

+AiM Infotech

Configuration with RaceStudio 3  
software of AiM combined  
pressure + temperature sensor

Release 1.00

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# 1

## Introduction

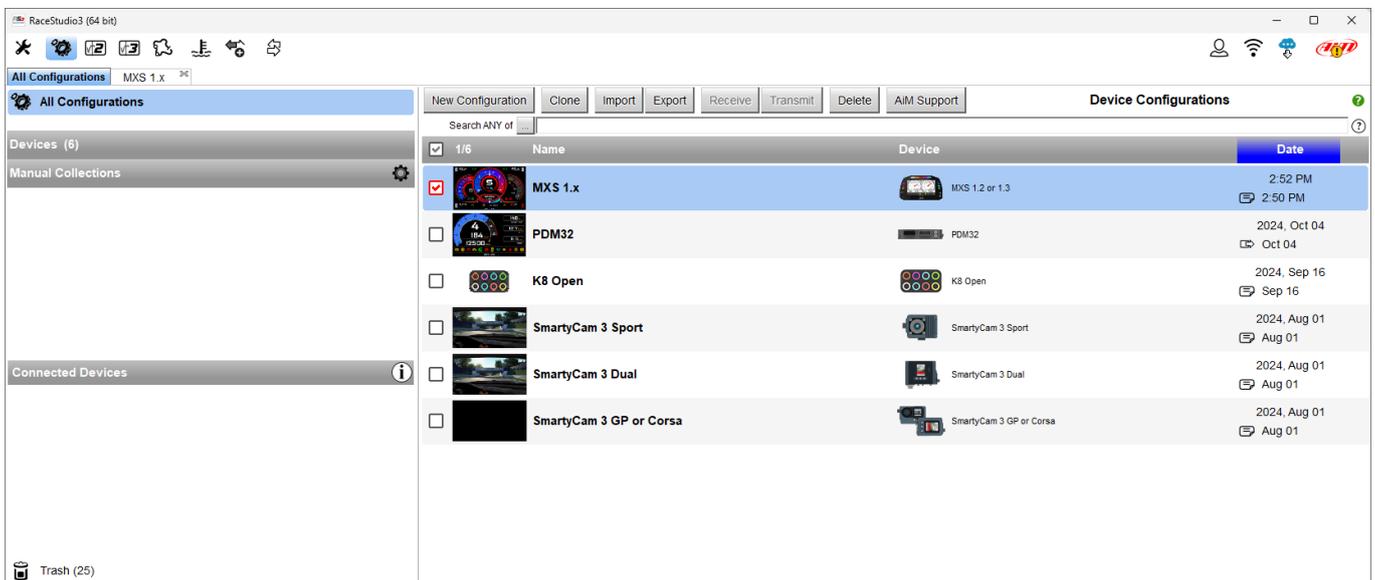
Once the sensor is physically connected to one of the device channels it has to be loaded in the related configuration using AiM **RaceStudio 3** configuration software.

**Please remember** that each combined sensor occupies two analog channels so keep in consideration the max number of allowed analogue channels of your device.

# 2

## Setup with RaceStudio 3

To load the sensor in the configuration, keeping the device switched on and connected to the PC, run the software and select the configuration where to load the sensor on (MXS 1.x in the example).



**Please note:** some AiM devices manage the channels only as analog, others also as digital while others need an additional optional AiM CAN Expansion module (Channel expansion and ACC2).

## 2.1 Setting the pressure sensor with RaceStudio 3 software

AiM devices that manage the channels **only as analog** are:

- EVO5
- EVO4S
- MXL2
- MX Strada systems
- MXm

To configure the sensor:

- enter "Channels" tab and click the channel where to load the sensor on
- "Channel settings" panel is prompted: select the function "Pressure" and the pressure type
- by default the software sets a sensor: click it and select the sensor you connected to AiM device; in paragraph 2.3 a table shows the codes that match each sensor

The screenshot shows the RaceStudio 3 software interface. The 'Channels' tab is active, displaying a table of channels. A 'Channel Settings' dialog box is open for 'Channel01'. The 'Function' dropdown is set to 'Voltage', and the 'Unit of Measure' dropdown is set to 'Pressure'. The 'Sensor' dropdown is set to 'Generic 0-5 V'. The 'Unit' is 'mV' and the 'Freq' is '20 Hz'. The 'Parameters' column in the table shows 'max:16000; factor:1;'. A red arrow points from the 'Pressure' option in the 'Unit of Measure' dropdown to the 'Pressure' option in the 'Unit of Measure' dropdown. A red box highlights the 'Pressure' option in the 'Unit of Measure' dropdown.

