

AiM Infotech

Rotary potentiometer for
car/bike

Release 1.05





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Introduction

This datasheet explains how to install the rotatory potentiometer kit for car, bike installation and shows its electrical and mechanical characteristics.

AiM loggers can measure an element rotation (i.e. steering angle) using the rotatory potentiometer kit whose items are to be mounted integral with the mobile element and with a fixed reference point on the vehicle chassis.

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The kit

AiM designed and developed two different potentiometers and thereby two installation kits:

- 10G potentiometer 10 laps for car/bike installations
- 5G potentiometer 10 laps for car/bike (**out of production**)

10G potentiometer installation kit includes:

- 10G steering potentiometer (1)
- 1 toothed belt (2)
- 2 toothed pulleys (3)
- 1 Allen key (4)
- 1 bracket kit (5)

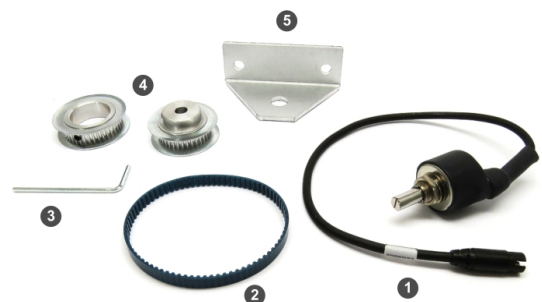


This kit part number is: **X05SNST10G**

5G potentiometer installation kit (out of production) includes:

- 5G steering potentiometer (1)
- 1 toothed belt (2)
- 1 Allen key (3)
- 2 toothed pulleys (4)
- 1 bracket (5)

