

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" (²²⁾) and select the configuration you are going to load the sensor on.





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- 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".

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All MXL2 03 ³⁶								
Save	Save As	Close Transmit						
Channels	ECU Stream	CAN2 Stream Math Channel	s Parameters Shift Light	s and Alarms Display Sm	artyCam Stre	am CAN E	Expansions	
	ID	Name	Function	Sensor	Unit	Freq	Parameters	
	RPM	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;	
	Spd1	Speed1	Vahiala Cod	Conced Concer	km/h 0 1	X	wheel: 1600 ; pulses: 1 ;	
	Spd2	Speed2	Namo	Channel05			wheel: 1600 ; pulses: 1 ;	
	Spd3	Speed3	Function 2	Percent		•	wheel: 1600 ; pulses: 1 ;	
	Spd4	Speed4		- Croutt		-	wheel: 1600 ; pulses: 1 ;	
	Ch01	Channel01						
	Ch02	Channel02	Sensor 3	Percentage Pot. Calib		÷		
	Ch03	Channel03	Sampling Frequency	20 Hz		÷		
	Ch04	Channel04	Unit of Measure	%				
	Ch05	Channel05	Display Precision	2 decimal places		÷		
	Ch06	Channel06					max travel: 50 ;	
	Ch07	Channel07						
	Ch08	Channel08						
	AccX	AccelerometerX						
	AccY	AccelerometerY		Save	Can	cel		
	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		



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.

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All MXL2 03 ³⁶									
Save	Save As		Close Transmit						
Channels	ECU Stream	CAN	2 Stream Math Channels	Parameters Shift Lights and Alarms Display SmartyCam Stream CAN Expansions					
	ID	\checkmark	Name	Function	Sensor	Unit	Freq	Parameters	
	RPM	✓	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;	
	Spd1	\checkmark	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	\checkmark	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	\checkmark	Channel03	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch04	\checkmark	Channel04	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch05	✓	Channel05	Percent	Percentage Pot. Calib	% 0.01	20 Hz		
	ChUb	☑	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	\checkmark	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	\checkmark	GyroY	Ang Velocity	AiM Internal Gyro	deg/s	20 Hz		
	GyrZ	\checkmark	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		



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To calibrate the potentiometer:

- Press "Device" ()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".

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Dtilities			N	/IXL2 ID 410		
	Live Measures Dow	nload Properties	Odometers	Logo Firmware		
Connected Devices	Stop Live Measures	Auto Calibrate	Calibrate	Start Recording mV Values		
MXL2 ID 410	Lap Time	Channel05		Logger Temperature	26.5	c
AIM-WIFI: No devices in view.	External Voltage	14	mV	RPM	0	rpm
	Speed1	0.0	km/h	Speed2	0.0	km/h
	Speed3	0.0	km/h	Speed4	0.0	km/h
	Channel01	4	mV	Channel02	28	mV
	Channel03	29	mV	Channel04	34	mV
	Channel05	2.30	%	Channel06	0	mm
	Channel07	32	mV	Channel08	33	mV
	AccelerometerX	0.26	g	AccelerometerY	-0.74	g ≡
	AccelerometerZ	-1.04	g	GyroX	-0.3	deg/s
	GyroY	-0.3	deg/s	GyroZ	-0.3	deg/s
	SM_RPM		rpm	SM_PPS		%
	SM_PEDAL_ANGLE		%	SM_WHSPD_FL		km/h
	SM_WHSPD_FR		km/h	SM_WHSPD_RL		km/h
	SM_WHSPD_RR		km/h	SM_VEH_SPEED		km/h



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

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Ottilities	MXL2 ID 410
	Live Measures Download Properties Odometers Logo Firmware
Connected Devices	
C MXL2 ID 410	Channel05
AIM-WIFI: No devices in view.	Chambero
	Reverse Set Point A Set Point B Save Abort
	Move 'channel' to two positions (Points A and B),
	then click 'Save' to confirm calibration
	119 mV : 130,00 %
	Point A Point B
	113 mV 119 mV

- With the potentiometer in its zero position press "Set Point A" as shown here below on the left; ٠
- With the throttle all open press "Set Point B" as shown here below on the right. •
- Press "Save". •

	Cha	nnel05		
	Reverse Set Point A S	et Point B Save A	bort	
	Move 'channel' to two p then click 'Save'	positions (Points A and B), to confirm calibration		
⊢∽–	111 mv : -1	30,00 %		
Point A			Point B	
0	%		130	%
115	mV		119	mV

	Channel05									
	Reverse Set Point A Set Point B Save Abort									
	Move 'channel' to two positions (Points A and B).									
	then click 'Save' to confirm calibration									
	5000 mV: 100.02 %									
⊢●	d									
Point A	Point B									
0	% 100 %									
111	mV 5000 mV									