

# CD50 – POTENTIOMETRIC OR GAUGE BRIDGE OUTPUT MEASUREMENT RANGE UP TO 1250 MM

## Specifications:

Measurement range	0 up to 1250 mm
Output signal	1k $\Omega$ potentiometric output (other values on demand) 500 $\Omega$ gauge bridge output
Resolution	Quasi infinite (depends on the operating system)
Material	Body and cover - aluminum (RohS) Measuring cable – Stainless steel 316L
Cable diameter	0,51 mm
Detection element	Precision potentiometer
Connection	Male connector M16 – 3 pins DIN (for R01K output) Male connector M16 – 8 pins DIN (for P05K output) Male connector M12 – 4 pins (A coding) PVC cable
Standard linearity	from +/-0.50% f.s to +/-0.10% f.s depending the measurement range (see ordering reference below)
Protection class	IP54 (option IP67)
Max. Velocity	10 M/S
Max. Acceleration	7 M/S <sup>2</sup> (before cable deformation)
Weight	$\approx$ 2000 g
Operating temperature	-20° to +80°C
Storage temperature	-30° to +80°C



## Cable forces:

Measurement range in mm	Min. pull-out force	Max. pull out force
50	$\approx$ 6,40 N	$\approx$ 6,50 N
100	$\approx$ 6,30 N	$\approx$ 6,50 N
250	$\approx$ 6,00 N	$\approx$ 6,50 N
500	$\approx$ 5,50 N	$\approx$ 6,50 N
750	$\approx$ 5,00 N	$\approx$ 6,50 N
1000	$\approx$ 4,50 N	$\approx$ 6,50 N
1200	$\approx$ 4,00 N	$\approx$ 6,50 N
1250	$\approx$ 4,00 N	$\approx$ 6,50 N

## Ordering reference:

**CD50** – **1000** – **R01K** – **L15** – **K02** – **OP** – **xx** – **xx**

Model	
<b>CD50</b>	
Measurement range	
<b>1250</b> = 0 to 1250 mm <i>Or other ranges between 0 and 1250mm</i>	
Output signal	
<b>R01K</b> = 1k $\Omega$ potentiometric output ( <i>other values on demand</i> ) <b>P05K</b> = 500 gauge bridge	
Linearity	
<b>L50</b> = +/- 0.50% f.s.(standard for 50mm $\geq$ Measuring range $\leq$ 250 mm)	
<b>L25</b> = +/- 0.25% f.s.(standard for 250mm > Measuring range $\leq$ 500 mm) (optional for 50mm $\geq$ Measuring range $\leq$ 250 mm)	
<b>L15</b> = +/- 0.15% f.s.(standard for 500mm > Measuring range $\leq$ 1250 mm) (optional for 250mm > Measuring range $\leq$ 500 mm)	
<b>L10</b> = +/- 0.10% f.s.(option optional for 500mm > Measuring range $\leq$ 1250 mm)	
Connection	
<b>C</b> = Male connector M16 – DIN 3 pins ( <b>version R01K</b> ) <b>C</b> = Male connector M16 – DIN 8 pins ( <b>version P05K</b> ) <b>L4</b> = Male connector M12 – 4 pins (A coding) <b>K</b> = PVC cable - 8 wires - axial + ex: <b>02</b> for cable 2 meters long <i>Other connection available on demand</i>	
Options OP	
<b>AC</b> = Complete anodizing <b>BR</b> = Cleaning brush for the measuring cable <b>BT</b> = Low temperature (down to -30°C) <b>CP</b> = Fixing of the measuring cable with a clevis <b>EM</b> = Fixing of the measuring cable with a clip <b>EN</b> = Measuring cable coated with polyamide <b>IP67</b> = Protection class of electronics IP67 <b>M4</b> = Fixing of the measuring cable with a M4 threaded rod <b>RAC</b> = Cable dust wiper <b>TEV</b> = Water evacuation hole	



