

AiM InfoTech

AiM pressure sensor 0-160 bar  
Race Studio 2 configuration

Release 1.01

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# 1

## Introduction

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Once AiM pressure sensor 0-160 bar is physically connected to one of the device analog channels, it has to be loaded in the related configuration using AiM configuration software. In this datasheet it is loaded using **Race Studio 2** software.

You can proceed in two ways: importing the sensor configuration file, downloading it from the Products – Sensors (car/bike) section of our website [www.aim-sportline.com](http://www.aim-sportline.com), or creating a custom sensor.

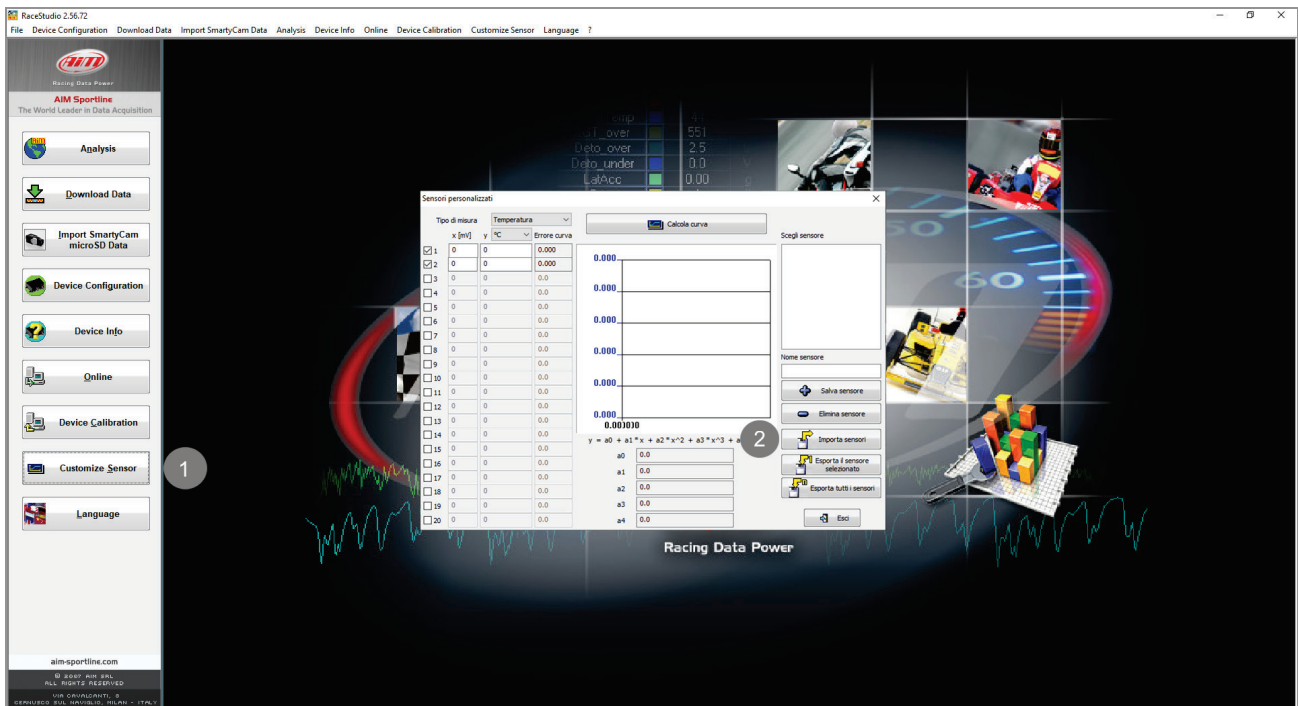
## 2 SCF\* file import

To obtain the sensor configuration file, enter the Products – Sensors (auto/moto) section of the AiM website [www.aim-sportline.com](http://www.aim-sportline.com), and click the link referred to the sensor you own (following image). Once the download is finished, save the file in a PC folder.

