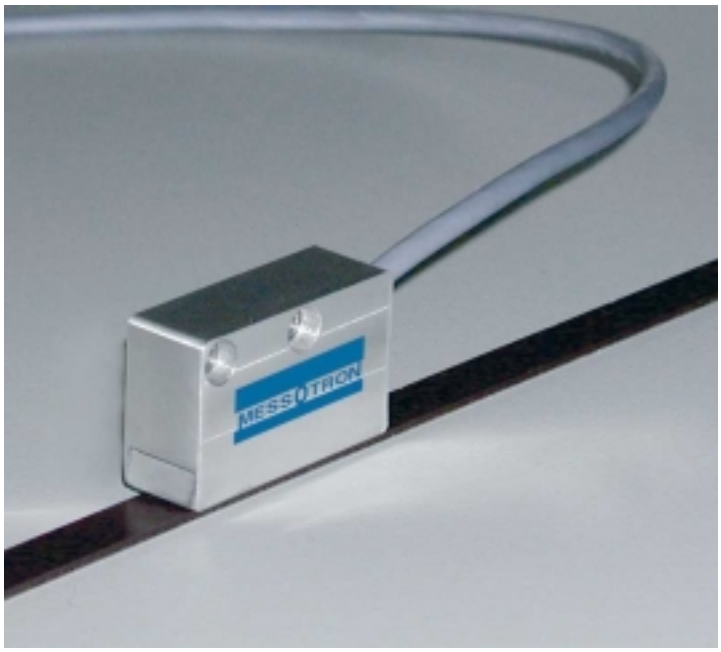
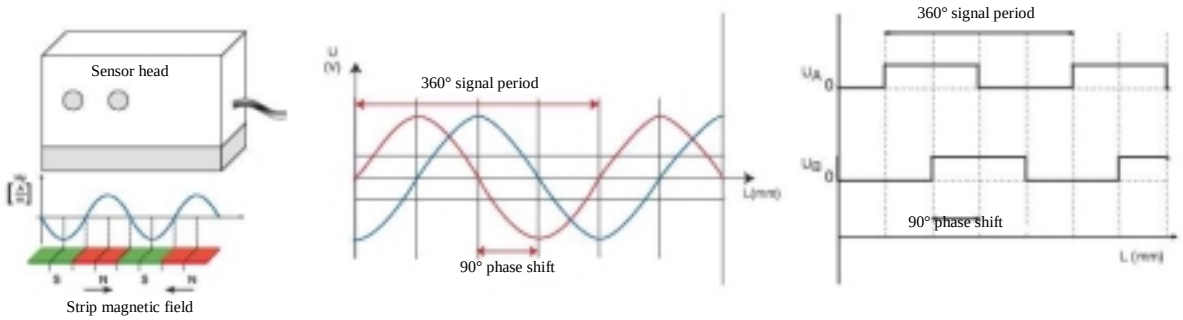


Magneto-resistive Position Sensing

The MRP system detects position and motion using the magneto-resistive effect. An electronics sensor contactlessly detects its position from the pole pattern induced in a magnetic tape.

- **High-accuracy position detection in µm range**
- **Contactless, no-wear sensing technology based on rugged components**
- **Measurement range from few mm to 100 m**
- **Flexible and easy accommodation of strip**
- **Compact electronics**
- **Economic long range linear position sensing**

Principle of sensing



Components

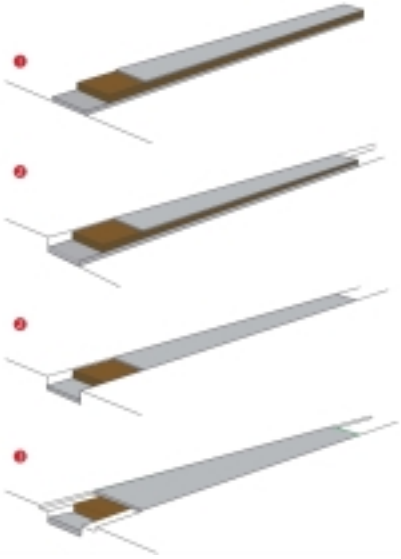
Electronics
Compact sensor head integrated electronics, easy to mount above magnetic strip

