



Race Studio 2

Configuring the sensor with Race Studio 2 software

Question:

How can I configure a generic fuel level sensor using Race Studio 2 software?

Answer:

Once the sensor and the additional pull up resistor connected, you need to find the correspondence between tension read by AiM device and fuel level in the tank and ensure that your AiM device reads this correspondence.

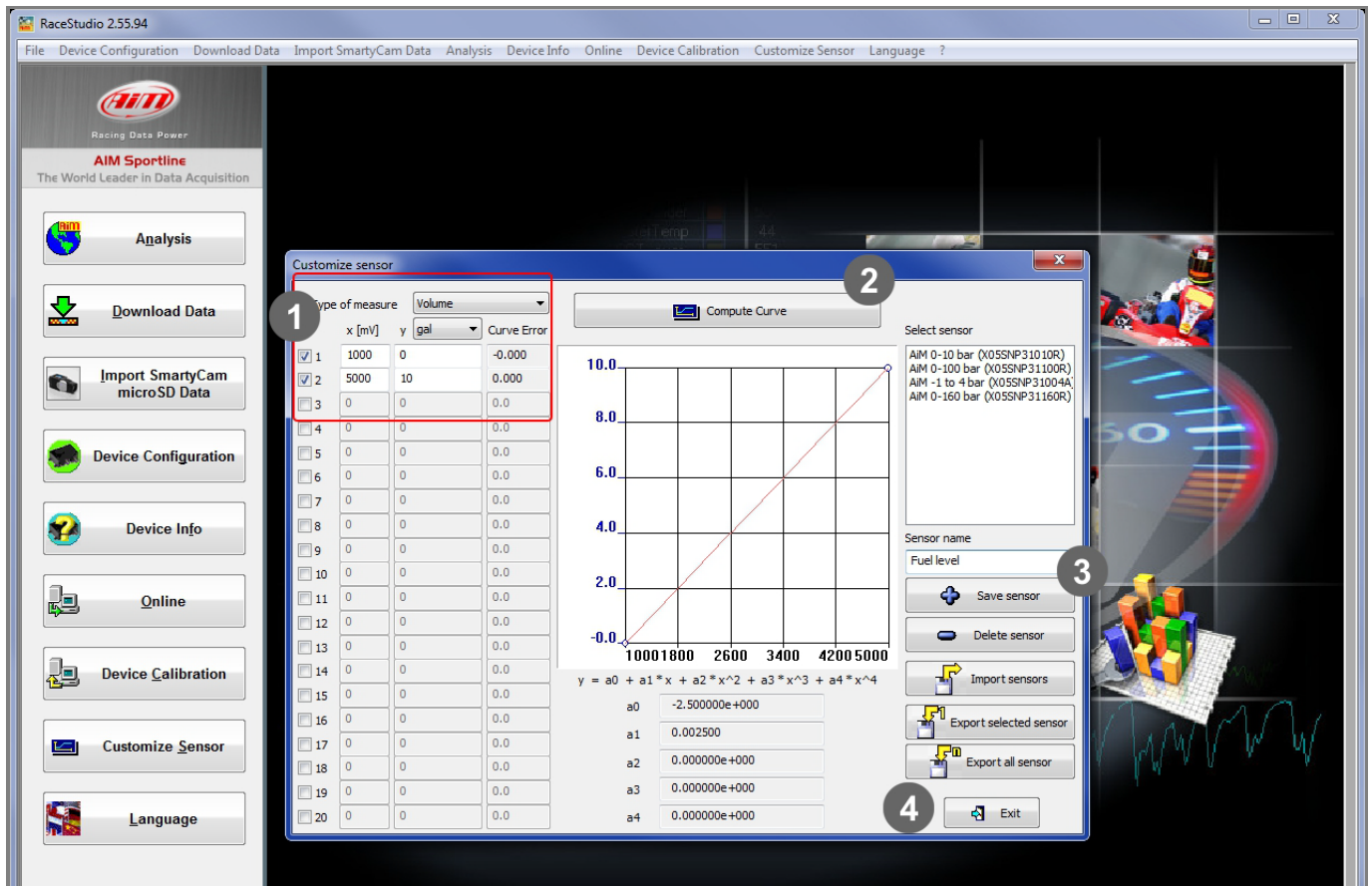
Proceed adding fuel step by step (eg. 3 litres at a time); at the same time go Online with Race Studio 2 to read the tension (mV) detected by AiM device in real time. Take note of mill volts and corresponding litres poured in the tank to complete sensor characterization.

Once all needed info collected, use Race Studio 2 **custom sensor** menu, to fill in collected values and make the software compute the sensor curve. The new sensor is now available to be set on an analog input.

