



KORSMIT

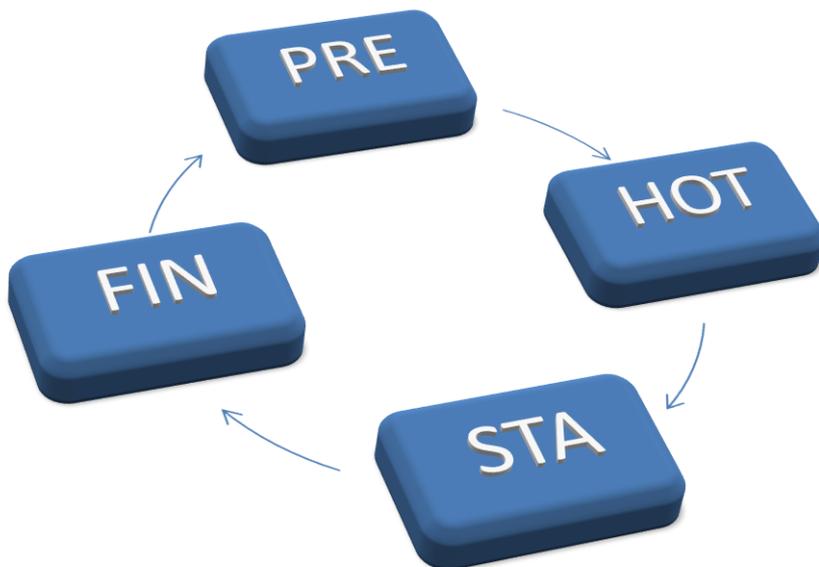
Rally Electronics

Operating Manual Alma 1 (XL)

Version 2.0.0

Korsmit Rally Electronics

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Content

- Content..... 2
- Summary: 1 page explanation..... 4
- 2.Installation..... **Fout! Bladwijzer niet gedefinieerd.**
 - Mount Tripmeter mechanically:..... **Fout! Bladwijzer niet gedefinieerd.**
 - Electrical Connections: **Fout! Bladwijzer niet gedefinieerd.**
 - Electrical connections:..... **Fout! Bladwijzer niet gedefinieerd.**
 - A1XL1.1 , (Alma 1 XL Off-Road): **Fout! Bladwijzer niet gedefinieerd.**
 - A1XL1.3:..... **Fout! Bladwijzer niet gedefinieerd.**
- 3.Setup..... 5
 - General 5
 - Signal Speed 5
 - Avarage Target Speed 5
 - View..... 6
 - Rally, Regularity or Dakar mode..... 6
 - Wheel circumference 6
 - Pulses per wheel rotation..... 7
 - Calibration Run..... 7
 - How it works..... 7
 - Perform the Calibration Run 8
 - Calibration Distance 9
- 4.Operation Rally mode..... 10
 - Screen Explanation 10
 - 10
 - Functionality: State Explanation..... 11
 - Explained graphically:..... 12
 - Explanation..... 12
 - Additional Information:..... 14
- 5.Operation Regularity mode 15
 - Screen Explanation 15
 - 15
 - Functionality: State Explanation..... 17

Explained graphically:.....	17
Explanation.....	18
Additional Information:.....	20
5. Stages Menu.....	21
Introduction.....	21
General.....	21
Stages.....	22
Total Time.....	23
Reset all Stages.....	23
Reset an individual stage.....	24
How to.....	24
Technical information and limits.....	25
Electrical:	Fout! Bladwijzer niet gedefinieerd.

Legend:

KNOP = A button that needs to be pressed.

PRE = Status

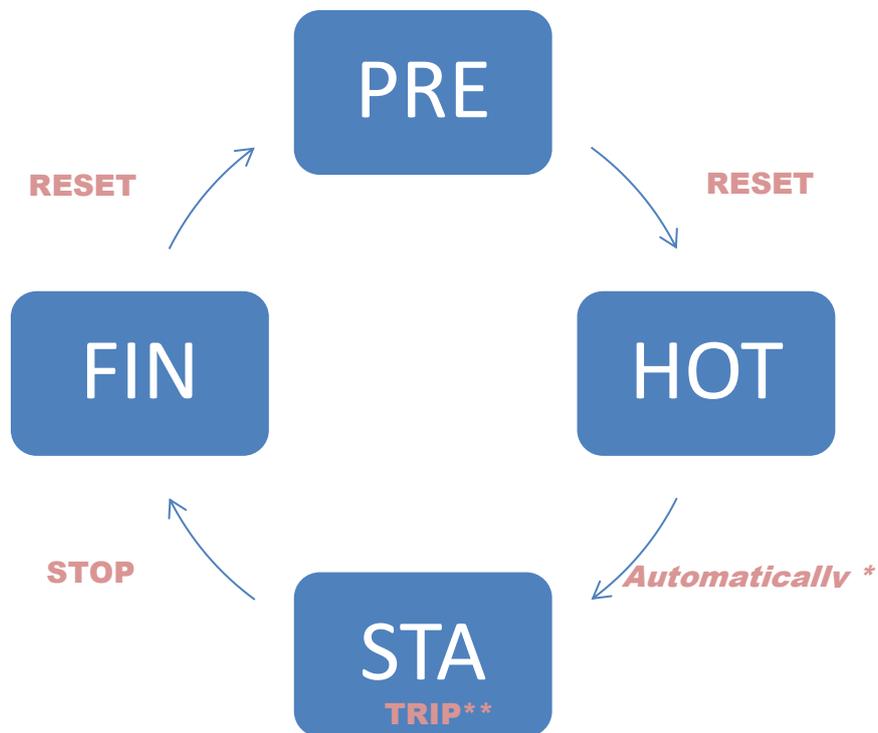
Summary: 1 page explanation

PRE: prior to the test

HOT: "ready to go"

