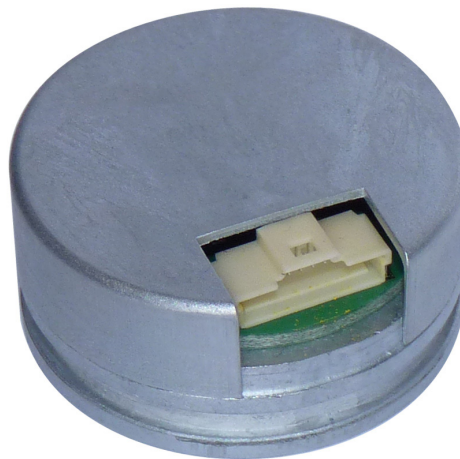
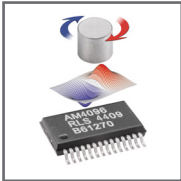


RMC35 commutation and incremental encoder solution



The RMC35 is designed for use in motor feedback applications requiring both A, B, Z incremental and U, V, W signals.

Robust non-contact OnAxis™ sensor technology provides ultimate long term reliability and with simple installation costs of ownership are minimal.

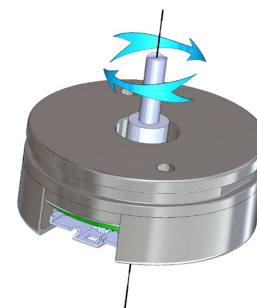
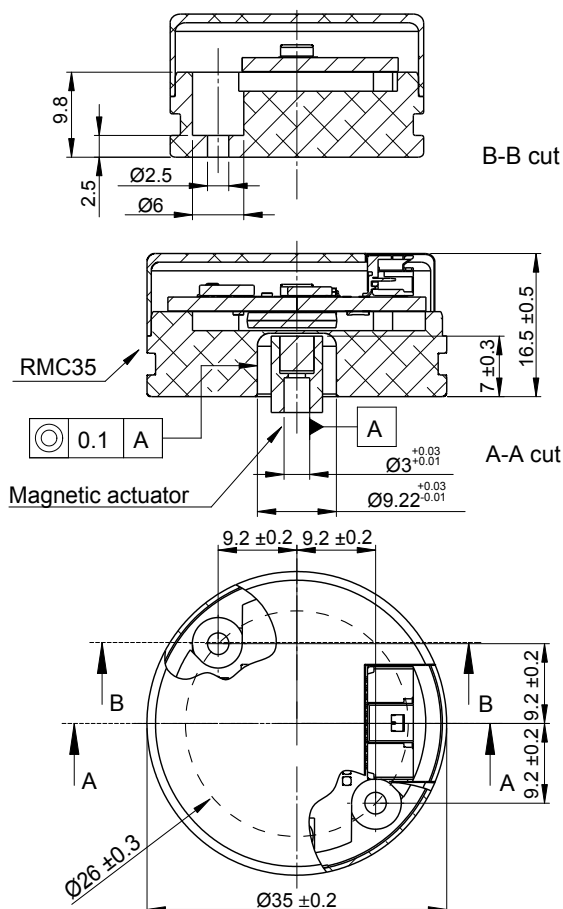
Installation is simplified with a range of magnetic actuators and mounting options for the encoder. A simple one time zero position programming then removes the need for careful adjustment of the encoder.

Resolutions are available from 64 to 2,048 pulses per revolution (256 to 8,192 counts per revolution with ×4 evaluation). U,V,W commutation signals are simultaneously output with 1 to 8 pole pairs (2 to 16 poles).

- Incremental resolution from 256 to 8,192 cpr
- Simple installation and setup
- U, V, W commutation signals with up to 16 poles (± 24 mA output drive)
- Industry standard incremental outputs (RS422)
- Operating speed to 30,000 rpm
- Compact - 35 mm diameter body
- Non-contact, frictionless design
- Low inertia

Installation drawing

Dimensions and tolerances in mm



Clockwise rotation of magnetic actuator.

Connector type

Molex 501568-1107

Mating connector (Not provided)

Molex 501330-1100 (crimp terminal 501334-xxxx)

Installation procedure

1. Install the magnetic actuator

Use glue to fix the magnetic actuator to the shaft (recommended LOCTITE 648 or LOCTITE 2701). Actuator should protrude by 7 mm.

2. Install the flange with the encoder module on the mounting surface

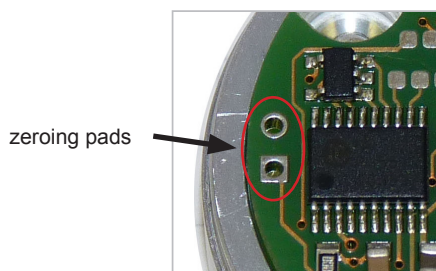
Screw the flange to the mounting surface using 2 screws (not provided).

