AiM Infotech

Turbo pressure sensor
0-4 bar/0-58 PSI

Release 1.00

This datasheet explains how to use turbo 0-4 bar (0-58 PSI) pressure sensor. The sensor is sold with a 50 cm cable. This sensor **part number** is:

- Turbo pressure sensor 0-4 bar/0-58 PSI **X05SNP31004A**

1 Introduction

AiM loggers can measure the pressure with a proper sensor. It needs a careful installation. This is why we suggest to address to a specialized workshop. Once installed the sensor needs to be correctly configured using AiM Race Studio software freely downloadable from download area –> software section of www.aim-sportline.com.

This sensor fits turbo pressure measurement.

2
Sensor configuration

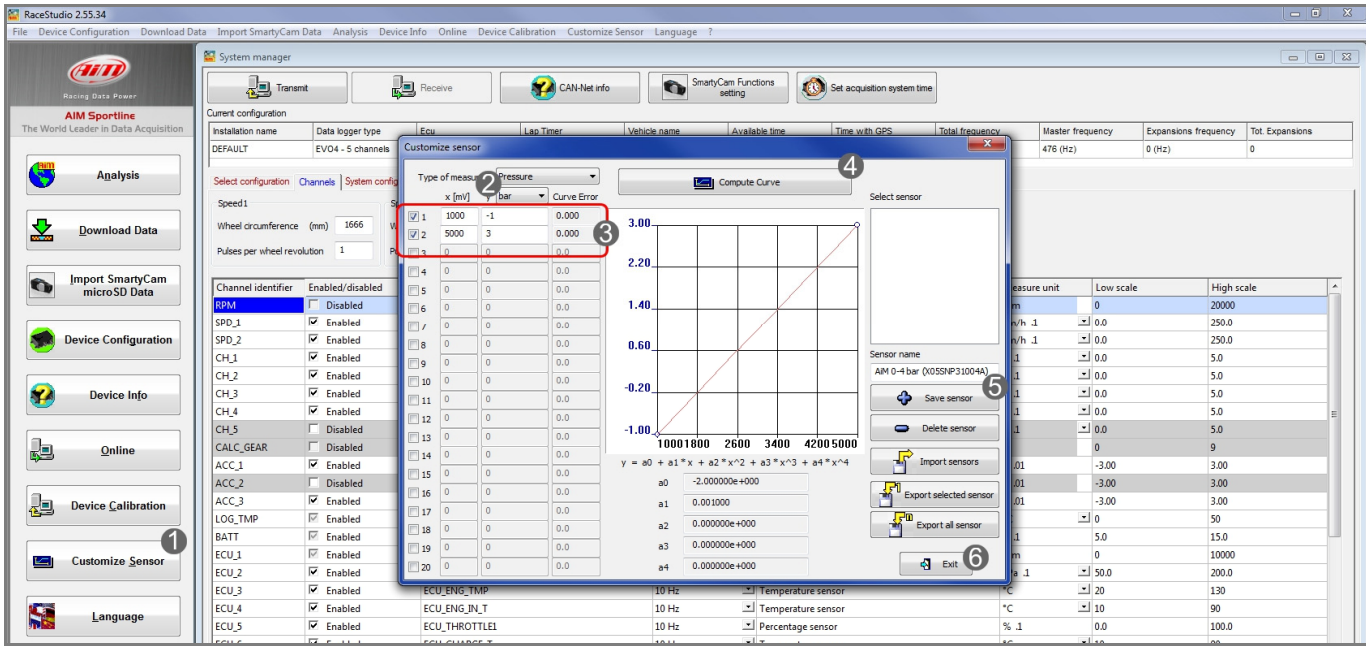
AiM logger can sample data sent by the sensor only if this last is physically connected to a logger channel set using AiM Race Studio software and the configuration is transmitted to the logger.

