

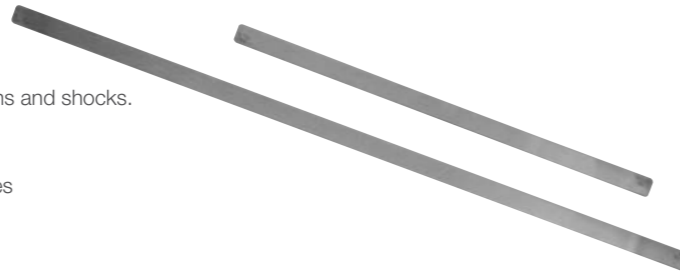
SL

SL700 Series

Scale unit

Magnescape® Digiruler®

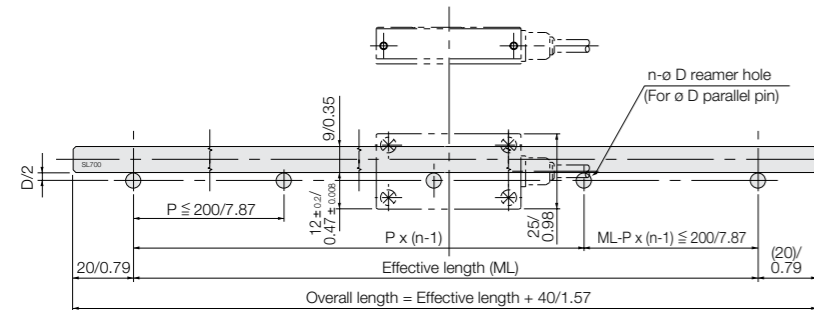
- Compact ribbon type scale for easy mounting in cramped spaces
- Non-contact detection
- Magnetic detection system with excellent resistance to dust, oil, vibrations and shocks.
- Effective length from 50 mm to 100,000 mm
- Detects linear displacement and produces analog or AB quadrature signal output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



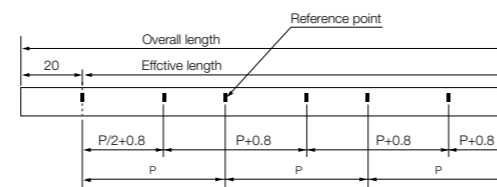
Example for connection

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

Dimensions



Reference mark

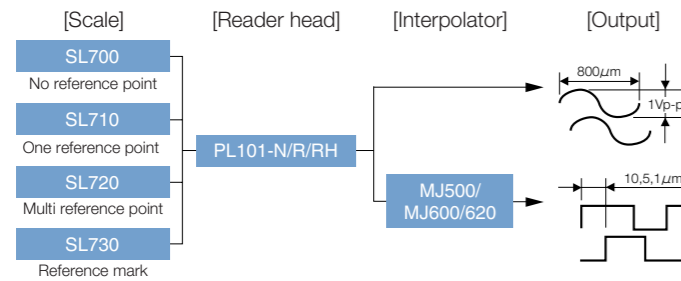


| Reference mark pitch(p) | Effective length (mm) |
|-------------------------|-----------------------|
| 80 mm | 200 < ML ≤ 2,000 |
| 160 mm | 2,000 < ML ≤ 12,000 |
| 320 mm | 12,000 < ML ≤ 56,000 |
| 480 mm | 56,000 < ML ≤ 100,000 |

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 ⁻⁶ / °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.

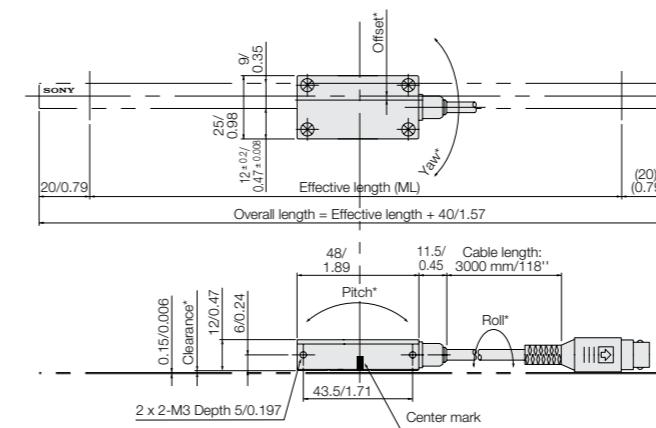


Example for connection

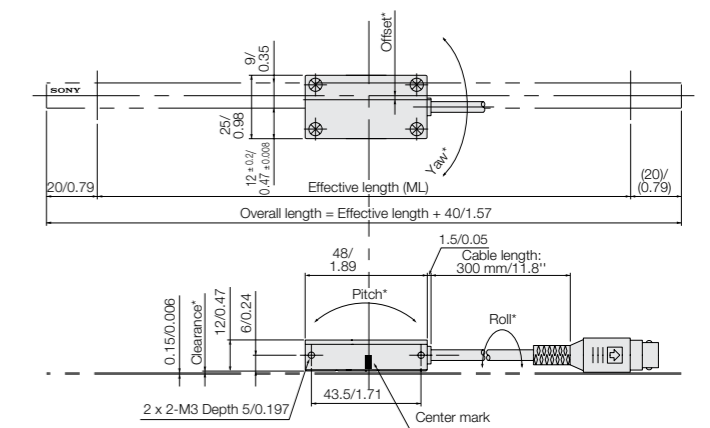
| Scale | Head | Cable | Interpolator |
|-------|-------|-------|---------------------------------------|
| SL700 | PL101 | CE08 | MJ500/600/620/700 MJ820/821 MJ830/831 |

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.