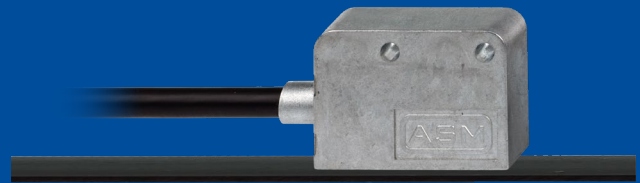




PMIS3

Position Sensor for industrial applications

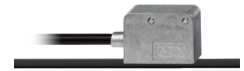
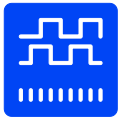


- Protection class IP67
- Measurement length up to 30,000 mm
- Shielded metal housing
- Contactless and wear-free
- Reference pulse and end position signal
- Indicator for velocity / position errors

Product version



Incremental encoder output A/B/Z



PMIS3 - Magnetic Scale Position Sensor

Incremental encoder output

Specifications

										Order options
Magnetic period	2 mm				5 mm				1	20 50
Guided spacing between sensor and mag. scale (x _z)	0.1 ... 0.8 mm				0.1 ... 2 mm					
Side tracking tolerance of the sensor	±1 mm				±1 mm					
Linearity (sensor with magnetic scale PMIB3)	15 µm ± 40 µm/m				30 µm ± 40 µm/m					
Resolution with ext. times 4 counting mode [µm]	5	10	20	50	10	25	50	125	2	5 / 10 / 20 / 50 / 10 / 25 / 50 / 125
Max. velocity with f _p =50 kHz [m/s]	0,8	1,6	3,2	8	1,6	4	8	20		
Repeatability	± 1 Digit									
Excitation voltage	10 ... 30 VDC or 5 VDC ±5 %									
Excitation current	50 mA to 300 mA, depending on pulse frequency, cable length and load									
Max. pulse frequency f _p	50 kHz 20 kHz 10 kHz (standard 50 kHz) (The subsequent counting device must be able to process the specified maximum pulse frequency of the sensor)								3	50KHZ 20KHZ 10KHZ
Output	Incremental encoder output A/B with differential push-pull output HTL output with excitation 24 VDC, output 24 V TTL output with excitation 5 VDC, output TTL/RS422 TTL output with excitation 24 VDC, output TTL/10 mA								4	HTL TTL TTL24V
Reference pulse / end position signal / status signal	Z0 = A/B without reference pulse Z1 = A/B with reference pulse Z Z2 = A/B with end position signal Z3 = A/B with reference pulse and status signal (Option Z3 only for non-differential output, single ended)								5	Z0 Z1 Z2 Z3
Output signals	A, $\bar{A}$, B, $\bar{B}$, reference pulse Z, $\bar{Z}$, end position signal E, $\bar{E}$ status signal ($\overline{ERR}$)									
Housing material	Zinc die casting									
Cable length	Standard 2 m Cable 8 wire, Ø 5 mm, max. Max. length of the integrated sensor cable for output TTL: 3 m; HTL/TTL24V: 20 m								6	2M
Electrical connection	S = open cable end P = SUB-D connector at the cable end (9 pin) P15 = SUB-D connector at the cable end (15 pin)								7	S P P15
Weight	30 ±5 g (without cable and connector)									

Protection class (EN 60529)	IP67
Environmental	
Shock	EN 60068-2-27:2010, 50 g 6 ms, 100 shocks
Vibration	EN 60068-2-6:2008, 20 g, 10-2000 Hz, 10 cycles
EMC	DIN EN 61326
Operating temperature	-40 ...+85°C

Order code

PMIS3	–	1	–	2	–	3	–	4	–	5	–	6	–	7
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Order example: PMIS3 – 50 – 25 – 50KHZ – HTL – Z1 – 2M – S

Output signals

Saturation voltage	UH, UL = 0,2 V	I _{out} = ±10 mA	(UH = UB - U _{out})
	UH, UL = 0,4 V	I _{out} = ±30 mA	
	C _{last} < 10 nF		
Short circuit current	ISL, ISH < 800 mA	(UH, UL = 0 V)	
	ISL, ISH < 90 mA	(UH, UL = 1,5 V)	
Rise time	tr, tf < 200 ns	with cable length 1, 10 % ... 90 %	

