Figure 1: MyChron 3 LOG BIKE

Introduction

MyChron 3 LOG BIKE represents the perfect synthesis between MyChron 3 Gold Bike and MyChron 3 LOG advanced for bikes applications: this new logger merges the functionalities and the features of those 2 previous loggers and constitutes a turning point in AIM's data logger history.

MyChron 3 LOG BIKE monitors and displays RPM, 4 fully configurable analog inputs (pressure, temperature, potentiometers, Lambda sond and Pitot tube speed sensor), speed, Gyroscope (to map tracks), gear number and lap (split) times.

Moreover, the logger may be interfaced with the engine's ECU using a **RS232 serial cable** or a **CAN cable** (connected to the gauge's RS232 or CAN inputs), in order to sample data outcoming from the ECU.

To have a complete list of compatibles ECUs, communication protocol and connection with AIM logger, please refer to "documents" page of our website www.aim-sportline.com, where You find a dedicated datasheet called ECU-AIM logger.

The logger records the following parameters:
- 4 analog inputs: pressure sensors, temperature sensors (VDO, thermocouples, thermoresistors), potentiometers (linear and circular), Lambda sond and Pitot tube;
- lap and split times;
- 1 speed input;
- Gyroscope to map tracks;
- Gear number;
- Logger's temperature;
- All the channels acquired from the engine's ECU.

Data are stored in a huge 8 Mbytes internal flash memory and may be downloaded to a PC through an USB cable.

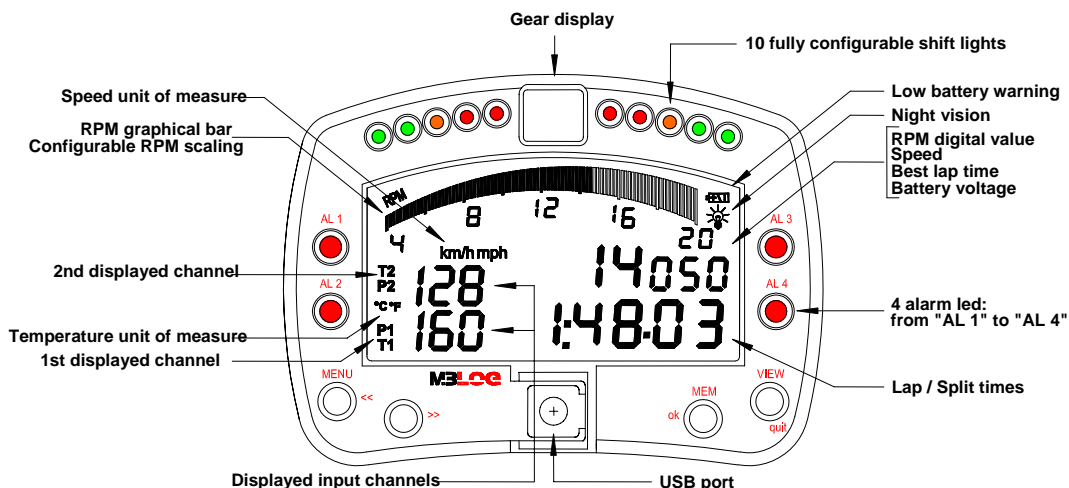For further information on the gauge's display, please refer to the following drawing.

Figure 2: MyChron 3 LOG BIKE display

Installation notes

- We recommend to choose a place where the instrument is not in contact with oil or fuel. Ensure not to install the gauge too close to heat sources and protect it from vibrations.
- To correctly measure the gyroscope input, please remember that gyroscope is resistant to shocks but can suffer vibrations: for this reason you should fix it to the chassis only with strips.
- We remind you that your **MyChron 3 LOG BIKE** is not equipped with internal batteries, and so it needs to be powered by an external **9 – 15V** power source (i.e. the BIKE's battery). **Do not exceed these limits.**
- Once the gauge has been correctly installed, plug the input cable inthe MS female connector on the gauge's back-side.
- Once the input cable has been plugged, please connect the sensors to the input cable.
- Moreover, you may connect the gauge to the engine's ECU using a serial/CAN cable.

How to connect MyChron 3 LOG BIKE to the ECU

To connect your **MyChron 3 LOG BIKE** to the ECU, please use a serial RS232 or a CAN cable plugged in the connectors on the gauge's backside, as shown in Figure 4.

