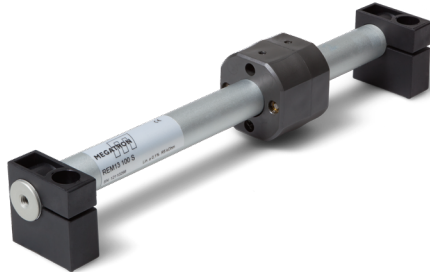


# Data Sheet for Linear Sensors

## Potentiometric Linear Transducer (Conductive Plastic)

Series REM13



The compact linear transducers REM13 are used in applications with up to 20 bar operating pressure, which require a displacement sensor with external cursor, high durability and accuracy in the measuring lengths from 50 to 1000 mm.

- Space-saving and compact construction Ø13 mm
- With external magnetic cursor (with or without ball joint)
- High degree of protection IP67 and operating pressure up to 20 bar
- Measuring lengths from 50 to 1000 mm
- With cable or plug

### Electrical Data

Effective electrical travel (+1/-0 mm) 1.)	50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 650 / 700 / 750 / 800 / 850 / 900 / 950 / 1000
Total electrical travel (±1 mm) 1.)	50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 550 / 600 / 650 / 700 / 750 / 800 / 850 / 900 / 950 / 1000
Total resistance 1.)	5 kOhm (50..300 mm) / 10 kOhm (350..600 mm) / 20 kOhm (650..1000 mm)
Resistance tolerance	±20%
Independent linearity (best straight line) 1.)	±0.1 % (50..100 mm) / ±0.05 % (150..1000 mm)
Theoretical resolution 1.)	Almost infinite
Backlash (Hysteresis) 1.)	≤ 0.25 mm
Repeatability 1.)	≤ 0.08 mm
Max. / recommended wiper current 1.)	10 mA (@40 °C, 1 min in case of failure) / < 0.1 µA
Power rating @40 °C (0 W @120 °C)	≤ 1 W (50 mm) / ≤ 2 W (100 mm) / ≤ 3 W (150..1000 mm)
Isolation voltage 1.)	< 100 µA@500 VAC, 1bar, 2s
Isolation resistance 1.)	100 MOhm@500 VDC, 1bar, 2s

### Mechanical Data, Environmental Conditions, Miscellaneous

Mechanical stroke (mm) 1.)	55 / 105 / 155 / 205 / 255 / 305 / 355 / 405 / 455 / 505 / 555 / 605 / 655 / 705 / 755 / 805 / 855 / 905 / 955 / 1005
Lifetime (90 % effective electrical travel) 2.)	> 25 million meters or 100 million movements (the smaller value applies)
Max. operational speed	≤ 5 m/s
Max. acceleration	≤ 10 m/s <sup>2</sup>
Operational force @ RT 1.) 2.)	< 0.5 N
Operational temperature	-30..+100 °C
Storage temperature	-50..+120 °C
Protection grade (IEC60529)	IP67
Vibration (IEC 68-2-6, Test Fc)	20 g (5..2000 Hz, 0.75 mm)
Shock (IEC 68-2-27, Test Ea)	50 g, halfsine, 11 ms
Housing length (±1.5 mm)	115 / 165 / 215 / 265 / 315 / 365 / 415 / 465 / 515 / 565 / 615 / 665 / 715 / 765 / 815 / 865 / 915 / 965 / 1015 / 1065

# Data Sheet for Linear Sensors

Potentiometric Linear Transducer (Conductive Plastic)

Series REM13

## Mechanical Data, Environmental Conditions, Miscellaneous

Material housing	Aluminium, PSU
Material cursor	POM
Connection type	Shielded cable 1 m (3-core 0.14 mm <sup>2</sup> ) / M8 plug connector straight 3-pin
Mounting parts	2 x mounting brackets included in delivery
Cursor	Included in delivery

1.) According IEC 60393

2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

Please note: Max. permissible supply voltage <75 VDC respectively <50 VAC in addition the max. power rating must be observed

# Data Sheet for Linear Sensors

Potentiometric Linear Transducer (Conductive Plastic)

Series REM13

Order Code			
Description	Selection: standard=black/bold, possible options=grey/cursive		
<b>Series:</b>	<b>REM13</b>		
<b>Effective electrical travel:</b>			
50 mm		<b>50</b>	
100 mm		<b>100</b>	
150 mm		<b>150</b>	
200 mm		<b>200</b>	
250 mm		<b>250</b>	
300 mm		<b>300</b>	
350 mm		<b>350</b>	
400 mm		<b>400</b>	
450 mm		<b>450</b>	
500 mm		<b>500</b>	
550 mm		<b>550</b>	
600 mm		<b>600</b>	
650 mm		<b>650</b>	
700 mm		<b>700</b>	
750 mm		<b>750</b>	
800 mm		<b>800</b>	
850 mm		<b>850</b>	
900 mm		<b>900</b>	
950 mm		<b>950</b>	
1000 mm		<b>1000</b>	
<b>Electrical connection:</b>			
<b>Connector</b>			<b>S</b>
<b>Cable 1 m</b>			<b>K</b>
<i>Option cable length in m</i>			<i>Kxx</i>
<b>Cursor:</b>			
<b>Standard cursor</b>			-
<i>Option cursor with ball joint</i>			<i>GK</i>

