MYCHRON4

KART TACH, LAP TIMER AND TEMPERATURE GAUGE



www.mychron4.com



MYCHRON4

Congratulations on your new MyChron4 purchase!

MyChron4 is an innovative instrument for karts, representing a revolutionary step in the development of electronic instrumentation for karts. Please check periodically on www.mychron4.com or www.aim-sportline.com websites for the new MyChron4 Firmware and Software updates.



Your MyChron4 display show

Led AL1
Temperature
Alarm Led

RPM bar graph

Menù button

Low Battery warning

Switch-off button

1 Temperature with settable unit of measure

Digital RPM Value



ws the following information:



RPM tattle

Max RPM value and bar graph

Data Recall Management and OK button

Lap Number

Switch-on and Quit button

Lap Time

MY4 CONNECTIONS AND POWER

Your MyChron4 is provided with three connectors in the back side:

1) Temperature Input
You can connect an AIM sensor to measure Water Temperature, Exhaust Gas Temperature or Underspark Temperature.

2) Lap Receiver Input
It can be both optical and magnetic.

3) MyChron4 E-Box/power/DataKey connection
Connecting your DataKey to your logger you can collect all the recorded data and then download them to your PC.



MyChron4 E-Box

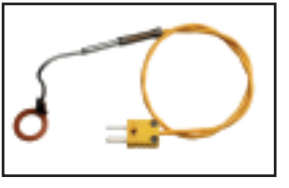

9V Internal batteries
TEMP
LAP
EXP 2 PPR
Made in Italy
Internal battery 9V Alkaline
RPM Connection

MY4 TEMPERATURE SENSORS

Underspark Thermoresistance



Underspark Thermocouple



These sensors measure the engine head temperature and are mounted to maintain the same compression ratio, eliminating the spark plug washer.

Water Temperature Sensor





Water Temperature Sensor Holder

The water sensor must be mounted on the sensor holder by winding the thread of the sensor with some Teflon, in order to guarantee a strong hold.



Exhaust Gas Temperature Sensor

For a correct measurement the Exhaust Gas Temperature sensor must be installed on the exhaust manifold at a distance of 100-120 mm from the jacket piston.

MY4 LAP RECEIVERS

As previously mentioned in the configuration menu, in case you should use a magnetic receiver on tracks provided with some magnetic bands, you must configure your MyChron4 to indicate:

The number of magnetic bands on the track

The magnetic band corresponding to the finish line

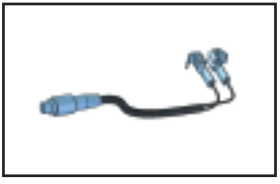


Magnetic Receiver



Optical Receiver

MY4 EXTERNAL POWER SUPPLY CABLE



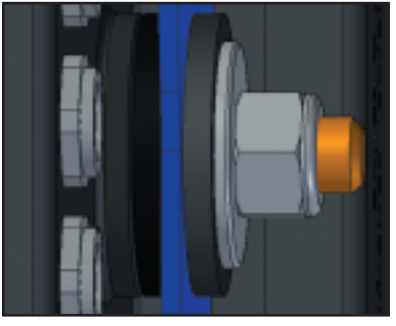
External Power supply cable

The external power supply cable has a double function: not only it supplies energy to your MyChron4, using the engine start battery or the electric ignition, but also relevates the RPM value when connected to the ignition, with no need for a further RPM cable.

It is generally used on 4-Stroke engines (i.e.Honda, Briggs&Stratton).

MY4 INSTALLATION

Please kindly pay attention to this phase for a correct use of your MyChron4.
To lower the vibrations received by your logger, mount the rubber washer above and under the spoke of the steering wheel, as in the picture here below:



Installation

The RPM cable must be fixed on the spark plug cable according to the type of engine you have.

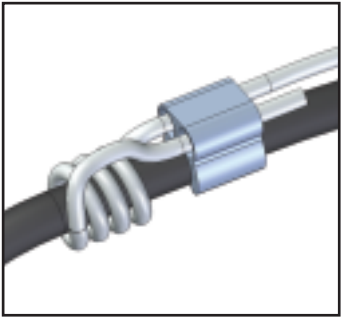
4 STROKE ENGINES

4-Stroke Engines (i.e. Honda, Briggs & Stratton)

4-Stroke engines are provided with a weak ignition system. To make the instrument receive more signals you should wind the thread around the spark plug cable, as in the picture here below:



