

Code ST02	Project A47-A	Release E	TECHNICAL DATASHEET
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ABSOLUTE MAGNETIC SENSOR AGM

GENERAL FEATURES

- Linear magnetic sensor, with direct reading of the absolute position.
- Resolutions up to 1 μm .
- Measuring length up to 30 000 mm.
- High-speed serial interface.
- Contactless reading.
- Warning indication through LED.
- Extremely easy and fast mounting of the entire measuring system, with wide alignment tolerances.
- Small size, to allow installation in narrow spaces.
- Option: 1 Vpp analog signal.
- Axial or radial cable output.



MECHANICAL AND ELECTRICAL CHARACTERISTICS

MECHANICAL	Cod. AGM	M
<ul style="list-style-type: none"> • Magnetic sensor with die-cast body. • Possibility to fix the magnetic sensor with M4 screws or with through M3 screws. • Wide alignment tolerances. • Robust sealed cable exit. 	Pole pitch	2+2 mm
	Incremental signal	sine wave 1 Vpp (optional)
	Resolution 1 Vpp	up to 1 μm *
	Repeatability	± 1 increment
	Signal period	2 mm
	Serial interface	SSI – BiSS
	Resolution absolute position	500 - 100 - 50 - 10 - 5 - 1 μm
	Accuracy	± 15 μm
	Measuring length ML	up to 30 000 mm
	Max. traversing speed	300 m/min **
	Vibration resistance (EN 60068-2-6)	200 m/s ² [55 ÷ 2 000 Hz]
	Protection class (EN 60529)	IP 67
	Operating temperature	0 °C ÷ 50° C
	Storage temperature	-20 °C ÷ 70° C
	Relative humidity	100%
	Power supply	5 ÷ 28 Vdc \pm 5%
	Current consumption	150 mA _{MAX} (with R = 120 Ω)
	Max. cable length	20 m ***
	Electrical connections	see related table
	Electrical protections	inversion of polarity and short circuits
	Weight	80 g

SIGNALS	CONDUCTOR COLOR
+ V	Brown
0 V	White
CK	Green
$\overline{\text{CK}}$	Yellow
D	Pink
$\overline{\text{D}}$	Grey
SCH	Shield

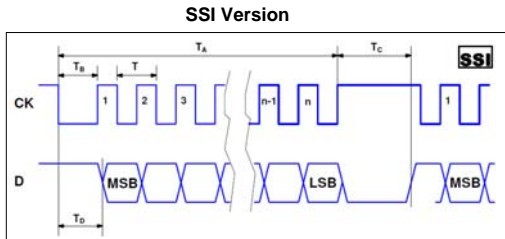
* Depending on CNC division factor.

** With a 1 μm resolution, the maximum traversing speed becomes 90 m/min.

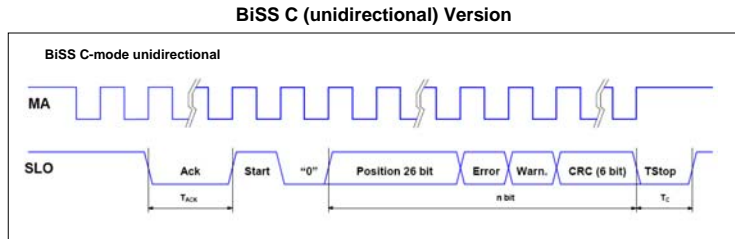
*** Ensuring a minimum power supply of 5 V to the sensor, the maximum cable length can be extended to 50 m.

