

MARELLI SRA ECU
for Formula Renault 2000



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 “FR2000”.

Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

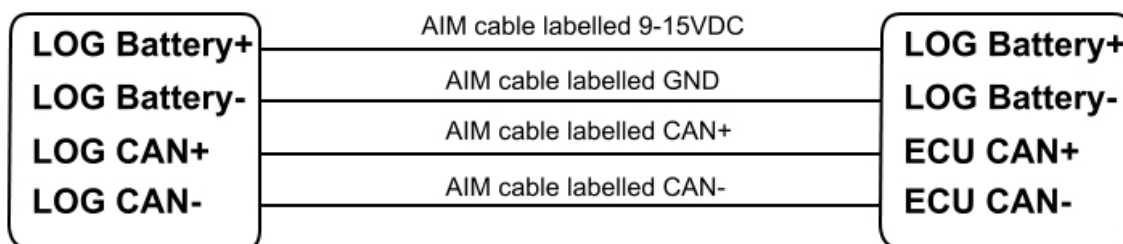
Warning: it is always suggested to verify if the ECU needs any software/firmware setting or upgrade to export data to an external logger.

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Chapter 1 – CAN Communication setup

Magneti Marelli SRA ECU for Formula Renault 2000 championship is equipped with a CAN communication setup used to communicate parameters to an external logger and shown here below.