Winding around the spark plug cable in 4-Stroke engine applications

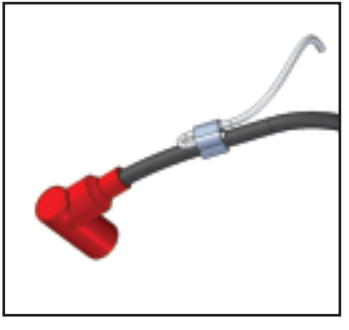


Winding zoom

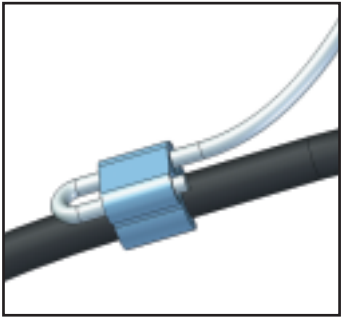
2 STROKE ENGINES

2-Stroke Engines (e.i. Tag, Junior, ICA, FA, ICC)

In case of 2-Stroke engines, the ignition gives a very strong signal.
Just lean the RPM thread onto the spark plug cable, fixing it with a clip as in the picture here below:



Winding on spark plug cable for a 2 stroke engine



Winding zoom


1
2
0
4
16
15300 RPM
L 5 BEST
166°F 1:20.98
MENU / <<
>> / OFF
MEM / OK
ON / VIEW
RACING ELECTRONIC INSTRUMENTATION
MYCHRON4

MY4 CONFIGURATION WIZARD

You can enter the Configuration Menu pressing the MENU button. The Wizard automatically switches on everytime you enter the configuration menu, untill it 's fully completed at least once.

Following the Wizard steps, you need to configure:

- **Language**
- **Driver's name**
- **Drive Type**
  (in case of gear transmission, please indicate the number of gears available)
- **Temperature Unit (Fahrenheit – Celsius)**
- **Maximum RPM**
- **RPM Tattle (0 = disabled)**
- **Temperature Alarm**
- **Hour / data**

The points listed here above are quite intuitive and do not need further explanations; nevertheless the "type of transmission" worths while spending some more words.

• Direct Drive - Direct drive is exactly what it sounds like. There is no clutch, but rather a drive gear on the engine, straightly connected to a sprocket on the axle. It's typically applied to Formula A and ICA categories.

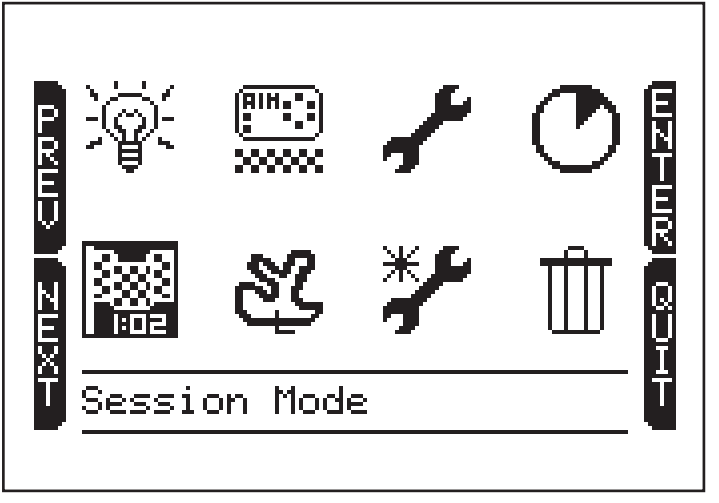
• Low Stall Clutch - If your clutch always remains engaged while racing, it can be considered a low stall clutch. Typical applications: Rotax Max, TAG, JICA, HPV, Comer, and most part of 4-Stroke engines (i.e. Briggs and Stratton, Honda, and others)

• Gearbox – or manual transmission. In this case you are requested to insert on your display the gear number, i.e. 6 for a six speed transmission, 5 for a five speed, and 2 in case of RM1.

You are asked to insert the gear number only if you select Gearbox as Drive Type. The gear number is displayed only when you install the MyChron4 E-Box.In case of Gearbox or Low Stall Clutch Drive types, the Predictive Lap Time function is not available.Your configuration Wizard has now finished and your MyChron4 is ready to start running.