STA: On the KP

FIN: FINished



*

1. Manual start: **TRIP**
2. Restore **HOT** status: **RESET**

** Only Regularity

1. Change Average Speed: **SETUP**
2. Activate Average Speed: **STAGES**
3. Forward/stop/reverse: **RESET** → Recover **HOT** status: **RESET (LONG)**

1. Setup

General

To open the Setup menu, press **SETUP** in the **PRE** or **FIN stage**. (For explanation about the stages, see Chapter 2.1 and 2.2)

The menu consists of the following components:

- Average target speed (only in regularity mode)
- Signal Speed
- Software version
- * Simple * or * extended * View
- Calibration distance
- * Rally * or * Regularity * mode
- Calibration run
- Pulses per wheel revolution
- wheel circumference

The menu can be scrolled by the **TRIP** and **STOP** buttons.

With **RESET** you can leave the Setup menu.

Signal Speed

This menu item requires the External Display with Speed indication. In this menu item you can set the speed at which the display will generate a signal that a certain speed is exceeded.

To change the value you can use:

- Up (1): **SETUP + TRIP**
- Down (1): **SETUP + STOP**

Average Target Speed

This menu item is only available in Regularity mode.

In this menu item you can set the starting average target speed of the stage. This is the target average speed with which the tripmaster calculates and what should be your average speed that you want to drive. From this average speed, the average speed deviation (see chapter XXX) will be calculated. During the Special Stage and the Hot Stage you can adjust the average speed in the main screen. (see Chapter XXX)

To change the value you can use the following button combinations:

- Up (1): **SETUP + TRIP**
- Down (1): **SETUP + STOP**
- Fast Up (50): **STAGES + TRIP**
- Fast Down (50): **STAGES + STOP**

View

There is the choice between a complete (extended) view with a lot of information or a simple view with focus on only the necessary information. You can choose the best view for the circumstances and your own preferences. . Changing the view does not affect any of the data that is stored.

To change the view you can use any of the following button combinations:

SETUP + TRIP or

SETUP + STOP or

STAGES + TRIP or

STAGES + STOP

Rally, Regularity or Dakar mode

For optimal use of the Stages menu where your stages data is stored and the layout of the screen, there are 3 different modes. If the mode is changed all the data in the Stages menu will be lost. The Calibration information will **not** be lost so you do not have to re-calibrate the tripmaster.

To change the view you can use any of the following button combinations:

SETUP + TRIP or

SETUP + STOP or

STAGES + TRIP or

STAGES + STOP

After this change you will be asked if you are sure because the information in the SDtages menu is lost. You can choose "Yes" or "No"

Yes = **TRIP**

No = **STOP**

Wheel circumference

Adjust here the circumference of your wheel. This is often significantly smaller than the actual circumference because of the indentation off your wheel. The wheel circumference can be automatically measured by the means of the Calibration run. If you use multiple sets of wheels, you can perform an automatic calibration run for every set and input here the correct wheel circumference per set. Also this value can be increased or decreased if you want to do small changes to your calibration.

To change the value you can use the following button combinations:

○ Up (1): **SETUP + TRIP**

○ Down (1): **SETUP + STOP**

○ Fast Up (50): **STAGES + TRIP**

○ Fast Down (50): **STAGES + STOP**

Pulses per wheel rotation

In this menu item you can set the amount of pulses you receive per rotation of the wheel. If you know this exact number, you can set it here. If you do not know this exactly, you can put in your best guess. If it is not an exact whole value, just put the closest number you think. If we do a calibration run (see Menu Item: Calibration Run) and we get an extremely small wheel circumference, we should decrease this number of pulses per rotation. If we get with a calibration run an extremely high wheel circumference, we should increase the amount of pulses per rotation. Any deviation from the exact real truth will automatically be compensated in the wheel circumference when a Automatic Calibration Run is performed. Being at approximately the correct wheel circumference gives as benefit that the size of the wheel circumference is normal and that there will not be big deviations of internal rounding of values.

To change the value you can use the following button combinations:

- Up (1): **SETUP** + **TRIP**
- Down (1): **SETUP** + **STOP**

Calibration Run

In this menu item we can choose to do a Calibration Run to perform an automatic calibration. (the official term is adjustment but everybody knows this as “Calibrating”). The Calibration Run will adjust **the circumference of the wheel** and **not** the amount of pulses per revolution.

