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| Code ST02 | Project A48-C | Release G | TECHNICAL DATASHEET |
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ABSOLUTE MAGNETIC SENSOR AGM

GENERAL FEATURES

- Linear magnetic sensor, with direct reading of the absolute position.
- High-speed SSI - BiSS C (unidirectional) serial interface.
- Resolutions up to 1 μm .
- Contactless reading.
- Measuring length up to 30 000 mm.
- 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 * |
| | Signal period | 2 mm |
| | Repeatability | ± 1 increment |
| | Serial interface | SSI - BiSS C (unidirectional) |
| | Resolution absolute position | 500 - 100 - 50 - 10 - 5 - 1 μm |
| | Accuracy | $\pm 15 \mu\text{m}$ |
| | 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 \div 2 000 Hz] |
| | Protection class (EN 60529) | IP 67 |
| | Operating temperature | 0 °C \div 50 °C standard -20 °C \div 80 °C on request |
| | Storage temperature | -30 °C \div 90 °C standard -45 °C \div 90 °C on request |
| | Relative humidity | 100% |
| | Power supply | 5 \div 28 Vdc \pm 5% |
| | Current consumption | 150 mA _{MAX} (with R = 120 Ω) 5 Vdc 100 mA _{MAX} (with R = 1200 Ω) 24 Vdc |
| | Max. cable length | 20 m ** |
| | Electrical connections | see related table |
| | Electrical protections | inversion of polarity and short circuits |
| | Weight | 80 g |

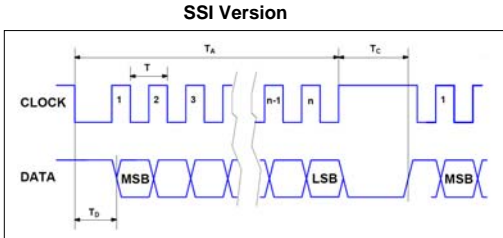
| SIGNALS | CONDUCTOR COLOR |
|------------------------|-----------------|
| + V | Brown |
| 0 V | White |
| CK | Green |
| $\overline{\text{CK}}$ | Yellow |
| D | Pink |
| $\overline{\text{D}}$ | Grey |
| SCH | Shield |

* Depending on CNC division factor.

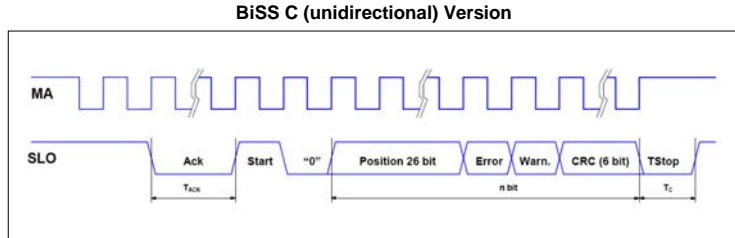
** Ensuring a minimum power supply of 5 V to the sensor, the maximum cable length can be extended to 50 m.

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OUTPUT SIGNALS

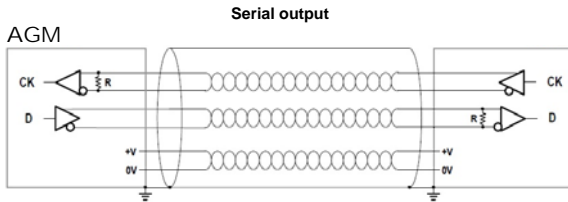


| | |
|-----------------|-------------------|
| Interface | SSI Binary - Gray |
| Clock frequency | 0.1 ÷ 1.2 MHz |
| n | Position bit |
| Tc | max. 25 µs |



| | |
|-----------------|-----------------------|
| Interface | BiSS C unidirectional |
| Clock frequency | 0.1 ÷ 8 MHz |
| n | 26 + 2 + 6 bit |
| Tc | 8 µs |

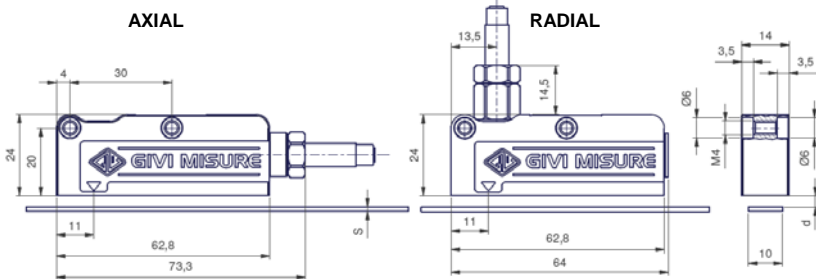
CABLE



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.

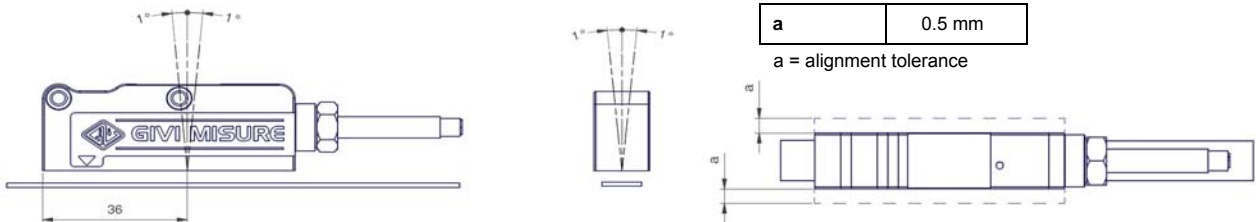
SENSOR DIMENSIONS



| 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



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 **A** = axial **528V** = 5 ÷ 28 V **S0** = SSI programmable **V** = + 1 Vpp **Mnn** = length in m
100 = 100 µm **R** = radial **S1** = SSI binary **No cod.** = no incremental signal **M02** = 2 m (standard)
50 = 50 µm **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 **M50** = 50 m
10 = 10 µm **S8** = SSI binary+even parity+error+error **S9** = SSI binary+odd parity+error+error **S10** = SSI Gray **S11** = SSI Gray **S12** = SSI Gray **S13** = SSI Gray **S14** = SSI Gray **S15** = SSI Gray **S16** = SSI Gray **S17** = SSI Gray **S18** = SSI Gray **S19** = SSI Gray **S20** = SSI Gray **S21** = SSI Gray **S22** = SSI Gray **S23** = SSI Gray **S24** = SSI Gray **S25** = SSI Gray **S26** = SSI Gray **S27** = SSI Gray **S28** = SSI Gray **S29** = SSI Gray **S30** = SSI Gray **S31** = SSI Gray **S32** = SSI Gray **S33** = SSI Gray **S34** = SSI Gray **S35** = SSI Gray **S36** = SSI Gray **S37** = SSI Gray **S38** = SSI Gray **S39** = SSI Gray **S40** = SSI Gray **S41** = SSI Gray **S42** = SSI Gray **S43** = SSI Gray **S44** = SSI Gray **S45** = SSI Gray **S46** = SSI Gray **S47** = SSI Gray **S48** = SSI Gray **S49** = SSI Gray **S50** = SSI Gray **S51** = SSI Gray **S52** = SSI Gray **S53** = SSI Gray **S54** = SSI Gray **S55** = SSI Gray **S56** = SSI Gray **S57** = 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