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CE

Code	Project	Release	
CST20	**B25-D**	**C**	**TECHNICAL DATASHEET**

MAGNETIC SENSOR CSM - 2 Series

GENERAL CHARACTERISTICS

- Magnetic sensor for linear and angular reading.
- Resolutions up to 1 µm.
- Contactless reading.
- Extremely easy and fast mounting of the entire measuring system, with wide alignment tolerances.
- Small size, to allow installation in narrow spaces.
- Magnetic band composed by a magnetized plastoferrite tape, with pole pitch 5+5 mm. The plastoferrite is supported by a stainless steel tape, already provided with the adhesive tape, for an easy application on the machine.
- To be used with magnetic band CP200 or CP200Z (with reference indexes positioned upon request).

MECHANICAL AND ELECTRICAL CHARACTERISTICS

MECHANICAL

- Magnetic sensor with die-cast body.
- Possibility to fix the magnetic sensor with M4 screws or with through M3 screws.
- Wide alignment tolerances.

ELECTRICAL

- Very flexible power cable.
- Reading through positioning sensor based on magneto resistance, with AMR effect (Magnetic Anisotropy).
- High signal stability.
- Electrical protection against inversion of power supply polarity and short circuits on output port.
- For applications where the maximum speed exceeds 1 m/s, it is necessary to use a cable **suitable for continuous movements**.

- CABLE:

  As a standard, the sensor is supplied with the following cable:
  - 8-wire shielded cable ∅ = 6.1 mm, PVC external sheath, with low friction coefficient, oil resistant;
  - Conductors section: power supply 0.35 mm^2; signals 0.14 mm^2.

PUR cable or cable with reduced section on request.

The cable's bending radius should not be lower than 60 mm.

LINE DRIVER	PUSH-PULL	CONDUCTOR COLOR
A	A	Green
$\overline{A}$		Yellow
B	B	Grey
$\overline{B}$		Pink
I_0	I_0	Blue
$\overline{I_0}$		Red
+ V	+ V	Brown
0 V	0 V	White
SCH	SCH	Shield

As a standard, the sensor is supplied with a 2-m cable.
Longer lengths are available, with the following limits:
L_{max} = 10 m sensor cable
L_{max} = 100 m 2 m sensor cable + cable extension *

Model. CSM	2
Pole pitch	2+2 mm
Reference indexes	**C** = constant step (every 2 mm) ** **E** = external **Z** = positioned on the magnetic band
Resolution (µm)	1,000 | 500 | 100 | 50 | 25 | 10 | 5 | 1
Accuracy (µm) * **	± 15 | ± 10 | ± 8
Max. traversing speed **	1.2 m/s (**res. 1 µm**) 12 m/s (**res. 10 µm**)
Max. frequency	300 kHz (up to 500 kHz on request)
Repeatability	± 1 increment
A, B and I_0 output signals	LINE DRIVER / PUSH-PULL
Vibration resistance (EN 60068-2-6)	300 m/s^2 [55 ÷ 2,000 Hz]
Shock resistance (EN 60068-2-27)	1,000 m/s^2 (11 ms)
Protection class (EN 60529)	IP 67
Operating temperature	0 °C ÷ 50° C
Storage temperature	-20 °C ÷ 80° C
Relative humidity	100%
Power supply	5 ÷ 28 Vdc ± 5%
Current consumption without load	60 mA_{MAX}
Current consumption with load	140 mA_{MAX} (with 5 V and R = 120 Ω) 90 mA_{MAX} (with 28 V and R = 1.2 kΩ)
Electrical connections	see related table
Electrical protections	inversion of polarity and short circuits
Weight	45 g

* Cable extensions need to have a 0.5 mm^2 section for power supply conductors.
** With 1,000 µm resolution, the constant step is 4 mm.
*** To obtain the declared accuracy values, it is necessary to respect the alignment tolerances prescribed by the Manufacturer. Better accuracy can be obtained by reducing the gap between the sensor and the magnetic band.
**** The indicated speeds are referred to a maximum frequency of 300 kHz.