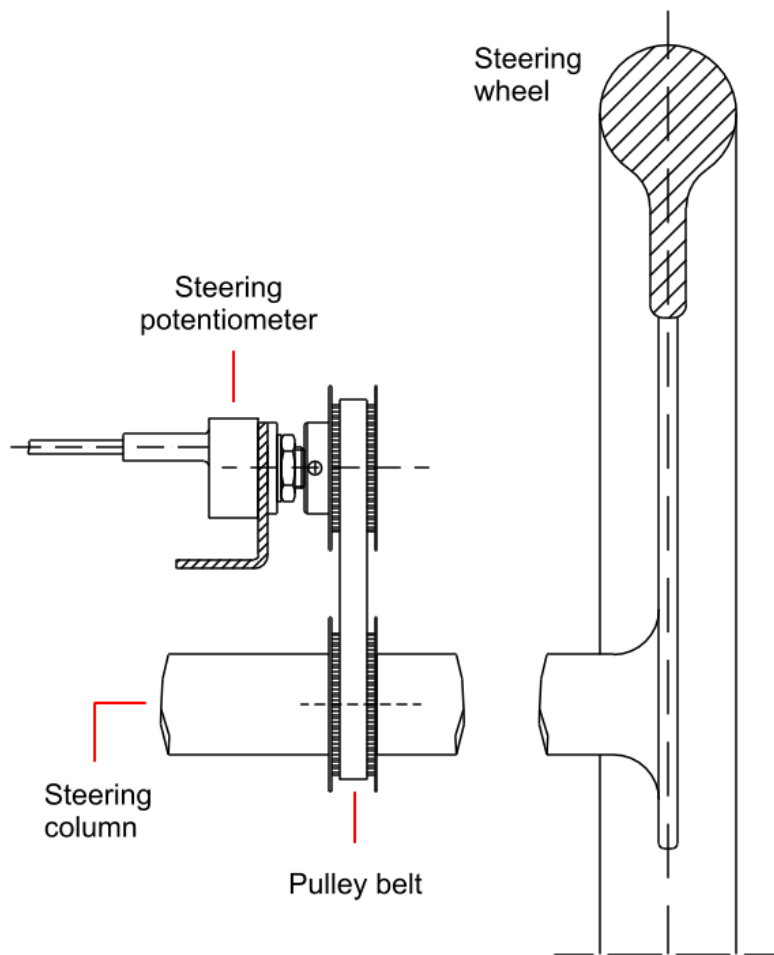
This kit part number is: **X05SNST05G**



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Installation

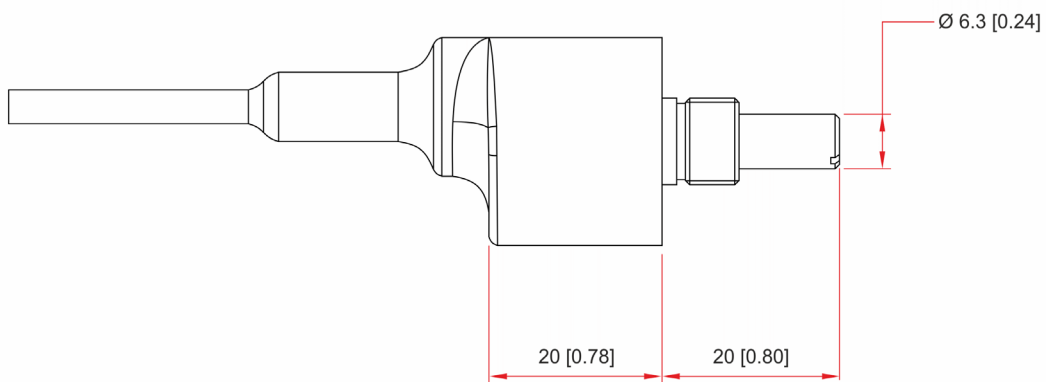
The steering potentiometer can be connected to any analog channel of AiM loggers. The drawing here below shows the potentiometer correctly installed.



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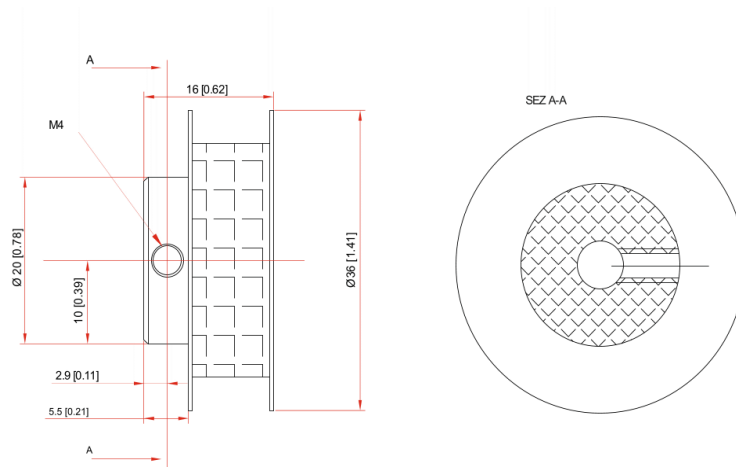
Dimensions, pinout and technical characteristics

The drawing there below shows the sensor dimensions in millimetres [inches].

