

AiM InfoTech

AiM pressure sensor 0-50 PSI
Race Studio 2 configuration

Release 1.00



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Introduction

Once AiM pressure sensor 0-50 PSI 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.

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SCF* file import

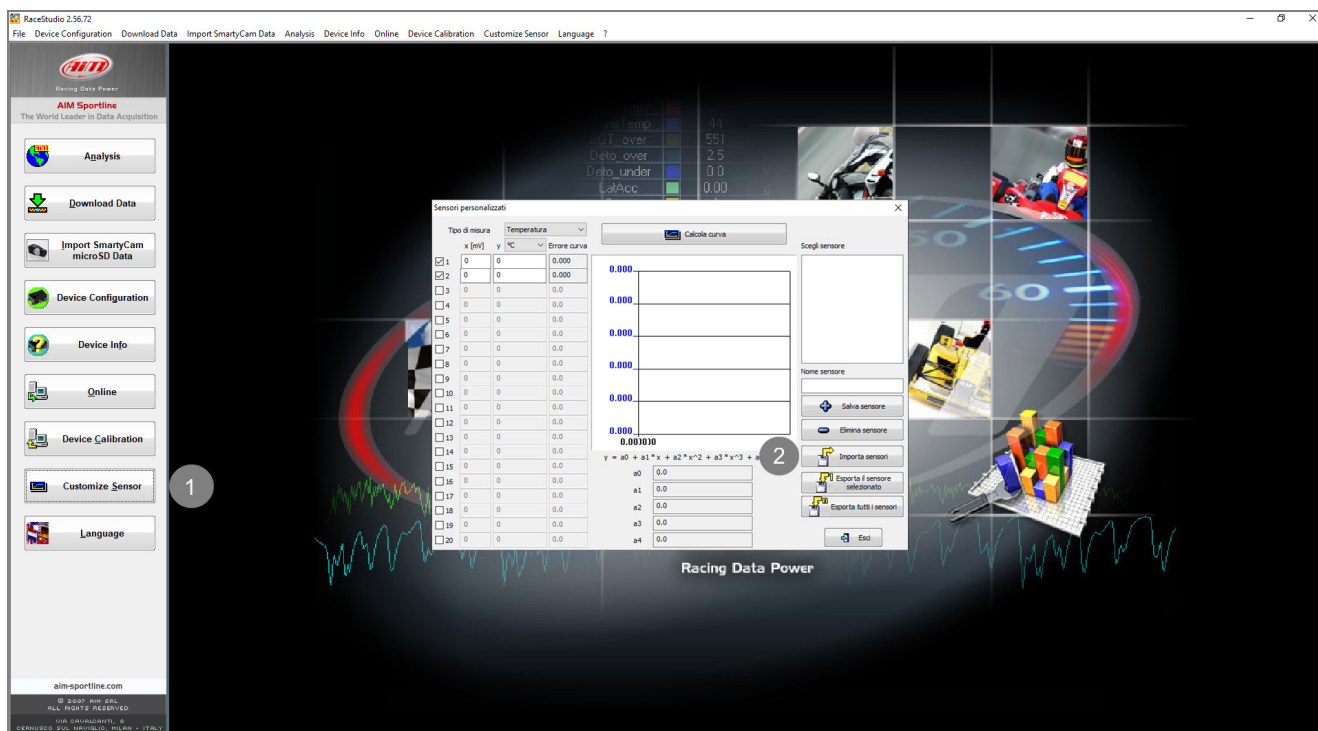
To obtain the sensor configuration file, enter the Products – Sensors (auto/moto) section of our website www.aim-sportline.com, and click the link referred to the sensor you own (following image). Once the download is finished, save the file in a PC folder.

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.



