KORSMIT

Rally Electronics

ALMA 1

OPERATING MANUAL

VERSION 5.0.1


KRE
Alma 1 XL
1 PRE
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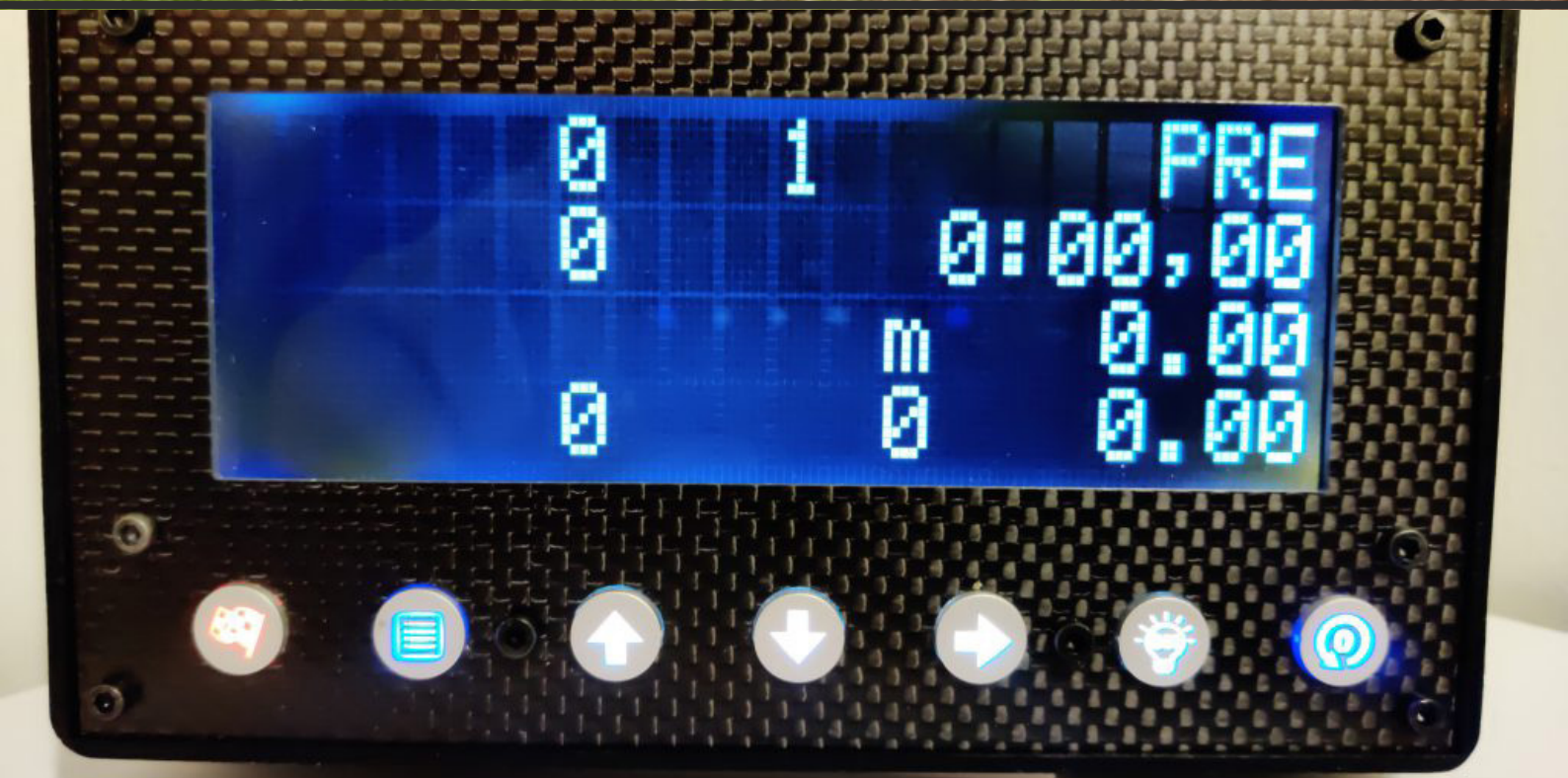
0
000 00,00 000 000.00
KRE Trip Stop Setup Stages Reset Dim


GTC
JUMBO
HR-VZ-41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INTRODUCTION

Welcome to the Alma 1 Tripmaster. The Alma 1 is the number 1 tripmaster of Korsmit Rally Electronics (KRE) and challenges all Tripmasters and Rally Computers currently out on the market in both price and performance. Besides a whole lot of options, features and possibilities, the Alma 1 can be used with multiple probes and has the unique feature of connecting the Tripmaster by Bluetooth with an Android App, to be able to change a lot of settings on the fly. Also a special GPS-variant will be launched in the near future.

Korsmit Rally Electronics is always actively developing her products and tries to keep up-to-date with the latest available technology on today's market. Therefore, all input is always welcome!

From small insignificant remarks about bothersome details to complete new requests and developments that can help us all enjoying our beloved Rally Sports to the max.

1.0 SETUP

After installation of the device in the vehicle, it is time to start it up. Although it powers up as being switched off, it still starts itself in the background to be able to detect the button. This can also take a couple of seconds.

When the power to the device is completely cut off, it does not lose its setup information or information stored in the stages menu.

Every time the device is switched off, it takes about 4 seconds before it can be powered up again.

