

Data Sheet for Linear Sensors

Potentiometric Linear Transducer (Conductive Plastic)

Series RC35



The displacement sensors RC35 are used in applications where a robust linear transducer with excellent linearity, lifetime and ball joints is recommended.

- For harsh environmental conditions up to IP67
- Free installation by double-sided ball joints
- Long lifetime and excellent linearity
- Measuring lengths from 50 mm to 750 mm

For example the IP67 version is designed for mobile hydraulics and commercial vehicles for heavy duty applications. The linear movement is detected by a push rod guided on one side.

Electrical Data

Effective electrical travel (+3/-0 mm) 1.)	50 / 100 / 130 / 150 / 175 / 200 / 225 / 275 / 300 / 360 / 375 / 400 / 450 / 500 / 600 / 750
Total electrical travel (±1 mm) 1.)	53 / 103 / 133 / 153 / 178 / 204 / 229 / 279 / 304 / 364 / 380 / 406 / 457 / 508 / 609 / 762
Total resistance 1.)	5 kOhm (50..600 mm) / 10 kOhm (750 mm)
Resistance tolerance	±20%
Independent linearity (best straight line) 1.)	±0,05%
Theoretical resolution 1.)	Almost infinite
Repeatability 1.)	≤ 0,01 mm
Max. / recommended wiper current 1.)	1 mA (@ 40°C, 1 min in case of failure) / < 0,1 µA
Power rating @ 40°C (0W@120°C)	≤ 3 W
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.)	59 / 109 / 139 / 159 / 184 / 210 / 235 / 285 / 310 / 370 / 386 / 412 / 463 / 518 / 619 / 772
Lifetime (90% effective electrical travel) 2.)	> 25 million meters or 100 million movements (the smaller value applies)
Max. operational speed	≤ 5 m/s
Operational force @ RT 1.) 2.)	< 15 N (IP65) / < 30 N (IP67)
Operational temperature	-30..+100°C
Storage temperature	-50..+120°C
Protection grade (IEC60529)	IP65 (optional IP67)
Vibration (IEC 68-2-6, Test Fc)	20 g (5..2000 Hz, 0,75mm)
Shock (IEC 68-2-27, Test Ea)	50 g, halvesine, 11 ms
Housing length version IP65 (mm)	180,5 / 230,5 / 260,5 / 280,5 / 305,5 / 331,5 / 356,5 / 406,5 / 431,5 / 497,5 / 513,5 / 539,5 / 590,5 / 665,5 / 766,5 / 919,5
Housing length version IP67 (mm)	198 / 248 / 278 / 298 / 323 / 349 / 374 / 424 / 449 / 515 / 531 / 557 / 608 / 683 / 784 / 937

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Mechanical Data, Environmental Conditions, Miscellaneous

Material housing	Aluminium, Nylon 66 G (IP65) / Aluminium (IP67)
Material push rod	Stainless steel AISI 303 (IP65) / C45 steel, chromed 20 µm (IP67)
Connection type	Connector M16 5-pole male DIN45322, cable PVC 3-pole 3 x 0,25 1 m (IP65) / Connector M12 4-pole male (IP67)
Mounting parts	2 x ball joints 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

Order Code

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

Series:	RC35					
Effective electrical travel:						
<i>Option 50 mm</i>		50			R5k	
100 mm		100			R5k	
<i>Option 130 mm</i>		130			R5k	
<i>Option 150 mm</i>		150			R5k	
<i>Option 175 mm</i>		175			R5k	
200 mm		200			R5k	
<i>Option 225 mm</i>		225			R5k	
<i>Option 275 mm</i>		275			R5k	
300 mm		300			R5k	
<i>Option 360 mm</i>		360			R5k	
<i>Option 375 mm</i>		375			R5k	
<i>Option 400 mm</i>		400			R5k	
<i>Option 450 mm</i>		450			R5k	
<i>Option 500 mm</i>		500			R5k	
<i>Option 600 mm</i>		600			R5k	
<i>Option 750 mm</i>		750			R10k	
Electrical connection:						
Standard 5-pole connector (IP65)				S		
<i>Option cable 3-pole: 3 x 0,25, length 1 m (IP65)</i>				K		
<i>Option 4-pole M12 connector (IP67)</i>				S		
<i>Option cable length in m (IP65)</i>				Kx,xx		
Total resistance:						
Standard depends on electrical travel					see above	
Resistance tolerance:						
±20%						W20%
Independent linearity:						
Standard ±0,05%						L0,05%
Protection class:						
Standard IP65						-
<i>Option IP67</i>						IP67

Accessory:

Mating connector IP67 #110906: M16 5-pole straight female (RC35 IP65)

Mating connector IP67 #125301: M12 4-pole straight female (RC35 IP67)

