Datasheet

- Linear magnetic sensor, with direct reading of the absolute position
- Resolutions up to 1 µm
- Contactless reading through positioning sensor based on magneto resistance, with AMR effect (Magnetic Anisotropy)
- Warning indication through LED
- Extremely easy and fast mounting of the entire measuring system, with wide alignment tolerances
- Possibility to fix the magnetic sensor with M4 screws or with through M3 screws
- Small size, to allow installation in narrow spaces
- Axial or radial robust sealed cable output

AMS2 Aluminium Housing

AMS2 Zinc Die-Casting Housing

Mechanical Data

Material Housing	 Aluminium Zinc Die-Casting
Weight	80 g
Measuring Length	< 30.000 mm
Warning indication through LED	LED glow: operational LED does not glow: check distance
Traversing Speed	< 300 m/min < 90 m/min -> with a 1µm resolution
Operating Temperature	0 °C to +50°C
Storage Temperature	-20°C to +70°C
Relative Humidity	100%
Vibration Resistance (EN 60068-2-6)	200 m/s^2 [55 to 2.000 Hz]
IP-Rating (EN60529)	IP67

Electrical Data

Pole Pitch	2 + 2 mm
Signal Period	2 mm
Resolution Absolute 1 Vpp	 500; 100; 50; 10; 5; 1µm < 1 µm (depending on CNC division factor)
Incremental Signal	sine wave 1 Vpp (A and B output singals, with phase displacement of 90°)
Accuracy	±15 µm
Repeatability	±1 increment
Interface	SSI BiSS
Supply Power	5 to 28 VDC ±5 %
Consumption Power	150 mA (with R = 120 Ω)

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Serial Output

- Shielded twisted pair for analog signals (SIN, COS)
- The cable is suitable for continuous movement
- 6-wire shielded cable, Ø=7 mm, PVC external sheath, with low friction coefficient, oil-resistant
- Conductors section:
  - supply: 0,25 mm²
  - signals: 0,25 mm²
- **The cable's bending radius should not be lower than 70 mm**

The following output signals are available
Complying to DIN 47100

Signals	Color
V+	brown
V-	white
CK	green
$\overline{CK}$	yellow
D	pink
$\overline{D}$	grey
SCH	shield

Avoid locating the cable next to any device that may cause electromagnetic interferences (motors, solenoid valves, inverters). If interferences are detected, act directly on the source of disturb using EMC filters.

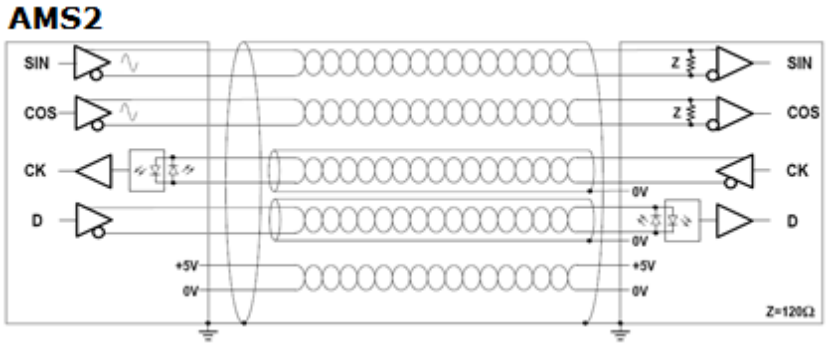
If cable extensions are needed, it is necessary to use shielded cables with a section of at least 0,5 mm² for power supply and 0,25 mm² for signals.

The cable capacity should be: C≤90 - 100 pF/m.

Analog + Serial Output

- Shielded twisted pair for analog signals (SIN, COS)
- The cable is suitable for continuous movement
- 10-wire shielded cable Ø = 6,2 mm, Pur external sheath
- Conductor Section
  - supply 0,29 mm²
  - signal 0,10 mm²
- **The cable's bending radius should not be lower than 90 mm.**

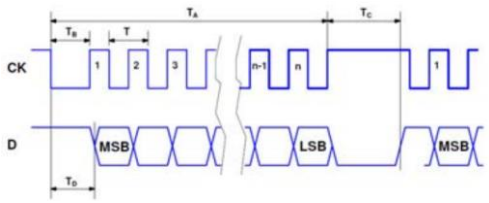
The following output signals are available