How it works

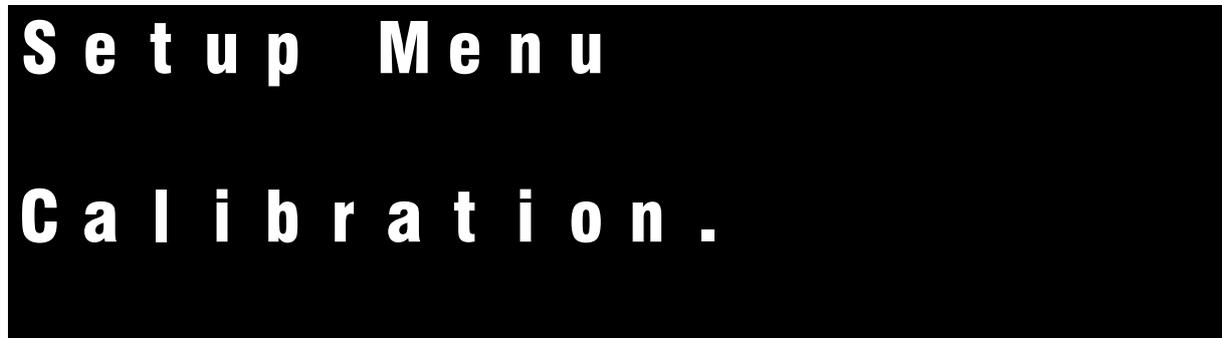
First of all you have to define a certain calibration distance (menu item: Calibration Distance). This distance is standard defined as 1000 meters but can be adjusted for a given calibration section. You drive up to the start of this section and activate the calibration Run (see next paragraph). Then you drive this exact section and stop at the finish to deactivate the calibration run. At this moment he calculates the measured wheel circumference and shows this in the display. After this, you have the possibility to accept this new wheel circumference or to stay with your old value. At this moment it can be that the measured number is deviating from the real expected wheel circumference. This can have several reasons:

- The number of pulses per wheel rotation is not correct. If the wheel circumference is not extremely big or small, you can accept the value.
- You did not drive the correct calibration distance. Do **not** accept the value.

Note: The measured value will not be the same as when you measure with a tape around your wheel. The tire has a flat bottom surface from the indentation of your wheel. It will measure the wheel circumference that belongs to the radius of the indented wheel. So, it will be always less than when you measure it.

Perform the Calibration Run

After setting the calibration distance you go in the setup menu to “Calibration Run”.



To activate the Calibration Run you can use any of the following button combinations:

SETUP + **TRIP** or

SETUP + **STOP** or

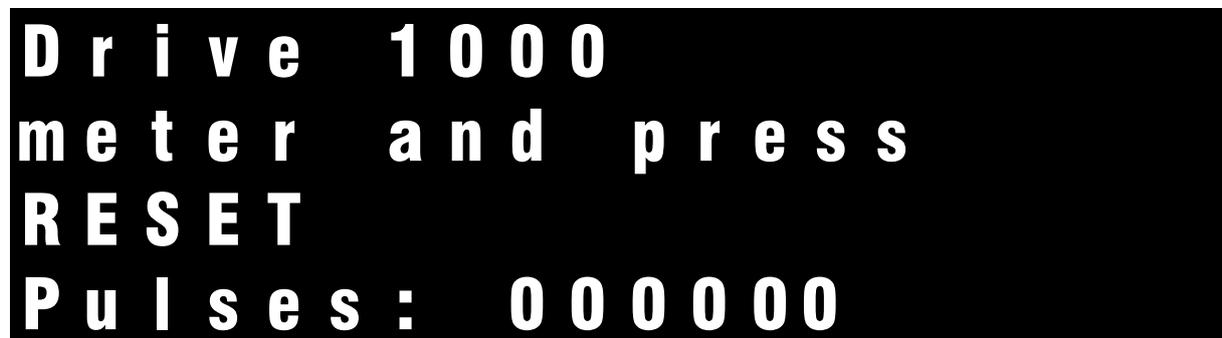
STAGES + **TRIP** or

STAGES + **STOP**



First drive to the beginning of the Calibration section (and Stop).

Then press **STOP** To start the calibration run. (**TRIP** to exit)



Now you can start to drive and you will see the amount of pulses that is measured during this run.

This are not meters but incoming pulses of your sensor. This can also be used during the installation of the tripmaster to see if you get pulses from your sensor.

At the end of the section when you have exactly driven the section distance (in this example 1000 meter), it is easiest to stop and you have to press the **RESET** button. He will give the following screen:



The screenshot shows a black background with white text. The first line reads "wheel cir : 1930 mm?". The second line reads "Trip = NO". The third line reads "Stop = YES".

If you want to accept the given value for the wheel circumference you press **STOP**. To decline this as a new value you press **TRIP**.

Calibration Distance

Because it is not always possible to use the same distance for the calibration, the distance can be adjusted for the calibration. In general, the longer the distance, the more accurate the calibration (if your calibration section is accurate) This can come in handy if the Organization of a regularity event gives a stage/section as a calibration section. . This distance can then be entered and driven and you calibrate your tripmaster to the one that is used by the organization (if they did everything with 1 device, with 1 setting in 1 car!!). In this case, it does not even matter if your device deviates from the truth (if 1 meter is really 1 meter) because it is the same as the one that the organization does all the (distance) measurements with.

