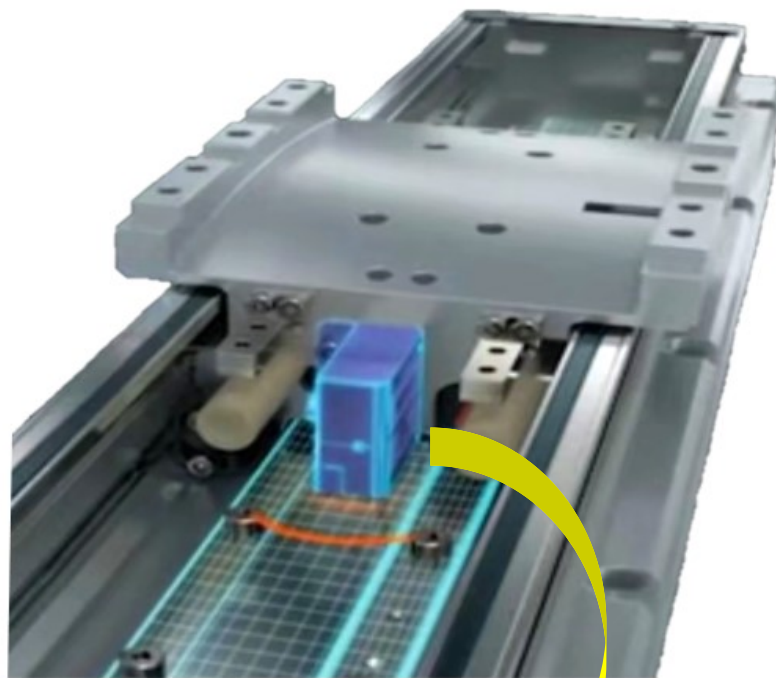




## Scaleless Position Feedback Encoder (ZB Encoder)



Version: 1.0

Date: 2017.01.01



## List of Contents

Introduction.....	3
Features .....	3
Model Designation.....	4
Electrical Specification .....	4
Dimensions .....	5
Pin Definition of DSUB-9 Male Connector.....	6



## Introduction

Based on the 20-year development of electromagnetic technology, Magtronics Technology Inc. proposed a novel position feedback encoder (ZB encoder) which does not need any scale for position measurement. This encoder reads the specific feature of the magnet track of a linear motor to get the micron-level position information. It can be attached to the specific mounting holes of the YAN and YAE series linear motor. This scaleless feature solve the problem of extremely long stroke or highly polluted application. This new technology not only lower the overall cost, but also enhance the reliability and easiness of installation.

## Features

1. **Standard resolution is 1 $\mu$ m**, which can be customized according upon request.
2. **RS422 differential output:** Output signal complies to the standard RS422 differential signals (A+, A-, B+, B-, Z+, Z-), which is compatible with any conventional optical or magnetic encoders.
3. **Dust/ water proof :** thanks to the scaleless feature, this encoder can resist any kind of dust (including ferromagnetic powder), oil, water pollution.
4. **Cost down solution:** eliminate the precision machining of the surface for scale mounting which saves considerable cost for long stroke application.
6. **Anti-EMI design:** excellent signal processing approach to achieve good signal-to-noise ratio, in addition, this encoder is equipped with protection circuit to resist disturbance from power source.



