

ACW4

Modular absolute rotary sensor

ACW4 is a series of modular hall effect rotary sensors. With its two-part design ACW4 offers maximum flexibility for installation.

The sensor is paired with a magnet of your choice (see magnet datasheet) and the non-contact operation ensure minimal wear and excellent lifetime.

ACW4 is a rugged and well proven sensor for the harshes conditions, used in off-road vehicles and mobile machinery with excellent shock and vibration resilience.



ELECTRICAL SPECIFICATIONS

Supply voltage	5 VDC, 11-30 VDC or 15 to 30 VDC 0-10 V or 0.5-4.5 V (load > 10 K Ω)
Output Analog	4-20 mA (load 500 Ω) Ratiometric 10-90% of Vcc (load > 10 K Ω)
Output PWM	1 kHz, 10-90 % (load > 10 K Ω)
Accuracy	± 0.1 mm (30...250 mm) $\pm 0.3\%$ on 360 $^\circ$
Repeatability	$\pm 0.1\%$ on 360 $^\circ$
Resolution	Single turn 12 bit
Electrical Angle	360 $^\circ$
Min. cycle time	1 ms
Start-up	< 1 ms
Response time	< 10 ms (PWM, 3L1 and 3L2 electronics) < 1 ms (all other options)
Current	< 40 mA
Protection	Overvoltage protection Reverse polarity protection Short circuit protection
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)
MTTFd	IEC 61000-4-4 Electrical fast transients (burst) 1 kV IEC 61000-4-6 Conducted disturbances, induced by RF-fields 10 Veff. Available on request

- Compact
- Modular two-part design
- Wide range of options
- Custom option available

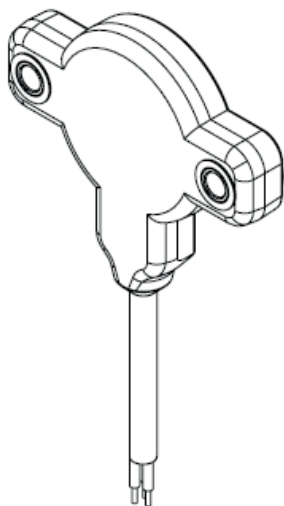
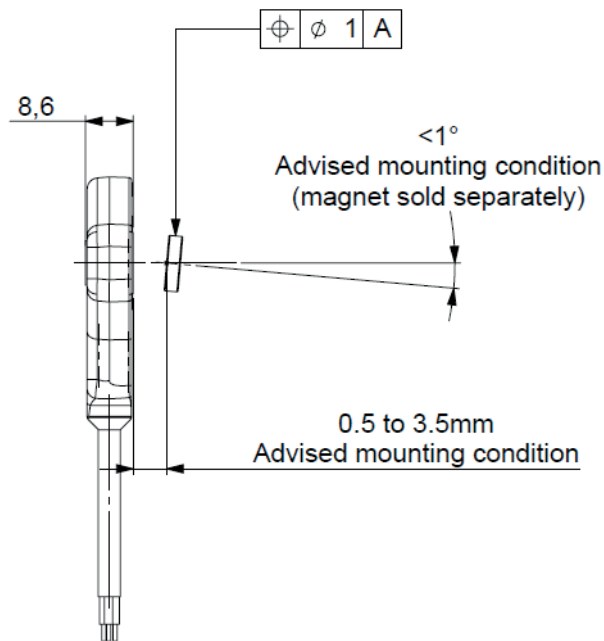
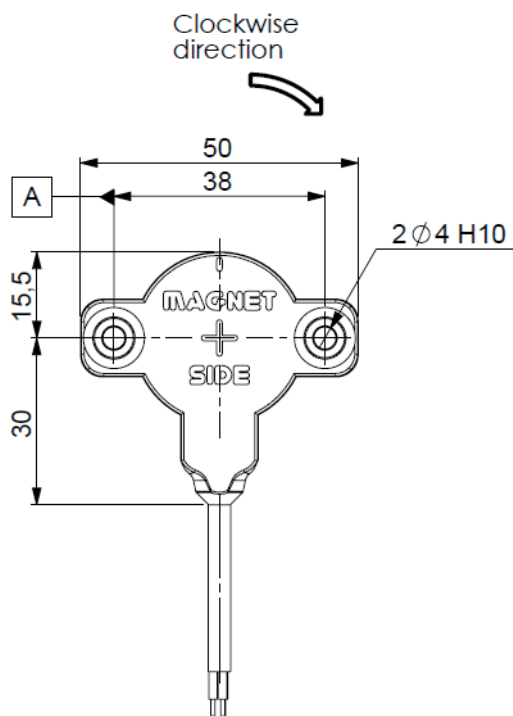
ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Operating temperature	-40 $^\circ$ C...+85 $^\circ$ C (-40 $^\circ$ C...+125 $^\circ$ C option)
Vibrations (EN60068-2-6)	≤ 200 m.s-2 (55 ... 2 000 Hz)
Shock (EN60068-2-27)	≤ 2000 m.s-2 (during 6 ms)
Ingress protection housing	IP67 (IP69K option)
Material electric connection	PVC cable
Material housing	Macromelt PA638
Material magnets	See specification magnet datasheet.
Weight	0.150 kg

