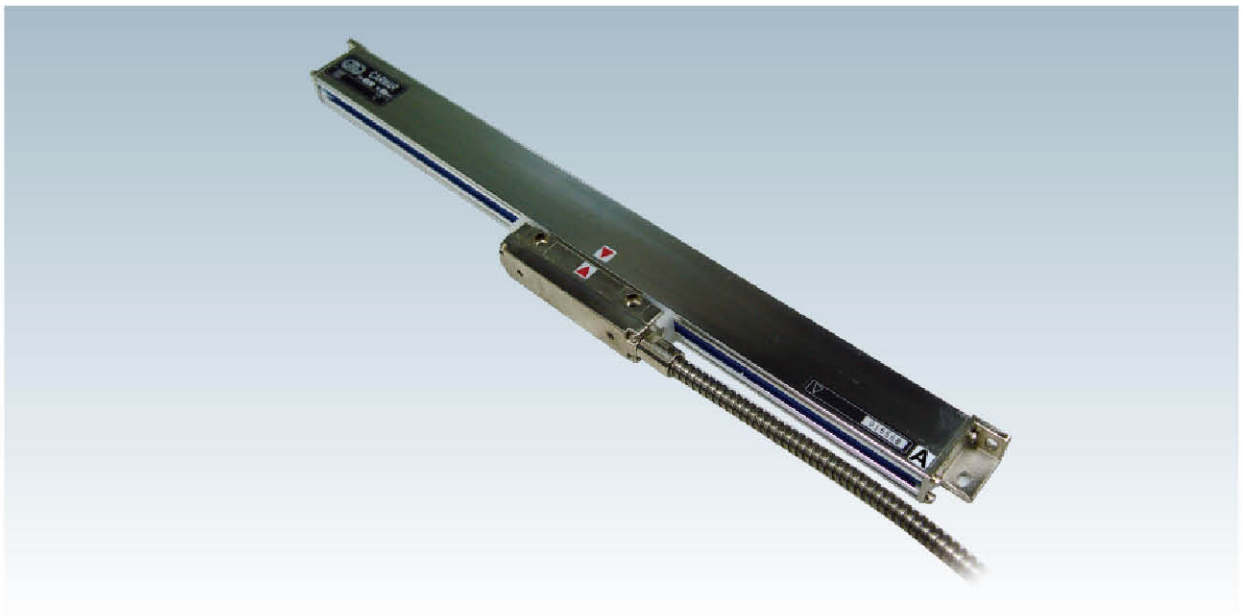


All series linear scale

■ Sealed Standard Type Linear Scale (LE series)



■ Sealed Slim Type Linear Scale (LS series)



- The linear scales are designed with five bearings on the slide for superior repeatability, high slide accuracy and long service life.
- The scale frame is manufactured from anode treated aluminum alloy.
- The hard chrome scanning head is treated for corrosion resistance.
- The signal wires employ a multiple layer braided net and are guarded with stainless steel shades for waterproof and anti-interference performance.

LE series specifications

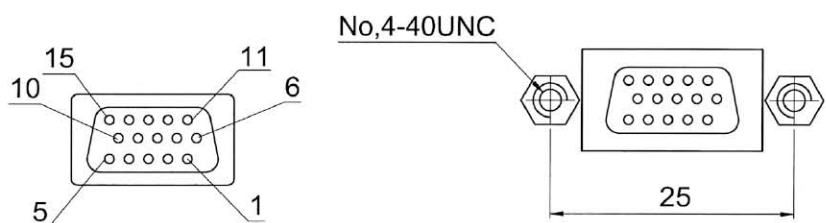
Grating pitch	20 μ m
Resolution	0.005 mm $\cdot$ 0.001 mm $\cdot$ 0.0005 mm (option)
Measuring length (ML)	50 mm~3,000mm
Output signal	TTL square wave (std.) ; RS422 (option)
Accuracy	$\pm (5 + L/200) \mu$ m ; L: measuring length (mm)
Max. Response Speed	60 m/min (1 μ m resolution)
Signal Cable	3.5 m for ML < 1,200mm 5 m for 1,200 $\leq$ ML
Working temperature	0°C~+40°C
Storage temperature	-20°C~ +50°C

