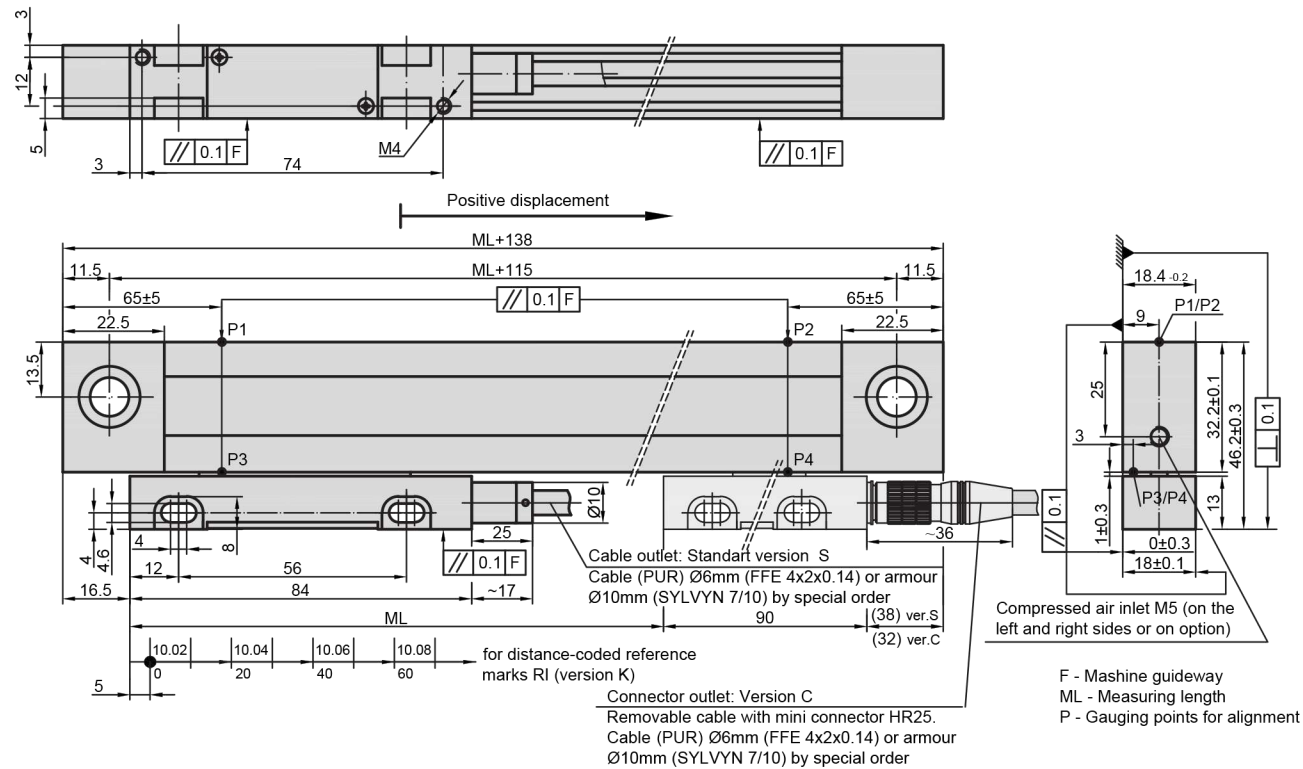


PHOTOELECTRIC LINEAR ENCODER

L18T



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) | Required moving force with sealing lips | < 3 N |
| Accuracy grades to any metre within the ML (at 20°C): | ±10; ±5; ±3 µm (optional) | Protection (IEC 529) -without compressed air -with compressed air (optional) | IP53 IP64 |
| Grating period | 20 µm; 40 µm (optional) | Weight | 0.4 kg + 0.8 kg/m |
| 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 | Operating temperature | 0...+50°C |
| 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 | 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 | 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: - I ₁ = 7-16 µA - I ₂ = 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/U1 and U2/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 complementary -R per revolution. Signals magnitude at 120 Ω load - R = 0.2-0.8 V (usable component) | 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

| 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 | 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 | | | | | | |