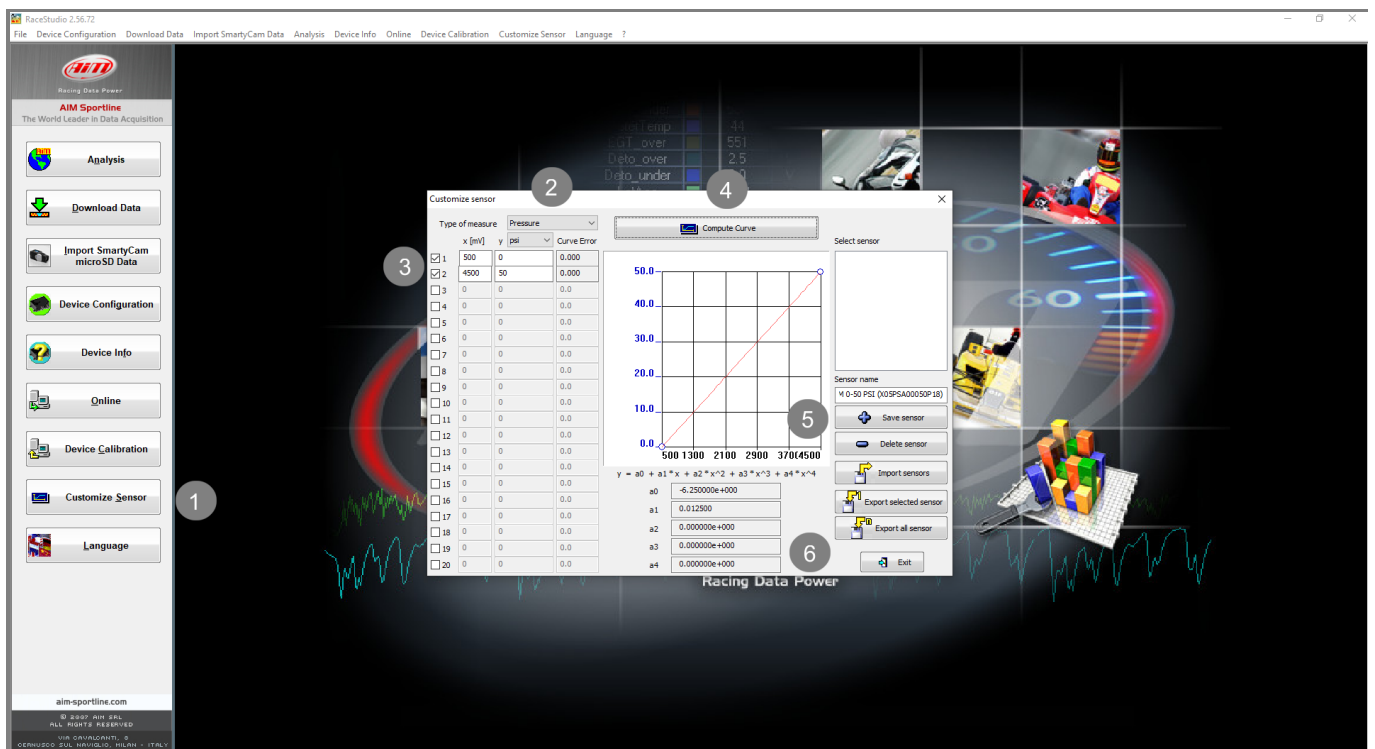
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Custom sensor creation

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

| X [mV] | Y [PSI] |
|--------|---------|
| 500 | 0 |
| 4500 | 50 |

- press "Compute curve" **(4)**, fill in sensor name - in the example "AiM 0-50 PSI (X05PSA00050P18)" – and press "Save sensor" **(5)**; press "Exit" **(6)**



The screenshot shows the 'Customize sensor' dialog box in the RaceStudio 2.56.72 software. The dialog box is divided into several sections:

- Left Panel:** A list of menu items including 'Analysis', 'Download Data', 'Import SmartyCam microSD Data', 'Device Configuration', 'Device Info', 'Online', 'Device Calibration', 'Customize Sensor' (highlighted with a red circle and '1'), and 'Language'.
- Table:** A table with columns 'x [mV]', 'y', and 'Curve Error'. The first two rows are filled with the values 500, 0 and 4500, 50, respectively. The table is highlighted with a red circle and '3'.
- Graph:** A line graph showing the relationship between x and y. The x-axis ranges from 500 to 4500, and the y-axis ranges from 0.0 to 50.0. A red line connects the two data points. The graph is highlighted with a red circle and '4'.
- Fields:** A 'Sensor name' field containing the text 'AiM 0-50 PSI (X05PSA00050P18)' is highlighted with a red circle and '5'. Below it are fields for coefficients a0, a1, a2, a3, and a4.
- Buttons:** Buttons for 'Compute Curve', 'Save sensor', 'Delete sensor', 'Import sensors', 'Export selected sensor', 'Export all sensor', and 'Exit' are visible. The 'Exit' button is highlighted with a red circle and '6'.