Model

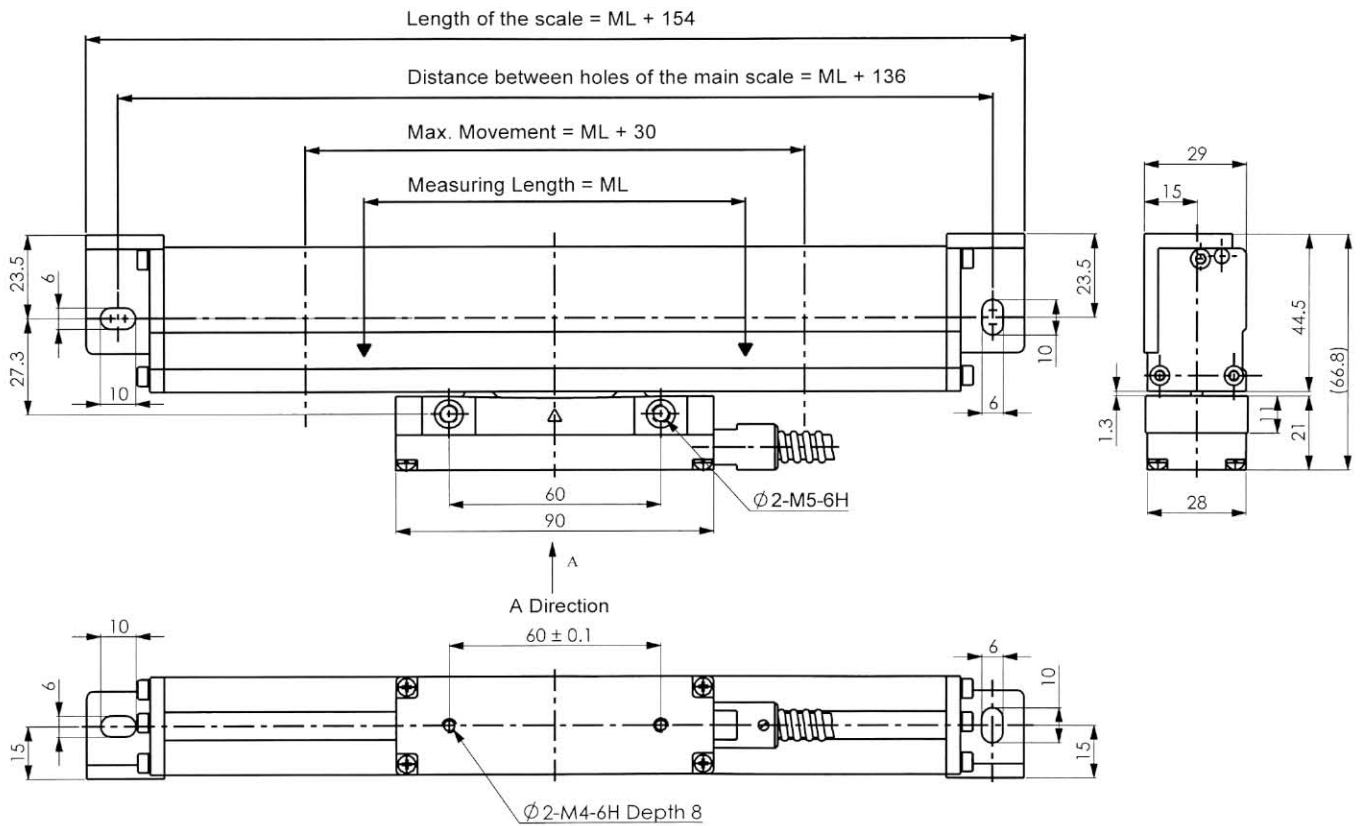
Resolution\ML	50mm	100mm	150mm	200mm	250mm	300mm	350mm
0.005mm	LE50-0050	LE50-0100	LE50-0150	LE50-0200	LE50-0250	LE50-0300	LE50-0350
0.001mm	LE10-0050	LE10-0100	LE10-0150	LE10-0200	LE10-0250	LE10-0300	LE10-0350
Resolution\ML	400mm	450mm	500mm	600mm	700mm	800mm	900mm
0.005mm	LE50-0400	LE50-0450	LE50-0500	LE50-0600	LE50-0700	LE50-0800	LE50-0900
0.001mm	LE10-0400	LE10-0450	LE10-0500	LE10-0600	LE10-0700	LE10-0800	LE10-0900
Resolution\ML	1000mm	1100mm	1200mm	1300mm	1400mm	1500mm	1600mm
0.005mm	LE50-1000	LE50-1100	LE50-1200	LE50-1300	LE50-1400	LE50-1500	LE50-1600
0.001mm	LE10-1000	LE10-1100	LE10-1200	LE10-1300	LE10-1400	LE10-1500	LE10-1600
Resolution\ML	1800mm	2000mm	2200mm	2600mm	2800mm	3000mm	
0.005mm	LE50-1800	LE50-2000	LE50-2200	LE50-2600	LE50-2800	LE50-3000	
0.001mm	LE10-1800	LE10-2000	LE10-2200	LE10-2600	LE10-2800	LE10-3000	

