

# MAGNESCALE

digital magnetic tape



## Reading head Series PL81, PL82 magnetic tape SL110, SL130

Key-Features:

- Accuracy up to 52  $\mu\text{m}$  (with FS 200 mm)
- Resolution 10, 20, 25, 50, 100  $\mu\text{m}$  selectable
- Output signal PL81: open collector
- Output signal PL82: A/B TTL-output (RS422)
- Displacement speed up to 300 m/min
- Protection class IP67 (Reading head)
- Working temperature 0...+45°C
- Interpolator integrated in reading head
- resistant against dirt, water, oil, vibrations and shock
- SL110: Profile, extremely robust, up to 2000 mm length
- SL130: flexible magnetic tape scale to glue on, up to 30.000 mm length

### Content:

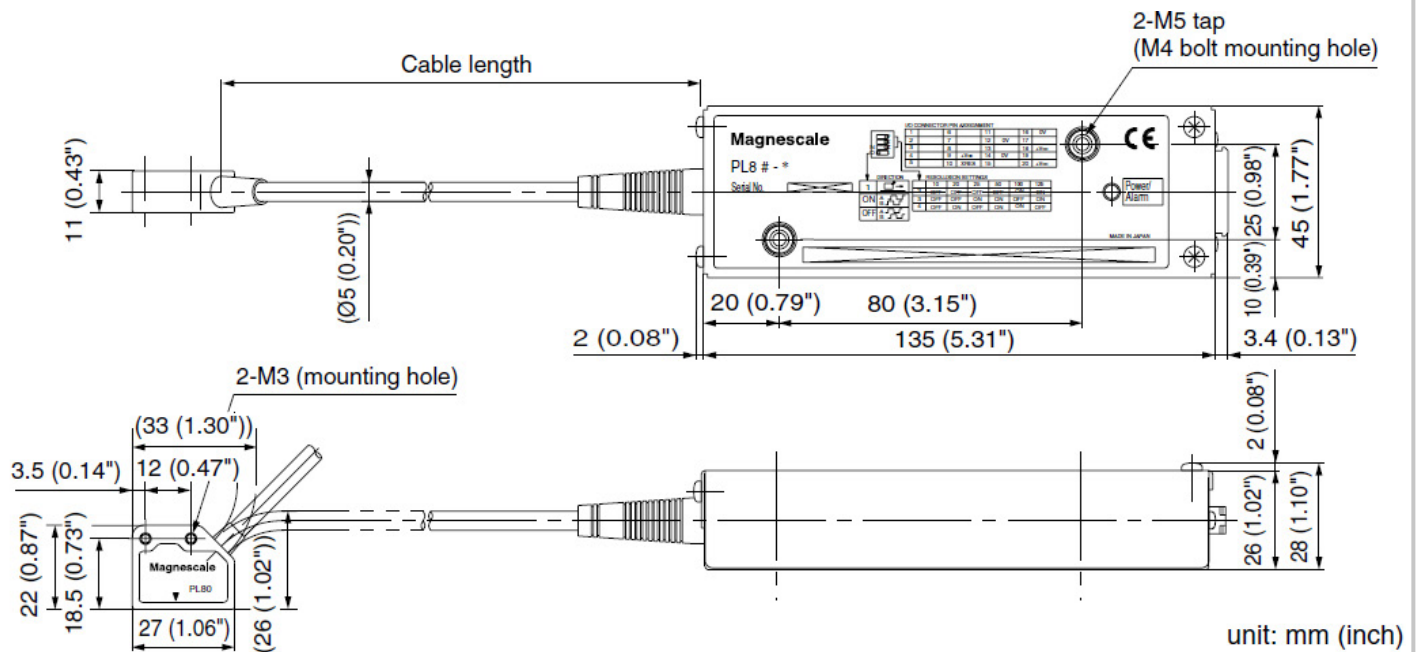
<b>Technical Data PL81, PL82</b>	<b>....2</b>
<b>Technical Data SL110/130</b>	<b>....3</b>
<b>Accessories</b>	<b>....4</b>
<b>Displays</b>	<b>....5</b>
<b>Oder Code</b>	<b>....6</b>