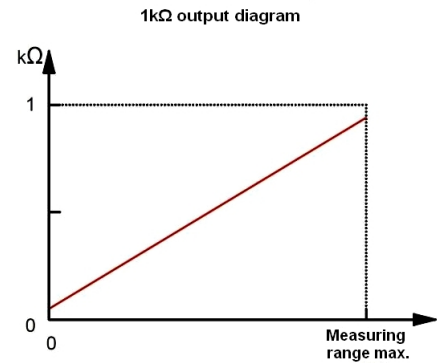
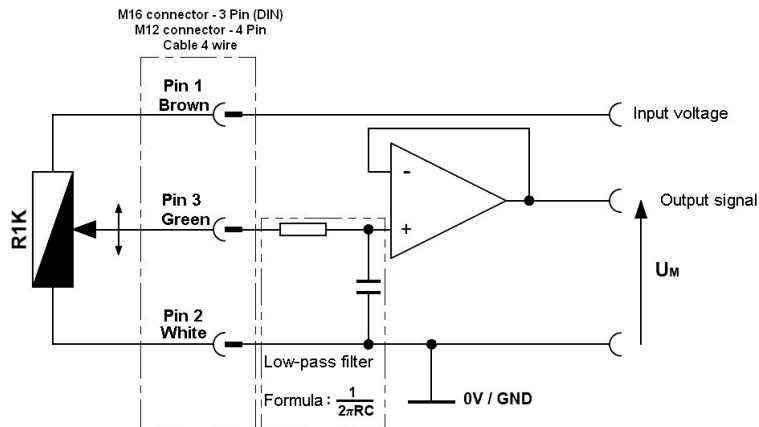
Tel : +33 (0)3 88 02 09 02 / Fax : +33 (0)3 88 02 09 03 / E-mail : [info@ak-industries.com](mailto:info@ak-industries.com) / Web : <http://www.ak-industries.com>

## Electrical characteristics

### Potentiometric version 1 K $\Omega$ : (other values on demand)

Temperature drift                      +/- 50 ppm/°C

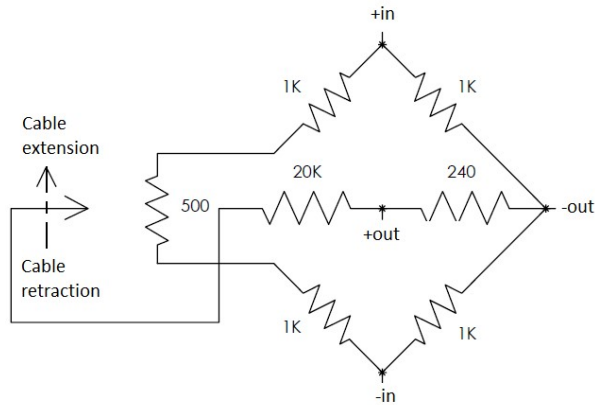
#### Example of wiring diagram with input stage :



To ensure a good linearity, wire the potentiometer as a voltage divider and never as a rheostat.  
The input resistance of the operating system must be very high (greater than 10M $\Omega$ )

### Bridge output P05K :

Impedance of 500 $\Omega$   
Full scale output : 2mV/V  
Zero offset not available  
Please consult us for an adjustable version.



