

Installing the Aim “Formula Renault Kit”

Introduction

Aim has developed and tested its instruments to provide accurate and precise results.

Before installing all instruments on your Formula Renault car, please read carefully these instructions. It is very important that everything is correctly installed to capture consistent and accurate data. Incorrect installation may result in system malfunction.

This short manual has been written in order to give you some information about instruments (such as data logger, cables, speed sensors...) position along the chassis. The different installation steps will be presented by using images and described in the most accurate way.

Here are the parts of your system

Quantity	Ordering code	Description
1	X02 L 030808ME	EVO 3 8c MS data logger, 8 Mbyte internal memory
1	X02 J BEV08	Junction Box for EVO 3 MS data logger
1	X02 H 54901 0	Harness MS – 8 Binder connector
1	X02 H 54905 0	ECU extension harness
1	X02 H 54903 0	Double speed harness
2	LRC 54921 0	Star phonic wheel
2	LS P 54901 0	Speed sensor bracket
2	3SN 1S3 1S0	Speed sensor
1	X02 TXKMA0	Beacon transmitter
1	X02 RX OCM 100	Coded beacon receiver
1	X02 H 54904 0	Jack USB – PC’s USB port cable
1		CD-ROM with the latest Race Studio 1 release
1		EVO 3 MS user’s manual
1		EVO 3 MS installation manual

Step 1: Installing the data logger

The Aim **EVO 3 MS** data logger, an 8 channels data logger, has to be mounted inside the Formula Renault cockpit front part.

To install the data logger, please unscrew the front cockpit cover and place the **EVO 3 MS** on the carbon fibre chassis by using two large pieces of Velcro.

Please, ensure that the data logger is firmly mated to the chassis, in order to avoid possible movements during the race and damages to the unit.

In the following image it is represented the data logger installation on a Formula Renault car.