3. Turn the power on

Plug in the mating connector and turn on the power

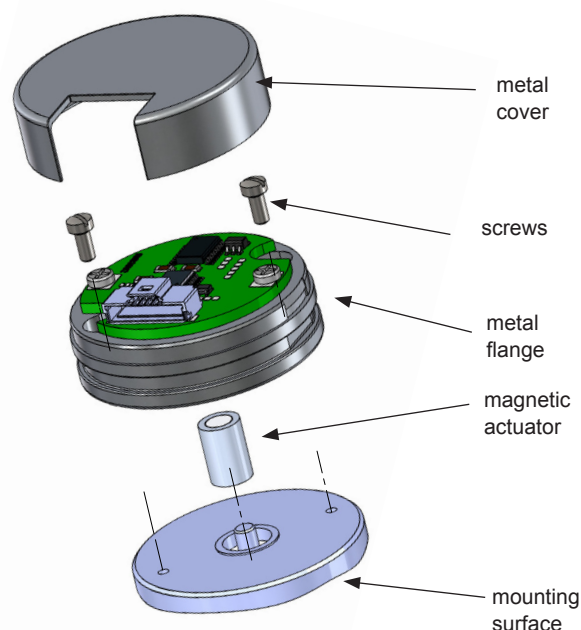
4. Zero the UVW signals

Move the motor to the required zero UVW position. Short together the two zeroing pads.



5. Cover the encoder with the metal cover

Place the metal cover over the encoder and gently press it in position. Be sure to align the opening with the connector.



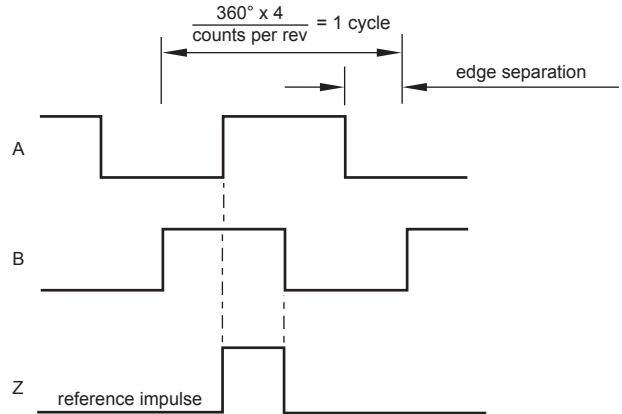
Product specification

Power supply	5 V $\pm$ 10 %
Power consumption	40 mA (not loaded)
Accuracy	$\pm 0.5^\circ$
Hysteresis	0.17° typ.
Incremental outputs	A, B, Z, A-, B-, Z- (RS422)
Incremental resolution	256, 320, 400, 500, 512, 800, 1,000, 1,024, 1,600, 2,000, 2,048, 4,096, 8,192 cpr
Commutation outputs	U, V, W (± 24 mA output drive)
Number of poles for commutation outputs	2, 4, 6, 8, 10, 12, 14, 16
Operating temperature	-40 °C to +85 °C (Limited by connector. All other components used are specified for operation from -40 °C to +125 °C.)
Weight	45 g

Incremental resolution (cpr)	Maximum speed (rpm)
8,192	4,000
4,096	8,000
2,048, 2,000	16,000
1,600	20,000
All other resolutions	30,000

Timing diagram - Incremental

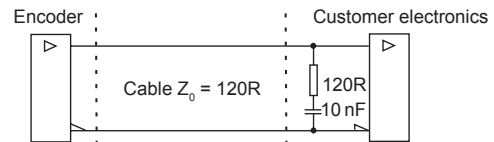
Complementary signals not shown



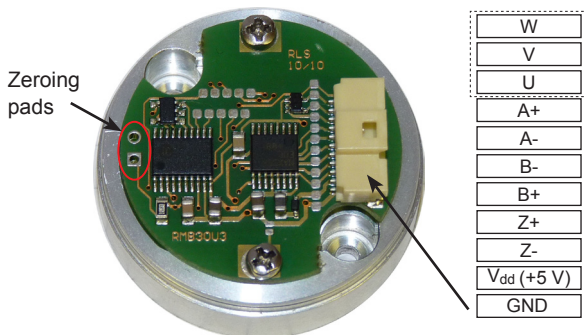
B leads A for clockwise rotation of magnet.

Recommended signal termination

For complementary signals only



Connections

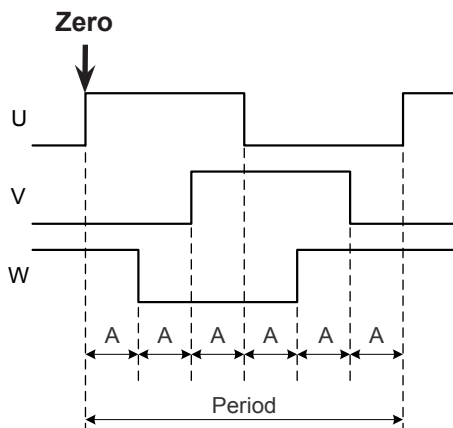


NOTE: For IC output pins 9, 10 and 11 are not connected.

Zero function

The UVW commutation outputs can be zeroed at any angle with a resolution of 0.0879 degrees. The first rising edge on the U signal will be reset at this point of zeroing. The reference impulse of the incremental signals is not changed by this procedure.

Timing diagram - Commutation for clockwise rotation



UVW outputs

Pole	A	Period	Pole pairs*
2	60°	360°	one
4	30°	180°	two
6	20°	120°	three
8	15°	90°	four
10	12°	72°	five
12	10°	60°	six
14	8.57°	51.42°	seven
16	7.50°	45°	eight

* Number of pole pairs equals number of periods per revolution.

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Document issues

Issue	Date	Page	Corrections made
01	21. 4. 2011	-	New document
02	22. 1. 2013	1,3	U, V, W specification added
03	11. 2. 2014	3	Resolution and maximum speed table added
04	24. 4. 2015	2	Changed dimensions and tolerances in installation drawing
		3	Pin out comment added for incremental output
		4	Ordering code updated with the incremental option and a new option of LOCTITE glue added

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