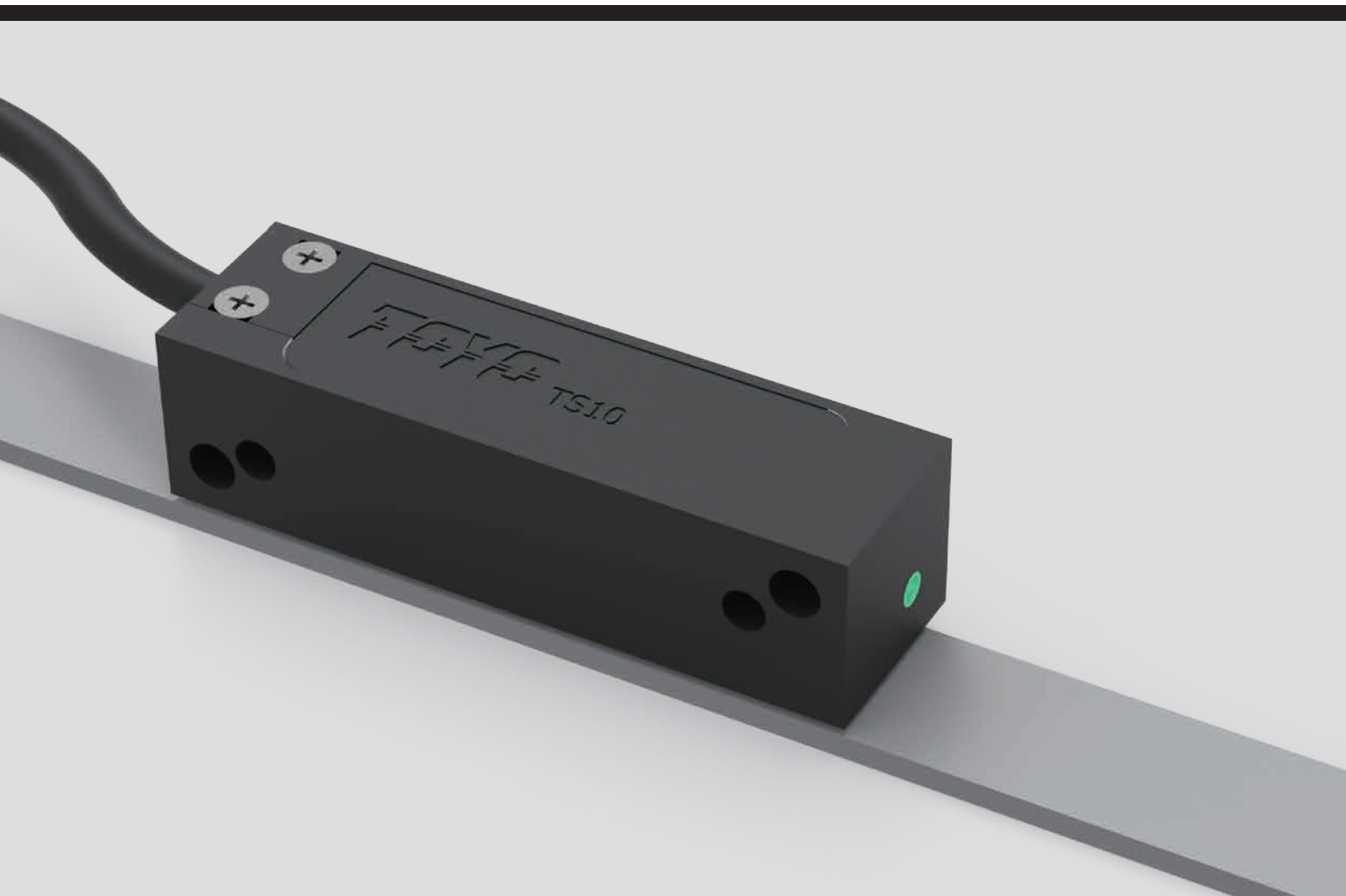


Incremental Magnetic Encoder

TOYO 2024

Compact magnetic encoder module **TS10**



TS10

Incremental Magnetic Encoder



■ Including Status Indicator

Easy to determine whether the reading status is abnormal.