Connector

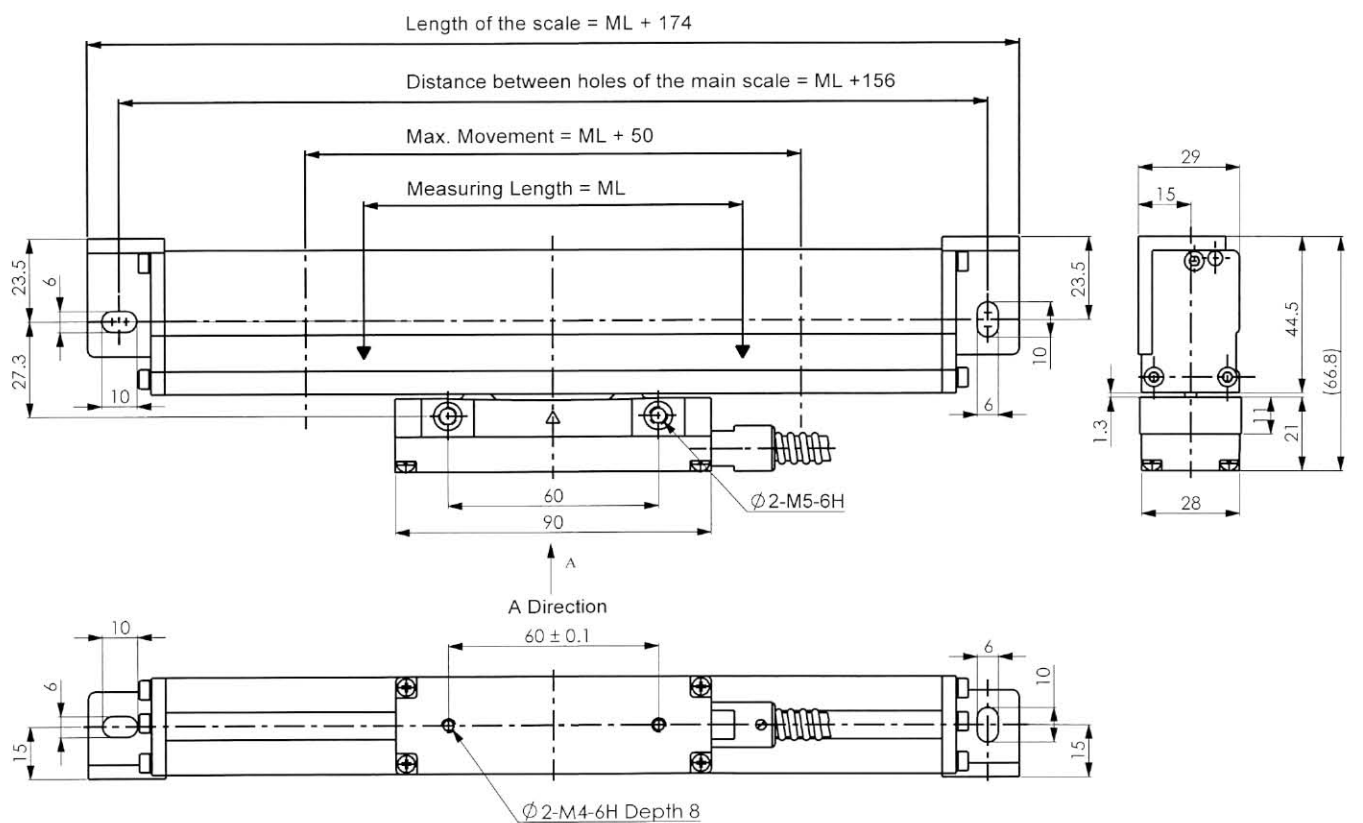
15 PD Connector	
PIN No.	Signal
1	+ 5V
2	0 V
3	A
4	B
5	RI



