



AiM Infotech

Position sensor  
Car/Bike suspension  
potentiometer

Release 1.02



This datasheet explains how to install the car/bike suspension potentiometer and shows its mechanical and electric characteristics.

## 1

# Introduction

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

- suspensions and spring cushions compression or extension
- steering column rotation measured through the rack displacement.

## 2

# Part numbers

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Car/Bike linear potentiometer part number depends on its travel:

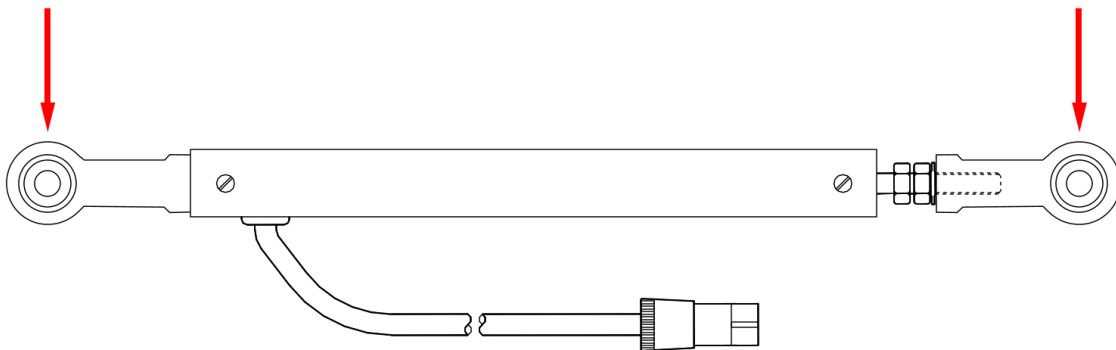
- Potentiometer with 50 mm travel      **X05SNLP050**
- Potentiometer with 75 mm travel      **X05SNLP075**
- Potentiometer with 100 mm travel      **X05SNLP100**
- Potentiometer with 150 mm travel      **X05SNLP150**

## 2.1 Installation notes

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The car/bike linear potentiometer has been designed to measure the displacement between two reference points: a fixed point and a mobile one.

Fix the potentiometer using 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.

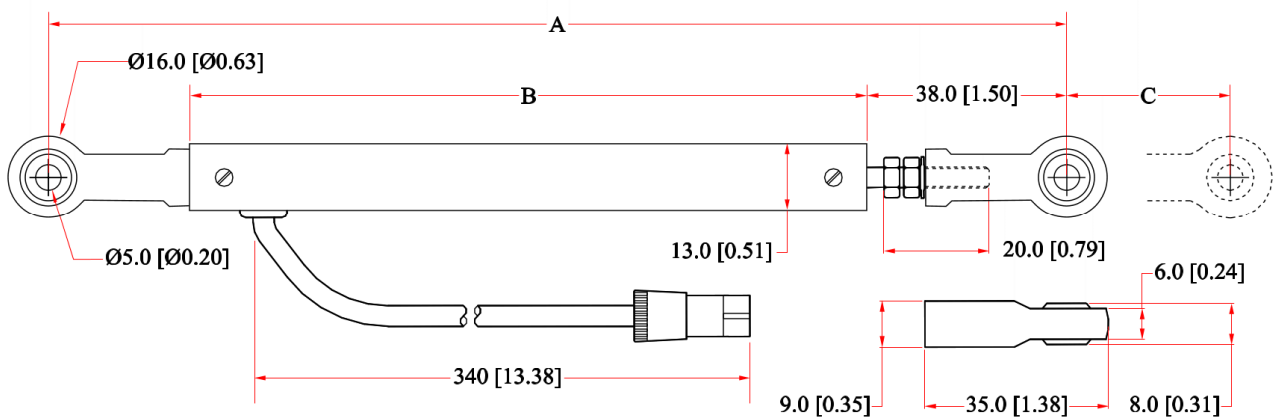
**Please note:** do not use this sensor to measure distances beyond the potentiometer maximum travel.

The car/bike linear potentiometer can be connected to any analog channel of MXL, EVO4 and Channel Expansion, to say:

- MXL Strada/Pista: channels from 1 to 8
- MXL Pro05: channels from 1 to 12
- EVO4: channels from 1 to 5
- Channel Expansion: channels from 1 to 4

### 3 Dimensions, pinout and technical characteristics

The drawing here below shows the sensor dimensions in mm [inches].



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

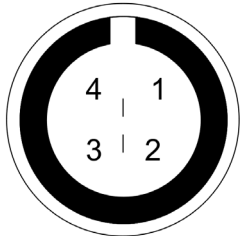
#### TYPE A

Potentiometer travel (C)	"A"	"B"
50 mm (1.97")	193 mm (7.6")	129 mm (5.09")
75 mm (2.95")	218 mm (8.58")	154 mm (6,06")
100 mm (3.93")	243 mm (9.57")	179 mm (7.05")
150 mm (5.91")	293 mm (11.54")	229 mm (9.02")

#### TYPE B

Potentiometer travel (C)	"A"	"B"
50 mm (1.97")	135 mm (5.31")	91 mm (3.58")
75 mm (2.95")	160 mm (6.30")	116 mm (4.56")
100 mm (3.93")	191 mm (7.52")	147 mm 3.22")
150 mm (5.91")	241 mm (9.49")	197 mm (7.75")

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



Binder connector pin	Function
1	Analog signal 0-5 V
2	GND
3	Not connected
4	V reference (4.5V)

The car/bike linear potentiometer **electrical characteristics** are:

- nominal resistance: 1k $\Omega$  / 25 mm travel
- operating mode: voltage divider

The car/bike linear potentiometer **mechanical characteristics** are:

- temperature operating range: -50/+85 °C
- operating strength: 2,45 N horizontal
- measure range: up to 150 mm

## 4

# Extension cable

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The potentiometer is sold with a 30 cm cable and standard lengths extension cables are available as optional: 0,5 m, 1m e 1,5 m; 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:

- Channel Expansion
- MyChron Expansion
- EVO4.

Part numbers:

- V02PCB05BTXG** – cable length: 500mm
- V02PCB10BTXG** – cable length: 1000mm
- V02PCB15BTXG** – cable length: 1500mm
- V02PCB20BTXG** – cable length: 2000mm
- V02PCB25BTXG** – cable length: 2500mm
- V02PCB30BTXG** – cable length: 3000mm



Extension cable for connection with:

- MXL Strada
- MXL Pista
- MXL 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

