MAB28A Series

Single Turn Contactless Encoder
(Hall Effect, Analog)

- Any angle; 20º to 360º (redundant output option)
- Analog output: Voltage (0..5V, 0..10V)
- Analog output: Current (0..20mA, 4..20mA))
- 12 bit resolution
- IP65 protection grade
- > 50 mio. shaft revolutions

The series MAB28A is a 28mm diameter, precision, servo-mount, absolute encoder capable of providing an analog 0..5V, 0..10V, 0..20mA or 4..20mA output at any angle up to 360º (20º minimum).

Electrical Data			
Effective electrical angle of rotation	360° or any fraction. Minimum angle 20° (factory set)		
Independent linearity	±0.3%		
Supply voltage	5V ±10%	9..30V	15..30V
Output signal	0..5V ratiometric	0..5V, 0..20mA, 4..20mA	0..5V, 0..10V
Output load	Voltage output: ≥ 5k Ohm	Current output: ≤ 500 Ohm	
Resolution	12 bit (4096 steps)		
Current consumption (no load)	< 8 mA (< 20 mA with high speed update rate option)		
Update rate	0.6 ms (0.2 ms option)		
Insulation voltage	1000 VAC @ 50 Hz, 1 min.		
Insulation reistance	2 MOhm @ 500 VDC, 1 min.		

Mechanical and Environmental Data	
Mechanical angle of rotation	360º (continuous)
Maximum rotational speed	6000 rpm
Life expectancy	> 50 mio. shaft revolutions
Starting torque	< 2mN•m (20gf•cm)
Bearing	2 precision ball bearings
Protection class	IP65
Operating temperature	-30ºC...+80ºC
Storage temperature	-40ºC...+80ºC
Vibration	±1.5mm / 20 g / 10 to 2000 Hz / 16 frequency cycles (3x4 h)
Shock	50 g / 11 ms / halfsine (3x6 shocks)
Housing material	chromed aluminim
Shaft material	stainless steel
Weight	approx. 90 g

Note: Customers should test and verify device performance in any given application. General specifications values are measured at +15°C ~ +35°C. Please consult us if application is in higher or lower temperatures. Shaft modifications are possible, please consult us. Specifications subject to change without notice.

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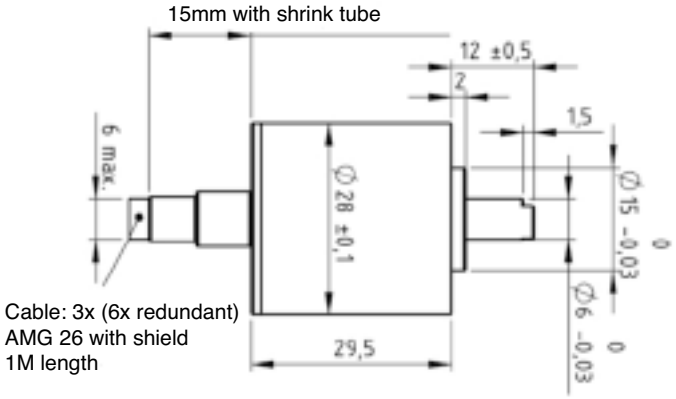
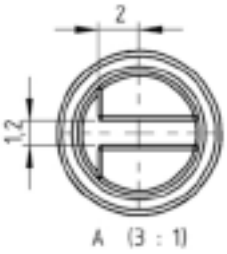
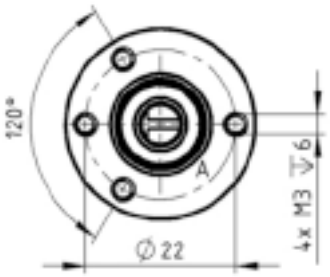
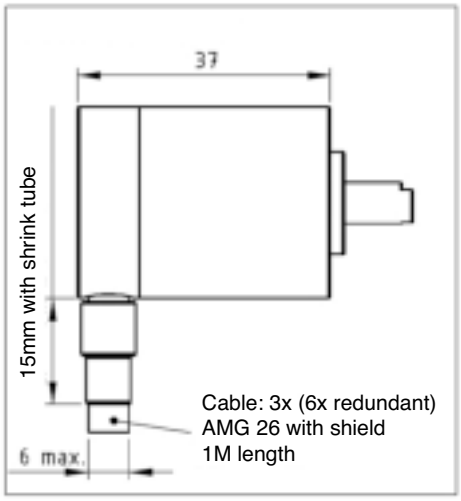
Dimensions (mm)







