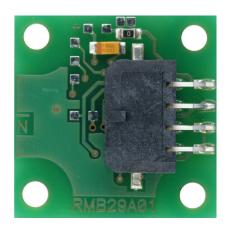


RMB29 angular magnetic encoder module







The RMB29 encoder module is designed for direct integration to high volume OEM applications. The low cost 29 mm square PCB is provided with a connector for easy installation.

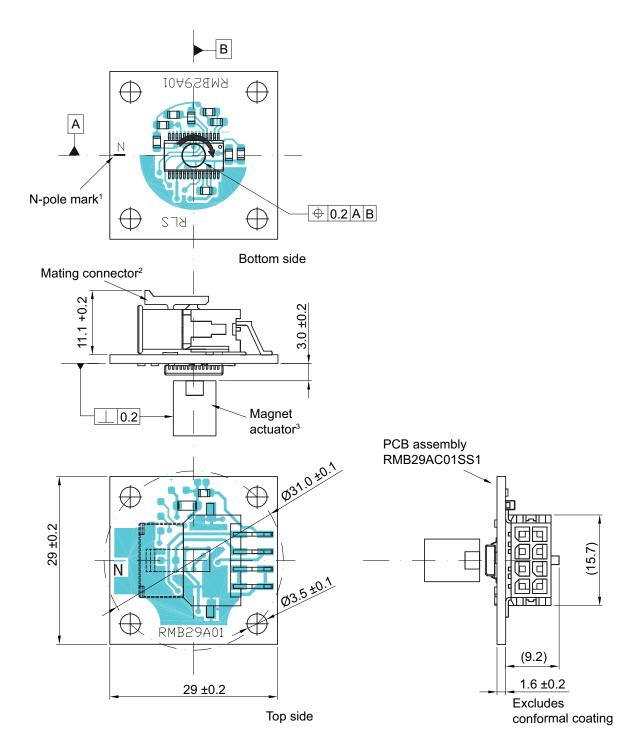
The encoder module consists of a magnetic actuator and a separate sensor board. Rotation of the magnetic actuator is sensed by a custom encoder chip mounted on the sensor board, and processed to give one sine/cosine wave per revolution.

The RMB29 can be used in a wide range of applications including motor control and industrial automation.

- 29 mm square module
- Low cost for OEM integration
- 5 V power supply version
- High speed operation to 60,000 rpm
- Analogue sine/cosine output
- Accuracy to ±0.5°
- RoHS compliant (lead free)
- Conformal coated
- RoHS compliant (lead free) - see Declaration of conformity

RMB29D01_07

RMB29AC01SS1 installation drawing



When N-pole marks of the magnet actuator and the PCB are aligned sine output = mid level and cosine output = max. level.



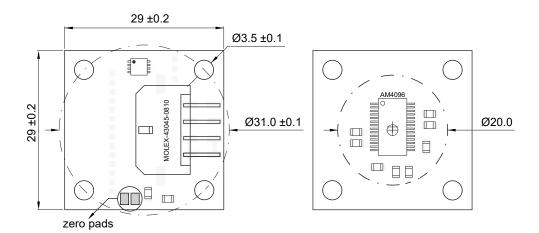
Clockwise (CW) rotation of magnet

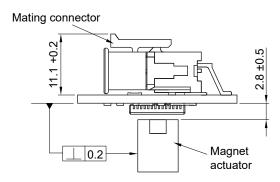
² Not supplied. See page 3 for details.

³ See page 4 for options.



RMB29Ex12BS66 installation drawing





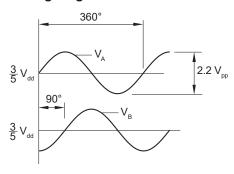
Data sheet

RMB29D01_07

RMB29AC - Analogue sinusoidal

Power supply	$V_{dd} = 5 V \pm 5 \%$
Current consumption	13 mA
Outputs	Signal amplitude: 1.1 V ± 0.2 V
Resolution	One sine/cosine wave per revolution
Accuracy	Typ. ±0.5°
Hysteresis	0.45°
Maximum speed	60,000 rpm
Operating temperature	-40 °C to +105 °C (limited by connector) All other components used are specified for operation from -40 °C to +125 °C.

Timing diagram



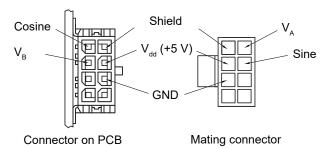
Conformal coating type - Polyurethane

Connections

Connector on board: MOLEX 43045-0810

Mating connector:

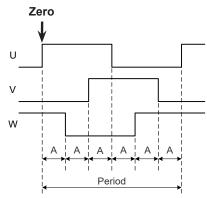
Shell: MOLEX 43025-0800 **8 pin crimp:** MOLEX 43030-0010



RMB29Ex - Commutation outputs

Power supply	5 V ±5 %
Current consumption	30 mA (not loaded)
Commutation outputs	U, V, W
Number of poles for commutation outputs	2, 4, 6, 8, 10, 12, 14, 16
Accuracy	Typ. ±0.5°
Maximum speed	30,000 rpm
Operating temperature	-40 °C to +105 °C

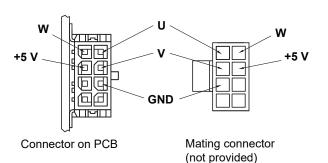
Timing diagram



Connections

Connector on board: MOLEX 43045-0810

Mating connector (not provided):
Shell: MOLEX 43025-0800
8 pin crimp: MOLEX 43030-0010



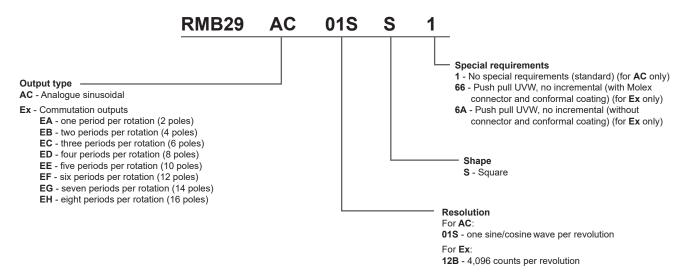
UVW outputs

Pole	Α	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.