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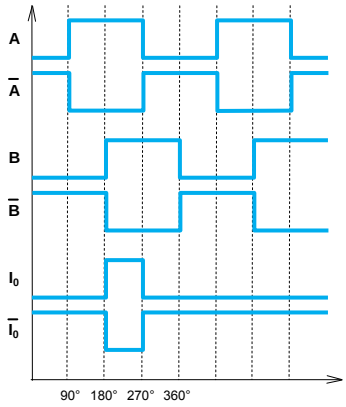
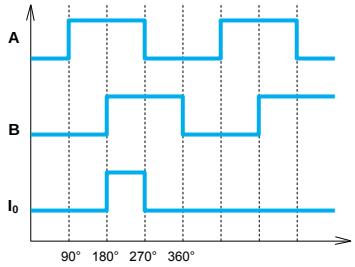
OUTPUT SIGNALS

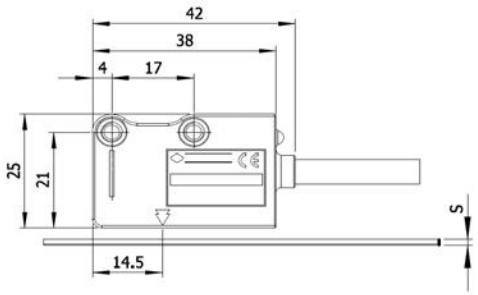
LINE DRIVER

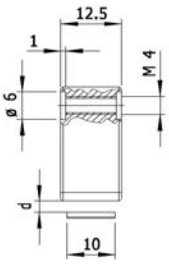


PUSH-PULL



SENSOR DIMENSIONS



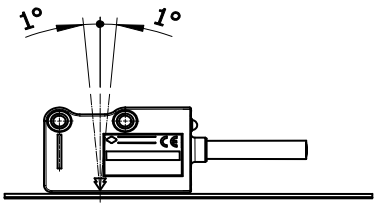


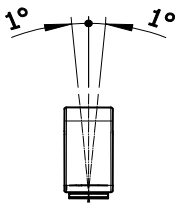
values in mm	CP200	CP200 + CV103	CP200 + SP202	CP200 + GVS 100
s	1.3	1.6	2.1	7.6
d	0.2 ÷ 1.4	1.1_{MAX}	0.6_{MAX}	0.3 ÷ 1

values in mm	CP200Z	CP200Z + CV103	CP200Z + SP202
s	1.3	1.6	2.1
d	0.3 ÷ 0.8	0.5_{MAX}	N.A.

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

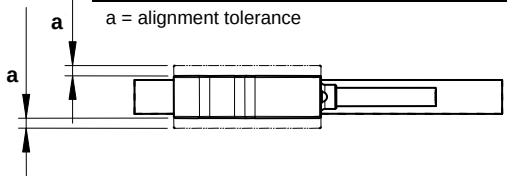
SENSOR ALIGNMENT TOLERANCES





values in mm	CSM 2xxxC CSM 2xxxE	CSM 2xxxZ	CSM 2 for GVS 1002
a	3_{MAX}	1_{MAX}	1_{MAX}

a = alignment tolerance



ORDERING CODE

MODEL	POLE PITCH	RESOLUTION	REFERENCE INDEXES	POWER SUPPLY	OUTPUT SIGNALS	CABLE	CONNECTION	PROGRAMMING	SPECIAL
CSM	**2**	**1**	**C**	**528V**	**L**	**M02 / N**	**SC**	**F**	

2 = 2+2 mm	**25** = 25 µm **5** = 5 µm **1** = 1 µm	**C** = constant step **E** = external **Z** = positioned on magnetic band	**528V** = 5÷28 Vdc **5285** = 5÷28 Vdc with 5 V output	**L** = LINE DRIVER **Q** = PUSH-PULL	**M01/N** = 1 m **M02/N** = 2 m **M03/N** = 3 m	**SC** = without connector **Cnn** = progressive	**F** = fixed **V** = variable **G** = for GVS 100	**No cod** = standard **SPnn** = special nn

Standard ☞ **MAGNETIC SENSOR CSM 2 5 C 528V L M02 / N SC F**