

## Race Studio 3


# Configuring a TPS potentiometer with RS3

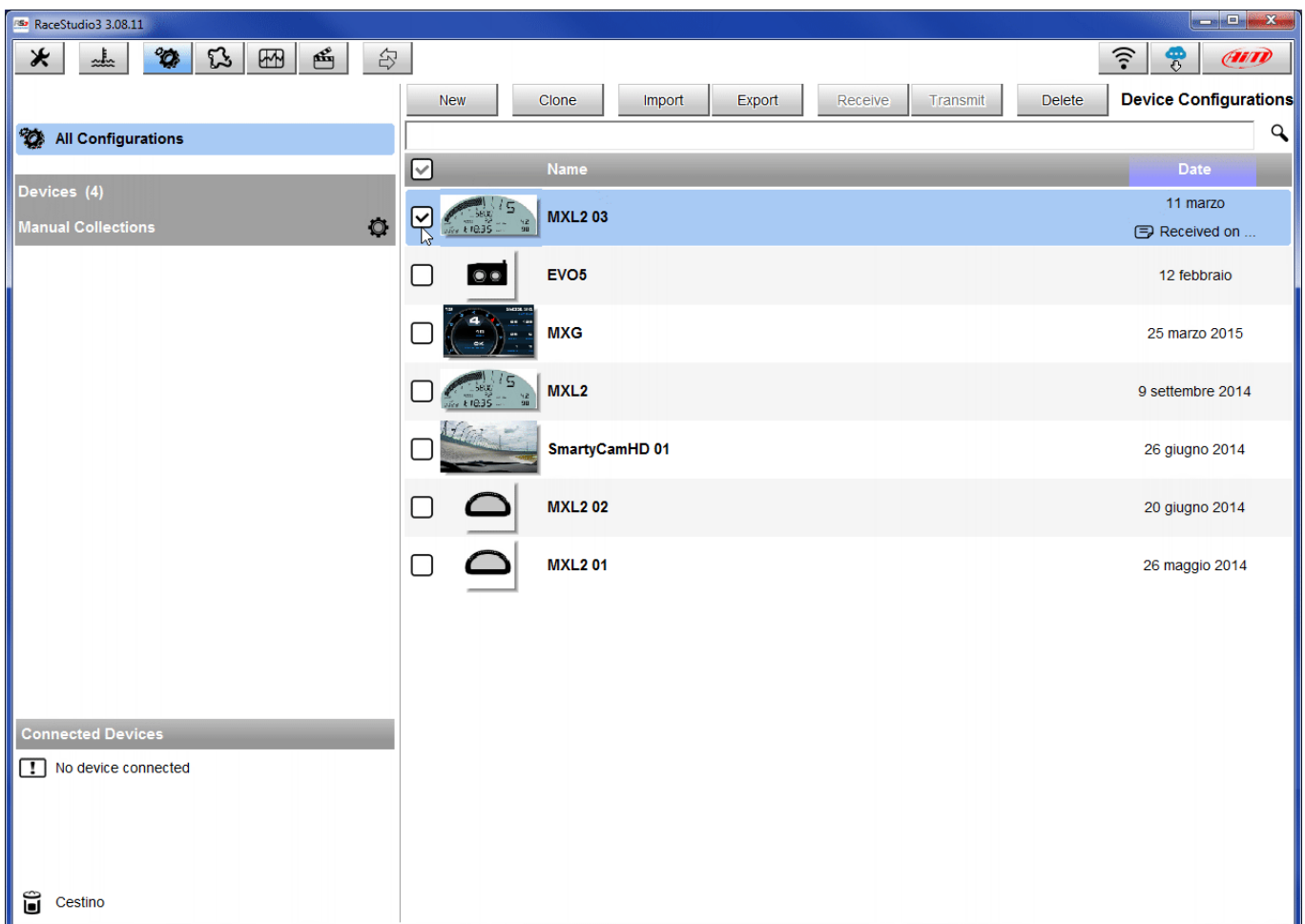
### Question:

How do I configure the TPS potentiometer installed on my car/bike using RS3?

