

AiM Infotech

Rotary potentiometer for
car/bike/kart

Release 1.04



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Introduction

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

AiM loggers can measure the displacement between two points using a sensor (rotary potentiometer) directly connected to the two measure points. This potentiometer can measure the angular displacement like those of the steering wheel.

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The kit

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

- 10G potentiometer 10 giri for car/bike installations
- 5G potentiometer 10 giri for car/bike but also kart installations

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 includes:

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

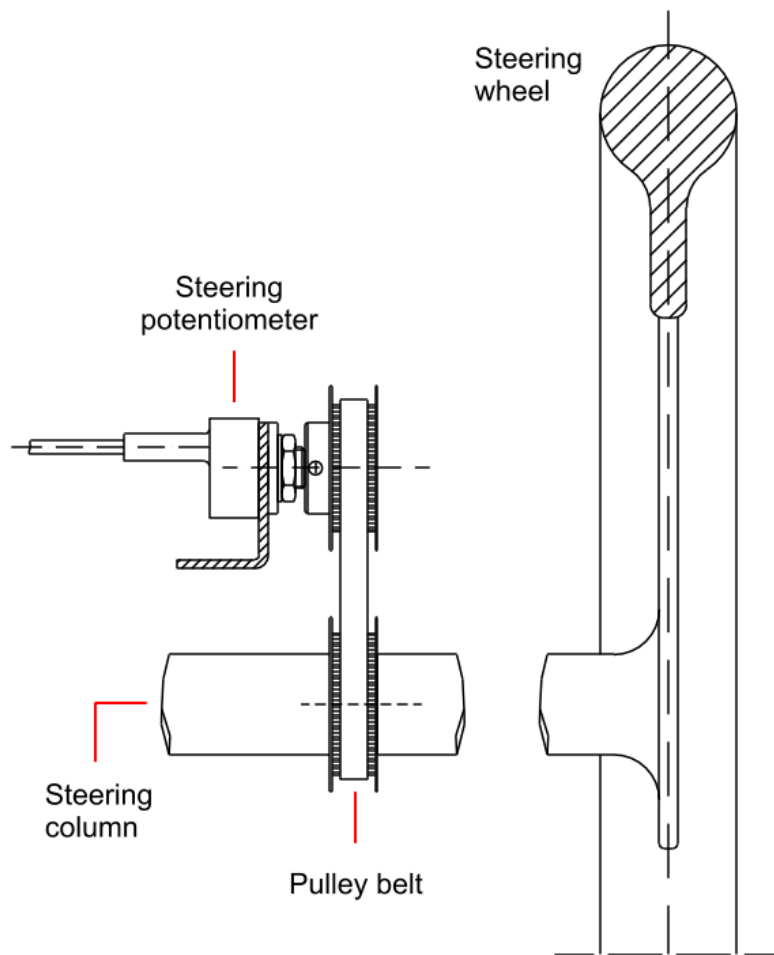
This kit part number is: **X05SNST05G**



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Installation

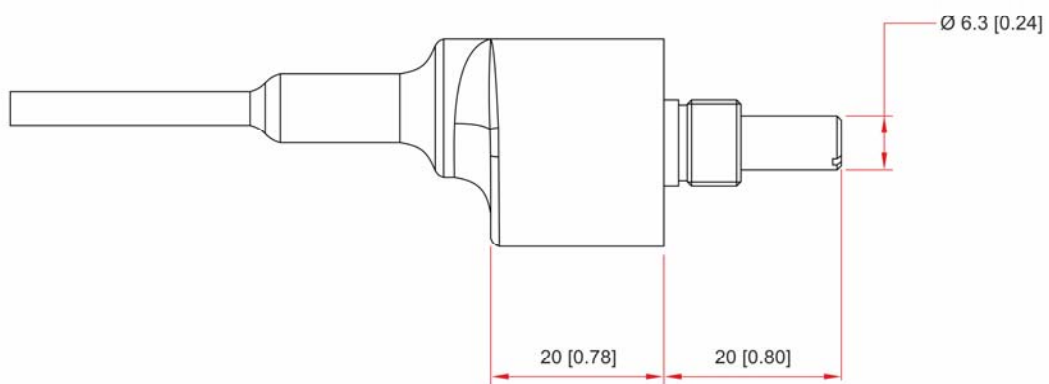
The steering potentiometer can be connected to any analog channel of AiM loggers. The drawing here below shows the potentiometer correctly installed.



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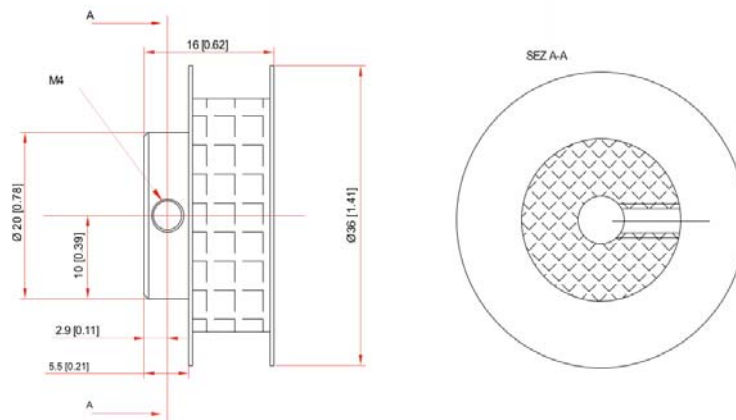
Dimensions, pinout and technical characteristics

