

# AM256Q – Angular magnetic encoder IC

## Features

- Contactless angular position encoding over 360°
- Ideal for harsh environments due to magnetic sensing
- Complete system-on-chip solution
- 8 bit absolute encoder
- Output options:
  - Incremental
  - Serial SSI
  - Analogue sinusoidal
- Factory optimized linearity
- High rotational speed up to 60,000 rpm
- 5 V power supply
- Low power consumption: 13 mA typical
- Extended operating temperature range (-40 °C to +125 °C)
- SMD package QFN28
- RoHS compliant (lead free)

## General description

The AM256Q uses the same technology as the well known AM256 and AM256L integrated circuits but is offered in the compact QFN28 package (6 × 6 mm).

It offers Incremental and Serial (SSI) digital outputs at 8 bit resolution as well as Sinusoidal analogue outputs.

For detailed sensor information, please refer to the AM256 datasheet that can be found on [www.rls.si](http://www.rls.si). The AM256Q has the same features, specifications and performance in all respect to the AM256 except that parallel digital outputs are not provided.

## Applications

Non-contact position or velocity measurements:

- Motor motion control
- Flow measurement
- Robotics
- Camera positioning
- Front panel switches
- Workshop equipment
- Mobility aids

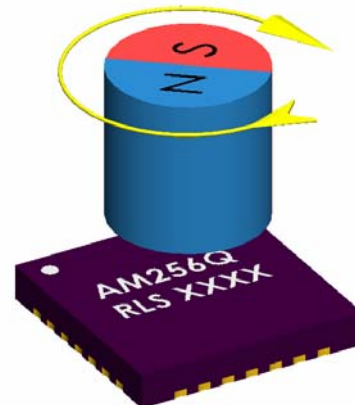
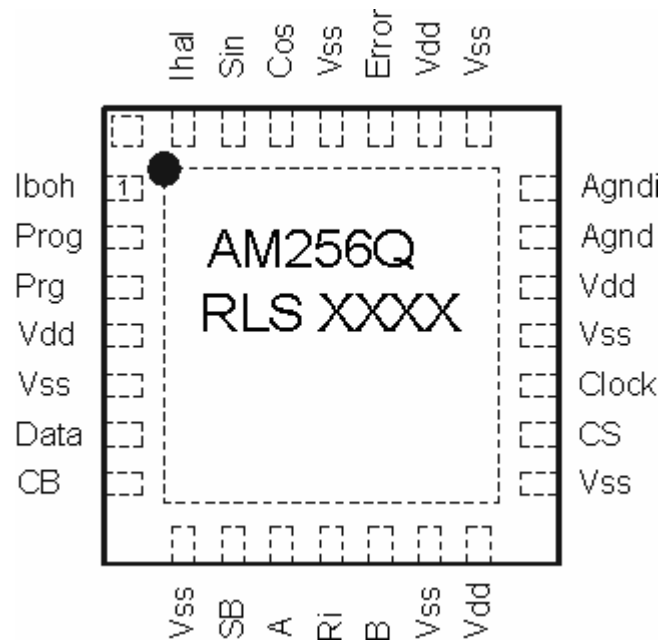


Fig. 1: AM256Q with magnet

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## Pin description



## Magnet position

The magnet can be placed below or above the device. The typical distance between the magnet and the sensors must be 1.8 mm for the recommended magnet.