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Proceed as follows:

- run the software and press "Custom Sensor"
- select type of measure, measure unit, enable the rows you need and fill in collected values (1)
- press "Compute curve" (2), fill in sensor name and press "save sensor" (3)
- press "Exit" (4)



Customize sensor

Type of measure: Volume

	x [mV]	y	Curve Error
<input checked="" type="checkbox"/> 1	1000	0	-0.000
<input checked="" type="checkbox"/> 2	5000	10	0.000
<input type="checkbox"/> 3	0	0	0.0
<input type="checkbox"/> 4	0	0	0.0
<input type="checkbox"/> 5	0	0	0.0
<input type="checkbox"/> 6	0	0	0.0
<input type="checkbox"/> 7	0	0	0.0
<input type="checkbox"/> 8	0	0	0.0
<input type="checkbox"/> 9	0	0	0.0
<input type="checkbox"/> 10	0	0	0.0
<input type="checkbox"/> 11	0	0	0.0
<input type="checkbox"/> 12	0	0	0.0
<input type="checkbox"/> 13	0	0	0.0
<input type="checkbox"/> 14	0	0	0.0
<input type="checkbox"/> 15	0	0	0.0
<input type="checkbox"/> 16	0	0	0.0
<input type="checkbox"/> 17	0	0	0.0
<input type="checkbox"/> 18	0	0	0.0
<input type="checkbox"/> 19	0	0	0.0
<input type="checkbox"/> 20	0	0	0.0

Compute Curve

Select sensor

- AIM 0-10 bar (X05SNP31010R)
- AIM 0-100 bar (X05SNP31100R)
- AIM -1 to 4 bar (X05SNP31004A)
- AIM 0-160 bar (X05SNP31160R)

Sensor name

Fuel level

Save sensor

Delete sensor

Import sensors

Export selected sensor

Export all sensor

Exit

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

$a_0 = -2.500000e+000$
 $a_1 = 0.002500$
 $a_2 = 0.000000e+000$
 $a_3 = 0.000000e+000$
 $a_4 = 0.000000e+000$

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To load the sensor in AiM device configuration:

- press "Device configuration" on the software left keyboard, select your device and the configuration where to load the sensor
- enable "Channels" layer (1)
- select the channel where to set the sensor on and select it from the drop down menu in "Sensor type" column (2)
- transmit the configuration to the device pressing "Transmit" (3)

System manager

Transmit (3)

Channels (1)

Sensor type (2)

Channel ident...	Enabled/disabled	Channel name	Sampling frequ...	Sensor type	Measure unit	Low sca
RPM	Disabled	Engine	10 Hz	Engine revolution speed	rpm	0
SPD_1	Enabled	Speed1	10 Hz	Speed	km/h .1	0.0
SPD_2	Enabled	Speed2	10 Hz	Speed	km/h .1	0.0
CH_1	Enabled	Channel_1	10 Hz	Thermocouple	°C	0
CH_2	Enabled	Channel_2	10 Hz	Generic linear 0-5 V	V .1	0.0
CH_3	Enabled	Channel_3	10 Hz	Air temp. (FR2000)	deg .1	0.0
CH_4	Enabled	Channel_4	10 Hz	Oil press. (RENAULT)	V .1	0.0
CH_5	Disabled	Channel_5	10 Hz	Air press. (RENAULT)	V .1	0.0
CALC_GEAR	Disabled	Calculated_Gear	10 Hz	Water temp. AIM (FR2000)	#	0
ACC_1	Enabled	Acc_Laterale	10 Hz	Pressure sensor	g .01	-3.00
ACC_2	Enabled	Acc_Longitudinale	10 Hz	MSI 0-2000 PSI sensor	g .01	-3.00
ACC_3	Enabled	Acc_Verticale	10 Hz	AVIORACE_SP35_Pressure sensor	g .01	-3.00
LOG_TMP	Enabled	Datalogger_Temp	10 Hz	AEM 30 PSI Press sensor	°C	0
BATT	Enabled	Battery	1 Hz	AEM 30 PSI INHg/PSI Press sensor	V .1	5.0
ECU_1	Enabled	ECU_RPM	10 Hz	Kavlico 50 PSI Press sensor	rpm	0
ECU_2	Enabled	ECU_TPS	10 Hz	GM 3 Bar Map sensor	% .1	0.0
ECU_3	Enabled	ECU_ECT	10 Hz	KA 0-150 PSI Press sensor	°C	0
ECU_4	Enabled	ECU_OIL_T	10 Hz	AEM 30 1000 PSI Press sensor	°C	0
ECU_5	Enabled	ECU_OIL_P	10 Hz	Delphi IAT #25036751 Temp sensor	°C	0
ECU_6	Enabled	ECU_AIRBOX_P	10 Hz	Texense INFKL 800 C IR Temp sensor	°C	0
ECU_7	Enabled	ECU_INT_AIR_T	10 Hz	Texense INFKL 200 C IR Temp sensor	°C	0
ECU_8	Enabled	ECU_ACC_LAT	10 Hz	Texense INFKL 150 C IR Temp sensor	°C	0
ECU_9	Enabled	ECU_ACC_LONG	10 Hz	PRS-831 0-50 PSI MAP absolute	bar .1	0
ECU_10	Enabled	ECU_YAW_RATE	10 Hz	PRS-832 0-15 PSI	mbar	0
ECU_11	Enabled	ECU_STEER_ANG	10 Hz	PRS-837 0-150 PSI	°C	0
ECU_12	Enabled	ECU_SPEED	10 Hz	PRS-838 0-300 PSI	m/s^2	-50
ECU_13	Enabled	ECU_SPEED_FL	10 Hz	PRS-839 0-2000 PSI	m/s^2	-50