**Accessory (not included in delivery):**

- Mating connector with cable (STKM8) #125303: M8 thread, 3-pole, IP67, straight, not shielded, 2 m (STK M8 3POL IP67 G NS 2M AWG22)
  - Mating connector with cable (STKM8) #126325: M8 thread, 3-pole, IP67, angled, not shielded, 2 m (STK M8 3POL IP67 W NS 2M AWG22)
  - Mating connector with cable (STKM8) #127825: M8 thread, 3-pole, IP67, straight, shielded, 2 m (STK M8 3POL IP67 G GS 2M AWG22)
  - Mating connector with cable (STKM8) #127826: M8 thread, 3-pole, IP67, angled, shielded, 2 m (STK M8 3POL IP67 W GS 2M AWG22)
- More connectors with cable on request. Take a look at data sheet STKM8 for connector cable.

**For higher quantities or on-going demand, additional options are available as described below on request**

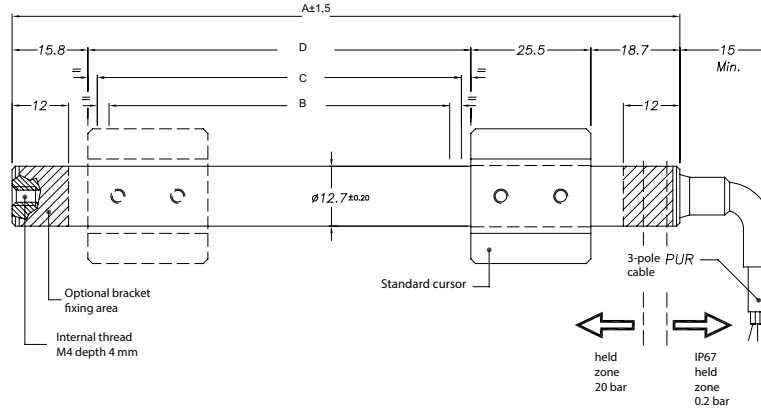
For example:

- Special connectors, assembled cables with / without connector
- Special measuring length and much more

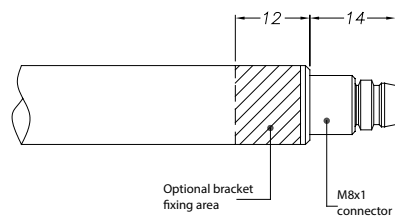
Note: When calibrating the linear transducer, be careful to set the stroke so that the output does not drop below 1 % or rise beyond 99 % of the supply voltage.

### Drawing

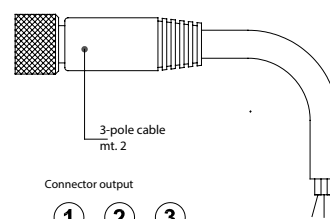
#### Cable output version



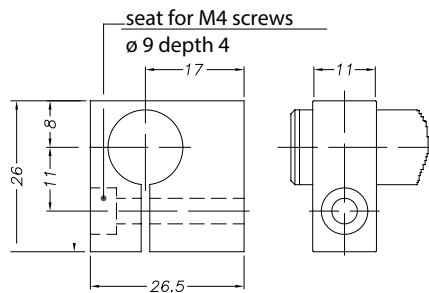
#### Connector output version



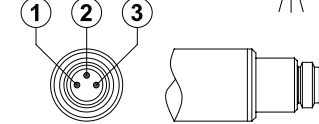
#### Optional cable (accessories / illustration similar)



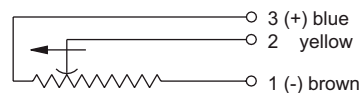
#### Mouting brackets



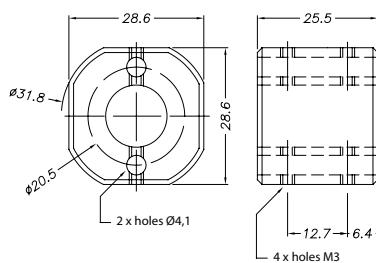
#### Connector output



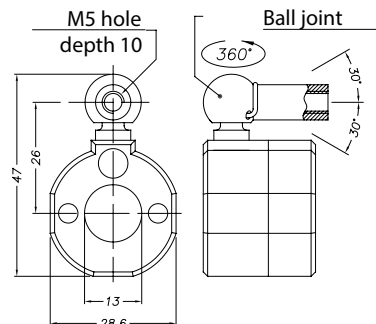
#### Connection diagram



#### Standard cursor



#### Cursor with ball joint



Dimensions in mm

Dimensions	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
B: Effective electrical travel (+1/-0 mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
C: Total electrical travel (±1 mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
D: Mechanical stroke (+5 mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A: Housing length (mm)	115	165	215	265	315	365	415	465	515	565	615	665	715	765	815	865	915	965	1015	1065