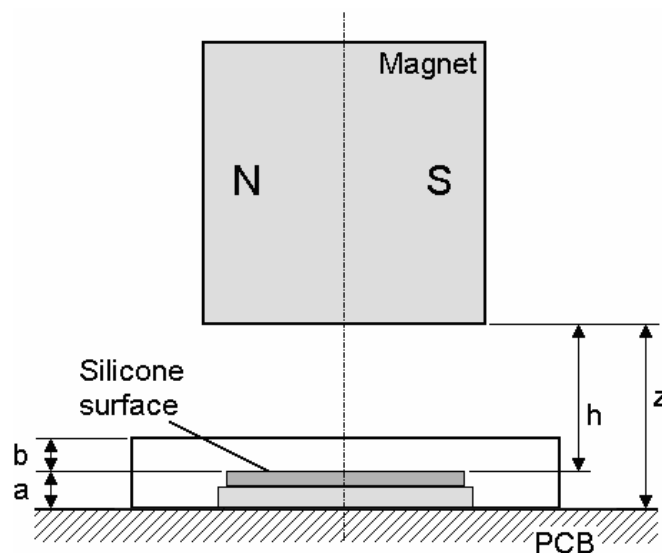
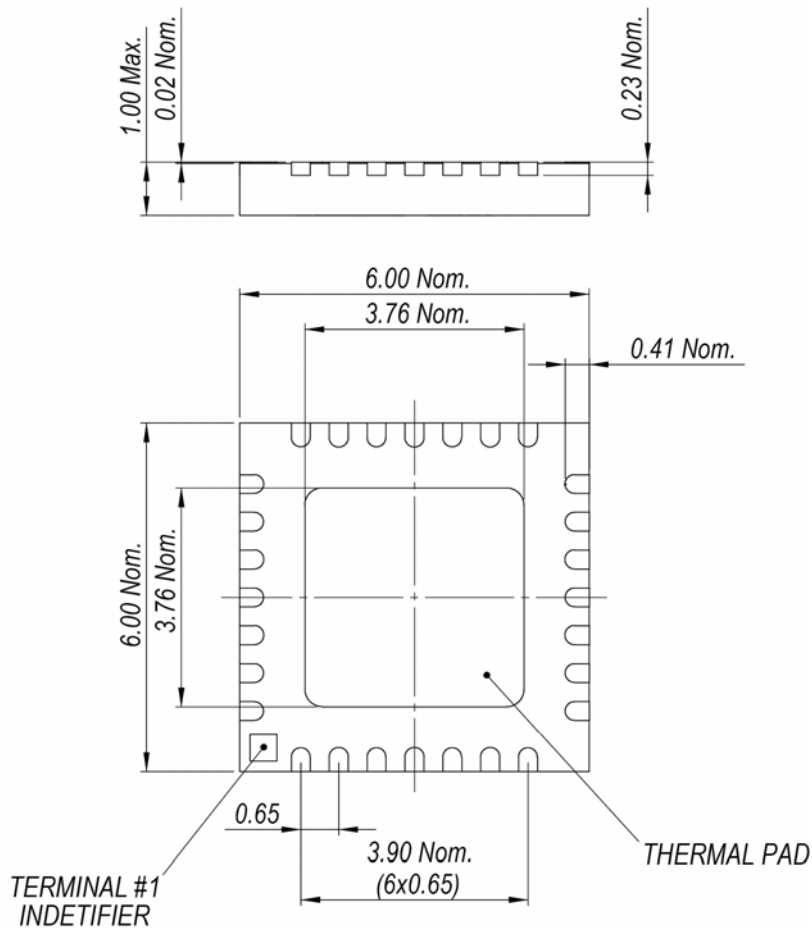


Fig. 15: Cross section of AM256 with dimensions


Parameter	Symb ol	Min.	Typ.	Max	Unit	Note
Distance sensors – PCB plane	a		0.55		mm	
Distance sensors – chip surface	b		0.45		mm	
Distance sensors – magnet	h	1.6	1.80	2.0	mm	For recommended magnet
Distance magnet – PCB plane	z	2.15	2.35	2.55	mm	For recommended magnet

## QFN28 Package Dimensions



## Ordering information

### 1. Angular Magnetic Encoder IC


Part Number	Description
<p><b>AM256Q</b></p> 	<p>AM256Q Angular Magnetic Encoder IC with default functionality</p> <p>Outputs:</p> <ul style="list-style-type: none"> <li>- SSI</li> <li>- Incremental</li> <li>- Unbuffered Sine/Cosine</li> <li>- Buffered Sine/Cosine</li> </ul> <p>QFN28 plastic package</p> <p>Delivered in tubes (61 units per tube)</p>

**NOTE:** order quantity must be a multiple of 61 (one tube).

**NOTE:** Can be delivered in reels (special order)

**NOTE:** magnet must be ordered separately! The Angular Magnetic Encoder IC part number does not include a magnet.

### 2. Magnet

Part Number	Description
<p><b>RMM44A2C00</b></p> 	<p>Diametrically polarized magnet</p> <p>Dimensions: <math>\varnothing</math> 4 mm x 4 mm</p>


