AiM Infotech

Rotary potentiometer for car/bike/kart
Race Studio 3 configuration – steering angle

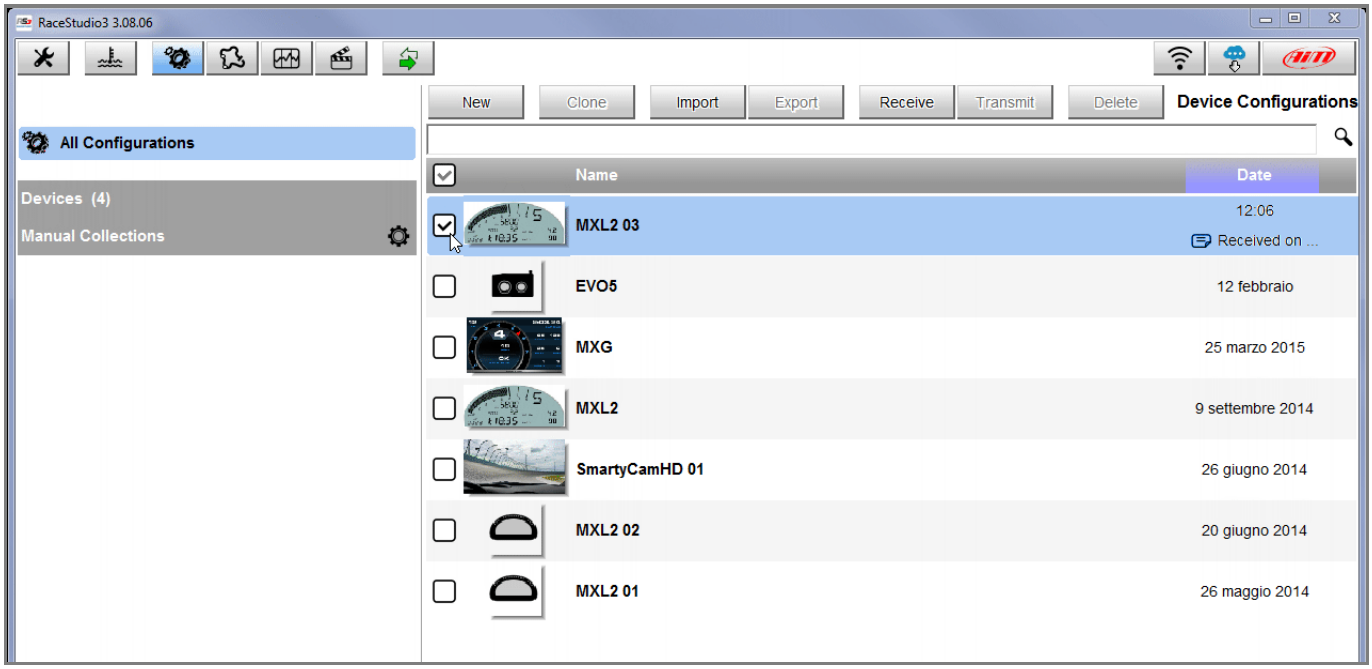
Release 1.00

1 Introduction

This datasheet explains how to set up with 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.