- The **7 pins** connector has to be used for all ECU connection: both with **RS232 serial protocol** and with **CAN protocol**;
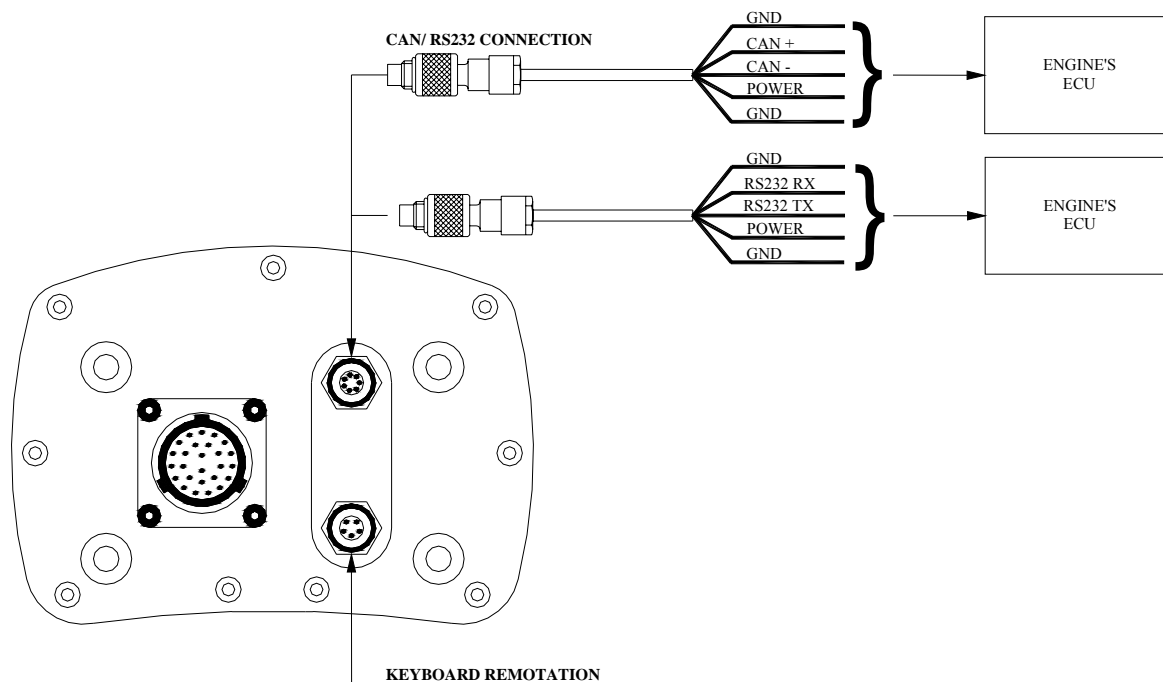- The **5 pins** connector has to be used for keyboard remotation;

Figure 3: How to connect your MyChron 3 LOG BIKE to the engine's ECU

How to connect MyChron 3 LOG BIKE to the PC

To connect your **MyChron 3 LOG BIKE** to the PC, please use the USB data download cable and plug it both in the gauge's USB port and in the PC's USB port, as showed in **Figure 5**. Moreover, **please use a 9-15 Volts external power source** to switch on the gauge.
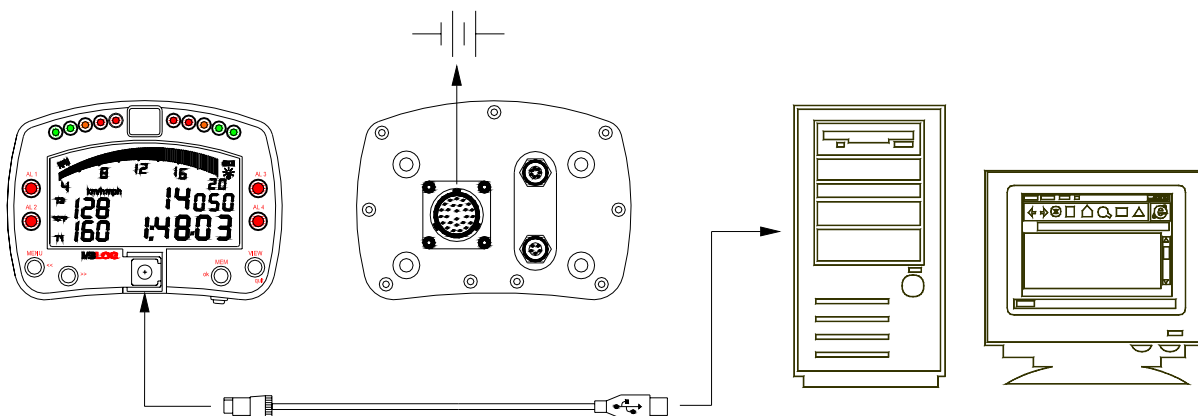