■ Installation for measuring length $ML \leq 900mm$



■ Installation for measuring length $ML > 900mm$



■ LS series specifications

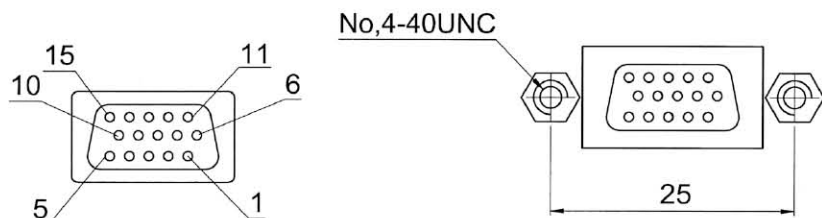
Grating pitch	20 μm
Resolution	0.005 mm · 0.001 mm · 0.0005 mm (option)
Measuring length (ML)	50 mm ~ 1,000mm
Output signal	5V, TTL square wave (Standard) ; RS422 (option)
Accuracy	± (5 + L/200) μm ; L: measuring length (mm)
Max. Response Speed	50 m/min (1 μm resolution)
Signal Cable	3.5 m
Working temperature	0°C~+40°C
Storage temperature	-20°C~ +50°C

■ Model

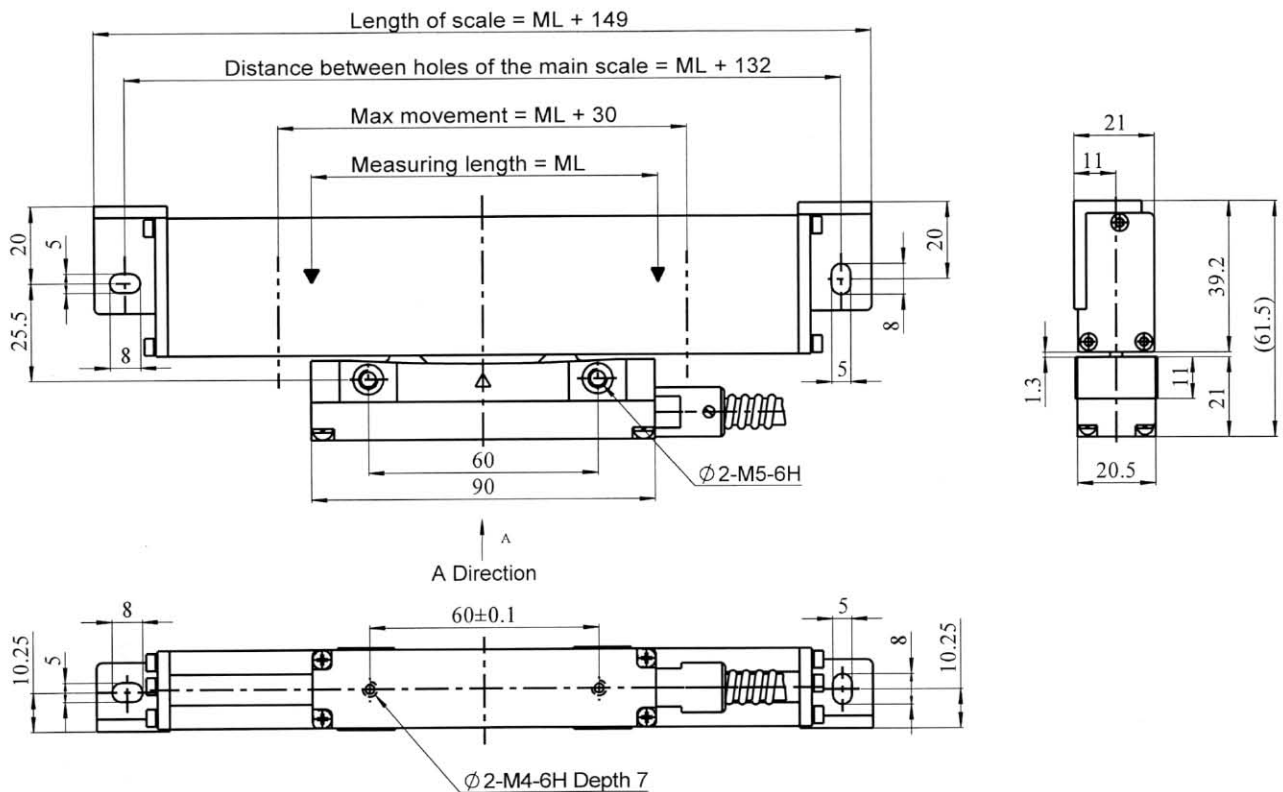
Resolution\ML	50mm	100mm	150mm	200mm	250mm	300mm	350mm
0.005mm	LS50-0050	LS50-0100	LS50-0150	LS50-0200	LS50-0250	LS50-0300	LS50-0350
0.001mm	LS10-0050	LS10-0100	LS10-0150	LS10-0200	LS10-0250	LS10-0300	LS10-0350
Resolution\ML	400mm	450mm	500mm	600mm	700mm	800mm	900mm
0.005mm	LS50-0400	LS50-0450	LS50-0500	LS50-0600	LS50-0700	LS50-0800	LS50-0900
0.001mm	LS10-0400	LS10-0450	LS10-0500	LS10-0600	LS10-0700	LS10-0800	LS10-0900
Resolution\ML	1,000mm						
0.005mm	LS50-1000						
0.001mm	LS10-1000						

