

TECHNICAL DOCUMENTATION	6/07/2004	PRESSURE	0-100 BAR brake pressure sensor
Notes: technical documentation, dimensions and pinout of the 0-100 BAR pressure sensor – Version 1.01			

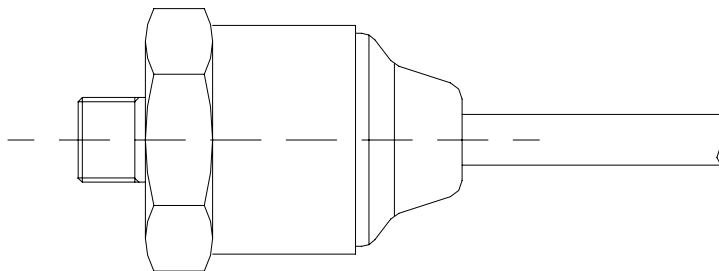


Figure 1: 0-100 BAR brake pressure sensor

Introduction

The “Brake pressure kit” has been properly developed for Formula Renault FR2000 applications. The kit is composed of:

- 2 0-100 BAR pressure sensors;
- 2 “Goodridge durit”;
- 2 master cylinders, used to install the “Goodridge durit” on the brake pump;
- metallic washers;
- 2 brackets for the sensor’s installation.

Installation notes

- Connect the sensor to the “Goodridge durit”: AIM recommends to use Teflon to avoid brake oil to blow-by;
- Uninstall the master cylinder mounted inside the brake pump. In Figure 2 is shown the master cylinder corresponding to the front brakes pump. This operation has of course to be repeated even for the rear brakes pump;
- Connect the “Goodridge durit” to the brake pump using the master cylinder supplied with the kit. This cylinder has been designed to allow the user to install the brake pressure sensor coaxially to the brake’s pump wiring

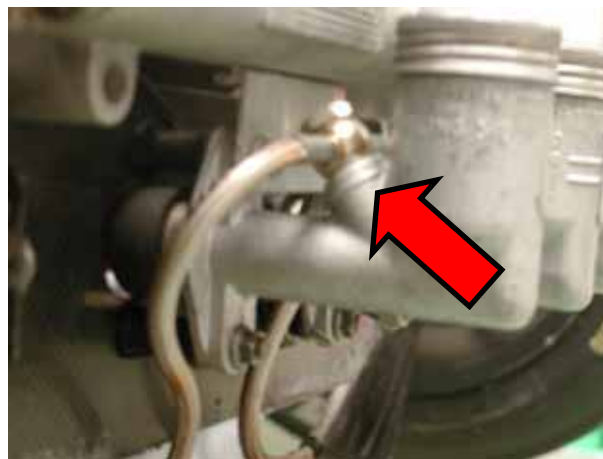


Figure 2: brake pressure sensor installation photo.

- AIM recommends You to use the metallic washers supplied with the sensor.
- Use the bracket supplied with the kit in order to install the sensor inside the vehicle. Please remember: Renault does not ask for a specific position, so you are free to install the sensor wherever you wish.

NOTE 1: Please remember: the kit includes 2 pressure sensors, which have to be installed inside the front and the rear brakes pumps. If you watch these pumps from the front of the vehicle, they are located on the left and in the middle of the front chassis (the pump on the right is for the hydraulic clutch circuit).

NOTE 2: Please ensure to correctly bleed the brake lines.

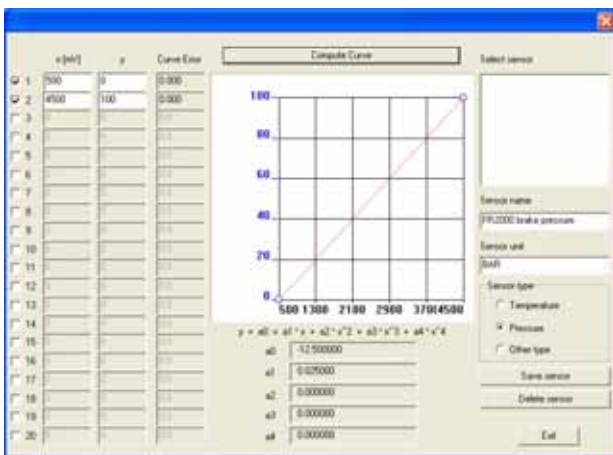
Software

Once the sensor has been installed and connected to your EVO 3, the logger needs to be configured to acquire correct data. To configure the logger You have to use **Race Studio 2**, the software properly developed by AIM to configure its loggers and to analyze stored data.

