

Data Sheet for Linear Sensors

Potentiometric Linear Transducer (Conductive Plastic)

Series REM13



The REM13 compact linear transducers are used in applications up to 20 bar operating pressure where a displacement sensor with an external cursor, high durability and accuracy in measurement lengths from 50 to 1000 mm is required.

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

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 ²
Operational force @ RT 1.) 2.)	< 0.5 N
Operational temperature	-30 °C up to +100 °C
Storage temperature	-50 °C up to +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 ²) / 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 <i>options=grey/italic</i>		
Series:	REM13		
Effective electrical travel:			
50 mm		50	
100 mm		100	
150 mm		150	
200 mm		200	
250 mm		250	
300 mm		300	
350 mm		350	
400 mm		400	
450 mm		450	
500 mm		500	
550 mm		550	
600 mm		600	
650 mm		650	
700 mm		700	
750 mm		750	
800 mm		800	
850 mm		850	
900 mm		900	
950 mm		950	
1000 mm		1000	
Electrical connection:			
Connector			S
Cable 1 m			K
<i>Option cable length in m</i>			<i>Kxx</i>
Cursor:			
Standard cursor			-
<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

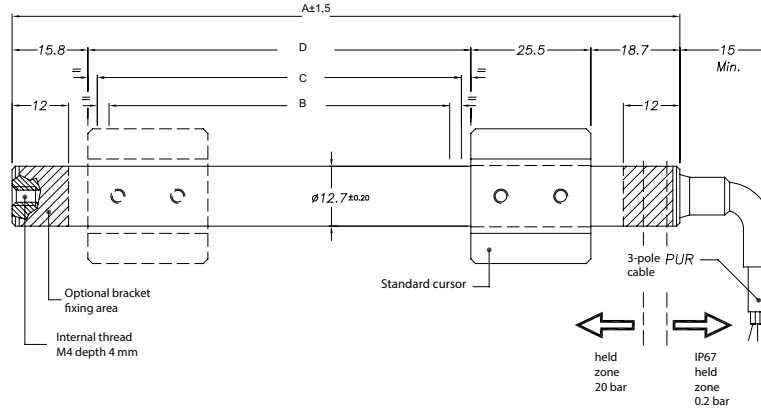
For example:

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

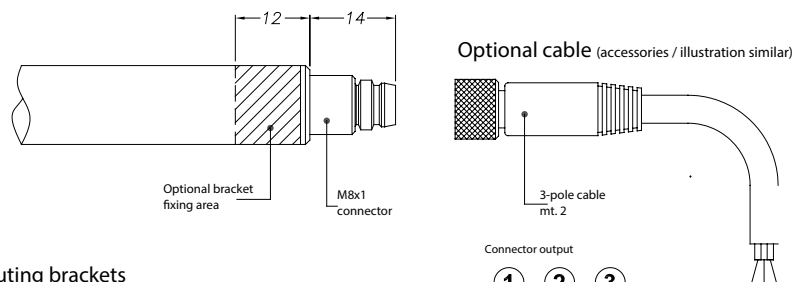
Note: When calibrating the linear transducer, be careful to set the stroke so that the output does not drop below 1 % or rise beyond 99 % of the supply voltage.

Drawing

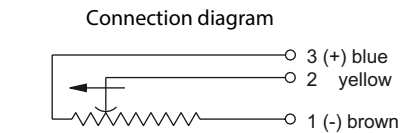
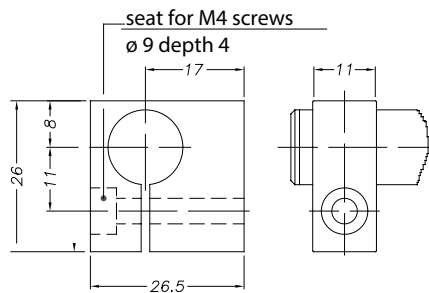
Cable output version



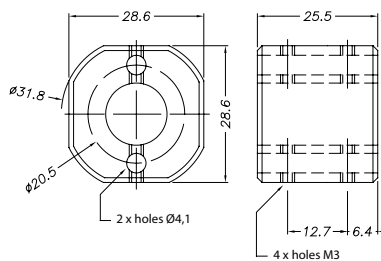
Connector output version



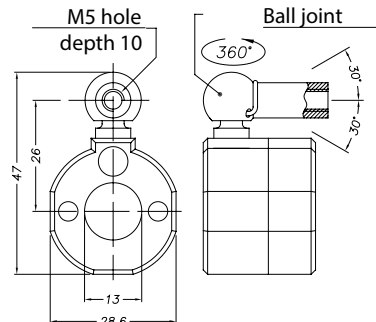
Mouting brackets



Standard cursor #121241



Cursor with ball joint #136240



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