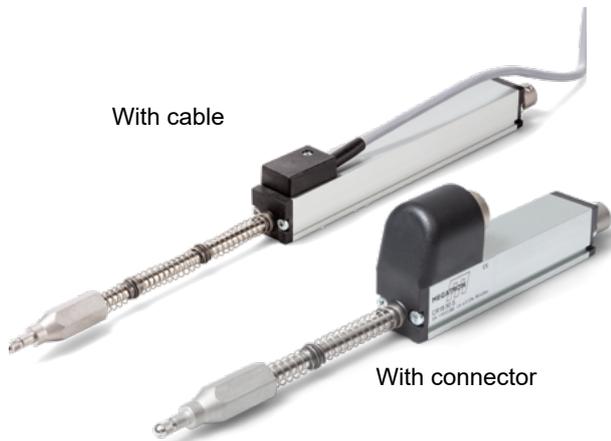


Data Sheet for Linear Sensors

Potentiometric Linear Transducer (Conductive Plastic)

Series CR18



- Compact industrial design
- With spring-suspended probe tip (optional tip with roller bearing)
- Long lifespan and high accuracy
- Linear potentiometer with almost infinite resolution
- Measuring lengths from 10 mm to 100 mm

The transducer has a stainless steel ball in the probe tip, for example for scanning profiles or monitoring distances. The CR18 is available in both connector and cable versions with stroke lengths from 10 to 100 mm. In the CR18 displacement sensor series, the mechanical detection of linear motion is achieved by a front and rear guided push rod.

Electrical Data	CR18 10	CR18 25	CR18 50	CR18 75	CR18 100
Effective electrical travel 1.)	10 +1 mm	25 +1 mm	50 +1 mm	75 +1 mm	100 +1 mm
Total electrical travel 1.)	11 ±1 mm	26 ±1 mm	51 ±1 mm	76 ±1 mm	101 ±1 mm
Total resistance 1.)	1 kOhm		5 kOhm		
Resistance tolerance	±20 %				
Independent linearity (best straight line) 1.)	±0.3 %	±0.2 %	±0.1 %		
Theoretical resolution 1.)	Almost infinite				
Backlash (Hysteresis) 1.)	≤ 0.02 mm				
Max. / recommended wiper current1.)	1 mA (@40 °C, 1 min in case of failure) / 2 µA				
Power rating @40 °C (0 W @120 °C)	≤ 0.2 W	≤ 0.6 W	≤ 1.2 W	≤ 1.8 W	≤ 2.4 W
Isolation voltage 1.)	< 100 µA@500 VAC, 1bar, 2s				
Isolation resistance 1.)	100 MOhm@500 VDC, 1bar, 2s				

Mechanical Data, Environmental Conditions, Miscellaneous	CR18 10	CR18 25	CR18 50	CR18 75	CR18 100
Mechanical stroke 1.)	15 mm	30 mm	55 mm	80 mm	105 mm
Lifetime (90 % effective electrical travel) 2.)	> 25 million meters or 100 million movements (the smaller value applies)				
Max. operational speed	< 10 m/s				
Operational force @ RT 1.) 2.)	< 4 N				
Operational temperature	-30 °C up to +100 °C				
Storage temperature	-50 °C up to +120 °C				
Protection grade (IEC60529)	IP40				
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 (18x)				
Housing length	48 ±1	63 ±1	88 ±1	113 ±1	138 ±1
Mass	ca. 83 g	ca. 102 g	ca. 121 g	ca. 140 g	ca. 178 g
Mounting parts (included in delivery)	Mounting clamps (1 set = 4 pc.)				
Material housing	Aluminium and plastic				
Material pushrod	Stainless steel				
Connection type	Cable 3-pol. 1 m (Ø Leads: 3 x 0.20 mm ²), connector DIN 43322				

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 CR18

Order Code

Description	Selection: standard=black/bold , possible <i>options=grey/italic</i>			
Series:	CR18			
Effective electrical travel:				
10 mm		10		
25 mm		25		
50 mm		50		
75 mm		75		
100 mm		100		
Electrical connection:				
Cable 1 m			K	
Connector			S	
<i>Option cable length in m</i>			<i>Kxx</i>	
Mechanical connection:				
Probe tip				-
<i>Option tip with roller bearing only for 10..50 mm</i>				<i>RL</i>