Figure 4: How to connect your MyChron 3 LOG BIKE to the PC

Once the data logger has been installed and the sensors plugged in it, to acquire consistent and correct information, you need to configure the logger. For a correct configuration, please use **Race Studio 2**, a software properly developed by Aim to configure its instruments and analyze stored data.
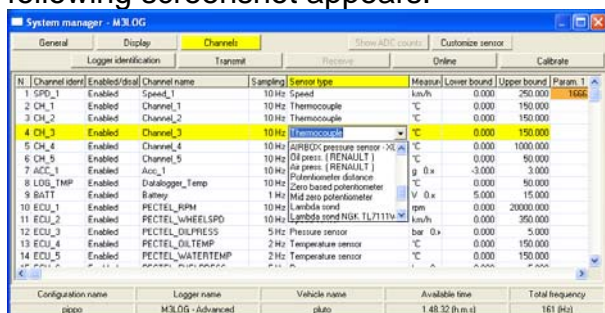
Please launch **Race Studio 2**. In its main window, shown below, choose your data logger: "**M3 LOG**" and press "System manager" button
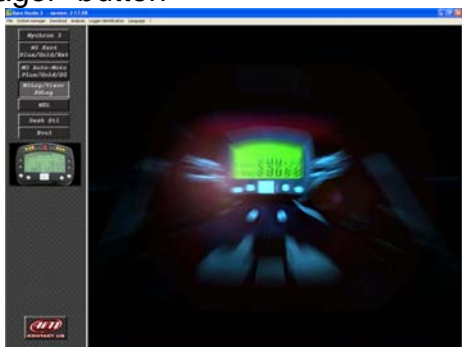
Now follow these five configuration steps:

1) Set the input channels

Press "Channels" button to set the sensors you installed on your bike. The following screenshot appears.

2) Configure the gauge

Once the desired input channels are set, press "Configuration" button to set displayed channels, alarms etc… The following screenshot appears.

To correctly configure your **MyChron 3 LOG BIKE** it is necessary to set all the parameters reported in this dialog box:

- Display language.
- Obscuring time and Number of splits (*Lap* box, bottom right).
- Speed channel, pulses per wheel revolution (*Speed* box top on the left) and wheel circumference.
- Channels and alarms concerning the 2 pages of the display (*Display page* boxes).
- Gear channel: sampled from ECU, from gear sensor, calculated or not available (*Gear sensor* box – bottom central)

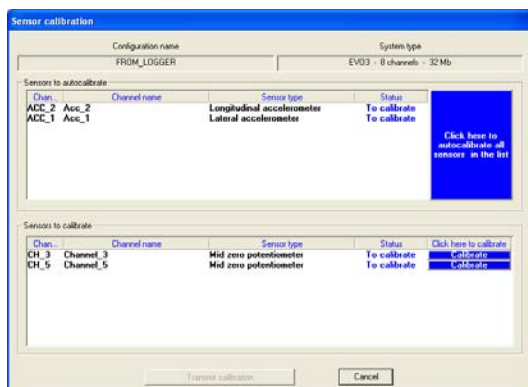**3) Transmit the configuration**

After having set and configured the input channels, transmit the configuration to the instrument pressing "Transmit" button.

Note: to transmit the configuration, the gauge is to be switched on and connected to the PC, as shown in Figure 5.

4) Calibrate/auto calibrate the sensors

Once the configuration transmitted to the logger you need to calibrate / auto-calibrate the sensors.