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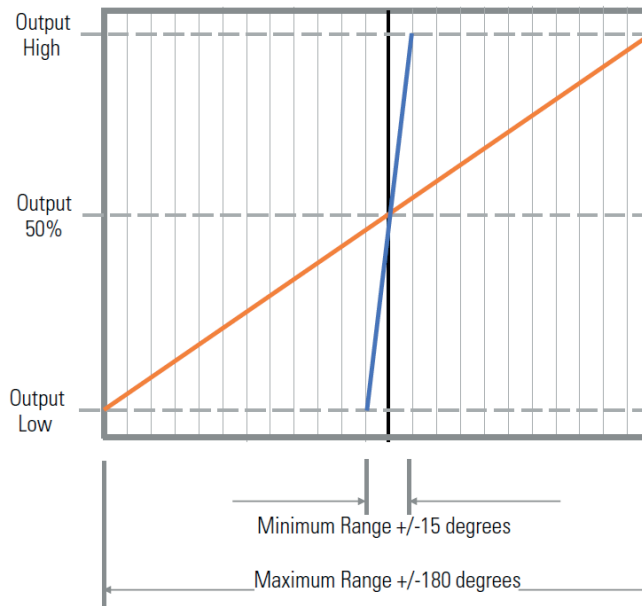
DIMENSIONS



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ACW4 ANALOG OUTPUT



CONNECTIONS

Function	Vcc	0 V	Analog output	Ground
Color	Brown	White	Green	Shield

ORDER INFORMATION

ACW4_00 // // 00 // L3R020

Example: ACW4_00//2LR1//00360//L3R020

1 Supply & Output

15 to 30 Vdc, 0-10V Output	3L1
11 to 30 Vdc, 0.5 - 4.5 V Output	5L2
15 to 30 Vdc, 4 - 20 mA Output	3L3
5Vdc +/- 5%, Ratiometric 10 - 90% of Vcc	2LR

2 Direction

CW (Clockwise positive)	1
CCW (Counterclockwise positive)	2

3 Range

Specify electric measuring angle at [x]	00xxx
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4 Connection

3 conductor PVC cable	L3
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5 Connection orientation

Radial cable 2m long	R020
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ORDER NOTIFICATION

Magnets are ordered separately, refer magnet datasheet.

Contact Regal for custom option requests.



Rev no.
2023_2 specifications subject to change without notice

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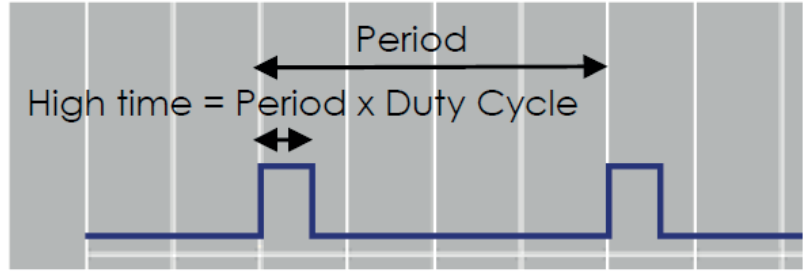
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ACW4 PWM OUTPUT

PWM CHARACTERISTICS

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



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.

CONNECTIONS

Function	Vcc	0 V	PWM output	Ground
Color	Brown	White	Green	Shield

ORDER INFORMATION

ACW4_00 // // 00 // L3R020

Example: ACW4_00//2LP1//00360//L3R020

1 Supply

11 to 30 VDC 5LP
5Vdc +/- 5% 2LP

2 Direction

CW (Clockwise positive) 1
CCW (Counterclockwise positive) 2

3 Range

Specify electric measuring angle at [x] 00xxx

4 Connection

3 conductor PVC cable L3

5 Connection orientation

Radial cable 2m long R020

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