■ Connector

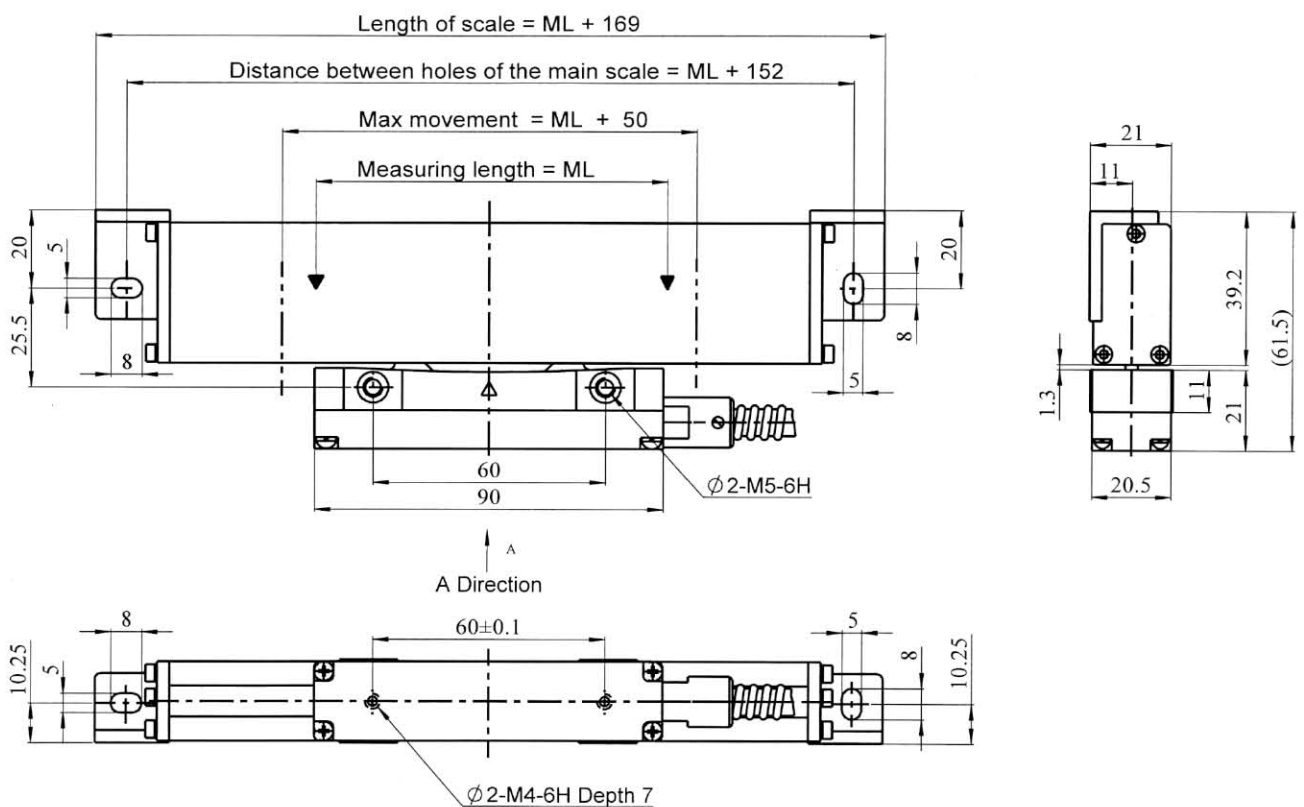
15 PD Connector	
PIN No.	Signal
1	+ 5V
2	0 V
3	A
4	B
5	RI



■ Installation for measuring length $ML \leq 900mm$



■ Installation for measuring length $ML > 900mm$



Open linear encoder GPR 40R series

High accuracy non-contact open linear encoders are designed for many applications, such as CMM, Vision measuring systems, and microscope, measuring and production equipment in the semiconductor industry, PCB assembly machines, Ultra-precision machines, High-accuracy machine tools, other precision measuring devices.