#### Connection :

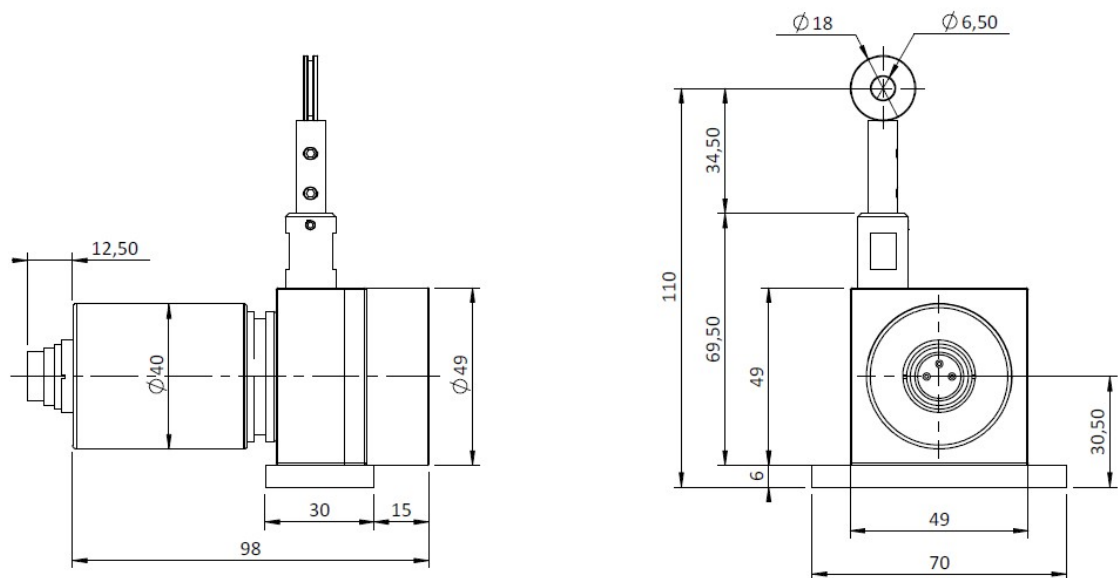
Male connector M16 3 pins (DIN) R01K only	Male connector M12 4 pins R01K or P05K	Male connector M16 8 pins (DIN) P05K only	PVC cable 4 wires	R01K	P05K
1	1	1	Brown	Input voltage +	Input voltage +
2	2	2	White	Input voltage GND	Input voltage GND
3	3	3	Green	Signal +	Signal +
/	4	4	/	/	Signal -

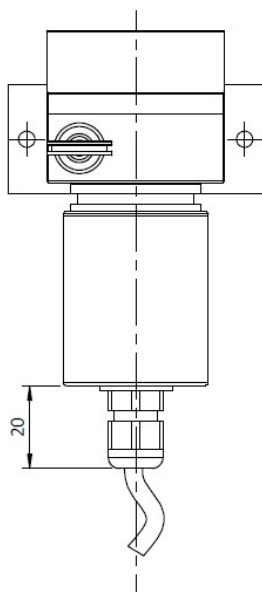
Sensor side view	Sensor side view	Sensor side view

