

Magnetic Sensing Head MSH1000

Magnetic Scale MS100



Servo Shaft
The art of Linear Motion

Contactlessly measuring sensing head with digital signal output. Combined with the magnetic scale MS100 the sensor establishes an open and robust measuring system with very high resolution and a sensing distance of up to 0.4mm.

Features:

- Resolution up to 0,2µm
- Status LED display
- Real-time signal processing
- Reference signal fixed or periodic
- robust metal housing



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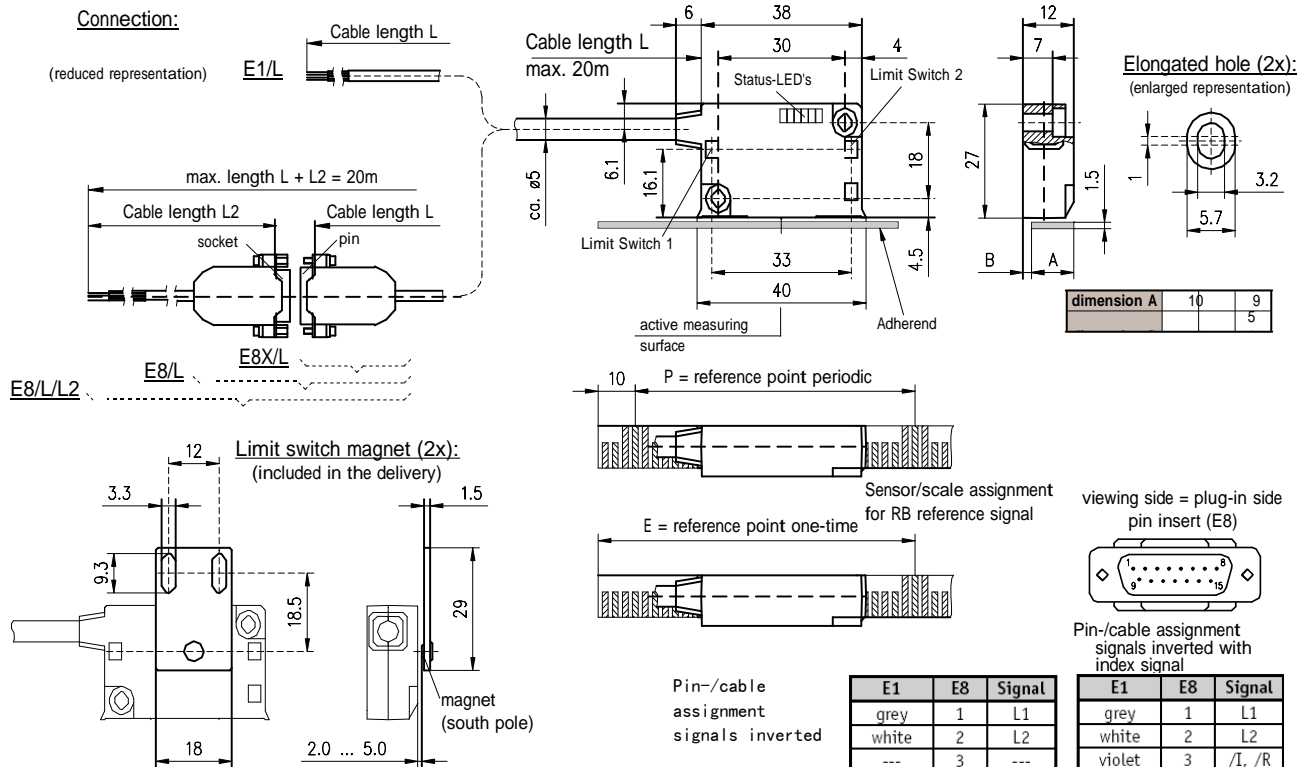
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Feature	Order text	Additional information
Operating voltage	10 A	6,5VDC ... 30VDC
	11 A	4,75VDC ... 6VDC
Connection	E1 B	E8X; E8
Cable length L (in m)	... C	max. 20m standard 1,0m
Cable length L2 (in m)	... D	L + L2 = max. 20m
Reference signal	0 E	without
	I E	periodic index
	RB E	reference fixed, scanning on tape side
Resolution in µm	1 F	0,2; 2; 5
Pulse interval in µs	1,00 G	0,25; 0,5; 2,0
Width in mm	10 H	9; 5
Precision in mm	0,01 I	max. ordering length 4,0m
	0,05 I	max. ordering length 90,0m
Length in m	... K	in steps of 0,1m ordering length = required length + 30mm
Carrier strip	St L	steel
	VA L	food grade approved
Adhesive carrier band	TM M	with
	TO M	without
Cover strip	AM N	with, MS + loose cover tape
	V N	MB + glued cover tape
	AO N	without cover or adhesive tape
Reference point	O O	without
	E O	one-time only for 10mm width
	P O	periodic only for 10mm width
Position of E reference point (one-time)	... P	in m
or		
Position of P reference point (periodic)	... Q	in m

