

磁栅尺 MAGNETIC TAPE

型号:PMB5

- 3M 背胶, 易于安装 Easy mounting by glueing
- 5mm 磁极距 5 mm pole length
2mm 磁极距 2 mm pole length, 1mm 磁极距 1 mm pole length
- 高精度 High accuracy
- 标准 $\pm 30 \mu\text{m}/\text{m}$ Standard $\pm 30 \mu\text{m}/\text{m}$
- IP67 保护等级 Protection class IP67
- 防潮 Resistant to humidity
- 不锈钢材质 Stainless steel cover strip (Upside and Downside)
- 最长100m Up to 100 m available (标准30M)
- 合成橡胶 Nitrile Rubber



磁条由三部分组成: 1. 胶磁 .2. 保护盖条 3. 载条。

The magnetic band is supplied with a non-magnetic stainless steel cover for physical protection; for its fixing an adhesive tape is pre-mounted.

- 1 - A flexible magnetic tape made of plastic material (Resistant to debris, liquids and oils)
- 2 - Cover Strip (Upside) :A magnetised steel tape used to create a shield against any external magnetic disturb.

Although, it's glued to the upper plastic layer in.

- 3 - Cover Strip (Downside) The third part is the most rigid one and therefore is supplied separately due to transport And application needs. It must be stick to

磁尺参数特性

工作温度范围 -30°C to $+70^{\circ}\text{C}$

磁极距 5mm/2mm/1mm

精度等级 $\pm 30 \mu\text{m}/\text{M}$ ($\pm 15 \mu\text{m}/\text{M}$)

(重复定位精度: ± 1 分辨率)

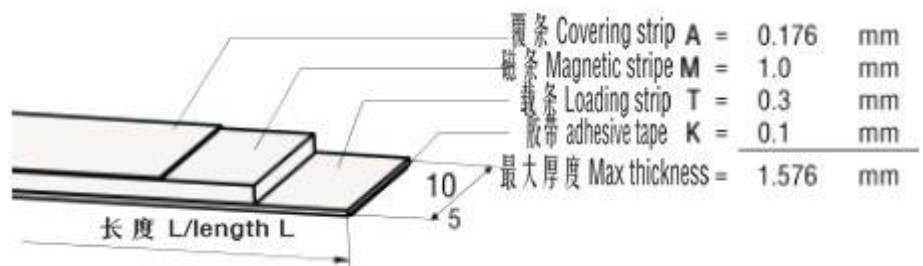
温度系数 $(11 \pm 1) \times 10^{-6} / \text{K}$

存储温度 -40°C to $+85^{\circ}\text{C}$

Magnetic Tape Specifications, Operating temperature -30°C to $+70^{\circ}\text{C}$

Pole Pitch 5 mm, Accuracy Class $\pm 40 \mu\text{m}/\text{m}$, Temperature coefficient $(11 \pm 1) \times 10^{-6} / \text{K}$

Storage temperature -40°C to $+85^{\circ}\text{C}$, Special material stainless steel carrier



长度 L/length L

参数名称 Parameter name	数据 Data			备注 Notes
磁间距/Pole Pitch	5mm	2mm	1mm	
测量长度Measure the length	100m/Max	30m/Max	3m	
精度等级 Accuracy class	$30 \mu\text{m} / \pm 10 \mu\text{m} (\text{M})$	$15 \mu\text{m} / \pm 10 \mu\text{m} (\text{M})$	$10 \mu\text{m} / \pm 5 \mu\text{m} (\text{M})$	
磁尺宽度/厚度 Width / thickness	10mm/1.4mm			
温度系数Temperature coefficient	$(11 \pm 1) \times 10^{-6} / \text{K}$			弹性钢 Elastic steel
温度系数Temperature coefficient	$(16 \pm 1) \times 10^{-6} / \text{K}$			不锈钢 Stainless steel
工作温度 working temperature	-30°C to $+70^{\circ}\text{C}$			
安装方式 Installation method	3M adhesive/ Pre installed double-sided adhesive tape			预装双面胶
覆带材料 Cladding material	不锈钢 Stainless steel			



