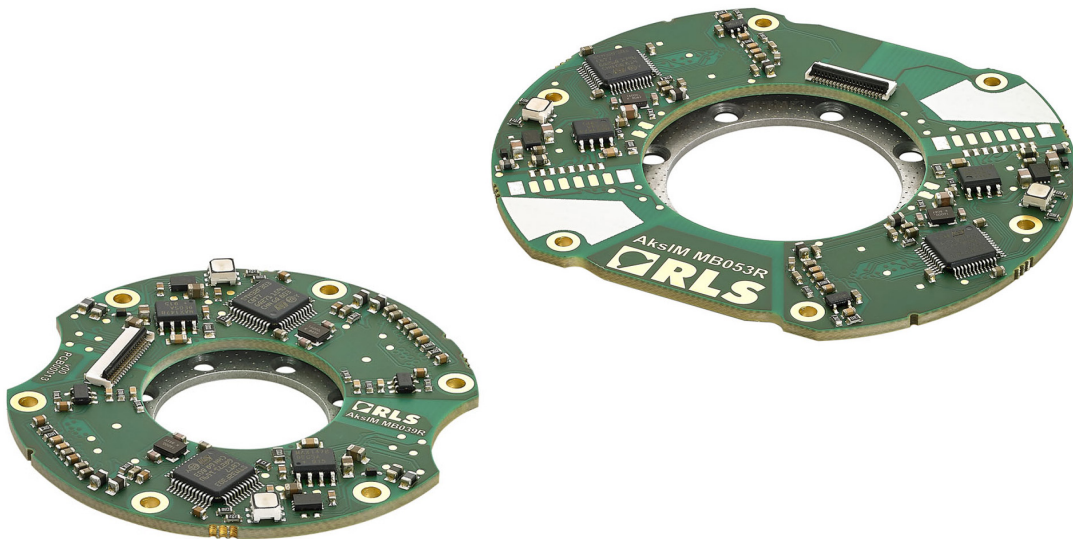


AksIM-2 redundant encoder



The AksIM-2 redundant encoder is an advanced series of non-contact, high performance off-axis absolute encoders suitable for applications requiring a higher level of safety. The AksIM-2 redundant encoder system consists of two identical, completely independent and electrically isolated encoder modules combined on one PCB and a separate axially magnetized ring.

With its compact and innovative design, the AksIM-2 redundant encoder system allows easier installation and is available in two dimensions. Two encoder modules on one PCB give much more freedom in designing advanced motion control systems to monitor the encoder position via two independent channels.

The redundant AksIM-2 encoder is available with the advanced BiSS communication protocol with differential signalling (RS422).

High performance is ensured with resolutions up to 20 bits and an accuracy better than $\pm 0.05^\circ$ when the encoder is installed within the required tolerance. Even better accuracy can be achieved using the self-calibration function of the encoder. The encoder operates from -40°C to $+85^\circ\text{C}$.

As with our proven series of standard AksIM-2 encoders, the redundant AksIM-2 encoder has a built-in advanced self-monitoring function that continuously checks several internal parameters. Error, warning and other status reports are available over BiSS register access and are indicated by LEDs.

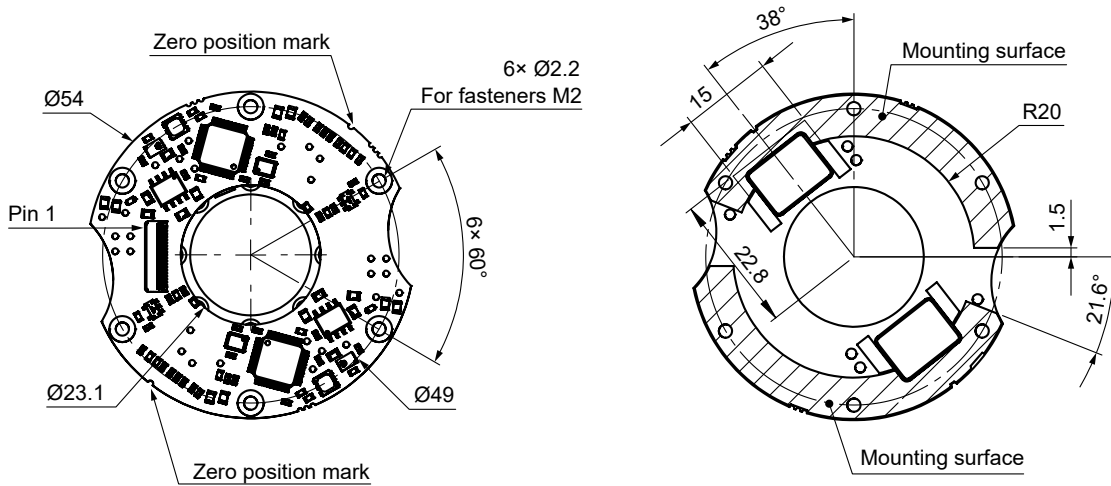
The redundant AksIM-2 encoders are compatible with the standard MRA039 and MRA053 AksIM-2 absolute magnetic rings, providing a reliable solution for a wide range of applications.

