

AiM Infotech

Car speed sensor – Race Studio 3 Configuration

Release 1.00



1

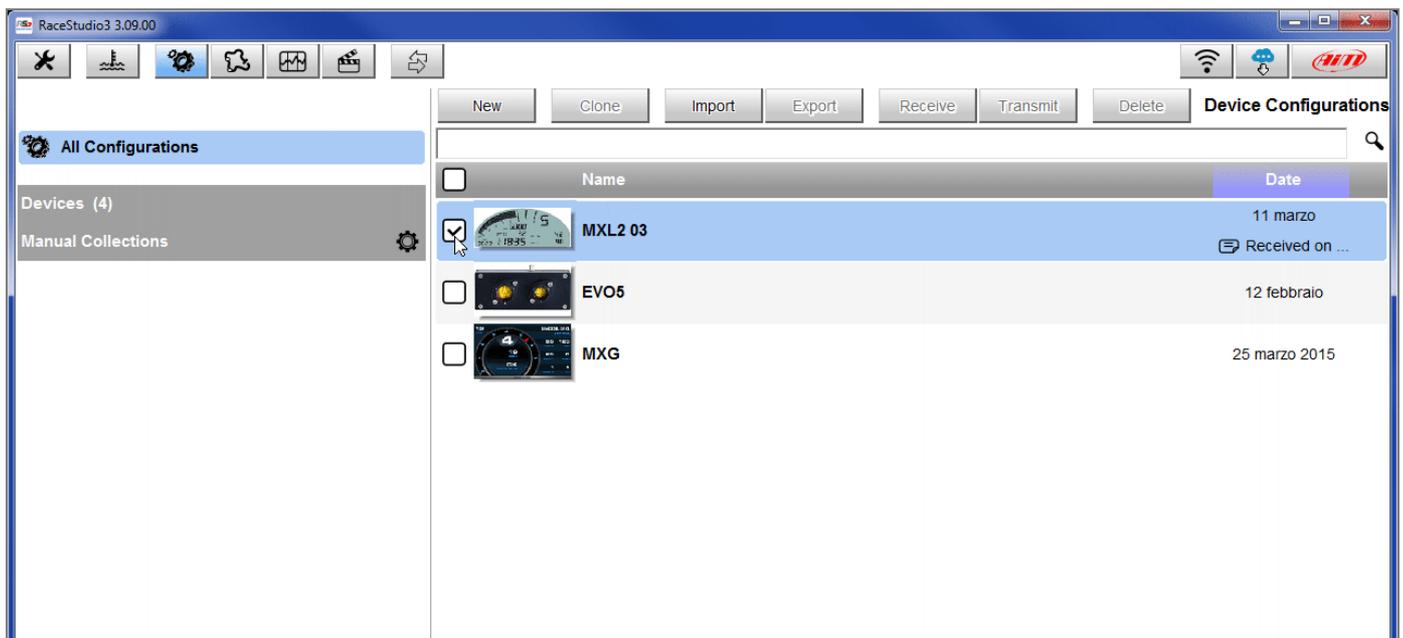
Introduction

This datasheet explains how to configure the car speed sensor using AiM Race Studio 3 software.

2

Setup with Race Studio 3

To load the car speed sensor in AiM logger configuration run the software and select the configuration you are going to load it on (in the example MXL2 03).



The software enters "Channels" layer.

- Select the speed channel where to set the sensor – in the example Speed2 (1) and fill in the panel that shows up
- Select "Speed" function and choose:
 - Vehicle Speed, fill in the panel and press "Save" or
 - Wheel Speed(2)

The screenshot shows the RaceStudio3 3.09.00 interface. The 'Channels' tab is active, displaying a table of channels. The 'Speed2' channel is selected, and the 'Channel Settings' dialog box is open for it. The dialog box shows the 'Function' set to 'Vehicle Spd' and the 'Sensor' set to 'Speed Sensor'. The 'Speed Parameters' section is also visible, showing 'Wheel circumference' set to 1600 mm and 'Pulse per wheel revolution' set to 1.

ID	Name	Function	Sensor	Unit	Freq	Parameters
RPM	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	Speed1					wheel: 1600 ; pulses: 1 ;
Spd2	Speed2					wheel: 1600 ; pulses: 1 ;
Spd3	Speed3					wheel: 1600 ; pulses: 1 ;
Spd4	Speed4					wheel: 1600 ; pulses: 1 ;
Ch01	Channel01					
Ch02	Channel02					
Ch03	Channel03					
Ch04	Channel04					
Ch05	Channel05					
Ch06	Channel06					
Ch07	Channel07					
Ch08	Channel08					
AccX	AccelerometerX					
AccY	AccelerometerY					
AccZ	AccelerometerZ					
GyrX	GyroX	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrY	GyroY	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrZ	GyroZ	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
Spd	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz	
OdD	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz	

In this second case a "position" option appears:

- click it and choose the panel below shows up:
- select the wheel
- press "Save"
- press "Save" again

The screenshot shows the RaceStudio3 3.09.00 interface. A 'Choose position of measure' dialog box is open, displaying a top-down view of a car with four wheels. The front-left wheel is highlighted with a red dot. The dialog has 'Save' and 'Cancel' buttons at the bottom.