磁栅传感器 (读数头) MAGNETIC READER SENSORS

型号:MS5/MS8/PMS5

特点 sign:

- 可设定分辨率 Finished product can adjust resolution
- 供电电压5v-24v Wide supply voltage 5v-24v
- 工作状态指示 Status indication
- 最高分辨率达 0.5μm High Resolution Up to 0.5μm Resolution
- 高精度 High Accuracy
- 螺旋电缆选项 Spiral or Cable Option
- 测量长度最长100m Measuring Lengths Up to 100 m
- 可应用于油污环境 Resistant to Humidity
- 金属外壳 Sturdy Metal Case
- 防护等级 IP67 (EN60529) Protection Class IP67 (EN60529)



磁头与5+5mm (2+2mm/1+1mm) 磁极距磁条配套使用, 磁头与磁带有效感应距离0.1-2mm, 0.8-1.5mm 使用最佳, 宽电压供电, 工作状态指示灯, 分辨率可调。国际最先进技术, 质量保证。

The reader sensors can be used with 5+5 (2+2mm/1+1mm) magnetic tape, The reader sensor glides contactless over the Profile with gap up to 0.1-2 mm., wide voltage supply, Spiral or pure cable models are available.

International State-of-the-art Technology, quality assurance.

应用 Applications :

- 加工中心 Machining Centers
- PVC 切割机 PVC Cutting Machines
- 木材切割机 Wood Cutting Machines
- 车床, 铣床, 钻床, 磨床 Lathes, Milling, Drilling, Grinding Machines
- 金属板材加工机 Sheet Metal Working Machines
- 石材机 Marble Machines
- 焊接机 Welding Machines
- 折弯机 Bending Machines
- 火花机 Electrical Discharge Machines
- 机器人/物料搬运 Robotics / Material Handling
- 玻璃加工机械 Glass Working Machinery

运动速度

		运动速度 Vmax (m/s)									
分辨率(mm)	0.001	4.00	1.60	0.80	0.32	0.20	0.10	0.05	0.03	0.01	
	0.005	20.00	8.00	4.00	1.60	1.00	0.50	0.25	0.13	0.06	
	0.010	25.00	16.00	8.00	3.20	2.00	1.00	0.50	0.25	0.12	
	0.025	25.00	25.00	20.00	8.00	5.00	2.50	1.25	0.63	0.30	
	0.050	25.00	25.00	25.00	16.00	10.00	5.00	2.50	1.25	0.61	
	0.100	25.00	25.00	25.00	25.00	20.00	10.00	5.00	2.50	1.21	
脉冲间隔时间(μs)		0.20	0.50	1.00	2.50	4.00	8.00	16.00	32.00	66.00	
计数频率(kHz)		1250.00	500.00	250.00	100.00	62.50	31.25	15.63	7.81	3.79	