Your ordering: **MSH1000** - **A** **G**

Your ordering: **MS100** - **H** **Q**

Magnetic Sensing Head **MSH1000**
Magnetic Scale **MS100**



Note: The internal translation module can generate fast counting pulses, the lengths of which are limited by the pulse interval. The follower electronics must be adjusted accordingly. Select the pulse interval in advance, if necessary.

Resolution in μm	Travel speed V_{max} . (m/s)			
0,2	0,64	0,32	0,16	0,08
1	3,20	1,60	0,80	0,40
2	6,40	3,20	1,60	0,80
5	16,00	8,00	4,00	2,00
Pulse interval (μs)	0,25	0,50	1,00	2,00
Count. frequ. (kHz)	1000	500	250	125

E1	E8	Signal
grey	1	L1
white	2	L2
---	3	---
---	4	---
green	5	/b
orange	6	B
red	7	A
yellow	8	/A
---	9	---
black	10	GND
---	11	---
brown	12	+UB
---	13	---
screening	14	---
---	15	---

E1	E8	Signal
grey	1	L1
white	2	L2
violet	3	/I, /R
blue	4	I, R
green	5	/b
orange	6	B
red	7	A
yellow	8	/A
---	9	---
black	10	GND
---	11	---
brown	12	+UB
---	13	---
screening	14	---
---	15	---

Technical data

Additional information

Mechanical data:		
Housing	ABS black	
Sensor cable	PUR, drag chain-compatible	alternating bending strength $\geq 4 \times 10^6$ double strokes; bending radius min. $r > 5 \times$ cable diam.; $V = 30$ double strokes/min
Electrical data:		
Power supply	6,5VDC ... 30VDC ; 4,75VDC ... 6VDC	
Power consumption	<25mA without load	
Output signals	A; /A; B; /B; I; /I bzw. R; /R Output circuit	LD – line driver RS422
Realtime requirements	real-time signal processing	
Index mark	periodic, fixed	
Limit switch L1/L2	NPN (open collector) End = lo	max. 50VDC/50mA (Not available for MSH1000) max. 0,1W power loss
Interference protection class	3	IEC-61000-6-2
Test mark	CE	
Environmental conditions:		
Temperature coefficient (strip)	$(11 \pm 1) \times 10^{-6}/K$	
Working temperature	-10°C ... +70°C (sensor)	-20°C ... +70°C (scale)
Storage temperature	-30°C ... +80°C (sensor)	-40°C ... +70°C (strip)
Humidity	100% rF, condensation permitted	
Type of protection	IP67	
System data:		
Pole length	1mm	
Suitable magnetic tape	MS100	
Travel speed	depending on resolution and pulse interval	
System accuracy	$\pm 10 \mu m$	
Repeat accuracy	max. $\pm 5 \mu m$	
Sensor/magnetic scale gap	0,1 - 0,4mm 0,1 - 0,2mm	reference signal 0 + I reference signal RB