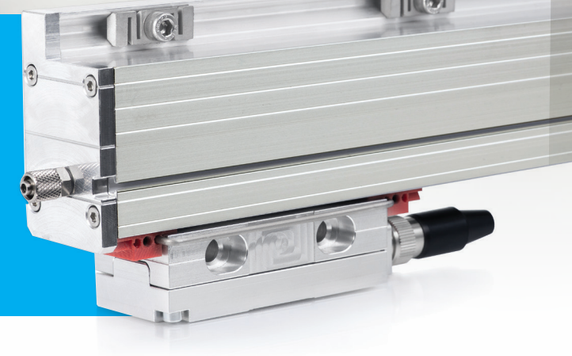
PRECIZIKA METROLOGY

The company under the name JSC "Precizika Metrology" began work after the change of name of the Lithuanian - American Joint Venture "Brown & Sharpe - Precizika". The company has a proud history of old traditions in the leadership of design and production of metrological equipment. Its workforce has been involved for over fifty years in the supply of measuring technology and systems to automate factories as well as in the development of optical scale manufacturing technology.
In 2000, the production process was certified to fully meeting the requirements of EN ISO 9002:1994, in 2003 – EN ISO 9001:2000.
The company's goal is to consistently supply high quality products and services to meet customer demands on a timely basis. The company's main products are linear and angular glass scale gratings, and the linear and rotary displacement measuring systems.
JSC "Precizika Metrology" represents worldwide known companies and suppliers of measuring equipment, CNC centers, executes installation and services of them, trains the users, and executes upgrading of used CMM and manual cutting machine-tools.

L37

PHOTOELECTRIC LINEAR ENCODER



TÜV International Certification
TÜV THÜRINGEN CERT ISO 9001:2008 15 100 74491 TIC

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The precision sealed linear encoder L37 is used to convert linear displacements of key machine components into electrical signals containing information about the value and direction of the displacements.

The encoder consists of a glass scale installed into a rigid hollow housing and a ball-bearing-guided reading head. To be able to work in harsh environments (cooling liquid, lubricants and chips), the encoder has two rows of sealing lips. Filtered air can be supplied into the housing of the encoder for extra protection from dust. The photoelectric unit of the reading head generates sinusoidal micro-current or square-wave output signals.

Characteristic feature of encoder is a rigid housing that provides better resistance to vibration and higher protection grade due two pairs of sealing lips.

Reference mark can be selected by magnet, which moves in horizontal groove on the front side of encoder (optional).

50 YEARS OF EXPERIENCE

L37

RECOMMENDED APPLICATIONS

ROBOTICS

CNC CUTTING MACHINES

MILLING / BORING / DRILLING CNC MACHINES

TURNING MACHINES & CENTERS

HIGH-PRECISION MACHINE TOOLS

REPLACEMENT

MEDICAL EQUIPMENT

ELECTRONIC INDUSTRY

RETROFOTTING

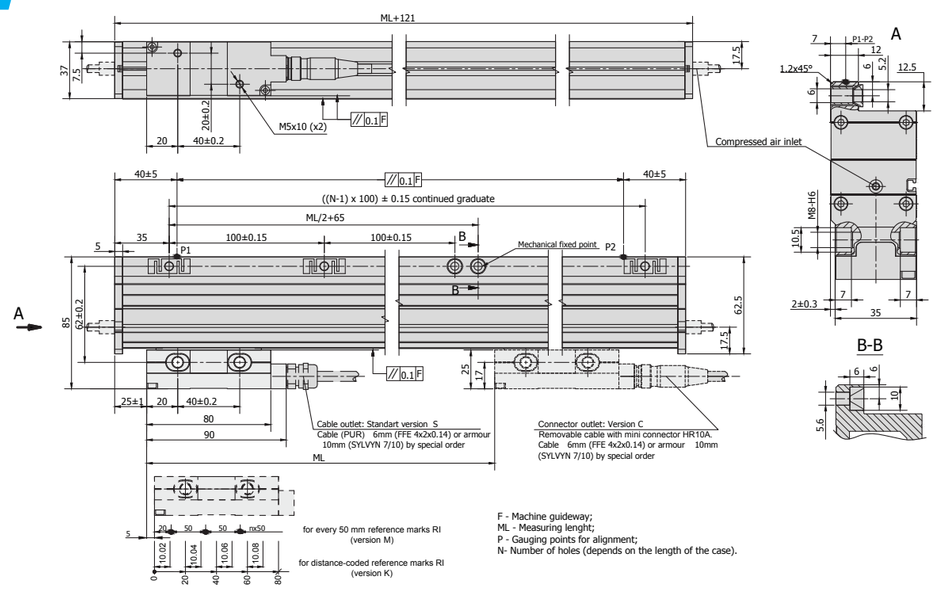
LABORATORY EQUIPMENT

3D PRINTING

COORDINATE MEASURING MACHINES

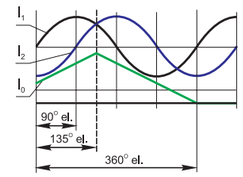
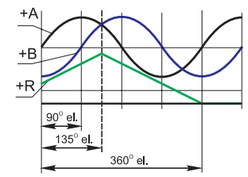
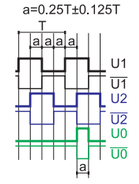
MECHANICAL DATA