Pulse frequency in dependence on the cable length

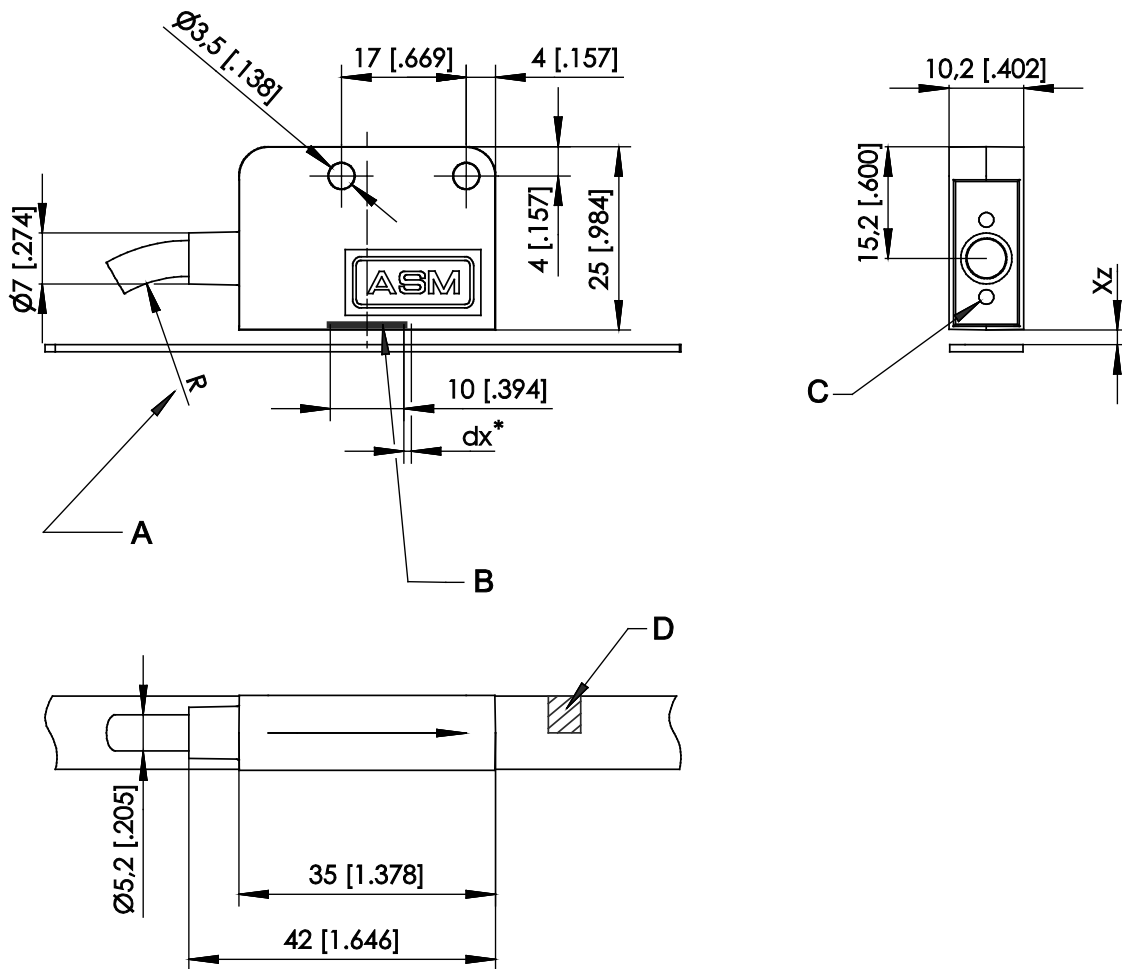
Load/cable length	Load/pulse frequency fp		
	HTL single ended UB = 24 V	TTL/RS422 differential UB = 5 V *	TTL/24 V UB = 24 V
Max. output current	50 mA	50 mA	10 mA
R _{last} min.	500 Ω	100 Ω	500 Ω
C _{last} max.	10 nF	10 nF	1 nF
200 m	15 kHz	—	—
100 m	25 kHz	100 kHz	—
50 m	50 kHz	200 kHz	50 kHz
10 m	100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

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

NOTICE

- 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!

PMIS3, PMIB3



A – Minimum bending radius 50 mm [1.969]

B – Active measurement range

C – Status signal

D – Reference mark

* Position tolerance of the active measurement range: $dx = \pm 1$ mm

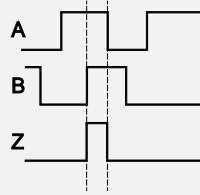
Dimensions in mm [inch]

Dimensions informative only.

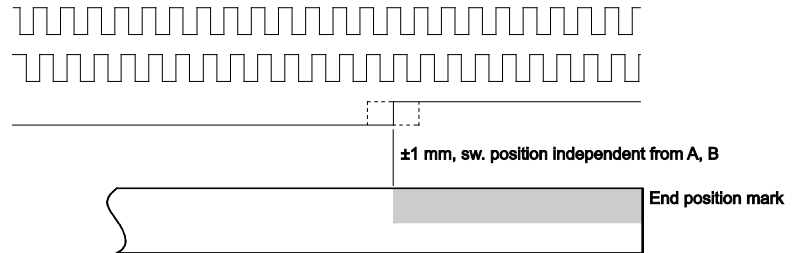
For guaranteed dimensions consult factory.