### Answer:

The TPS potentiometer is configurable using RS3 in the way shown here below:

- Run the software RS3.
- Click "Configuration" () and select the configuration you are going to load the sensor on.



### Race Studio 3

- 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.
- Function: "Percent" (2; also "Position" and "Angle" function can be selected, but the potentiometer total motion must be known accurately, respectively in millimeters and in degrees).
- Sensor: "Percentage Pot. Calib" (3 – this implies that the potentiometer will be calibrated as shown in the following pages).
- Fill in the other fields.
- Click "Save".

The screenshot shows the RaceStudio3 3.08.11 interface. The 'Channels' tab is active, displaying a table of channels. A dialog box titled 'Channel Settings' is open for 'Channel05'. The dialog box contains the following fields:

- Name: Channel05
- Function: Percent (2)
- Sensor: Percentage Pot. Calib (3)
- Sampling Frequency: 20 Hz
- Unit of Measure: %
- Display Precision: 2 decimal places

The 'Save' button is highlighted with a mouse cursor.

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					
Ch02	Channel02					
Ch03	Channel03					
Ch04	Channel04					
Ch05	Channel05					
Ch06	Channel06					
Ch07	Channel07					
Ch08	Channel08					
AccX	AccelerometerX					
AccY	AccelerometerY					
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	

### Race Studio 3

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.

The screenshot shows the RaceStudio3 3.08.11 interface. The 'Channels' tab is active, displaying a table of channel configurations. The 'Transmit' button is highlighted in red. The 'Channel05' row is highlighted in blue and circled in red.

