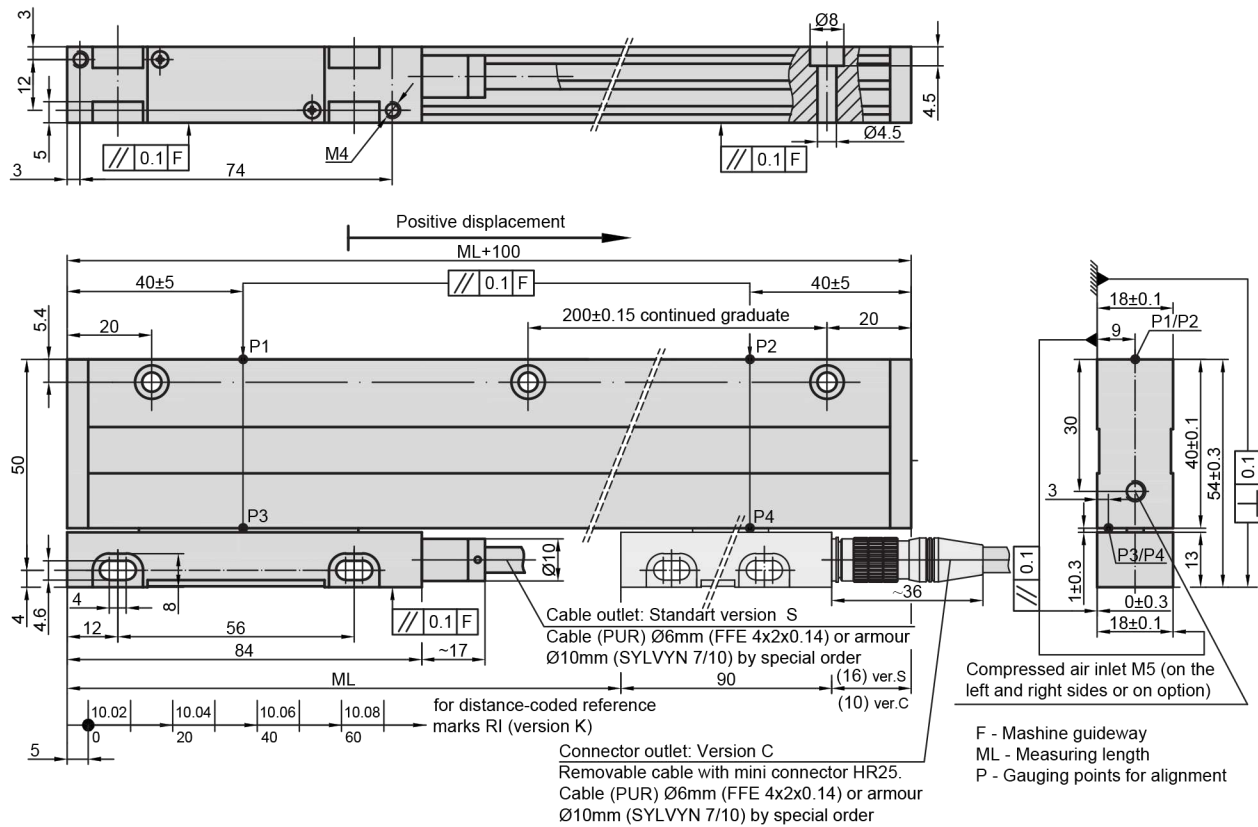
Distance Coded reference mark



Analog output signals



Photoelectric linear encoder L18B is able to have the measuring length of up to 3.240 mm, maximum accuracy of $\pm 5 \mu\text{m}$ to any meter within the ML and grating periods of $\pm 20 \mu\text{m}$, $\pm 40 \mu\text{m}$.