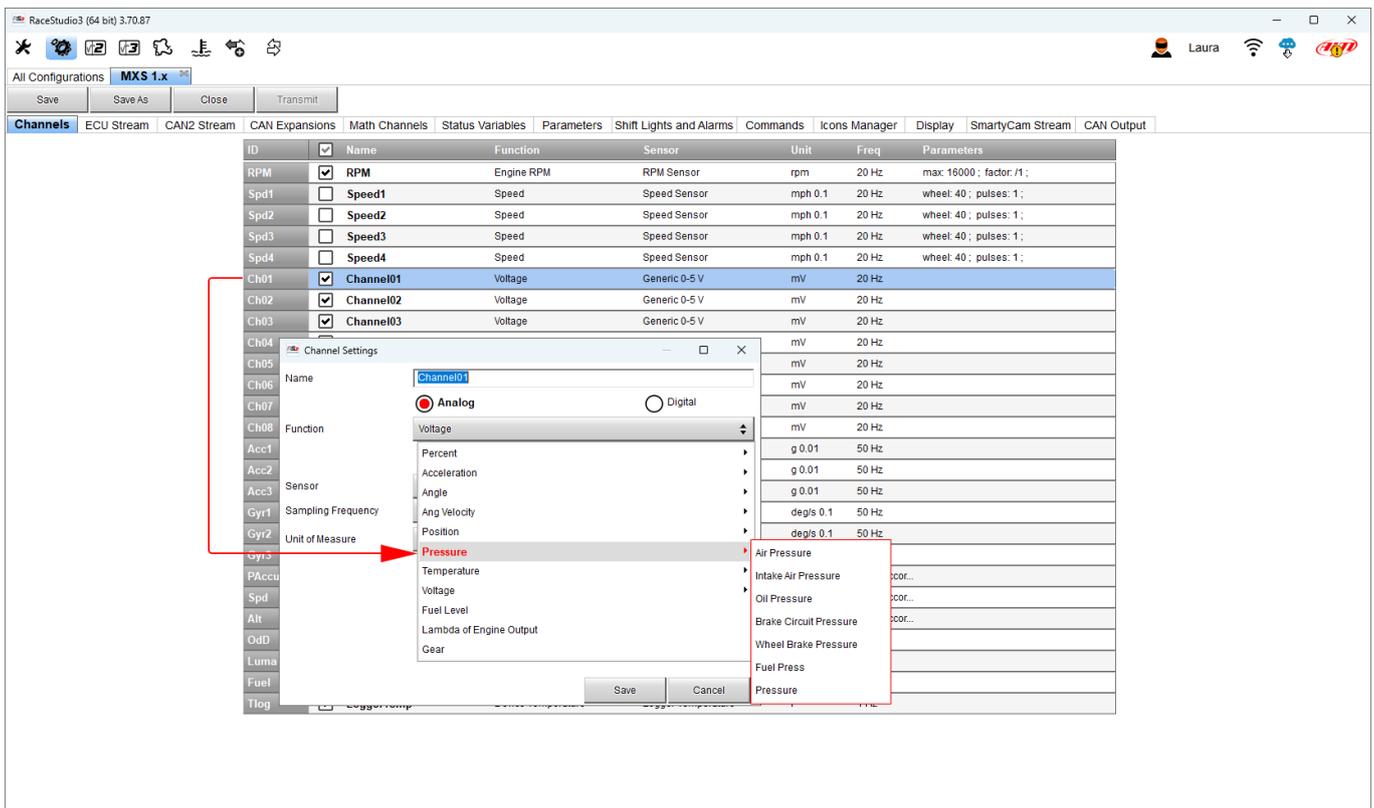
ID	Name	Function	Sensor	Unit	Freq	Parameters
RPM	<input checked="" type="checkbox"/> RPM	Engine RPM	RPM Sensor	rpm	20 Hz	max:16000; factor:1;
Spd1	<input type="checkbox"/> Speed1	Speed	Speed Sensor	mph 0.1	20 Hz	wheel: 40; pulses: 1;
Spd2	<input type="checkbox"/> Speed2	Speed	Speed Sensor	mph 0.1	20 Hz	wheel: 40; pulses: 1;
Spd3	<input type="checkbox"/> Speed3	Speed	Speed Sensor	mph 0.1	20 Hz	wheel: 40; pulses: 1;
Spd4	<input type="checkbox"/> Speed4	Speed	Speed Sensor	mph 0.1	20 Hz	wheel: 40; pulses: 1;
Ch01	<input checked="" type="checkbox"/> Channel01	Voltage	Generic 0-5 V	mV	20 Hz	
Ch02	<input type="checkbox"/> Channel02	Voltage	Generic 0-5 V	mV	20 Hz	
Ch03	<input type="checkbox"/> Channel03	Voltage	Generic 0-5 V	mV	20 Hz	
Ch04	<input type="checkbox"/> Channel04	Voltage	Generic 0-5 V	mV	20 Hz	
Ch05	<input type="checkbox"/> Channel05	Voltage	Generic 0-5 V	mV	20 Hz	
Ch06	<input type="checkbox"/> Channel06	Voltage	Generic 0-5 V	mV	20 Hz	