Output signals

Option Z1
(Reference pulse)



Option Z2
(End position signal)



Signal wiring

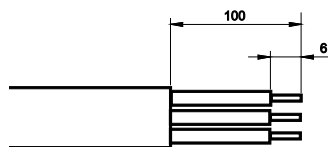
Signal					Open cable end cable color	Connector Sub-D, Pin no.	
Option	Z0	Z1	Z2	Z3*		9 pin	15 pin
	Excitation +				white	1	1
	Excitation GND (0V)				brown	5	2
	B	B	B	B	green	2	6
	A	A	A	A	yellow	3	4
	$\bar{B}$	$\bar{B}$	$\bar{B}$	$\bar{ERR}$	grey	7	7
	$\bar{A}$	$\bar{A}$	$\bar{A}$	—	pink	6	5
	—	Z	$\bar{E}$	Z	blue	4	8
	—	$\bar{Z}$	E	—	red	8	9
	Shield				black	9	housing

Z = reference pulse

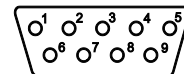
E = end position signal

$\bar{ERR}$ = status signal, periodical approx. 16 Hz, for side tracking and velocity errors

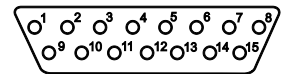
* = status signal ERR available only with HTL (single ended) output



Dimensions open cable end



Connector SUB-D
(9 pin)



Connector SUB-D
(15 pin)

View to the connector pins

NOTICE

- Unused wires are connected inside the sensor head. Do not connect unused wires to each other or to supply U_B or ground potential GND. Isolate and secure unused wires at switch cabinet terminal.

Accessories

Masking tape PMAB

Masking tape made of stainless steel for posimag®
magnetic scale PMIB3, width 10 mm, thickness 0.2 mm