The internal lateral accelerometer and the "potentiometer distance" need to be auto-calibrated, while "Mid zero potentiometer", "zero based potentiometer" and "on-board gear sensor" need to be calibrated.

Please press "calibrate" button and the screenshot in the following page appears.

Please follow these instructions:

- G-force sensor and "potentiometer distance" sensor need to be auto calibrated pressing button "Click here to auto calibrate all sensors in the list".

- To calibrate "on-board" gear sensor, "Mid zero potentiometer" or "zero based potentiometer", please click on the related "Calibrate" button and follow the instructions prompted on your PC's monitor.

Please note: calibration / auto-calibration procedure is fundamental to acquire correct data.

5) Re-transmit the configuration
Once the calibration/auto calibration has finished, it is absolutely necessary to re-transmit the configuration to your **MyChron 3 LOG BIKE** pressing the "Transmit configuration" button
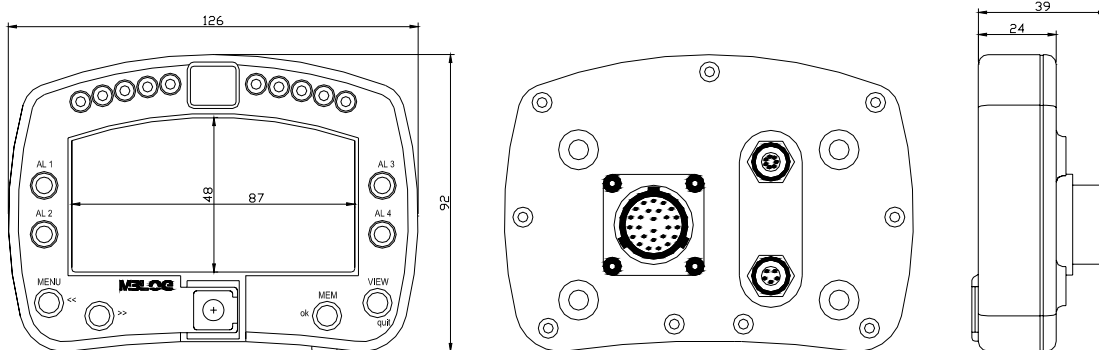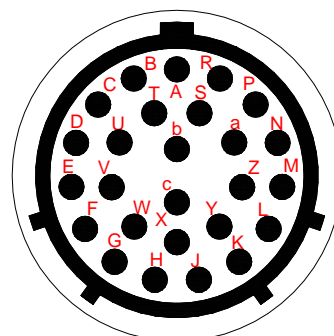
Dimensions in millimetres [inches]

26 pins Connector details (Channels)

Pin	Function	Pin	Function
A	+Ch. 1	P	GND
B	-Ch.1 (GND)	R	+ VB
C	+Ch. 2	S	Speed
D	-Ch.2 (GND)	T	GND
E	+Ch.3	U	+ VB
F	-Ch.3 (GND)	V	Gyroscope
G	V ref1	W	Magnetic lap
H	+Ch.4	X	+ VB
J	-Ch.4 (GND)	Y	RPM 150-400 V (coil)
K	V ref 2	Z	RPM 8-50 V-sq. wave
L	+ Gear	a	GND
M	- Gear (GND)	b	+ V battery
N	Optic lap	c	GND

Female MS connector pinout (external view): 26 pins

7 pins Connector details (ECU)

Pin	Function	Pin	Function
1	CAN +	5	RS232RX
2	CAN -	6	n.c.
3	Power	7	GND
4	RS232TX		

Connector details (Remotation)

Pin	Function	Pin	Function
1	View	4	Menu
2	Mem	5	GND
3	Conf		

Specifications

General characteristics	Value
Input channels	9
Internal memory	8 Mbyte flash EPROM
PC interface	300 kb/sec USB port
Sampling frequency	Up to 200 Hz per ch.
Max sampling frequency	500 Hz
External optional gyroscope	±90 °/sec
External power	From 9 to 15 VDC
Voltage output (V reference)	4.5 V (for potentiometers)
ECU interface	Serial / CAN protocol

Other characteristics	Value
M3 LOG BIKE dimensions	126x92x24 mm
Display dimensions	87x48 mm
Environmental	IP 65

Note: Ch. = Channel

Binder Female connectors pinout (external view): 7 pins (left) and 5 pins (right)