2.1
Configuration with Race Studio 2.

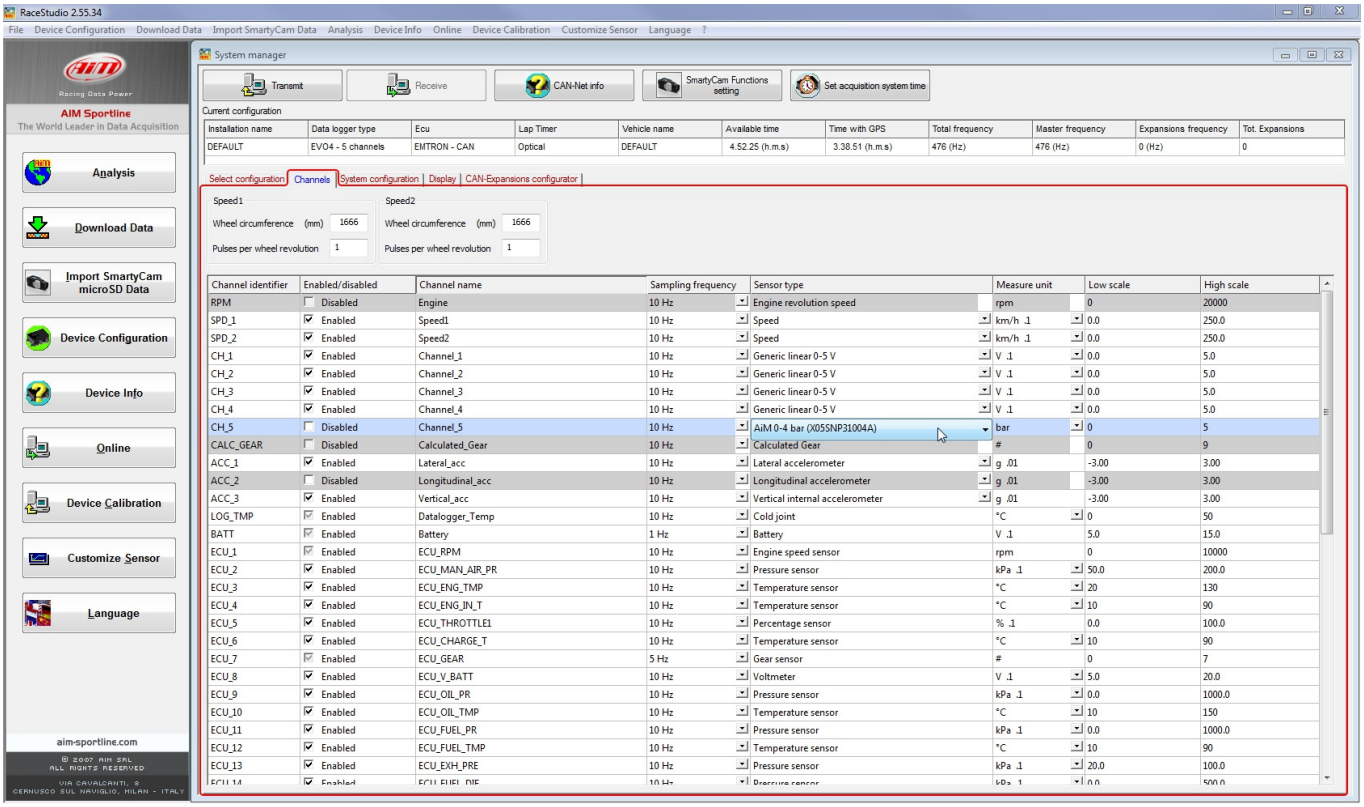
- run Race Studio 2 and select the logger the sensor is connected to;
- create a custom sensor pressing "Customize sensor" (**1**)
- select the type of measure (Pressure) and the unit of measure (bar) (**2**)
- complete the first two rows of the table on the left as follows (**3**):

X [Mv]	Y [Bar]
1000	-1
5000	3

- press "Compute curve" (**4**), fill in sensor name and press "Save sensor" (**5**)
- premere "Exit" (**6**)

