

AiM InfoTech

AiM pressure sensor
0-5 bar absolute
Race Studio 2 configuration

Release 1.00



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Introduction

Once AiM pressure sensor 0-5 bar absolute 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, or creating a custom sensor.

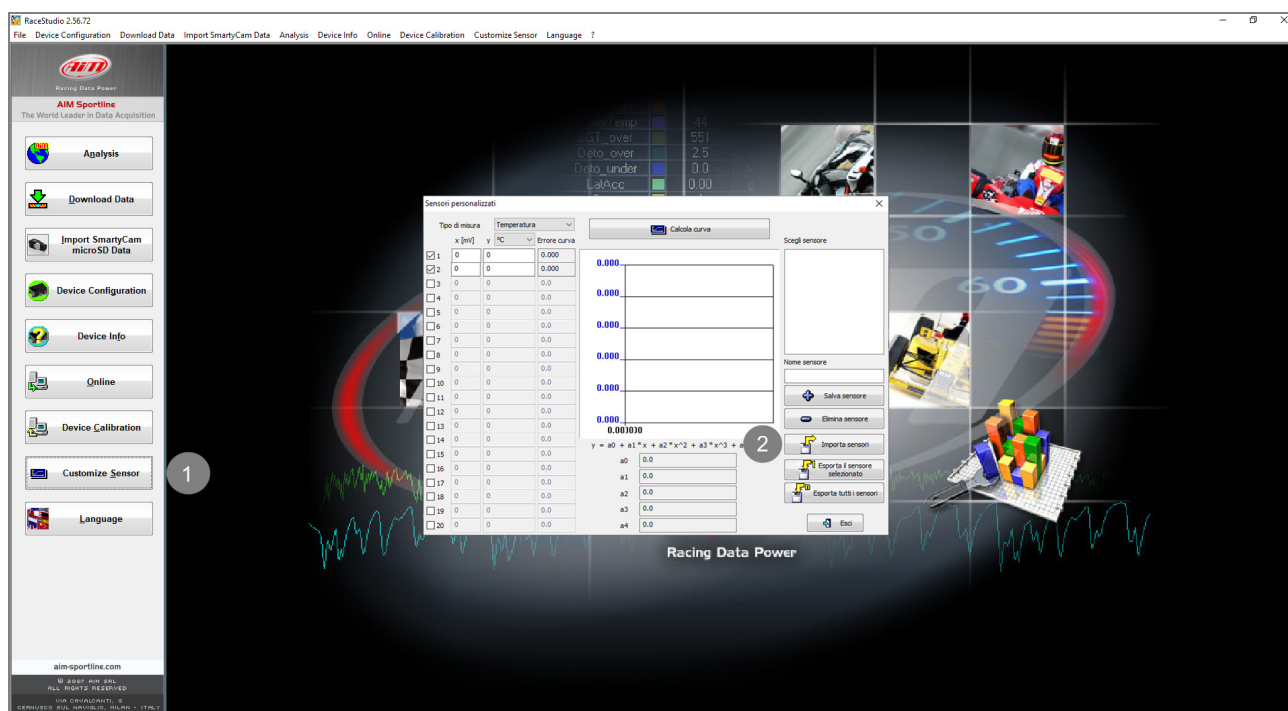
2 SCF* file import

To obtain the sensor configuration file, enter the Products – Sensors (car/bike) section of the AiM website 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.



