

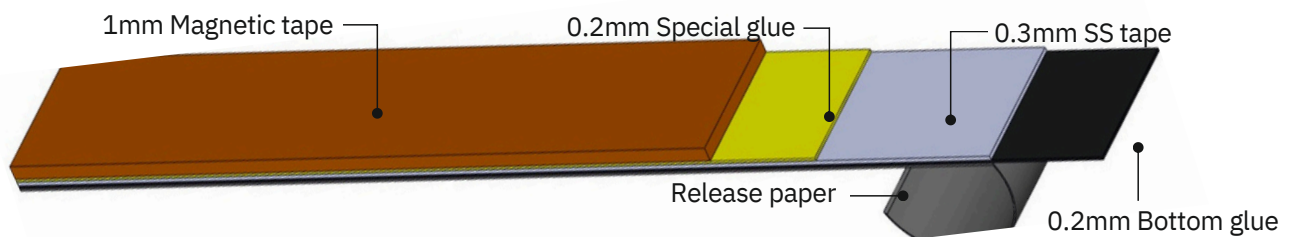
# Magna Linear

## Magnetic Linear Encoder System

Magna Linear encoder series is a contact less high speed Measurement system, easy to install and highly resistant to oil, dust, dirt and vibrations, making them ideally suitable for use under harshest of conditions. These are IP-68 protection class which makes them suitable for such applications.

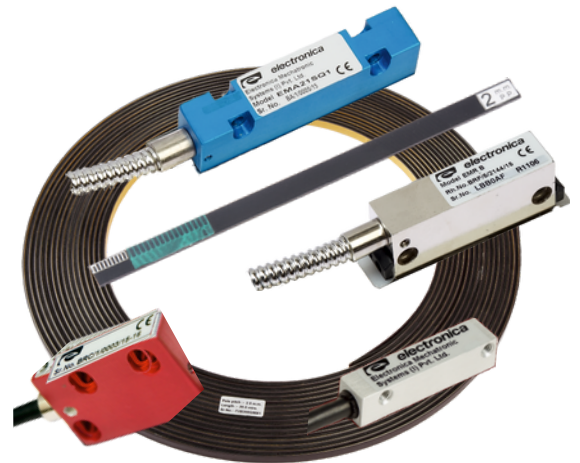
The system consists of a magnetic tape and a reader head. The magnetic tape consists of a magnetic rubber glued to a Stainless steel tape using a special process. The glueing is such that the Magnetic tape will near same thermal expansion coefficient of stainless steel.

A magnetic pattern consisting of alternate North and south poles are printed on the magnetic tape using our fully automatic magnetization machine. The reader head reads this pattern and gives the required output.



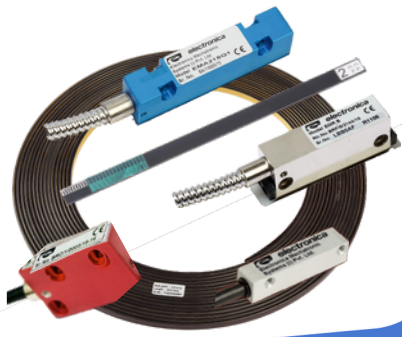
### Salient Features :

- Available in Industry accepted IP-68 protection class
- Available in Absolute as well as Incremental outputs
- Available in 1mm, 2mm, 2.5mm and 5mm as standard pole pitches. Custom pole pitches available on request
- Wide variety of resolutions from 0.1 $\mu$ m to 100 $\mu$ m.
- Different accuracy grades of magnetic tapes available
- Supports measuring speed of 4 m/s (240 m/min) at 1 $\mu$ m resolution
- Supports measuring length up to 60 meters
- Supports RS422 and 1Vpp analog output in Incremental encoder and BiSS-C and SSI protocol output in Absolute encoder
- Manufactured to ISO 9001:2015 Standard



### Major Applications :

- |                            |                           |
|----------------------------|---------------------------|
| Machine Tools Industry     | Measuring/Inspection      |
| Automation                 | Machines Robotics         |
| Material Handling Machines | Special Purpose Machines  |
| Length Cutting Machines    | Pick and Place Machines   |
| Dispensing Machines        | Elevator Technology       |
| Medical Engineering        | Linear Motor Applications |