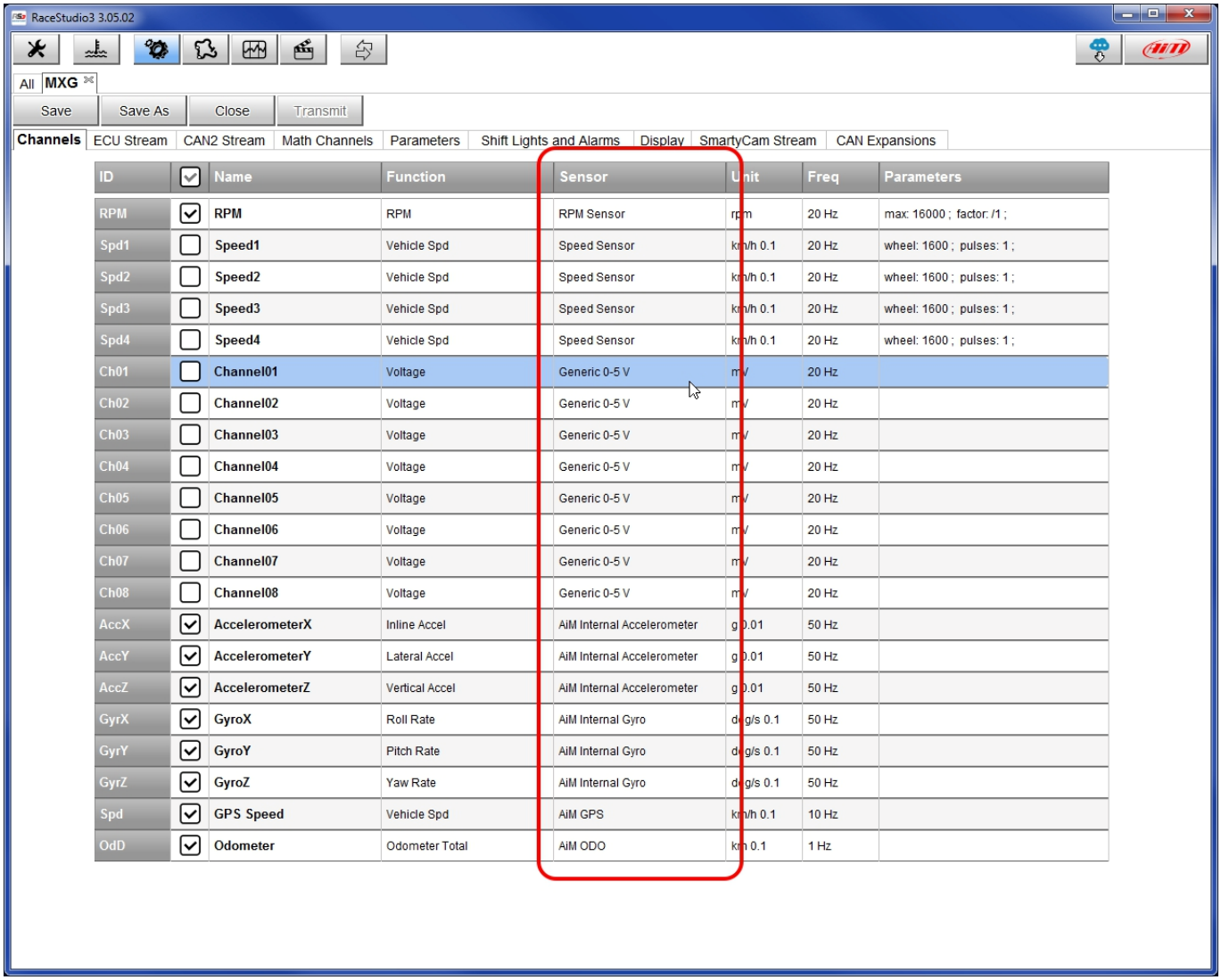


To set the sensor in the logger configuration select it in "Channels" layer as shown here below and press "Transmit".