Ch07	<input type="checkbox"/> Channel07	Voltage	Generic 0-5 V	mV	20 Hz	
Ch08	<input type="checkbox"/> Channel08	Voltage	Generic 0-5 V	mV	20 Hz	
Acc1	<input type="checkbox"/> Acc1	Acceleration	Acceleration	g 0.01	50 Hz	
Acc2	<input type="checkbox"/> Acc2	Acceleration	Acceleration	g 0.01	50 Hz	
Acc3	<input type="checkbox"/> Acc3	Acceleration	Acceleration	g 0.01	50 Hz	
Gyr1	<input type="checkbox"/> Gyr1	Angle	Angle	deg/s 0.1	50 Hz	
Gyr2	<input type="checkbox"/> Gyr2	Angle	Angle	deg/s 0.1	50 Hz	
Gyr3	<input type="checkbox"/> Gyr3	Angle	Angle	deg/s 0.1	50 Hz	
PAccu	<input type="checkbox"/> PAccu	Pressure	Pressure	ft	auto (accor...	
Spd	<input type="checkbox"/> Spd	Speed	Speed	mph 0.1	auto (accor...	
Alt	<input type="checkbox"/> Alt	Fuel Level	Fuel Level	ft 0.01	auto (accor...	
OdD	<input type="checkbox"/> OdD	Lambda of Engine Output	Lambda of Engine Output	mi 0.1	1 Hz	
Fuel	<input type="checkbox"/> Fuel	Gear	Gear	l 0.1	10 Hz	

