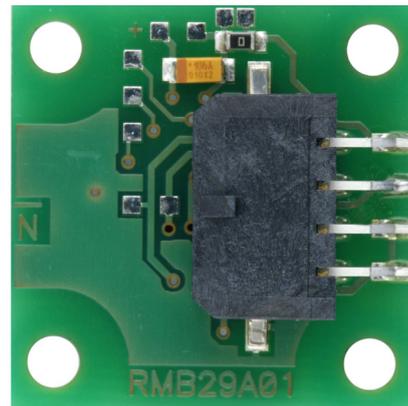


# RMB29AC01SS1 – Analogue sine/cosine encoder



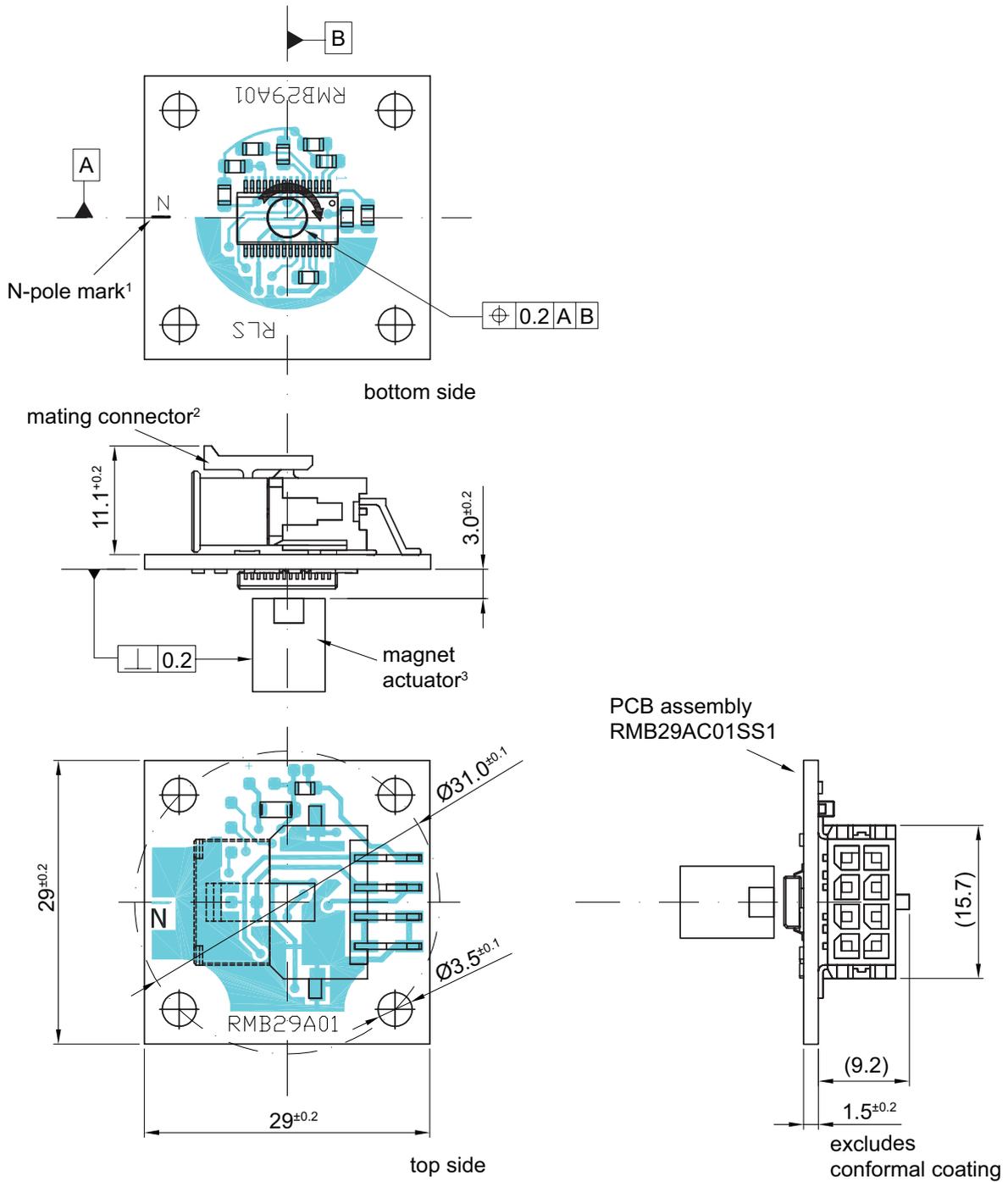
The RMB29 encoder module is designed for direct integration to high volume OEM applications. The low cost 29 mm square PCB is provided with a connector for easy installation.

