

AiM Infotech

Car/bike linear
potentiometer diameter 9,5

Release 1.01



This datasheet explains how to install the car/bike linear potentiometer 9,5 mm diameter and shows its technical characteristics.

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Introduction

AiM loggers can measure the displacement between two points using a sensor (linear potentiometer) directly connected to the points of measure. This potentiometer can measure linear displacements like:

- dampers compression or extension
- steering rotation measured through the rack displacement

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Part numbers

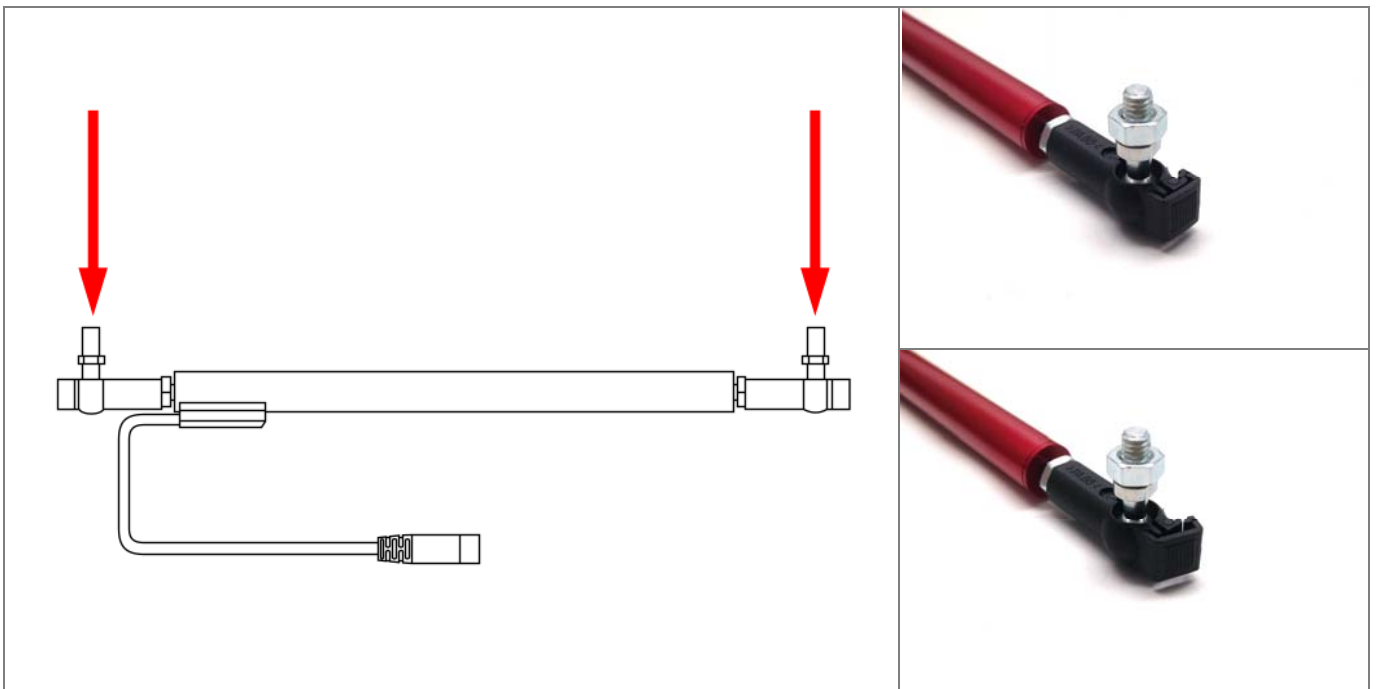


Car/bike linear potentiometer part numbers depends on its travel:

- 75 mm travel potentiometer **X05SNPJ075**
- 150 mm travel potentiometer **X05SNPJ150**

3 Installation

To fix the potentiometer use the two fixing points highlighted here below.



When installing the sensor:

- be very careful avoiding possible bending of the internal cylinder; these bendings, occurring when over tightening the screws or in case of incorrect mounting, can seriously damage the sensor
- extract the internal cylinder for about 5 mm (0.2 inches) from the sensor lower boundary position.
- if you need to open the two pop joints use the black plastic clip ; images here above on the right show the clip closed on top and open on bottom.