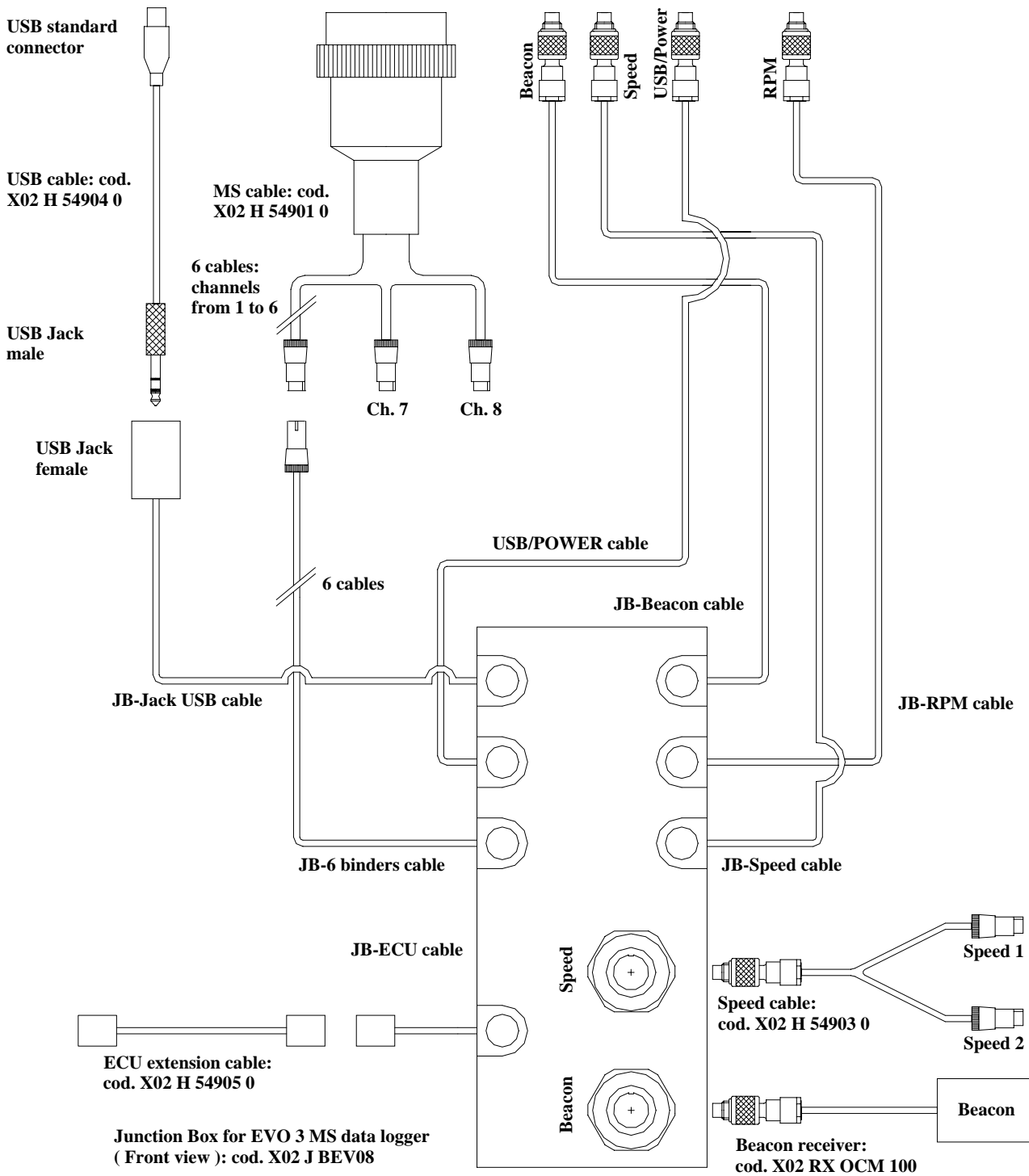
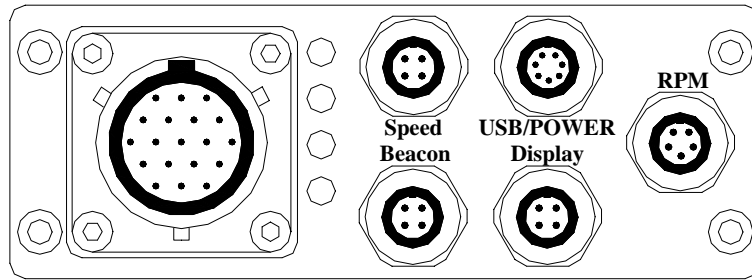
In this image it is also reported the “Junction box”, which is the black box on the left of the picture, which is used to duplicate the signals coming from the Magneti Marelli ECU: in the output, one signal will go to the XAP system while the other one will go to our data logger.

As previously described for the data logger, please ensure the “Junction box” to the chassis by using a large piece of Velcro.

In the drawing on next page you can see the cable lay up.

EVO 3 MS (Front view)

Cod. X02 L 030808ME



Step 2: Connecting the data logger to the engine

As described in “step 1”, the data logger has to be connected to the Magneti Marelli ECU, located inside the left body side of the car.

This unit has a pin connector intake: please use our cable, furnished as equipment, to connect the unit to the “Junction box”.

In the following picture it is represented the Magneti Marelli unit and the ECU.



As the intake is in the left body side of the car and the junction box is in the front part of the chassis, you have to run the extension cable along the chassis. First of all you have to pass the cable inside the interior body cell by using the hole in the carbon fibre chassis and then you have to run this cable till the junction box.

In this picture it is represented the hole connecting the left body side with the interior body cell and the cables running along the chassis.



As shown in this picture, please ensure the different cables to the chassis by using plastic wrappers in order to avoid possible movements and damages to the cables.

Step 3: Installing the Beacon receiver

The Beacon receiver is used to capture lap time. It is an infrared receiver and is characterized by a “receiver eye” which has to face the track side where the infrared Beacon transmitter has been placed (in the following picture we have placed the Beacon receiver on the right, supposing that the transmitter was on that side of the track).

As previously described for the data logger and the junction box, please ensure the Beacon receiver to the chassis by using a large piece of Velcro.

In the picture on next page it is reported a description of the beacon receiver installation: the beacon receiver is the little black box in the top central part of the photo.