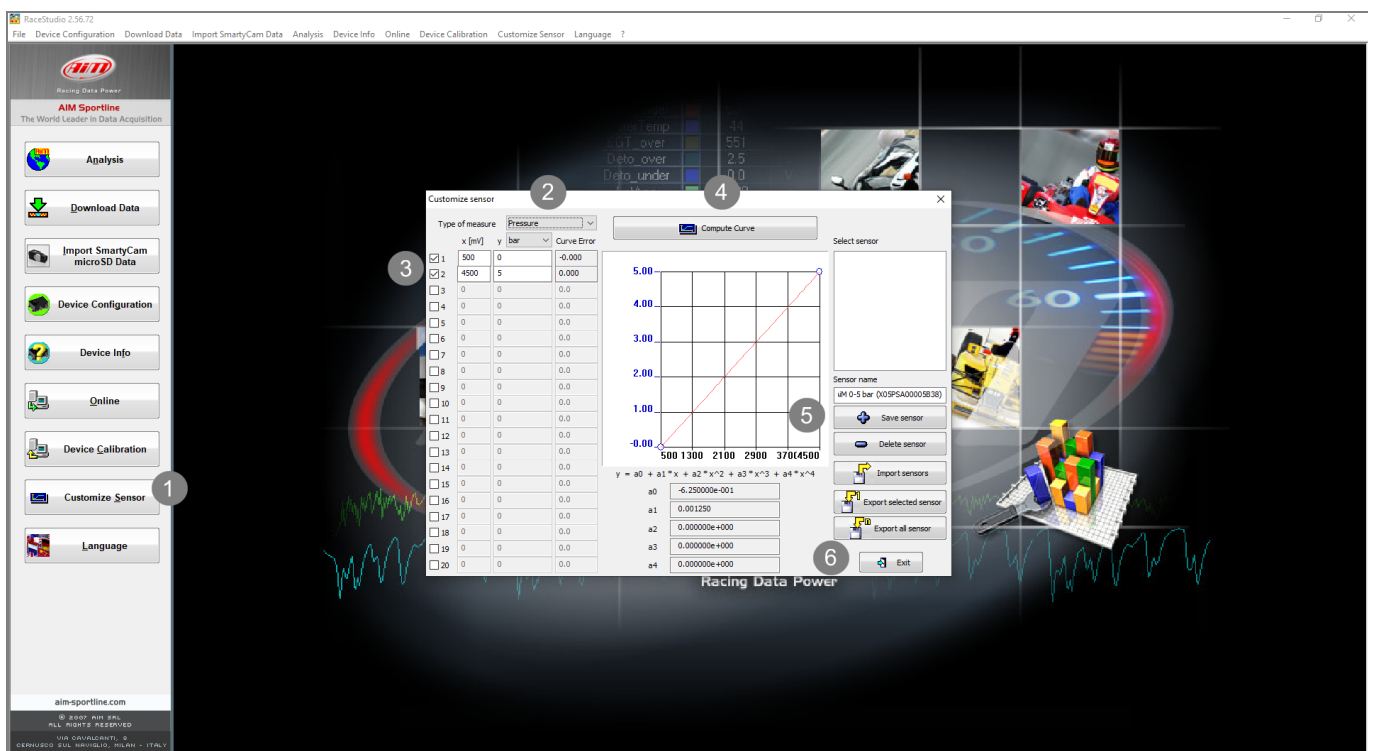
3

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	-1
4500	4

- press "Compute curve" **(4)**, fill in sensor name - in the example "AiM 0-5 bar abs (X05PSA00005B38A)" – and press "Save sensor" **(5)**; press "Exit" **(6)**



The screenshot shows the AIM Sportline software interface. The 'Customize sensor' dialog box is open, and the following steps are indicated by numbered circles:

- (1)** Click on the 'Customize sensor' button in the left sidebar.
- (2)** Select 'Pressure' as the 'Type of measure' and 'bar' as the unit.
- (3)** Complete the first two rows of the table on the left:

x [mV]	y [bar]	Curve Error
500	-1	0.000
4500	4	0.000
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
0	0	0.0
- (4)** Click the 'Compute Curve' button.
- (5)** Enter the sensor name 'AiM 0-5 bar abs (X05PSA00005B38A)' and click 'Save sensor'.
- (6)** Click the 'Exit' button.

The graph shows a linear curve passing through the points (500, -1) and (4500, 4). The equation of the curve is displayed as:

$$y = a_0 + a_1 * x + a_2 * x^2 + a_3 * x^3 + a_4 * x^4$$

The coefficients are:

- $a_0 = -6.250000e-001$
- $a_1 = 0.001250$
- $a_2 = 0.000000e+000$
- $a_3 = 0.000000e+000$
- $a_4 = 0.000000e+000$

4 Analog channel configuration

To set the sensor in the device configuration:

- enter "Channels" tab
- set the sensor on a channel selecting "AiM 0-5 bar abs (X05PSA00005B38A)" in sensor type column of the desired channel and transmit the configuration to the device.

The screenshot shows the RaceStudio 2.56.78 software interface. The 'Channels' tab is selected, displaying a table of channel configurations. The table has columns for ID, Abil., Nome canale, Freq., Sensore usato, Unità, Inizioscala, and Fondoscala. Channel 4 is highlighted in yellow, and the sensor 'AiM 0-5 bar abs (X05PSA00005B38A)' is selected for it. A red box highlights the sensor name in the 'Sensore usato' column.

ID	Abil.	Nome canale	Freq.	Sensore usato	Unità	Inizioscala	Fondoscala
RPM	<input checked="" type="checkbox"/>	Engine	10 Hz	Giri motore	rpm	0	20000
SPD_1	<input checked="" type="checkbox"/>	Speed_1	10 Hz	Velocità	km/h	0,0	250,0
CH_1	<input checked="" type="checkbox"/>	Channel_1	10 Hz	Generico lineare 0-5 V	V	0,0	5,0
CH_2	<input checked="" type="checkbox"/>	Channel_2	10 Hz	Generico lineare 0-5 V	V	0,0	5,0
CH_3	<input checked="" type="checkbox"/>	Channel_3	10 Hz	Generico lineare 0-5 V	V	0,0	5,0
CH_4	<input checked="" type="checkbox"/>	Channel_4	10 Hz	Generico lineare 0-5 V	V	0,0	5,0
CH_5	<input checked="" type="checkbox"/>	Channel_5	10 Hz	Fuochi	V	0,0	5,0
CH_6	<input checked="" type="checkbox"/>	Channel_6	10 Hz	pressione freno ant	V	0,0	5,0
CH_7	<input checked="" type="checkbox"/>	Channel_7	10 Hz	pressione freno 0-150	V	0,0	5,0
CH_8	<input checked="" type="checkbox"/>	Channel_8	10 Hz	pressione freno 0-200	V	0,0	5,0
CALC_GEAR	<input type="checkbox"/>	Calculated_Gear	10 Hz	pressione freno 0-50	#	0	9
ACC_1	<input checked="" type="checkbox"/>	LataAcc	10 Hz	AiM 0-100 bar (X05NP31100R)	g	-3,00	3,00
LOG_TMP	<input checked="" type="checkbox"/>	Datalogger_Temp	10 Hz	SDP2000-L	°C	0	50
BATT	<input checked="" type="checkbox"/>	Battery	1 Hz	Damper_R	V	5,0	15,0