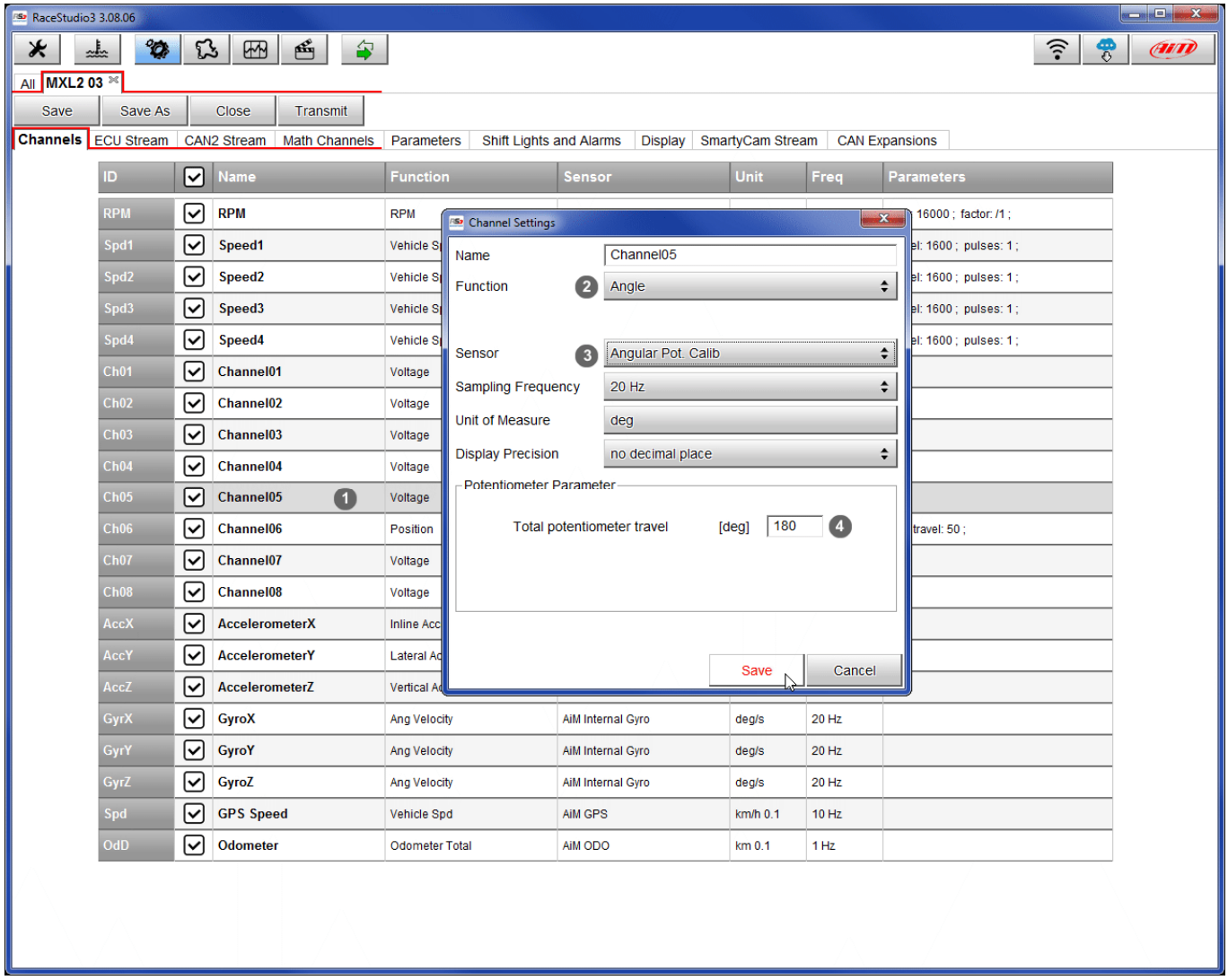
2 Setup with Race Studio 3

To load the potentiometer in the logger configuration, with the logger switched on and connected to the PC, run the software and select the configuration you are going to load it on.



