

<b>TECHNICAL DOCUMENTATION</b>	<b>20/02/2009</b>	<b>PRESSURE</b>	<b>Brake pressure sensors 0-100 BAR</b>
<b>Notes:</b> technical documentation, dimensions and pinout of brake pressure sensors 0-100 BAR e 0-2000 PSI – <b>Release 1.00</b>			



**0-100 BAR pressure sensor**

## Introduction

“Brake pressure” kit has been **specifically developed for pipes with 1/8 inch diameter** and includes the following objects:

- 0-100 BAR brake pressure sensor;
- 1 steel junction
- 2 lock nuts;
- 2 nipples
- 1 “T” brunch pipe female M10x1 thread.

**Please Note: sensor extension is not included in the kit**

### **WARNING:**

**after sensor installation ensure that braking circuit has been cleared.  
 This tutorial explains installation and configuration procedure of  
 0-100 Bar brake pressure sensors.  
 AIM can not be held responsible for wrong mountings made by the user.  
 It is suggested to make installation at a specialised garage**

# 1 – Installation

Choose the point of braking plant (shown on the right) where to install the sensor.



Cut the tube using a tube cutter for brake pipes like the one shown on the right. Otherwise it is possible to use a fine toothed hacksaw, wrapping the pipe cutting point with a tape.

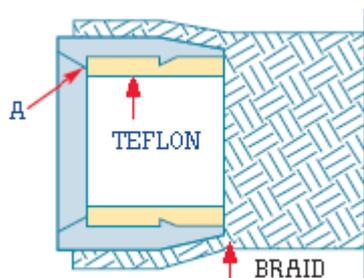


Insert the 2 locking nuts in the cut parts of the pipe as shown on the right.

In case the plastic cover of the metallic braid does not allow the locking nuts to slip, it is suggested to peel the pipe.



Insert the nipple under the metallic braid as shown here on the right, pressing it until the contact with the internal part of the pipe (labelled as "A" in the figure below) is complete and covering it with the metallic braid.

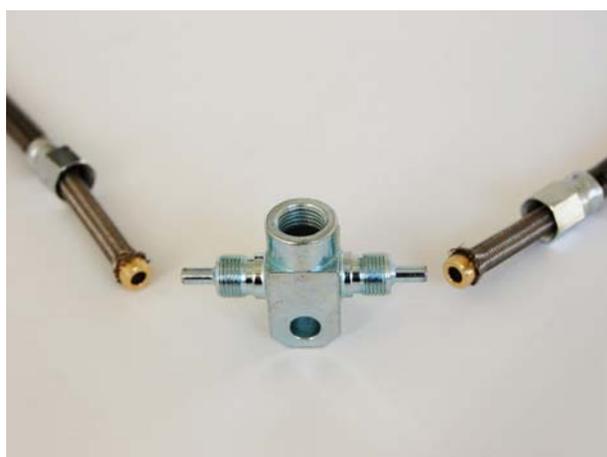


Repeat these operations on both edges of the cut pipe.

Lubricate the threads.



Establish the exact junction position - as it will determine the sensor position - before tightening (making a reference mark).



Tighten to 0,8 Kg (8Nm).



Alternatively tighten the threads a quarter turn at a time until the right position is reached.

**Attention:** do not exceed 15 Nm.



Repeat this operation on both sides of the junction.



Install the sensor on the junction wrapping the thread with Teflon to guarantee its tightness.

On the right a 0-100 BAR brake pressure sensor correctly installed is shown.



**Warning: once the installation is over, ensure the braking circuit is cleared and check its tightness.**

## 2 – Sensor configuration with MXL ed EVO3 systems

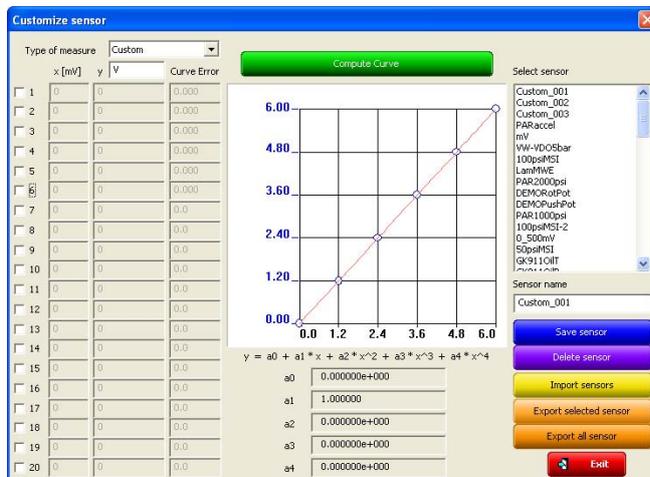
After sensor installation and connection to AIM data logger, making sure that the channel the sensor is connected to has a +Vb output, it is required to configure the logger so to sample correct data. Configuration needs to be done using **Race Studio 2** software, properly designed and developed by AIM, downloadable for free from [www.aim-sportline.com](http://www.aim-sportline.com). Refer to software installation manual for software and AIM USB driver installation.