MY4 CONFIGURATION MENU

The Configuration Menu can be activated pressing MENU button. Once you have completed the configuration Wizard at least once, the MENU screen appears as in the picture here below:



Following the icons, you can activate some functions as follows:

MY4

	**BackLight**
	**Session Mode**
	**Min Lap Time**
	**Track Name**
	**Control Panel**
	**Wizard**
	**Hour Meter**
	**Language**

MY4 CONFIGURATION MENU



Backlight
Backlight switch on/off



Session Mode
There are 2 session modes available:
Lap Counter: the display shows the incremental lap number.
Timed: Your MyChron4 can work as a countdown, showing you how long it will take you to get to the end of the race or qualifications.



Min Lap Time
This function sets the minimum predicted time between every lap signal and the following one. It's very useful to avoid the risk of recording false Lap Times, when there are more beacon transmitters installed along the track.

From the start line and troughout all the Min Lap Time duration, the logger does not receive other signals.



Track Name
The Track Name is associated with the every run recorded on your MyChron4. This is extremely useful when you have many runs, in order to understand when and where your data have been recorded. The Track Name is also managed by our RaceStudio2 Software, when you download your data on the PC.
You can fill in the name of the tracks in which you normally race, and then select the current track among them



Control panel
This section will be analyzed subsequently in a separate chapter.



Wizard
Through this function you get back to to the beginning of the configuration, when the logger asks you again to go ahead with the configuration process as in the first time.

MY4 CONFIGURATION MENU



Hour Meter
Four different resettable counters (plus one, not resettable) are available, in order to keep under control the activity of your engines.



Language selection
It is possible to select one among the following languages: English, Spanish, French, German, Dutch, Swedish and Japanese.

MY4 CONTROL PANEL

Selecting the Control Panel Icon, you enter a new menu:



You can sets the icon as follows:

MY4 CONTROL PANEL

	**Set RPM parameters**
	**Temperature Setup**
	**Drive Setup**
	**Split setup**
	**System Setup**
	**Enter Driver's Name**
	**Eliminate Data**



RPM parameters
The parameters used to improve the RPM management are:

Maximum RPM
It grants the best visualization of the RPM Scale.

RPM factor
For 2-Stroke and 4-Stroke engines with lost spark, please select the X1 factor.

RPM Tattle
It indicates the limit-level over which the RPM alarm led switches on.

RPM Peak Hold
The maximum RPM value is obtained at the very end of a straight line, just before the turn. At that point the driver cannot lower his eyes to read the gauge, since he has to face the corner. When you set the Hold RPM Peak ON, your MyChron4 will keep the RPM value

fixed for some seconds, in order to give you the possibility to get the RPM Peak value after the corner itself.



Temperature Setup
This section allows to modify the following values:

Temperature alarm
It lights everytime the Temperature value goes higher than the limit-value set.
Temperature Measure Units
You are free to choose to get the Temperature in °C or °F scale



Drive Setup
As already seen in the Wizard this function concurs in eventually selecting the type of transmission and the number of gears from 2 to 6



Split Setup
Number of magnetic bands
This function allows to insert the number of

magnetic bands located along the whole track.

Type of Split:
You can choose to have an absolute Split value or get the Split as the difference between the current and the **Best Lap.**

Finish band
It allows to select the datum band to get the Total Lap Time



System Setup

Time/Date
It allows to modify the following parameters:
Predictive Lap Time
It indicates the Predictive Lap Time automatically calculated by the logger when no splits are required and in case of direct-sproket engine (i.e. FA, ICA).
You can choose between Absolute and Differential Predictive Lap Time.

MY4 CONTROL PANEL

Reverse
This function assets the visualization of the display in negative or positive mode.



Driver's Name
Once you have inserted the driver's name, MyChron4 associates it to every run recorded, both in the visualization on display and during the analysis of the downloaded data through **RaceStudio2 Analysis Software.**



Clear data
Function allowing the full reset of the acquired data.




SOFTWARE >>>
1
2
MENU / <<
>> / OFF
MEM / OK
ON / VIEW
0
16
13700 RPM
L15
167°F
1:21.34
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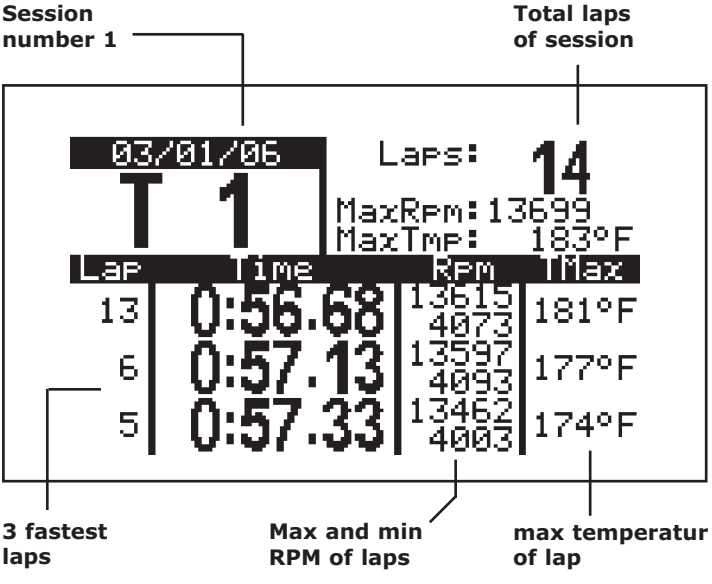
MY4 DATA ANALYSIS