To change the value you can use the following button combinations:

- Up (1): **SETUP + TRIP**
- Down (1): **SETUP + STOP**
- Fast Up (50): **STAGES + TRIP**
- Fast Down (50): **STAGES + STOP**

2.1. Operation Rally mode

Screen Explanation

Extended view:

The extended view screen displays the following information:

- Trip 2:** 000
- Trip 1:** 00
- Special Stage number:** 1
- Stopwatch (MM:ss,HH):** 0:02,40
- State:** FIN
- Maximum driven topspeed:** 000
- Stopwatch from 0-100 km/h:** 02,40
- Current speed:** 000
- Average speed:** 000.00

Simple view:

The simple view screen displays the following information:

- Trip 2:** 000
- Trip 1:** 00
- Special Stage number:** 1
- Status:** FIN
- Stopwatch (MM:ss,HH):** 0:02,40
- Current speed:** 000

Only in PRE and FIN status (for the connection stages):
Current speed

ITEM	DESCRIPTION
TRIP 1	The trip distance in meters. This can be resetted by the TRIP button. Above 10 meters, the value will be rounded down to every 10 meters for readability
TRIP2	Total Special Stage distance.
SPECIAL STAGE NUMBER	Special Stage number. This is also the Special Stage number that can be found in the Stage storage section, the Stages menu.
STATE	The State where you are. There are 4 states: PRE, HOT, STA, FIN
STOPWATCH	Stopwatch: Minutes, seconds, and hundredths in steps of 0.04 s
MAXIMUM DRIVEN TOPSPEED	The maximum driven topspeed on the Special Stage in Km/h
STOPWATCH FROM 0 TO 100 KM/H	A stopwatch in seconds and hundreths which stops automatically at 100 km/h.
CURRENT SPEED	Current speed in Km/h
AVARAGE SPEED	The average speed on the Special Stage.

Functionality: State Explanation

The trip meter goes through 4 States every time when driving and capturing a Special Stage:

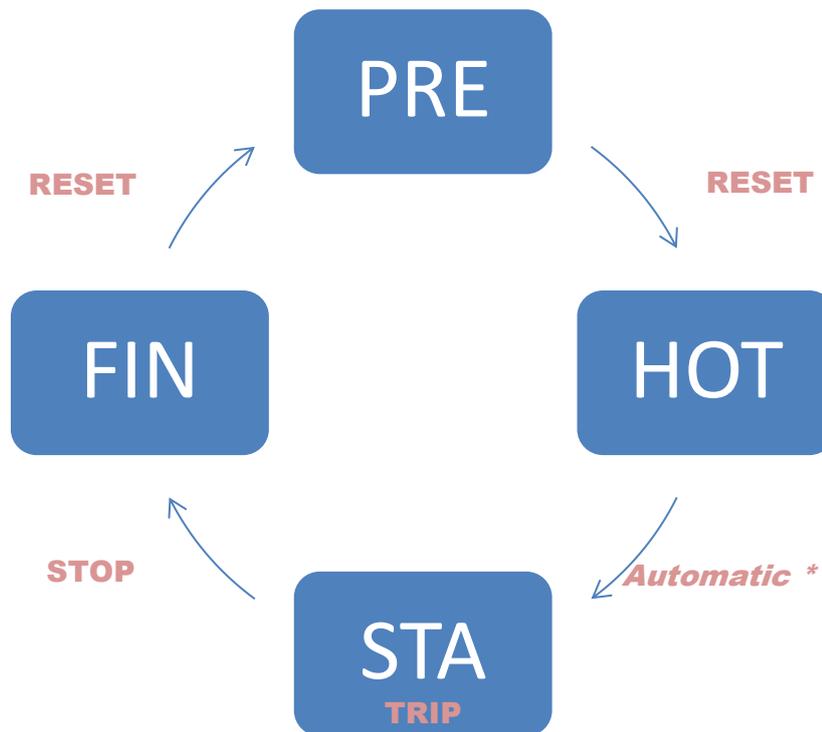
PRE: Before the Special Stage

HOT: "Ready to Start"

STA: Driving the Special Stage

FIN : FINished

Explained graphically:



*Remarks:

1. Manual Start, suppressing the automatic: **TRIP** (Release)
2. Recover to **HOT** state: **RESET**

Explanation

PRE

In this state you can drive towards your Special Stage. You can use the **TRIP** button to reset your **trip 1** to follow your roadbook to the start of your Special Stage. In this state you can open the Setup and Stages Menu by pressing the **SETUP** and **STAGES** buttons.

When you are completely stopped at the Start Line of the Special Stages, you press the **RESET** button to go the **HOT** Stage.

If you want to suppress the Automatic Start function, you can already push your **TRIP** button while pressing the **RESET** button to go to the **HOT** Stage.

