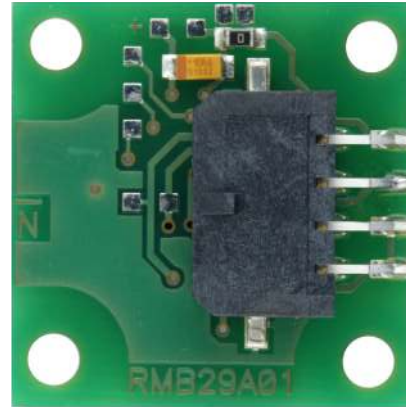


RMB29AC01SS1 – Analogue sine/cosine encoder



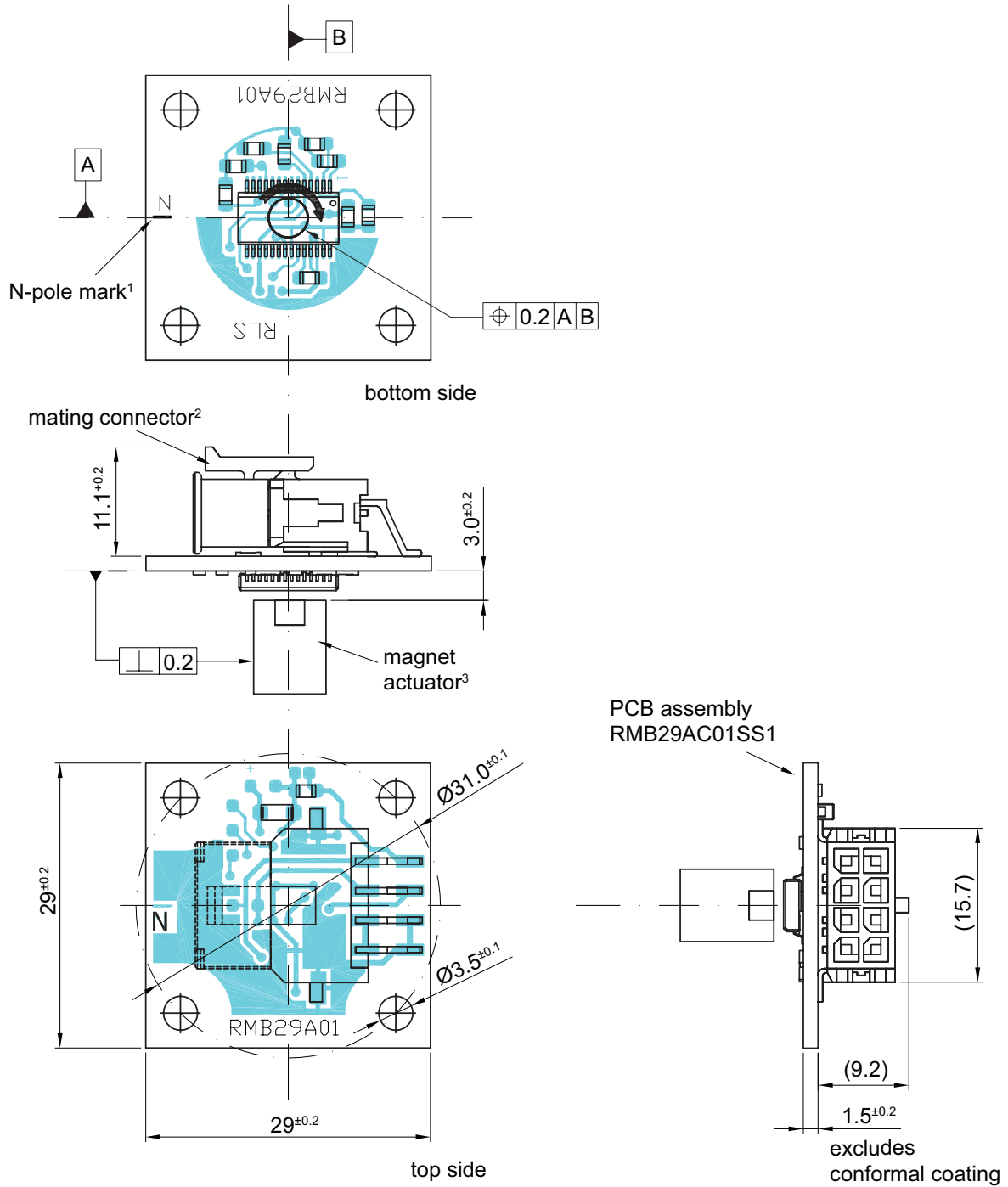
The RMB29 encoder module is designed for direct integration to high volume OEM applications. The low cost 29 mm square PCB is provided with a connector for easy installation.