PRESSURE SENSORS						
Turbo pressure sensor from -1 to 3 Bar	X05SNP31004A		Datasheet	RS3 conf	RS2 conf	SCF*
Pressure sensor 0-10 bar/0-145 PSI	X05SNP31010R		Datasheet	RS3 conf	RS2 conf	SCF*
Pressure sensor 0-100 bar/0-1450 PSI	X05SNP31100R		Datasheet	RS3 conf	RS2 conf	SCF*
Pressure sensor 0-160 bar/0-2320 PSI	X05SNP31160R		Datasheet	RS3 conf	RS2 conf	SCF*
VDO pressure sensor 0-5 Bar	X05SNBO05		Datasheet	RS3 conf	RS2 conf	
VDO pressure sensor 0-10 Bar	X05SNBO00		Datasheet	RS3 conf	RS2 conf	

\*Download the sensor configuration file ready to import in RS2

To import the file in Race Studio 2, making it available in the pressure sensors list, from the Customize Sensors window (1), click Import Sensors (2) and select the saved file.



### 3 Custom sensor creation

- create a custom sensor pressing "Customize sensor" (1)
- select the type of measure (Pressure) and the measure unit (bar) (2)
- complete the first two rows of the table on the left as follows (3):

X [mV]	Y [bar]
500	0
4500	160

- press "Compute curve" (4), fill in sensor name - in the example "AiM 0-160 bar (X05PSA00160B10K)" – and press "Save sensor" (5); press "Exit" (6)

The screenshot shows the 'Customize sensor' dialog box in RaceStudio 2.56.72. The dialog box contains a table with the following data:

Type of measure	x [mV]	y [bar]	Curve Error
Pressure	500	0	-0.000
Pressure	4500	160	0.000
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0
Pressure	0	0	0.0

The graph shows a linear fit with the equation:  $y = a_0 + a_1 \cdot x + a_2 \cdot x^2 + a_3 \cdot x^3 + a_4 \cdot x^4$ . The coefficients are:  $a_0 = -2.000000e+001$ ,  $a_1 = 0.040000$ ,  $a_2 = 0.000000e+000$ ,  $a_3 = 0.000000e+000$ ,  $a_4 = 0.000000e+000$ .

The sensor name is: AiM 0-160 bar (X05PSA00160B10K).

# 4 Analog channel configuration

To set the sensor in the device configuration:

- enter "Channels" tab
- set the sensor on a channel selecting "AiM 0-160 bar (X05PSA00160B10K)" in sensor type column of the desired channel and transmit the configuration to the device.

The screenshot shows the 'Channels' configuration tab in RaceStudio 2.56.72. The main table lists various channels and their configurations. Channel\_4 is selected, and its 'Sensor type' dropdown menu is open, displaying a list of sensor options. The option 'AiM 0-160 bar (X05PSA00160B10K)' is highlighted in red.

Channel identifier	Enabled/disabled	Channel name	Sampling frequency	Sensor type	Measure unit	Low scale	High scale
RPM	Enabled	Engine	10 Hz	Engine revolution speed	rpm	0	20000
SPD_1	Enabled	Speed_1	10 Hz	Speed	km/h -1	0.0	250.0
CH_1	Enabled	Channel_1	10 Hz	Generic linear 0-5 V	V -1	0.0	5.0
CH_2	Enabled	Channel_2	10 Hz	Generic linear 0-5 V	V -1	0.0	5.0
CH_3	Enabled	Channel_3	10 Hz	Generic linear 0-5 V	V -1	0.0	5.0
CH_4	Enabled	Channel_4	10 Hz	Generic linear 0-5 V	V -1	0.0	5.0
CH_5	Enabled	Channel_5	10 Hz	Generic linear 0-5 V	V -1	0.0	5.0
CH_6	Enabled	Channel_6	10 Hz	AIM Lambda LCU-GNE ( 0.65 - 1.6 lambda)	V -1	0.0	5.0
CH_7	Enabled	Channel_7	10 Hz	MSI 0-2000 PSI sensor	V -1	0.0	5.0
CH_8	Enabled	Channel_8	10 Hz	Fuel level	V -1	0.0	5.0
CALC_GEAR	Enabled	Calculated_Gear	10 Hz	AVORACE SP35 Pressure sensor	V -1	0.0	5.0
ACC_1	Enabled	LataAcc	10 Hz	AEM 30 PSI Press sensor	#	0	9
LOG_TEMP	Enabled	Datalogger_Temp	10 Hz	AEM 30 PSI (Weg) PSI Press sensor	g .01	-3.00	3.00
BATT	Enabled	Battery	1 Hz	Kaifico 50 PSI Press sensor	°C	0	50