HOT

The tripmaster is resetten. All Values go to 0 and the Stages number will start blinking, indicating that the Tripmaster is ready. You are ready to start. If you are surpressing the Automatic Start function by pressing the **TRIP** button, the Stage number will not be blinking.

Automatic Start: When the vehicle starts moving the Tripmaster goes to the **STA** stage and starts.

Manual Start: When you release the **TRIP** button the Tripmaster goes to the **STA** stage and starts.

If, for any reason, you want to go back to the **PRE** stage, you can press the **STAGES** button.

STA

You drive on your Special Stage and the Stopwatch is running and the distance is counting.

You can press **TRIP** to reset your **Trip 1** value to zero to measure the distance from corner to corner.

By pressing **RESET** you can return to the **HOT** state. Use this button if, by accident, the autostart function is triggered while you are not started yet. You will get a Yes/No menu:

Stop = YES = Reset all and back to **HOT**

Trip = NO = back to **STA**. The information is not lost and everything continued counting in the background.

With the **SETUP** button you can freeze all screen information temporarily. All information will continue counting in the background and is displayed again when releasing the **SETUP** button.

Finally you stop the Stopwatch with the **STOP** button. This you have to do when crossing the Finishline. At this moment, the State will go to **FIN** and all Special Stage information is written to the **Stage Menu**.

FIN

This is the State after you have driven the Special Stage. All information is written to the **Stage Menu** and you can read your Information on the screen. Your **Trip** distances continue on measuring while this complies with your roadbook for the **Liason** stages.

You can still use the **TRIP** button to reset your **Trip 1**.

In this stage you can go to the **Setup Menu** by pressing the **SETUP** button and you can go to the **Stage Menu** by pressing the **STAGES** button.

To Continue on to the next state, **PRE**, you have to press the **RESET** Button and you continue with your next Special Stage. (see top of this section)

Additional Information:

1. When you put the car in reverse, “**REVERSE**” will appear in the top right corner of your screen and the trip distances will count backwards.
2. During these stages you can use the Simple or Extended view. See **Setup menu**.

2.2. Operation Regularity mode

Screen Explanation

Extended view:

The extended view screen displays the following data points with callouts:

- Trip 3:** 0
- Trip 2:** 0
- Trip 1:** 0
- Stage number:** 1
- Stopwatch (MM:ss,HH):** 0 : 02 , 40
- State:** F I N
- Maximum driven topspeed:** 0 0 0
- Current Speed:** 0 4 6
- Deviation in meters on position of Target Average Speed:** - 1 0
- Target Average Speed:** 0 3 0
- Average Speed:** . 8 6

Simple view:

The simple view screen displays the following data points with callouts:

- Trip 3:** 0
- Trip 2:** 0
- Trip 1:** 0
- Stage number:** 1
- Stopwatch (MM:ss,HH):** 0 : 02 , 40
- Status:** F I N

ITEM	DESCRIPTION
TRIP 1	The trip distance in meters. This can be resetted by the TRIP button. Above 10 meters, the value will be rounded down to every 10 meters for readability
TRIP 2	Total Special Stage distance.
TRIP 3	Total Event Distance
STAGE NUMBER	Stage number. This is also the Special Stage number that can be found in the Stage storage section; the Stages menu.
STATE	The State where you are. There are 4 states: PRE, HOT, STA, FIN
STOPWATCH	Stopwatch: Minutes, seconds, and hundredths in steps of 0.04 s
MAXIMUM DRIVEN TOPSPEED	The maximum driven topspeed on the Special Stage in Km/h
DEVIATION IN METERS ON POSITION OF TARGET AVERAGE SPEED	<p>This is the deviation in meters from where you should be when you would have driven always exactly on your ideal average speed. If there is on the display “-100”, that means, that you are hundred meters behind. You should have been 100 meters further now. While, if you change your average speed while driving (while being in the STA state), this value will keep your deviation. Therefore it can be that your current average speed measurement is higher than the target and There is still “-100” in the display. This is correct, while in the complete stage, you are still behind from where you should be if you were already behind while switching the average speed. The deviation is kept but the average speed is restarted when a new target average speed is activated.</p> <p>So; if the value is negative you should increase your speed. If the value is positive you should decrease your speed.</p>
CURRENT SPEED	Current speed in Km/h
TARGET AVERAGE SPEED	The average speed which you should drive. This can be changed and activated during driving of the stage (STA state). When activated, the Average speed starts counting again from 0 but the “Deviation on position of the target average speed” keeps its deviation so you can still compensate for that.
AVERAGE SPEED	The average speed on the Special Stage. If you change the target average speed and activate this, the average speed calculation is also restarted.

Functionality: State Explanation

A stage is a “travel” between two TC’s. While in Regularity, the stages can follow each other (you drive from TC to TC) you have to go through different stages(*) in the TC zone.

