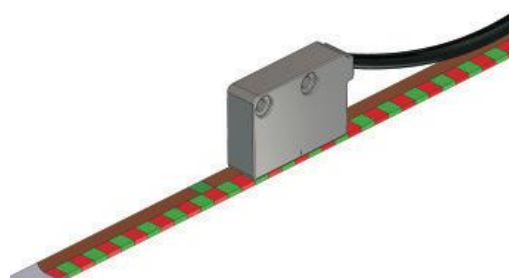
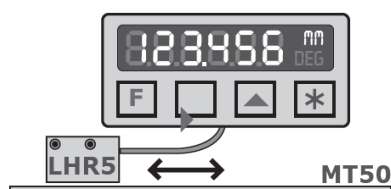


Datasheet

- Full metal body - particular high robustness construction
- Resistant to dust, water or shavings
- Simple mounting and alignment
- Resolution up to 5 μm
- System accuracy $\pm 100 \mu\text{m}$
- Protection class IP67
- Low noise system
- Speed proportional signal Output / real time



Contactless magnetic measuring technology with integrated digital processing electronic. In combination with the flexible magnetic tape MT50/PM5 and optionally with the aluminium-profile PS1 or the stainless steel cover strip DB50 you achieve a very accurate, robust and cheap length and angle measuring solution.



Ideal for linear motors, IPC, PLC, ...

Mechanical Data

Material Housing	Zinc die casting; plated
Dimensions	35 mm x 10 mm x 25 mm
Weight	35 g (without cable)
Distance between sensor bottom and top side of magnetic scale	0,1 - 2,0 mm
Angular tolerance (alpha, beta, gamma)	1°
Cable material	PUR (highly flexible)
Cable length	< 100 Meter (TTL) < 50 Meter (PP)
Protection class	IP67
Operating temperature	-10° to +70°C

Electrical Data

Resolution	< 5 μm with integrated digital evaluation; four edge evaluation
Period length	5 mm
Current consumption	< 70 mA (at 24 VDC no load)
Operating voltage	5 V DC $\pm$ 5% 10-30 V DC
Output specification	Line Driver / TTL Push Pull
Output signals	A; B; Z; $\bar{A}$; $\bar{B}$; $\bar{Z}$
Index signal, periodically or single signal	5 mm (I) or single signal (S)
Measurement speed	< 16 m/s (cut-off frequency reduced)