Part numbering



NOTE: Not all combinations are valid.

Series	Output type	Resolution	Shape	Special requirements
	AC 01S			1
RMB29	EA/EB/EC/ED/EE/EF /EG/EH	12B	S	66 / 6A

Data sheet

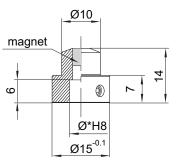
RMB29D01_07

Magnetic actuator and magnet ordering information

Actuator for integration onto shaft



Shaft = Ø*h7 Fixing: Grub screw provided



Part numbers:

For resolutions up to 9 bit absolute (512 cpr incremental)

RMA04A2A00 – Ø4 mm shaft
RMA05A2A00 – Ø5 mm shaft
RMA06A2A00 – Ø6 mm shaft
RMA08A2A00 – Ø8 mm shaft
RMA08A2A00 – Ø8 mm shaft
RMA37A2A00 – Ø3/8" shaft

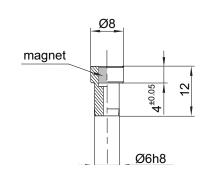
For resolutions from 10 bit absolute (800 cpr incremental) and above

RMA04A3A00 − Ø4 mm shaft
RMA05A3A00 − Ø5 mm shaft
RMA06A3A00 − Ø6 mm shaft
RMA08A3A00 − Ø8 mm shaft
RMA08A3A00 − Ø8 mm shaft
RMA37A3A00 − Ø3/8" shaft

Actuator for integration into shaft







Part numbers:

For resolutions up to 9 bit absolute (512 cpr incremental) $\mathbf{RMH06A2A00}$

For resolutions from 10 bit absolute (800 cpr incremental) and above ${\bf RMH06A3A00}$

With N-pole marker scribed to a ± 5° accuracy:

For resolutions up to 9 bit absolute (512 cpr incremental) **RMH06A2A02**

For resolutions from 10 bit absolute (800 cpr incremental) and above ${\bf RMH06A3A02}$

Hole = Ø6G7
Fixing: Glue (recommended – LOCTITE 648)

Magnet for direct recessing in non-ferrous shafts





Fixing: Glue (recommended - LOCTITE 648)

Part numbers:

For resolutions up to 9 bit absolute (512 cpr incremental) RMM44A2A00 (individually packed) – for sample quantities only RMM44A2C00 (packed in tubes)

For resolutions from 10 bit absolute (800 cpr incremental) and above **RMM44A3A00** (individually packed) – for sample quantities only **RMM44A3C00** (packed in tubes)



Head office

RLS merilna tehnika d.o.o.

Poslovna cona Žeje pri Komendi Pod vrbami 2 SI-1218 Komenda Slovenia

T +386 1 5272100 F +386 1 5272129 E mail@rls.si www.rls.si

Document issues

Issue	Date	Page	Amendments done
1	8. 12. 2009	-	New document
2	31.3.2014	3	New operating temperature
3	14. 2. 2017	3	Timing diagram drawing amended
4	14. 6. 2018	3 - 5	Ex output added
5	16. 7. 2018	5	Part number amended
6	8. 8. 2019	2-3	Installation drawings amended
7	30. 8. 2019	2	Installation drawings amended

This product is not designed or intended for use outside the environmental limitations and operating parameters expressly stated on the product's datasheet. Products are not designed or intended for use in medical, military, aerospace, automotive or oil & gas applications or any safety-critical applications where a failure of the product could cause severe environmental or property damage, personal injury or death. Any use in such applications must be specifically agreed to by seller in writing, and is subject to such additional terms as the seller may impose in its sole discretion. Use of products in such applications is at buyer's own risk, and buyer will indemnify and hold harmless seller and its affiliates against any liability, loss, damage or expense arising from such use. Information contained in this datasheet was derived from product testing under controlled laboratory conditions and data reported thereon is subject to the stated tolerances and variations, or if none are stated, then to tolerances and variations consistent with usual trade practices and testing methods. The product's performance outside of laboratory conditions, including when one or more operating parameters is at its maximum range, may not conform to the product's datasheet. Further, information in the product's datasheet does not reflect the performance of the product in any application, end-use or operating environment buyer or its customer may put the product to. Seller and its affiliates make no recommendation, warranty or representation as to the suitability of the product for buyer's application, use, end-product, process or combination with any other product or as to any results buyer or its customer might obtain in their use of the product. Buyer should use its own knowledge, judgment, expertise and testing in selecting the product for buyer's application, end-use and/or operating environment, and should not rely on any oral or written statement, representation, or samples made by seller or its affiliates for any purpose. EXC

RLS merilna tehnika d.o.o. has made considerable effort to ensure the content of this document is correct at the date of publication but makes no warranties or representations regarding the content. RLS merilna tehnika d.o.o. excludes liability, howsoever arising, for any inaccuracies in this document.