# Magnetic Linear Encoder System

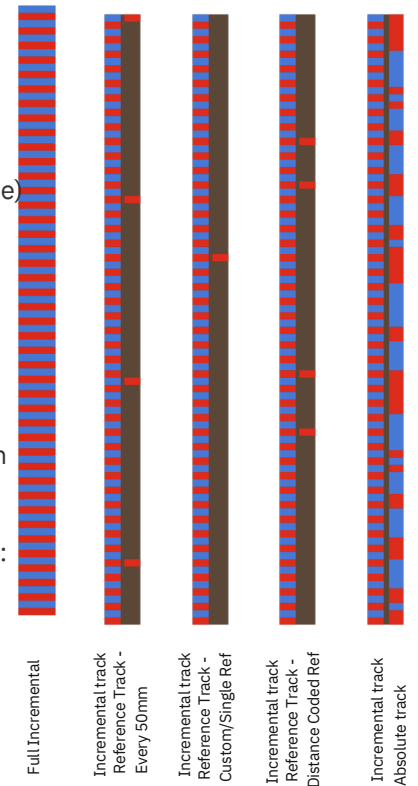
Digital Readout Series

## Specifications for Magnetic tapes :

Pole Pitch	1mm, 2mm, 2.5mm, 2.56mm, 5mm
Measuring types	Incremental and Absolute
Accuracy grade (per mtr)	±5μ*, ±10μ, ±15μ, ±20μ, ±40μ, ±100μ
Tape width	10mm + 0.2mm
Tape thickness	1.5mm + 0.1mm (w/o back adhesive and w/o protective tape)
Protective layer types	Option 1: Vinyl protection layer (Thickness 0.1mm) Option 2: Stainless steel tape (thickness 0.3mm)
Maximum length	60mtrs
Thermal expansion coefficient	~ 11 X 10 <sup>-6</sup> per °C
Operating Temperature	-20 °C to +85 °C
Storage Temperature	-20 °C to +85 °C
Minimum bending radius	150mm
Standard packing length	20m rolls (Higher lengths up to 60mtrs available on request)
Reference mark options (For Incremental only)	Option 1: No reference mark (Full incremental grating) Option 2: Multiple reference mark 50mm spaced Option 3: Single mark as per requirement Option 4: Distance coded reference mark Option 5: Custom reference mark
Material	Extruded plastic with Barium Ferrite on Stainless steel tape
Weigth	70 grams per meter including the top protective cover

\* For accuracy grade of ±3.5μ and ±5μ requires special Magnetization process

Magnetic tape Grating variety



## Specifications for Reader head :

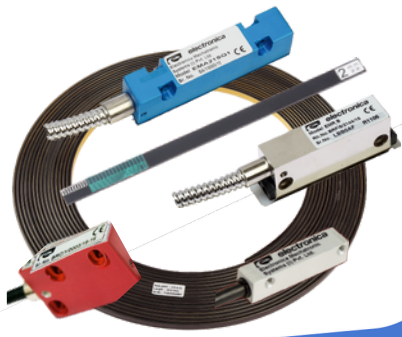
	EMR	EMC25	EMC14	EMA21
Type of Encoder		Incremental		Absolute
Pole Pitch	1mm/2mm/2.5mm/5mm	1mm / 2mm / 5mm		2mm
Resolution (X4 edge)	0.1 to 100 μm	0.244 to 100 μm		1μm, 5μm
Reader Head Dimensions (L X W X H)	60mmX16mmX22mm	35mmX10mmX25mm	A:36mmX13mmX14mm B:36mmX11mmX14mm	81mmX16mmX18.5mm
Accuracy		±10μm		±15μm
Repeat Accuracy		±1 resolution count		
Hysteresis		< 3μm		
Power Supply	+5VDC (±5%)	+5VDC, 6.5-30VDC		+5VDC, 6.5-30VDC
Current Consumption		< 0.6W		< 1.5W
Output signal		Option 1 - Quadrature Differential RS422 Option 2 - 1Vpp Signal with Signal period of one pole pitch		Option 1 - SSI** Option 2 - BiSS-C**
Reference sensing		Standard		-
Operating Temperature		-20°C to 85°C		
Storage Temperature		-20°C to 85°C		
Relative Humidity		20% to 80% Non-condensing		
Cable Type	Armoured or PUR Cable	PUR Cable		Armoured or PUR Cable
Standard Cable Length		3 meters (Max. 20 meters*)		
Output Connector		Standard - 9 pin D type Connector***		
Measurement Speed		4MHz (4m/s @ 1μm resolution)		
Protection Class		IP68		