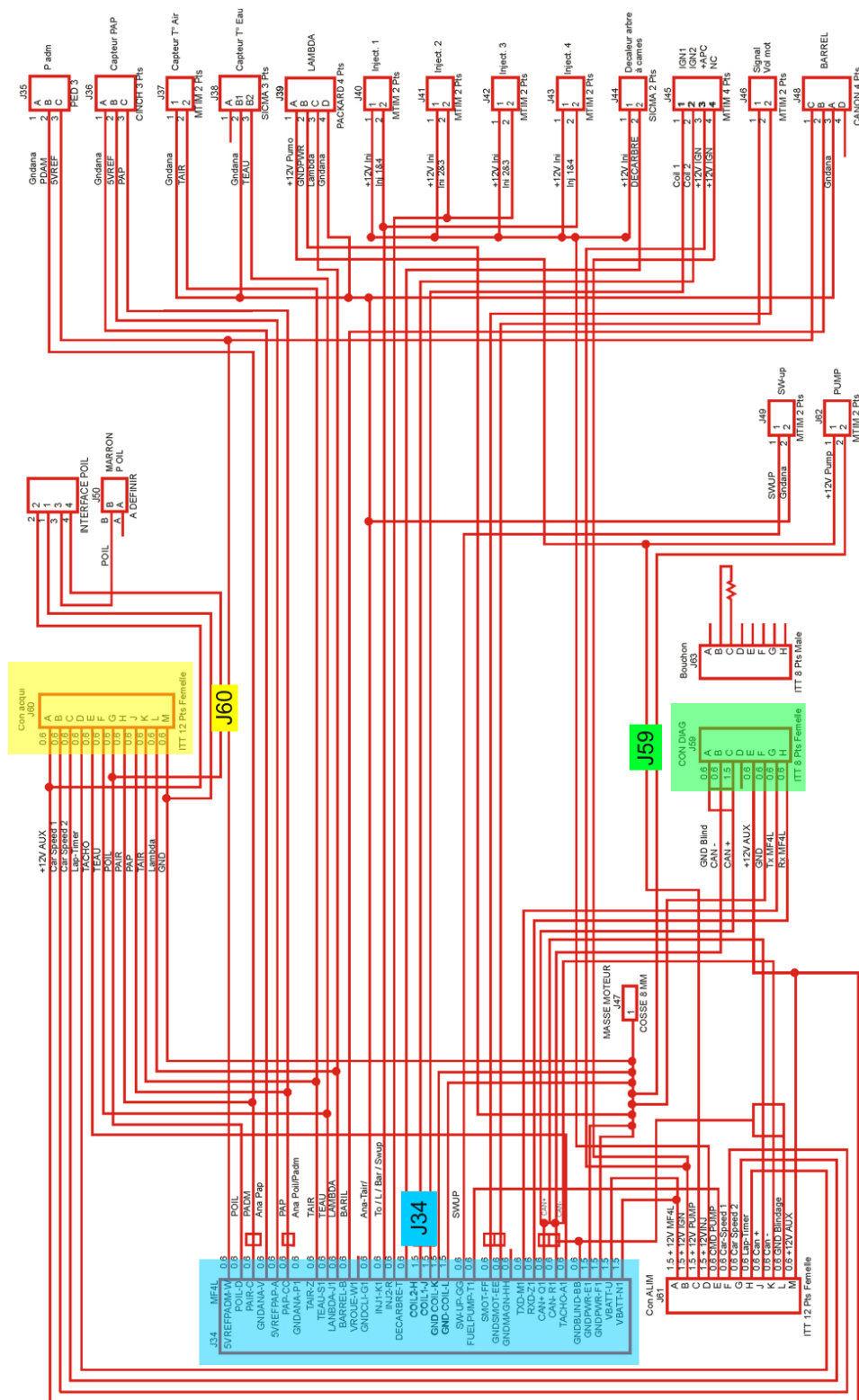
Chapter 2 – Connection with AIM loggers

Magneti Marelli SRA ECU is equipped with two front connectors a 60 pins connector and a 94 pins one shown here below. To connect the ECU with AIM loggers use the 94 pins connector.



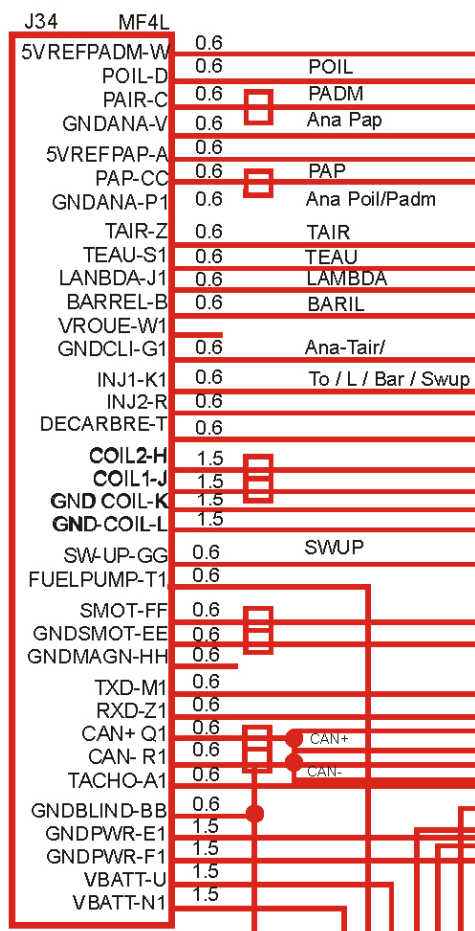
Connection of Magneti Marelli SRA ECU and AIM logger is made through the vehicle wiring using a dedicate 55 pins connector called **J34**. It communicates with the ECU through a dedicate **J59** connector and sends data (lapttime) through **J60** connector.

Here below is shown the connection scheme.

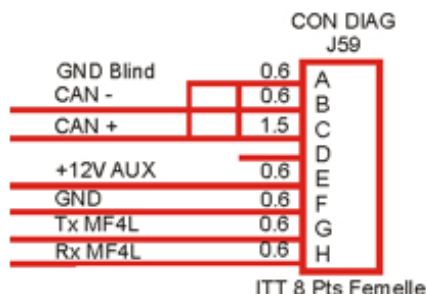


The images here below shows close up of the connectors used to made Marelli SRA FR2000 ECU communicate with AIM loggers.

