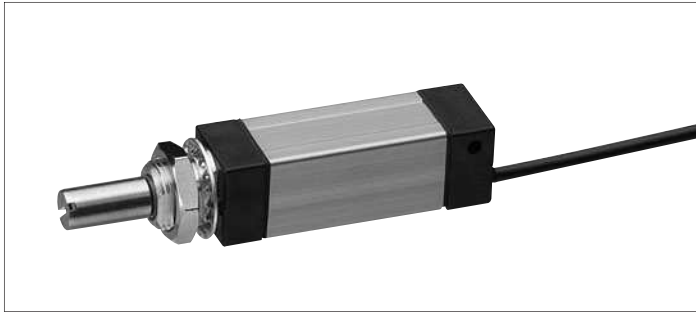


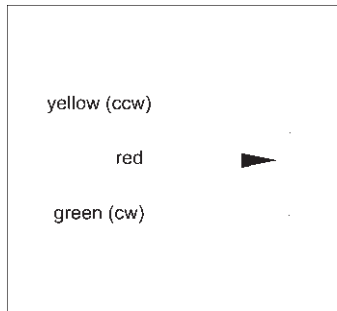
## Geared Conductive Plastic Potentiometers

### ML6-ML100 Series



#### Special features

- very small dimensions
- 6 - 100 revolutions
- up to  $15 \times 10^6$  movements
- excellent linearity
- high resolution – better than 0.1%



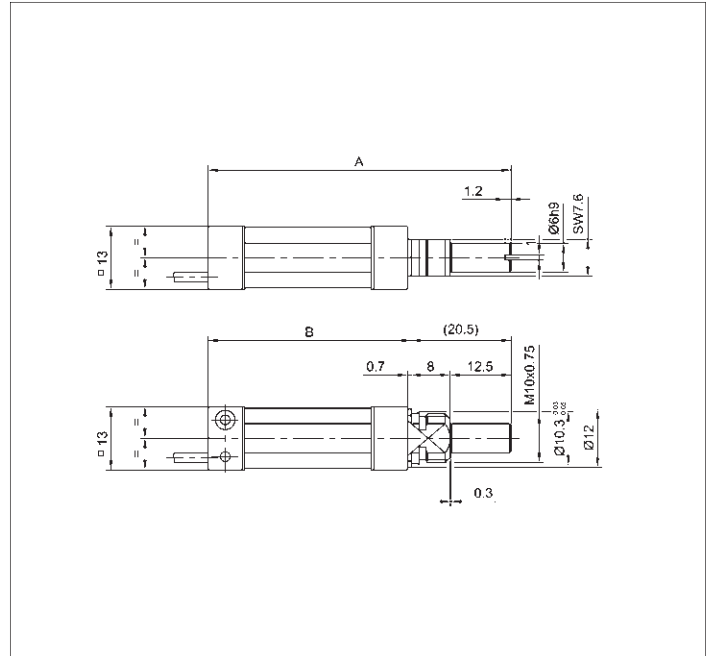
With a 13 mm profile, the ML6-ML100 Series geared potentiometer combines accurate angle signals,  $> 360^\circ$ , with excellent linearity in an extremely small package.

Careful selection of materials and high-quality components ensure a constant measurement throughout the entire service life of the sensor.

Special designs with other linearities and shaft dimensions are available on request.

#### Important

All values given for this series – including linearity, lifetime, micro-linearity, resistance to external disturbances and temperature coefficient in voltage dividing mode – are quoted for the device operating with the wiper voltage driving an operational amplifier working as a voltage follower where virtually no load is applied to the wiper ( $I_e \leq 1 \mu\text{A}$ ).



#### Description

Size	housing profile 13 x 13 mm
Housing	aluminum, anodized
Shaft	brass, nickel plated
Bearings	sinter bronze sleeve bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Electrical connections	cable 1 m CRTH 3 x 0.055 mm <sup>2</sup>

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Type designations	ML6	ML10	ML25	ML50	ML100		
<b>Mechanical Data</b>							
Dimensions	see drawing						
Dimension A	62.2	62.2	77.2	102.2	102.2	mm	
Dimension B	41.7	41.7	56.7	81.7	81.7	mm	
Mounting	nut M10 x 0.75 and serrated washer 3/8"						
Mechanical travel	2,160	3,600	9,000	18,000	36,000	°	
Permitted shaft loading (axial and radial) static or dynamic force	1						N
Torque	≤ 1						Ncm
Maximum operational speed	300						RPM
Weight	27	27	31	37	37	g	
<b>Electrical Data</b>							
Actual electrical travel	2,160	3,240	8,280	17,280	34,560	°	
Available resistance values	5	5	10	10	10	kΩ	
Resistance tolerance	±20						%
Repeatability	0.17 (=3.6°)	0.1 (=3.24°)	0.04 (=3.32°)	0.02 (=3.46°)	0.01 (=3.46°)	%	
Effective temperature coefficient of the output-to-applied voltage ratio	5 (typical)						ppm/K
Independent linearity	±2	±0.5	±0.25	±0.25	±0.25	%	
Max. permissible applied voltage	42	35	35	35	35	V	
Recommended operating wiper current	≤ 1						μA
Max. wiper current in case of malfunction	5						mA
Insulation resistance (500 VDC, 1 bar, 2 s)	≥ 10,000						MΩ
Dielectric strength (AC, 50 Hz, 1 min, 1 bar)	750						V
<b>Environmental Data</b>							
Temperature range	-25...+75						°
Vibration	30...2000 A <sub>max</sub> = 0.75 a <sub>max</sub> = 10						Hz mm g
Life	15 x 10 <sup>6</sup>						movements
Shock (DIN IEC 68 T2-27)	30 7						g ms
Protection class (DIN 40050)	IP 65						

**Order designations**

Type	Art. no.	R in kΩ
ML6 5K0 125 MB	82595	5
ML10 5K0 125 MB	82442	5
ML25 10K0 125 MB	82445	10
ML50 10K0 125 MB	82447	10
ML100 10K0 125 MB	82449	10

**Order designations / Abbreviations**MB: bushing M10 x 0.75,  
axis Ø 6 mm with slot

Included in delivery

1 nut M10 x 0.75

1 serrated washer 3/8"

**Recommended accessories**

MAP process-control indicators and display. MUP signal conditioner for standardized output signals.

Subject to changes

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