

# SL

## SL700 Series

Scale unit

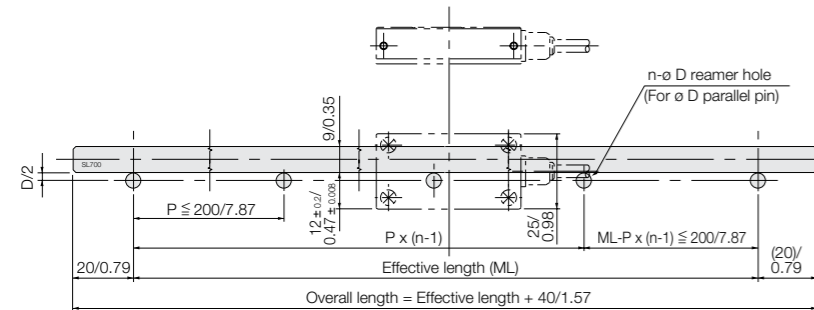
Magnescape® Digiruler®

- Compact ribbon type scale for easy mounting in cramped spaces
- Non-contact detection
- Magnetic detection system with excellent resistance to dust, oil, vibrations and shocks.
- Effective length from 50 mm to 100,000 mm
- Detects linear displacement and produces analog or AB quadrature signal output when connected to PL101 head and MJ500/600/620 Series interpolator (both sold separately).
- Three types are available with different reference point specifications.

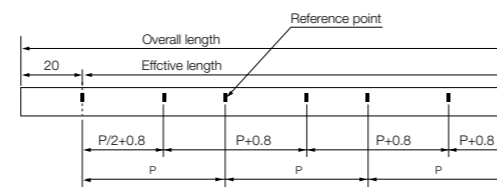
Example for connection

Scale	Head	Cable	Interpolator
SL700	PL101	CE08	MJ500/600/620/700 MJ820/821 MJ830/831

### Dimensions



Reference mark

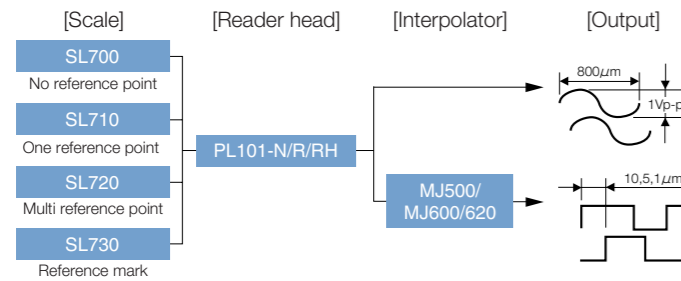


Reference mark pitch(p)	Effective length (mm)
80 mm	200 < ML ≤ 2,000
160 mm	2,000 < ML ≤ 12,000
320 mm	12,000 < ML ≤ 56,000
480 mm	56,000 < ML ≤ 100,000

Unit : mm/inch

\*Scale thickness 0.3 mm max. (Include double stick tape)  
\*Mount the scale on the non-magnetic material. When mounting on a magnetic material, insert a non-magnetic layer with a thickness of at least 3mm.

### Configurations



### The relation of Effective length (L) and factor N

L : m	N	L : m	N	L : m	N	L : m	N
3 < ML ≤ 5.5	1	28 < ML ≤ 30.5	11	53 < ML ≤ 55.5	21	78 < ML ≤ 80.5	31
5.5 < ML ≤ 8	2	30.5 < ML ≤ 33	12	55.5 < ML ≤ 58	22	80.5 < ML ≤ 83	32
8 < ML ≤ 10.5	3	33 < ML ≤ 35.5	13	58 < ML ≤ 60.5	23	83 < ML ≤ 85.5	33
10.5 < ML ≤ 13	4	35.5 < ML ≤ 38	14	60.5 < ML ≤ 63	24	85.5 < ML ≤ 88	34
13 < ML ≤ 15.5	5	38 < ML ≤ 40.5	15	63 < ML ≤ 65.5	25	88 < ML ≤ 90.5	35
15.5 < ML ≤ 18	6	40.5 < ML ≤ 43	16	65.5 < ML ≤ 68	26	90.5 < ML ≤ 93	36
18 < ML ≤ 20.5	7	43 < ML ≤ 45.5	17	68 < ML ≤ 70.5	27	93 < ML ≤ 95.5	37
20.5 < ML ≤ 23	8	45.5 < ML ≤ 48	18	70.5 < ML ≤ 73	28	95.5 < ML ≤ 98	38
23 < ML ≤ 25.5	9	48 < ML ≤ 50.5	19	73 < ML ≤ 75.5	29	98 < ML ≤ 100	39
25.5 < ML ≤ 28	10	50.5 < ML ≤ 53	20	75.5 < ML ≤ 78	30		