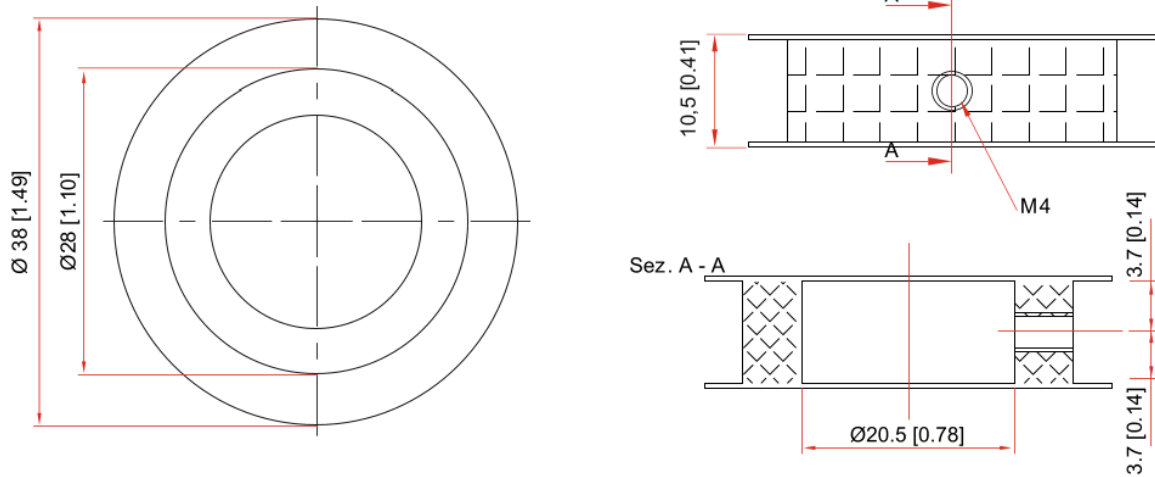


The following images shows the pulleys dimensions in millimetres [inches]:

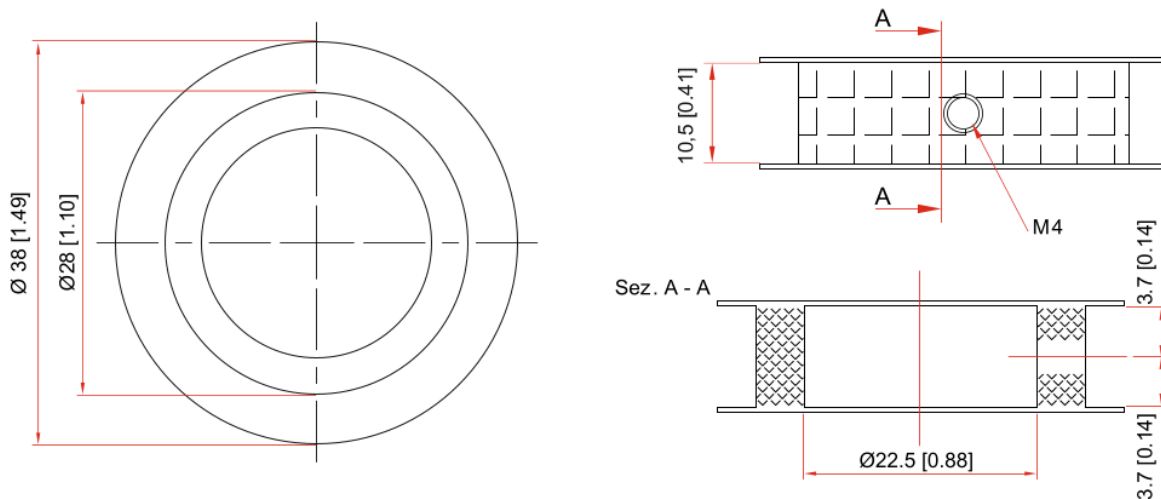
- pulley to be installed on the potentiometer



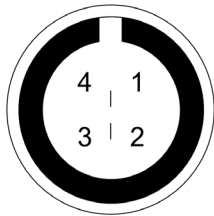
- 20 mm diameter pulley to be installed on the steering wheel for 5G potentiometer (out of production)



- 22 mm diameter pulley to be installed on the steering wheel for 10G potentiometer



The potentiometer cable ends with a 4 pins plastic Binder 719 male connector. Here below it is shown from solder termination view with the related pinout.



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

The steering potentiometer **electrical characteristics** are:

- nominal resistance: 10k Ω
- tolerance on resistance value: $\pm 5\%$
- precision (%):
 - 0.030 for 10G potentiometer
 - 0.034 for 5G potentiometer (out of production)

The steering potentiometer **mechanical characteristics** are:

- mechanical displacement: 1800° for 5 laps and 3600 for 10 laps
- working temperature range: -55/+125 °C
- power consumption: 5 μ A

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Extension cables

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:

- EVO4
- EVO4S
- Channel Expansion.

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:

- MXG/MXG 1.2
- MXS/MXS 1.2
- XML2
- EVO5
- XML 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