### 2.1 – Setting the sensor curve.

Run the software and press “AIM System manager”. The system choice panel appears: select the logger the sensor is connected to.

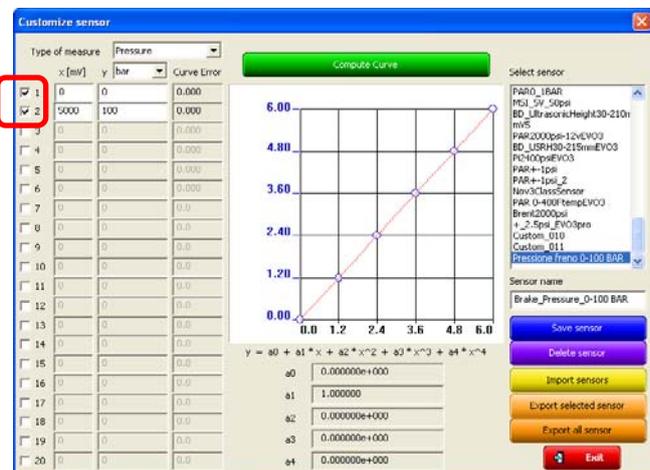


To make the system recognize the sensor it is required to **create a custom sensor**. Press “Custom sensor manager” on the left vertical keyboard or on the menu bar of the software main window. “Customize Sensor” window, shown on the right, appears.



The correct procedure is:

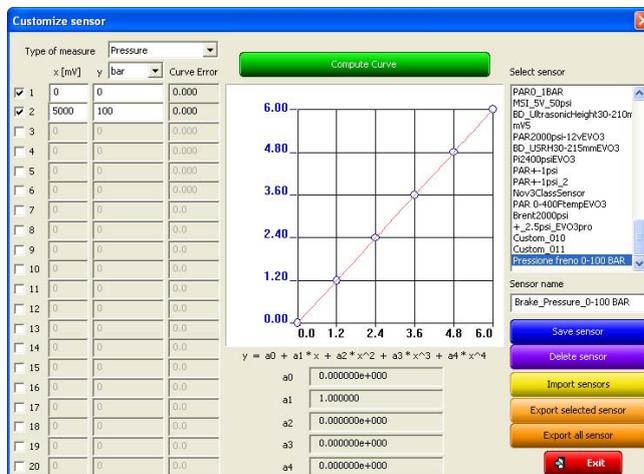
Type of measure: select “pressure”  
 Select the measure unit: Bar or PSI  
 Enable checkboxes 1 e 2, that indicate the number of experimental values used to compute the sensor curve (these circled in red here on the right).  
 Moving from one case to the other using “Tab” button, insert the experimental values shown in the tables below in the column x[mV] and Y.



### 0-100 BAR Sensor

X [Mv]	Y [Bar]
0	0
5000	1000

- Press “Compute curve” button
- Insert sensor name in the proper case on the right of “Custom sensor” window
- Press “Save sensor”
- Press “Exit”



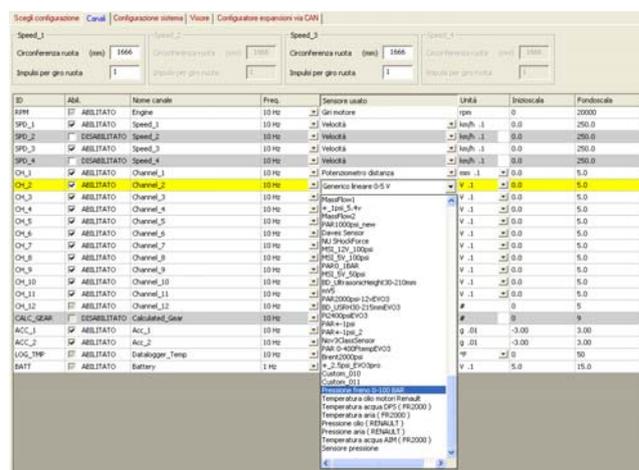
## 2.2 – Setting the sensor on the channel

In order to sample the information transmitted by the sensor, the analog channel to which it has been connected must be set. The image on the right shows an EVO3 Pro channels table.