■ Low Profile

Space saving.

■ High precision / High speed

Read pole position with ultra high precision by using special magnetization process. To ensure the precision.

■ Grease Proof

Due to special detecting method. Don't need to worried about unable to read position by greasiness.

■ Harsh Environment Proof

Coefficient of expansion is close to cooper. So it will stay accurate corresponded to harsh environment from -20 ° C~80 ° C. High resistant to vibration and pressure.

■ Simple Structure, Longevity, Vibration Resistance

Low malfunction rate. Using permanent magnetization tape. The magnetic won't easily vanish after few-years usage. It can withstand vibration, and won't easily broken like glass material.

SPEC

TS10 magnetic read head	
Dimensions	L42 x W12 x H11 mm
Pitch	2 mm
Repeatability	±2 μm
Resolution	1 μm
Vmax	3 m/s
Working temperature	-20~80° C
▶ Digital output	
Voltage	5VDC
Output signal	Square wave : A, B 和 A-, B-
Reference signal	Square wave : Z, Z-
Cable length	0.45 m
▶ Respond time	
Setting time ^{*1}	≤ 30ms
Converting time ^{*2}	<250ns

*1 Setting Time : The time cost from applying power to the reader to producing position signal.

*2 Transfer Time : The time cost for transferring position signal to output signal.

TS10 magnetic encoder	
Length	50m

Ordering Method

T	S	10	-	P	X	05	H	-	LXXXX
Brand	Encoder Head Model	Model		Brand	Accuracy	Cable Length		Connector Type	Length(mm)
TOYO	S Incremental Encoder			P Pulse	X 1μm	05	0.5m	- 9 way D-type plug	
						15	1.5m (Special version)	H 15 way D-type plug	

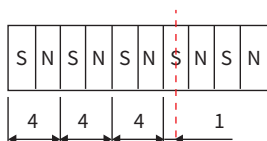
TS10

Incremental Magnetic Encoder

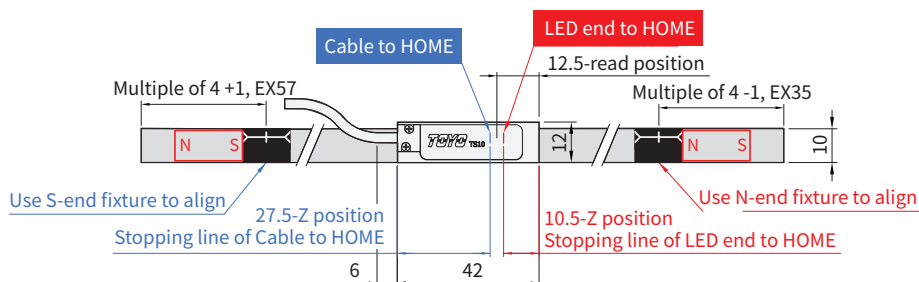
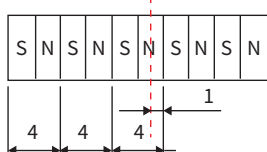
Assembly and Testing

STEP.1 Confirm the outlet direction and the position of the read head when it is at the origin, calculate the position of the sticking ruler and the origin, and mark the sticking position.

S-end alignment: multiple of 4 +1



N-end alignment: multiple of 4 -1



STEP.2 Confirm the cable outlet direction, and align the arrow direction of the magnetic fixture with the read head cable outlet direction.



STEP.3 Pass the magnetic scale through the fixture.



STEP.4 Install at the reading head installation position (away from sticking).



Assembly and Testing

STEP.5 Peel off the adhesive on the back of the magnetic ruler. align the front edge with the sticking position mark, press the front edge of the magnetic scale, push the carriage back, remove the adhesive on the magnetic ruler and press the magnetic scale to stick to the profile.



