Data Sheet for Linear Sensors

Potentiometric Linear Transducer (Conductive Plastic) — Series CLP13 / CLPR13

CLP13

CLPR13

The CLP13 / CLPR13 series is used in applications where a displacement sensor with space saving design is required.

- Linear potentiometer (conductive plastic) with almost infinite resolution
- Measuring lengths from 13 mm to 100 mm
- Compact dimensions
- Long lifetime (up to 40 million movements)
- With and without spring return

The compact displacement sensor has an excellent lifetime due to the Comolded conductive plastic technology. The front guided push rod allows use in applications with limited overall length. The spring return opens up additional fields of application.

Electrical Data	CLP(R)13-13	CLP(R)13-25	CLP(R)13-50	CLP(R)13-100
Effective electrical travel 1.)	8 ±0,5 mm	11 ±0,5 mm	12,7 ±0,5 mm	15 ±0,5 mm
Total resistance 1.)	12,7 ±0,5 mm	25,4 ±0,5 mm	50,8 ±0,5 mm	101,6 ±0,5 mm
Resistance tolerance	0,5, 1, 2, 5, 10 kOhm		1, 2, 5, 10, 20 kOhm	
Independent linearity (best straight line) 1.)	±1% (±0,5%)	±0,7% (±0,5%)	±0,5% (±0,3%)	±0,3% (±0,1%)
Theoretical resolution 1.)	Almost infinite			
Backlash (Hysteresis) 1.)	≤ 0,1 mm			
Max. / recommended wiper current1.)	1 mA (@ 40°C, 1 min in case of failure) / 2 µA			
Power rating @ 40°C (0W @ 55°C)	≤ 0,2 W	≤ 0,4 W	≤ 0,7 W	≤ 1,2 W
Isolation voltage 1.)	500 VAC, 1min			
Isolation resistance 1.)	1000 MOhm @ 500 VDC			

Mechanical Data, Environmental Conditions, Miscellaneous	CLP(R)13-13	CLP(R)13-25	CLP(R)13-50	CLP(R)13-100
Mechanical stroke 1.)	12,7 +3 mm	25,4 +3 mm	50,8 +3 mm	101,6 +3 mm
Lifetime (90% effective electrical travel) 2.)	40 / 20 Mio. movements (CLP13 / CLPR13)			
Max. operational speed	< 5 m/s			
Operational force @ RT 1.) 2.)	< 0,5 N / 3,5 N	< 0,5 N / 5 N		< 1 N / 5 N
End stop force in case of failure	< 20 N			
Operational temperature	-30..+105°C			
Storage temperature	-30..+105°C			
Protection grade (IEC60529)	IP40			
Vibration (IEC 68-2-6, Test Fc)	15 g (10..2000 Hz, 0,75mm, 12h)			
Shock (IEC 68-2-27, Test Ea)	50 g, halfsine, 11 ms (18x)			
Housing length	38 ±1 mm	51 ±1 mm	76 ±1 mm	127 ±1 mm

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Mechanical Data, Environmental Conditions, Miscellaneous	CLP(R)13-13	CLP(R)13-25	CLP(R)13-50	CLP(R)13-100
Mass	ca. 10 g	ca. 15 g	ca. 25 g	ca. 35 g
Mounting parts (included in delivery)	None			
Material housing	Plastic			
Material push rod	Stainless steel			
Connection type	Soldering pins			

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: **Without spring return** **With spring return**	**CLP13** **CLPR13**				
Effective electrical travel: **13 mm** **25 mm** **50 mm** **100 mm**		**13** **25** **50** **100**			**L1%** *(L0,5%)* **L0,7%** *(L0,5%)* **L0,5%** *(L0,3%)* **L0,3%** *(L0,1%)*
Total resistance: *Option 500 Ohm only CLP(R)13-13/25* **1 kOhm** *Option 2 kOhm* **5 kOhm** **10 kOhm** *Option 20 kOhm only CLP(R)13-50/100*			*R0,5k* **R1k** *R2k* **R5k** **R10k** *R20k*		
Resistance tolerance : **±10%**				**W10%**	
Independent linearity: **Standard depends on electrical travel Lx,x%** *Option depends on electrical travel Lx,x%*					**see above** *see above*