Once decided the channel to set the sensor on, select it clicking the cell labelled “Sensor type” of the row corresponding to the selected channel.

The sensor will appear in the list with the name previously inserted in sensor name box of “Customize Sensor” window.

It is reminded to select a channel that has a +Vb output.



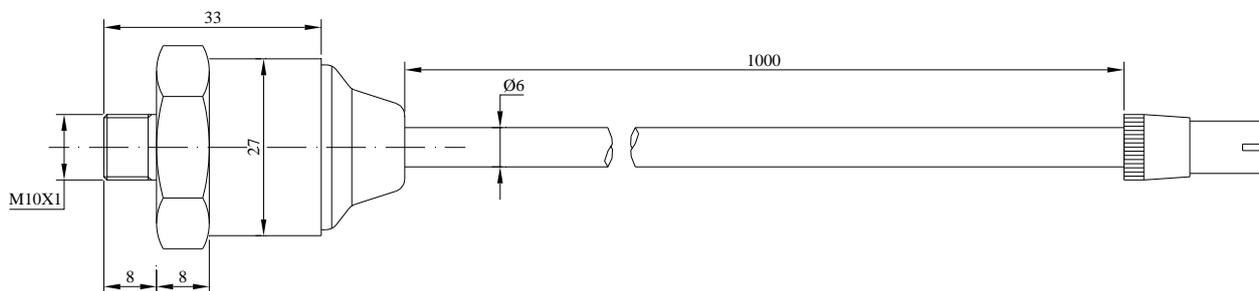
## 2.3 – Transmitting the configuration

Once the sensor has been correctly configured and set on the desired channel, it is necessary to transmit the configuration to the logger: connect the logger to the PC using the USB cable, switch the logger on, wait until the system recognizes the logger and press “Transmit” button in the logger “System Configuration” window.

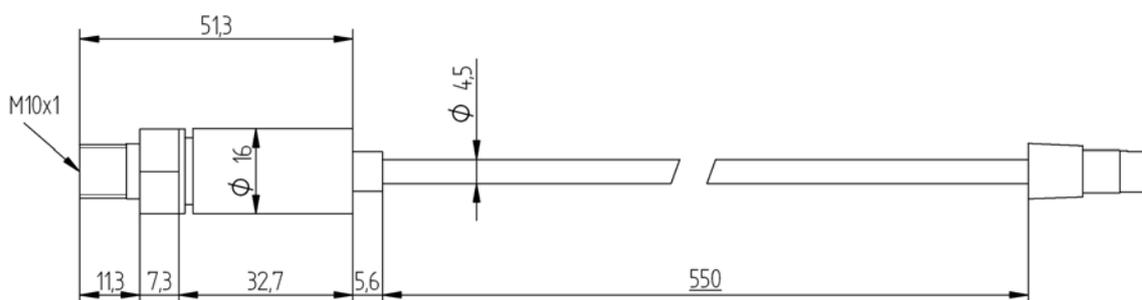
**Warning: refer to Race Studio Configuration user manual for any information concerning “Channels” table (or any button) position as well as for any information concerning any AIM logger configurations not expressly introduced in this tutorial.**

### 3 – Dimensions, pinout and technical features

#### 3.1 – Dimensions



0-100 Bar Sensor – Dimensions in millimetres

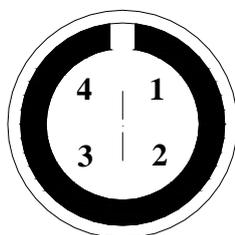


0-2000 PSI Sensor – Dimensions in millimetres

#### 3.2 – Pinout

##### 0-100 Bar Sensor

Pin	Function	Cable colour
1	Pressure signal 0-5V	White
2	GND	Black
3	Power 10-30 V	Red
4	Not connected	



4 pins Binder 719 male connector pinout:  
solder termination view

### 3.3 – Technical Features

0-100 Bar Sensor	
General features	Value
Measure range	0-100 Bar
Output signal	0-5V
Power	10-30 V
Cable length	100 cm
Extension	Not included
Thread	M10x1

### 4 – Part Numbers

0-100 Bar sensors kit number is:

- 0-100 Bar brake pressure sensor      **X05SNBO100**