Press the MEM/OK button after an on-track session to review the data.

Session Summary,
The first screen shows the Session Summary, as in the picture here beside.

The Session Summary page displays information in two sections: the upper one, indicating the date of the test, the test number, the number of laps in the test, the maximum RPM value and the maximum Temperature value, and the lower one showing your three fastest lap times, max and min RPM, and max Temp for each lap.

You can switch to previous or following sessions using the ”<<”and “>>” buttons.


Session number 1
Total laps of session
03/01/06
T 1
Laps: 14
MaxRpm: 13699
MaxTmp: 183°F
Lap
Time
Rpm
Max
13
0:56.68
13615
4073
181°F
6
0:57.13
13597
4093
177°F
5
0:57.33
13462
4003
174°F
3 fastest laps
Max and min RPM of laps
max temperatur of lap

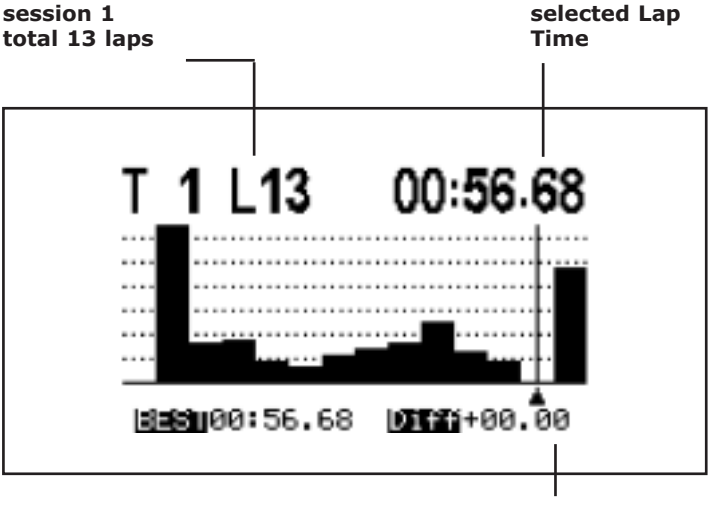
Lap Time Histogram
Press MEM/OK again to switch to the Lap Time Histogram screen.

This view shows a general summary of the main information of the current session, where each Lap Time is represented by a vertical bar.

This view helps you quickly see trends in your kart setup, showing the test number, the lap number and the lap time across the top.

The bottom always displays the Best Lap Time for the session and the differential +/- time from the Best Lap to the Lap visualized.

You can scroll though the laps using the << left button, and the >> right button.

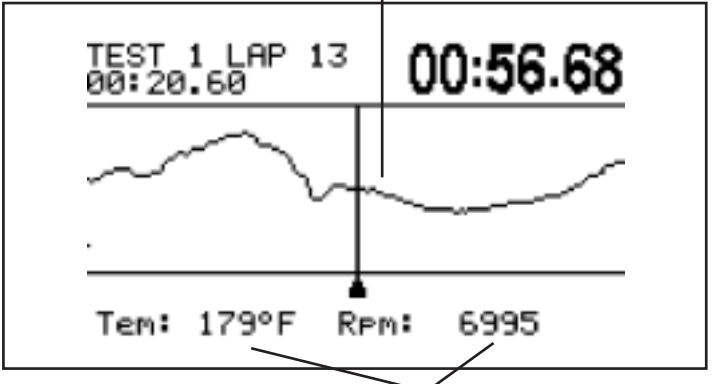

session 1
total 13 laps
selected Lap
Time
T 1 L13
00:56.68
BEST 00:56.68
DIFF +00.00
Time difference between the selected Lap and the Best Lap

RPM values graph

Pressing the MEM/OK key for the third time you pass on to the graphic page of the number of RPM, with the cursor already positioned on the previous RPM selected in the histogram graph, (please have a look at the screen shot here beside).

