ALFANO PRO

Serial : (82500 – 99999) (20000 – 59999)

Figure 1

Figure 2

Figure 3

Figure 4
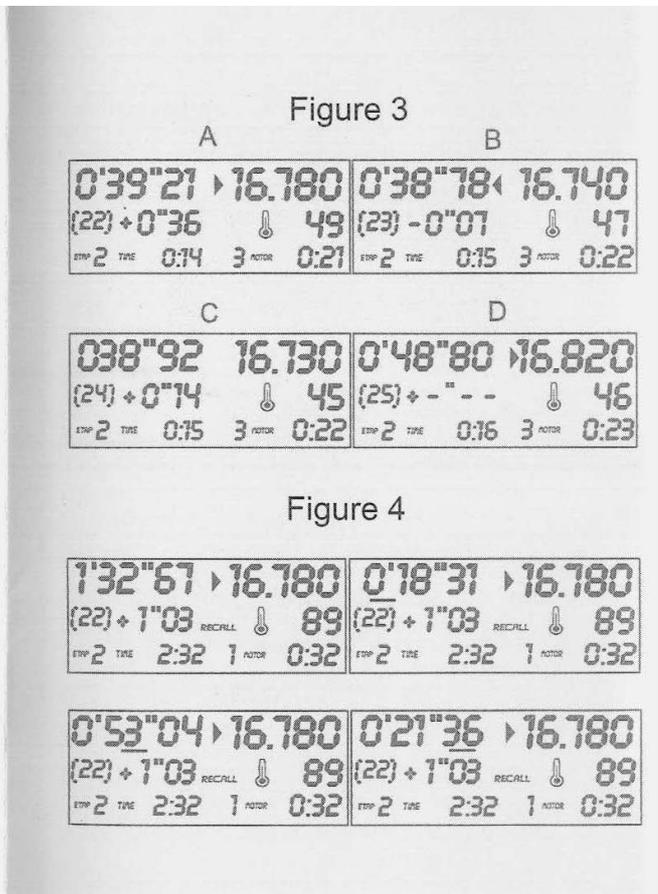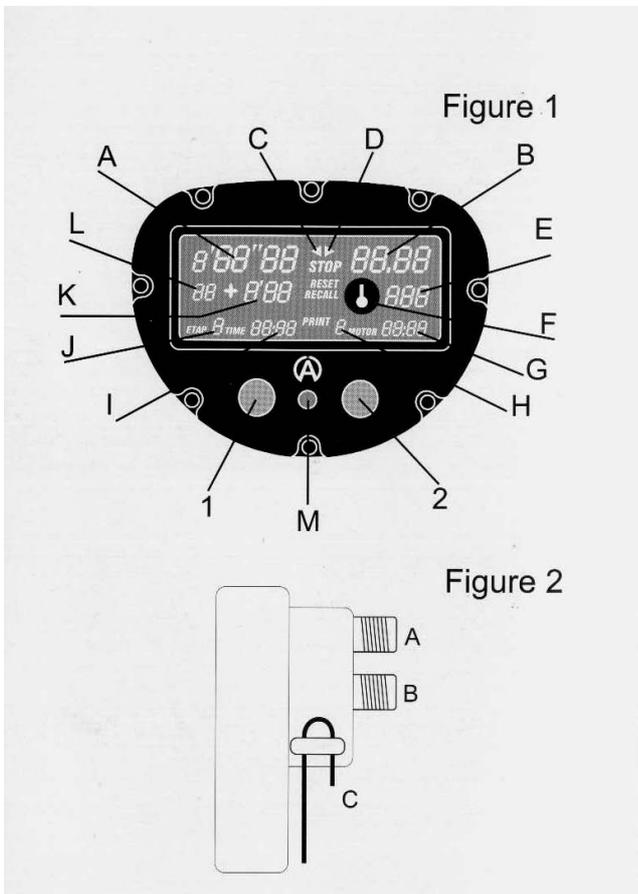
INTRODUCTION

We thank you for your purchase and hope that ALFANO will become your indispensable companion in your passion for karting. The new "ALFANO", new version starting from serial number (9 - - - -) has been built on the basis of comprehensive and detailed considerations from both a technical and aesthetic aspect to that it will become an "indispensable" partner for kart drivers. The device enables you to easily improve your performance and increase your kart-racing enjoyment in the process.

Also, we advise you to read this manual very carfully in order to take full advantage of all it's fonctions.

