

ACW4 PWM

PWM ABSOLUTE SINGLE TURN MODULAR SENSOR

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



Features

- With its two-part design, the ACW4 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 -40° C to 85° C
- Uses universal supply 5 Vdc or 11 to 30 VDC – PWM Output
- Available Resolution up to 12 bits per revolution
- Variety of magnet holders available

Applications

- Factory Automation
- Process Automation



SPECIFICATIONS

Mechanical

| | |
|---------------------|-----------------|
| Terminations | PVC cable |
| Housing | Macromelt PA638 |
| Weight | 0,150 kg |

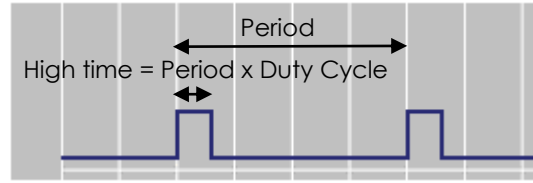
Electrical

| | |
|-----------------------------|--|
| Electrical Angle | 360° |
| Output Function | PWM 1 kHz, 10% to 90% Duty Cycle |
| Minimal Cycle Time | 1ms |
| Resolution | Single –turn, 12 bits |
| Accuracy | +/-0.3% on 360° |
| Repeatability | +/-0.1% on 360° |
| Supply Voltage | 5Vdc, or 11 to 30 Vdc |
| Start-up | < 1s |
| Response time | < 10 ms |
| Recommended Load | > 10 kOhms |
| Current Requirements | < 40mA |
| Protection | Overvoltage Protection: Yes Reverse Polarity Protection: Yes Short Circuit Protection: Yes |
| EMC | 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. |

PWM Output

Our PWM mode is defined with the following characteristics :

| | |
|-----------------------|---|
| Supply | 5-30Vdc |
| PWM frequency | 1kHz |
| Duty cycle | 10 to 90% (special duty cycle range on demand, for example 5% to 95%, consult us) |
| Output voltage | Minimum high level = $V_{cc}-2,5Vdc$. |



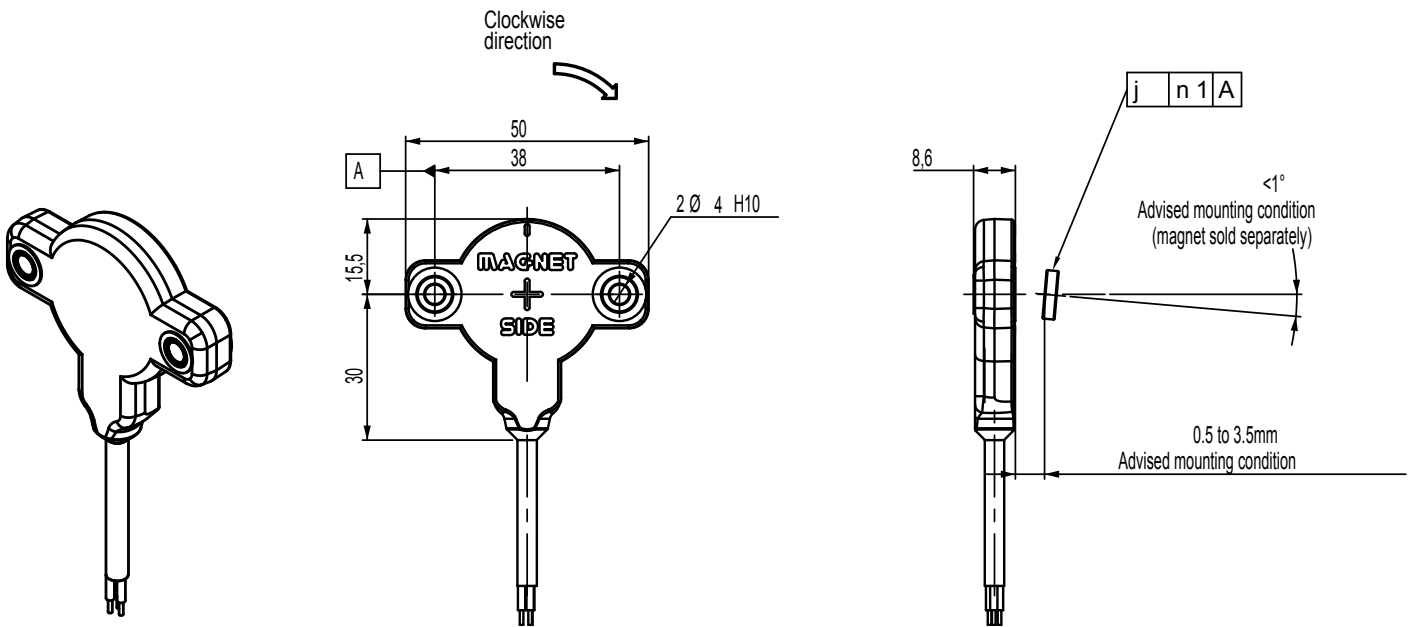
PWM output is highly linear and not subject to time delays. This makes it suitable for high speed applications and particularly in areas which may be subject to electrical interference. As data is time dependent, variation in voltage supply, data cable distances and subsequent circuitry have no appreciable effect on the data quality.



DIMENSIONS

All Dimensions are in millimeters.