## Head office

RLS merilna tehnika d.o.o.  
 Poslona cona Žeje pri Komendi, Pod vrbami 2  
 SI-1218 Komenda, Slovenia

T +386 1 5272100  
 F +386 1 5272129  
 E [mail@rls.si](mailto:mail@rls.si)  
[www.rls.si](http://www.rls.si)

## Document issues

Document issue	Date	Changes
2	8. 11. 2007	Changed layout Page 1: Changed the RLS colour to bright yellow Page 5: Corrected the contact information
3	12. 2. 2008	Page 5: Added the ordering information
4	14. 1. 2009	General: New layout
5	7. 5. 2012	Page 5: Buffered Sine/Cosine option added

**RENISHAW**  is our worldwide sales support partner for Magnetic Encoders.

**Australia**  
 T +61 3 9521 0922  
 E [australia@renishaw.com](mailto:australia@renishaw.com)

**Germany**  
 T +49 7127 9810  
 E [germany@renishaw.com](mailto:germany@renishaw.com)

**The Netherlands**  
 T +31 76 543 1100  
 E [benelux@renishaw.com](mailto:benelux@renishaw.com)

**Sweden**  
 T +46 8 584 90 880  
 E [sweden@renishaw.com](mailto:sweden@renishaw.com)

**Austria**  
 T +43 2236 379790  
 E [austria@renishaw.com](mailto:austria@renishaw.com)

**Hong Kong**  
 T +852 2753 0638  
 E [hongkong@renishaw.com](mailto:hongkong@renishaw.com)

**Poland**  
 T +48 22 577 1180  
 E [poland@renishaw.com](mailto:poland@renishaw.com)

**Switzerland**  
 T +41 55 415 5060  
 E [switzerland@renishaw.com](mailto:switzerland@renishaw.com)

**Brazil**  
 T +55 11 4195 2866  
 E [brazil@renishaw.com](mailto:brazil@renishaw.com)

**Hungary**  
 T +36 23 502 183  
 E [hungary@renishaw.com](mailto:hungary@renishaw.com)

**Russia**  
 T +7 495 231 1677  
 E [russia@renishaw.com](mailto:russia@renishaw.com)

**Taiwan**  
 T +886 4 2473 3177  
 E [taiwan@renishaw.com](mailto:taiwan@renishaw.com)

**Canada**  
 T +1 905 828 0104  
 E [canada@renishaw.com](mailto:canada@renishaw.com)

**India**  
 T +91 20 6674 6751  
 E [india@renishaw.com](mailto:india@renishaw.com)

**Singapore**  
 T +65 6897 5466  
 E [singapore@renishaw.com](mailto:singapore@renishaw.com)

**UK**  
 T +44 1453 524524  
 E [uk@renishaw.com](mailto:uk@renishaw.com)

**The People's Republic of China**  
 T +86 10 8448 5306  
 E [beijing@renishaw.com](mailto:beijing@renishaw.com)

**Israel**  
 T +972 4 953 6595  
 E [israel@renishaw.com](mailto:israel@renishaw.com)

**Slovenia (Head Office)**  
 T +386 1 52 72 100  
 E [mail@rls.si](mailto:mail@rls.si)

**USA**  
 T +1 847 286 9953  
 E [usa@renishaw.com](mailto:usa@renishaw.com)

**Czech Republic**  
 T +420 5 4821 6553  
 E [czech@renishaw.com](mailto:czech@renishaw.com)

**Italy**  
 T +39 011 966 1052  
 E [italy@renishaw.com](mailto:italy@renishaw.com)

**South Korea**  
 T +82 2 2108 2830  
 E [southkorea@renishaw.com](mailto:southkorea@renishaw.com)

**For all other countries**  
 Please contact RLS' head office  
 T +386 1 52 72 100  
 E [mail@rls.si](mailto:mail@rls.si)

**France**  
 T +33 1 64 61 84 84  
 E [france@renishaw.com](mailto:france@renishaw.com)

**Japan**  
 T +81 3 5366 5316  
 E [japan@renishaw.com](mailto:japan@renishaw.com)

**Spain**  
 T +34 93 663 3420  
 E [spain@renishaw.com](mailto:spain@renishaw.com)

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