ALFANO PRO *new*

- Completely new design
- Large individual display
- ALFANO lap timing with the option of 3 split times for each lap
- RPM counter (various displays) maximum 26,000 rpm
- Display of fastest lap, deviation from fastest lap, number of laps and total driving time
- 5 counters for different engine running time
- Engine temperature (water) « +0°C à +150°C ou +32°F à +302°F » (sensor Optional)
- Engine temperature (cylinder head) « +46°C à +299°C ou +115°F à +570°F » (sensor Optional)
- Infrared output via PC (Software and downloading kit optional)
- Recording Mode **"rec" (see Chapter** 5° RECORDING MODE "rec" **)**
- Additional functions

OPERATING INSTRUCTIONS

Basic mode of operation of the system

The system is mounted on the steering wheel and operated by two push buttons. The most important components are a timer, a RPM counter and an electronic thermometer. The system is connected to a magnetic sensor located on the floor pan of the VEHICLE very close   to the ground. It can also be connected to a water temperature sensor on the radiator hose or to a cylinder head temperature (C.H.T.) sensor between the spark plug and the cylinder head. The system is also connected to the ignition cable with an electrical wire, in order to enable recording of the necessary pulses, which are then forwarded to the engine RPM counter and the engine running time counter for the respective engines.

1°   DESCRIPTION OF THE DEVICE AND MOUNTING ON THE VEHICLE

ALFANO front

The device has a display whose elements are explained in **Chapter 2** of the present description, two push buttons on the left **(«1» in figure 1)** and right **(«2» in figure 1)** as well as a small lamp which sends infrared signals **(«M» in figure 1)** for data transfer via PC.

ALFANO rear

Here you will find the connections for the sensors and the battery compartment. The upper connection socket is for the magnetic sensor for lap timing **(«A» in figure 2).** The lower connection socket is for the sensor to record the engine temperature **(«B» in figure 2).** To the bottom left of these two connections you can see two recesses to hold a loop of the wire which leads to the spark plugs cable **(«C» in figure 2).**

Installing the **ALFANO**

The device is fastened to the steering wheel with the enclosed M8 nut and 2 red rubber disks, one on each side of the steering wheel spoke, as well as a black hard plastic disk as a liner between the steering wheel and the unit.

WARNING ! In order to avoid damaging the housing, the back side of the housing should not come into contact with the steering wheel.

Installing the magnetic sensor

The magnetic sensor is mounted with a screw and an M6 nut on the floor pan of the kart. The sensor must be installed in the kart's longitudinal axis (The screw of the sensor facing the front of the kart).

Installing the RPM sensor

The measuring pulses sent are recorded via a wire which is connected to the spark plugs cable and the device. The wire is hereby inserted in a loop in the two recesses **(«C» in figure 2)**. The plastic spirals enclosed with the ALFANO are used to fasten the black wire to the spark plug lead.

Installing the water temperature sensor for radiator hose

By cutting off the rediator hose, the sensor is fixed in the water cooling system, in direction of flow of the water to the cooler.

Installing the water temperature sensor for Rotax Max engines

The sensor is specially build to fit in the plug of the Rotax Max cylinder head water cooling system.

Installing the cylinder head temperature sensor

The sensor is fixed between the cylinder head and the spark plug.

WARNING ! Remove the spark plug washer.

Installing the battery

To change the battery, loosen the two screws on the small cover of the battery holder on the rear of the device. The spent batteries can now be removed. When inserting new batteries the positive pole **(+)** must point towards the cover of the battery holder. Then insert the holder into the housing.

WARNING ! Avoid over-tightening of the screws which could damage the threading. Tighten to the point where both sections of the housing meet.

Use batteries of the type **CR 2450.**

A **RESET** must be carried out every time the batteries are changed (press both push buttons for 2 seconds).

2° MODE OF OPERATION

Switching on :

Press both push buttons simultaneously for 2 seconds. When these are released the display comes on and the system is in the STOP mode. An unintelligible display can appear while both buttons are being pushed. This is normal. Upon release of the buttons the normal display will reappear.
This procedure is necessary if the battery has been changed and if the ALFANO jams.
For example: Because of motor disturbances.

Change to **START** mode :

The ALFANO must first without exception be in the STOP mode. If this is the case then a contact with a magnetic strip is sufficient to delete the display (small dashes appears).

WARNING ! The word START does not exist in the display.

Return to **STOP** mode :

Press the left push button **(no. 1)** or wait 5 minutes after the last contact with a magnetic strip.

Best Time and Highest RPM's of All Recorded Laps :

In **STOP** mode only the right button **(no. 2)** must be activated. The display lasts two seconds.