AiM devices that manage the channel both **as analog and as digital** are:

- MX 1.2/1.3 systems (MXP included)
- MX 1.2/1.3 Strada systems (MXP Strada included)
- MX systems
- MXsl

To configure the sensor:

- enter "Channels" tab and click the channel where to load the sensor on
- "Channel settings" panel is prompted: **select "Analog" management**
- select the configuration function "Pressure" and the pressure type
- by default the software sets a sensor: click it and select the sensor you connected to AiM device; in paragraph 2.3 a table shows the codes that match each sensor

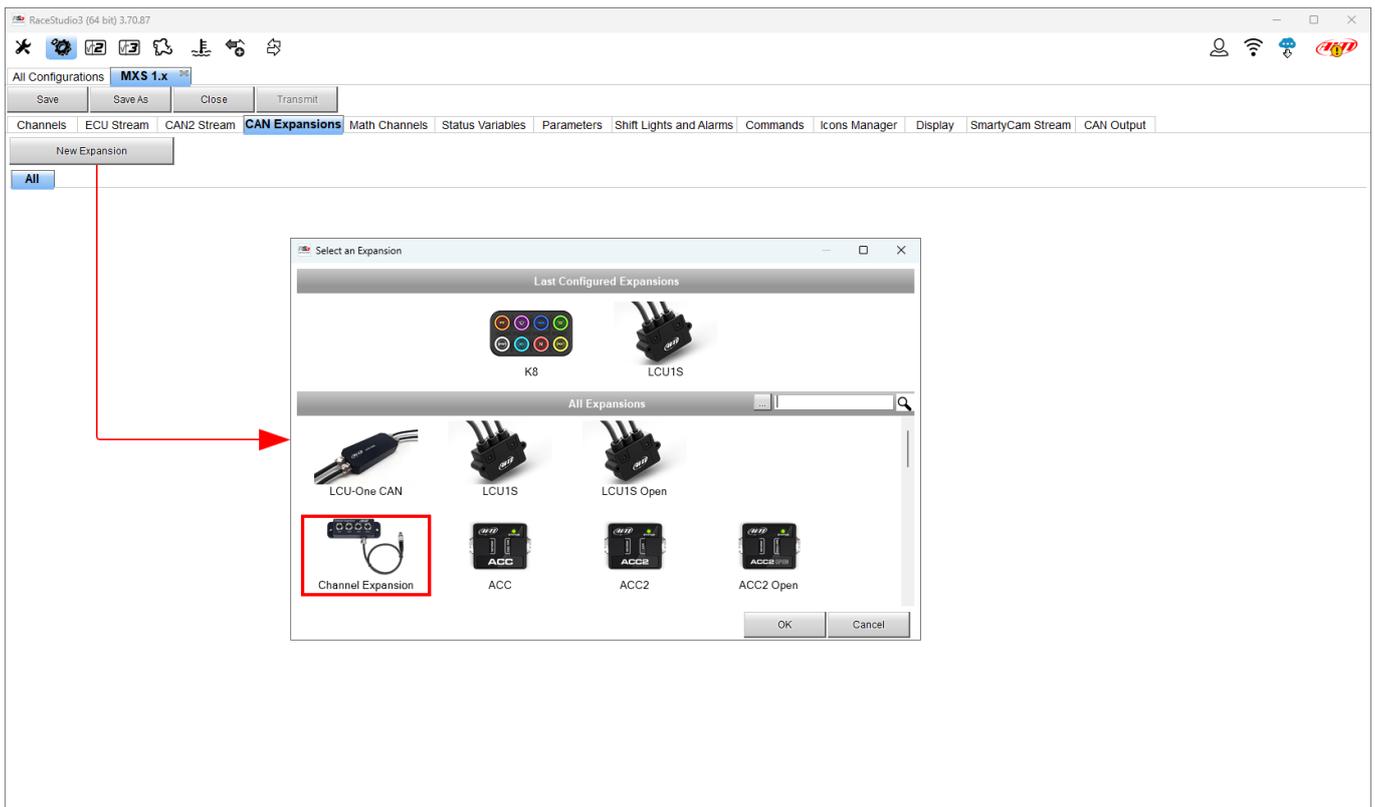


AiM devices that manage the channels **only through an additional optional AiM CAN Expansion (Channel expansion and ACC2)** are:

- SW4
- Solo 2 DL
- MXK10 Gen4
- MXK10 Gen5
- MX2E

To configure the sensor:

- enter “CAN Expansions” tab and click “New Expansion” button
- select the expansion you want to connect your device to and press “OK”
- once the expansion loaded the related setting tab is prompted: click the channel where to load the sensor on and manage it as explained in the previous paragraph according to the device it is connected to