## Dimensional drawing

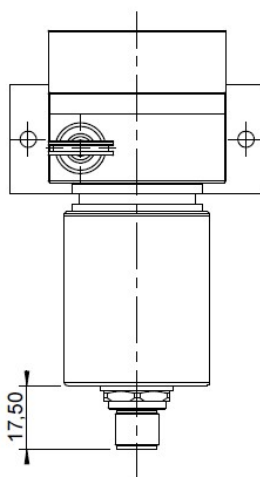
### POTENTIOMETRIC VERSION



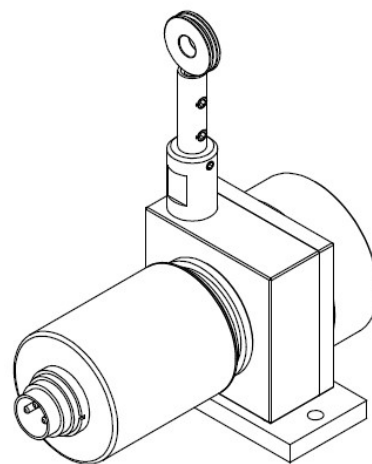
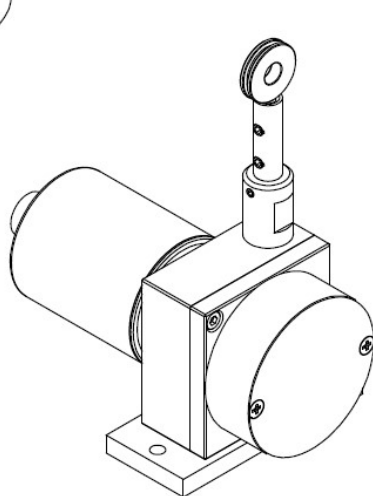
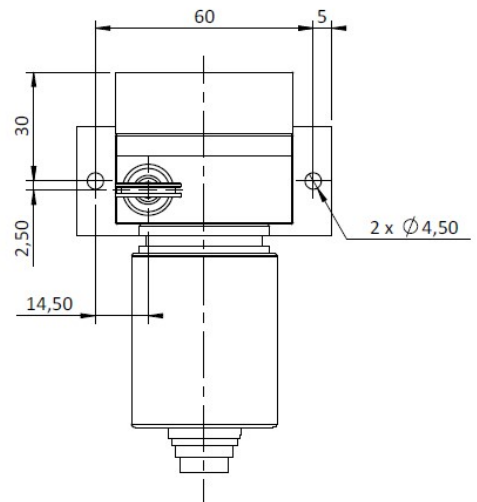
K Connection  
(PVC cable – 4 wires)



L4 Connection  
(M12 – 4 pins connector)

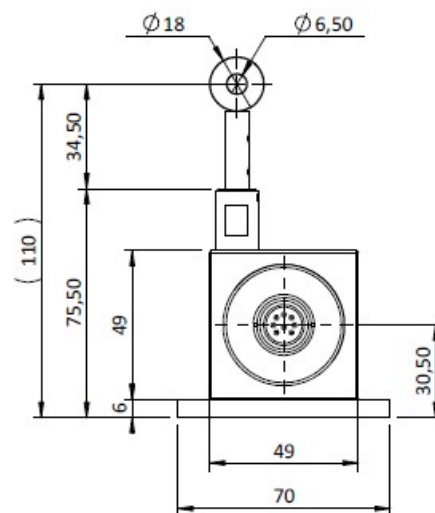
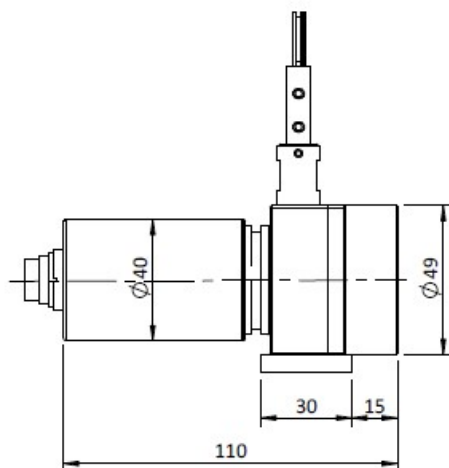


C Connection  
(M16 – 3 pins (DIN) connector)

