Figure 1: MyChron 3 Plus/Gold Car

Introduction

MyChron 3 Plus/Gold CAR represents the new generation of Aim data acquisition systems that provides the driver with a wide, easy to use and multifunctional display.

MyChron 3 Plus/Gold CAR monitors and displays RPM, 4 analog inputs (temperatures or pressures for **Plus** version, temperature, pressures, potentiometers and Lambda sond for **Gold** version), speed, current gear number and lap (split) times. It has a backlight, which can be switched on during night racing.

The logger records the following parameters:

- 4 analog inputs;
- engine's RPM;
- lap and split times;
- engaged gear number;
- 1 speed input;
- lateral acceleration (**MyChron 3 Gold** only);
- logger battery voltage;
- logger temperature;

Data is stored in a huge internal flash memory (512 kbyte for **Plus** version and 8 Mbyte for **Gold** one) and is downloaded to a PC through an USB cable.

For further information concerning the gauge's display, refer to the following drawing.
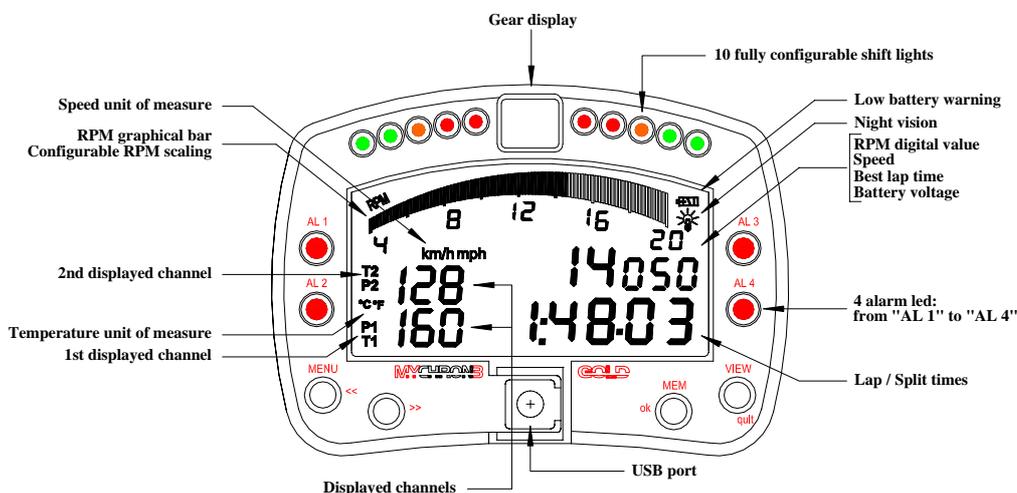
Figure 2: MyChron 3 Plus/Gold Car display unit

Installation notes

- We recommend to choose a place where the instrument will not be in contact with oil or fuel, be sure that the gauge is not installed too close to heat sources and protect the instrument from vibrations;
- To correctly measure the lateral g-force through the internal accelerometer (**MyChron 3 Gold** only), we suggest to install the gauge with the display perpendicular to the vehicle's speed;
- Please remember that your **MyChron 3 Plus/Gold** is not equipped with internal batteries, and so it needs to be powered by an external **9 – 15V** power source (i.e. the car battery). **Do not exceed these limits.**
- When the gauge has been correctly installed, plug the input cable inside the MS female connector on the gauge's back-side.
- After this, please connect the sensors in the input cable.