## TECHNICAL DATA PL81, PL82

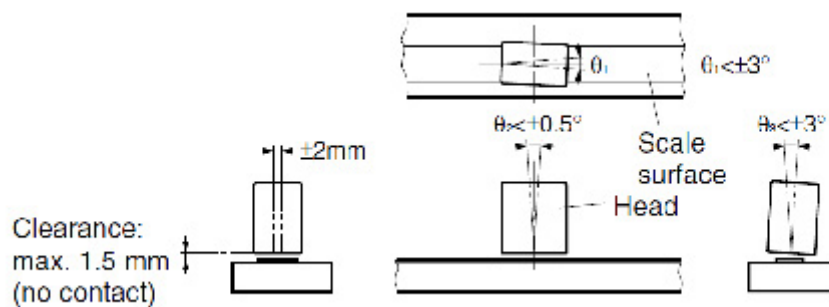
		PL81	PL82
Accuracy (20°C)		(50+10L/1000) μm (L: measuring length in mm, varies with tape SL110/SL130)	
Protection class		IP67 (exclude head cable)	
Resolution	[μm]	10, 20, 25, 50, 100 (selectable)	
Distance reading head - magnetic tape	[mm]	1.5	
Verfahrgeschwindigkeit max.	[m/min]	300	
Alarm display		LED turns orange (green for normal operation)	
Working temperature	[°C]	0...+45	
Storage temperature	[°C]	-20...+50	
Compatible magnetic tapes		SL110, SL130	
Cable lengths PL81, PL82	[m]	3, 5, 10, 15	
Output signal		Open Collector: max. rated voltage: 40 V, max. rated current: 100 mA	TTL A/B phase signal (differential) Linedriver according to RS422
Voltage supply	[V]	10...30 VDC	5 VDC ±5 %
Current consumption max.	[mA]	max. 70 (2.1 W)	max. 300 (1.5 W)

## TECHNICAL DRAWING

PL81, PL82



Mounting tolerances PL81, PL82



## TECHNICAL DATA SL110

Model		
Measurement range MR	[mm]	200 / 300 / 400 / 500 / 600 / 700 / 800 / 1000 / 1200 / 1500 / 1600 / 1700 / 1800 / 2000
Resolution (20°C)	[μm]	10
Linearity (20°C)	[μm]	±(25 + 5MB/1000)
Reference point		none
Working temperature	[°C]	0 to 45
Storage temperature	[°C]	-20 to 50
Displacement speed	[m/min]	maximum 300
Expansion coefficient		(11.1 ±1) × 10 <sup>-6</sup> /°C
Total length	[mm]	MB + 103
Reading head		PL20C

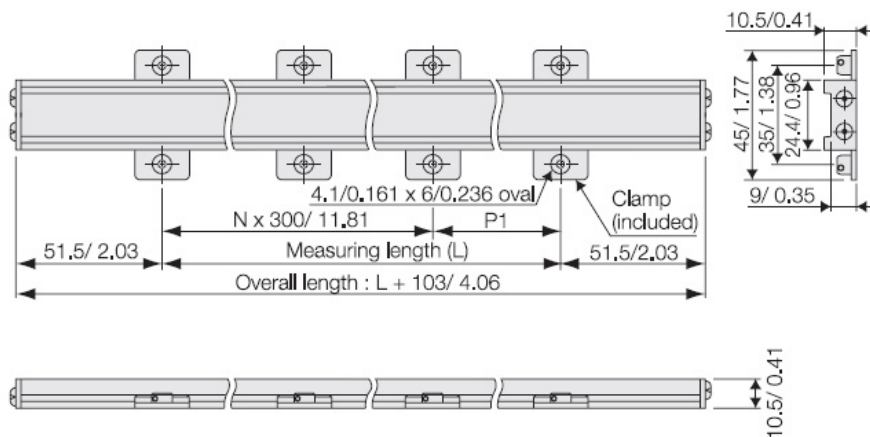
## TECHNICAL DATA SL130

Model		
Measurement range MR	[mm]	200/ 300/ 400/ 500/ 1000/ 1200/ 1500/ 1600/ 1700/ 1800/ 2000/ 2500/ 3000/ 4000/ 5000/ 6000/ 7000/ 8000/ 9000/ 10000/ 20000/ 30000
Resolution (20°C)	[μm]	10
Linearity (20°C)	[μm]	MB ≤7000 mm: ±(25 + 5MB/1000) / MB ≥8000 mm: ±(25 + 5MB/1000 + 10N*)
Reference point		none
Working temperature	[°C]	0 to 45
Storage temperature	[°C]	-20 to 50
Displacement speed	[m/min]	maximum 300
Expansion coefficient		(10,4 ±1) × 10 <sup>-6</sup> /°C
Total length	[mm]	MB + 100
Reading head		PL20C

