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AiM Infotech

Car speed sensor

Release 1.04

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1 Introduction

This datasheet explains how to use AiM car speed sensor, a non contact device that needs a metallic trigger to pass in front of it.

This sensor **part number** is: **X05SNVS00**.

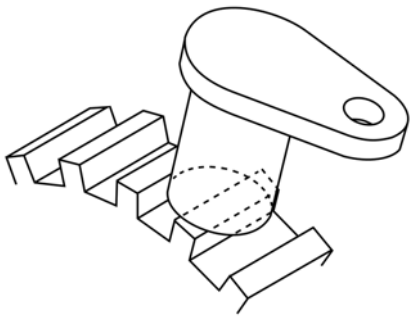
It fits the wheel speed measurement and needs an accurate installation. This is why we suggest you to address to a specialized workshop.

2 Installation

Install the sensor using a bracket and:
- ensure that distance between sensor and gear tooth is in a 0.5 – 2.0 mm (0.007-0.07 inches) range
- fix the sensor to the bracket
- connect the sensor to AiM device

The sensor measure range is 0.5–2 mm (0.1-0.07 inches). Optimum sensor performance depends on the following variables to be considered in combination: trigger building material, geometry, speed, metallic trigger/sensor distance and magnetic material in close proximity.

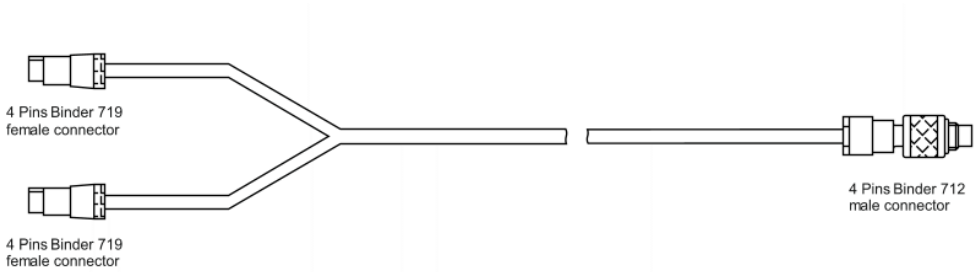
The image here below shows the sensor correctly installed.

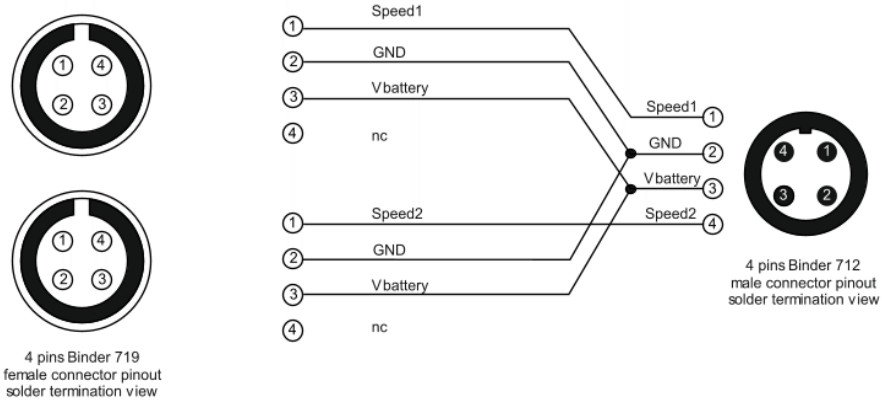


2.1
Specificity of AiM loggers

AiM loggers can support one or more speed sensors.

- **MXL2**, **MXG**, **MXS** and **EVO5** can support up to four speed sensors one of which can be connected to the standard harness (**V02573010** for **MXL2**, **MXG** and **MXS** and **V02586020** for **EVO5**) while the other three needs the optional harness (**V02573020** for **MXL2**, **MXG** and **MXS** and **V02586030** for **EVO5**).
- **EVO4** and **EVO4S** can support up to two speed sensors that needs to be connected to a dedicated connector, labelled Speed. To connect both speed channels you need an optional split cable as the one shown here below on the right ;its part number is: **V02549030**. Below is construction scheme.





MXL Pista has one speed channel only. The seed sensor is included in the optional basic sensors kit – part number **X10MXLS00000** – that includes RPM, water temperature sensors and their harness. Part number of the harness only is: **V02554020**.
MXL Pro05 has four speed channels that needs to be connected to the following optional cables:

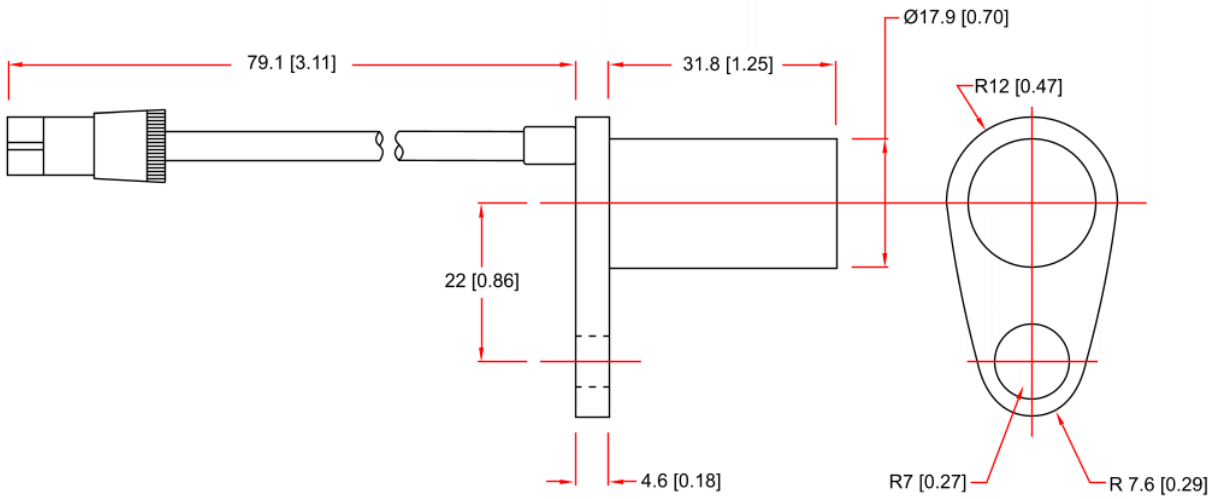
- part number **V02554200** for speed 1 and 2
- part number **V02554240** for speed 3 and 4.