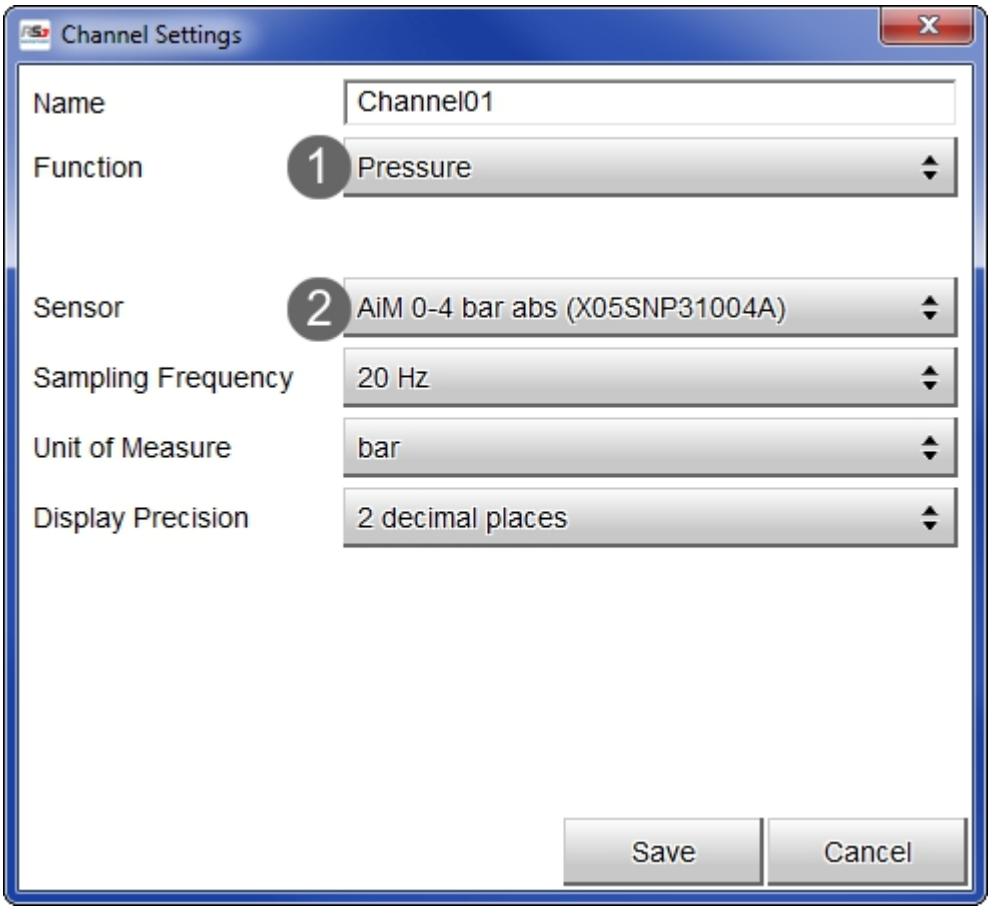
2.2
Configuration with Race Studio 3

- run Race Studio 3 and select the logger the sensor is connected to;
- select the configuration where the sensor is to be set or create a new one pressing “New” and select “Channel” layer shown here below;
- select the channel where to set the sensor and click on the related cell of "Sensor" column;