- Proven AksIM-2 true absolute encoder technology
- Redundant version for higher safety applications
- Simple installation and easy connection
- Resolutions up to 20 bits
- BiSS communication interface
- Excellent price-performance

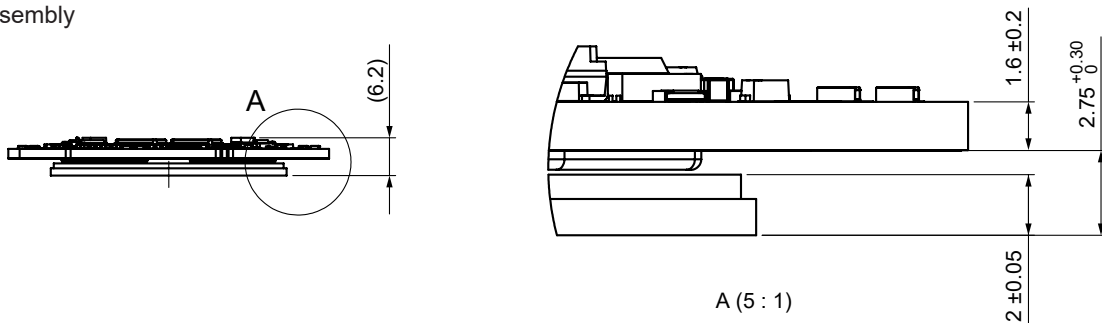
Dimensions and installation drawings

Dimensions and tolerances in mm.