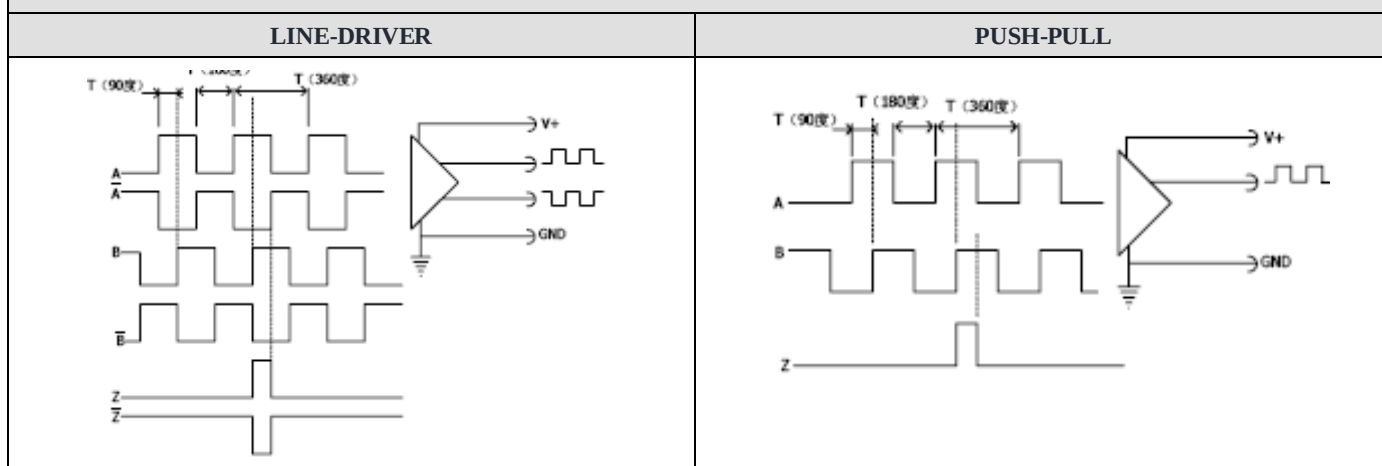
Mechanical and electrical characteristics			
MECHANICAL • Die-cast cast transducer. thread or with M3 through screws. • Liberal mounting tolerances. ELECTRICAL • Very flexible power cable. • High stability of the signals. •For applications where the max speed is than 1m/s, the use of a “special cable ” is request.		Cod. PMS5/MS5	
		Reference signal	
		Pole pitch	
		Resolution (S)	
		Accuracy²	
		Repeatability	
		Cable	
		Output type	
		Msx.measuring frequency	
		Sensor – magnetic band distance	
Power supply			
Current consumpt .with load			