MECHANICAL DATA

Measuring lengths (ML), mm	70; 120; 170; 220; 270; 320; 370; 420; 470; 520; 620; 720; 820; 920; 1020; 1140; 1240; 1340; 1440; 1540; 1640; 1740; 1840; 1940; 2040; 2140; 2240; 2340; 2440; 2540; 2640; 2740; 2840; 2940; 3040; 3140; 3240 (other intermediate lengths on request)	Max. traversing speed: -when interpolation factor is 1,2,5,10 -when interpolation factor is 25 -when interpolation factor is 50	1 m/s 0.5 m/s 0.4 m/s
Accuracy grades to any metre within the ML (at 20°C): - for ML 70 to 2040 - for ML 2040 to 3240	±10; ±5 µm ±10 µm	Required moving force with sealing lips	< 3 N
Grating period	20 µm; 40 µm (optional)	Protection (IEC 529) -without compressed air -with compressed air (optional)	IP53 IP64
Reference marks (RI): -standard for ML ≤ 1020 mm -standard for ML > 1140 mm -optional	35mm from both ends of ML 45mm from both ends of ML one RI at any location, or two or more RI's separated by distances of n x 50 mm or distance-coded	Weight	0.4 kg + 1.0 kg/m
		Operating temperature	0...+50°C
		Storage temperature	-20...+70°C
		Permissible vibration (40 to 2000 Hz)	≤ 30 m/s ²
		Permissible shock (11 ms)	≤ 100 m/s ²

ELECTRICAL DATA

Version	L18B-A ~ 11 µApp	L18B-AV ~ 1 Vpp	L18B-F TTL
Power supply	+5 V ± 5% / < 90 mA	+5 V ± 5% < 120 mA	+5 V ± 5% / < 120 mA
Light source	LED	LED	LED
Resolution	Depends on external subdividing electronics	Depends on external subdividing electronics	5; 1; 2.5; 0.5; 0.2; 0.1 µm (after 4-fold dividing in subsequent electronics)
Incremental signals	Two sinusoidal I ₁ and I ₂ Amplitude at 1 kΩ load: - I ₁ = 7-16 µA - I ₂ = 7-16 µA	Differential sine +A/-A and +B/-B Amplitude at 120Ω load: - A = 0.6-1.2 V - B = 0.6-1.2 V	Differential square-wave U1/U ₁ and U2/U ₂ . Signal levels at 20 mA load current: - low (logic "0") ≤ 0.5 V - high (logic "1") ≥ 2.4 V
Reference signal	Quasi-triangular I ₀ Signal magnitude at 1 kΩ load: - I ₀ = 2-8 µA	Quasi-triangular +R and its complementary -R. Signals magnitude at 120Ω load - R = 0.2-0.8 V	One differential square-wave U0/U0 per revolution. Signal levels at 20 mA load current: - low (logic "0") < 0.5 V - high (logic "1") > 2.4 V
Maximum operating frequency	50 kHz	50 kHz	50xk kHz, when interpolation factor is 1, 2, 5, 10 1000 kHz when interpolation factor is 25, 50
Direction of signals	I ₂ lags I ₁ at reading head displacement from left to right	B+ lags A+ at reading head displacement from left to right	U2 lags U1 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	5 m	25 m	25 m
Output signals			

Note: If cable extension is used the power supply conductor section should not be smaller than 0.5 mm².

ACCESSORIES

CONNECTORS FOR CABLE	B12 12-pin round connector	C9 9-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	HR25 8-pins round mini connector
DIGITAL READOUT DEVICES	CS3000					CS5500		
EXTERNAL INTERPOLATOR	NK							

ORDER FORM

L18B	- X1	- X2	- X3	- X4	- X5	- X6/X7
Output signals And resolution (X1):	Measuring length (X2):	Reference marks (X3):	Accuracy (X4):	Cable or Connector Outlet (X5):	Cable length (X6):	Connector type (X7):
A - Sinusoidal AV - Sinusoidal F01 - TTL 0.1µm F02 - TTL 0.2µm F05 - TTL 0.5µm F10 - TTL 1.0µm F25 - TTL 2.5µm F50 - TTL 5.0µm	0070 - 70 mm 0520 - 520 mm ... 3240 - 3240 mm	N - none RI S - standard M - every 50 mm K - distance coded Ln/XXX - n RI with 50-fold steps /XXX distance of the first RI from the beginning of ML, mm	05 - ±5 µm 10 - ±10 µm	S - version S (cable outlet) C - version C (connector outlet)	01 - 1m 02 - 2m 03 - 3m ... CP01 - 1m armoured CP02 - 2m armoured CP03 - 3m armoured ...	W - without connector B12 - round, 12 pins C9 - round, 9 pins C12 - round, 12 pins D9 - flat, 9 pins D15 - flat, 15 pins RS10 - round, 10 pins ONC - round, 10 pins
ORDER EXAMPLE: 1) L18B-F10-2440-S-05-C-CP03/W						