Moving with the keys "<<" and ">>", you move the cursor to visualize the different Temperature values and the RPM's.

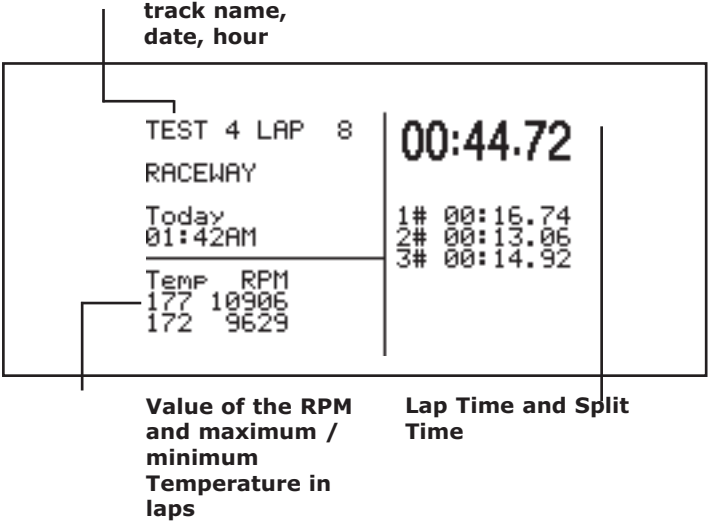
Progress of the number of RPM during the session



Accurate value of the Temperature and RPM

Splits of the selected Lap

Selecting again the MEM/OK key, you pass to the next screen where the provided data is a summarization of the laps that you were analyzing in the previous display.



Best Rolling and Theoretical Best Lap
Always using the MEM/OK key, if there are more Splits present on the track then you pass onto the last screen. A brief explanation is required for the two values of the display, as in the picture here below:



The Best Rolling represents the actual real time the driver made in one lap but not from the finishing line to finishing line.
The Theoretical Best is the time resulting from the total sum of the best Splits recorded in the session.

MY4 DATAKEY FOR DATA DOWNLOAD

Optional to your MyChron4 you can have the MyChron4 DataKey, a useful and handy USB device, provided for a safe and quick data storage, together with the installation CD of RaceStudio2, the software properly developped by AIM to analyze data stored in your gauge.



With your new MyChron4 you do not need a laptop on the track: you can download your data from your logger on to the optional DataKey, in order to move them, in a second time, to your PC.

MyChron4 DataKey is provided with 32 Mb of not volatile memory. You can record on your DataKey



information received from different MyChron4s or got from different sessions made with the same kart. When you download the data to your PC, they will be properly managed, and splitted in different files. Every test will be associated to the driver's name and track name; time and date of the test are recorded too.

MY4 DATAKEY FOR DATA DOWNLOAD

The same DataKey is to be used to download new updates of MyChron4 firmware.

To download the data collected from your MyChron4 to the PC, please follow the steps listed here below:

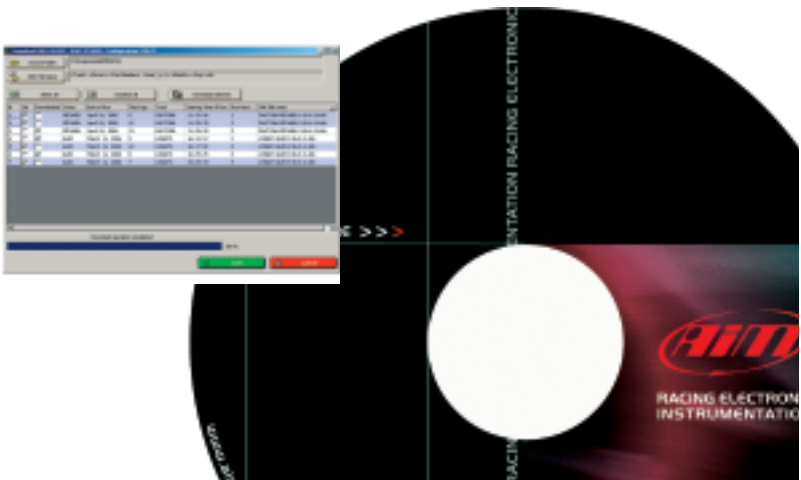
1)Connect the DataKey USB connector to your MyChron4

2)The downolad process automatically starts, showing on MyChron4 display three possibilities:
Memory empty: there are no data stored in your MyChron4
No new data: there no new information to be downloaded on your MyChron4
Download data

