

AiM Infotech

Rotary potentiometer for
car/bike/kart
Race Studio 2 configuration
– steering angle

Release 1.00



1

Introduction

This datasheet explains how to install and set up wit Race Studio 2 the rotary potentiometer. AiM loggers can measure the displacement between two points using a sensor (rotary potentiometer) directly connected to the two measure points. This potentiometer can measure the angular displacement like those of the steering wheel.

2

Setup with Race Studio 2

To load the potentiometer in AiM logger configuration:

- run the software, select the logger in use and the configuration to set the potentiometer on and enter "Channels" layer
- Select the channel where to set the potentiometer on (in the example channel 3) and select "Mid zero potentiometer" in "Sensor type" column as shown here below.

The screenshot shows the RaceStudio 2.55.44 interface. The 'System manager' window is open, and the 'Channels' tab is selected. The 'Current configuration' table shows the following data:

Installation name	Data logger type	Ecu	Lap Timer	Vehicle name	Available time	Time with GPS	Total frequency	Master frequency	Expansions frequency	Tot. Expansions
LOGGER_CONF	MXL PISTA	None - None	by GPS	READ	9.32.39 (h.m.s)	4.06.35 (h.m.s)	121 (Hz)	121 (Hz)	0 (Hz)	0

The 'Channels' table is as follows:

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 0-50 mV	mV	0	5
CH_4	<input checked="" type="checkbox"/> Enabled	Channel_4	10 Hz	Thermocouple	V .1	0.0	5.0
CH_5	<input checked="" type="checkbox"/> Enabled	Channel_5	10 Hz	Thermoresistance PT100	V .1	0.0	5.0
CH_6	<input checked="" type="checkbox"/> Enabled	Channel_6	10 Hz	Temperature VDO 40-120 °C	V .1	0.0	5.0
CH_7	<input checked="" type="checkbox"/> Enabled	Channel_7	10 Hz	Temperature VDO 50-150 °C	V .1	0.0	5.0
CH_8	<input checked="" type="checkbox"/> Enabled	Channel_8	10 Hz	Temperature VDO 60-200 °C	V .1	0.0	5.0
CALC_GEAR	<input type="checkbox"/> Disabled	Calculated_Gea	10 Hz	Water temp. (SUZUKI SUPERSPORT)	V .1	0.0	5.0
ACC_1	<input checked="" type="checkbox"/> Enabled	LatAcc	10 Hz	Pressure VDO 0-2 bar	#	0	9
LOG_TMP	<input checked="" type="checkbox"/> Enabled	Datalogger_Term	10 Hz	Pressure VDO 0-5 bar	g .01	-3.00	3.00
BATT	<input checked="" type="checkbox"/> Enabled	Battery	1 Hz	Pressure VDO 0-10 bar	°C	0	50

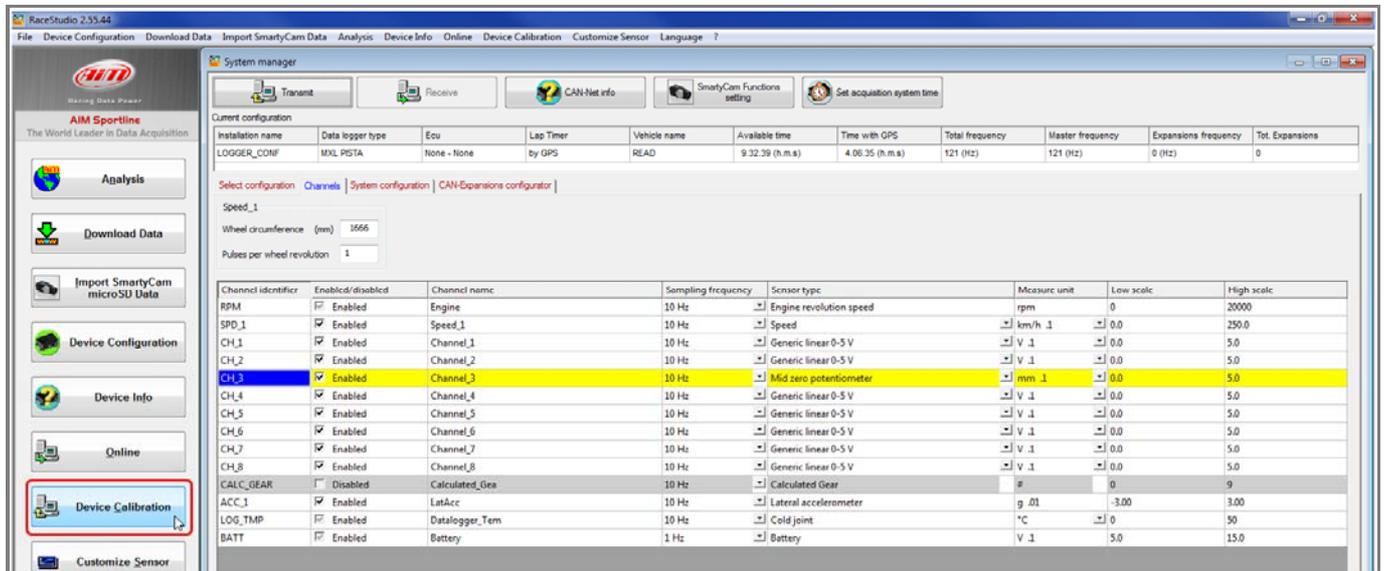
The 'Sensor type' dropdown for channel 3 is open, showing the following options:

- Mid zero potentiometer
- Lambda sensor B17C11
- Lambda sensor NGK TL7111W1 - NTK TC6110
- Generic linear 0-5 V
- Generic linear 0-300 mV
- Generic linear 0-50 mV
- SEAT Brake Pressure

- click out of the cell
- transmit the configuration to the logger pressing "Transmit" on the software top keyboard.

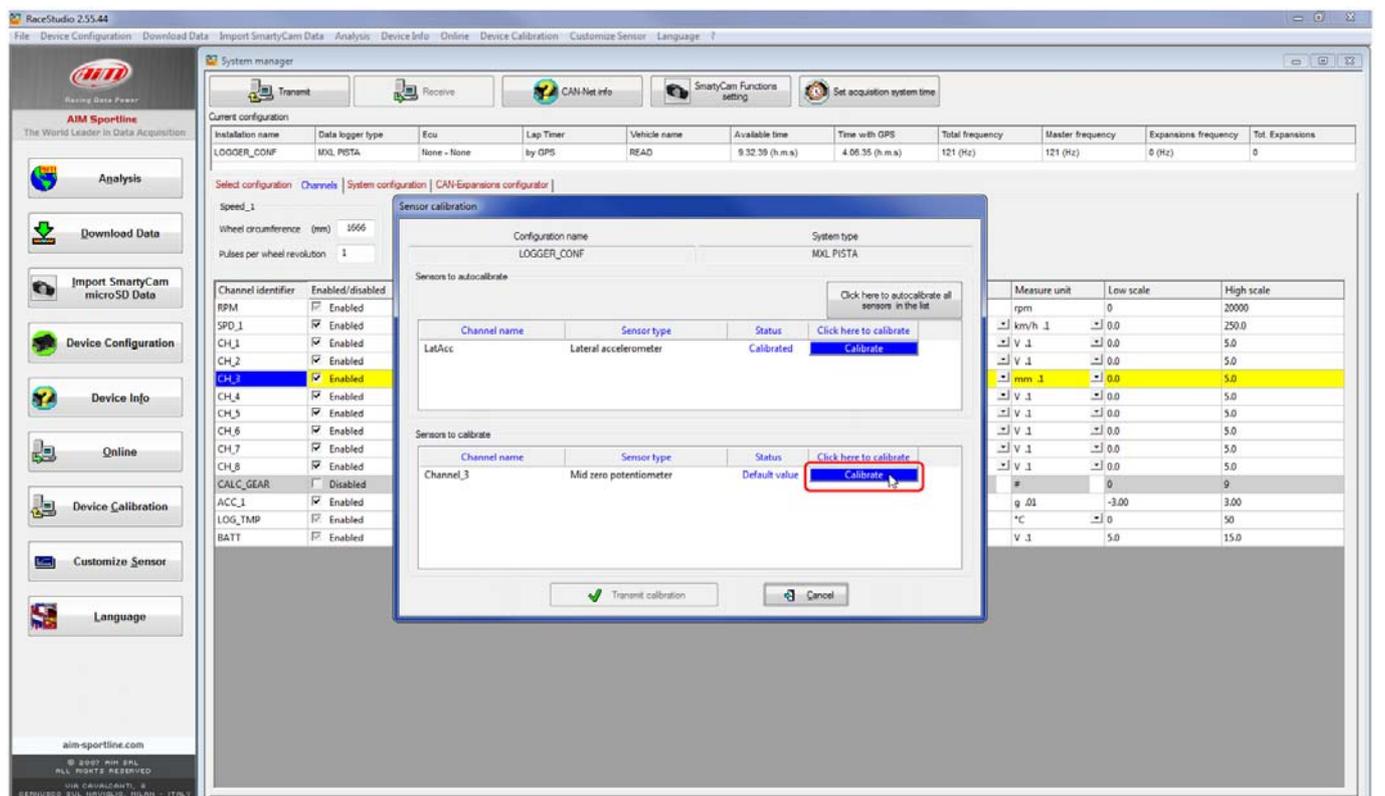
To calibrate the potentiometer:

- Press "Device Calibration"



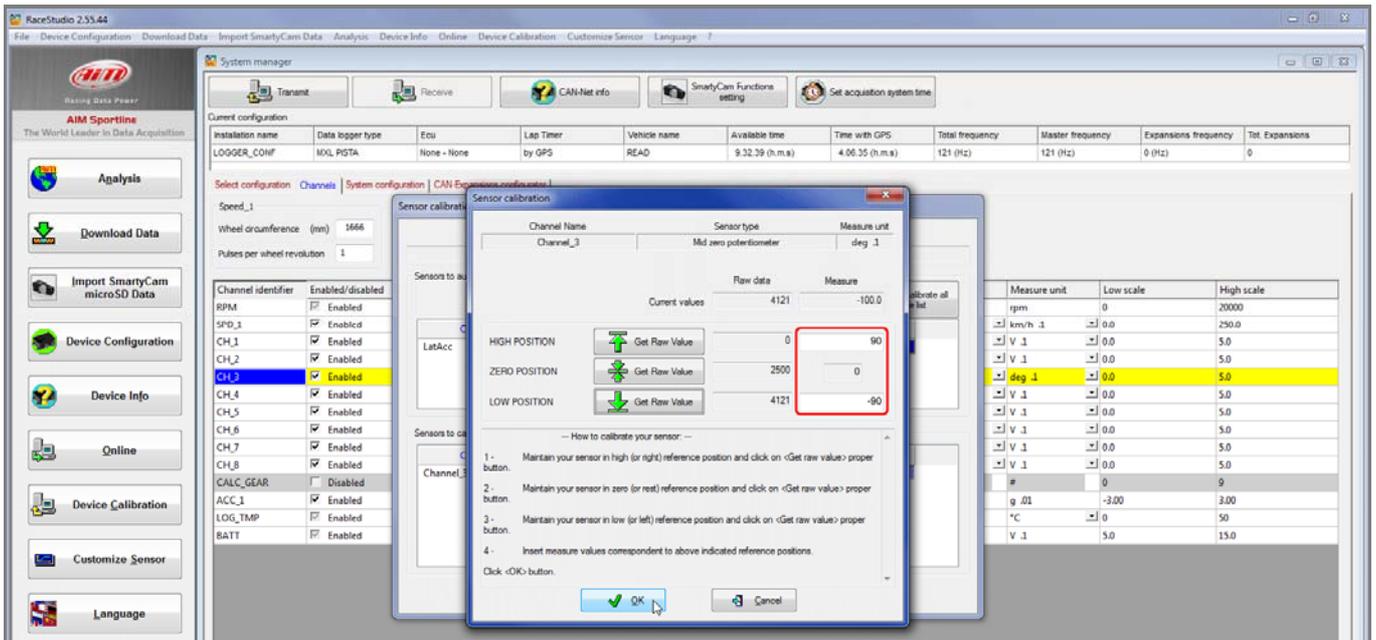
Calibration panel shows up:

- Press "Calibrate" button of "Mid zero potentiometer"