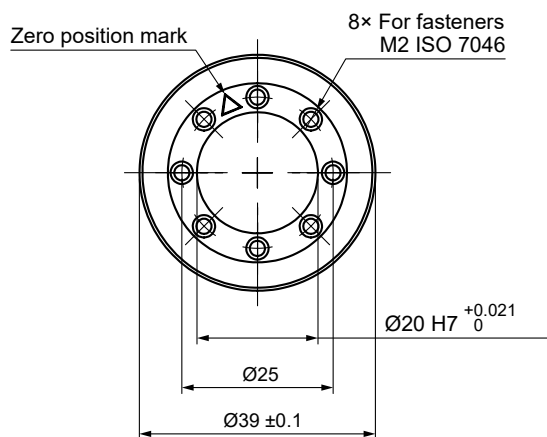
Readhead MB039 redundant



Encoder assembly



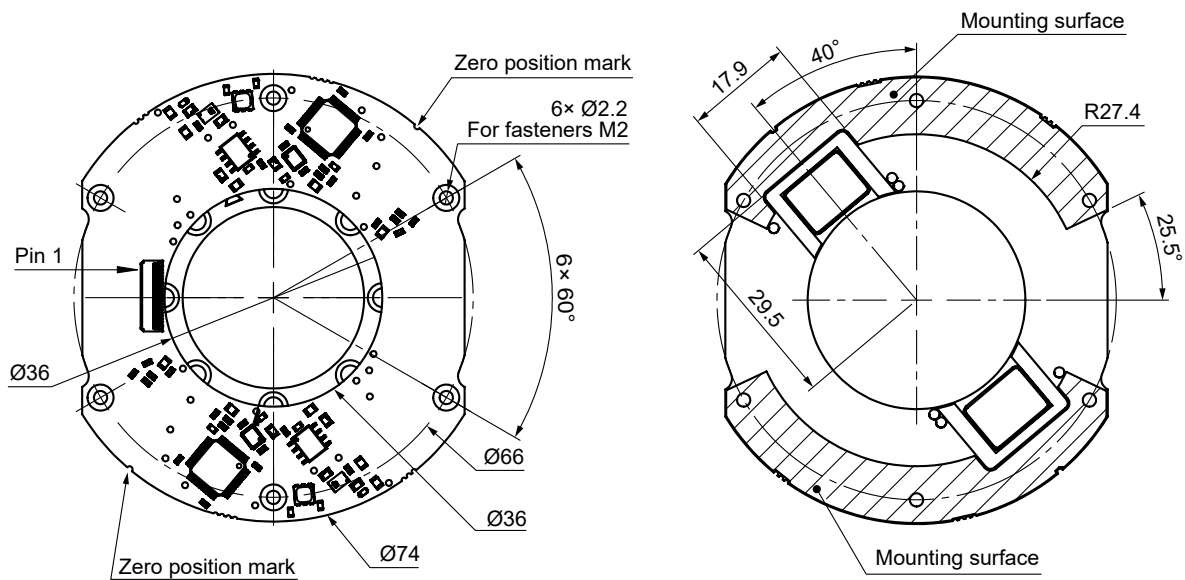
Ring MRA039



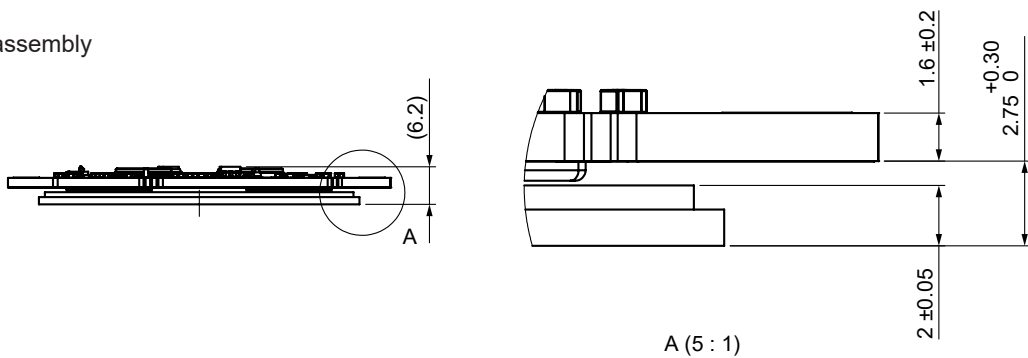
Dimensions and installation drawings

Dimensions and tolerances in mm.

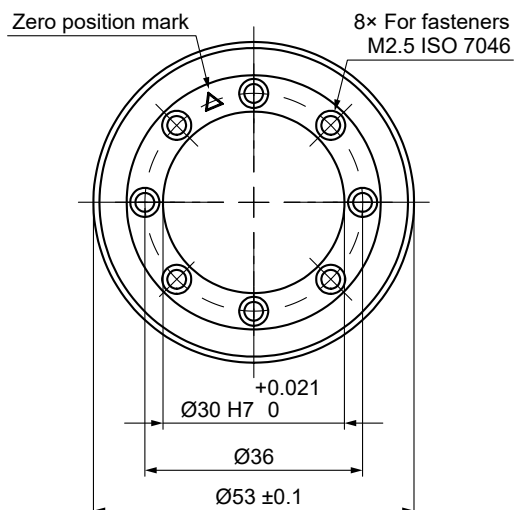
Readhead MB053 redundant



Encoder assembly



Ring MRA053



Technical specifications

Power supply (V_{DD})	5 V ± 10 %
Current consumption	2 × 135 mA (typ.)
Isolation	250 V _{AC}
Resolution	MB039 19 bit
	MB053 20 bit
Accuracy	±0.05°
Communication protocol	2× BiSS-C, RS422, bidirectional
Operating temperature	-40 °C to +85 °C *
Connector	Molex 503480-2000 (Right-Angle, with Flip Lock) FFC, 20-pin, 0.5 mm pitch, contacts on top and bottom side **

* For a wider temperature range please [contact RLS](#).