## 2.2 Setting the temperature sensor with RaceStudio 3 software

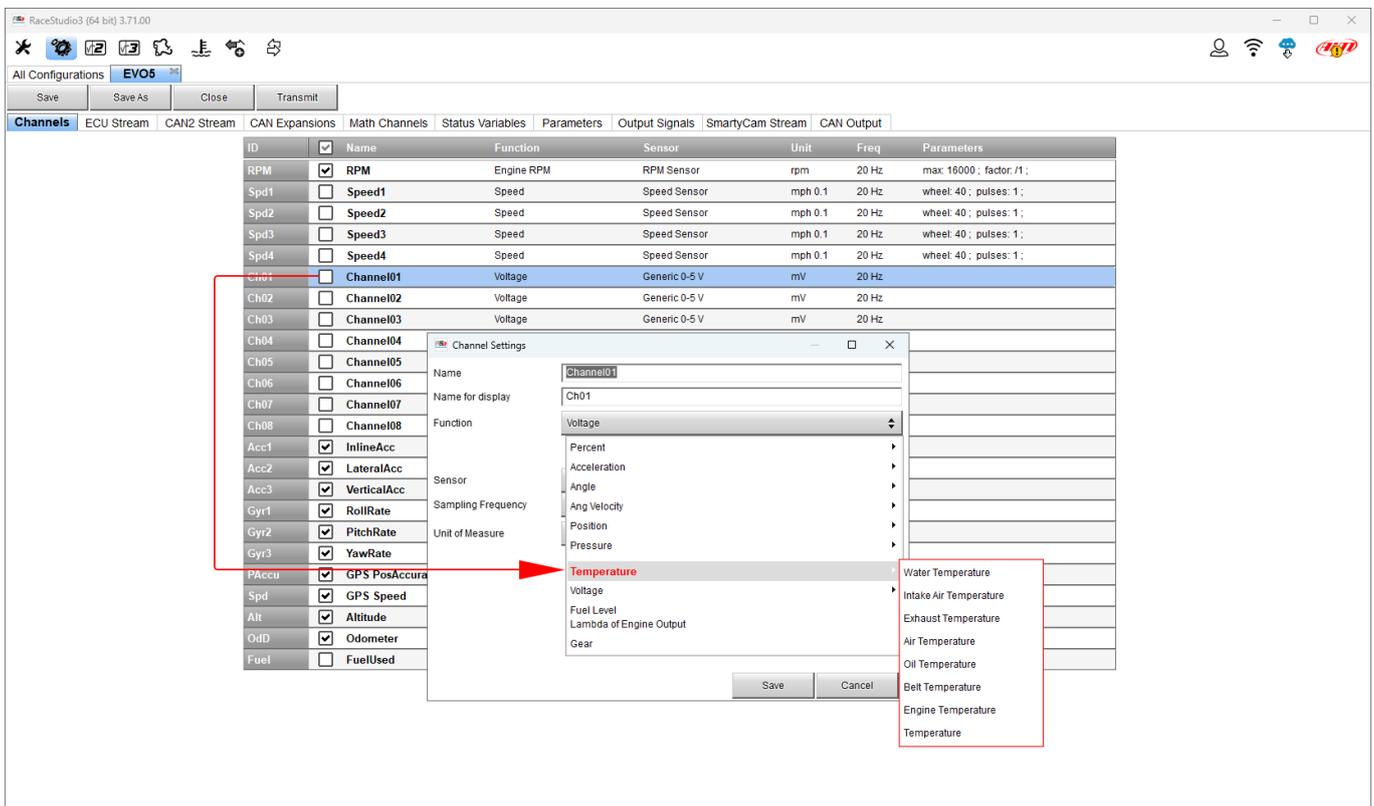
As explained before, this sensor supports PT100 thermo-resistor to measure the temperature. To load it in the device configuration, once entered "Channels" tab select the channel where to load the sensor on.

As said before AiM devices can manage the channels only as analog or also as digital. Devices that manage the channels **only as analog** are:

- EVO5
- EVO4S
- MXL2
- MX Strada systems
- MXm

To configure the sensor:

- enter "Channels" tab and click the channel where to load the sensor on
- "Channel settings" panel is prompted: select the function "Temperature" and the temperature type
- by default the software sets a "PT-100" sensor
- click "Save" and then "Transmit" to transmit the configuration to the logger

