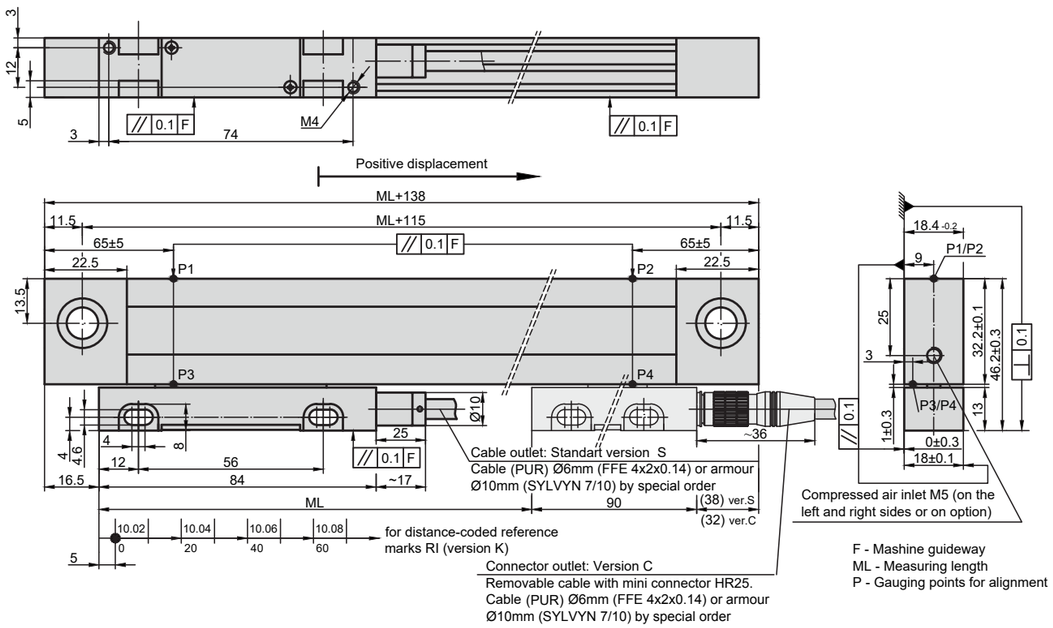
PHOTOELECTRIC LINEAR ENCODER

L18T

Distance Coded reference mark

Analog output signals

Photoelectric linear encoder L18T does not vary much from L18 series and retains almost identical parameters. However, it has a different housing fixation and more stable thermal behavior.

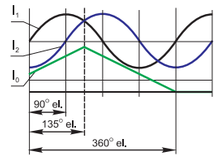
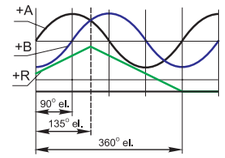
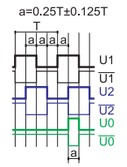


MECHANICAL DATA

Measuring lengths (ML), mm	70; 120; 170; 220; 270; 320; 370; 420; 470; 520; 620; 720; 820; 920; 1020; 1140; 1240; (other intermediate lengths on request)
Accuracy grades to any metre within the ML (at 20°C):	±10; ±5; ±3 µm (optional)
Grating period	20 µm; 40 µm (optional)
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
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

Required moving force with sealing lips	< 3 N
Protection (IEC 529) -without compressed air -with compressed air (optional)	 IP53 IP64
Weight	0.4 kg + 0.8 kg/m
Operating temperature	0...+50°C
Storage temperature	-20...+70°C
Permissible vibration (40 to 2000 Hz)	≤ 30 m/s²
Permissible shock (11 ms)	≤ 100 m/s²

ELECTRICAL DATA

Version	L18T-A ∿ 11 µApp	L18T-AV ∿ 1 Vpp	L18T-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; 2.5; 1; 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: - I1 = 7-16 µA - I2 = 7-16 µA	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") ≤ 0.5 V - high (logic "1") ≥ 2.4 V
Reference signal	One quasi-triangular I_0 peak per revolution. Signal magnitude at 1 kΩ load: - I_0 = 2-8 µA (usable component)	One quasi-triangular +R and its omplementary -R per revolution. Signals magnitude at 120Ω load - R = 0.2-0.8 V (usable component)	One differential square-wave U0/$\overline{U0}$ 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

L18T - **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 ... **1240** - 1240 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	**03** - ±3 µm **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) L18T-A-1240-K-05-C-03/C9