Current consumption with load			
Phase displacement			
Maximum speed			
Vibration resistance			
Shock resiststance			
Class of protection			
Operating temperature			
Storage temperature			
Humidity			
Weight of transducer			
Electrical protections			

1.Cable extension with power supply conductor' s section of 0.5mm²

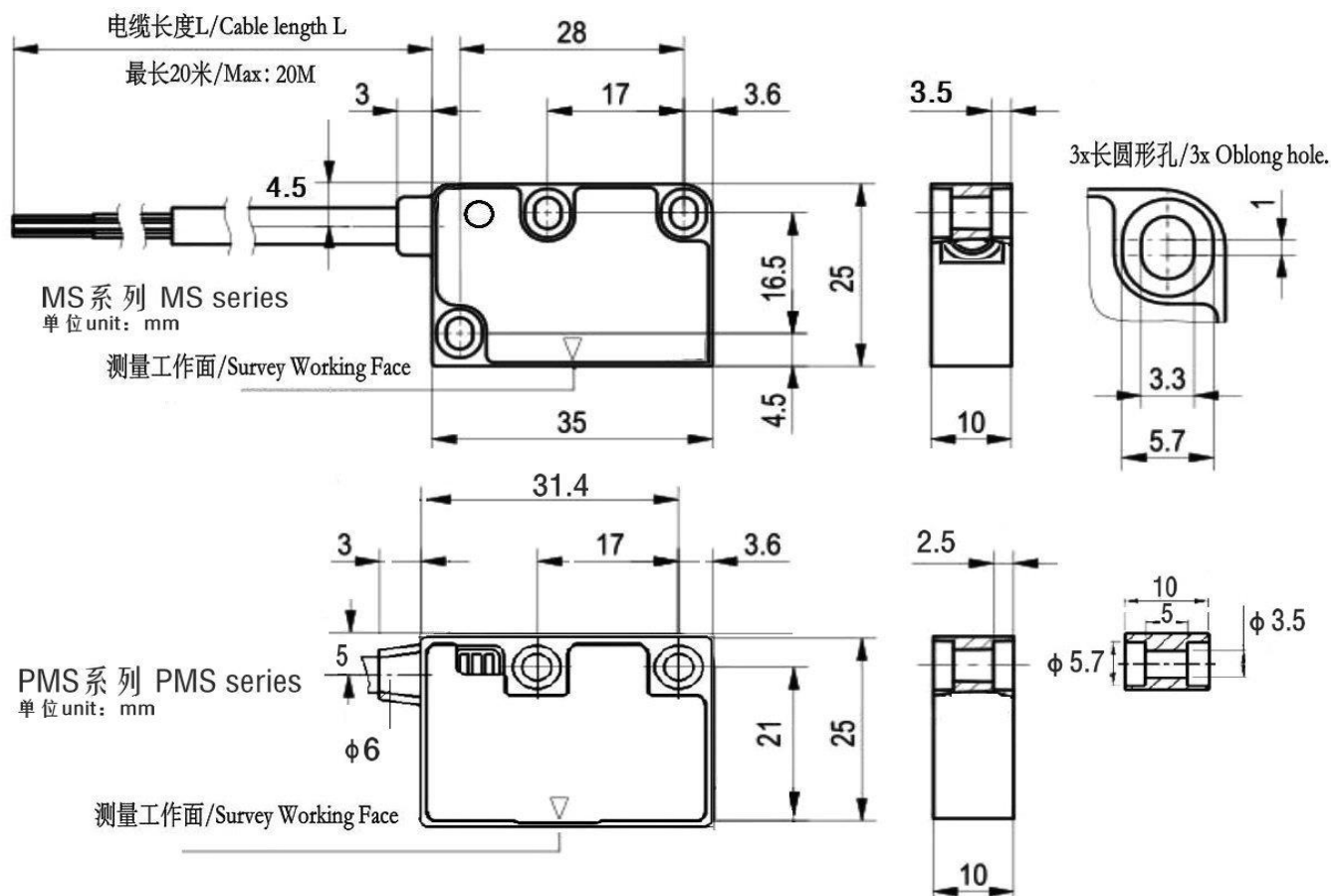
2.To obtain this accuracy value it' s necessary to resperct the alignment tolerances values peescribed by manufacturer.Better accuracy results can be obtained by reducing the gap between the dendor and the magnetic band

