

## MAIN EXPORT COUNTRIES:



The company under the name "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.

# L50

## PHOTOELECTRIC MODULAR LINEAR ENCODER



Modular photoelectric sealed linear encoder L50 has measuring length from 3240 mm up to 30040 mm. The encoder is used to convert linear displacements of key machine components into electrical signals containing information about the value and direction of the displacement. The encoder determines position by detecting light reflected of a metal band. Metal band with 40 µm pitch scale is fixed in rigid aluminium housing with protection lips. The encoder consists of several separate rigid modules with length up to 2.0 m, which are joined together, and reading head. Two versions of output signals are available:

- L50-AV - Sinusoidal signals, with amplitude approx. 1 Vpp, require external subdividing electronics. Resolution 0.1 µm is possible with respective external electronics.
- L50-F - Square-wave signals, with integrated subdividing electronics for interpolation x1, x2, x5, x10.



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# L50

## RECOMMENDED APPLICATIONS



ROBOTICS



PACKAGING



RETROFITTING



FACTORY AUTOMATION



MILLING / BORING /  
DRILLING CNC MACHINES



TURNING MACHINES  
& CENTERS



CNC CUTTING MACHINES



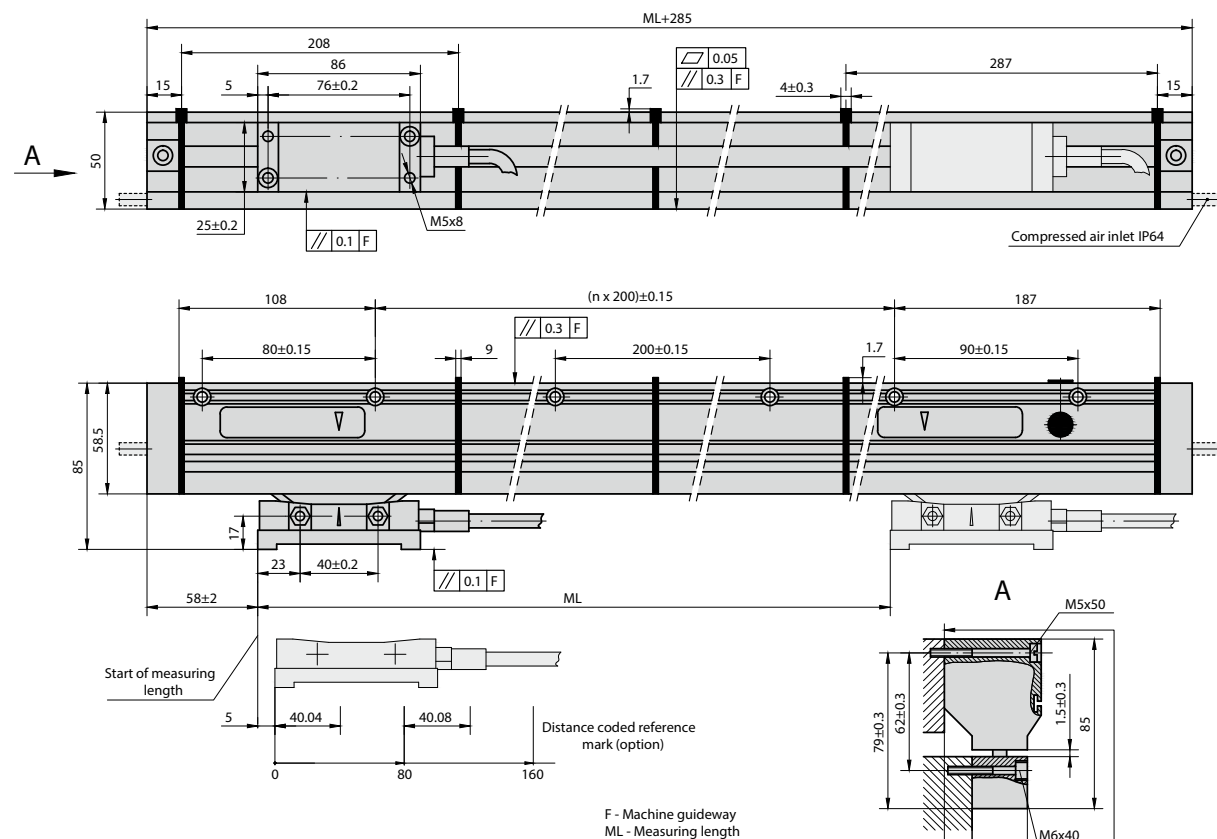
AUTOMOTIVE INDUSTRY



MAINTENANCE

## MECHANICAL DATA

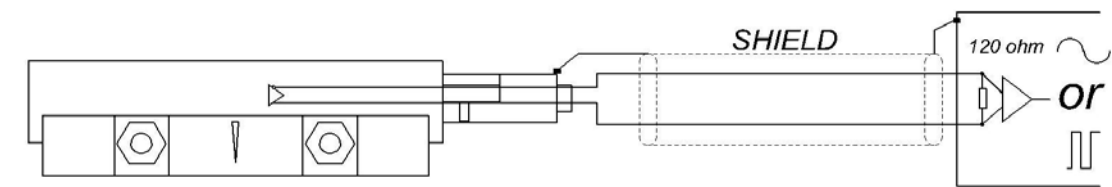
Measuring lengths (ML), mm	from 3240 up to 30040 (length of each module with steps 200 mm)	Protection (IEC 529): -without compressed air -with compressed air	IP53 IP64
Accuracy grades to any metre within the ML (at 20 °C)	±10 µm/m	Weight	1.8 kg + 3.3 kg/m
Grating period	40 µm	Operating temperature	0...+50 °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	1 m/min	Permissible vibration (10...2000 Hz)	≤ 100 m/s <sup>2</sup>
Required moving force	< 6 N	Permissible shock (11 ms)	≤ 300 m/s <sup>2</sup>
		Coefficient of thermal expansion	10.6 x 10 <sup>-6</sup> °C



## ELECTRICAL DATA

VERSION	L50-AV ~ 1Vpp	L50-F TTL
Power supply	+5 V ±5% /100 mA (120Ω)	+5 V ±5% /150 mA (120Ω)
Light source	LED	LED
Resolution	Up to 0.1 µm depending on external subdividing electronics	10; 5; 1; 0.5 µm (after 4-fold dividing on subsequent electronics)
Incremental signals	Differential sine +A/-A and +B/-B Amplitude at 120 Ω load: - I <sub>1</sub> = 0.6...1.2 V - I <sub>2</sub> = 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	Quasi-triangular R Magnitude at 120 Ω load: - R = 0.25-0.8V (usable part)	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
Direction of signals	B lags A at reading head displacement from left to right	U2 lags U1 at reading head displacement from left to right
Electrical protection	inversion of power supply polarity and short circuit on output port	
Cable length (standard)	4 m	4 m
Maximal cable length (total with extension cable)	150 m	50 m
Output signals		

## CABLE CONNECTION



## 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 - XX - XXX - X - X - XX / X					
OUTPUT SIGNALS AND RESOLUTION:	MEASURING LENGTH:	REFERENCE MARKS:	COMPRESSED AIR:	CABLE LENGTH:	CONNECTOR TYPE:
AV - Sinusoidal F10 - TTL 1µm F20 - TTL 2µm F50 - TTL 5µm F100 - TTL 10µm	3240 - 3240mm 5240 - 5240mm ... 30400 - 30400mm	C - at coded distance (80mm) P - at constant step (50mm) E - selectable through magnet	0 - without compressed air 1 - with compressed air	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