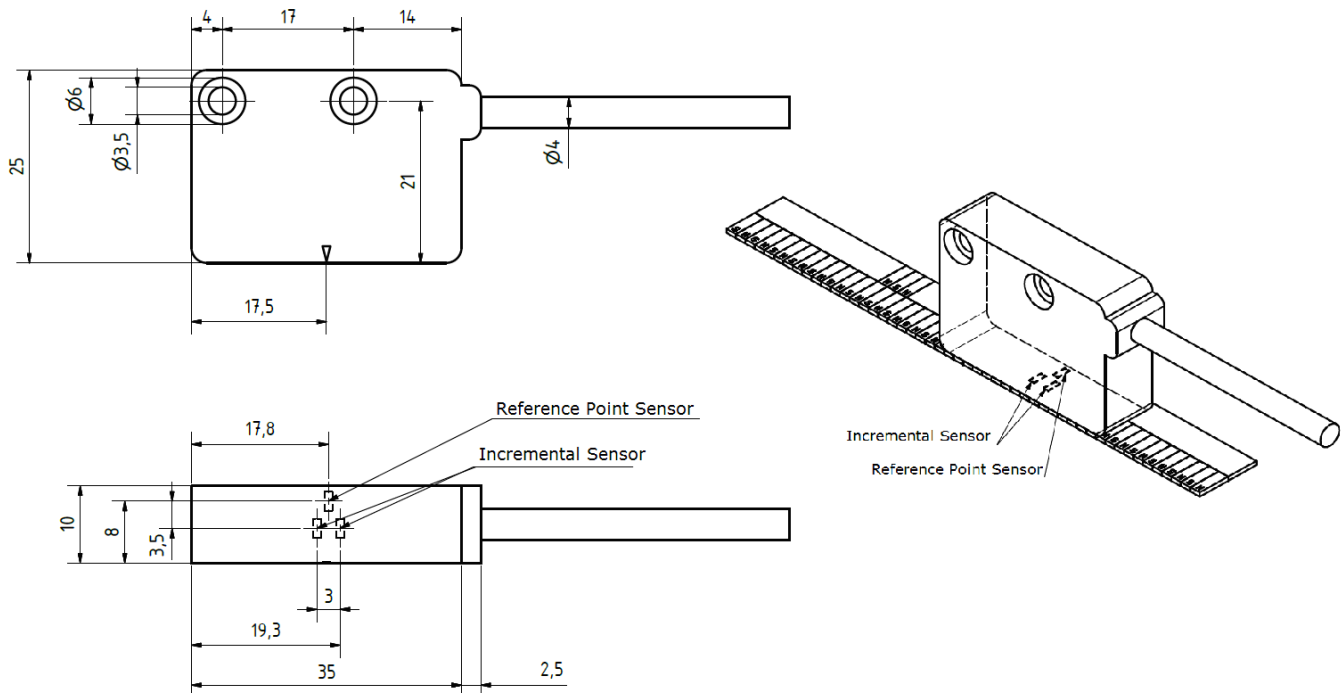
Datasheet

Edge distance

Example: Edge distance $t = 2\mu s$
(that means the downstream unit must be able to process 500kHz)

Formula for counting frequency = $1 / (2\mu s \times 4) = 500kHz$

Dimension

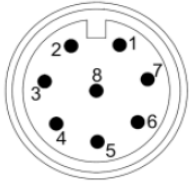
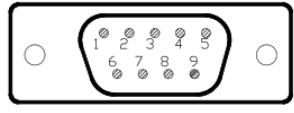


Limitation of Output Frequency

Min. edge distance T	Correlates counting frequency	5 μm	10 μm	50 μm	100 μm
120 ns	$\sim 8,3$ MHz	10 m/s	10 m/s	10 m/s	10 m/s
290 ns	$\sim 3,4$ MHz	10 m/s	10 m/s	10 m/s	10 m/s
480 ns	$\sim 2,1$ MHz	6,5 m/s	10 m/s	10 m/s	10 m/s
680 ns	$\sim 1,5$ MHz	4,5 m/s	9 m/s	10 m/s	10 m/s
800 ns	1,25 MHz	4 m/s	8 m/s	10 m/s	10 m/s
1.000 ns	1 MHz	2,8 m/s	5,5 m/s	10 m/s	10 m/s
1.500 ns	~ 670 KHz	2 m/s	4 m/s	10 m/s	10 m/s
2.000 ns	500 KHz	1,5 m/s	3 m/s	7,5 m/s	7,5 m/s
4.000 ns	250 KHz	0,75 m/s	1,5 m/s	3,9 m/s	3,9 m/s
8.000 ns	125 KHz	0,4 m/s	0,8 m/s	2 m/s	2 m/s
10.000 ns	100 KHz	0,4 m/s	0,8 m/s	2 m/s	2 m/s
16.000 ns	62,5 KHz	0,2 m/s	0,4 m/s	1 m/s	1 m/s

Datasheet

Pin Assignment

	Cable			
Signal	Line Driver / Differential	Push Pull	CO8P M12 8-pin	SUB-D9 9-polig
A	pink	green	6	6
A	grey	-	5	5
B	green	yellow	3	8
B	yellow	-	4	4
Z	white	grey	1	9
Z	brown	-	2	1
Vcc	red	brown	8	7
GND	blue	white	7	2

Ordering Example

Type **LHR5** - **10** - **I** - **Y** - **2** - **CO8P** - **24** - **xx**

Resolution

5 / **10** / 25 / 50 / 100 [µm]

Reference signal

I = periodic index pulse (5mm)

S = reference-single signal

O = without reference signal

Output

Y = Push-Pull (ABZ)

L = Line Driver (ABZ, $\overline{\text{ABZ}}$)

Cable length

2 = 2,0 m

5 = 5,0 m

10 = 10,0 m

other lengths on request

Connector

CO8P = circular connector M12, 8-pin

SUBD9 = SUB-D 9-pol.

Power supply

5 = 5 VDC

24 = 10-30 VDC

Desired counting frequency (in kHz)

This information is not necessary.