



## ACW4 CANopen

### CANOPEN ABSOLUTE SINGLE TURN MODULAR SENSOR

Sensata-BEI Sensors' ACW4 sensors provide absolute single turn measurement with a CANopen output in an over-molded, two-part package that offers design flexibility & protection from the environment.



#### Features

- With its two-part design, the ACW4 CANopen absolute single-turn offers maximum flexibility for installation
- Rugged and excellent resistance to shock and vibration
- Robust, proven magnetic technology
- Environmentally resistant, IP 67 standard (IP69K option)
- Extended operating range from -30° C to 85° C
- Uses universal supply 5 to 30 VDC – CAN open output
- Available Resolution up to 12 bits per revolution
- Variety of magnet holders available
- Standard PVC cable with SUBD9 connector

#### Applications

- Factory Automation
- Process Automation



## SPECIFICATIONS

### Mechanical

<b>Terminations</b>	PVC Cable with SUBD9 connector
<b>Housing</b>	Macromelt PA638
<b>Weight</b>	0,150 kg

### Electrical

<b>Electrical Angle</b>	360°
<b>Output Function</b>	CANopen
<b>Minimal Cycle Time</b>	< 400µs
<b>Resolution</b>	Single –turn, 12 bits
<b>Accuracy</b>	+/-0.3% on 360°
<b>Repeatability</b>	+/-0.1% on 360°
<b>Supply Voltage</b>	5 to 30 Vdc
<b>Start-up</b>	< 1 s
<b>Current Requirements</b>	< 40mA
<b>Protection</b>	Overvoltage Protection: Yes Reverse Polarity Protection: Yes Short Circuit Protection: Yes
<b>EMC</b>	IEC 61000-4-2 Electrostatic discharge (ESD) 4 kV, 8 kV IEC 61000-4-3 Electromagnetic fields 10 V/m (80MHz - 1GHz), 3V/m (1.4GHz - 2GHz), 1V/m (2GHz - 2.7GHz) IEC 61000-4-4 Electrical fast transients (burst) 1 kV IEC 61000-4-6 Conducted disturbances, induced by RF-fields 10 Veff.

## Programmable Parameters

**Resolution:** Defines the resolution per revolution (0 to 4 096).

**Transmission Speed:** Programmable from 10kbaud (1 000m) to 1 Mbaud (25 m) ; value per default : 20 Kbaud.

**Address:** Defines the software address of the encoder on the bus (1 to 127, Value per default : id = 1).

**Direction:** Defines the direction of count of the sensor.

**RAX:** Defines the value of the current position (with the shaft held stationary)

**CAMs:** High and low limits.

## Communication Modes

**Sensor Configuration :** Reading/Writing of the encoder objects dictionary (SDO mode).

3 modes are available to interrogate the encoder position/speed:

**CYCLIC Mode:** The sensor transmits its position in an asynchronous manner. The frequency of the transmission is defined by the programmable cyclic timer register from 0 to 65 535 ms,

**SYNCHRO Mode:** The Sensor transmits its position on a synchronous demand by the master.

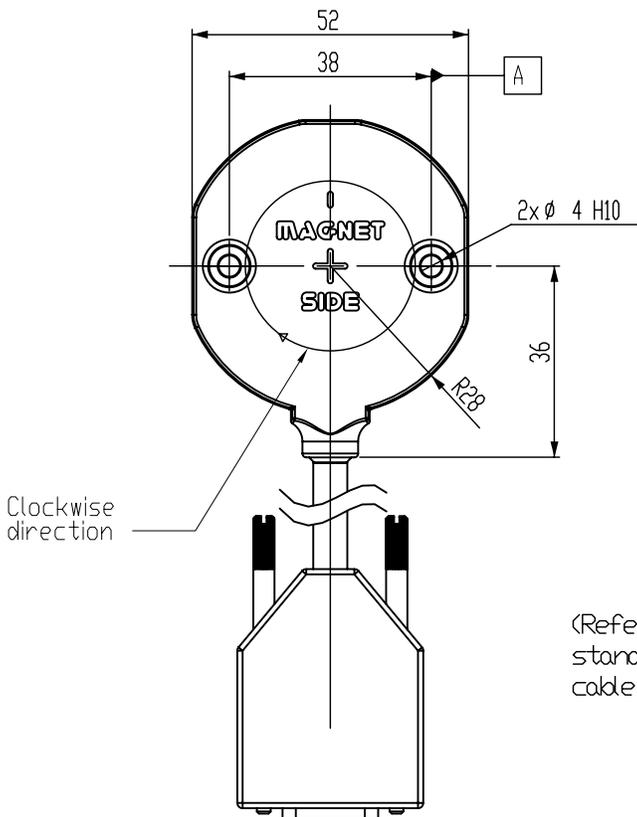
**POOLING Mode (Answer to a RTR signal) :** The sensor only answers to a request.



