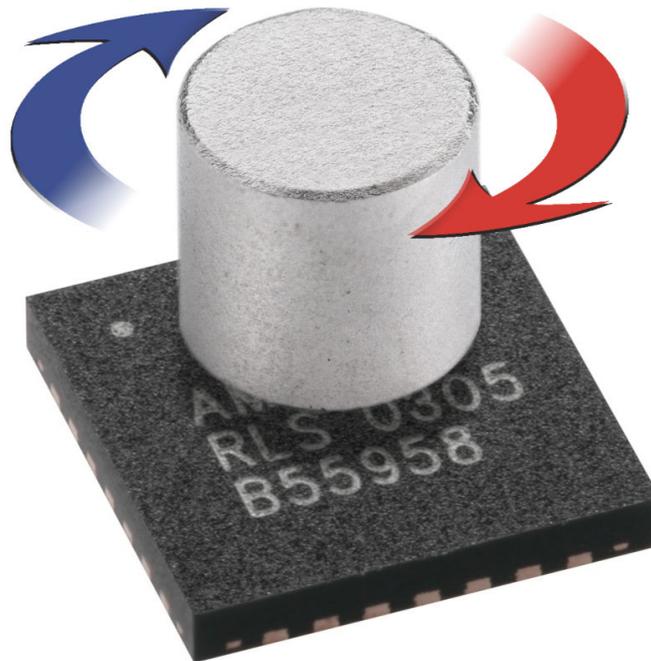


AM256Q – angular magnetic sensor IC



The AM256Q uses the same technology as the well known AM256 integrated circuit 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. The AM256Q has the same features, specifications and performance with respect to the AM256 except that parallel digital outputs are not provided.

With its compact size the AM256Q rotary magnetic sensor chip is especially suitable for different applications, including motor motion control, flow measurement, robotics, camera positioning, front panel switches, workshop equipment, mobility aids etc.

Output options:

- Incremental
- Serial SSI
- Analogue sinusoidal

- Contactless angular position encoding over 360°
- Ideal for harsh environments due to magnetic sensing
- Complete system-on-chip solution
- 8 bit absolute encoder
- 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
- Moisture sensitivity level 3
- RoHS compliant (lead free)

Pin description

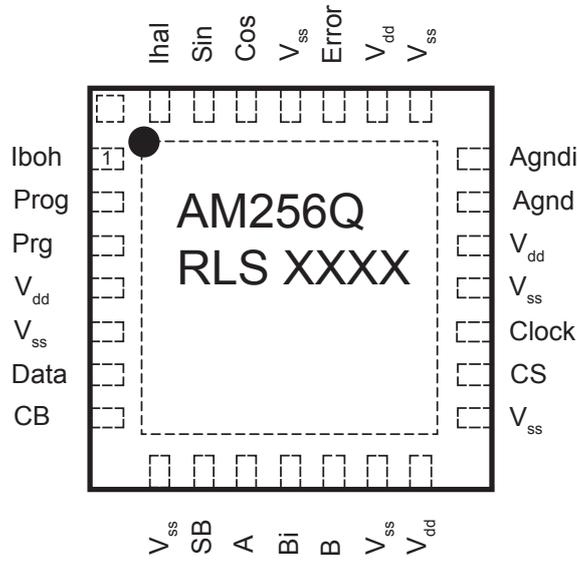


Fig. 1: Pin description

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.

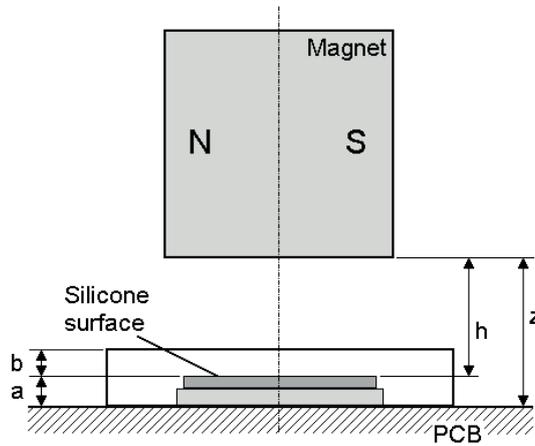


Fig. 2: Cross section of AM256 with dimensions

Parameter	Symbol	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

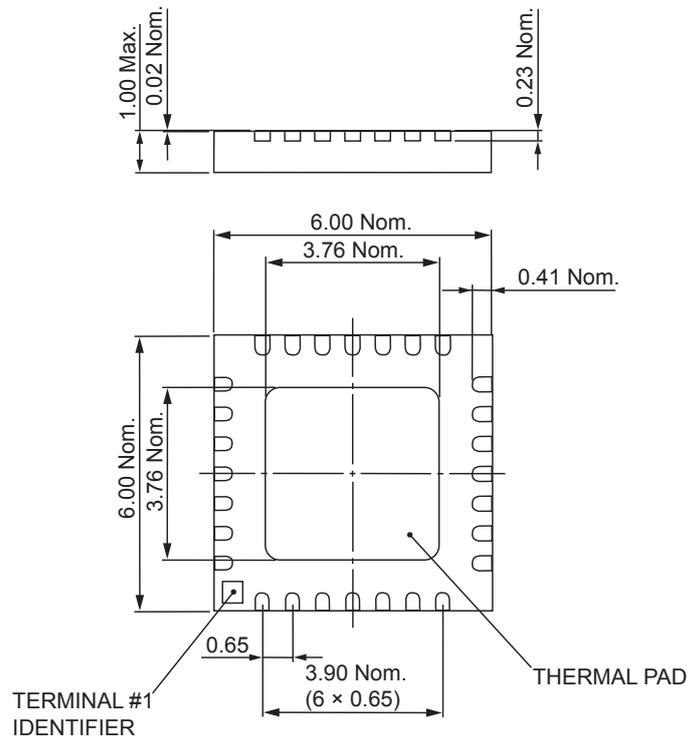


Fig. 3: Dimensional drawing

Ordering information

1. Angular magnetic encoder IC

Part number	Description
AM256Q 	AM256Q angular magnetic encoder IC with default functionality Outputs: - SSI - Incremental - Unbuffered Sine/Cosine - Buffered Sine/Cosine QFN28 plastic package Delivered in tubes (61 units per tube)

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
RMM44A2C00 	Diametrically polarized magnet Dimensions: $\varnothing 4$ mm \times 4 mm

3. Sample kits

Part number	Description
AM256QKIT 	AM256Q angular magnetic encoder IC with a magnet, delivered in an antistatic box. Outputs: Parallel, SSI, Incremental, Unbuffered Sine/Cosine.

NOTE: Maximum order quantity for AM256QKIT is 10 pcs. For larger quantities chip and magnet should be ordered separately.

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Document issues

Issue	Date	Page	Corrections made
2	8. 11. 2007	General	Changed layout
		1	Changed the RLS colour to bright yellow
		5	Corrected the contact information
3	12. 2. 2008	5	Added the ordering information
4	14. 1. 2009	General	New layout
5	7. 5. 2012	5	Buffered Sine/Cosine option added
6	28. 10. 2015	General	New layout
7	4. 1. 2016	1	Moisture sensitivity level added

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