\* Additional cable length available on request \*\*Optional 1Vpp or RS-422 Incremental signals also available with Absolute signals

\*\*\* For EMA21 Encoder other connector options also available

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Digital Readout Series



## Magnetic tape mounting options :



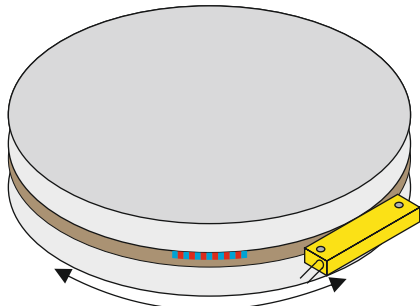
Magnetic Tape with end clamps



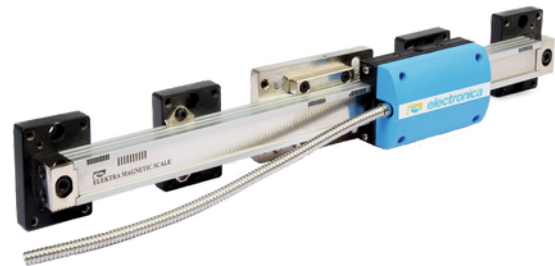
Magnetic Tape with S1 extrusion for length up to 1m



Magnetic Tape with S2 extrusion for length up to 3m

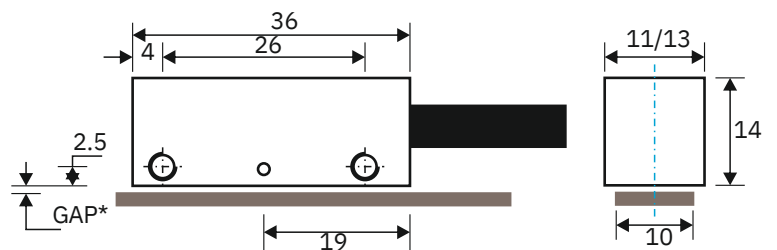
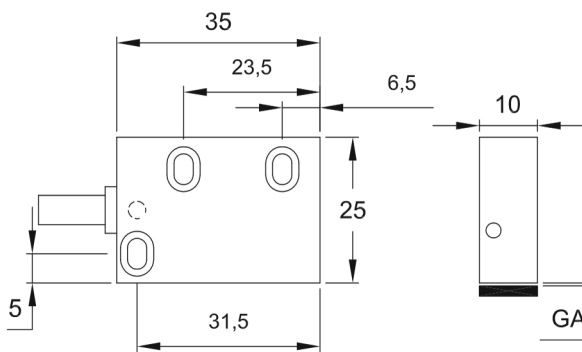
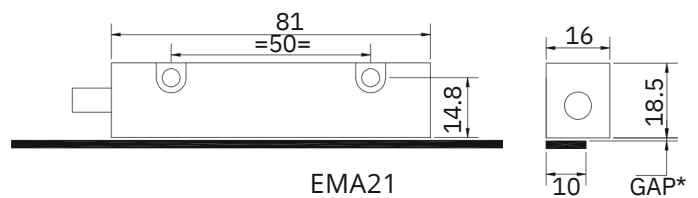
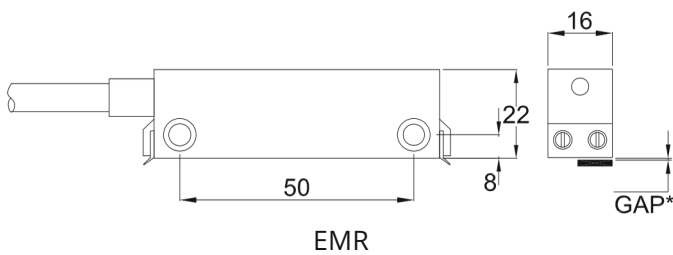


Angular Measurement  
Magnetic Tape and Reader head for Angular Application



Magnetic Tape with S2 extrusion with joining mechanism for length up to 60m

## Reader head dimensional details :



Pole Pitch	1mm	2mm	2.5mm	5mm
Gap *	0.1-0.3 mm	0.1-0.8 mm	0.1-1.0mm	0.1-2.5mm

# Notes



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Dealer Stamp