3. EMC : Electrostatic discharge(ESD: EN61000-4-2); Radio-frequency(EN61000-4-3, EN61000-4-6);
Electrical fast transient(EFT: EN61000-4-4); Surge(EN61000-4-5); Power frequency magnetic field(EN61000-4-8); .

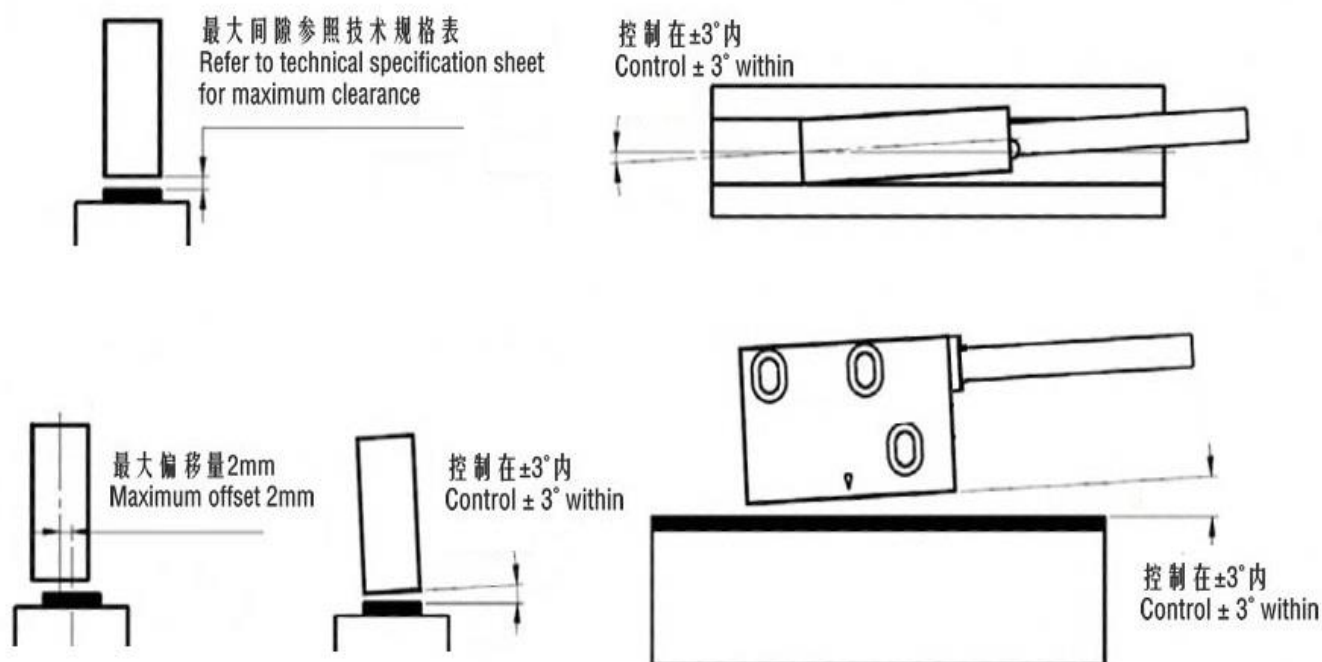
输出信号图 Output signal diagram



安装尺寸图 installation size



安装要求 Installation requirements



读数头订货代码 Order code of magnetic scale

类型 Type	n 输出方式 Output mode	分辨率 Resolutio	供电电压 Supply voltage	参考点 Reference point	线缆长度/米 Cable length/m	接头方式 Cable connector
PMS5	5	F	A	0	M3	SC
MS PMS	5=TTL 8= Differential Output	E=1 μ m F=5 μ m T=10 μ m TF=25 μ m H=100 μ m D=定制 Custom	A=5V $\pm$ 10% B=10-30V $\pm$ 10%	0=循环参考点 Loop reference point 1=指定参考点 Custom reference point	M1=1m M2=2m M3=3m M10=10m	SC=散装线 Without plug DB9=DB9 插头 With DB9 plug

Specifications (continued)

Max. pulse frequency fp	50 kHz, 20 kHz, 10 kHz (standard 50 kHz)
Outputs	A, $\bar{A}$, B, $\bar{B}$, reference pulse Z, $\bar{Z}$, end position signal E, $\bar{E}$, status signal ERR
Material of enclosure	Zinc die casting
Electrical connection	Cable 8 wire, $\varnothing$ 5 mm, open cable end, 9 pin SUB-D connector at the cable end as option. Max. length of the integrated sensor cable for TTL: 3 m; HTL/TTL24V: 20 m
Weight (w/o cable and connector)	30 $\pm$ 5 g
Protection class (EN 60529)	IP67
Environmental	
Shock	EN 60068-2-27:1993, 50 g 6 ms, 100 shocks
Vibration	EN 60068-2-6:1995, 20 g, 10-2000 Hz, 10 cycles
EMC	DIN EN 61326
Temperature	-40 ... +85°C



The subsequent counting device must be able to process the specified maximum pulse frequency of the sensor.

Output signals

Saturation voltage	UH, UL = 0,2 V UH, UL = 0,4 V $C_{last} < 10$ nF	$I_{out} = \pm 10$ mA $I_{out} = \pm 30$ mA	(UH = UB - U _{out})
Short circuit current	ISL, ISH < 800 mA ISL, ISH < 90 mA	(UH, UL = 0 V) (UH, UL = 1,5 V)	
Rise time	$t_r, t_f < 200$ ns	with cable length 1 m, 10 % ... 90 %	

Pulse frequency in dependence on the cable length

	Load/cable length	Load/pulse frequency fp		
		HTL single ended UB = 24 V	TTL/RS422 differential UB = 5 V *	TTL/24 V UB = 24 V
Max. output current		50 mA	50 mA	10 mA
R_{last} min.		500 Ω	100 Ω	500 Ω
C_{last} max.		10 nF	10 nF	1 nF
200 m		15 kHz	—	—
100 m		25 kHz	100 kHz	—
50 m		50 kHz	200 kHz	50 kHz
10 m		100 kHz	300 kHz	100 kHz

* = consider the voltage loss of the cable; the excitation voltage 5 V $\pm$ 5% of the sensor must be guaranteed.

Note: For longer distances (see specification above) you must use min. 0,5 mm² wire for „Excitation+“ and „Excitation GND“ (see signal wiring next page), all signal wires must be min. 0,14 mm²!