Carmar's optical encoder has earned reputation for high performance and cost effective price.

Features:

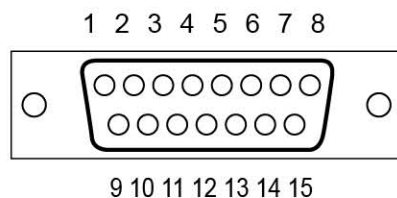
- Non-contact measurement
- Easy mounting with large mounting tolerances
- High speed response
- Integrated interpolation ASIC electronics in the scanning head
- Build-in real RI signal



GPS 40R Specifications:

Grating pitch	40 μm
Resolution	0.005 mm(5μm), 0.001 mm(1μm), 0.0005 mm(0.5μm)
Measuring length (ML)	50 mm ~ 1,000mm
Output signal	A, B, and RI; 5V TTL square wave line-driven signals with integral interpolation
Accuracy	± 5 μm/m
Max. output frequency response	Resolution: 1 μm, 5 m/sec Resolution: 5 μm, 10 m/sec
Signal Cable	3.0 m
Working temperature	0°C ~ +40°C
Storage temperature	-20°C ~ +50°C
Material of grating scale	Glass scales with adhesive tape

Connector pin outs



PIN No.	1	2	3	4	5	6	7	8
Signal	NC	GND	ERR-	Z-	B-	A-	+5V	+5V

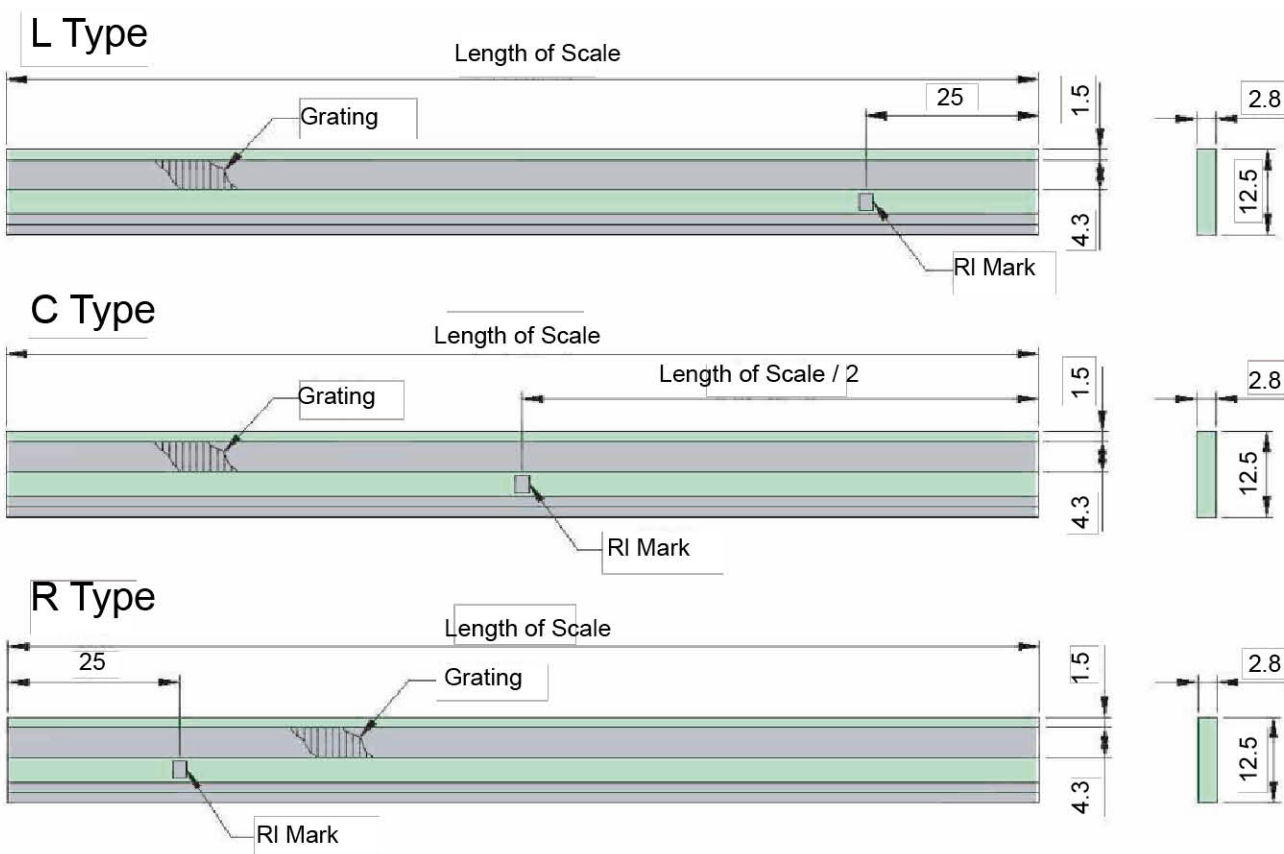
PIN No.	9	10	11	12	13	14	15	16
Signal	GRD	NC	ERR+	Z+	B+	A+	Inner Shield	Outer Shield