Accessory (not included in delivery):

- Mating connector (STEM16) #110906: M16 thread, 5-pole, IP67, straight, shielded (STE M16 5POL IP67 G S)
- Mating connector (STEM16) #114462: M16 thread, 5-pole, IP67, angled, shielded (STE M16 5POL IP67 W S)
- Mating connector with cable (STKM16) #127664: M16 thread, 5-pole, IP67, straight, shielded, 2 m (STK M16 5POL IP67 G GS 2M AWG24)
- Mating connector with cable (STKM16) #127665: M16 thread, 5-pole, IP67, angled, shielded, 2 m (STK M16 5POL IP67 W GS 2M AWG24)

More connectors with and without cable on request. Take a look at data sheet STEM16 for connector without cable or STKM16 for connector with cable.

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

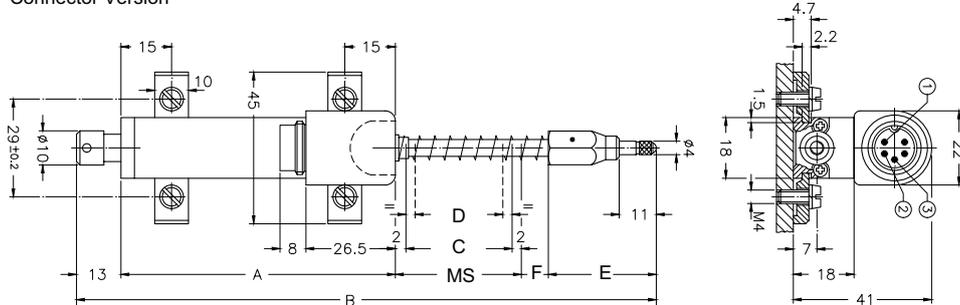
For example:

- Assembled cables with / without connector
- Probe, special axis length and much more

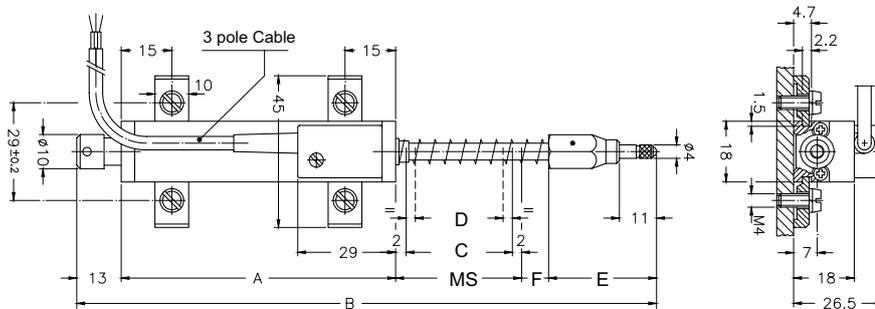
Note: When calibrating the linear transducer, be careful to set the stroke so that the output does not drop below 1 % or rise beyond 99 % of the supply voltage.

Drawing

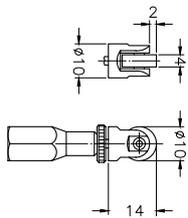
Connector Version



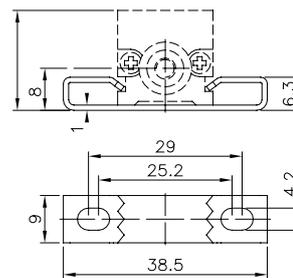
Cable Version



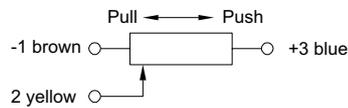
Option tip with roller bearing



Mounting clamps



Connection diagram



Dimensions in mm

Dimensions	CR18 10	CR18 25	CR18 50	CR18 75	CR18 100
C	10 +1	25 +3	50 +1	75 +1	100 +1
D	11 ±1	26 ±1	51 ±1	76 ±1	101 ±1
MS	15	30	55	80	105
A	48 ±1	63 ±1	88 ±1	113 ±1	138 ±1
B - probe tip	108 ±1	138 ±1	196 ±1	251 ±1	307 ±1
B - tip with roller bearing	119 ±1	149 ±1	207 ±1	-	-
E - probe tip	32	32	40	40	40
E - tip with roller bearing	43	43	51	-	-
F	-	-	-	5	11