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



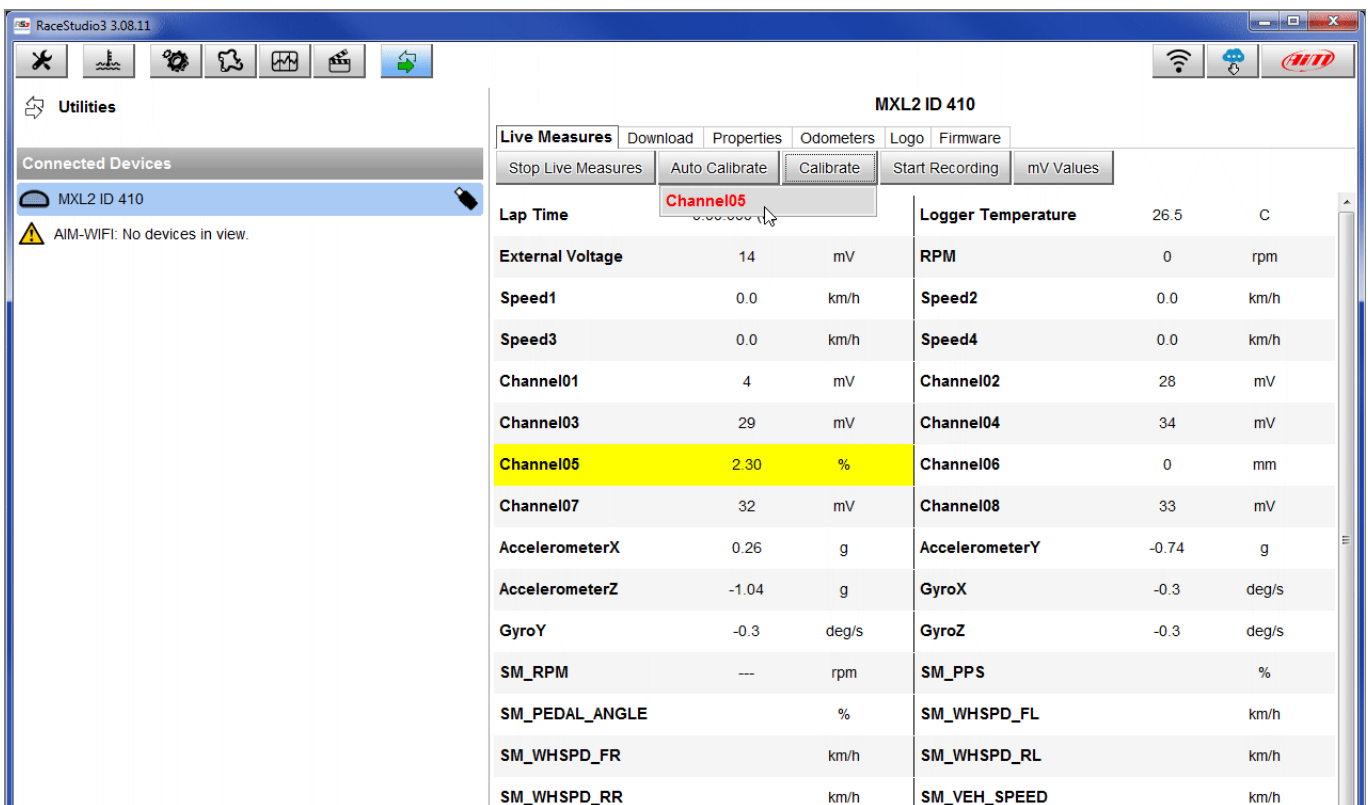
### Race Studio 3

To calibrate the potentiometer:

- Press "Device" (D) on the top keyboard.
- Select the configuration – in the example "MXL2 ID 410".

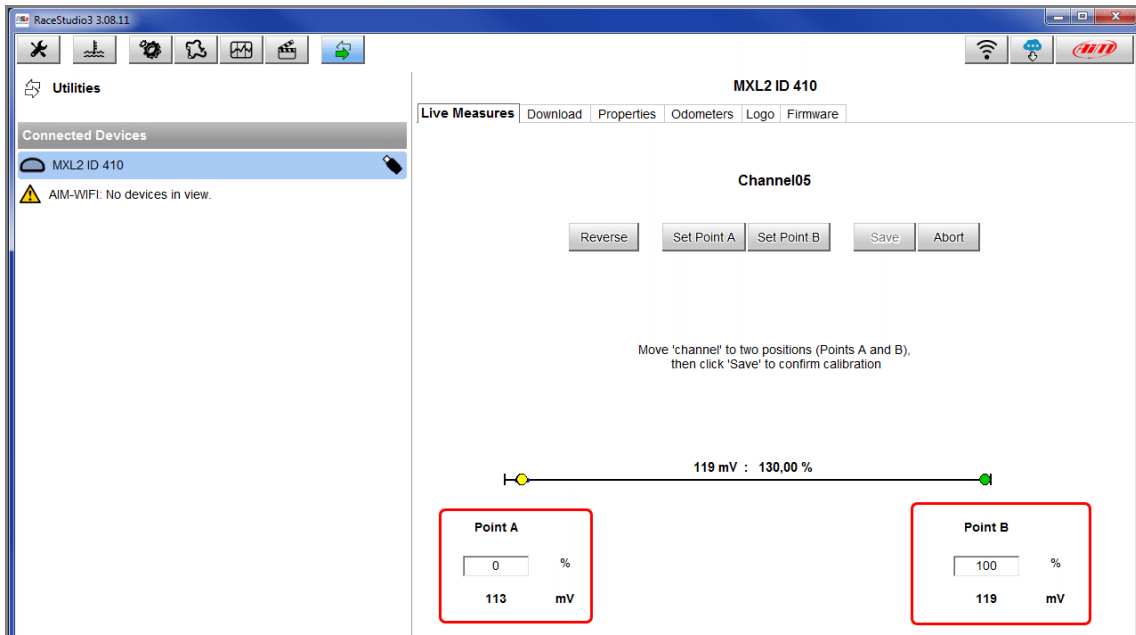


- Press "Calibrate".
- The system shows all channels to be calibrated: choose the one where the potentiometer has been set – in the example "Channel 5".



### Race Studio 3

- Fill in the values corresponding to the two measure points:
  - "0" for point "A".
  - "100" for point "B".



- With the potentiometer in its zero position press "Set Point A" as shown here below on the left;
- With the throttle all open press "Set Point B" as shown here below on the right.
- Press "Save".