Within this two seconds you can enter to the Recording Mode "rec"
(see Chapter 5° RECORDING MODE "rec")

Switching off :

Refrain from activating **ALFANO** any further, from driving over the magnetic strip, and from running the motor (if the RPM wire is connected). Wait 10 minutes.

3° DISPLAY (Figure 1)

A   LAP TIMER

In the **START** mode :

The time for each lap is shown, i.e. the time between passing over **the same** magnetic strip twice. The display is in minutes, seconds and hundredths of a second as soon as a lap is completed and during the next lap.

In the **STOP** mode :

The last recorded lap is shown.

In the **RECALL** mode :

The fastest lap, followed by all other laps with respective times and corresponding additional   information.

Split time (In **RECALL** mode only) :

On tracks with 2 or 3 magnetic strips **« line A »** also shows the time between each magnetic strip. **(See Chapter 4°, Sub-Menu -1-)**

B   RPM COUNTER

In the **START** mode :

The system user has two RPM display options : « **M** » ou « **D** »

M   =   MAXIMUM, the highest engine RPM of the last lap This data remains on the display during the next lap.
D   =   DIRECT, direct display of engine RPM

In the **RECALL** mode :

The highest recorded RPM for each lap is displayed .

C   BEST TIME DISPLAY

The arrow appears in front of the fastest time and remains visible as long as the information is shown.

D   HIGHEST RPM DISPLAY

The arrow appears in front of the highest engine RPM and remains visible as long as the information is shown.

E   ENGINE TEMPERATURE

In the **START** or **STOP** mode :

The directly recorded thermometer temperature is shown every 0.8 seconds on the display for a safe reading. The temperature shown :
From « +0°F à +150°C ou de +32°F à 302°F » for the water temperature
From « +46°F à +299°C ou de +115°F à 570°F » for the CHT
Below or above those temperatures ranges the system shows **LO** or **HI**

In the **RECALL** mode :

The maximum recorded temperature for each lap.

F   ENGINE TEMPERATURE ALARM

If the engine temperature exceeds the programmed temperature a large black circle appears.

G   ENGINE RUNNING TIME COUNTER (MOTOR)

The running time of the engine is shown in this line in hours and minutes. Select the desired counter and reset one of the system's 5 counters for the engine running time to zero. The number of the counter is shown under **« LINE H »**. The selected engine running time counter is continuously updated whether the system is in the **START** or **STOP** mode.
REMEMBER :
The RPM wire should be connected
(see Chapter 1° "Installing the RPM sensor")

H   ENGINE NUMBER (MOTOR)

This display is helpful if a number of engines are used in the vehicle. If the engine is exchanged another counter should be selected **(5 counters are available in the ALFANO).**

I   TOTAL TIME (TIME)

Total measured time in hours and minutes.

J   NUMBER OF SESSIONS (ETAP)

This display indicates the number of session. Whenever the system switches from **STOP** to **START** mode, the counter displays an additional session.

K TIME DIFFERENCE TO BEST TIME

The difference between the former fastest time and the last lap is shown in this **« ligne K »** (a maximum of 9 seconds and 99 hundredths of a second; beyond this, three small dashes appear). **Example : (Figure 3)**

L LAP NUMBER

This displays the total number of laps completed.

4° READING THE RESULTS AND CONFIGURATIONS

The results and most important instructions are found in Menu 1, which is divided into 5 Sub-Menus.

- 1 - MAIN RECALL
- 2 - RECALL, RESET and Selection between 5 ENGINE RUNNING TIME COUNTERS
- 3 - PRINT VIA PC
- 4 - RESET
- 5 - ACCESS To the 2nd MAIN MENU
  ENGINE "RPM" GRAPHICS and SYSTEM CONFIGURATION

The Engine "RPM" Graphics and System Configuration are found in 2nd Main Menu, which is divided into 7 Sub-Menus.

- 6 - ENGINE "RPM" GRAPHICS
- 7 - ENGINE RPM TYPE SETTINGS: M or D
- 8 - ENGINE STROKE TYPE SETTINGS (IGNITION:1, 2, 4, 8 STROKE)
- 9 - NUMBER OF MAGNETIC STRIPS SETTINGS: 1, 2, or 3
- 10 - TEMPERATURE SENSOR TYPE and MEASUREMENT UNIT SETTINGS:
- 11 - ENGINE TEMPERATURE ALARM SETTINGS.
- 12 - RESET TO FACTORY DEFAULT SETTINGS.