## Model Designation

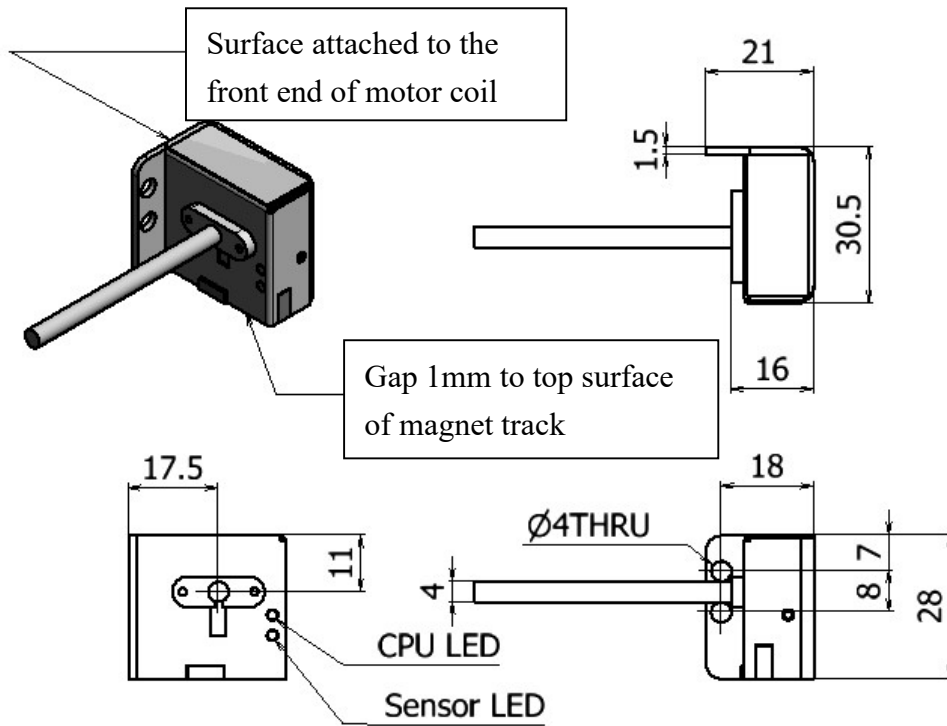
	Resolution (um)	Accuracy type	Applicable Motor model	Position calibration
ZBRS	1	relative	YA010 ~ YA049 (27 mm Magnet Pitch)	No
ZBRL	1	relative	YA050~ YA200 (45 mm Magnet Pitch)	No
ZBAS	1	absolute	YA010 ~ YA049 (27 mm Magnet Pitch)	Yes
ZBAL	1	absolute	YA050 ~ YA200 (45 mm Magnet Pitch)	Yes

## Electrical Specification

Supply Voltage	5.0 +/- 0.2V	V
Current consumption	<200	mA
Operational Temp.	0~50	C
Operational humidity	Up to 95%	No condense
Vibration	100m/s <sup>2</sup> @ 2kHz	
Exit cable length	300	mm
Connector	DSUB-9 Male	
AB pulse output voltage	Hi > 3.4V Lo < 0.7V	
AB pulse output bandwidth	6 (24 after Quadro interpolation)	MHz
EMC compatibly	BS EN 61326-1: 2013	

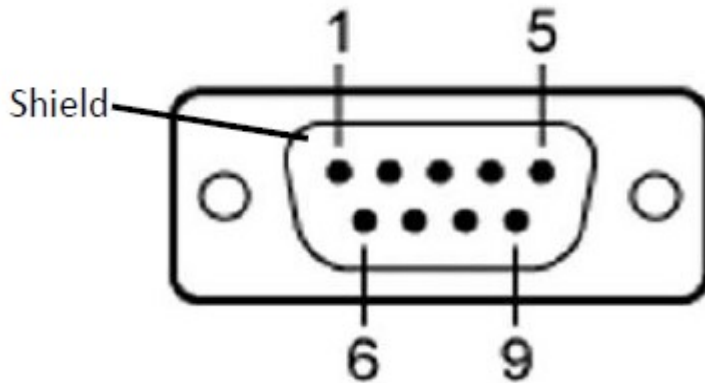


## Dimensions





## Pin Definition of DSUB-9 Male Connector



5V	pin5	Black
A-	pin 4	Pink
B-	pin 3	Green
Z-	pin 2	Grey
	pin 1	
A+	pin 9	Red
B+	pin 8	Yellow
Z+	pin 7	Brown
GND	pin 6	White
FG	shield	shell