AiM Infotech

# Motec M84 ECU

Release 1.00

# INTRODUCTION

**AIM** has developed special applications for many of the most common ECU: by special applications we mean user-friendly systems which allow to easily connect the vehicle ECU to our hi-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 model and on the ECU data stream) 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 "MoTeC" and Model "M84".**

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

As far as any further information concerning ECU firmware/software settings is concerned, it is always recommended to address to your ECU dealer.

# Chapter 1 – CAN communication setup

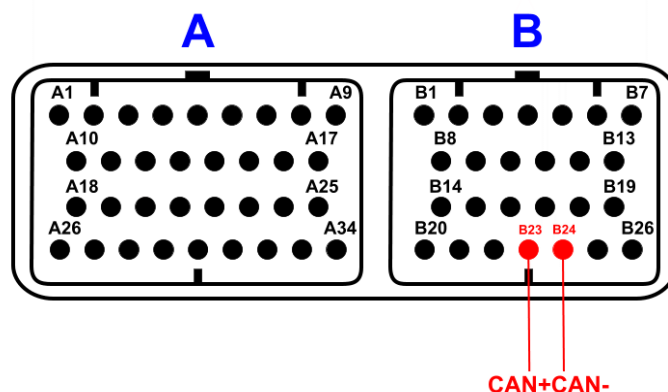MoTeC M84 ECU is equipped with a CAN communication protocol whose setup is shiwn here below.
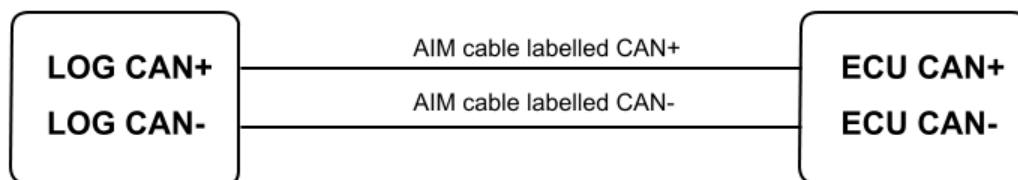


# Chapter 2 – ECU Connection

MoTeC M84 ECU is equipped with two male connectors: a 34 pins male connector labelled "A" and a 26 pins male one labelled "B", highlighted here below.



Here below is shown MoTeC M84 pinout.



To connect MoTec M84 ECU to AIM loggers connect:

- AIM cable labelled CAN+ with pin 23 of 26 pins "B" male connector;
- AIM cable labelled CAN- with pin 24 of 26 pins "B" male connector.

**Please note: for MoTeC M84 ECU to communicate with aim loggers a 120 Ohm "line end" resistor is needed. Ensure that it is installed between CAN+ and CAN-; use a multimeter; disconnect AIM logger from the ECU and make this check on the ECU harness.**

# Chapter 3 – MoTeC M84 communication protocol

| ID | CHANNEL NAME | FUNCTION |
|----|-------------|----------|
| ECU_1 | M84_RPM | Engine speed sensor |
| ECU_2 | M84_TPS | Throttle Position Sensor |
| ECU_3 | M84_MAP | Manifold Air Pressure |
| ECU_4 | M84_IAT | Intake Air Temperature |
| ECU_5 | M84_ECT | Engine Coolant Temperature |
| ECU_6 | M84_LAMBDA1 | Lambda sensor 1 |
| ECU_7 | M84_LAMBDA2 | Lambda sensor 2 |
| ECU_8 | M84_MAF | Raw value |
| ECU_9 | M84_FUEL_PR | Fuel Pressure |
| ECU_10 | M84_OIL_PR | Oil Pressure |
| ECU_12 | M84_EXH_TEMP | Exhausted Air Temperature |
| ECU_13 | M84_BATTVOLT | Battery Voltage |
| ECU_15 | M84_GRD_SP_LF | Ground Speed Left |
| ECU_16 | M84_GRD_SP_RH | Ground Speed Right |
| ECU_17 | M84_DRV_SP_LF | Drive Speed Left |
| ECU_18 | M84_DRV_SP_RH | Drive Speed Left |
| ECU_19 | M84_DRV_SPEED | Drive Speed |
| ECU_20 | M84_GRD_SPEED | Ground Speed |
| ECU_21 | M84_WHEEL_SLIP | Wheel Slip |
| ECU_22 | M84_LA1_SH_TRM | Lambda 1 Short Term Trim |
| ECU_23 | M84_LA2_SH_TRM | Lambda 2 Short Term Trim |
| ECU_24 | M84_LA1_LN_TRM | Lambda 1 Long Term Trim |
| ECU_25 | M84_LA2_LN_TRM | Lambda 2 Long Term Trim |
| ECU_26 | M84_FUEL_CUT | Fuel Cut Level |
| ECU_27 | M84_IGN_CUT | Ignition Cut Level |
| ECU_28 | M84_IGN_ADV | Ignition Advance |
| ECU_32 | M84_FUEL_ACT | Fuel Act Pulse Width |
| ECU_33 | M84_FUEL_EFF | Fuel Effective Pulse Width |
| ECU_34 | M84_FUEL_INJ | Fuel Injector Duty Cycle |
| ECU_35 | M84_GEAR | Gear sensor |
| ECU_37 | M84_FUEL_COMP1 | Fuel Comp 1 |
| ECU_38 | M84_FUEL_COMP2 | Fuel Comp 1 |
| ECU_39 | M84_ERR_GRP1 | Diagnostic Error Group 1 |
| ECU_40 | M84_ERR_GRP2 | Diagnostic Error Group 2 |
| ECU_41 | M84_ERR_GRP6 | Diagnostic Error Group 6 |
| ECU_42 | M84_ERR_GRP10 | Diagnostic Error Group 10 |
| ECU_43 | M84_ERR_GRP14 | Diagnostic Error Group 14 |
| ECU_44 | M84_ST_GRP1 | Status Flags Group 1 |
| ECU_45 | M84_ST_GRP3 | Status Flags Group 3 |