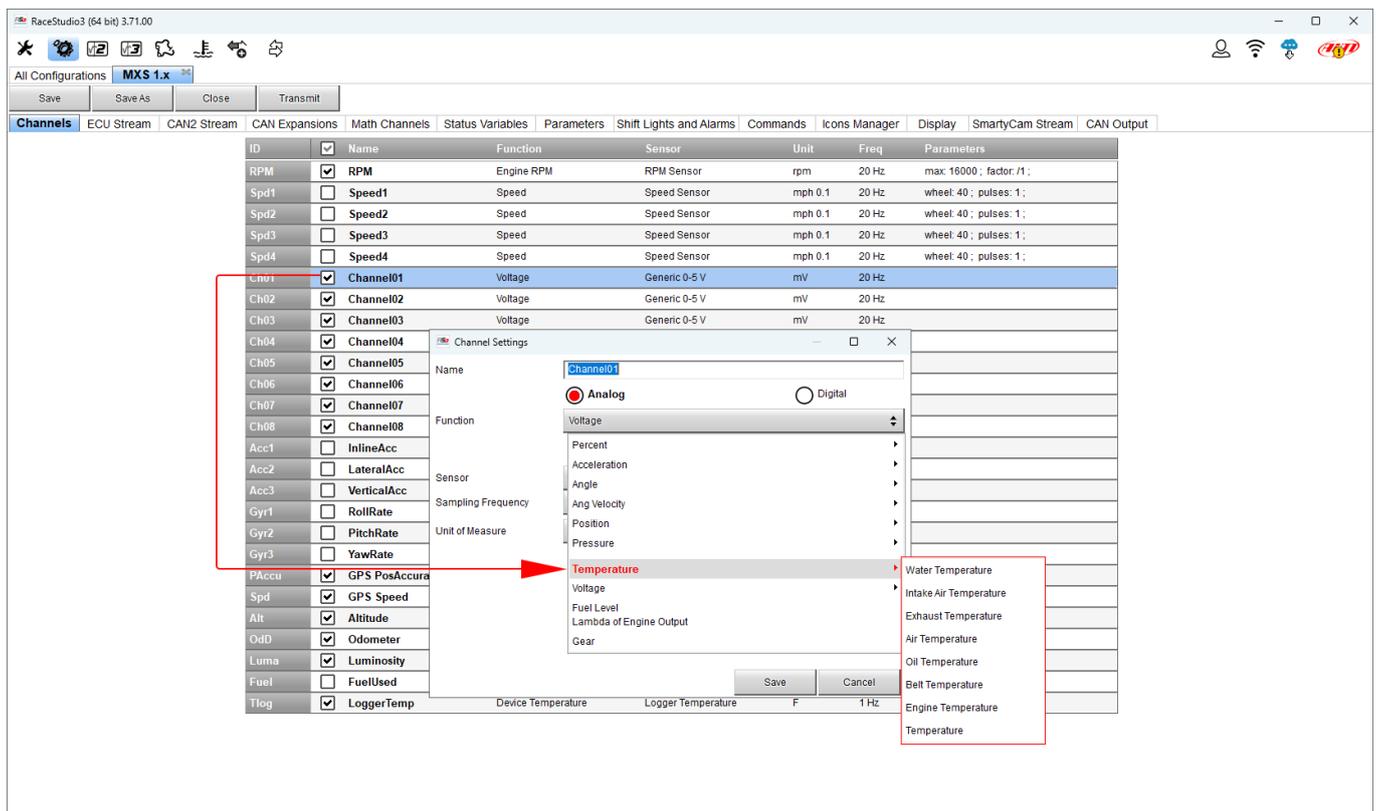


AiM devices that manage the channel both **as analog and as digital** are:

- MX 1.2/1.3 systems (MXP included)
- MX 1.2/1.3 Strada systems (MXP Strada included)
- MX systems
- MXsl

To configure the sensor:

- enter “Channels” tab and click the channel where to load the sensor on
- “Channel settings” panel is prompted: **select “Analog” management**
- select the configuration function "Temperature" and the temperature type
- by default the software sets “PT-100”
- press “Save” and then “Transmit” to transmit the configuration to your device.