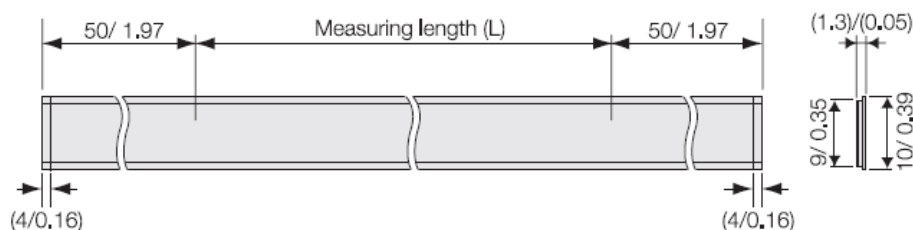
\* MB ≤10000: N=1 / MB =20000: N=1 / MB =30000: N=3

## TECHNICAL DRAWING

SL110



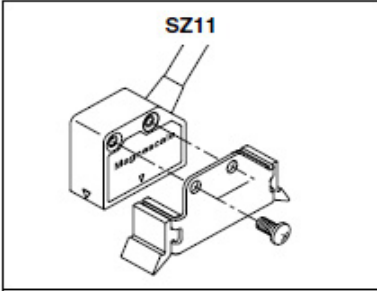
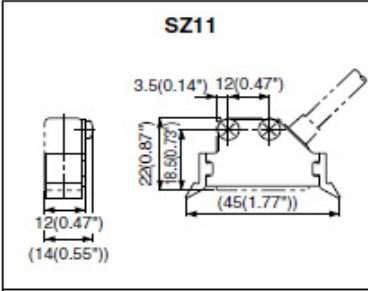
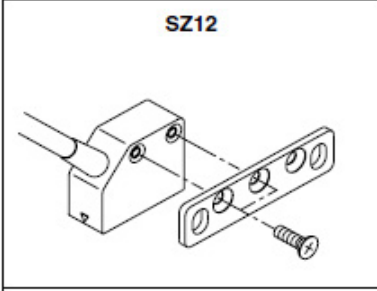
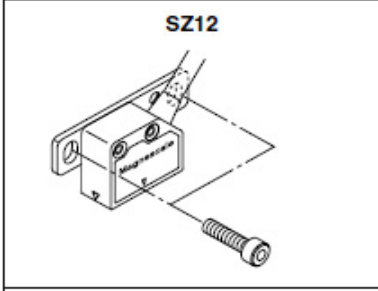
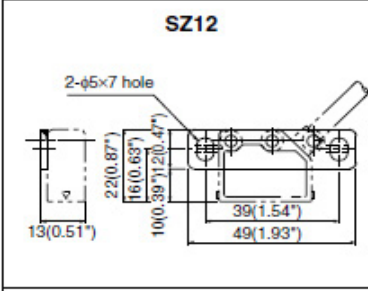
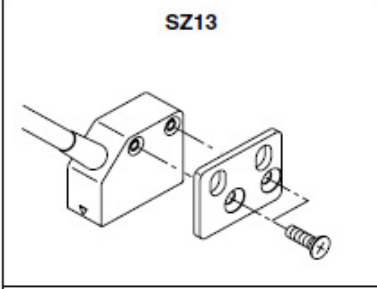
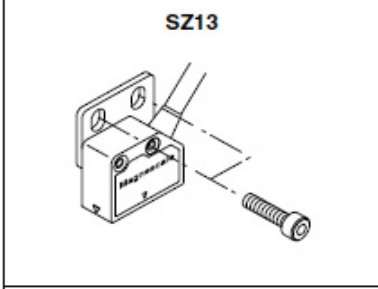
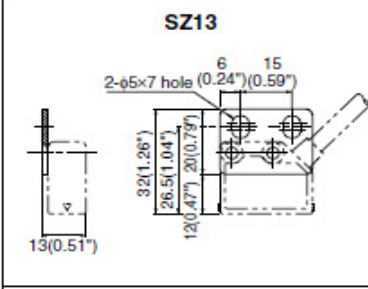
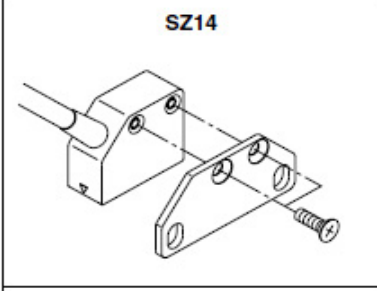
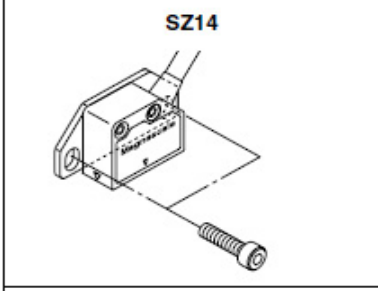
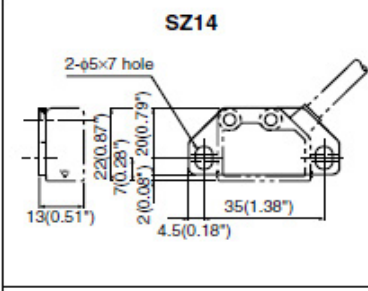
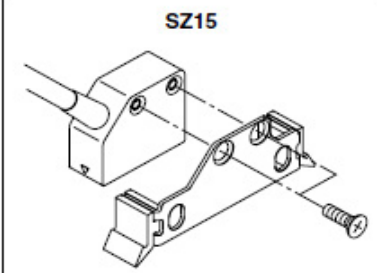
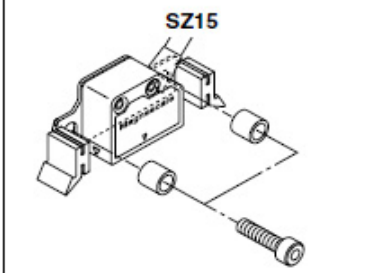
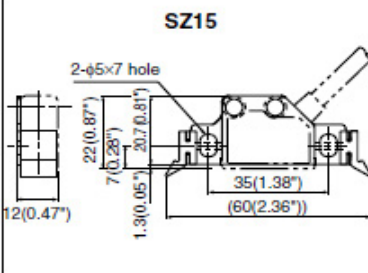
SL130