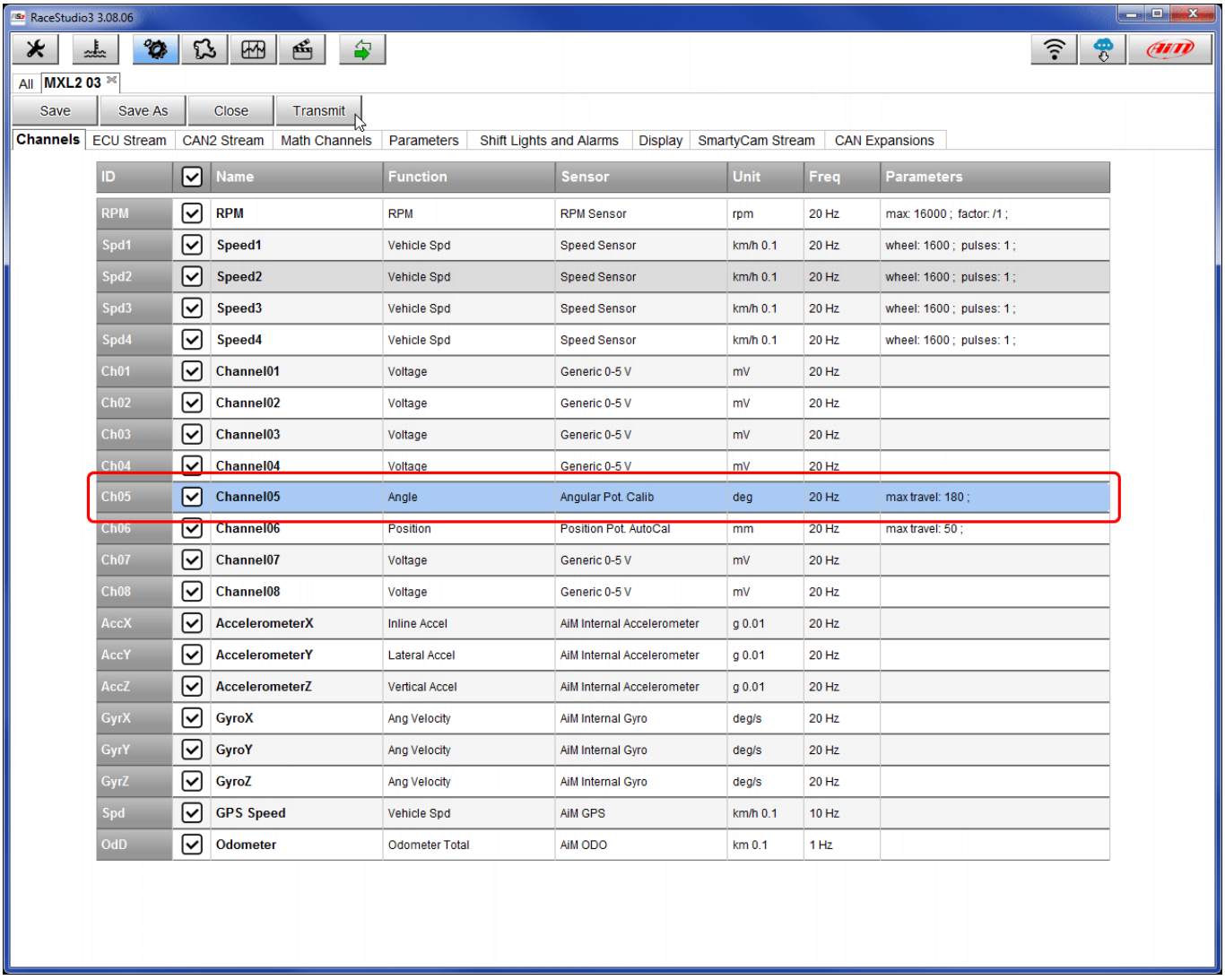
Enter the configuration (in the example MXL2 03) and the related "Channels" layer.

- Select the channel where to set the potentiometer on – in the example channel 5 (**1**) and fill in the panel that shows up; tip: you can name the channel (in the example "Channel06")
- Function: "Angle" (**2**)
- Sensor: " Angular Pot. Calib" (**3** – this implies that the potentiometer will be calibrated as shown in the following pages)
- Fill in the other fields
- Fill "Total Potentiometer travel" box with the potentiometer travel in degrees: 180° (**4**)
- Click "Save"



When the software comes back to "Channels" layer the potentiometer has been set on the desired channel as shown here below.