ID	<input checked="" type="checkbox"/>	Name	Function	Sensor	Unit	Freq	Parameters
RPM	<input checked="" type="checkbox"/>	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	<input checked="" type="checkbox"/>	Speed1					wheel: 1600 ; pulses: 1 ;
Spd2	<input checked="" type="checkbox"/>	Speed2					wheel: 1600 ; pulses: 1 ;
Spd3	<input checked="" type="checkbox"/>	Speed3					wheel: 1600 ; pulses: 1 ;
Spd4	<input checked="" type="checkbox"/>	Speed4					wheel: 1600 ; pulses: 1 ;
Ch01	<input checked="" type="checkbox"/>	Channel01					
Ch02	<input checked="" type="checkbox"/>	Channel02					
Ch03	<input checked="" type="checkbox"/>	Channel03					
Ch04	<input checked="" type="checkbox"/>	Channel04					
Ch05	<input checked="" type="checkbox"/>	Channel05					
Ch06	<input checked="" type="checkbox"/>	Channel06					max travel: 50 ;
Ch07	<input checked="" type="checkbox"/>	Channel07					
Ch08	<input checked="" type="checkbox"/>	Channel08					
AccX	<input checked="" type="checkbox"/>	AccelerometerX					
AccY	<input checked="" type="checkbox"/>	AccelerometerY					
AccZ	<input checked="" type="checkbox"/>	AccelerometerZ					
GyrX	<input checked="" type="checkbox"/>	GyroX	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrY	<input checked="" type="checkbox"/>	GyroY	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrZ	<input checked="" type="checkbox"/>	GyroZ	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
Spd	<input checked="" type="checkbox"/>	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz	
OdD	<input checked="" type="checkbox"/>	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz	



The software shows the sensor properly set. In the example the sensor is set on "Speed2" channel and connected to the front left wheel.

ID	<input checked="" type="checkbox"/>	Name	Function	Sensor	Unit	Freq	Parameters
RPM	<input checked="" type="checkbox"/>	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	<input checked="" type="checkbox"/>	Speed1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd2	<input checked="" type="checkbox"/>	Speed2	Vehicle Spd - Front Left	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd3	<input checked="" type="checkbox"/>	Speed3	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd4	<input checked="" type="checkbox"/>	Speed4	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Ch01	<input checked="" type="checkbox"/>	Channel01	Voltage	Generic 0-5 V	mV	20 Hz	
Ch02	<input checked="" type="checkbox"/>	Channel02	Voltage	Generic 0-5 V	mV	20 Hz	
Ch03	<input checked="" type="checkbox"/>	Channel03	Voltage	Generic 0-5 V	mV	20 Hz	
Ch04	<input checked="" type="checkbox"/>	Channel04	Voltage	Generic 0-5 V	mV	20 Hz	
Ch05	<input checked="" type="checkbox"/>	Channel05	Percent	Percentage Pot. Calib	% 0.01	20 Hz	
Ch06	<input checked="" type="checkbox"/>	Channel06	Position	Position Pot. AutoCal	mm	20 Hz	max travel: 50 ;
Ch07	<input checked="" type="checkbox"/>	Channel07	Voltage	Generic 0-5 V	mV	20 Hz	
Ch08	<input checked="" type="checkbox"/>	Channel08	Voltage	Generic 0-5 V	mV	20 Hz	
AccX	<input checked="" type="checkbox"/>	AccelerometerX	Inline Accel	AIM Internal Accelerometer	g 0.01	20 Hz	
AccY	<input checked="" type="checkbox"/>	AccelerometerY	Lateral Accel	AIM Internal Accelerometer	g 0.01	20 Hz	
AccZ	<input checked="" type="checkbox"/>	AccelerometerZ	Vertical Accel	AIM Internal Accelerometer	g 0.01	20 Hz	
GyrX	<input checked="" type="checkbox"/>	GyroX	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrY	<input checked="" type="checkbox"/>	GyroY	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrZ	<input checked="" type="checkbox"/>	GyroZ	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
Spd	<input checked="" type="checkbox"/>	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz	
OdD	<input checked="" type="checkbox"/>	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz	

Transmit the configuration to the logger pressing "Transmit".

The screenshot shows the same configuration table as above, but with the 'Transmit' button in the top toolbar highlighted in red, indicating the next step in the process.