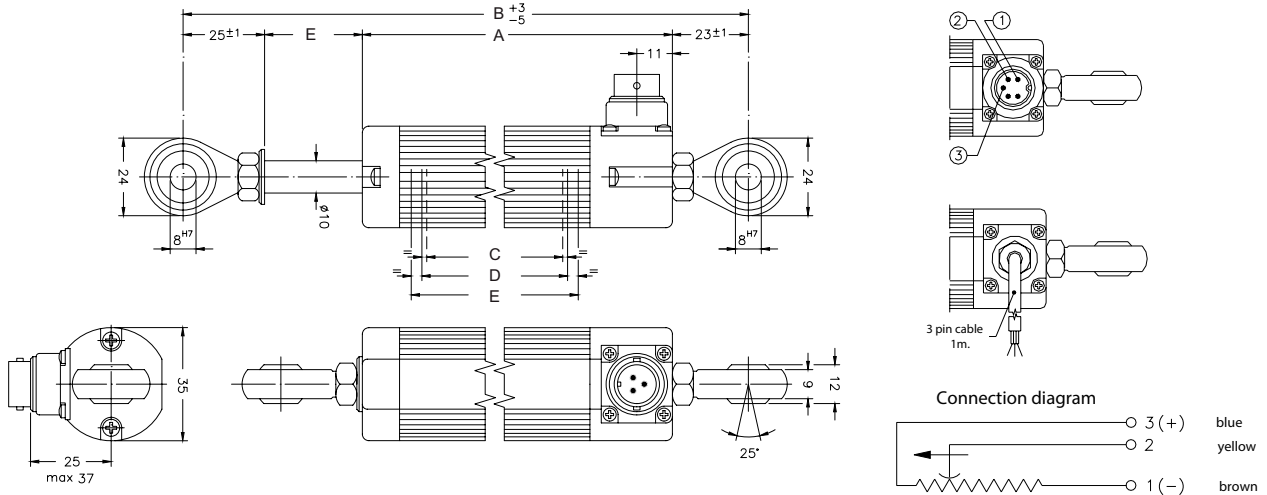
For higher quantities or on-going demand, additional options are available as described below on request

For example:

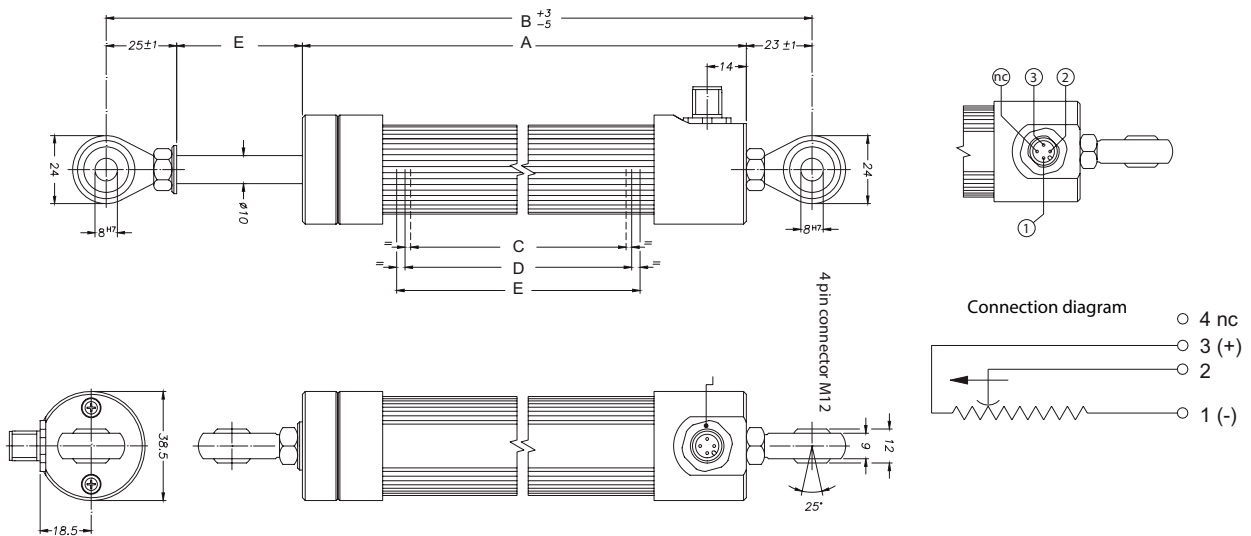
- Special connectors, assembled cables with / without connector
- Special axis length and much more

Drawing

Construction RC35 IP65



Construction RC35 IP67



Dimensions

C: Effective electrical travel (+3/-0 mm)	50	100	130	150	175	200	225	275	300	360	375	400	450	500	600	750
D: Total electrical travel (± 1 mm)	53	103	133	153	178	204	229	279	304	364	380	406	457	508	609	762
E: Mechanical stroke (mm)	59	109	139	159	184	210	235	285	310	370	386	412	463	518	619	772
A: Housing length version IP65 (mm)	180,5	230,5	260,5	280,5	305,5	331,5	356,5	406,5	431,5	497,5	513,5	539,5	590,5	665,5	766,5	919,5
A: Housing length version IP67 (mm)	198	248	278	298	323	349	374	424	449	515	531	557	608	683	784	937
B: Min. distance ball joints IP65 (mm)	227	277	307	327	352	378	403	453	478	554	560	586	637	712	813	966
B: Min. distance ball joints IP67 (mm)	246	296	326	346	371	397	422	472	497	563	579	605	656	731	832	985