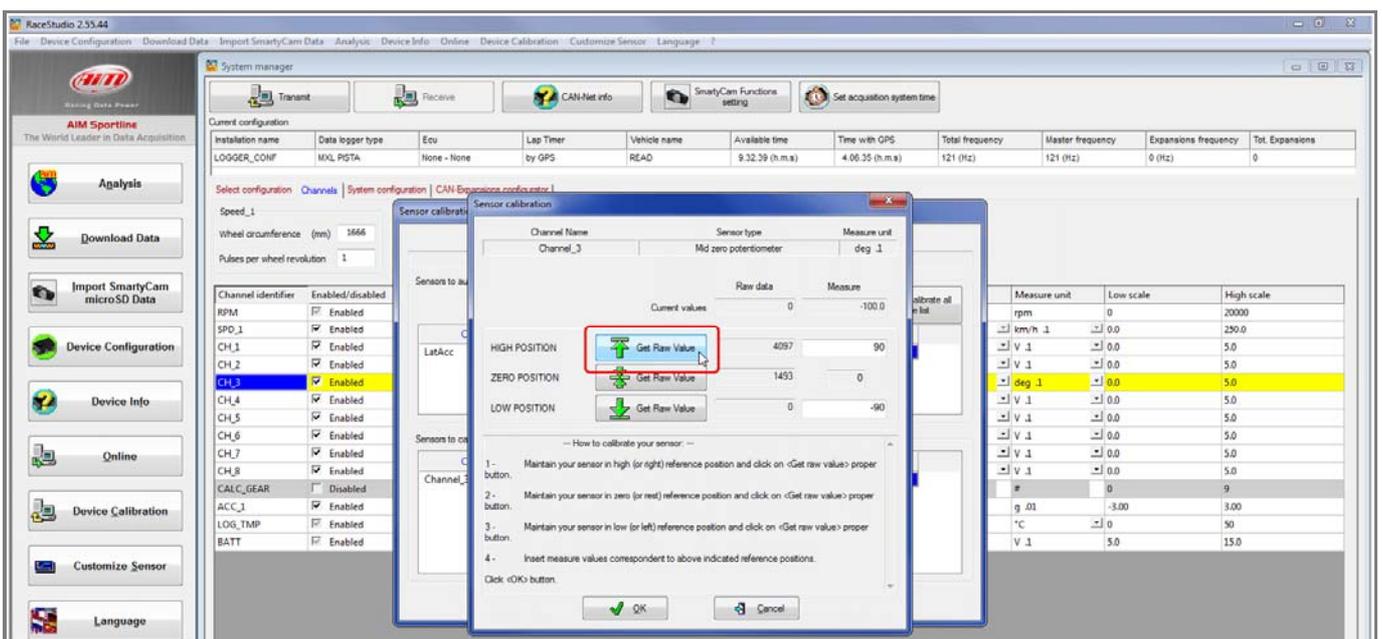


The software shows "Calibration panel" to learn the three calibration points:

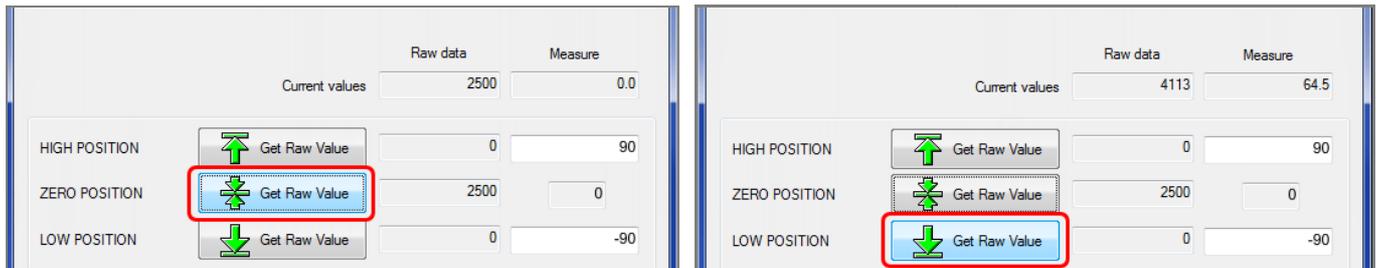
- manually fill in values corresponding to the three angular position: for example 90, 0 and -90.



- swerve to the right according to the angle you wish to calibrate and press "Get raw value" corresponding to "High position"



- place the steering in its zero position and press "Get raw value" corresponding to "Zero position" (image below on the left)
- swerve to the left according to the angle you wish to calibrate and press "Get raw value" corresponding to "Low position" (image below on the right)



- press OK

When calibration is over potentiometer status will turn to "Calibrated" and become red:

- Transmit the calibration to the logger pressing "Transmit Calibration"

