Data Sheet for Angle Sensors

Singleturn Hall effect kit absolute encoder — Series MKA

- Only 12.7 mm housing diameter
- Suitable for shaft diameters from 3 to 6.35 mm
- Mounting ring and push on magnet are part of delivery
- Supply voltage 5 VDC
- Output signal analogue absolute or PWM
- Integrated latching connector

Extremely compact Hall-effect kite encoder, consisting of encoder unit, mounting ring and matching plug-on magnet for the shaft. The plug-in connection allows the signal line to be easily disconnected from the evaluation unit, which improves handling during installation and servicing.

Electrical Data	Analogue	PWM
Effective electrical angle of rotation 1.)	360°	
Independent linearity (best straight line) 1.)	±0.14% @ 25°C	
Output signal	0 to 5 V analogue	5 V PWM
Resolution	12 Bit	12 Bit
Update rate	0.14 ms	1.1 ms PWM-Frequency 920 Hz (min. 874 Hz, max. 966 Hz)
Supply voltage	5 V ±10 %	
Power consumption (no load)	16 to 20 mA	
Output load	≥ 10 kOhm	

Mechanical and environmental data, Miscellaneous	
Mechanical angle of rotation 1.)	360° without stop
Lifetime 2.)	Mechanically unlimited
Max. operational speed	10.000 rev./min.
Operating temperature range	-40 to +125°C
Storage temperature range	-40 to +125°C
Vibration (IEC 68-2-6, Test Fc)	(5 Hz to 2 kHz) 20 g
Housing diameter	12.7 mm
Housing depth	14.2 / 16.9 mm
Shaft diameter	3 to 6.35 mm
Shaft type	Push-on magnet for solid shafts

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Mechanical and Environmental Data, Miscellaneous	
Connection type	Connector Molex 505568 (encoder side), Customer side e. g. Molex 5055650301 with contacts 5054311000, Connection cable available!
Connection position	Axial
Sensor mounting	Mounting ring
Mass	Magnet + magnet holder + kit encoder + mounting ring: app. 20 g
Included in delivery	Kit Encoder, mounting ring, push on magnet and magnet holder Not included in delivery: 2 pcs. lens head screws 4-40 x 1/4" for mounting of the mounting ring
Fastening torque of the mounting screws for mounting ring	0.67 Nm
Material mounting ring	Plastic
Material housing	Plastic
Material magnet holder	Metal

Immunity	
ESD, IEC 61000-4-2	± 4 kV

1.) According IEC 60393
2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

Order Code			
Description	Selection: **standard=black/bold**, possible options=grey/italic		
Series	**MKA**		
Shaft diameter:			
Ø3 mm		*3*	
Ø3.17 mm		*3,17*	
Ø4 mm		*4*	
Ø5 mm		*5*	
Ø6 mm		**6**	
Ø6.35 mm		*6,35*	
Supply voltage / Output signal:			
V_{SUP}=5 V ±10% / OUT = 0 to 5 V (ratiometric)			**0505**
V_{SUP}=5 V ±10% / PWM			*05PWM*

Order example MKA

Requirement:
Shaft diameter 6.00 mm, V_{SUP} = 5 V, output signal OUT = 0 to 5 V (ratiometric)

Example for order code: MKA 6 0505

For higher quantities or on-going demand, additional options are available as described below

- Special connector and cable design

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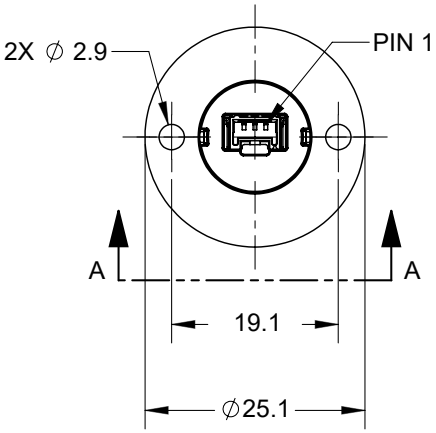
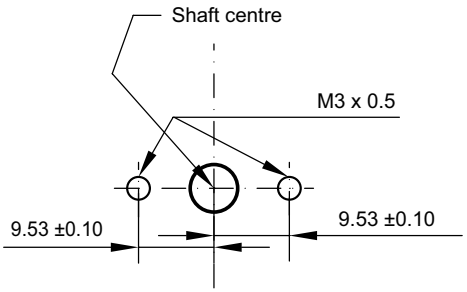
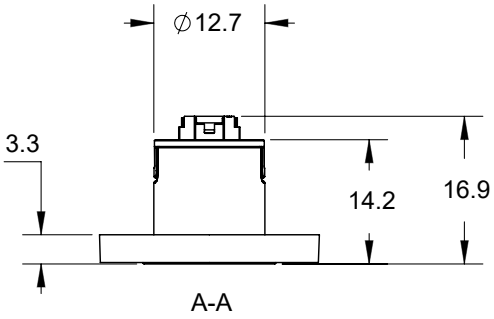
Drawing