All harness are labelled and the sensor is to be connected to the cable labelled "Speed".

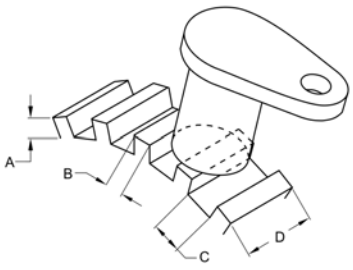
3 Dimensions, pinout and technical characteristics

The drawings here below shows:

- sensors dimensions in mm [inches].

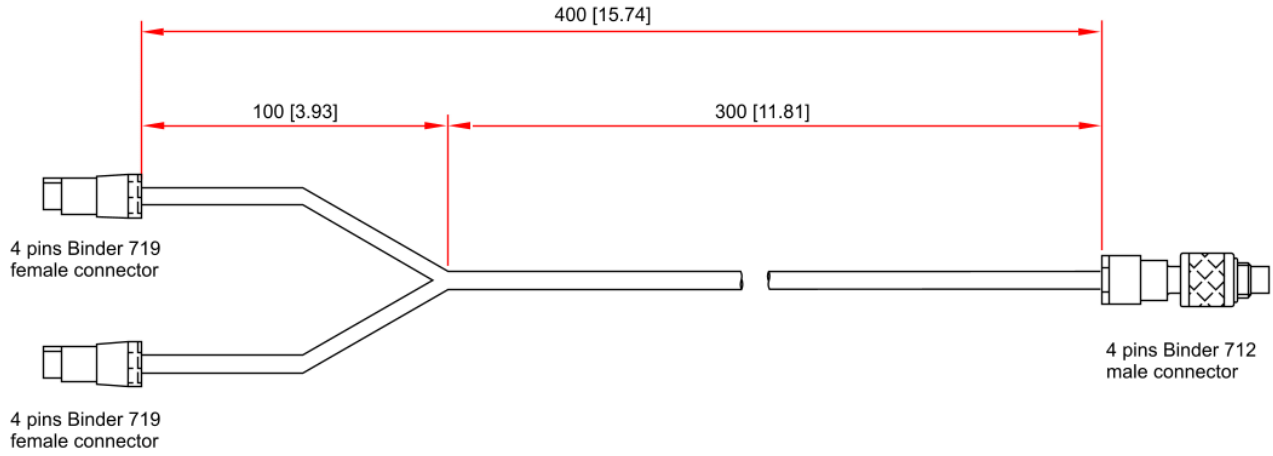


- dimensions required for a correct sensor installation in mm [inches].



Point description	Value (minimum)
A = tooth highness	5,06 [0.19]
B = tooth wideness	2,54 [0.09]
C = space between the teeth	10,16 [0.39]
D = Tooth thickness	6,35 [0.24]

- dimensions of the speed split cable needed to connect two speed sensors to the only **EVO4** and **EVO4S** available speed connector in mm [inches].



The speed sensor comes with a cable ending with a 4 pins Binder 719 male connector. The table below shows the connector – solder termination view – on the left and its pinout on the right.

Binder 719 connector pin	Function
1	Speed
2	GND
3	V battery
4	Not connected

Car speed sensor electrical characteristics are:

- power supply voltage: 4.5-24 VDC
- current consumption: 10 mA (typical) 20 mA (max)
- output signal type: pulse 0-5 volt
- max current output: 20 mA
- max operating frequency: 100 kHz
- sensibility distance: from 0.5 to 2 mm (from 0.007 to 0.07 inches)
- recommended distance: 1mm

Car speed sensor mechanical characteristics are:

- operating temperature range: from – 40 to +150 °C (from 104 to 302 °F)
- Cable length: 80 mm (3.14 inches)

4
Extension cables

The sensor comes with an 80 mm cable and optional extension cables are available with standard length from 0,5 to 3m; specific length extension cables are also available.

Extension cable part number changes according to their length and to the device the sensor has to be connected to.

Extension cables for connection with:
- EVO4
- EVO4S
- Channel Expansion

Part number:
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 cables for connection with:
- EVO4/split cable
- MXG
- MXS
- MXL2
- EVO5
- MXL Pista/Pro05

Part number:
V02PCB05B – cable length: 500mm
V02PCB10B – cable length: 1000mm
V02PCB15B – cable length: 1500mm
V02PCB20B – cable length: 2000mm
V02PCB25B – cable length: 2500mm
V02PCB30B – cable length: 3000mm