STEP.6 After the read head is installed (away from the magnetic ruler), use a 0.5mm thick plastic piece and place it between the read head and the magnetic scale. Place the read head against the magnetic scale and tighten the read head fixing screws.



STEP.7 According to the direction of returning to the origin, use the fixture to stick the origin sticker.



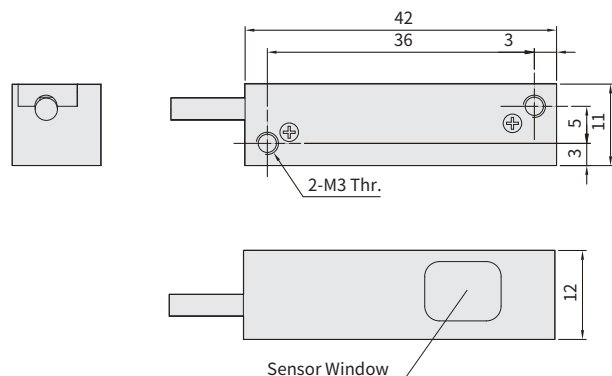
STEP.8 Attach the fixing sticker (short side for magnetic scale; long side for the profile)



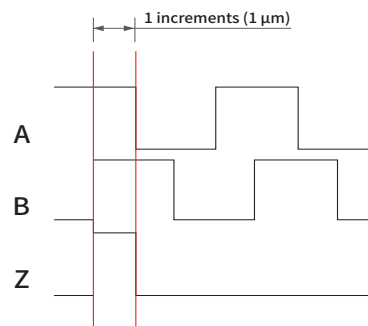
TS10

Incremental Magnetic Encoder

Size



Z pulse Output Timing Diagram



LED Status Display

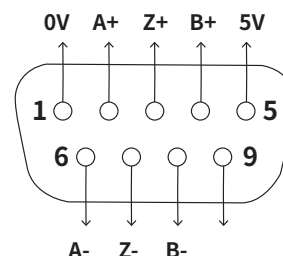
LED Color	Status
Green	Normal
Red	Weak magnetic field or other error

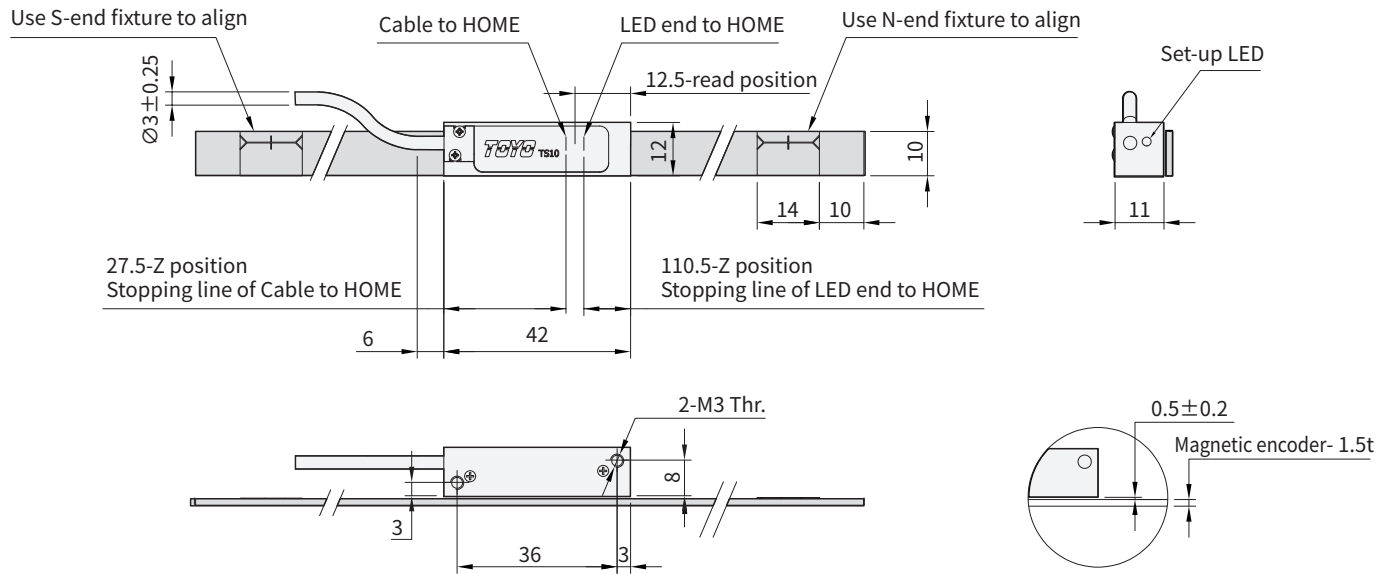
After powered on, the green light remains constantly on. If the green light is not on, flashes, or the red light is on, which are all NG states.



