

## CARMO AFI 2005 ECU



## INTRODUCTION

AIM has developed special applications for many of the most popular ECU: 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 temperature, 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 “Carmo” and Model “AFI 2003-2005”.**

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

**Warning: for any further information concerning ECU firmware/software settings and/or upgrading it is always recommended to address to the ECU dealer.**

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## Chapter 1 – Technical notes

AIM loggers can be connected to both Carmo ignition or injection unit. They can acquire data from Carmo units installed on Honda CBR600, Kawasaki ZX6R, Yamaha YZ6F and Suzuki GSX-R600 but available channels are different.

### Connection to the injection unit

When the logger is connected to the injection unit all channels listed in the configuration window are available.

### Connection to the ignition unit

When the logger is connected to the ignition unit, only RPM and TPS channels are available. It is thereby recommended to disable all other ECU channels in the logger configuration to save memory.

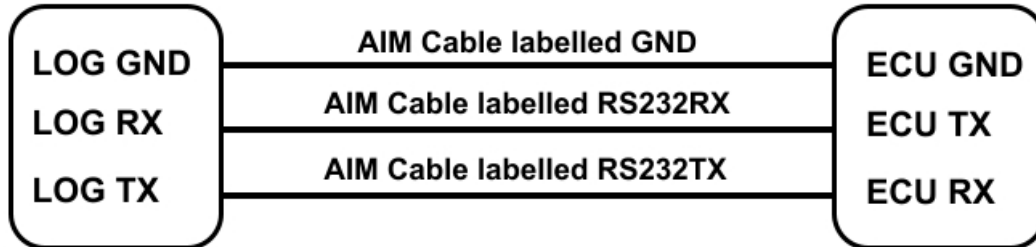
Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

The configuration procedure is the same for each bike; when the channels to acquire or to display have been selected the logger will automatically select the right set of sensor, using the information given by AFI ECU.

**Warning: each bike manufacturer has its own set of sensors; if the set installed on the bike is not the stock one sampled data could be wrong.**

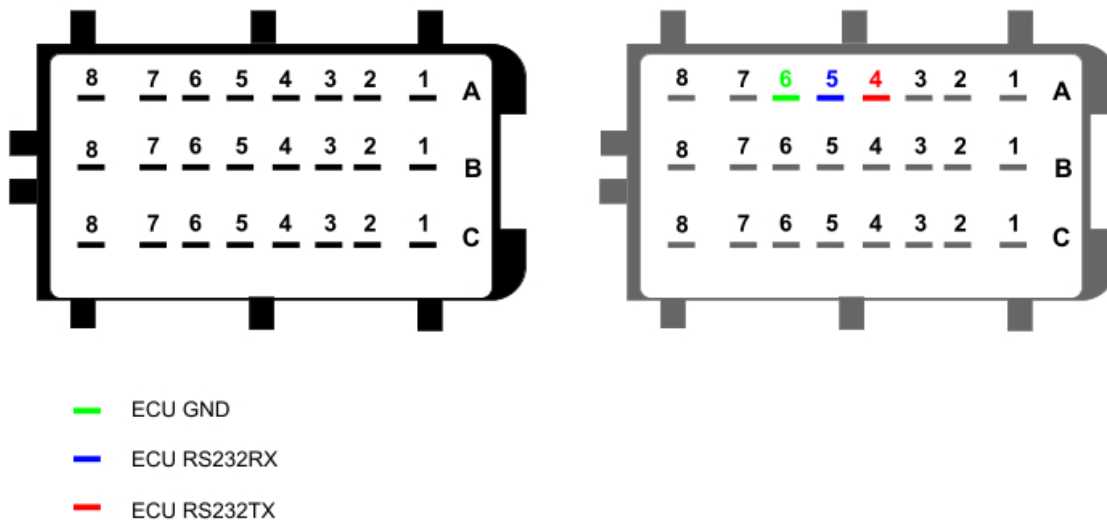
## Chapter 2 – Carmo serial communication setup

AFI 2005 ECU is equipped with a serial communication setup used to communicate with external loggers whose standard setup is shown here below.



## Chapter 3 – Connecting AFI 2005 ECU to AIM loggers

Carmo AFI 2005 is equipped with two 24 pins male connector (one black and one grey) placed on the front of the ECU and shown here below. They are drawn front looking the ECU.



To connect AIM logger to Carmo AFI 2005 ECU:

- connect AIM cable labelled RS232RX to pin A4 of Carmo AFI 2005 grey connector;
- connect AIM cable labelled RS232TX to pin A5 of Carmo AFI 2005 grey connector;
- connect AIM cable labelled GND to pin A6 of Carmo AFI 2005 grey connector.

## Chapter 4 – Carmo AFI 2005 communication protocol

Channels received by AIM loggers connected to Carmo AFI 2005 ECU are:

<b>ID</b>	<b>NOME CANALE</b>	<b>FUNZIONE</b>
ECU_1	CARMO_RPM	RPM
ECU_2	CARMO_THROTTLE	Throttle position sensor
ECU_3	CARMO_AIRTEMP	Inake air temperature
ECU_4	CARMO_WATERTEMP	Engine cooling temperature
ECU_5	CARMO_MANIFPRES	Manifold air pressure
ECU_6	CARMO_BATTERY	Battery voltage