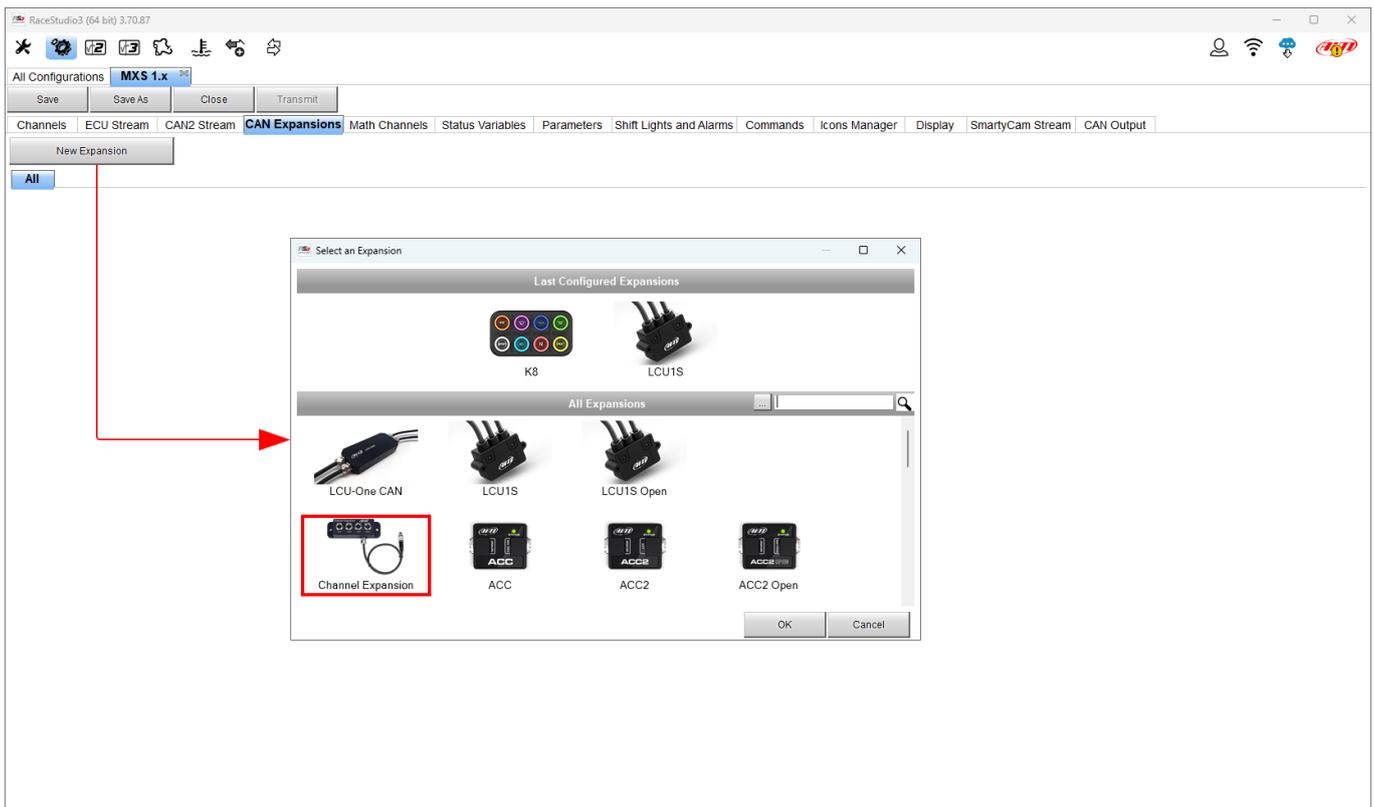


AiM devices that manage the channels **only through an additional optional AiM CAN Expansion (Channel expansion and ACC2)** are:

- SW4
- Solo 2 DL
- MXK10 Gen4
- MXK10 Gen5
- MX2E

To configure the sensor:

- enter "CAN Expansions" tab and click "New Expansion" button
- select the expansion you want to connect your device to and press "OK"
- once the expansion loaded the related setting tab is prompted: click the channel where to load the sensor on and manage it as explained in the previous paragraph according to the device it is connected to



## 2.3

### Option to select in RaceStudio 3 for the pressure configuration

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To configure the correct pressure sensors you need to know the option to select in the channel configuration. In the table below they are listed.

Pressure range	RaceStudio 3 selection	
	Temperature channel	Pressure channel
0-5 Bar	PT-100	0-5 bar (X05PSA00005Bxx)
0-10 Bar	PT-100	0-10 bar (X05PSA000010Bxx)
0-100 Bar	PT-100	0-100 bar (X05PSA00100Bxx)
0-160 Bar	PT-100	0-160 bar (X05PSA00160Bxx)
0-15 PSI	PT-100	0-15 psi (X05PSA00015P18)
0-50 PSI	PT-100	0-50 psi (X05PSA00050P18)
0-150 PSI	PT-100	0-150 PSI (X05PSA00150P18)
0-300 PSI	PT-100	0-300 psi (X05PSA00300P18)
0-2000 PSI	PT-100	0-2000 psi (X05PSA02000P18)
0-5 Bar Absolute	PT-100	0-5 bar abs (X05PSA00005Bxxx)
0-50 PSI Absolute	PT-100	0-50 psi abs (X05PSA00050P18A)