From **Race Studio 2** main window You can select your logger. Please select **EVO 3** and press “*System manager*” button. Now, please follow these instructions to configure the sensor.

1) Set the sensor’s calibration curve

Press first “*Channels*” button then “*Customize sensor*” one. The following screenshot appears:



Sensor with 0.5 – 4.5 V output (see label on the sensor)

X [Mv]	Y [BAR]
500	0
4500	100

Sensor with 0 – 5 V output (see label on the sensor)

X [Mv]	Y [BAR]
0	0
5000	100

Please insert these values inside the customize sensor table as described here below:

- Please, ensure that, in the left column, checkboxes “1” and “2” are checked;
- Fill column “x [mV]” with the values reported in the tables above. **Please respect this order;**
- Fill column “y” with the values reported in the tables above. **Please respect this order;**
- Press “*Compute curve*” button;
- Left click inside “*Sensor name*” cell and insert the desired sensor name. We suggest You to use “FR2000 brake pressure”;
- Click inside “*Sensor unit*” cell and write BAR;
- Enable “*Pressure*” checkbox in the “*Sensor type*” box;
- Press “*Save sensor*” button;
- Press “*Exit*” button.

2) How to set the sensor on the desired channel

Once you set the sensor’s calibration curve, you have to decide which analog channel has to be used to sample the brake pressure.

In the following image the brake pressure sensor has been connected on channel 4.



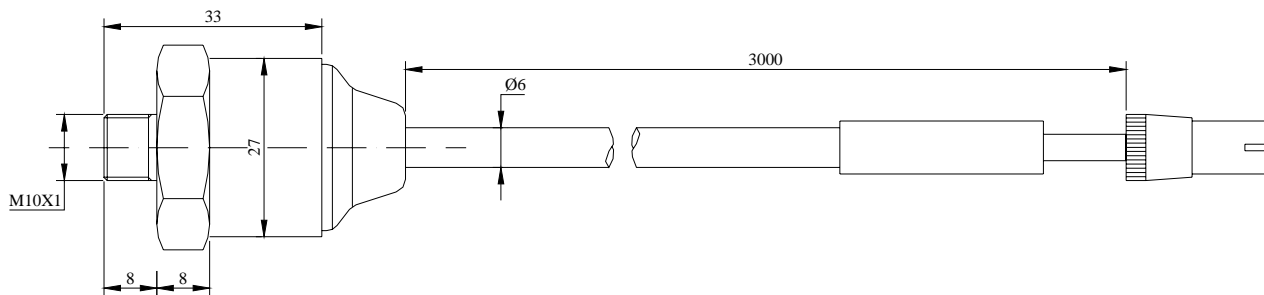
- Click twice on the cell corresponding to the “Sensor type” column and to the “Ch_x” row.
- Select the custom sensor you have just created among the available sensor’s list.

3) How to transmit the configuration

Once the new sensor has been set, you have to transmit the configuration to the logger using “*Transmit*” button.

In order to correctly transmit the configuration, the logger must be switched on and connected to the PC.

Dimensions



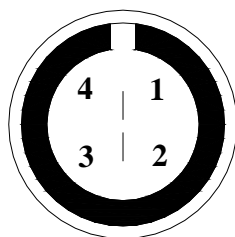
Dimensions in millimetres

Sensor pinout

Pin	Function	Cable colour
1	Pressure signal 0-5V or 0.5-4.5 V	White
2	GND	Grey + Black
3	Power 12V ±30%	Yellow
4	Not connected-	

Technical characteristics

Characteristics	Value
Measure range	0 – 100 BAR
Output voltage	0.5 – 4.5 V or 0 – 5 V
External power	12 V ±30%
Cable length	3000 mm
Cable weight	150 g
Sensor weight	35 g
Installation thread	M10 X 1



Pinout Binder 719 male – 4 pins – solder termination view