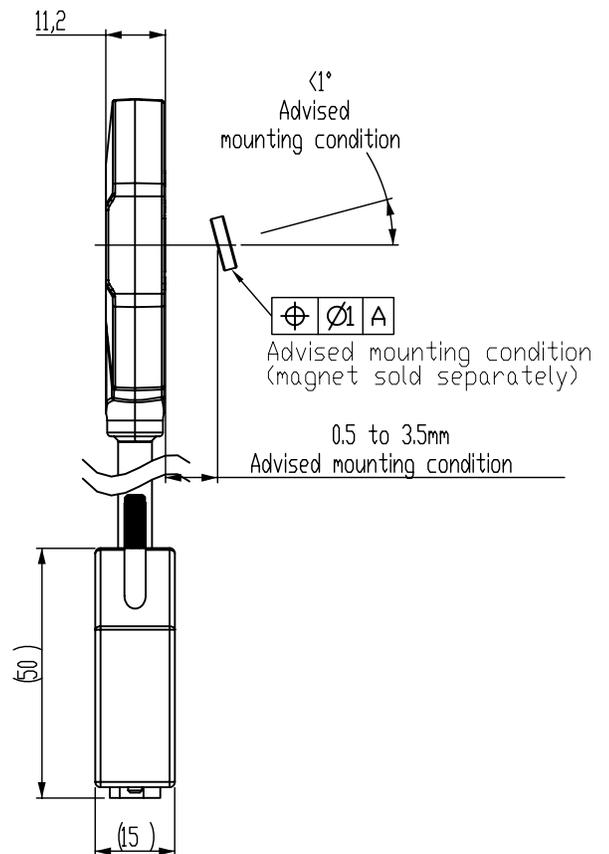
## DIMENSIONS

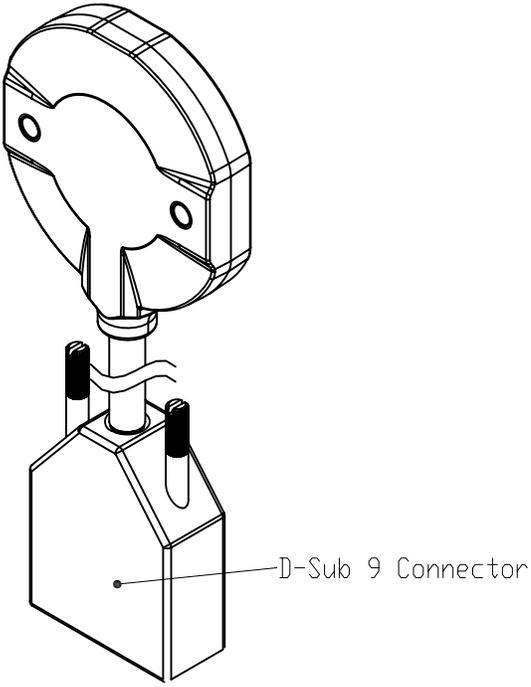
All Dimensions are in millimeters.

Shaft system with magnet to be ordered separately (see Accessories).



(Refer to the bus standards for max cable length)





## CONNECTIONS

		N.C	CAN LOW	CAN GND / 0V	N.C.	N.C.	0V	CAN HIGH	N.C.	5/30Vdc	Ground
BB	PVC Cable + DB9	1	2	3	4	5	6	7	8	9	General Shielding

## NOTES

Stray magnetic fields can interfere with accuracy and repeatability of the signal.



# ORDERING OPTIONS

Example : ACW4\_00//PBB//12//BBR020

(Contact the factory for special versions, ex : dimensions, connections... )

	<b>ACW4</b>	<b>00</b>	<b>//</b>	<b>P</b>	<b>BB</b>	<b>B</b>	<b>//</b>	<b>12</b>	<b>//</b>	<b>BBR</b>	<b>020</b>
<b>Family</b>	ACW4: Absolute Single-Turn Sensor										
<b>Shaft Ø</b>	00: Modular										
<b>Supply</b>	P: 5 to 30 Vdc										
<b>Output Stage</b>	BB: CANopen										
<b>Code</b>	B: Binary										
<b>Resolution</b>	12: 12 bits										
<b>Connection</b>	BBR: Side PVC cable with SUBD9 connector										
<b>Cable Length</b>	020: 2 meters										

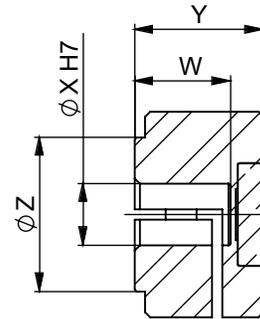
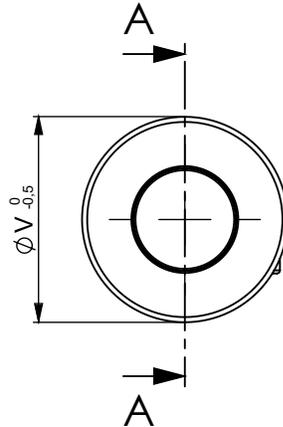
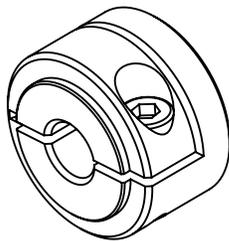