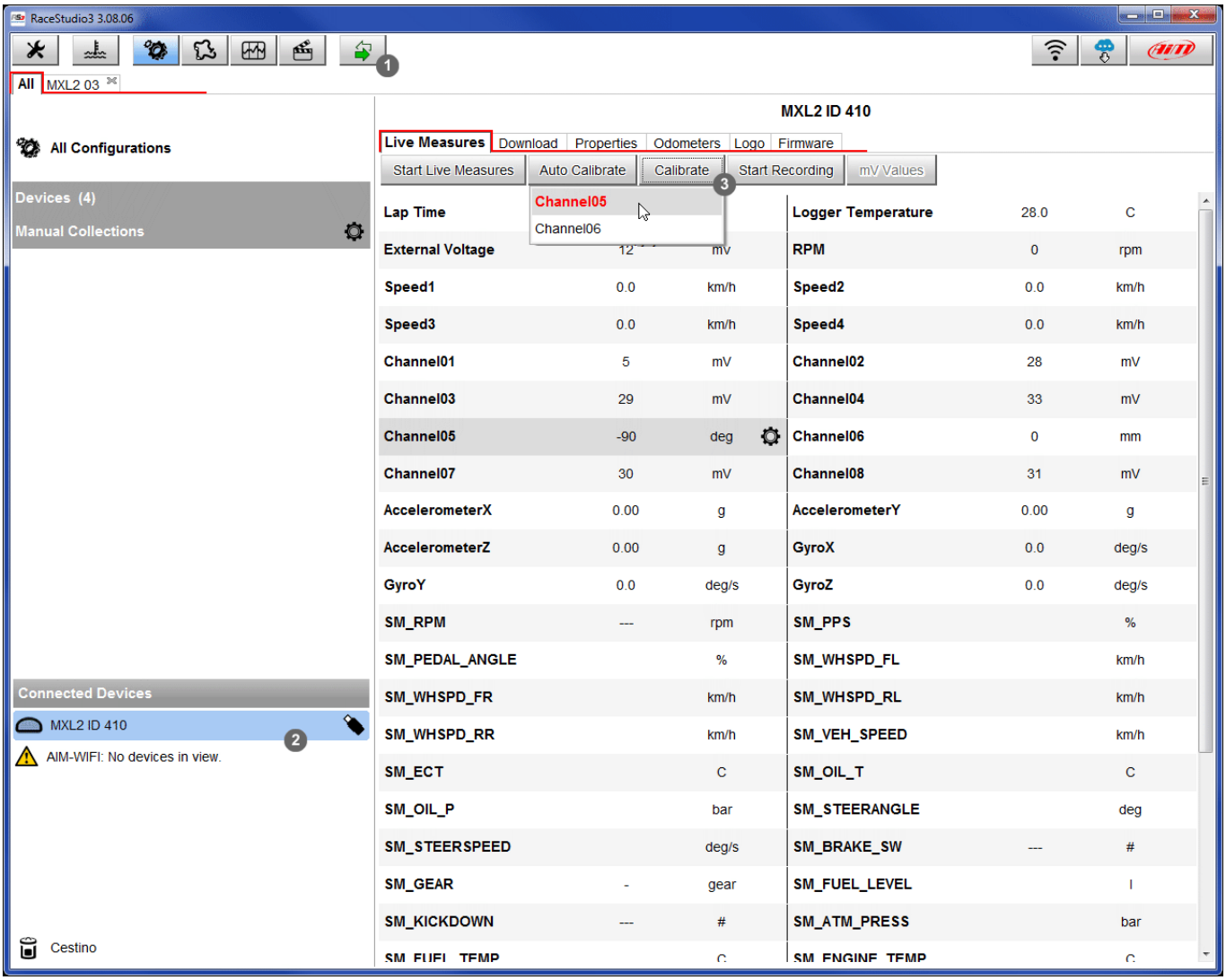
- Transmit the configuration to the logger pressing "Transmit" on the top keyboard.



ID		Name	Function	Sensor	Unit	Freq	Parameters
RPM	☑	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	☑	Speed1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd2	☑	Speed2	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd3	☑	Speed3	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd4	☑	Speed4	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Ch01	☑	Channel01	Voltage	Generic 0-5 V	mV	20 Hz	
Ch02	☑	Channel02	Voltage	Generic 0-5 V	mV	20 Hz	
Ch03	☑	Channel03	Voltage	Generic 0-5 V	mV	20 Hz	
Ch04	☑	Channel04	Voltage	Generic 0-5 V	mV	20 Hz	
Ch05	☑	Channel05	Angle	Angular Pot. Calib	deg	20 Hz	max travel: 180 ;
Ch06	☑	Channel06	Position	Position Pot. AutoCal	mm	20 Hz	max travel: 50 ;
Ch07	☑	Channel07	Voltage	Generic 0-5 V	mV	20 Hz	
Ch08	☑	Channel08	Voltage	Generic 0-5 V	mV	20 Hz	
AccX	☑	AccelerometerX	Inline Accel	AiM Internal Accelerometer	g 0.01	20 Hz	
AccY	☑	AccelerometerY	Lateral Accel	AiM Internal Accelerometer	g 0.01	20 Hz	
AccZ	☑	AccelerometerZ	Vertical Accel	AiM Internal Accelerometer	g 0.01	20 Hz	
GyrX	☑	GyroX	Ang Velocity	AiM Internal Gyro	deg/s	20 Hz	
GyrY	☑	GyroY	Ang Velocity	AiM Internal Gyro	deg/s	20 Hz	
GyrZ	☑	GyroZ	Ang Velocity	AiM Internal Gyro	deg/s	20 Hz	
Spd	☑	GPS Speed	Vehicle Spd	AiM GPS	km/h 0.1	10 Hz	
OdD	☑	Odometer	Odometer Total	AiM ODO	km 0.1	1 Hz	