Signal	Color
V+	red
V-	blue
A	green
$\overline{A}$	orange
B	white
$\overline{B}$	light-blue
CK	brown
$\overline{CK}$	yellow
D	pink
$\overline{D}$	grey
SCH	shield

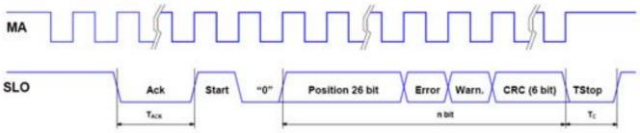
Output Signals

SSI



Interface	SSI binary-gray		
n	Position bit		
Signals level	EIA RS 485		
Cable Length [m]	≤3	≤20	≤50
Clock frequency [MHz]	1,2	0,4	0,2
T	0,833 ÷ 10 µs		
T_c	12 - 45 µs		
T_A	Clock sequence		
T_B	> 0,4 µs		
T_C	12 ÷ 65 µs		
T_D	0,6 ÷ 7,2 µs		

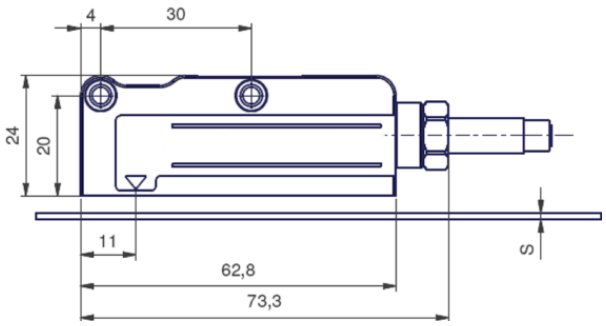
BiSS



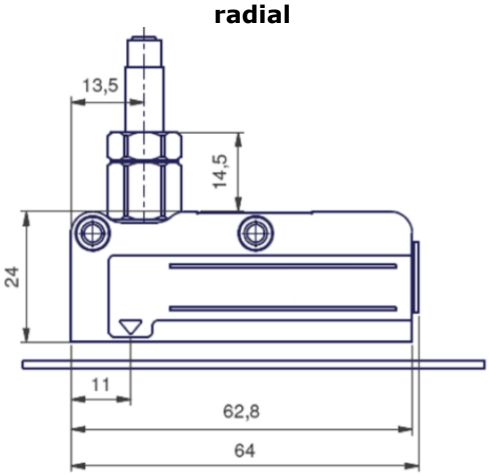
Interface	BiSS C unidirectional		
Parity	no		
Signal level	EIA RS 485		
Cable Length [m]	≤2	≤20	≤50
Clock frequency [MHz]	2	1	0,4
n	26+2+6 Bit		
T_c	12 ÷ 45 µs		

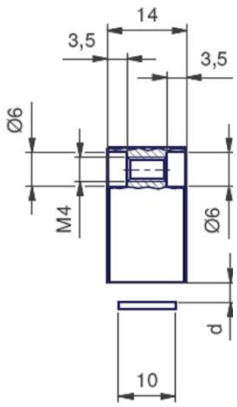
Dimensions

axial



radial





	MBA2	**MBA2 + DB01**
s -> thickness	1,5 mm	1,7 mm
d ->distance between magnetic tape and sensor	0,3 - 1 mm	max. 0,8 mm

Ordering Example

Type	AMS2	- 1	- A	- 528	- S0	- V	- M02/S	- SC

Pole Pitch
2 = 2+2

Resolution [µm]
500; 100; 50; 10; 5; **1**

Cable Output
A = axial
R = radial

Power Supply
528 = 5-28 V

Output Signals
S0 =SSI programmable*
S1 = SSI binary
S2 = SSI binary + even parity
S3 = SSI binary + uneven parity
S4 = SSI binary + Error
S5 = SSI binary + even parity + Error
S6 = SSI binary + uneven parity + Error
S7 = SSI gray
B1 = BiSS binary

Incremental Signal
V = +1 Vpp
No Code = no incremental signal

Cable Length/ Type
Mnn = Length in m
M02 = 2 m (Standard)
M50 = 50 m
R = 6- wires (only serial)
S = 10- wires (serial+ analog)

Connector
SC = without connector
Cnn = progressive

*Programmer sold separately

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