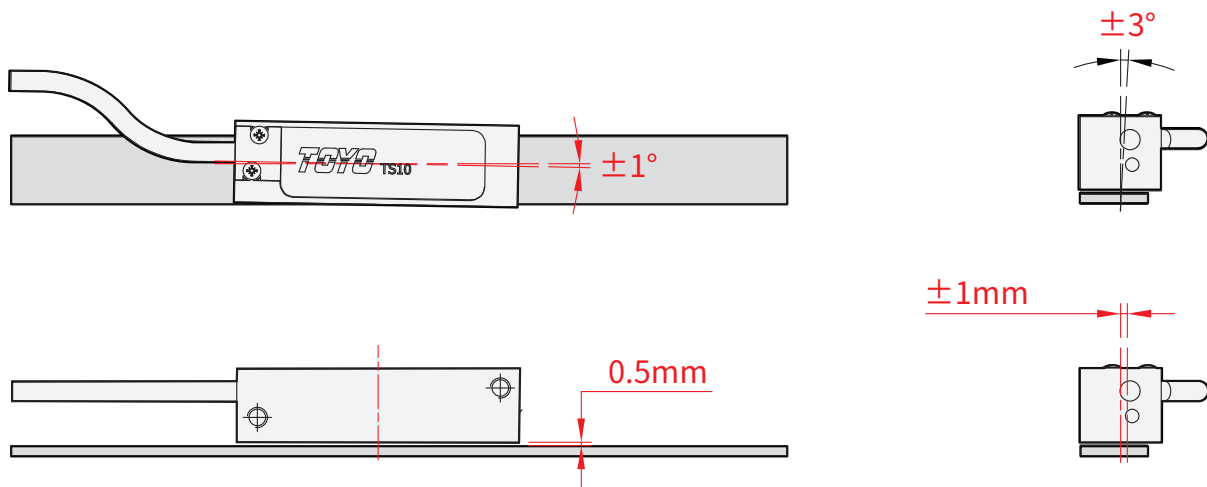
D-sub Connector Definition

Color	Signal
Blue	5V
White	0V
Brown	A+
Yellow	A-
Purple	B+
Orange	B-
Green	Z+
Black	Z-



Assembling Size

1. Leave clearance between reader and tape for 0.5mm.
2. Keep it parallel between reader and tape.

Assembling Deviation Range

Applications

Greasy



Water proof



Cost effective



Electronic Industry



Packing Equipment



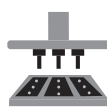
Printing Equipment



Semi-conductor Equipment



Food processing Equipment



Machining Tools



Woodworking Machinery



Laser Cutting



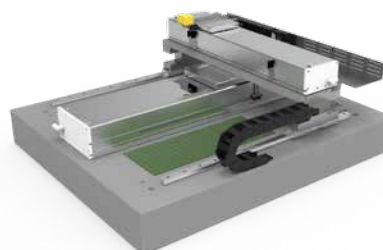
Assembly Applications



WAFER pick and place



Visual Inspection



LINE



facebook



YouTube



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