MARELLI MF4 ECU

for Formula Azzurra

(former Formula Renault 1600)

AiM

Racing Data Power

INTRODUCTION

AIM has developed special applications for many of the most popular ECUs; by special applications we mean user-friendly systems which allow to easily connect your ECU to our high tech data loggers: user needs only to install harness between the **logger** and the ECU.

Once connected, the logger displays (and/or records, depending on the logger and on the ECU data stream and configuration) values like RPM, engine load, throttle position (TPS), air and water temperatures, battery voltage, speed, gear, lambda value (air/fuel ratio) analog channels…

All AIM loggers include – free of charge – **Race Studio 2** software, a powerful tool to configure the system and analyze recorded data on your PC.

Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software.
Select Manufacturer "Marelli" Model "FR1600".
Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

Warning: it is always suggested to verify if the ECU needs any software/firmware setting or upgrade to export data to an external logger.

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Chapter 1 – Formula Azzurra or Formula Renault 1600

In this tutorial is explained how to connect AIM loggers to Magneti Marelli MF4 ECU for Formula Azzurra championship. This championship is made using the same ECU previously used for Formula Renault 1600 as well as the same vehicles whose Renault engine has been substituted with a FIAT engine.

In this tutorial it is spoken about FR1600 because this is the option to be chosen in Race Studio Configuration software when configuring AIM logger.

Chapter 2 – CAN Communication setup

Magneti Marelli MF4 ECU for Formula Renault 1600 championship is equipped with a CAN communication setup used to communicate parameters to an external logger and shown here below.
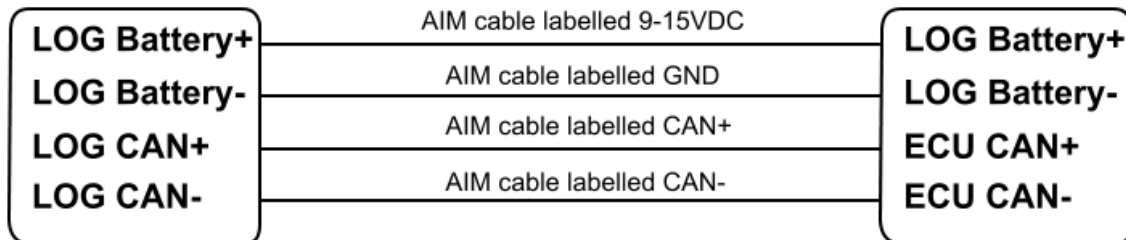
Chapter 3 – Connection with AIM loggers

Connection of Magneti Marelli MF4 ECU and AIM logger is made through the vehicle wiring using a dedicate 16 pins J7 female connector placed on the vehicle cockpit and shown here below.
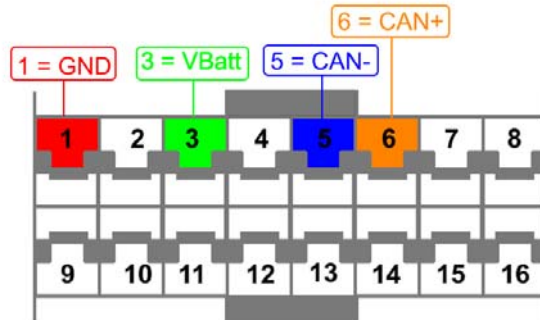
To connect AIM logger to the ECU using the J7 female connector just plug the AMP 16 pins male connector of AIM logger wiring in the J7 one.

The image here below shows a wiring connection between AIM MyChron3 XGLog and FR1600 interface harness
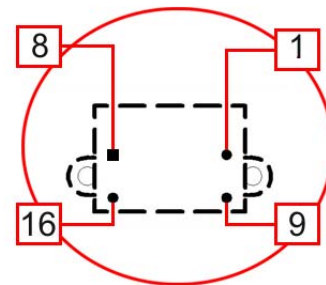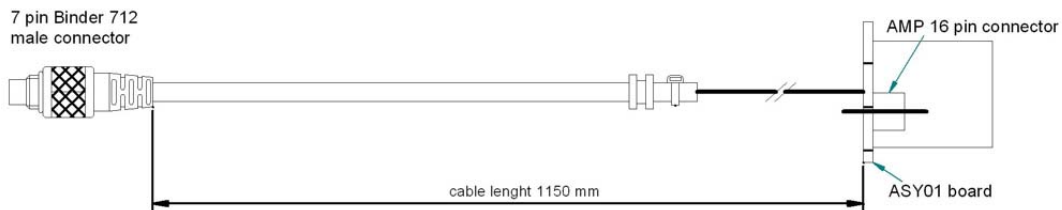
Chapter 4 – MF4 FR1600 communication protocol

Channels received by AIM loggers connected to Magneti Marelli MF4 Customer Protocol ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	FR1600_RPM	RPM
ECU_2	FR1600_GEAR	Engaged gear
ECU_3	FR1600_WATERTEMP	Water temperature
ECU_4	FR1600_MAP	Manifold air pressure
ECU_5	FR1600_TPS	Throttle position sensor
ECU_6	FR1600_AIRTEMP	Intake air temperature