



Industrial Encoders  
Direct Ltd

# LINEAR ENCODERS

## MLS-2

*Magnetic Incremental Technology*



*Measuring Scale with PS2 Profile System & Un-guided Sensor Head*

### Features

- Resolution up to 0,001 mm
- Tape is enclosed in rugged profile
- Stainless Steel cover protection
- Shielded metal enclosure
- Easy mounting (glues into place)
- Contact-less and wear free system
- Resistant to vibration & shock
- IP67 Protection
- Resistant to humidity
- High accuracy (+/-5 micron)
- Highly reliable
- Measuring lengths up to 100 Meters.
- Connection cable up to 20 Meters.
- Signal processing incorporated

This MLS-2 innovative sensor system is similar to the MLS-1 but instead the magnetic tape is incorporated into a rigid PS2 Profile System. A sturdy stainless steel cover is also available for additional protection.

### Function of the aluminium carrier and steel cover protection

1. Guaranteed mechanical stability.  
Thermal expansion is determined by expansion of the steel carrier. This results in optimal adaption for use in machines made from a metal construction.
2. Applying a ferric steel carrier results in up to 30% higher magnetic field. Special care was taken to find the optimum stainless steel alloy for the tape .



### Typical Applications

The MLS-2 (B5 magnetic tape integrated into the PS2 Profile System) produces an excellent system to measure the dimensions on machine tools and other intallations required to operate in harsh environments.

- |                                |                                 |
|--------------------------------|---------------------------------|
| • Wood Cutting Machines        | • Machining centers             |
| • Marble Machines              | • Lathes                        |
| • PVC Profile Cutting Machines | • Grinding machines             |
| • CNC/NC                       | • Electrical discharge machines |
| • Milling machines             | • Welding machines              |
| • Drilling and boring machines | • Bending presses               |

### Magnetic Tape Complex Structure



*Strontium ferrite bonded into a plastic or rubber (elastomer) matrix bonded onto a steel support. This is then incorporated into the PS2 Profile system.*

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## Magnetic Tape Mechanical Properties

Mechanical properties	
Width	5 mm
Thickness	1,2 mm
Length	Up to 100 m
Number of tracks	1
Pole pitch	1 mm, 2 mm, 5 mm
Absolute pole pattern possible	yes

## Magnetic Tape Environmental Properties

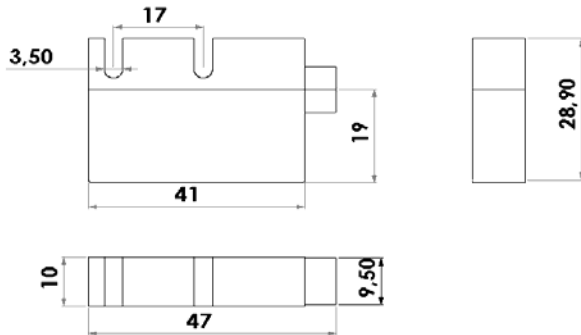
Operating temperature	-40°C to +120°C
Storage temperature	-40°C to +120°C
Water Protection	CrNi 17 7 stainless steel carrier nitrile rubber high temperature magnetic tape

## Technical Specifications

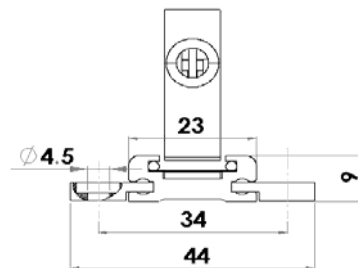
Resolutions: (µm) 1, 5, 10, 25, 62.5, or 1mm  
(with 4x triggering)  
Output signals: A, /A, B, /B, (Z, /Z option)  
Input current: Max. 40mA per Channel  
Power supply: 10...30VDC or 5VDC  
Housing Material: Aluminium

Connections: Up to 100 m (on request)  
Allowable Head Gap: Up to 2.5 mm  
(Depend on pole pitch)  
Travel velocity: 3 m/s  
Magnetic Tape Type:  
B5 high temperature magnetic tape  
Measure Accuracy: +/- 5 micron  
Linear Expansion Coefficient:  $(11\pm 1) \times 10^{-6} / K$   
Repeatability: ±1 increments  
Temperature range: -25 +85 °C  
Protection Class: IP67

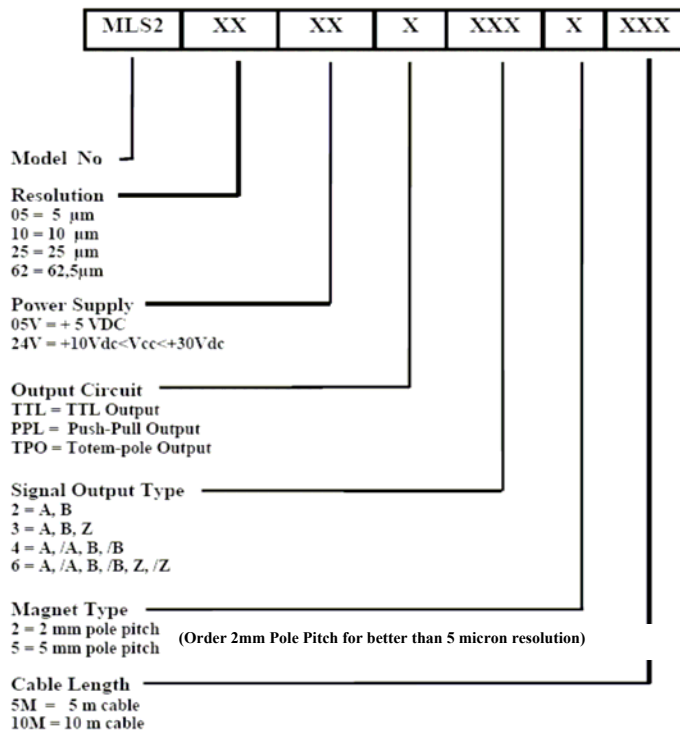
### Mechanical Dimensions



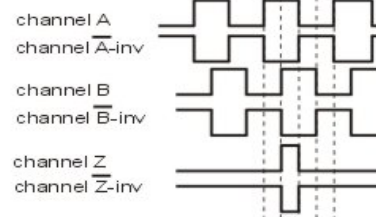
### PS2 Profile System



## Ordering Codes



## Waveform Diagram



## Connections

Function	Colour	Pin
A	Yellow	1
B/	White	2
+V	Red	3
0V	Black	4
A/	Blue	5
B	Green	6
Z/	Grey	7
Z	Orange	8
Ground	Shield	9