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
- RoHS compliant (lead free) - see Declaration of conformity

Installation drawing



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

<sup>2</sup> Not supplied. See page 3 for details.

<sup>3</sup> See page 4 for options.



Clockwise (CW) rotation of magnet

## RMB29AC – Analogue sinusoidal

<b>Power supply</b>	$V_{dd} = 5\text{ V} \pm 5\%$
<b>Resolution</b>	one sine/cosine wave per revolution
<b>Power consumption</b>	13 mA
<b>Sin/Cos outputs</b>	Signal amplitude: $1.1\text{ V} \pm 0.2\text{ V}$
<b>Operating temperature</b>	-40 °C to +105 °C (limited by connector) All other components used are specified for operation from -40 °C to +125 °C.
<b>Maximum speed</b>	60,000 rpm
<b>Accuracy*</b>	$\pm 0.7^\circ$
<b>Hysteresis</b>	$0.45^\circ$

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

**Conformal coating type** - Polyurethane

### Connections

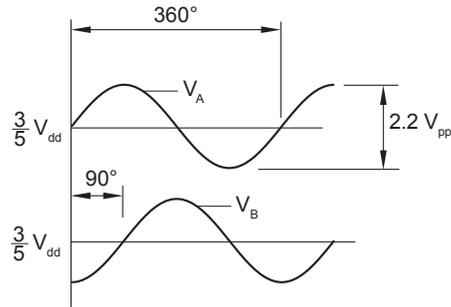
**Connector on board:** MOLEX 43045-0810

**Mating connector:**

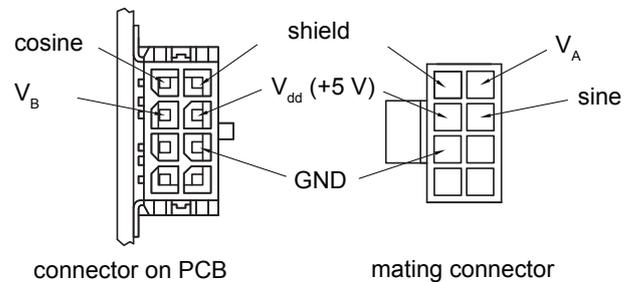
**Shell:** MOLEX 43025-0800

**8 pin crimp:** MOLEX 43030-0010

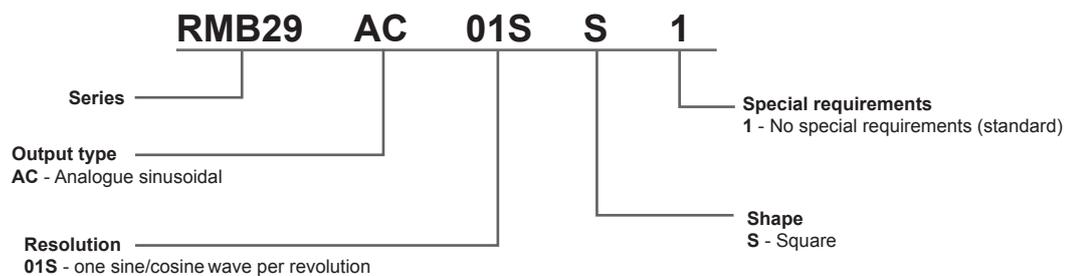
### Timing diagram



$V_A$  leads  $V_B$  for clockwise rotation of magnet.



### Ordering code

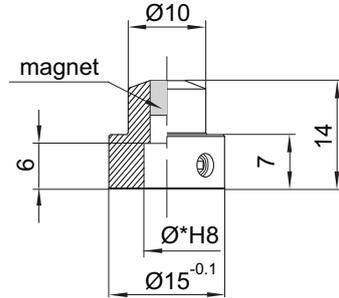


## Magnetic actuator and magnet ordering information

### Actuator for integration onto shaft



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

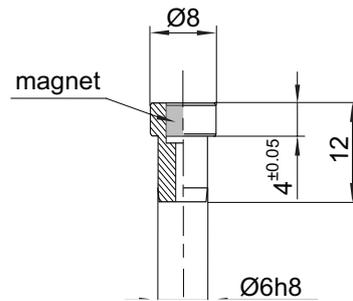


#### Part numbers:

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**

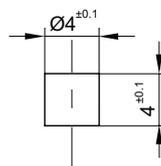
#### With N-pole marker scribed to a $\pm 5^\circ$ accuracy:

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

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## Document issues

Issue	Date	Page	Amendments done
1	8. 12. 2009	-	New document
2	31.3.2014	3	New operating temperature
3	1. 2. 2017	3	Timing diagram drawing amended