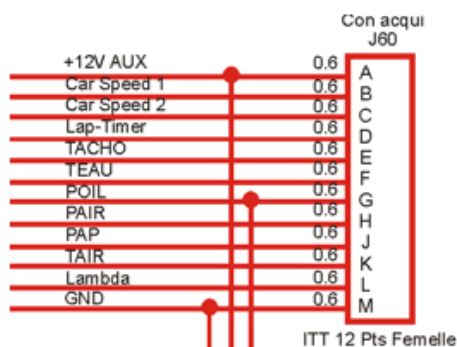
J34 Connector



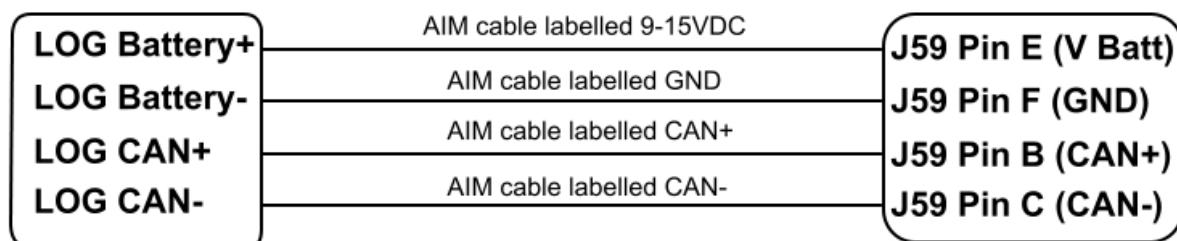
J59 Connector



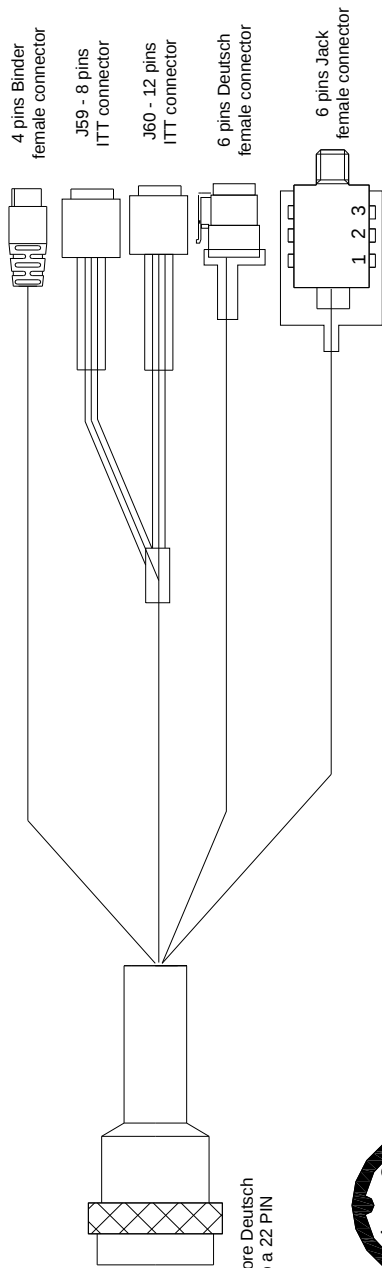
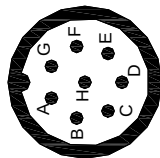
J60 Connector



To connect AIM loggers using **J59** connector refer to the following diagram.



Here below is the technical drawing for J59 and J60 connectors (used to send data from Evo3 Pro/Pista to XAP Dash through the ECU).

N.rev. / Rev. N.		Descrizione / Description		Data / date	Firma / Sign	Contr. da / Ckd. b																																				
EVO3 for Formula Renault 2000 - 22 pins Deutsch connector harness  4 pins Binder female connector J59 - 8 pins ITT connector J60 - 12 pins ITT connector 6 pins Deutsch female connector 6 pins Jack female connector Connettore Deutsch maschio a 22 PIN J59 - 8 Pins connector pinout Contact insertion view  J60 - 12 Pins connector pinout Contact insertion view  <table><caption>J59 - J60 Connectors table</caption><thead><tr><th>Deutsch connector pin</th><th>Cable colour</th><th>Destination connector</th><th>Destination connector pin</th><th>Cable Type</th><th>Cable Length</th><th>Channel</th><th>Label</th></tr></thead><tbody><tr><td>21</td><td>Blue</td><td rowspan="4">8 pins ITT Connector</td><td>B</td><td>19*0.25mm²</td><td rowspan="4">3530 mm</td><td rowspan="4">CAN1- CAN1+ Vb Ext GND</td><td rowspan="4">J59</td></tr><tr><td>20</td><td>White</td><td>C</td><td>19*0.25mm²</td></tr><tr><td>22</td><td>Red</td><td>E</td><td>19*0.25mm²</td></tr><tr><td>19</td><td>Black</td><td>F</td><td>19*0.25mm²</td></tr><tr><td>14</td><td>Orange</td><td>12 pins ITT Connector</td><td>D</td><td>19*0.25mm²</td><td>3530 mm</td><td>Lap</td><td>J60</td></tr></tbody></table>							Deutsch connector pin	Cable colour	Destination connector	Destination connector pin	Cable Type	Cable Length	Channel	Label	21	Blue	8 pins ITT Connector	B	19*0.25mm ²	3530 mm	CAN1- CAN1+ Vb Ext GND	J59	20	White	C	19*0.25mm ²	22	Red	E	19*0.25mm ²	19	Black	F	19*0.25mm ²	14	Orange	12 pins ITT Connector	D	19*0.25mm ²	3530 mm	Lap	J60
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Chapter 3 – SRA FR2000 communication protocol

Channels received by AIM loggers connected to Magneti Marelli SRA for Formula Renault 2000 are:

ID	CHANNEL NAME	FUNCTION
ECU_1	FR2000_RPM	RPM
ECU_2	FR2000_TPS	Throttle position sensor
ECU_3	FR2000_MAP	Manifold air pressure
ECU_20	FR2000_WATERTEMP	Engine cooling temperature
ECU_21	FR2000_AIRTEMP	Intake air temperature
ECU_23	FR2000_GEAR	Engaged gear
ECU_24	FR2000_OILP	Oil pressure