The trip meter goes through 4 States every time when driving and capturing a Stage:

PRE(*): Before the Stage

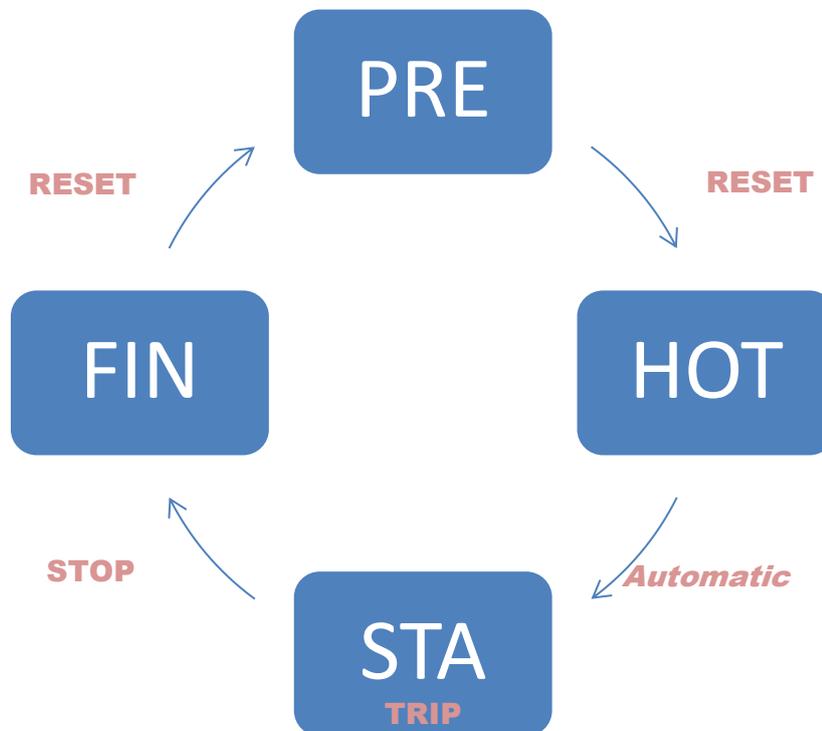
HOT : “Ready to Start”

STA : Driving the Stage

FIN (*): FINished

(*) The States **FIN** and **PRE** Should be activated sequentially within the TC zone when TC’s are following each other directly. (driving from TC to TC to TC) (**RESET**).

Explained graphically:



Remarks:

1. Manual Start in **HOT** State, suppressing the automatic: **TRIP** (Release)
2. Recover to **HOT** state: **RESET (Long)**
3. Counting backwards or stop counting: **RESET**
3. Changing Target Average speed on **STA** State:
 - **SETUP** to Change
 - **STAGES** to activate

Explanation

PRE

In this state you can drive towards your Stage. You can use the **TRIP** button to reset your **trip 1** to follow your roadbook to the start of your Stage. In this state you can open the Setup and Stages Menu by pressing the **SETUP** and **STAGES** buttons.

When you are completely stopped at the Start Line of the Stages, you press the **RESET** button to go the **HOT** Stage.

If you want to suppress the Automatic Start function, you can already push your **TRIP** button while pressing the **RESET** button to go to the **HOT** Stage.

HOT

The tripmaster is resetten. All Values go to 0 and the Stages number will start blinking, indicating that the Tripmaster is ready. You are ready to start. If you are surpressing the Automatic Start function by pressing the **TRIP** button, the Stage number will not be blinking.

Automatic Start: When the vehicle starts moving the Tripmaster goes to the **STA** stage and starts.

Manual Start: When you release the **TRIP** button the Tripmaster goes to the **STA** stage and starts.

If, for any reason, you want to go back to the **PRE** stage, you can press the **STAGES** button.

STA

You drive on your Special Stage and the Stopwatch is running and the distance is counting.

You can press **TRIP** to reset your **Trip 1** value to zero to measure the distance from corner to corner.

By pressing **RESET(long)** you can return to the **HOT** state. Use this button if, by accident, the autostart function is triggered while you are not started yet. You will get a Yes/No menu:

Stop = YES = Reset all and back to **HOT**

Trip = NO = back to **STA**. The information is not lost and everything continued counting in the background.

By pressing **RESET(short)** you can change manually from backwards to not counting and reverse counting. If the pulscounting is stopped, no meters are measured. When reverse is selected, all

meters that are measured are deducted from all trips. When the car is put in reverse, the reverse will go to normal or normal will go to reverse. To go back to normal counting, press **RESET** until the state (**STA**) is displayed again in the top right corner of the display.

With the **SETUP** button you can change the Target Average Speed. When pressing it shortly, the value will increase or decrease, when pressing it long, increase will change to decrease or decrease will change to increase. This will only change the value that is displayed but **not** the value the Tripmaster is using to calculate. Therefore as soon as you can start changing this value, you can start doing this.

To activate the new Target Average Speed you press and release the **STAGES** button. When releasing, the new Target Average speed is used and the average speed measurement is reset to 0. The *Deviation of the Average Speed (in meters)* will keep its deviation in meters so you can still compensate for that.

In short:

- up: **SETUP (short)**
- Change decrease/increase: **SETUP (Long)**
- Down: **SETUP (kort)**
- Start new average measurement*: **STAGES (Release)**

Finally you stop the Stopwatch with the **STOP** button. This you have to do when crossing the Finishline. At this moment, the State will go to **FIN** and all Special Stage information is written to the **Stage Menu**.