■ Model

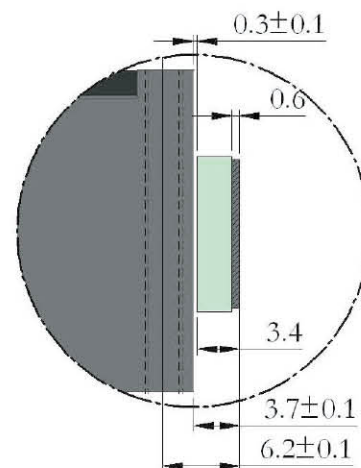
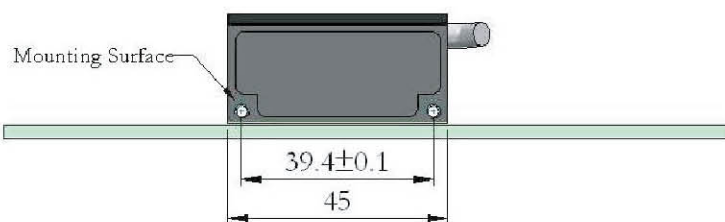
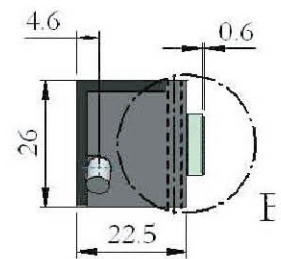
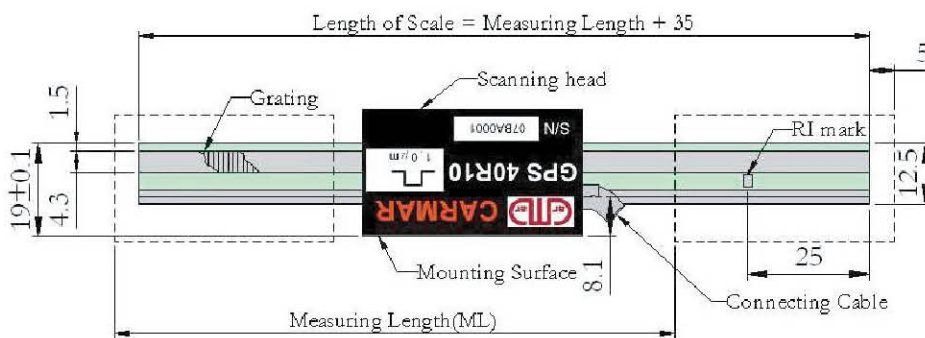
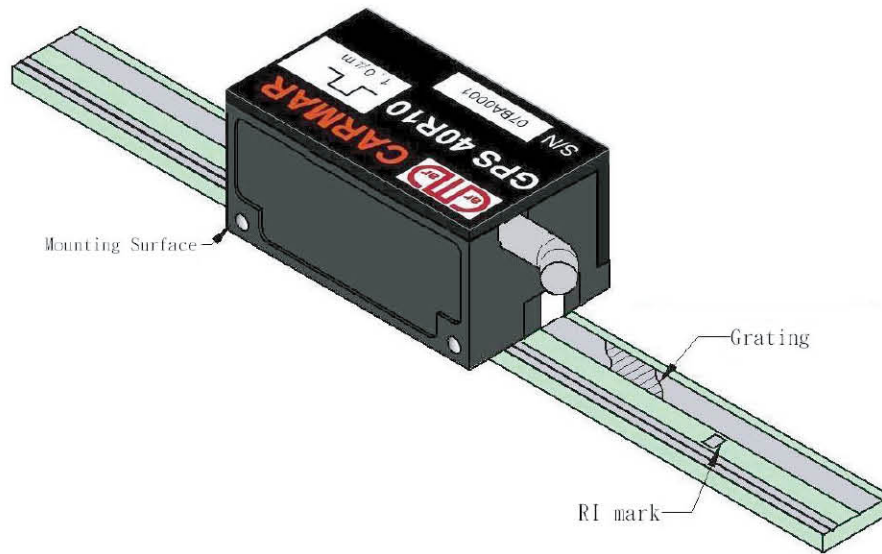
Resolution\ ML	50mm	100mm	150mm	200mm
0.005mm	GPS 40R50-0050	GPS 40R50-0100	GPS 40R50-0150	GPS 40R50-0200
0.001mm	GPS 40R10-0050	GPS 40R10-0100	GPS 40R10-0150	GPS 40R10-0200
0.0005mm	GPS 40R05-0050	GPS 40R05-0100	GPS 40R05-0150	GPS 40R05-0200
Resolution\ ML	250mm	300mm	350mm	400mm
0.005mm	GPS 40R50-0250	GPS 40R50-0300	GPS 40R50-0350	GPS 40R50-0400
0.001mm	GPS 40R10-0250	GPS 40R10-0300	GPS 40R10-0350	GPS 40R10-0400
0.0005mm	GPS 40R05-0250	GPS 40R05-0300	GPS 40R05-0350	GPS 40R05-0400
Resolution\ ML	450mm	500mm	600mm	700mm
0.005mm	GPS 40R50-0450	GPS 40R50-0500	GPS 40R50-0600	GPS 40R50-0700
0.001mm	GPS 40R10-0450	GPS 40R10-0500	GPS 40R10-0600	GPS 40R10-0700
0.0005mm	GPS 40R05-0450	GPS 40R05-0500	GPS 40R05-0600	GPS 40R05-0700
Resolution\ ML	800mm	900mm	1,000mm	
0.005mm	GPS 40R50-0800	GPS 40R50-0900	GPS 40R50-1000	
0.001mm	GPS 40R10-0800	GPS 40R10-0900	GPS 40R10-1000	
0.0005mm	GPS 40R05-0800	GPS 40R05-0900	GPS 40R05-1000	