How to connect MyChron 3 Plus/Gold CAR to the PC

To connect your **MyChron 3 Plus/Gold CAR** 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 explained in the following figure. Moreover, **we remind You to use a 9-15 Volts external power source** to switch on the gauge.
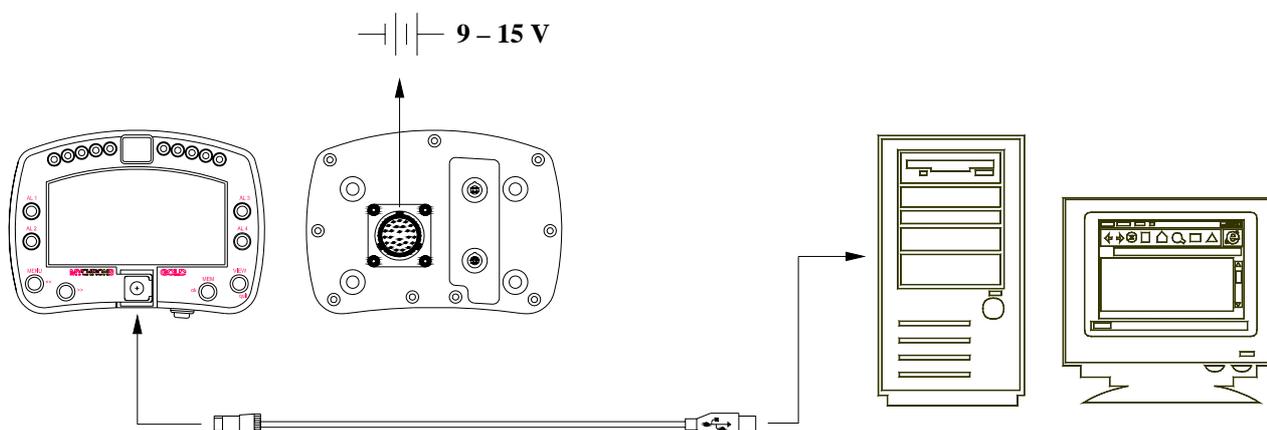
Figure 3: How to connect MyChron 3 Plus Gold Car to the Pc

Software

When the data logger has been installed and the sensors plugged in it, to acquire consistent and correct information, the data logger has to be configured. For a correct configuration, please use **Race Studio 2**, the software properly developed by Aim to configure its instruments and analyze stored data.

In **Race Studio 2** main window, shown here on the right, You can choose your data logger.
Please, select "MyChron 3 Plus/Gold" and, then, press "System manager" button

Now, please follow these configuration steps:

1. Set the desired input channels;
2. Configure the input channels;
3. Transmit the configuration to the logger;
4. Calibrate/autocalibrate the sensors;
5. Transmit the configuration to the logger.

1) How to set the input channels

Press "Channels" button to set the sensors you have installed on your gauge. The following screenshot appears.
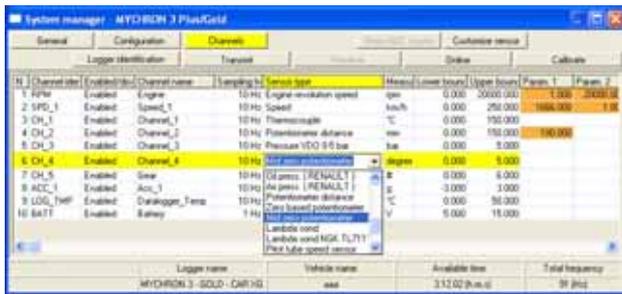
To set an input channel, double-click on the cell that corresponds to the desired one: the screenshot shown in the previous picture appears.
Select the desired input channel among the available ones.

2) How to configure the gauge

When the desired input channels have been set, press button "Configuration" button to set RPM maximum value, temperature measure unit, RPM factor, split numbers etc… The following screenshot appears.

To correctly configure your **MyChron 3 Plus/Gold CAR** it is necessary to set all parameters reported in this dialog box:

- Display language.
- RPM multiply factor.
- Maximum RPM value.
- Temperature, pressure and speed measure unit.
- The alarm values for the 4 analog inputs.
- Pulses per wheel revolution.
- Wheel circumference.
- Obscuring time.
- Number of splits.
- Shift lights.
- Gear sensor (None, "On-board", Calculated).

Please, refer to the user's manual in order to get further information concerning gauge's configuration.

3) How to transmit the configuration

When You have set input channels and configured them, you have to transmit the configuration to the instrument pressing "Transmit" button.
We remind You that, to transmit the configuration, the gauge must be switched on and connected to the PC.