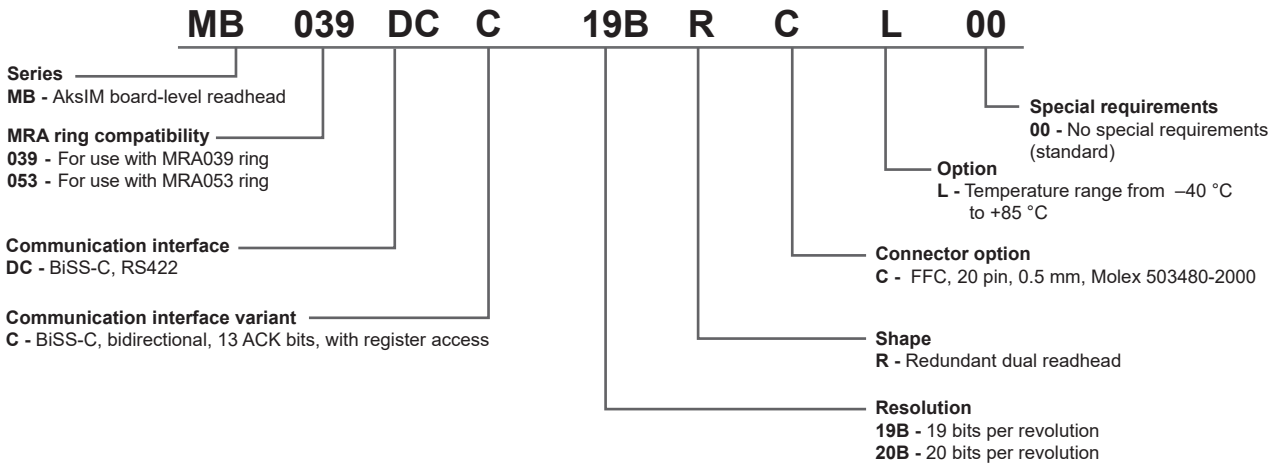
** Cable can be flipped, in such case Primary and Secondary encoders are interchanged.

Pinout

Pin	Signal name	Encoder
1	Chassis	Primary
2	V _{DD}	
3	GND	
4	Clock +	
5	Clock -	
6	GND	
7	Data +	
8	Data -	
9	GND	
10	Not connected	
11		
12	GND	Secondary
13	Data -	
14	Data +	
15	GND	
16	Clock -	
17	Clock +	
18	GND	
19	V _{DD}	
20	Chassis	

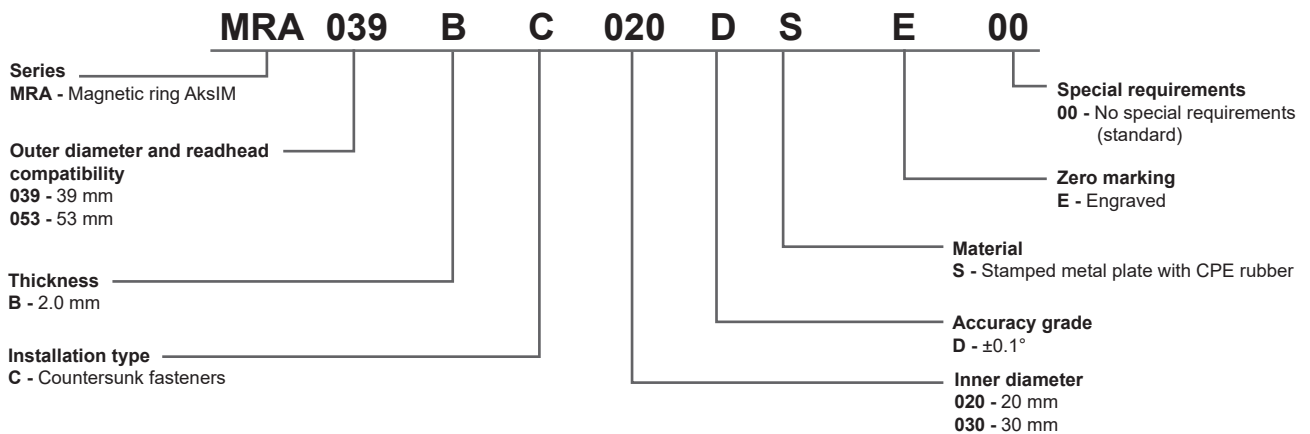
For more information, please see the MBD01 AksIM-2 data sheet, available for download on the [AksIM-2 website](#).

Readhead part numbering



Series	Ring Compatibility	Communication Interface	Variant	Resolution	Shape	Connector	Option	Special requirements
MB	039	DC	C	19B	R	C	L	00
	053			20B				

Ring part numbering



Series	Outer diameter and readhead compatibility	Thickness	Installation type	Inner diameter	Accuracy grade	Material	Zero marking	Special requirements
MRA	039	B	C	020	D	S	E	00
	053			030				

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Document issues

Issue	Date	Page	Amendments done
01	10. 4. 2020	-	New document

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