Option: Radial cable output



Cable assignment		
	Analog	**Analog redundant**
black	GND	GND 1
red	VSUP	VSUP 1
broun	OUT	OUT 1
orange	-	GND 2
yellow	-	VSUP 2
green	-	OUT 2

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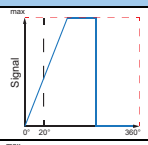
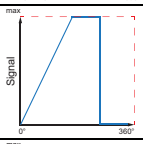
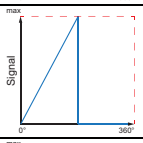
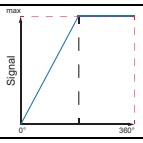
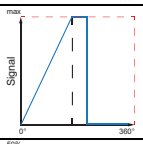
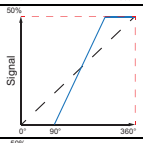
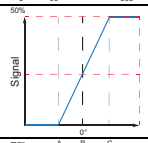
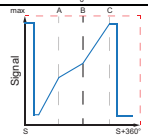
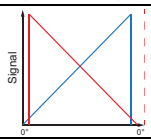
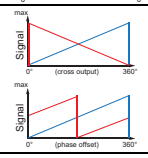
P3 AMERICA
PRECISION SENSORS & JOYSTICKS

Electrical Options		
Modified effective electrical angle The measuring range can be programmed from 0-20° to 0-360°. In the basic type with stop, the zeropoint is always at CCW position. If not specified, the signal level is programmed according EA1A. On request it is also possible to set the zeropoint at CW position.	CWxxx / CCW xxx	
Electrically non effective angle - Delta 1/2 If the electrical angle is programmed below 360°, the remaining electrically non effective angle is divided in two equal parts: High level & Low level (Delta 1⁄2).	EA1A	
Electrically non effective angle - Low-Level If the electrical angle is programmed below 360°, the signal fall low after reaching the maximum level.	EA1b	
Electrically non effective angle - High-Level If the electrical angle is programmed below 360°, the signal level remains high after reaching the maximum level.	EA1c	
Electrically non effective angle - Variable Level If the electrical angle is programmed below 360°, the remaining electrical non effective angle can be divided into high and low level in any ratio according to customer request.	EA1d	
Zero point positioning The mechanical zero point is aligned with the marking on the sensor housing. The electrical zeropoint can be alligned to the mechanical zeropoint. Zeropoint can be programmed at any offset.	EA2	
Center Position The effective electrical angle is aligned with the mechanical zero point in such a way that equal effective angles in both rotating directions are acheived. Center point can be programmed at any offset.	EA3	
Multipoint programming Allows output characteristics which consists of 3 to 6 rising or falling linear segments. Minimum and maximum signal levels can be defined within the total electrical angle. First and last linear segment (min/max) is always horizontal. Within maximum and minimum position, 1 to 3 calibration points can be set.	EA4	
Rotational direction The standard direction of rotation is Clockwise (CW). It is also possible with this option to change the direction from Clockwise(CW) to Counterclockwise (CCW).	CW / CCW	
2-channel-output This is made up of a hall sensor chip consisting of 2 galvanically separated sensing elements.One magnet provides a magnetic field simultaneously for both elements. Both elements can be programmed identically or independently	MAB...X	

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