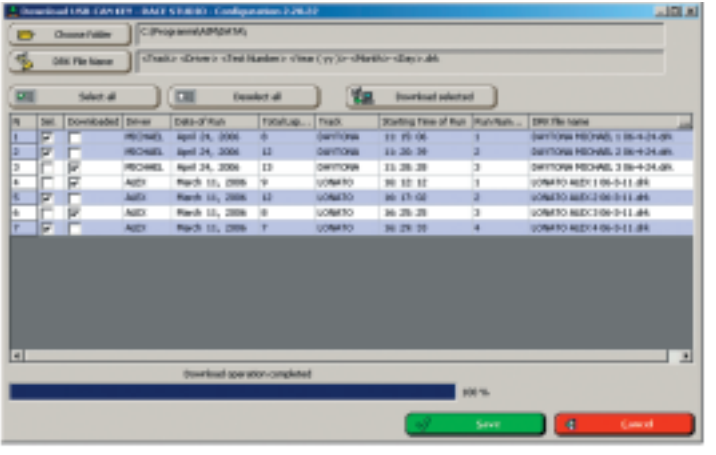
3)Connect your DataKey to the USB input on your PC
4)Start RaceStudio2 software and click on Download button
5)Among all the tests showed, flag just the ones to

be downloaded
6)Click on "Download selected" to activate the downloading process and eventually close clicking on "Save" button.

To visualize and analyze the downloaded data, please click on "Analysis" button.



DATA DOWNLOADING MANAGEMENT



The data downloading management window displays:

- The folder where the files resulting from the download process are saved

- The scheme of the files name

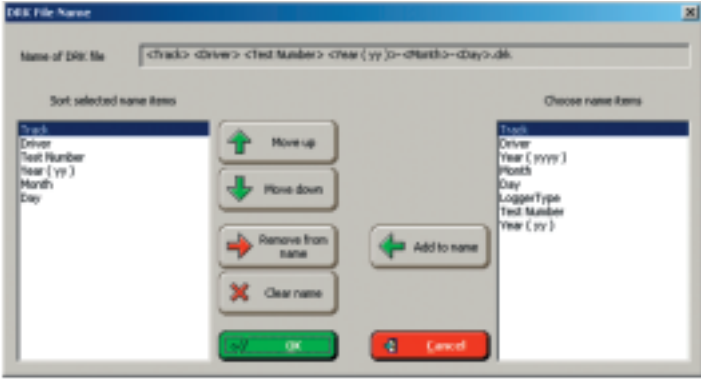
- The grid reporting the information about the tests stored on the DataKey, cronologically ordered.

The runs already downloaded on the PC are automatically identified by a tick displayed in the "Downloaded" column, while the runs still stored on the DataKey are automatically selected (tick in the column "Sel") to be downloaded.

The"Choose folder" button opens a browsing window to select the file destination

The "DRK file name" button opens the window to compose the DRK file name

DATA DOWNLOADING MANAGEMENT



The window here above displays:

- The DRK file name composition

- The two lists reporting both the elements currently composing the drk file name (left one) and the whole list of the available elements (right one)

- Some further keys to be used to:

Change the order of the elements selected to compose the file name;

Eliminate an element from the name of the file;

Add a selected element to the file name;

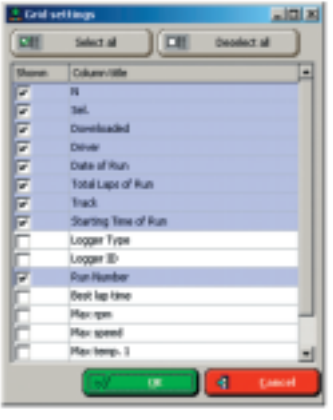
Remove all the elements from the file name, to start a new composition of the same file name;

Exit from the window saving the changes to the settings (OK button)

Exit from the window without changing the settings (CANCEL button)

The " " key, in the top right corner of the grid of runs in the "Download Data" window, leads to a new screen, available to personalize the same informa-

tion showed in the grid and display the list of the visible columns in the same grid of runs.



Clicking on the column header of the grid of runs, it's possible to reorder the number of runs displayed, according to the kind of information represented in the column. Clicking again the order gets inverted.

Clicking on the same column header of the grid of runs with the right side of the mouse you can choose whether or not to remove the column (to restore the column display, use the configuration window of the grid, to be activated pressing ".." key)

MY4

For further information, please check on www.mychron4.com or www.aim-sportline.com

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