### Specifications

Model	SL700	SL710	SL720	SL730
Reference point	No reference point	One point (Specify the position when ordering) (1 mm unit)	Multi point 60mm pitch from left effective length end	Reference mark (Refer to figure below)
Reference point position accuracy	-	± 1 mm	± 1 mm Pitch accuracy ± 7 µm	± 1 mm Pitch accuracy ± 7 µm
Effective length (L)*	50 to 100,000 mm			
Overall length	L+40mm			
Accuracy (20 °C)	± 10L µm (L ≤ 3m) ± (10L+2.5N) µm (L > 3m) *In combination with PL101 series *L: Measuring length *Refer separate table			
Reproduced wave length	800µm			
Single mass	15 g/m			
Linear expansion coefficient	(14 ± 1) × 10 <sup>-6</sup> / °C (Scale unit)			
Operating temperature	0 to 45 °C / 32°F to 113°F			
Storage temperature	-20 to 50 °C / -4°F to 122°F			
Standard compliance	EMI: EN55011 Group 1 Class A EMS: EN50082-2 FCC Part 15 Subpart B Class A ICES-003 CLASS A DIGITAL DEVICE			

\*L ≤ 1,000mm: 50mm pitch 1,100 ≤ L ≤ 3,000mm: 100mm pitch 3,500 ≤ L ≤ 10,000mm: 500mm pitch 11,000 ≤ L: 1,000mm pitch

# PL

## PL101 Series

Head cable unit

Magnescape® Digiruler®

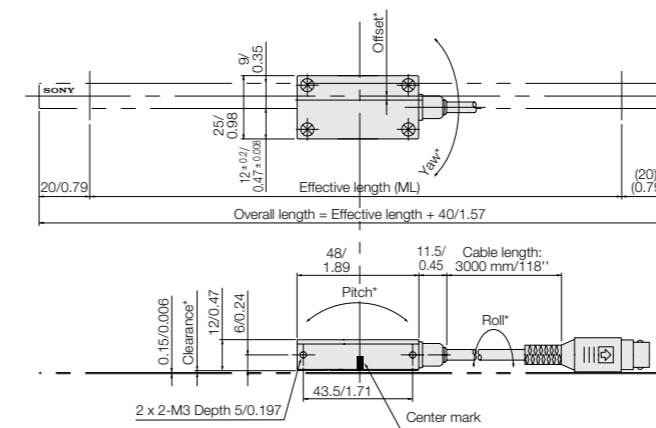
- Non-contact detection
- Magnetic detection system for excellent resistance to dust, oil, vibrations and shocks.
- Detects linear position and displacement and produces analog signal output when connected to the SL700 Series. Produces AB quadrature signal when connected to MJ500/600 Series interpolator
- A wide range of models is available so you can select the best model for your specific application.

Example for connection

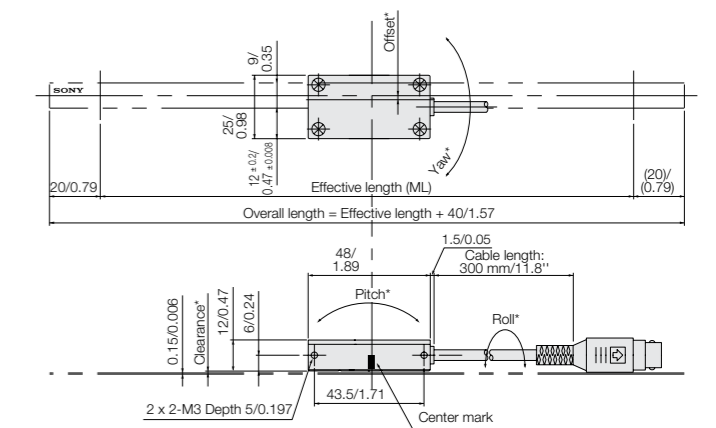
Scale	Head	Cable	Interpolator
SL700	PL101	CE08	MJ500/600/620/700 MJ820/821 MJ830/831

### Dimensions

PL101-RH (IP67 Type)



PL101-N/PL101-R (IP50 Type)



Unit : mm/inch

### Specifications

Model	PL101-N	PL101-R	PL101-RH
Protective grade		Equivalent to IP50	Equivalent to IP67 (exclude Connector)
Reference point detection function	Not Included	Included	
Resolution (Connected to MJ500 and MJ600/620)	1, 2, 5 or 10 µm (MJ620), 1 µm (MJ600), 2 or 10 µm (MJ500)		
Accuracy (20 °C)	± 10 µm (when combined with the SL700)		
Clearance*	0.35 ± 0.1 mm		
Offset	± 0.2 mm		
Attitude change	Pitch*	± 0.1°	
	Yaw*	± 0.2°	
	Roll*	± 0.2°	
Output signal	1 Vp-p Analog output Differential output		
Power supply voltage	DC 5V ± 5%		
Power consumption	Max. 150 mA (0.8W)		
Max. response speed	6.4 m/s		
Cable length	300 mm		3000 mm
Mass	60 g / 2.12oz		150 g / 5.29oz
Operating temperature	0 to 45 °C / 32°F to 113° F		
Storage temperature	-20 to 50 °C / -4°F to 122° F		
Standard compliance	EMI: EN55011 Group 1 Class A EMS: EN50082-2 FCC Part 15 Subpart B Class A ICES-003 CLASS A DIGITAL DEVICE		
Extension cable (Option)	CK-T12 ... 1 m CK-T13 ... 3 m CK-T14 ... 5 m CK-T15 ... 10 m CK-T16 ... 15 m (By extension cable, it can be extended up to Max 10 m)		

\*Refer to Dimensions drawings below. \*Cable length of more than 15m, Please consult our sales.