■ Type of optical scale

According to RI, the position of optical scale can be R, C, L, customer can indicate the RI position before give purchase order.



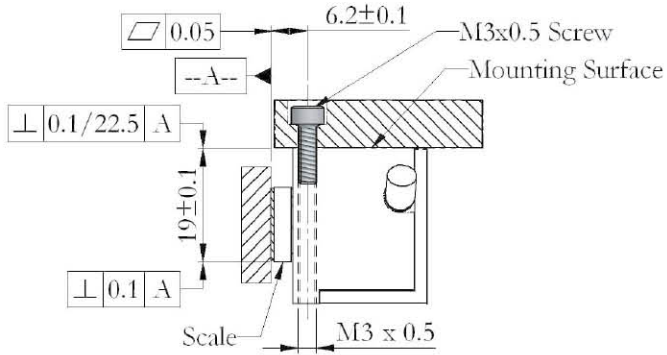
■ Dimensions and mounting tolerances



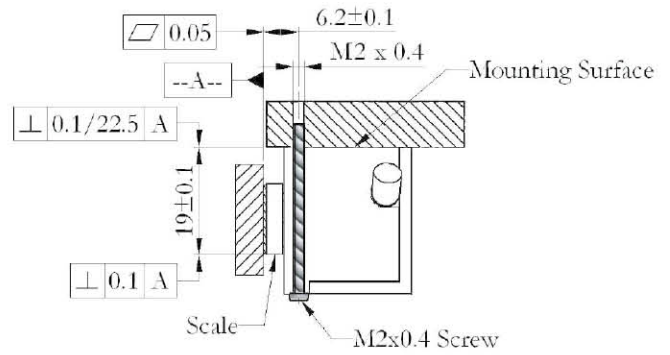
Detail B

■ Suggetion for screw mounting

Use M3 x 0.5 screw



Use M2 x 0.4 screw



■ GPS scale Auxiliary mounting signal display, SB-100

- 3 LED light to display the counting signal of A/B to confirm if the linear encoder is properly installed.
- Providing individual LED light to display RI signal to confirm if RI functions well.
- Power supply accepts battery or DC input and equips with low pressure warning light.
- There are several outputs to connect with external display.