4 Analog channel configuration

To set the sensor in the device configuration:

- enter "Channels" tab
- set the sensor on a channel selecting "AiM 0-50 PSI (X05PSA00050P18)" in sensor type column of the desired channel and transmit the configuration to the device.

The screenshot shows the RaceStudio 2.56.72 software interface. The 'Channels' tab is selected in the 'System configuration' section. The table below lists the configured channels and their sensor types. Channel 4 is highlighted, and the sensor type dropdown is open, showing the selection of 'AiM 0-50 PSI (X05PSA00050P18)'.

| Channel identifier | Enabled/disabled | Channel name | Sampling frequency | Sensor type | Measure unit | Low scale | High scale |
|--------------------|---|-----------------|--------------------|-------------------------|--------------|-----------|------------|
| RPM | <input checked="" type="checkbox"/> Enabled | Engine | 10 Hz | Engine revolution speed | rpm | 0 | 20000 |
| SPD_1 | <input checked="" type="checkbox"/> Enabled | Speed_1 | 10 Hz | Speed | km/h .1 | 0.0 | 250.0 |
| CH_1 | <input checked="" type="checkbox"/> Enabled | Channel_1 | 10 Hz | Generic linear 0-5 V | V .1 | 0.0 | 5.0 |
| CH_2 | <input checked="" type="checkbox"/> Enabled | Channel_2 | 10 Hz | Generic linear 0-5 V | V .1 | 0.0 | 5.0 |
| CH_3 | <input checked="" type="checkbox"/> Enabled | Channel_3 | 10 Hz | Generic linear 0-5 V | V .1 | 0.0 | 5.0 |
| CH_4 | <input checked="" type="checkbox"/> Enabled | Channel_4 | 10 Hz | Generic linear 0-5 V | V .1 | 0.0 | 5.0 |
| CH_5 | <input checked="" type="checkbox"/> Enabled | Channel_5 | 10 Hz | Generic linear 0-5 V | V .1 | 0.0 | 5.0 |
| CH_6 | <input checked="" type="checkbox"/> Enabled | Channel_6 | 10 Hz | Generic linear 0-5 V | V .1 | 0.0 | 5.0 |
| CH_7 | <input checked="" type="checkbox"/> Enabled | Channel_7 | 10 Hz | Generic linear 0-5 V | V .1 | 0.0 | 5.0 |
| CH_8 | <input checked="" type="checkbox"/> Enabled | Channel_8 | 10 Hz | Generic linear 0-5 V | V .1 | 0.0 | 5.0 |
| CALC_GEAR | <input checked="" type="checkbox"/> Enabled | Calculated_Gear | 10 Hz | Calculated_Gear | # | 0 | 9 |
| ACC_1 | <input checked="" type="checkbox"/> Enabled | LatAcc | 10 Hz | LatAcc | g .01 | -3.00 | 3.00 |
| LOG_TMP | <input checked="" type="checkbox"/> Enabled | Datalogger_Temp | 10 Hz | Datalogger_Temp | °C | 0 | 50 |
| BATT | <input checked="" type="checkbox"/> Enabled | Battery | 1 Hz | Battery | V .1 | 5.0 | 15.0 |

The sensor type dropdown for Channel 4 is open, showing the following options:

- AiM 0-50 PSI (X05PSA00050P18)
- AiM 0-100 bar (X05PSA00100B38)
- AiM 0-150 PSI (X05PSA00150P18)
- AiM 0-160 bar (X05PSA00160B10)
- AiM 0-2000 PSI (X05PSA02000P18)