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OUTPUT SIGNALS

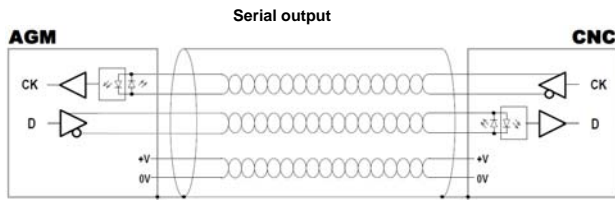


Interface	SSI Binary - Gray
Signals level	EIA RS 485
Clock frequency	0.1 ÷ 1.2 MHz
n	Position bit
Tc	12 ÷ 45 µs



Interface	BiSS C unidirectional
Signals level	EIA RS 485
Clock frequency	0.1 ÷ 2 MHz
n	26 + 2 + 6 bit
Tc	12 ÷ 45 µs

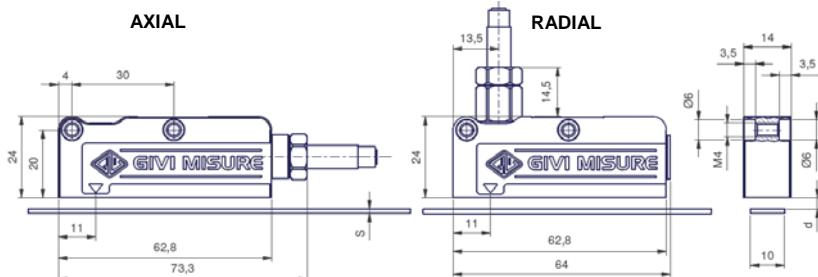
CABLE



In case of cable extension, it is necessary to guarantee:

- the electrical connection between the body of the connectors and the cables shield;
- a minimum power supply voltage of 5 V to the sensor.

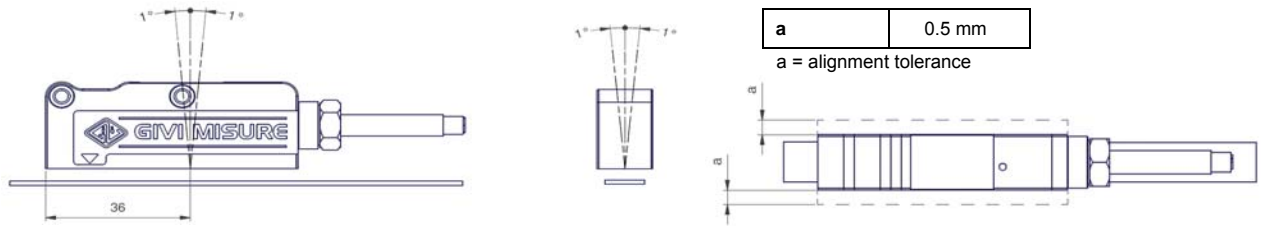
SENSOR DIMENSIONS



values in mm	MP200A	MP200A + CV103	MP200A + SP202
s	1.3	1.6	2.1
d	0.3 ÷ 1	0.7 _{MAX}	0.2 _{MAX}

s = thickness
 d = distance to be maintained between sensor and surface of the magnetic band (or eventual cover/support)

SENSOR ALIGNMENT TOLERANCES



a	0.5 mm
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a = alignment tolerance

ORDERING CODE

MODEL	POLE PITCH	RESOLUTION	CABLE OUTPUT	POWER SUPPLY	OUTPUT SIGNALS	INCREMENTAL SIGNAL	CABLE LENGTH, CABLE TYPE	CONNECTOR
AGM	M	1	A	528V	S0	V	M02 / S	SC

M = 2+2 mm
 500 = 500 µm
 100 = 100 µm
 50 = 50 µm
 10 = 10 µm
 5 = 5 µm
 1 = 1 µm

A = axial
 R = radial

528V = 5 ÷ 28 V

S0 = SSI programmable
 S1 = SSI binary
 S2 = SSI binary+even parity
 S3 = SSI binary+odd parity
 S4 = SSI binary+error
 S5 = SSI binary+even parity+error
 S6 = SSI binary+odd parity+error
 S7 = SSI Gray
 B1 = BiSS binary

V = +1 Vpp
 No cod. = no incremental signal

Mnn = length in m
 M02 = 2 m (standard)
 M50 = 50 m

R = 6 wires (only serial)
 S = 10 wires (serial + analog)

SC = without connector
 Cnn = progressive

Example **ABSOLUTE MAGNETIC SENSOR AGM M1A 528V S0 V M02 / S SC**