NOTE : With the left push button (No1), we scroll from one sub-menu to the other. With the right push button we make a selection in the sub-menu. Remember : to make it easier, the sub-menu number is always indicated on the display except for sub-menu 1 "MAIN RECALL"

Unit Working Flowchart for the 2 Main Menus and the 12 Sub-Menus

The system must be in the STOP mode :

1st Impulse to the left button; this takes you to the Main **Menu 1,**
sub-menu - 1 - :
MAIN RECALL "recall"

The screen displays the data recorded during the **best lap**. For each additional impulse on the right button the ALFANO will display the data starting from the first lap.

Reading of the results of the split times

a) If the time between pressing the right push button is shorter than 3 seconds only the lap times are shown and not the cycles of the split times.

b) If the time between pressing the right push button is longer than 3 seconds the cycle for the split times begins. Example (**figure 4**).

2nd Impulse to the left button: this takes you to the Main Menu 1,
sub-menu - 2 - :
ENGINE RUNNING TIME COUNTER "motor"

"MOTOR" is displayed with the serial number of your ALFANO. The system has 5 counters. The counters show the running times of each engine in hours and minutes. Select the desired counter with the right button. **Keep the right button pressed to reset the counter to zero.**

3rd Impulse to the left button: this takes you to the Main Menu 1,
sub-menu - 3 - :
PRINT "print"

"PRINT" is displayed with the serial number of your ALFANO. Press the right button: the system starts the infrared output of all saved data and shows the individual serial number in the display. **Note :** Each ALFANO has a unique serial number.

4th Impulse to the left button: this takes you to the Main Menu 1, **sub-menu - 4 - :**
RESET "reset"

"RESET" s'affiche avec le numéro de série de votre ALFANO. Reset is displayed with the serial number then an impulse on the right button the system returns to the **STOP** Mode once the memory has been cleared. Meantime a little animation appears on the screen.
NOTE : The **RESET** does not affect the parameters and the engine running time counters.

5th Impulse to the left button: this takes you to the **Main Menu 1, sub-menu - 5 –**

ACCESS TO MAIN MENU 2 :
THE ENGINE "RPM" GRAPHICS AND SYSTEM CONFIGURATION "Conf SYSt - recall motor"

- Push the right button and you enter in the **Main Menu 2**.
- Push the left button, and you return to **STOP** Mode .

MAIN MENU - 2 –

Once you have accepted the access to **Main Menu 2** you are now in the
Sub-Menu - 6 - :
ENGINE "RPM" GRAPHICS "recall motor"

This option is a numerical graphic. It gives you the running time for each 640 RPM bracket, this being calculated for the **best lap time**. The 1st bracket is between 5,120rpm and 5,760 rpm. The last bracket between 24,320 rpm and 24, 960 rpm. (For a total of 31 brackets).

2nd Impulse to the left button: this takes you to the Main Menu 2,
sub-menu -7- :
ENGINE RPM TYPE SETTINGS : M or D "Conf dSPL"

Select « **M** » or « **D** »with the right button

M = **MAXIMUM**, displays the highest rpm for the previous lap.
The display remains during the next lap.
D = **DIRECT**, direct rpm display.

3rd Impulse to the left button: this takes you to the Main Menu 2,
sub-menu - 8 - :
ENGINE STROKE TYPE SETTINGS (IGNITION:1, 2, 4, 8 STROKE) "Conf Stro"

With the right button, you select your ignition type:
1 Stroke = number **2** and **4** are off
2 Stroke = Only number **2** is on
4 Stroke = Only number **4** is on
8 Stroke = number 2 and **4** are on
WARNING ! A bad configuration unavoidably leads to a defective reproduction of data.

4th Impulse to the left button: this takes you to the **Main Menu 2,**
sub-menu - 9 - :
NUMBER OF MAGNETIC STRIPS SETTINGS : 1, 2, or 3 "Conf Sect"

Select with the right button the number of magnetic strips integrated in the track. If this parameter has been changed, the system automatically executes a **RESET** and return in fashion **STOP**.
WARNING ! A bad configuration unavoidably leads to a defective reproduction of data.

5th Impulse to the left button: this takes you to the **Main Menu 2,**
sub-menu -10 - :
TEMPERATURE SENSOR TYPE and MEASUREMENT UNIT SETTINGS :
"Conf T1 C, T2 C, T1 F or T2 F"

With the right button you select your sensor type and your measurement unit:

T1°C = All **water** temperature sensors in **CELSIUS**
T2°C = **Cylinder head** temperature sensors in **CELSIUS**
T1°F = All **water** temperature sensors in **FAHRENHEIT**
T2°F = **Cylinder head** temperature sensors in **FAHRENHEIT**

6th Impulse to the left button: this takes you to the **Main Menu 2,**
sub-menu - 11 - :
ENGINE TEMPERATURE ALARM SETTINGS. "Conf ALAr"

> With the right button you select your target for the temperature alarm.
> To scroll faster you hold the button.