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

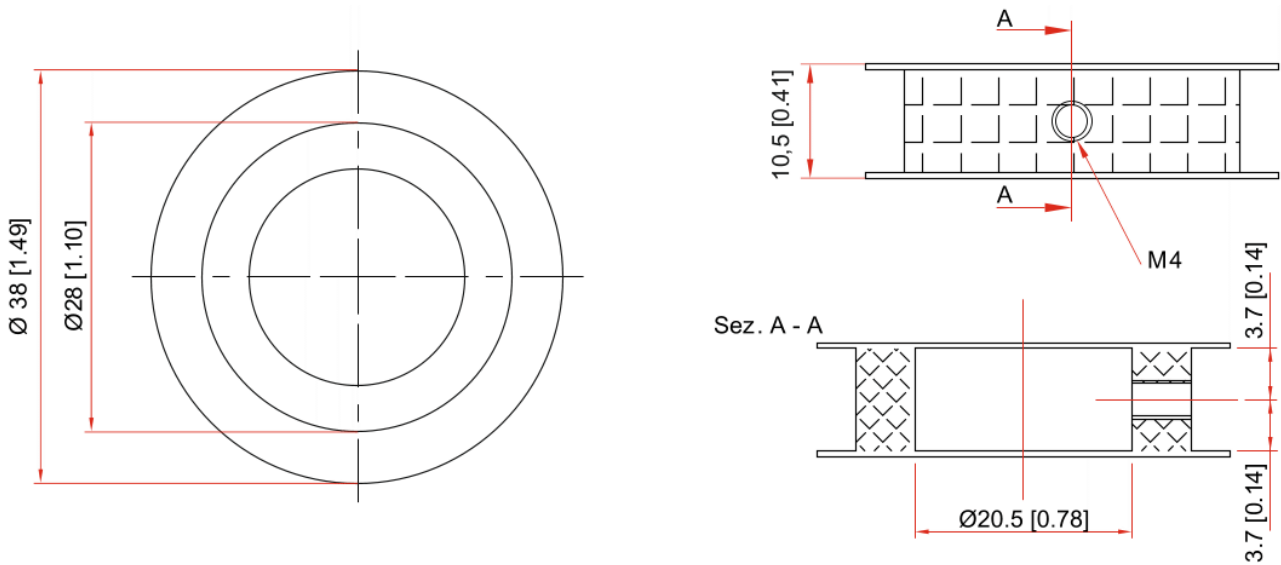


The following images shows the pulleys dimensions in millimetres [inches]:

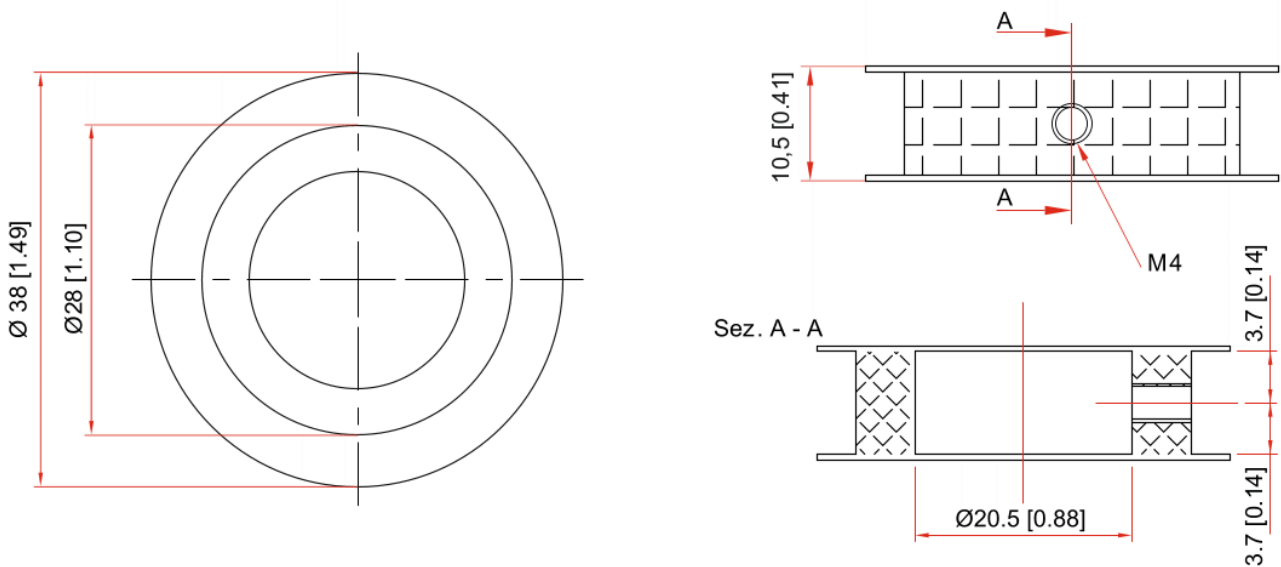
- pulley to be installed on the potentiometer



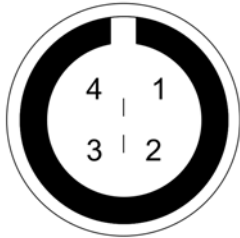
- 20 mm diameter pulley to be installed on the steering wheel for 5G potentiometer



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



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



Binder connector pin	Funtion
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

The steering potentiometer **mechanical characteristics** are:

- mechanical displacement: 1080°/5 or 10laps
- working temperature range: -55/+125 °C
- dissipated power at 40°C:
 - 2.4W for 10G potentiometer
 - 1.6 W for 5G potentiometer
- dissipated at 70°C:
 - 1.5W for 10G potentiometer
 - 1W for 5G potentiometer

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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
- MXS
- 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