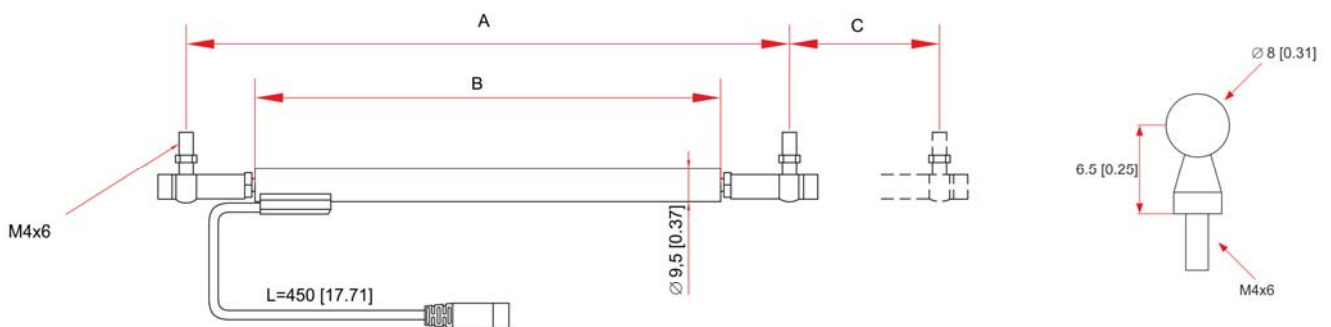
Please note: do not use this sensor to measure distances beyond the potentiometer maximum travel.

The car/bike linear potentiometer can be connected to any analog channel of AiM loggers.

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Dimensions, pinout and technical characteristics

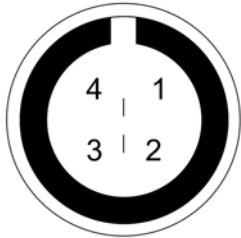
The drawing below shows sensors dimensions in millimetres [inches] on the left and pop joints dimensions on the right.



With reference to the drawing above the table here below shows the proportional growth of "A", "B" and "C" dimensions.

Potentiometer travel (C)	"A" – Retracted mounting distance	"B" Sensor body length
75 mm (2.95")	175 mm (6.88")	157 mm (6,18")
150 mm (5.91")	260 mm (10.23")	232 mm (9.13")

The potentiometer ends with a 4 pins Binder 719 male connector. The image below shows the male connector pinout from solder termination side.


Binder connector pin
Function

1	Analog signal
2	GND
3	Not connected
4	Vreference (4.5V)

Car/Bike linear potentiometer **technical characteristics** are:

- Maximum supply voltage: 40 Vdc
- Resolution: essentially infinite
- Repeatability: ≤ 0.01 mm
- Operational speed: 10 m/s max
- Mechanical life: >25 millions cycles
- Temperature range: from -40° to $+150^{\circ}$
- Protection: IP67
- Independent linearity: $\leq \pm 0.5\%$
- Cable type: Raychem 55M 26 AWG, Viton Sleeve
- Cable length: 450 mm
- Housing: Aluminium
- Mechanical fixing: Pop joints (2x Ball Pins $\varnothing 8$ mm – M4x6 mm)
- Weight: 26÷46 g

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Extension cables

The potentiometer is sold with a 45 cm cable and standard lengths extension cables are available as optional; it is also possible to ask for specific length extension cables.

Extension cables part numbers change according to their length and to the device the sensor is to be connected to.

Extension cable for connection with:

- EVO4
- EVO4S
- Channel Expansion

Part numbers:

V02PCB05BTXG – cable length: 500 mm

V02PCB10BTXG – cable length: 1000 mm

V02PCB15BTXG – cable length: 1500 mm

V02PCB20BTXG – cable length: 2000 mm

V02PCB25BTXG – cable length: 2500 mm

V02PCB30BTXG – cable length: 3000 mm



Extension cable for connection with:

- MXG
- MXS
- MXL2
- EVO5
- MXL Pista/Pro05

Part numbers:

V02PCB05B – cable length: 500mm

V02PCB10B – cable length: 1000mm

V02PCB15B – cable length: 1500mm

V02PCB20B – cable length: 2000mm

V02PCB25B – cable length: 2500mm

V02PCB30B – cable length: 3000mm