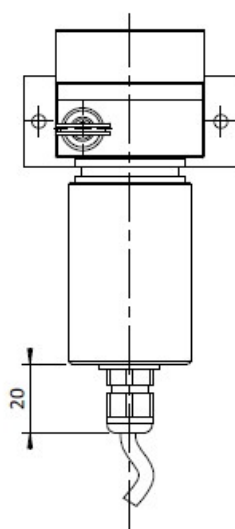


## Dimensional drawing

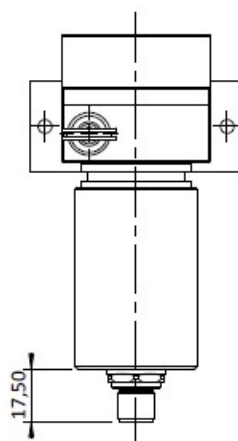
### BRIDGE OUTPUT VERSION



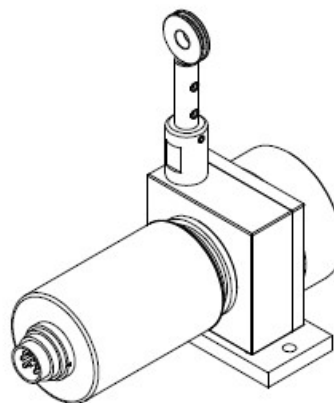
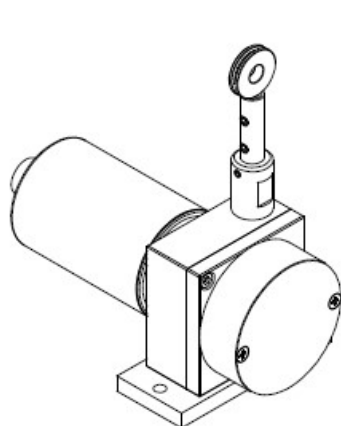
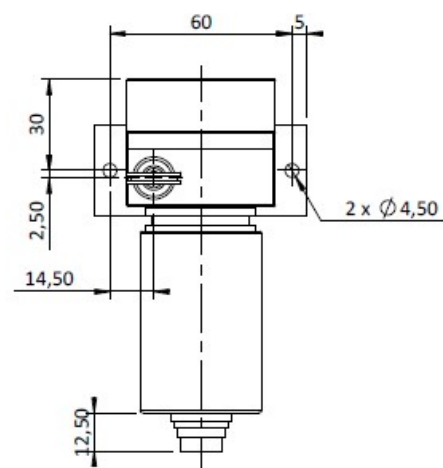
K Connection  
(PVC cable – 4 wires)



L4 Connection  
(M12 - 4 pins connector)



C Connection  
(M16 – 3 pins (DIN) connector)

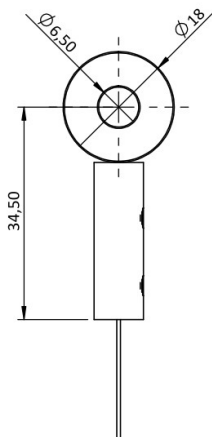


## Options :

### Cable attachment with a lug :

#### **Standard**

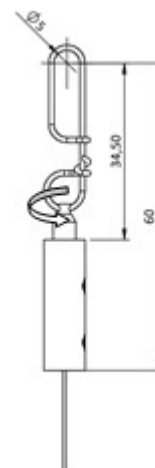
The attachment lug is fixed with a M6 screw or a clevis.



### Cable attachment with a clip :

#### **OP-EM**

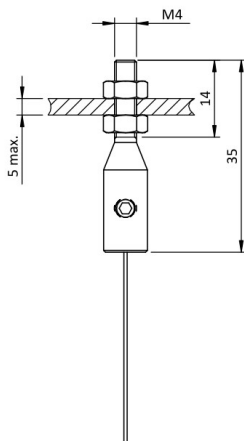
This fastening system allows a rotation about its axis.  
The clip is fixed with a M4 screw or a clevis.



### Cable attachment fitted with a M4 threaded rod:

#### **OP-M4**

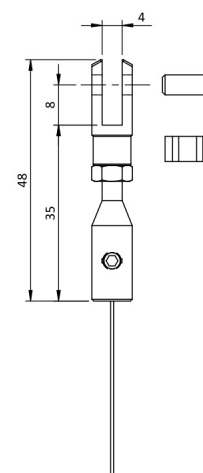
The rod attachment uses a threaded rod with 2 nuts (provided).  
The required thickness of the plate does not exceed 5 mm.



### Cable attachment with a clevis :

#### **OP-CP**

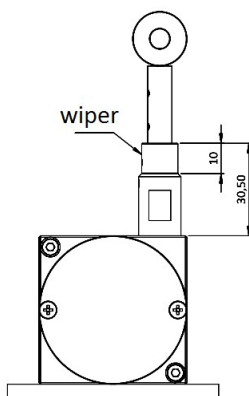
The attachment of the clevis is done using a pin (provided).



### Cable dust wiper:

#### **OP-RAC**

The dust wiper cleans the cable in dusty or humid environments.



### Water evacuation holes:

#### **OP-TEV**

The holes allow the natural flow of fluids out of the sensor in order to avoid their accumulation in the system.

