SENSOR DOCUMENTATION	31/01/2005	SPEED	Front wheel KART speed sensor
Notes: **Speed sensor for KART applications** technical documentation, dimensions and pinout. **– Version 1.01**			

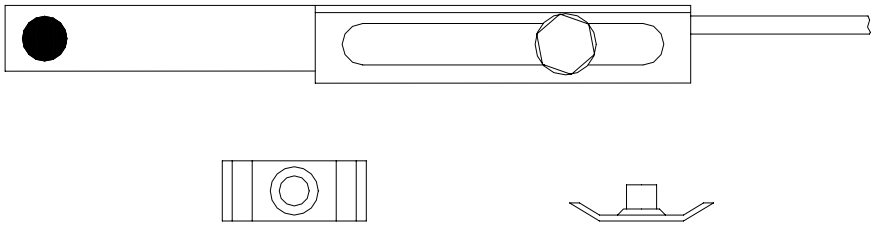


Figure 1: Speed sensor for KART applications (to be installed on the front wheel)

Introduction

The kart speed sensor allows you to measure your kart's front wheel speed. This sensor is a "non contact" device and needs a magnetic metal trigger to pass the sensor face.

The sensor's sensing distance is from 3 mm to 5 mm; the speed sensor is supplied with a 1700 mm long extension cable.

Kit description

Inside the kart front wheel speed kit you will find the following objects:

- 1 metal plate, equipped with a magnetic cylinder;
- 1 metal bracket, containing the speed sensor, supplied with a 1700 mm long cable.

Installation notes

- Install the magnetic metal plate inside the front wheel rim;
- Install the bracket on the steering arm: if the steering arm is solid, make a hole in it with a 6 mm drill bit;
- When mounting the bracket, please let the sensitive part (recognizable by a red point) pass in front of the magnetic cylinder at a distance included between 3 and 5 mm;
- Firmly screw the bracket to the steering arm, in order to avoid sensor movements due to very high front wheel vibrations;
- Ensure that the bracket does not come in contact with the metal plate when steering;
- Plug the speed sensor in your data logger (MyChron 3, EVO 3…).

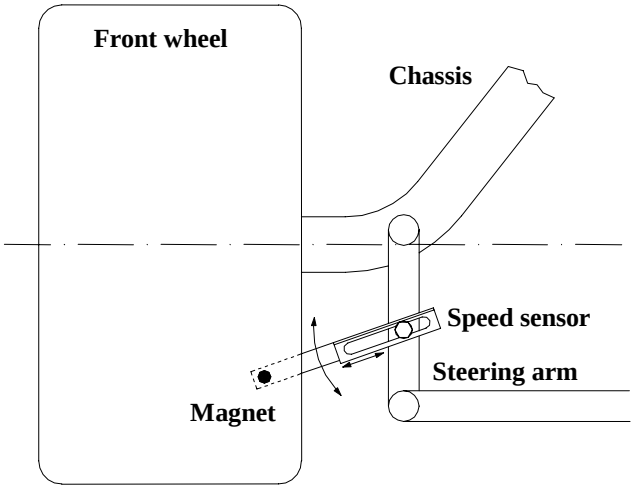


Figure 2: Front wheel kart speed sensor installation

Software

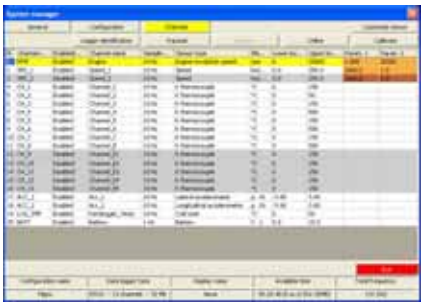
When the speed sensor has been installed and plugged in your instrument, to acquire consistent and correct information, it needs to be configurated. To do so please use **Race Studio 2**, the software properly developed by Aim to configure its instruments and analyze stored data.

Race Studio 2

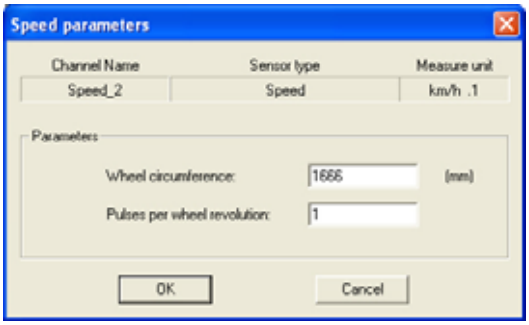
In **Race Studio 2** main window you can choose your data logger. Please select the gauge and press *"System manager"* button.

Sensor configuration – EVO 3

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 the "speed" channel. 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 allows you to set the wheel circumference (in mm or in inches). This value is fundamental to correlate the wheel revolution speed and the kart speed.

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

Sensor configuration – MyChron 3 KART

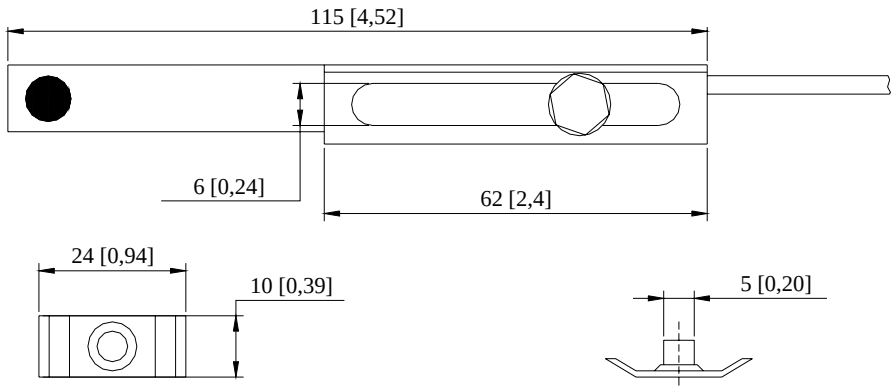
Once reached *"System manager"* main window, please press *"Configuration"* button to set the speed sensor parameters. The following screenshot appears..

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 magnets installed on the wheel. The kart speed kit you have just bought is equipped with one magnet, so fill the "Number of pulses on wheel revolution" box with the value **1**.
- *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 kart speed. A typical kart wheel circumference value is **830 mm (32.7")**.

Once the correct wheel circumference value and the number of pulses set, please transmit the configuration to the instrument pressing *"Transmit"* button.

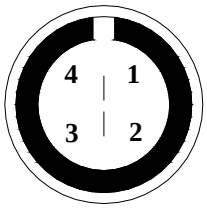
Dimensions



Dimensions in millimeters [inches]

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
Sensing distance	From 3 to 5 mm
Number of pulses per revolution	1

Mechanical characteristics	Value
Cable length	1700 mm