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 $\pm 0.5^\circ$
- RoHS compliant (lead free)
- Conformal coated

RMB29 installation drawing



¹ When N-pole marks of the magnet actuator and the PCB are aligned sine output = mid level and cosine output = max. level.

² Not supplied. See page 3 for details.

³ See page 4 for options.



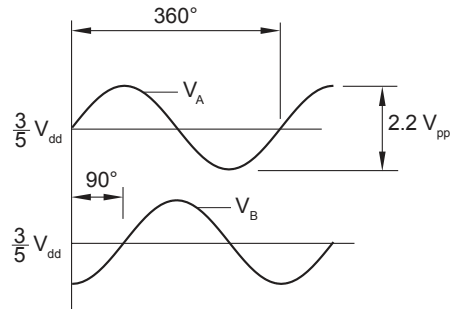
Clockwise (CW) rotation of magnet

RMB29AC – Analogue sinusoidal

Power supply	$V_{dd} = 5\text{ V} \pm 5\%$
Resolution	one sine/cosine wave per revolution
Power consumption	13 mA
Sin/Cos outputs	Signal amplitude: $1.1\text{ V} \pm 0.2\text{ V}$
Operating temperature	$-40\text{ }^{\circ}\text{C}$ to $+105\text{ }^{\circ}\text{C}$
Maximum speed	60,000 rpm
Accuracy*	$\pm 0.7^{\circ}$
Hysteresis	0.45°

* Worst case within operational parameters including magnet position and temperature.

Timing diagram



V_B leads V_A for clockwise rotation of magnet.

Conformal coating type - Polyurethane

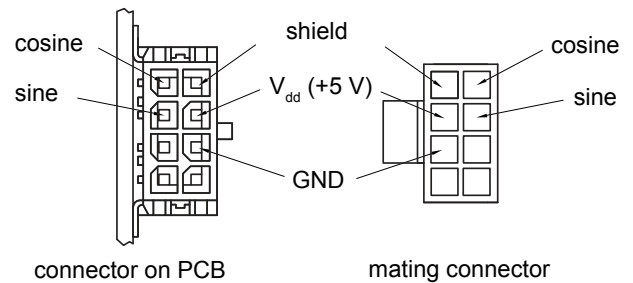
Connections

Connector on board: MOLEX 43045-0810

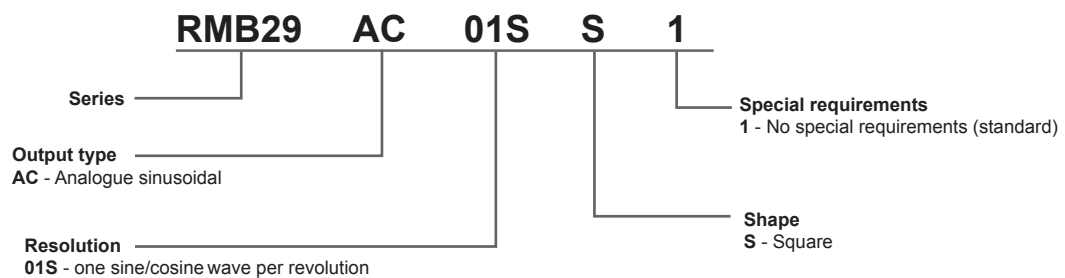
Mating connector:

Shell: MOLEX 43025-0800

8 pin crimp: MOLEX 43030-0010



RMB29 ordering code

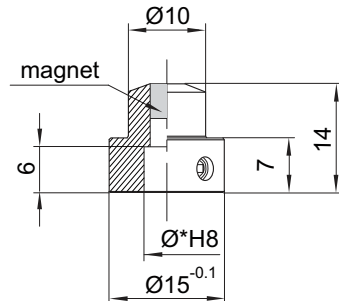


Magnetic actuator and magnet ordering information

Actuator for integration onto shaft



Shaft = \varnothing^*h7
Fixing: Grub screw provided

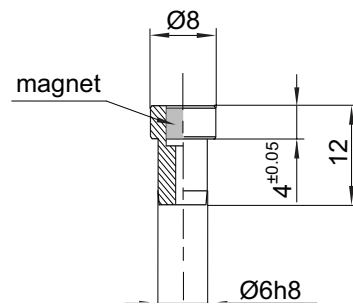


Part numbers:

