

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/s²
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

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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

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Order Code				
Description	Selection: standard=black/bold, possible options=grey/cursive			
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

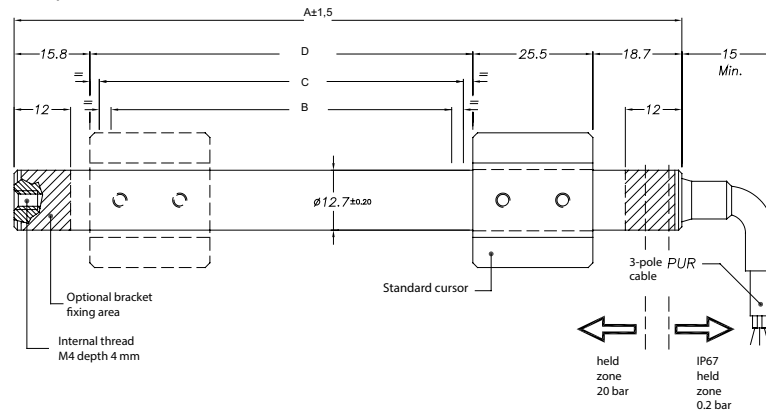
For example:

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

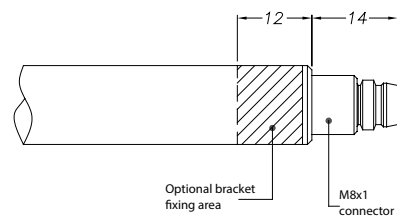
Note: When calibrating the linear transducer, be careful to set the stroke so that the output does not drop below 1 % or rise beyond 99 % of the supply voltage.

Drawing

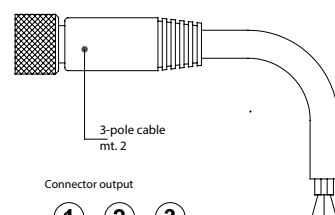
Cable output version



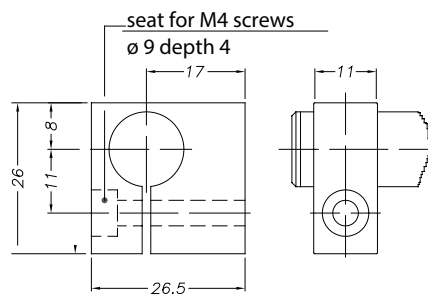
Connector output version



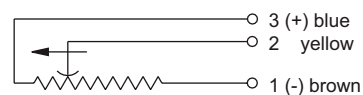
Optional cable (accessories / illustration similar)



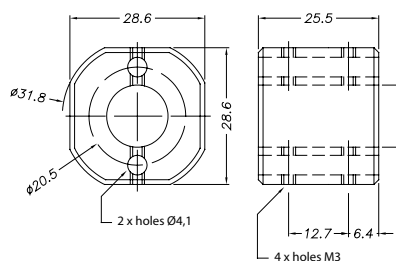
Mouting brackets



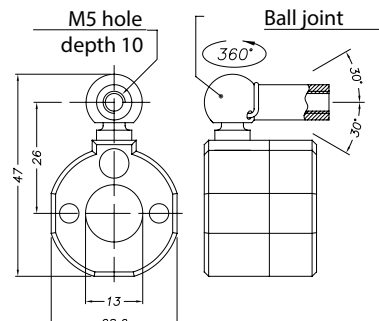
Connection diagram



Standard cursor



Cursor with ball joint



Dimensions in mm

Dimensions																				
B: Effective electrical travel (+/-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