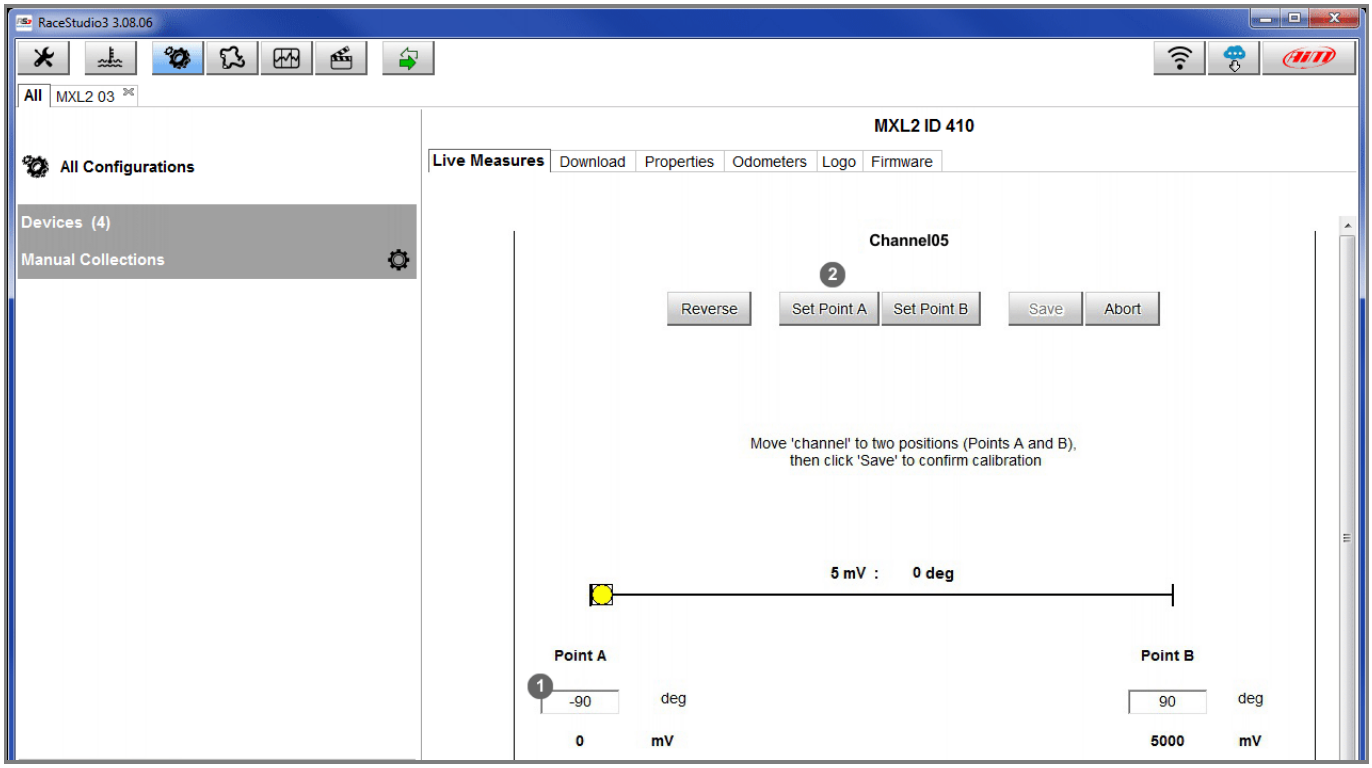
To calibrate the potentiometer:

- enter "All" layer and press "Device" (**1**)
- select the logger – in the example MXL2 ID 410 (**2**)
- in "Live Measures" layer press "Calibrate" **(3**) and select the channel where the potentiometer was set (in the example channel 5)



The software shows calibration page:

- fill in threshold values -90 and 90 in the proper cells (**1**)
- keeping the potentiometer completely closed press "Set point A" (**2**)



- completely open the potentiometer and press "Set point B"
- press "Save"