CD50

CABLE DISPLACEMENT SENSOR

CD50

APPLICATIONS

- CD50 sensores are cable displacement sensors. They are used to measure (in absolute or incremental mode) the displacement of a mobile object from its datum.
- Injection moulding machines.
- Forging machines and bending machines.
- Material testing machines.

DESCRIPTION

A linear CD50 works according to the principle of a thread taut between a mobile element and a fixed element, fitted with a return spring drum. The drum then converts the linear displacement into an angle displacement. The shaft of the drum is fitted with a potentiometer, and operates an incremental encoder or an absolute encoder.

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CD50 POTENTIONMETRIC OUTPUT – Measurement range 0 up to1250 MM

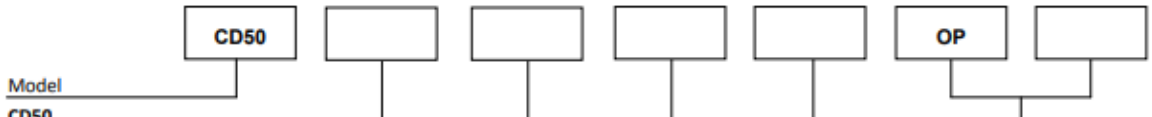
TECHNICAL FEATURES

Measurement Range	0 up to 1250 mm
Output signal	1kΩ Potentiometer (other values on demand)
Resolution	Quasi infinite (depends on the operating system)
Material	Body and cover – aluminum (RohS) Measuring cable – inox 316L
Cable diameter	0,51 mm
Detection element	Multi-turn Hybrid potentiometer
Connection	Male connector M16 – DIN 3 pin Male connector M12 – 4 pin PVC cable – 4 wires
Standard linearity	+/- 0,25% PE – stroke ≤500 mm +/- 0,15% PE – stroke >500 mm +/- 0,10% PE – stroke >500 mm
Protection class	IP54 (option IP67)
Max.Velocity	10 M/S
Max. Acceleration	40M/S^2 (before cable deformation)
Weight	≈ 700 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	= 6,40 N	= 6,50 N
100	= 6,30 N	= 6,50 N
250	= 6,00 N	= 6,50 N
500	= 5,50 N	= 6,50 N
750	= 5,00 N	= 6,50 N
1000	= 4,50 N	= 6,50 N
1200	= 4,00 N	= 6,50 N
1250	= 4,00 N	= 6,50 N

ORDERING REFERENCE



Model

CD50

Measurement range

0050 = 0 up to 50 mm
0100 = 0 up to 100 mm
0250 = 0 up to 250 mm
0500 = 0 up to 500 mm
0750 = 0 up to 750 mm
1000 = 0 up to 1000 mm
1200 = 0 up to 1200 mm
1250 = 0 up to 1250 mm
(Other range available on demand)

Output signal

R01K = 1kΩ output
(Other values on demand)

Linearity

L25 = +/- 0.25% f.s. (standard for measuring range from 0 to 500mm)
L15 = +/- 0.15% f.s. (standard for measuring range greater than 500 mm)
(option for measuring range from 0 to 500mm)
L10 = +/- 0.10% f.s. (option for measuring range greater than 500 mm)

Connection

C = Male connector M16 – DIN 3 pin
L4 = Male connector M12 – 4 pin
K = PVC cable – 4 wires + ex: **02** for cable 2 meters long

OP Options

AC = Complete anodizing
BT = Low temperature (down to -30°C)
EM = Cable clip
EN = Measuring cable coated with polyamide
IP67 = Protection class IP67
M4 = M4 cable fixing
RAC = Cable dust wiper
TEV = Water evacuation holes

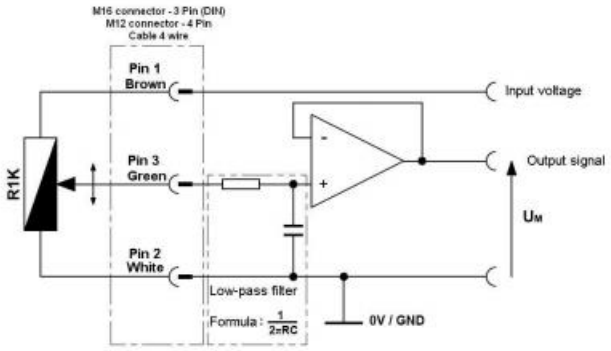
Reference example: CD50-0750-U010-L15-K02-OP-AC-EM

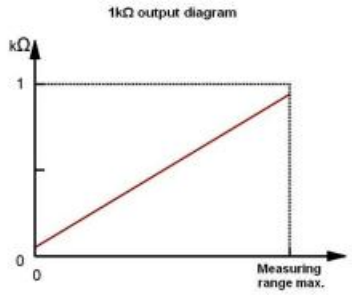
ELECTRICAL FEATURES

Potentiometric version 1 KΩ : (other values on demand)

Temperature drift ..... +/-50 ppm/°C

Example of wiring diagram with input stage :

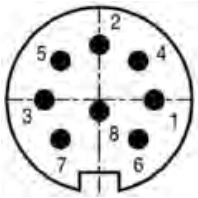


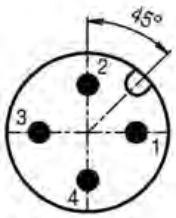


To ensure a good linearity, wire the potentiometer as a voltage divider and never as a rheostat.
The input resistance of the operating system must be very high (greater than 10MΩ)

CONNECTION

Male connector M16 3 pin (DIN)	Male connector M121 4 pin	PVC cable 4 wire	R01K
1	1	Brown	Input voltage +
5	2	White	Input voltage GDN
3	3	Green	Signal +
Sensor side view	Sensor side view		