## ACCESSORIES

Model	Name	Application
SZ11	Wiper	for removing dust and dirt on the scale
SZ12	Attachment	for tap mounting holes. Small vertical space type. Can be used with SZ11.
SZ13	Attachment	for tap mounting holes. Small horizontal space type. Can be used with SZ11.
SZ14	Attachment	for mounting according to PL20 (conventional type), without wiper
SZ15	Attachment with wiper	for mounting according to PL20 (conventional type), with wiper

## MOUNTING OF ACCESSORIES

Mounting of accessory	Installation to the device	Dimensions [mm]
 <p><b>SZ11</b></p>	<p><b>SZ11</b></p> <p>See "Installing the Head Unit".</p>	<p><b>SZ11</b></p> 
 <p><b>SZ12</b></p>	<p><b>SZ12</b></p> 	<p><b>SZ12</b></p> 
 <p><b>SZ13</b></p>	<p><b>SZ13</b></p> 	<p><b>SZ13</b></p> 
 <p><b>SZ14</b></p>	<p><b>SZ14</b></p> 	<p><b>SZ14</b></p> 
 <p><b>SZ15</b></p>	<p><b>SZ15</b></p> 	<p><b>SZ15</b></p> 

## DISPLAYS MAGNESCALE

### LG20:

General purpose display. The LG20 offers a Reset/Preset function

### LH70 Serie:

High performance counter for Mille (LH70/LH71) and Lathe (LH70-3/ LH71-3) applications.

### LH71A-3

Can be user for milling machines and lathes applications by switching initial settings.

### LH72

Designed especially for lathes.