It is recommended to use plastic wrappers to fix the cables to the chassis.

The infrared receiver has to “see” the infrared Beacon transmitter placed on the track side; in order to “see” it, the front cockpit cover presents a 20 mm (0.78 inches) hole (showed in next photo): please ensure that the receiver eye is placed in the middle of this hole.



Step 4: Installing the beacon transmitter

In the Kit it is included an infrared beacon transmitter, which has to be used together with the previously described beacon receiver.

The optical transmitter has to be placed on the trackside, in order to correctly transmit the LAP MARKER to the beacon receiver installed on the car. It is recommended to fix the transmitter on the pit-lane wall.



The beacon transmitter has two operating modes: high or low power. It is suggested to use the **low power** mode when the track is less than 10 meters wide, while it is absolutely necessary to use the **High power** mode when the track is wider than 10 meters.

The High power function may be activated by placing the clip (located directly below where the battery pack is attached to the beacon transmitter board) over the two connectors (see previous photo). When the beacon transmitter operates in High Power mode, it has to be powered by an external 12 Volts battery.

Step 5: Installing the speed sensor

The speed sensor is made up of two different parts: the static one, which has to be screwed on the front wheel hub, and the rotating one, which has to be screwed coaxially to the front wheel rotation axis. In the packaging you will find two speed sensors, which have to be mounted on the two front wheels.

In the following picture it is represented the speed sensor installation on the front right wheel.

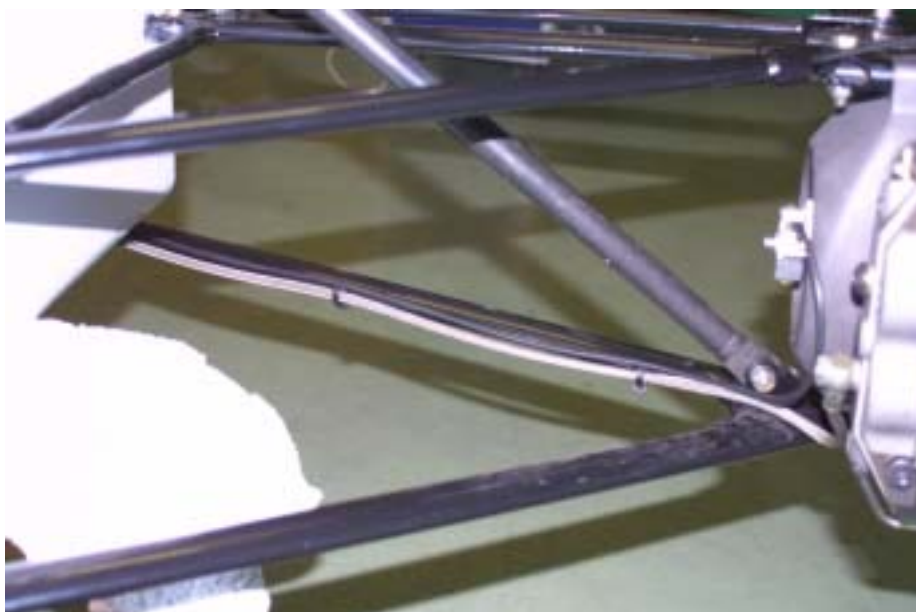


The static sensor is equipped with two nuts: please use them to fix the sensor at a distance from the rotating part included between 0.5 and 1 mm (0.02 and 0.04 inches).

Once the sensor is correctly installed, you may run the speed cables along the suspension lower triangle and insert them inside the chassis by using the hole located on the right of the oil brake pump.

In the following picture it is represented the installation of the cables along the front right suspension: please fix the speed cable to the suspension arm by using plastic wrappers.

It is recommended to pay particular attention in inserting the cable inside the front-cockpit, in order to avoid damages to the speed cable.



Step 6: Installing the USB data download cable

The USB cable is used to download data from the Aim **EVO 3 MS** to a computer.

This cable is equipped with an iron clamp and has to be installed inside the cockpit, near the dashboard. To ensure it to the chassis, please use a large piece of Velcro.