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

For example:
- Assembled leads and cables with / without connector
- Probe, special axis length and much more

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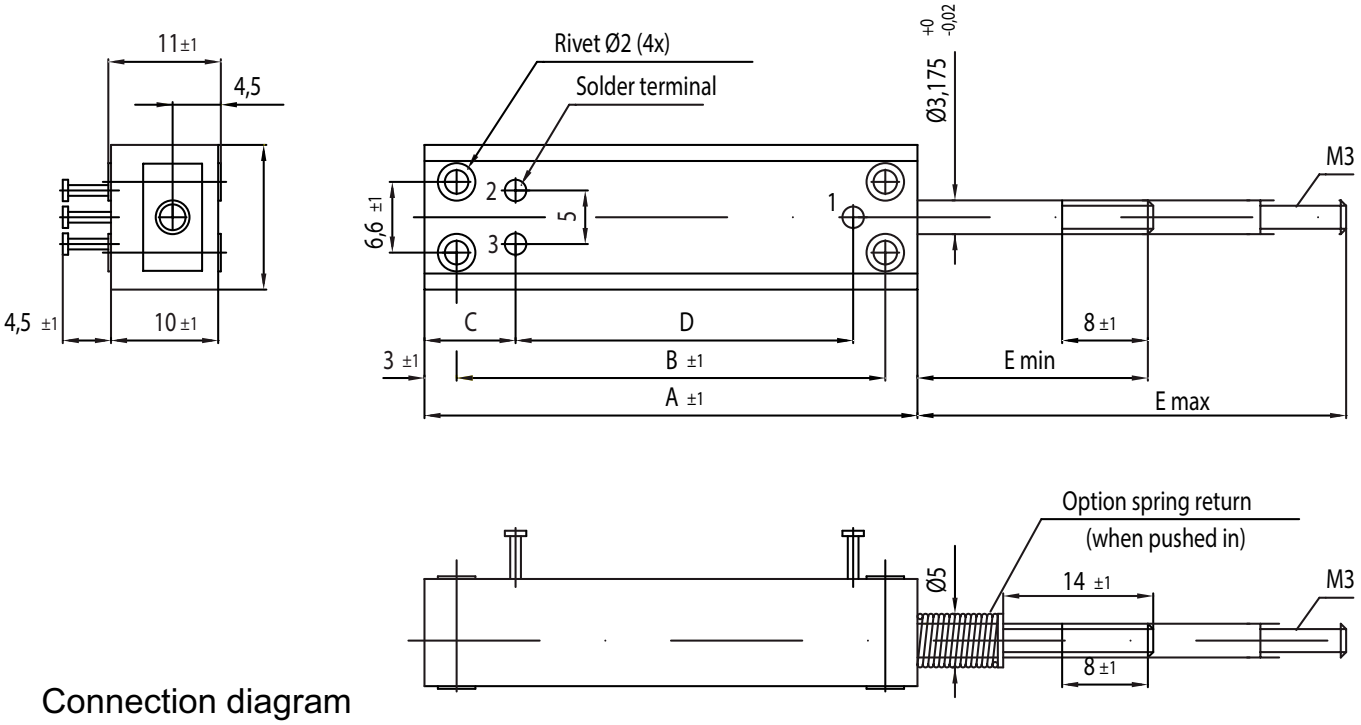
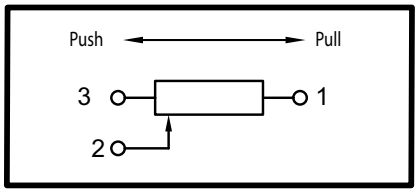
Drawing



Connection diagram



Dimensions in mm

Dimensions	CLP13-13	CLP13-25	CLP13-50	CLP13-100
A	38	51	76	127
B	32	45	70	121
C [±0,1 mm]	8,5	8,5	8,5	8,5
D [±0,1 mm]	23,5	36,5	61,5	112,5
E min [±1 mm]	19	19	19	19
E max [+3 mm]	31,7	44,4	69,8	120,6
	CLPR13-13	**CLPR13-25**	**CLPR13-50**	**CLPR13-100**
E min [±1 mm]	30	35	40	50
E max [+3 mm]	42,7	60,4	90,8	151,6