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CE

Code	Project	Release	
CST32	**B25-D**	**N**	**TECHNICAL DATASHEET**

MAGNETIC SENSOR CSM - 254 Series

GENERAL CHARACTERISTICS

- Magnetic sensor for linear and angular reading.
- Resolutions up to 24,000 DPI.
- 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 2.54+2.54 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 MP254.

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	254
Pole pitch	2.54+2.54 mm
Reference indexes	**C** = constant step (every 2.54 mm)
Resolution	600 - 1,200 - 2,400 - 3,000 - 4,800 - 6,000 - 9,600 - 12,000 - 24,000 DPI
Accuracy **	± 10 µm
Max. traversing speed ***	1.2 m/s (**24,000 DPI**) 14 m/s (**1,200 DPI**)
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.
** 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. With 600 DPI resolution, the accuracy is ± 14 µm.
*** The indicated speeds are referred to a maximum frequency of 300 kHz.

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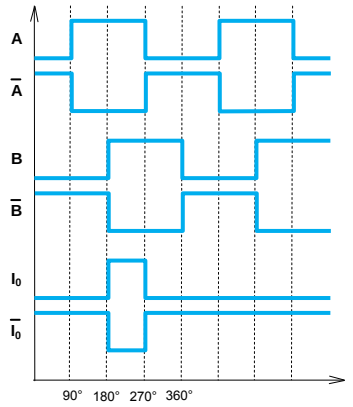
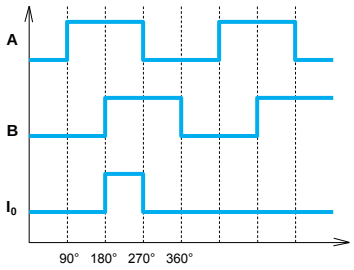
OUTPUT SIGNALS

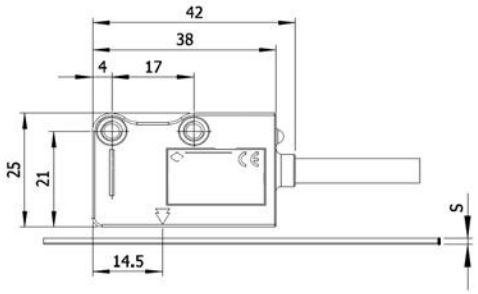
LINE DRIVER

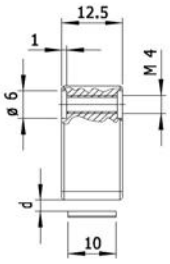


PUSH-PULL



SENSOR DIMENSIONS

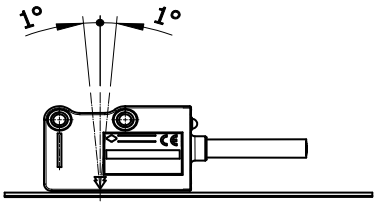


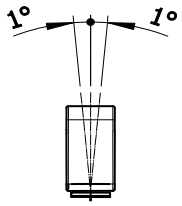


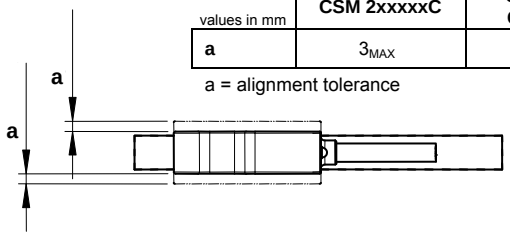
values in mm	CP254	CP254 + CV103	CP254 + SP202	CP254 + GVS 1002
s	1.3	1.6	2.1	7.6
d	0.2 ÷ 1.4	1.1_{MAX}	0.6_{MAX}	0.3 ÷ 1

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 2xxxxxC	CSM254 for GVS 1002
a	3_{MAX}	1_{MAX}

a = alignment tolerance

ORDERING CODE

MODEL	POLE PITCH	RESOLUTION	REFERENCE INDEXES	POWER SUPPLY	OUTPUT SIGNALS	CABLE	CONNECTION	PROGRAMMING	SPECIAL
CSM	**254**	**600**	**C**	**528V**	**L**	**M02 / N**	**SC**	**F**	

254 = 2.54+2.54 mm

24000 = 24,000 DPI
6000 = 6,000 DPI
1200 = 1,200 DPI
600 = 600 DPI

C = constant step

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
SNxx = special nn

Standard ☞ **MAGNETIC SENSOR CSM 254 600 C 528V L M02 / N SC F**