Strip assembly

- Cover strip (stainless steel)
- Adhesive tape
- Magnetic tape
- Carrier strip (stainless steel)
- Adhesive tape

Mounting

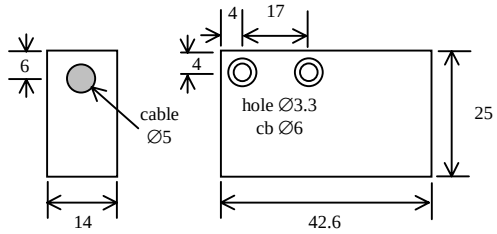
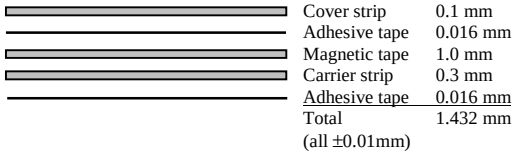
1) Standard top mounting (glued); sensor head hovering above magnetic strip at specified distance (typically 1 mm)



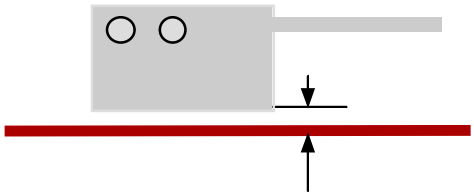
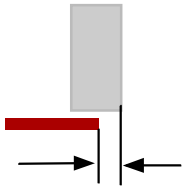
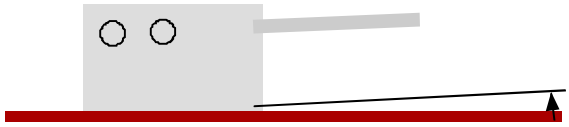
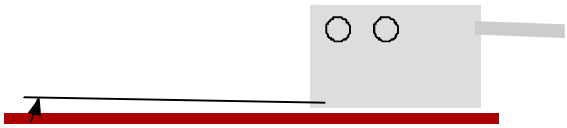
2) Edge and groove mounting with increased protection, no height increase

3) Groove mount with widened upper cover; maximum degree of integration and system protection (e.g. against dust, fluids)

Technical Data

Model	MRP 2000	MRP 1000	MRP 100
Electrical			
Measuring range	Standard: 100 ... 2000 mm, other ranges optional		
Resolution	100 µm	10 µm	5 µm
Accuracy	± 15 µm/m	± 15 µm/m	± 10 µm/m
Pole pattern	2 + 2 mm		
Measuring pattern	400		
Referenz	strip internal or external ref. Optional		
Repetivity	± 1 increment @ 20°C		
Frequency	500KHz		
Max. displacement speed	5.5 m/s (higher speed optional)		
Signal output	5V TTL A/B/Reference, Line Driver		
Connection	3m cable with 9-pin Sub-D connector		
EMI	IEC 801, level 3		
Supply	5 VDC, ± 5%		
Consumption	150 mA	180 mA	
Mechanical			
Sensor head dimensions [in mm]			
Strip assembly dimensions [in mm]			
Mass	50 g (sensor head) 120 g/m (standard cable)		
Protection class	IP 67 (sensor head) ≥ IP64 (strip assembly; depending on installation)		
Temperature range	-10°C ... +70°C		
Relative humidity	0 ... 100% rF, long-term condensation allowed		

Mounting guidelines

sensor head to strip gap		+0.1 ... +0.8 mm
lateral sensor head shift wrt strip		± 2 mm
misalignment		≤ 4°
back tilt angle		≤ 2.5°
front tilt angle		≤ 1.5°