Measuring lengths (ML), mm	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)
Accuracy grades to any metre within the ML (at 20 °C): - for ML from 170 up to 2040 mm - or ML from 2040 up to 3240 mm	 ±5; ±3 (optional) ±10 µm
Grating period	20 µm; 40 µm
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, two or more RI's separated by distances of (n x 50 mm)
- distance-coded - selection by magnets	see drawing standard - one magnet (RI) in ML middle
Max. traversing speed: - when interpolation factor is 1,2,5,10 - when interpolation factor is 25 - when interpolation factor is 50	 1 m/s (shortly 2 m/s) 0.5 m/s 0.4 m/s
Required moving force with sealing lips	< 5 N
Protection (IEC 529): - without compressed air - with compressed air (optional)	 IP54 IP64
Weight	0.4 kg + 2.8 kg/m
Operating temperature	0...+50 °C
Storage temperature	-20...+70 °C
Permissible vibration (40 to 2000 Hz)	≤ 150 m/s²
Permissible shock (11 ms)	≤ 300 m/s²



F - Machine guideway;
ML - Measuring lenght;
P - Gauging points for alignment;
N- Number of holes (depends on the length of the case).

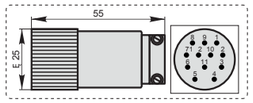
ELECTRICAL DATA

VERSION	L37-A ∿ 11 µApp	L37-AV ∿ 1 V pp	L37-F ⊓ TTL; ⊓ HTL
Power supply	+5 V ± 5% / < 90 mA	+5 V ± 5% < 120 mA	+5 V ± 5%/ < 120 mA;+12V±5%/ < 130mA
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 I1 and I2 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 at Up=+5V - high (logic "1") ≥ 2,4 V at Up=+5V - low (logic "0") ≤ 1,5 V at Up=+12V (HTL) - high (logic "1")≥(Up-2) V at Up=+12V (HTL)
Reference signal	One quasi-triangular I_0. 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 120Ω 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 at Up=+5V - high (logic "1") ≥ 2.4 V at Up=+5V - low (logic "0") ≤ 1,5 V at Up=+12V (HTL) - high (logic "1")≥(Up-2)V at Up=+12V(HTL)
Maximum operating frequency	50 kHz (v=1 m/s) 100 kHz (v=2 m/s shortly)	50 kHz (v=1 m/s) 100 kHz (v=2 m/s shortly)	(50 x k) kHz for k =1, 2, 5, 10 1000 kHz for k = 25, 50, where k- interpolation factor
Direction of signals (displacement from left to right)	I_2 lags I_1	B+ lags A+	U_2 lags U_1
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			

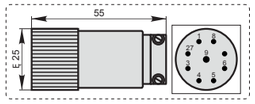
ACCESORIES

CONNECTORS

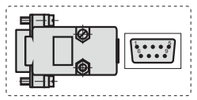
C12
12-pin round connector only for **L37 F, L37-AV**



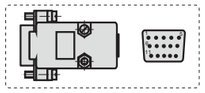
C9
9-pin flat connector only for **L37-A**



D9
9-pin flat connector for all **L37** types

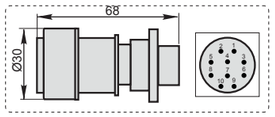


D15
15-pins flat connector for connection to DRO CS3000 and CS5500 only for **L37-F**

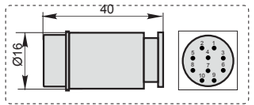


FLANGE SOCKETS

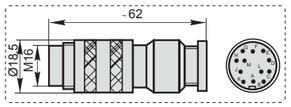
ONC
10-pin round connector



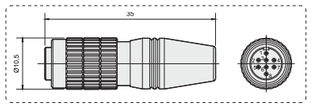
RS 10
10-pin round connector



B 12
12-pin round connector



HR10A
12-pin round mini connector



ORDER FORM

L37 - XXX - XXXX - X / XXX - XX - XX - X - X - XX / X

OUTPUT SIGNALS AND RESOLUTION:	MEASURING LENGTH:	REFERENCE MARKS:	ACCURACY:	SUPPLY VOLTAGE:	COMPRESSED AIR:	CABLE OR CONNECTOR OUTLET:	CABLE LENGTH:	CONNECTOR TYPE:
Note: If cable extension is used the power supply conductor section should not be smaller than 0.5 mm².								
A - Sinusoidal AV - Sinusoidal F01 - TTL / HTL 0.1µm F02 - TTL / HTL 0.2µm F05 - TTL / HTL 0.5µm F10 - TTL / HTL 1.0µm F25 - TTL / HTL 2.5µm F50 - TTL / HTL 5.0µm	0070 - 70mm 0520 - 520mm ... 3240 - 3240mm	N - none RI S - standard M - every 50mm K - distance-coded Ln/XXX - n˙RI with 50-fold steps /XXX distance of the first RI from the beginning of ML, mm O - selection by magnets (standard - one magnet (RI) in ML middle)	10 - ±10µm 05 - ±5µm 03 - ±3µm (optional)	05V - +5V 12V - +12V* *only for L35-F	0 - without compressed air 1 - with compressed air	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 C9 -round, 9 pins C12 - round, 12 pins D9 - flat, 9 pins D15 - flat, 15 pins