FIN

This is the State after you have driven the Stage. All information is written to the **Stage Menu** and you can read your Information on the screen. Your **Trip** distances continue on measuring while this complies with your roadbook for the **Liason** stages.

You can still use the **TRIP** button to reset your **Trip 1**.

In this stage you can go to the **Setup Menu** by pressing the **SETUP** button and you can go to the **Stage Menu** by pressing the **STAGES** button.

To Continue on to the next state, **PRE**, you have to press the **RESET** Button and you continue with your next Special Stage. (see top of this section)

If there is no Liason stage but the TC are following directly after each other, you have to go to the **PRE** stage within the TC zone by pressing **RESET**

Additional Information:

1. When you put the car in reverse, “**REVERSE**” will appear in the top right corner of your screen and the trip distances will count backwards. (this can also be manually activated).
2. During these stages you can use the Simple or Extended view. See **Setup menu**.

3. Stages Menu

Introduction

In the Stages menu you can find all saved information about your stages. The Rally, dakar and regularity mode have their own Stages menu layout with different items and different sizes of the values.

General

To go to the Stages menu you press the **STAGES** button in the **PRE** or **FIN** state.

The Stages menu has the following menu items:

- The different Stages
- Total event time
- Entry to reset all stages (to be done before each event)

Next to the possibility to reset the complete event, you can also reset 1 individual stage so you can re-use that stage.

To go through the menu you use **TRIP** to go down and **STOP** to go up.

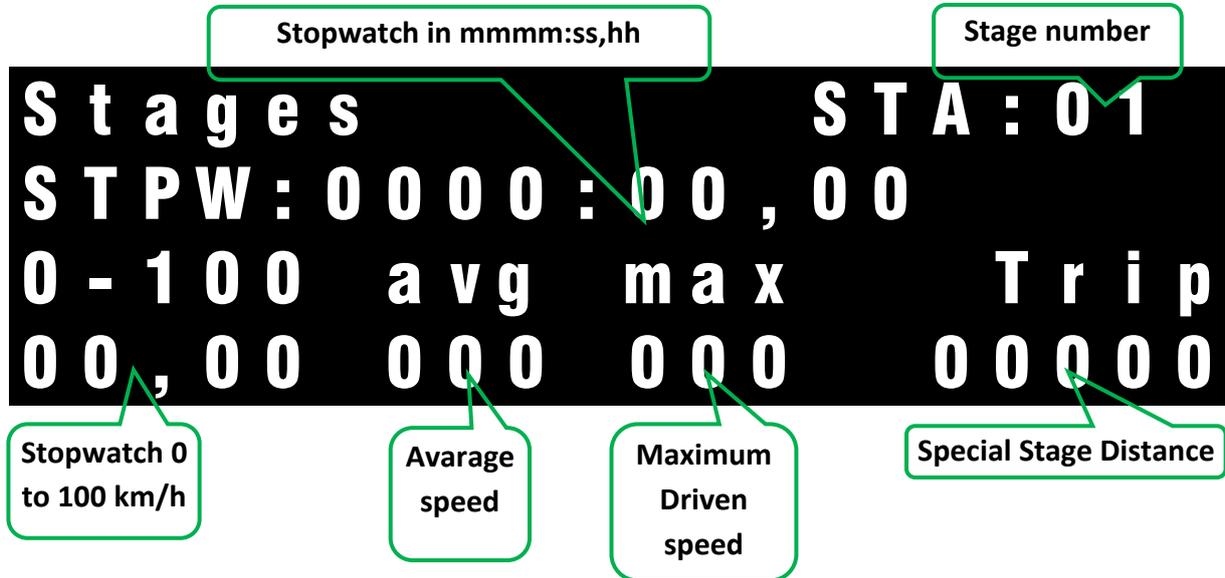
You can leave the menu in 2 ways:

- **Stages** button: You return where you were. (like a CANCEL or ESCAPE button)
- **RESET** button: You return and the selected stage will be activated. When the stage is already filled with information, you will not be able to activate this stage. If you want to overwrite the stage, you first have to remove all data from this individual stage (see reset an individual stage).