# ACCESSORIES

## Female magnet support + Magnet 8810/013

Ordering p/n : **M9105/Kxx**

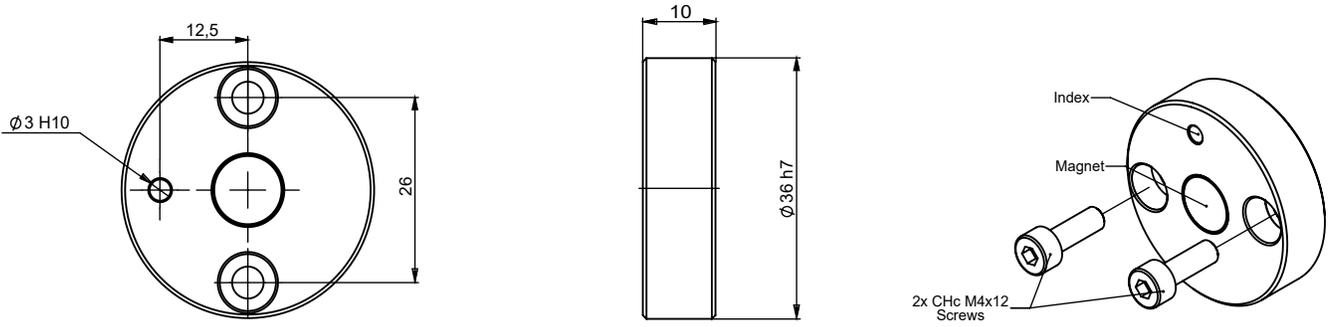
KXX: Where XX is the shaft mounting diameter in mm. Standards are 06, 08, 10, 11, and 14 mm. i.e M9105/K10 mounts to a 10 mm shaft.



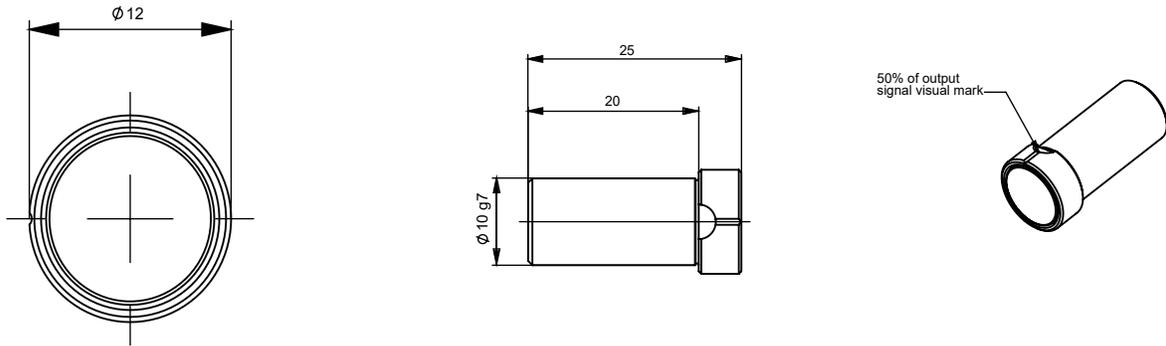
SECTION A-A

	M9105/K06	M9105/K08	M9105/K10	M9105/K11	M9105/K14
<b>X</b>	06 H7	08 H7	10 H7	11 H7	14 H7
<b>V</b>	20	20	26	26	29
<b>W</b>	9,3	9,3	10	10	10
<b>Y</b>	12,5	12,5	14	14	14
<b>Z</b>	15	15	15	15	18

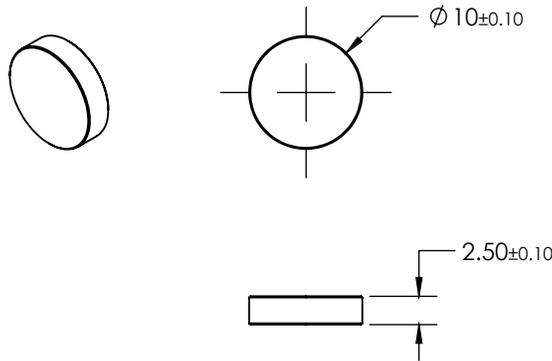
**Frontal magnet support + Magnet 8810/013**  
 Ordering p/n : **M9105/F26**



**Male magnet support + Magnet 8810/013**  
 Ordering p/n : **M9105/M10-01**



**Magnet**  
 Ordering p/n : **8810/013**



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Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

**CONTACT US**

**Americas**  
 +1 (800) 350 2727  
[sales.beisensors@sensata.com](mailto:sales.beisensors@sensata.com)  
**EMEA**  
[position-info.eu@sensata.com](mailto:position-info.eu@sensata.com)  
 +33 (3) 88 20 8080  
**Asia Pacific**  
[sales.isasia@list.sensata.com](mailto:sales.isasia@list.sensata.com)  
 China +86 (21) 2306 1500  
 Japan +81 (45) 277 7117  
 Korea +82 (31) 601 2004  
 India +91 (80) 67920890  
 Rest of Asia +886 (2) 27602006  
 ext 2808