### Overview Magnescale Series

	LG20	LH70/LH71	LH72
Display axes	1, 2, 3		3
Display	7 digits, orange LEDs, floating minus sign		
Display resolution	0,1 / 0,5 / 1 / 5 / 10 µm	0,1 / 0,5 / 1 / 5 / 10 µm	
	1 s / 10 s / 1 min / 10 min		
Input signal	TTL Line driver RS422		
Power supply	12 VDC using separate power supply unit PSC23 with 100 - 240 VAC		
Weight	1.5 kg		

### Functions of the Magnescale displays

	LG20	LH70	LH71	LH71A	LH72
Reset	■	■	■	■	■
Preset	■	■	■	■	■
Absolute/Incremental		■	■	■	■
Diameter display	■	■	■	■	■
Angle display		■	■	■	■
Alarm display	■	■	■	■	■
Zero point detection		■	■	■	■
Datum points		10	150	150	
Tool memory *		12	99	99	99
Midpoint calculation		■	■	■	■
Scaling			■	■	■
Addition function *		■	■	■	■
Programming function			■	■	■
Bolt hole circle		■	■	■	
Line hole			■	■	
Simple R cutting		■	■	■	
Linearity error compensation	■	■	■	■	■
Segment error compensation			■	■	■
Data storage	■	■	■	■	■
Energy saving function	■	■	■	■	■
Navigation function		■	■	■	■
External reset				■	■
Touch sensor function				■	

\* only 3-axes display



## ORDER CODE MAGNESCALE MAGNETIC TAPE

SL110-20	Measurement range 200 mm	SL130-70	Measurement range 700 mm
SL110-30	Measurement range 300 mm	SL130-80	Measurement range 800 mm
SL110-40	Measurement range 400 mm	SL130-100	Measurement range 1000 mm
SL110-50	Measurement range 500 mm	SL130-120	Measurement range 1200 mm
SL110-60	Measurement range 600 mm	SL130-150	Measurement range 1500 mm
SL110-70	Measurement range 700 mm	SL130-160	Measurement range 1600 mm
SL110-80	Measurement range 800 mm	SL130-170	Measurement range 1700 mm
SL110-100	Measurement range 1000 mm	SL130-180	Measurement range 1800 mm
SL110-120	Measurement range 1200 mm	SL130-200	Measurement range 2000 mm
SL110-150	Measurement range 1500 mm	SL130-250	Measurement range 2500 mm
SL110-160	Measurement range 1600 mm	SL130-300	Measurement range 3000 mm
SL110-170	Measurement range 1700 mm	SL130-400	Measurement range 4000 mm
SL110-180	Measurement range 1800 mm	SL130-500	Measurement range 5000 mm
SL110-200	Measurement range 2000 mm	SL130-600	Measurement range 6000 mm
		SL130-700	Measurement range 7000 mm
SL130-20	Measurement range 200 mm	SL130-800	Measurement range 8000 mm
SL130-30	Measurement range 300 mm	SL130-900	Measurement range 9000 mm
SL130-40	Measurement range 400 mm	SL130-1000	Measurement range 10.000 mm
SL130-50	Measurement range 500 mm	SL130-2000	Measurement range 20.000 mm
SL130-60	Measurement range 600 mm	SL130-3000	Measurement range 30.000 mm

## ORDER CODE MAGNESCALE READING HEAD

PL81-3	Cable length 3 m	PL82-3	Cable length 3 m
PL81-5	Cable length 5 m	PL82-5	Cable length 5 m
PL81-A	Cable length 10 m	PL82-A	Cable length 10 m
PL81-B	Cable length 15 m	PL82-B	Cable length 15 m

## ORDER CODE MAGNESCALE DISPLAYS

<b>Display</b>			
LG20-1	Digital display 1 axis	LH71-3	High performance display 3 axes
LG20-2	Digital display 2 axes	LH71A	High performance display 3 axes
LG20-3	Digital display 3 axes	LH72-3	High performance display 3 axes
LH70-1	High performance display 1 axis	LY71	2 channel multifunctional Display
LH70-2	High performance display 2 axes	LY72	2 channel multifunctional Display, RS232C
LH70-3	High performance display 3 axes		
LH71-1	High performance display 1 axis		
LH71-2	High performance display 2 axes	<b>Power supply unit for display</b>	
		PSC23	Power supply unit

## ACCESSORIES

SZ11	Wiper	SZ14	Attachment
SZ12	Attachment	SZ15	Attachment with wiper
SZ13	Attachment		

Subject to change without prior notice.