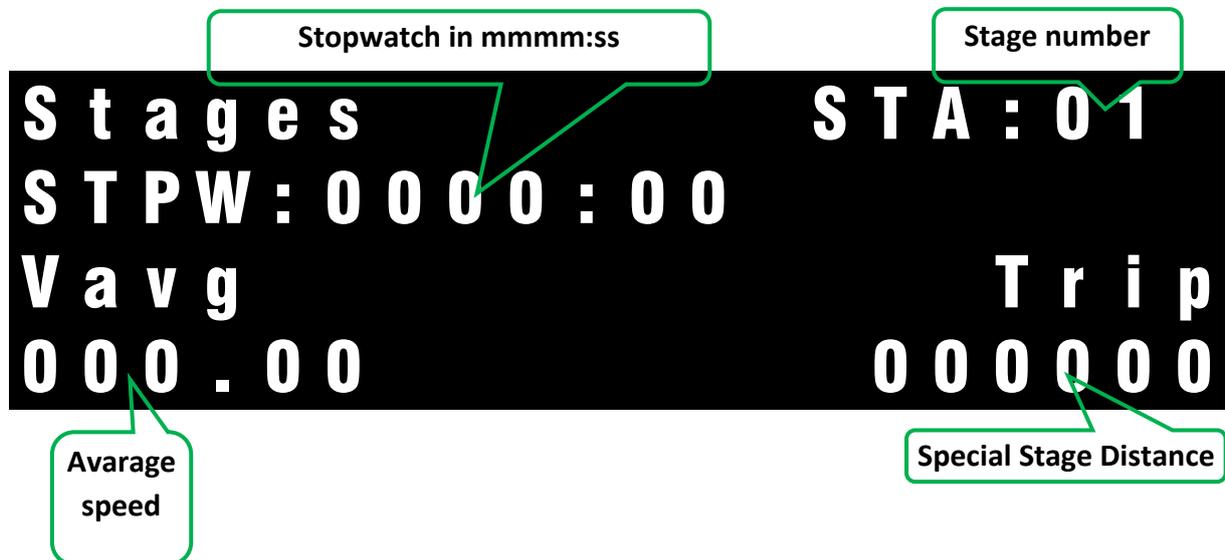
Stages

The layout and resolution of the different information in the Stages menu depends on the mode you are using: Rally, Regularity or Dakar. The layout of the stages you can see in the next part.

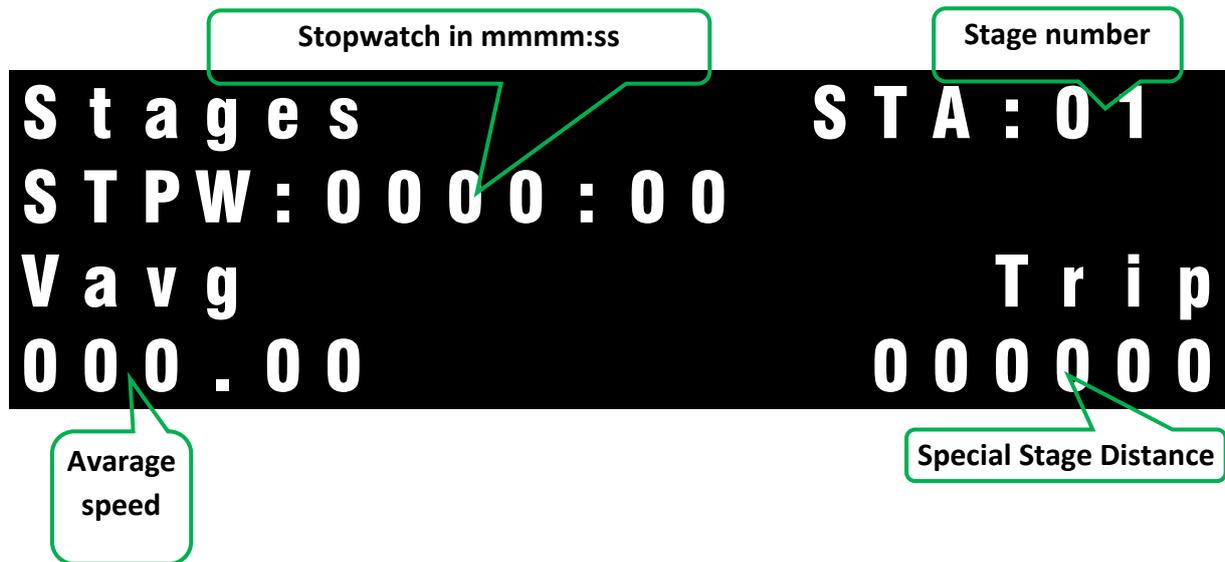
Rally:



Regularity:



Dakar:



Total Time

This menu item shows you the total time of all your stages. This is easy to compare with the time of the organization. To come there you do:

Select the 1 before last menu item (by selecting it with **TRIP** or **STOP**).

(The last menu item is to reset all stages)

This item will show you your total time.

Reset all Stages

The last menu item is to reset all Stages. All information of all stages will be lost. (ofcourse no setup information will be lost).

Select the last menu item (by selecting it with **TRIP** or **STOP**).



If you press the **RESET** button you get:

R E S E T A L L S T A G E S ?
T r i p = N O
S t o p = Y E S

Then press the **STOP** button the reset all stages. The total time (1 before last menu item) will also be reset to 0.

Reset an individual stage

You can reset 1 individual stage. All information in this stage will be lost.

How to..

Activate the stage you want to reset (by selecting it with **TRIP** or **STOP**).

Press the **SETUP** button.

You get:

R e s e t S t a g e : 4
T r i p = N O
S t o p = Y E S

If you press the **STOP** button you will reset the Stage.

Technical information and limits

Maximum stored stages:

- Rally: 30
- Regularity: 60
- Dakar:

Maximum Stage Distance:

- Rally: 65 km
- Regularity:
- Dakar:

Maximum Stopwatch time minutes

Maximum Speed km/h