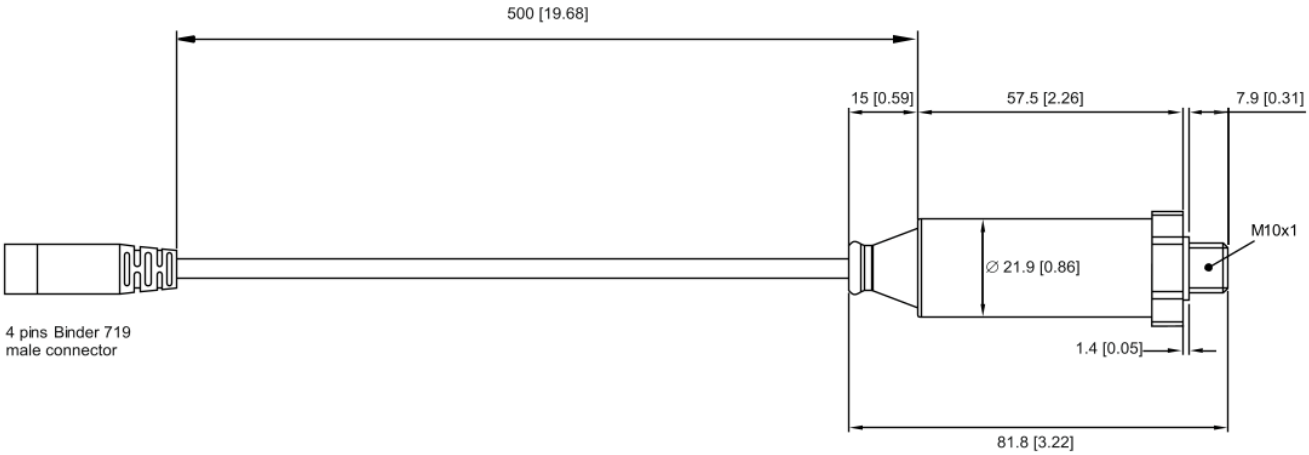
ID	Name	Function	Sensor	Unit	Freq	Parameters
RPM	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	Speed1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd2	Speed2	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd3	Speed3	Vehicle Spd	Speed Sensor	km/h 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	Voltage	Generic 0-5 V	mV	20 Hz	
Ch06	Channel06	Voltage	Generic 0-5 V	mV	20 Hz	
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	50 Hz	
AccY	AccelerometerY	Lateral Accel	AiM Internal Accelerometer	g 0.01	50 Hz	
AccZ	AccelerometerZ	Vertical Accel	AiM Internal Accelerometer	g 0.01	50 Hz	
GyrX	GyroX	Roll Rate	AiM Internal Gyro	deg/s 0.1	50 Hz	
GyrY	GyroY	Pitch Rate	AiM Internal Gyro	deg/s 0.1	50 Hz	
GyrZ	GyroZ	Yaw Rate	AiM Internal Gyro	deg/s 0.1	50 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	

- a configuration panel shows up
- select: "Pressure" function as well as the kind of pressure to sample (**1**) among:
    - Oil pressure
    - Brake Pressure
    - Wheel Brake Pressure
    - Pressure
- select the sensor "AiM 0-4 bar abs (X05SNP31004A)" (**2**), press "Save" and transmit the configuration to the logger pressing "Transmit".

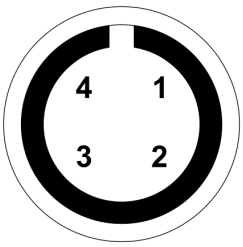


3
Dimensions, pinout and technical characteristics

The drawing here below shows sensor dimensions in millimetres [inches].



The image here below shows 4 pins Binder 719 male connector pinout solder termination view.



Pin	Function	Cable colour
1	Analog signal 0-500 mV	White
2	GND	Black
3	+Vb	Red
4	Not connected	

The table here below shows the sensor electrical characteristics.

Technical characteristics	**Value**
Pressure type	Absolute
Output signal	1.5 V
Accuracy	<+/1 0.5%
Temperature working range	from -40° to 125°
Sealing	IP66
Excitation	10-32 VDC; 1-5 V
Consumption	<10 mA
Housing	304 Stainless steel
Weight	60g
Sensor thread	M10*1
Cable length	50 mm

4
Extension cables

The sensor is sold with a 50 cm cable. Standard and custom length extension cables are available; standard length are: 0,5 m, 1m and 1,5 m.

Product part number changes according to their length and to the product the sensor is to be connected to.

Extension cable for connection to:
- Channel Expansion
- EVO4.

Part numbers:
V02PCB05BTXG – cable length: 500mm
V02PCB10BTXG – cable length: 1000mm
V02PCB15BTXG – cable length: 1500mm
V02PCB20BTXG – cable length: 2000mm
V02PCB25BTXG – cable length: 2500mm
V02PCB30BTXG – cable length: 3000mm

Extension cable for connection to:
- MXG
- MXS
- MXL2
- MXL Strada/Pista/Pro05

Part numbers:
V02PCB05B – cable length: 500mm
V02PCB10B – cable length: 1000mm
V02PCB15B – cable length: 1500mm
V02PCB20B – cable length: 2000mm
V02PCB25B – cable length: 2500mm
V02PCB30B – cable length: 3000mm