Mounting sketch



Axial mounting tolerance:
5.6 +0.5/-0.4 mm



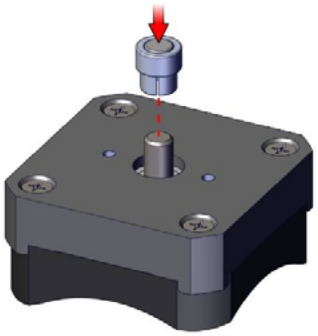
PIN #	Function
1	+5 V Supply
2	Output
3	GND

Mounting instruction

ESD guidelines must be observed during transport, storage, assembly and operation.

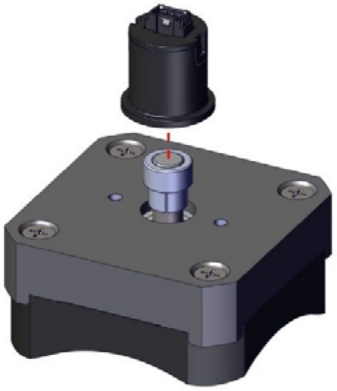
Step 1:

Push the plug-in hub with the magnet onto the shaft, as shown in the picture on the right. Make sure there's no space between the shaft tip and the plug-in hub.



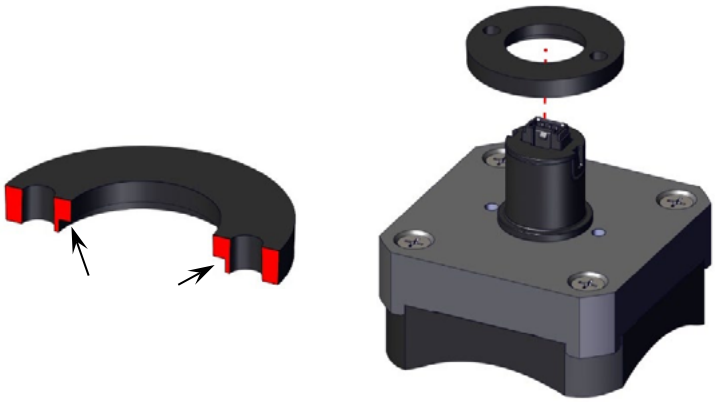
Step 2:

Put the encoder on top of the magnet so that it is resting on the mounting surface.



Step 3:

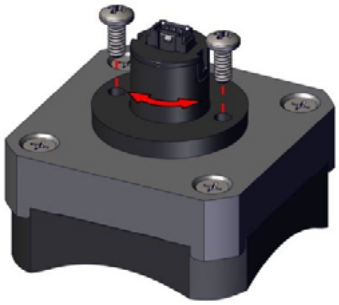
Place the mounting ring over the encoder, ensuring that the recess points downward towards the mounting surface.



Step 4:

Fasten the mounting ring with 2 pcs. pan-head screws (recommendation: 4-40 x 1/4"). Position the mounting ring over the encoder so that the recess points downwards towards the mounting surface.

If a zero point adjustment is required, do not fully tighten the screws of the mounting ring. The zero point can be aligned by turning the encoder housing. Once the zero point has been adjusted, tighten the screws of the mounting ring.



Recommendation for mounting screws: 4-40 x 1/4"
Max. allowed tightening torque 0.67 Nm.

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Cable 136831 – not included in delivery!