For resolutions up to 9 bit absolute (512 cpr incremental)
RMA04A2A00 – $\varnothing 4$ mm shaft **RMA10A2A00** – $\varnothing 10$ mm shaft
RMA05A2A00 – $\varnothing 5$ mm shaft **RMA19A2A00** – $\varnothing 3/16''$ shaft
RMA06A2A00 – $\varnothing 6$ mm shaft **RMA25A2A00** – $\varnothing 1/4''$ shaft
RMA08A2A00 – $\varnothing 8$ mm shaft **RMA37A2A00** – $\varnothing 3/8''$ shaft

For resolutions from 10 bit absolute (800 cpr incremental) and above
RMA04A3A00 – $\varnothing 4$ mm shaft **RMA10A3A00** – $\varnothing 10$ mm shaft
RMA05A3A00 – $\varnothing 5$ mm shaft **RMA19A3A00** – $\varnothing 3/16''$ shaft
RMA06A3A00 – $\varnothing 6$ mm shaft **RMA25A3A00** – $\varnothing 1/4''$ shaft
RMA08A3A00 – $\varnothing 8$ mm shaft **RMA37A3A00** – $\varnothing 3/8''$ shaft

Actuator for integration into shaft



Part numbers:

For resolutions up to 9 bit absolute (512 cpr incremental)
RMH06A2A00

For resolutions from 10 bit absolute (800 cpr incremental) and above
RMH06A3A00

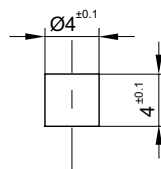
With N-pole marker scribed to a $\pm 5^\circ$ accuracy:

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

For resolutions from 10 bit absolute (800 cpr incremental) and above
RMH06A3A02

Hole = $\varnothing 6G7$
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

RENISHAW  is our worldwide sales support partner for Magnetic Encoders.

Australia
 T +61 3 9521 0922
 E australia@renishaw.com

Austria
 T +43 2236 379790
 E austria@renishaw.com

Brazil
 T +55 11 4195 2866
 E brazil@renishaw.com

Canada
 T +1 905 828 0104
 E canada@renishaw.com

The People's Republic of China
 T +86 10 8448 5306
 E beijing@renishaw.com

Czech Republic
 T +420 5 4821 6553
 E czech@renishaw.com

France
 T +33 1 64 61 84 84
 E france@renishaw.com

Germany
 T +49 7127 9810
 E germany@renishaw.com

Hong Kong
 T +852 2753 0638
 E hongkong@renishaw.com

Hungary
 T +36 23 502 183
 E hungary@renishaw.com

India
 T +91 20 6674 6751
 E india@renishaw.com

Israel
 T +972 4 953 6595
 E israel@renishaw.com

Italy
 T +39 011 966 10 52
 E italy@renishaw.com

Japan
 T +81 3 5366 5316
 E japan@renishaw.com

The Netherlands
 T +31 76 543 11 00
 E benelux@renishaw.com

Poland
 T +48 22 577 11 80
 E poland@renishaw.com

Russia
 T +7 495 231 1677
 E russia@renishaw.com

Singapore
 T +65 6897 5466
 E singapore@renishaw.com

Slovenia
 T +386 1 52 72 100
 E mail@rls.si

South Korea
 T +82 2 2108 2830
 E southkorea@renishaw.com

Spain
 T +34 93 663 34 20
 E spain@renishaw.com

Sweden
 T +46 8 584 90 880
 E sweden@renishaw.com

Switzerland
 T +41 55 415 50 60
 E switzerland@renishaw.com

Taiwan
 T +886 4 2473 3177
 E taiwan@renishaw.com

UK
 T +44 1453 524524
 E uk@renishaw.com

USA
 T +1 847 286 9953
 E usa@renishaw.com

**For all other countries
 Please contact RLS' head
 office**

T +386 1 52 72 100
 E mail@rls.si