Order code

PMAB

-

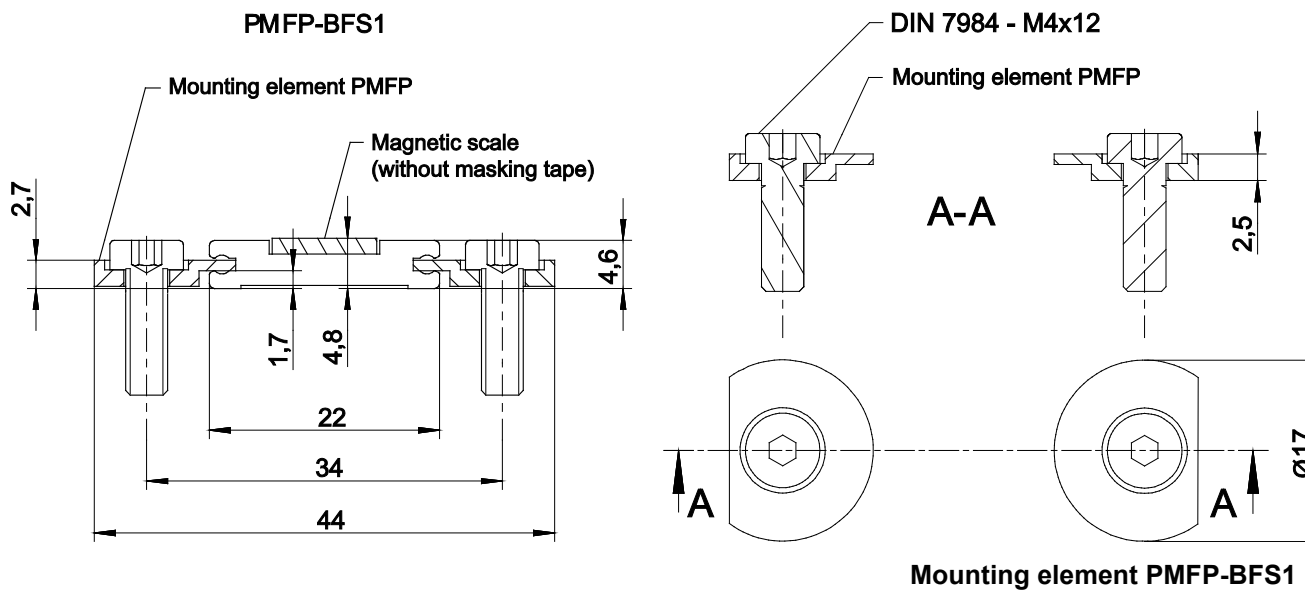
10MM

-

Length in mm

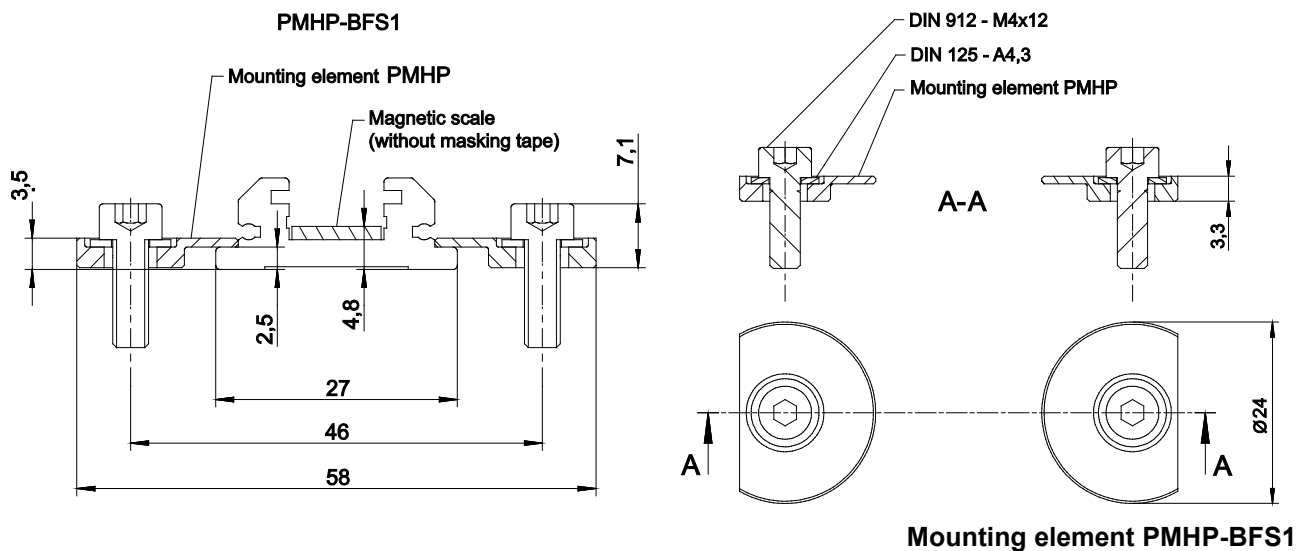
Flat profile PMFP

PMFP-BFS1



High profile PMHP

PMHP-BFS1

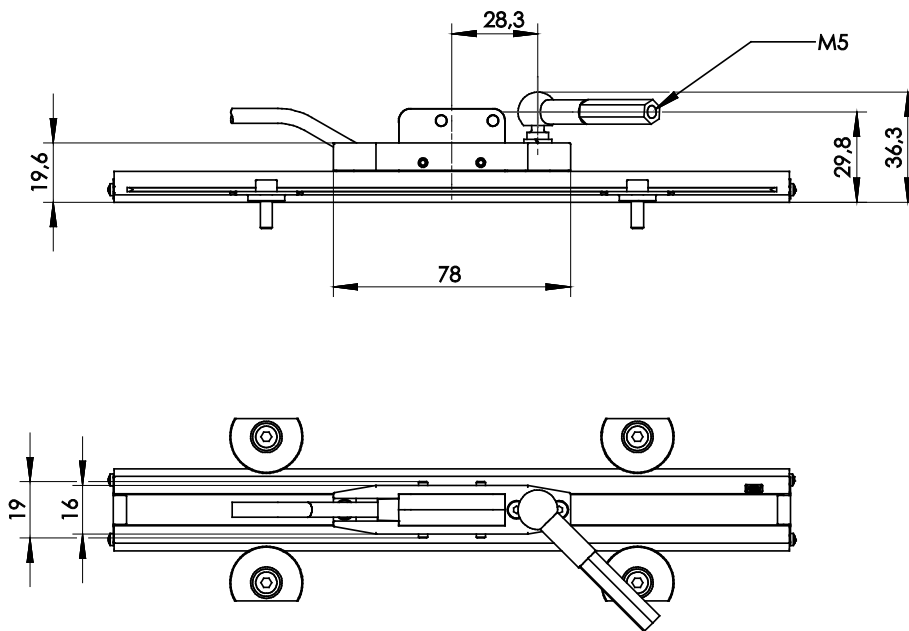


Dimensions in mm [inch].

Dimensions informative only.

For guaranteed dimensions consult factory.

Slider for high profile PMGW3



Dimensions in mm [inch].

Dimensions informative only.

For guaranteed dimensions consult factory.