7th Impulse to the left button: this takes you to the **Main Menu 2,**
sub-menu - 12 - :
RESET TO FACTORY DEFAULT SETTINGS : "Conf dEFt"

With right button the system reset to the default settings The default settings are:
> **- D** : Direct RPM reading.
> **- 2** : 2 Strokes
> **- 1 Strip** : 1 Magnetic Strip on the track.
> **- T1°C** : All water temperature sensors in CELSIUS
> **- 50°** :Temperature alarm.

When in one of the menus the buttons are not activated for longer than 120 seconds, the system automatically returns to the mode STOP.

5° RECORDING MODE "rec"

This option is linked with only the software (ALFANO_VUE 1.1). This allows you to record the engine rpm in 6'36''80 hundredths of a second every 0.2 seconds. This provides you with:

> 1) the various engine **rpm** at any point on the track.
> 2) the vehicle acceleration.

How to switch the ALFANO PRO to the RECORD mode " **rec**"?

Before accessing to this mode make sure that the number of magnetic strips are properly set in the LAP TIMING Mode.
WARNING! A bad configuration unavoidably leads to a defective reproduction of data.

First bring the ALFANO PRO into position : "Best time and maximum engine speed of all recorded circuits". **(See: Chapter 2 "Mode of operation").** The display lasts for 2 seconds.
Press the left button (1) to start the new option in the ALFANO PRO during these 2 seconds.

RECORDING (rec)
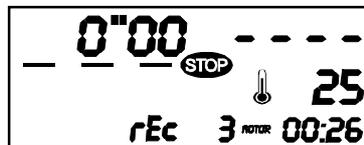
Mode of operation

To verify the number of magnetic fields programmed, (number of bars displayed on the left of the **STOP**). Press the right push button **(2)** **STOP** clears, to start recording the systems waits for the next magnetic strip.
If you press the right push button **(2)** again during recording the system restarts recording from zero.

Change to **STOP** mode (end recording)

> 1) When the memory is full (counter shows 6'36''80 hundredths of a second) the system automatically switches to the STOP mode.
> 2) Press the left button (1) to switch the system to the STOP mode and recording is stopped.

Transferring the recorded data to a PC

> If the left push button **(1)** is pressed in the **STOP** mode the system shows **"PRINT"** together with the serial number of your **ALFANO PRO**. Confirm with the right push button **(2)**.

<u>Quit record mode and return to the lap timer mode for **ALFANO PRO**</u>

Simply press both push buttons for 2 seconds at any time.

<u>**NOTE**</u>**:**

When the ALFANO PRO is working with the new option the system loses all recorded data in lap timer mode, since the complete memory must be empty when the option is used. Similarly, all recorded data, in **RECORDING MODE "rec"**, is also deleted when the ALFANO PRO quits the **RECORDING MODE "rec"**.
The following options are available in the **RECORDING MODE "rec"**: **RPM** counter (**D Reading**), engine running time, engine number, engine temperature and the alarm for the engine temperature.

6° SAFETY MEASURES

In mounting the ALFANO, pay attention that the back side of the housing does not come into contact with the steering wheel so as to avoid damaging the housing.

In changing the battery, pay attention that the screws are not over-tightened. Tighten to the point where both sections of the housing meet. Battery used:**CR2450**

Application of the protective caps is absolutely **REQUIRED** if one of the electrical contacts is not being used in order to insure that your ALFANO electrical contacts remain clean and watertight.

In heavy rain the electrical contacts should be protected against water entry in order to insure the defect-free operation of your ALFANO. If water has already leaked in, the danger exists that the ALFANO will no longer receive impulses from the magnetic strips which could result in a faulty engine temperature display. The contacts then only need to be dried in order for the system to function again.

6° TRACKS WITH MAGNETIC STRIPS

Have a look at our Web site at : <u>www.alfano.be</u>

7. PRODUCT ALTERATIONS

The functional descriptions in this handbook are solely for information purposes. In order to keep up with the latest technical developments the manufacturer reserves the right to undertake alterations in the functional method of the devices at any time without prior notification of the customer.

8° GUARANTEE

The product is intended for competition purposes. All electronic breakdowns, breakages in the housing, and damaged cables which are attributable to a collision or are not covered under the guarantee. Equally, the guarantee is also canceled if the device has been opened. Only the manufacturer can decide as regards liability in the event of damages or defects of any kind. A guarantee of one year is granted for manufacturing defects (the invoice date applies).

Have a safe race