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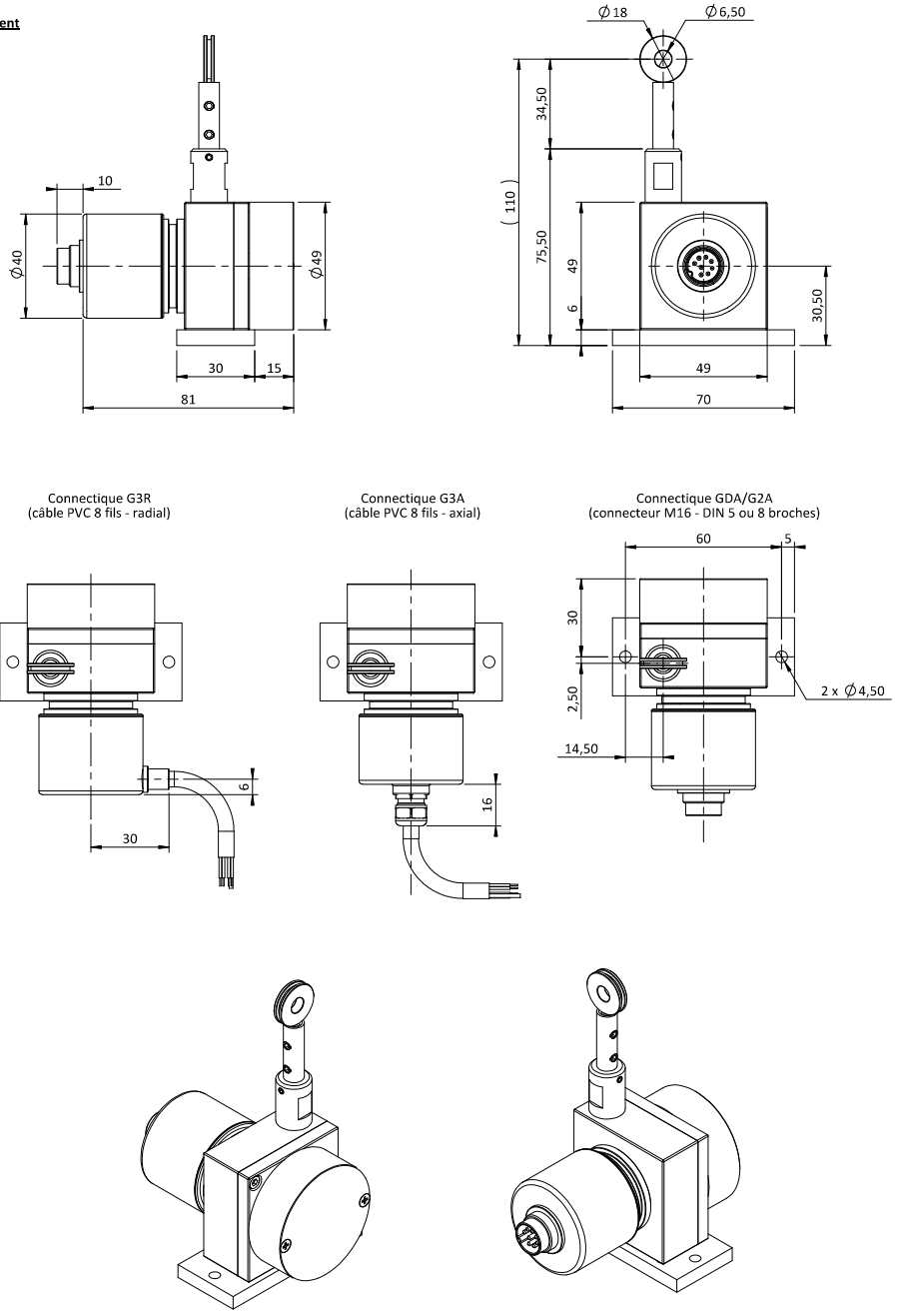
DIMENSIONAL DRAWING

Encombrement



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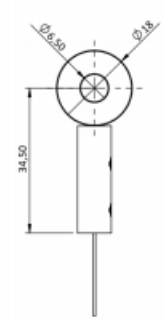
OPTIONS

Cable attachment with a lug :

Standard

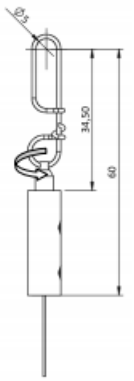
The attachment lug is fixed with a M6 screw or a clevis.



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.

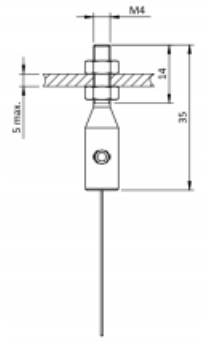


Cable attachment with a M4 threaded rod:

OP-M4

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

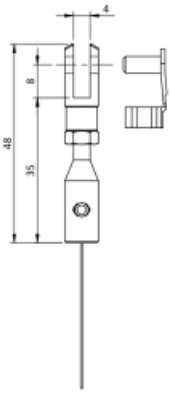
Caution
Never screw the threaded rod into a fixed nut, a twist of the measurement cable would damage it.



Cable attachment with a clevis :

OP-CP

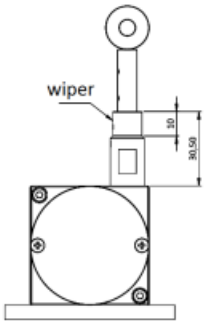
The attachment of the clevis is done using a pin (provided).



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.