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





CONNECTIONS

| Function | Vcc | 0V | PWM Out | Ground |
|----------|-------------|-------------|-------------|--------|
| Color | Brown BN | White WH | Green GN | Shield |



NOTES

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



ORDERING OPTIONS

Example : ACW4_00//5LP1//00360//L3R020

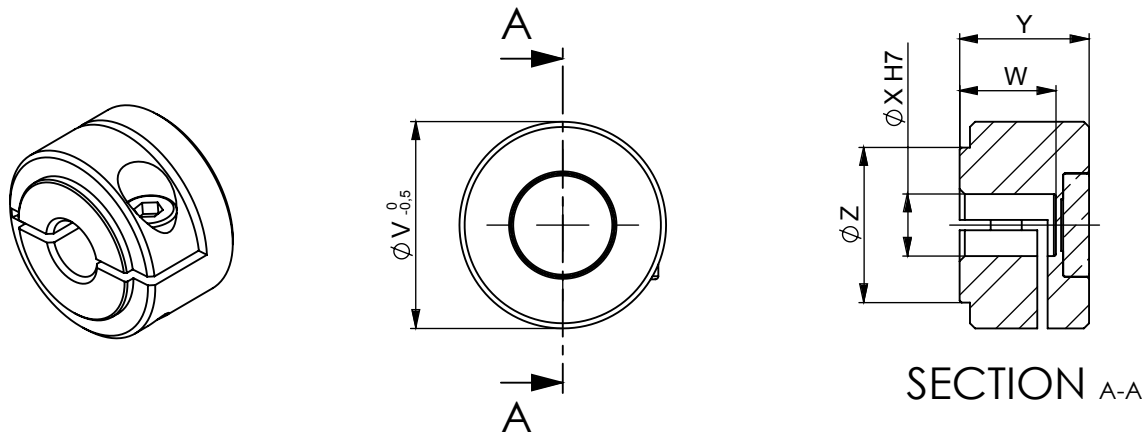
(Contact the factory for special versions, ex : dimensions, connections...)

| | ACW4 | 00 | // | 5LP | 1 | // | 00360 | // | L3 | R020 |
|---|------|----|----|-----|---|----|-------|----|----|------|
| Family | | | | | | | | | | |
| ACW4: Absolute Single-Turn Sensor | | | | | | | | | | |
| Shaft Ø | | | | | | | | | | |
| 00: Modular | | | | | | | | | | |
| Supply/Output Stage | | | | | | | | | | |
| 5LP: 11 to 30 Vdc 2LP: 5Vdc +/- 5% PWM 1 kHz, 10% to 90% duty cycle | | | | | | | | | | |
| Direction | | | | | | | | | | |
| 1: CW, Clockwise positive 2: CCW, Counterclockwise positive | | | | | | | | | | |
| Range | | | | | | | | | | |
| 00360: 360° degrees | | | | | | | | | | |
| Connection | | | | | | | | | | |
| L3: 3 conductor PVC cable | | | | | | | | | | |
| Connection Orientation | | | | | | | | | | |
| R020: Radial cable 2m long | | | | | | | | | | |

Female magnet support + Magnet 8810/013

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

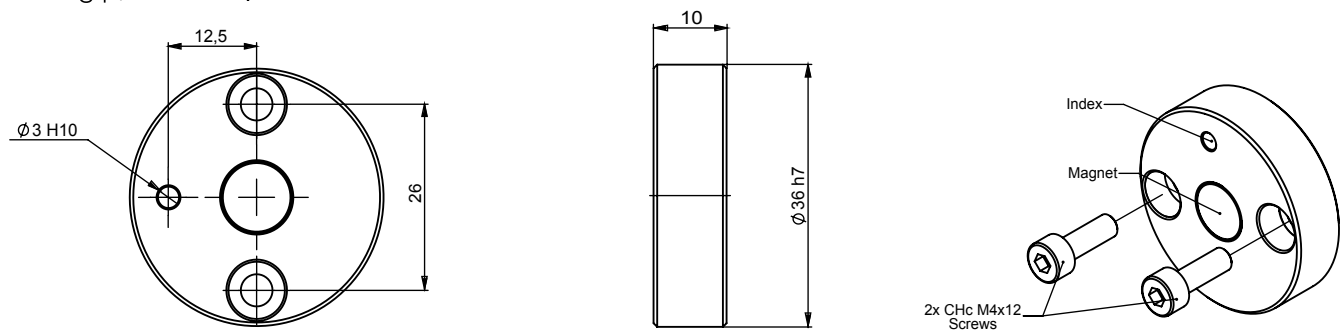
KXX: Where XX is the shaft mounting diameter in mm. Standards are 06, 08, 10, 11, and 14 mm. i.e M9105/K10 mounts to a 10 mm shaft.



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

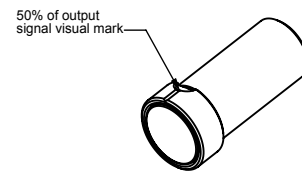
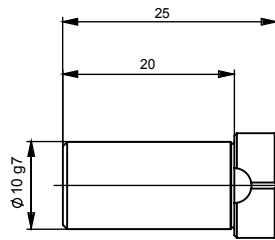
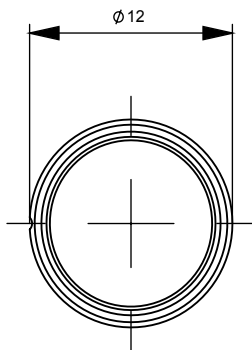
Frontal magnet support + Magnet 8810/013

Ordering p/n : **M9105/F26**



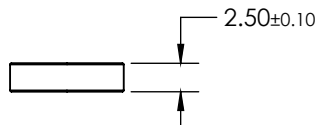
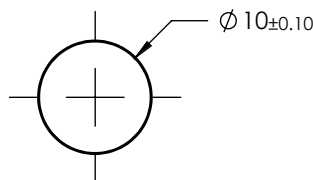
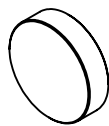
Male magnet support + Magnet 8810/013

Ordering p/n : **M9105/M10-01**



Magnet

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



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