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AiM Infotech

# Car / bike linear potentiometer diameter 9.4

Release 1.01



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This datasheet explains how to install the car/bike linear potentiometer 9.4 mm diameter and shows its technical characteristics.

# 1

## Introduction

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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

# 2

## Part numbers

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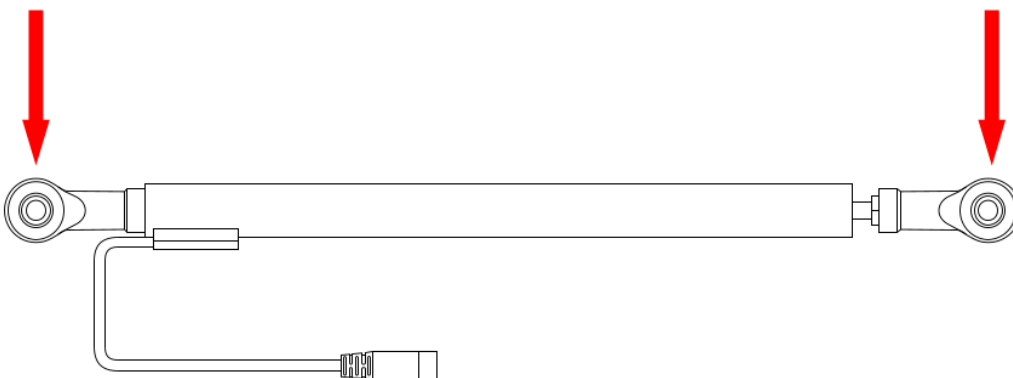
Car/bike linear potentiometer part numbers depends on its travel:

- 50 mm travel potentiometer **SUS-POT-50-RJ**
- 75 mm travel potentiometer **SUS-POT-75-RJ**
- 100 mm travel potentiometer **SUS-POT-100-RJ**
- 150 mm travel potentiometer **SUS-POT-150-RJ**

## 3 Installation

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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.

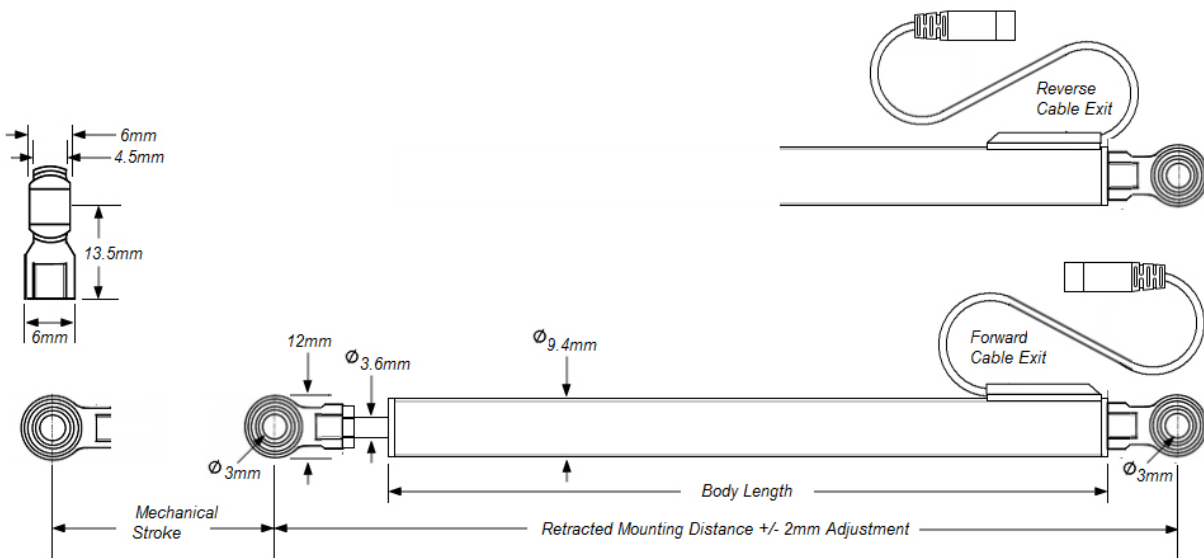
**Please note:** do not use this sensor to measure distances beyond the potentiometer maximum travel.

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

# 4

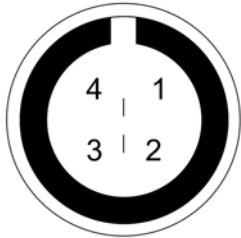
## Dimensions, pinout and technical characteristics

The drawing below shows sensors dimensions in millimetres [inches].



Potentiometer travel	Retracted mounting distance	Sensor body length
50 mm (1.97")	123 mm (4.84")	91 mm (3.58")
75 mm (2.95")	148 mm (5.82")	116 mm (4,56")
100 mm (3.93")	179 mm (7.04")	147 mm (3.22")
150 mm (5.91")	229 mm (9.01")	197 mm (7.75")

The potentiometer ends with a 4 pins Binder 719 male connector. The image below shows the 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:  $\leq 0.01$  mm
- Operational speed: 10 m/s max
- Mechanical life: >25 millions cycles
- Temperature range: from  $-40^{\circ}$  to  $+125^{\circ}$
- Environmental sealing: IP65
- Independent linearity:  $\leq \pm 0.5\%$
- Cable type: Raychem 55A 24 AWG
- Cable length: 450 mm
- Housing: Aluminium
- Spherical bearing:  $\varnothing 5$  mm

## 5

# Extension cables

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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
- MyChron 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
- XML2
- EVO5
- XML Strada/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

