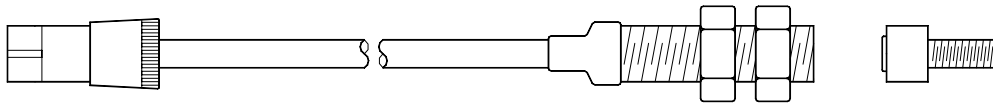


<b>SENSOR DOCUMENTATION</b>	<b>31/01/2005</b>	<b>SPEED</b>	<b>Speed sensor for BIKE applications</b>
Notes: <b>Speed sensor for BIKE applications</b> technical documentation, dimensions and pinout. – <b>Version 1.01</b>			



**Figure 1:** Speed sensor for BIKE applications (side view)

## Introduction

The magneto-resistive speed sensor is a high-sensing distance instrument which will allow you to measure the rotational speed. This sensor is a “non contact” device and needs a magnetic metal trigger to pass the sensor face.

The sensor sensing distance is from 8 mm to 20 mm; the speed sensor is supplied with a 1700 mm long cable.

## Kit description

Inside the magneto-resistive speed sensor kit you find the following objects:

- 1 metal plate, equipped with a magnetic cylinder;
- 1 speed sensor.

## Installation notes

- Install the magnetic metal plate;
- Install the speed sensor on a self-made bracket; use the locknuts provided to fasten the sensor;
- When mounting the sensor, please let the sensible part pass in front of the magnetic cylinder at a distance between 8 and 20 mm;
- Plug the speed sensor in your data logger (MyChron 3, EVO 3, Dash ST1...);
- Do not place the sensor near magnetic sources of electrical interference.

## Software

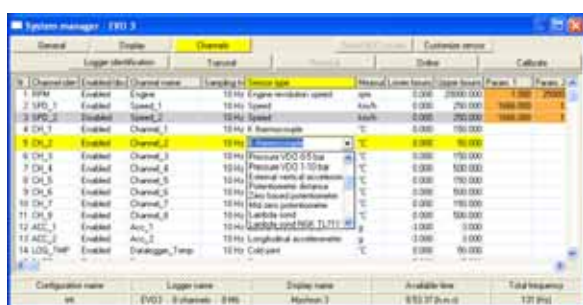
Once the speed sensor has been installed and plugged in your data logger, to acquire consistent and correct information, it is necessary to configure it. To do so, please use **Race Studio 2**, the software properly developed by Aim to configure its instruments and analyze stored data.

### Race Studio 2

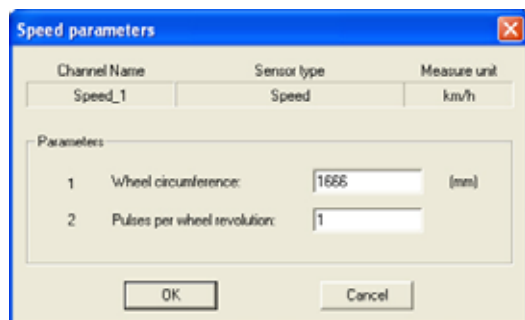
In **Race Studio 2** main window you can choose your instrument. Once selected it, please press “*System manager*” button.

### Sensor configuration – EVO 3, Dash ST1

In “*System manager*” main window, press “*Channels*” button to set the sensor you have installed on your vehicle. The following screenshot appears.



To configure the speed sensor, please click twice in the “Param 1” column and in the row corresponding to “speed” channel and select “speed”. The following screenshot appears:



You are requested to set two parameters:

- *Number of pulses on wheel revolution*: this function allows you to set the number of pulses per wheel revolution. Please fill this box with the number of teeth on the gear wheel.
- *Wheel circumference*: this option you to set the wheel circumference (in mm or in inches). This value is fundamental to correlate the wheel revolution speed and the bike speed.

Once the correct wheel circumference value and the number of pulses have been set, transmit the configuration to the instrument pressing “*Transmit*” button.

### Sensor configuration – MyChron 3 BIKE

In “*System manager*” main window, press “*Configuration*” button to set the speed sensor parameters. The following screenshot appears.

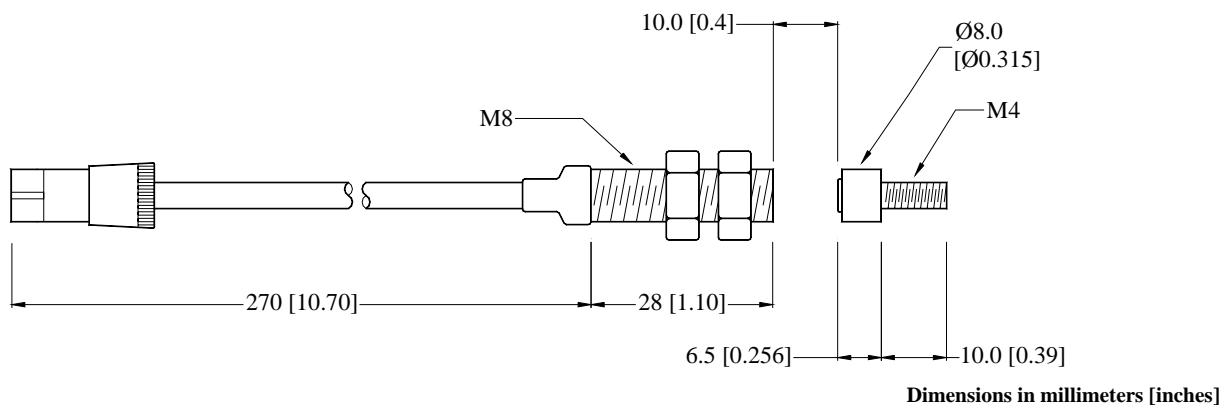


To acquire a correct speed signal, you are requested to set two parameters:

- *Number of pulses on wheel revolution*: this function allows you to set the number of pulses per wheel revolution. Please fill this box with the number of teeth on the gear wheel.
- *Wheel circumference*: this option allows you to set the wheel circumference (in mm or in inches). This value is fundamental to correlate the wheel revolution speed and the bike speed.

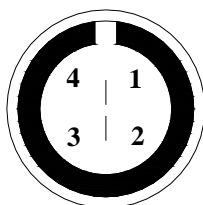
When the correct wheel circumference value and the number of pulses have been set, it is necessary to transmit the configuration to the instrument pressing “*Transmit*” button.

## Dimensions



## Connector details

Pin	Function	Pin	Function
1	Speed	3	V battery
2	GND	4	n.c.



4 pins Binder 719 male connector: solder termination view

## Technical characteristics

Electrical characteristics	Value
Supply voltage	6-24 V DC
Supply current	13.5 mA
Output signal type	Pulse 0-5 Volts
Maximum output current	20 mA
Maximum operating frequency	100 kHz
Maximum sensing distance	20 mm
Recommended distance	10 mm
Number of pulses per revolution	1

Mechanical characteristics	Value
Operating temperature range	From -20 to +85 °C
Cable length	1700 mm