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

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

Not supplied. See page 3 for details.

See page 4 for options.
**RMB29AC – Analogue sinusoidal**

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

* 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

**Ordering code**

- RMB29 AC 01S S 1
  - Series
  - Output type: AC - Analogue sinusoidal
  - Resolution: 01S - one sine/cosine wave per revolution

**Timing diagram**

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

**Connections diagram**

- sine
- cosine
- shield
- $V_{dd}$ (+5 V)
- GND
- connector on PCB
- mating connector

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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
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

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 ± 5° 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 = Ø6G7
Fixing: Glue (recommended – LOCTITE 648)

Magnet for direct recessing in non-ferrous shafts

Fixing: Glue (recommended – LOCTITE 648)
Head office

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Document issues

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