4) How to calibrate/auto calibrate the sensors

Once the configuration has been transmitted to the PC you have 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 following screenshot appears.
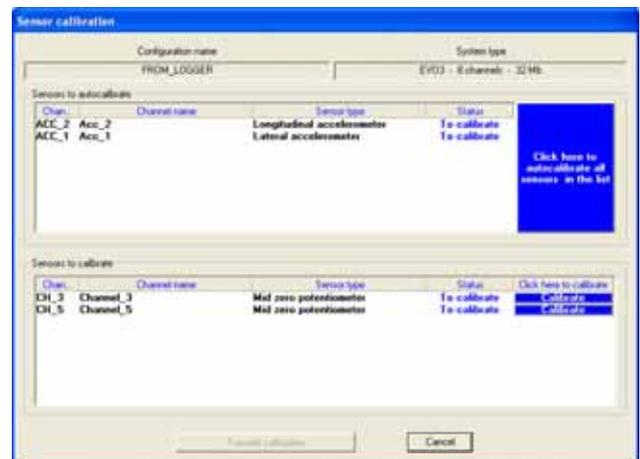
Please follow these instructions:

- The G-force sensor and the "potentiometer distance" sensor need to be auto calibrated; to do so, please press button "Click here to autocalibrate all sensors in the list".
- To calibrate "on-board" gear sensor, "Mid zero potentiometer" or "zero based potentiometer", please click on the corresponding "Calibrate" button and follow the instructions prompted on your PC's monitor.

We remind You that the 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 Plus/Gold CAR** pressing "Transmit" button.

Dimensions

126 [4,96]

48 [1,89]

87 [3,43]
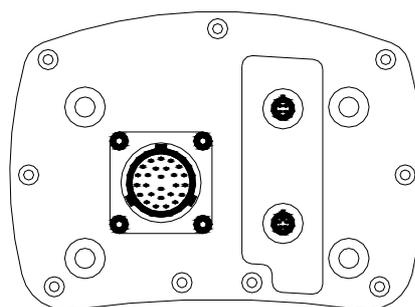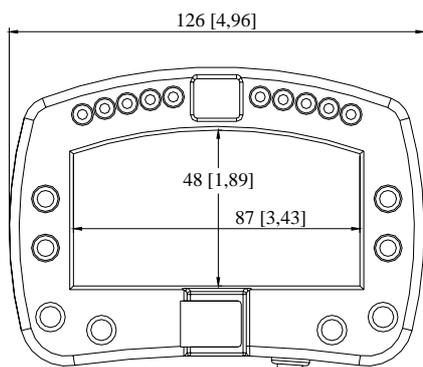
Dimensions in millimetres [inches]

Connector details (Channels inputs)

Pin	Function	Pin	Function
A	+Channel 1	P	GND
B	-Channel 1 (GND)	R	+ VB
C	+Channel 2	S	Speed
D	-Channel 2 (GND)	T	GND
E	+Channel 3	U	+ VB
F	-Channel 3 (GND)	V	Gyroscope
G	V ref1	W	Magnetic lap
H	+Channel 4	X	+ VB
J	-Channel 4 (GND)	Y	RPM 150-400 V (coil input)
K	V ref2	Z	RPM 8-50 V (square wave input)
L	+ Gear	a	GND
M	- Gear (GND)	b	+ V battery (input)
N	Optic lap	c	GND
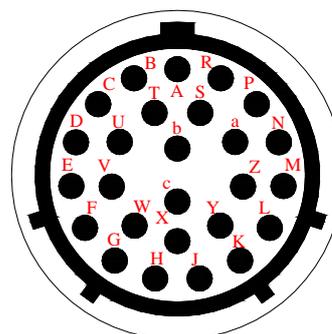
Female MS connector pinout (external view): 26 pins

Connector details (Keyboard remoting)

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

Connector details (USB)

Pin	Function	Pin	Function
1	USB D+	3	V battery
2	GND	4	USB D-
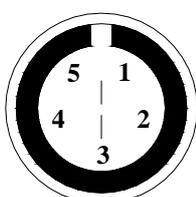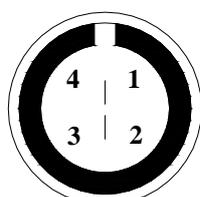
Female Binder connectors pinout (external view): 5 pins (left) and 4 pins (right)

Specifications

General characteristics	Value
Input channels (Plus)	7
Input channels (Gold)	9
Internal memory (Plus)	512 kbyte flash EPROM
Internal memory (Gold)	8 Mbyte flash EPROM
PC interface	300 kbyte/sec USB port
Sampling frequency	Up to 200 Hz per channel
Max sampling frequency	500 Hz
Internal g-sensor (Gold)	±10g
External power	From 9 to 15 VDC
Voltage output (V reference)	4.5 V (for potentiometers)

Other characteristics	Value
MyChron 3 PG dimensions	126x92x24 mm
Display dimensions	87x48 mm
Environmental	IP 65