To start the device, press shortly on the button. It will start up the device with a message of the model.

To power off the device, you have to press and hold the button until the arrows fill the complete screen. This can only be done in the *PRE-* and *FIN-s*tate.

1.1 Main Menu

During the PRE and FIN state, the MAIN MENU allows you to enter the SETUP MENU or the STAGES MENU. In the HOT- and STA-state, the MAIN MENU is more extensive as there are a couple of quick-select options. *(see 3.0 RALLY)*

To access the SETUP MENU press the blue button. Use the white and keys to choose SETUP and select with the white key.

To navigate the SETUP MENU, use the keys to scroll through the menus, use the button to change a setup-item. *(The upper-right will show ADJUST)*. Use the keys to change the values, use the button to change the numeral.

1.2 Calibration

To start a new calibration, use the keys to scroll through the setup menu to Setup 07: calibration distance.

This distance (m or 1/1000 mi) is the exact distance you're going to drive when calibrating. Use the key to change the distance, use the to adjust the distance and the to alter the numerals. Press again to finish.

Go to Setup 08: calibration. to start the calibration. The Tripmaster will ask if you're at the starting point of the calibration. Press if you are.

Drive the previously entered distance and press Stop when at the stopping line. The amount of registered pulses is given and both wheel circumferences are calculated (if two sensors are installed). Press again to confirm. The Tripmaster is now calibrated to the tyres currently in use.

It is advised to use your own measured calibration distance and *(if given)* the calibration distance provided by the organization of the Rally event in separate saves.

This can be accessed by Setup 5: surface/calibrations. Here, different save slots can be accessed for different measured calibration presets. For instance a combination of normal tyres, home calibrated; normal tyres, event calibrated and rain tyres *(with a different diameter compared to the normal tyres)*.

1.3 Setup Menu

Setup 1: sensor 1 w.cir.(mm)
and *Setup 3: sensor 2 w.cir. (mm)*
Alter the calibrated and calculated wheel circumference *(mm)* for sensor 1. Use for slight alterations after main calibration.

(scaling the wheel circumference larger means that, when driving the same distance, the tripmaster will cover less distance).

Use OK to select and ▲▼ to change the value. *(Note that this does not always correspond with the exact wheel circumference of the used tyres.)*

Setup 2: sensor 1 pulses/cir.
and *Sensor 4: sensor 2 pulse/cir.*
Determine the amount of pulses received per wheel rotation for sensor 1 and 2. In case there is no known amount of pulses, a best indication will also suffice.

Setup 5: tyres/calibrations
Select different save slots (normal, event, wet, snow) for different measured calibration presets. Information calibrated by Setup 1-4, Setup 7 and Setup 8 is stored here. Use save slots for different tyres. *(Saved information is stored when turned off or even when completely powerless).*

Using the 'Miles'-save slot with the correct calibration measurement displays all readings in mi instead of km.

Setup 6: use sensors
Determine which sensors are to be used. Only sensor 1, or only sensor 2, or the average between sensor 1 & 2 *(if both sensors are installed this is the general option to go for).*

Setup 7: calibration distance
Determine the distance used for calibration.

Setup 8: calibration.
Go through the calibration setup to determine the wheel circumference (stored in Setup 1 and Setup 3) to be used.

Setup 9: View Mode
There are two main view modes, the extended and simplified views *(1 and 2)*. Specified personal views can be implemented on request.

Setup 10: time
Display and adjust the clock time.

Setup 11: Bluetooth
Choose to turn Bluetooth on and off.

Setup 12: distance sprint or speed sprint
Selection between measuring time up till a certain speed or certain distance in sprint check.

Setup 13: sprint value
Determine up till which speed or distance value the stopwatch will count. Measured in *km/h* or *meters*.

Setup 14: light dim (1-10)
Select the brightness of the dimmer-function.

Setup 15: Driver Corr.: 0,0% Driver Correction factor (DCF)
This function has become obsolete and will be removed in the near future.

Setup 16: Correction pulses: pulses/click, distance/click
This setup relates to the wired 2-button or wireless 3-button clicker. Determine the distance each click adds or subtracts from the distance driven. Because the sensors only measure in pulses, only the pulses can be added or subtracted. Choose the pulses and correlating distance closest to the desired distance per click. The given distance is measured in milimeters *(mm)*.

Setup 17: speed with 0:
Determine the speed above which the distance-display surpresses the value of the last digit for readability. When driving below this speed, you can read the distance accurate up to 1 meter.

Setup 18: VavgGoal List: 1-20, with avg. goal speeds – automatic average speed changeover list
Compose a list of up to 20 pre-set average speed goal values, which can be changed in listed order during the Special Stage *(STA-state)*. The average speed goal values are measured in *km/h* or *mi/h*. Select the list by pressing the OK button, the upper-right shows SCROLL. Use the ▲▼ to scroll, select values by pressing ►, the upper-right will show ADJUST. Change the values by using the ▲▼ and change the numeral by using ►. Press OK again to confirm the changes and return to SCROLL and press OK again to leave the setup-menu.

Setup 19: view list of pre-programmed transition-points and recalibration-points

Setup 20:

Setup 21: use automatic list
Choose the way the automatic list, determined in the mobile app, is used: both changing the average speed on certain distance and the recalibration points; only the recalibration points are used or the automatic list is not in use. *(see for more information Automatic Average Speed and Recalibration)*

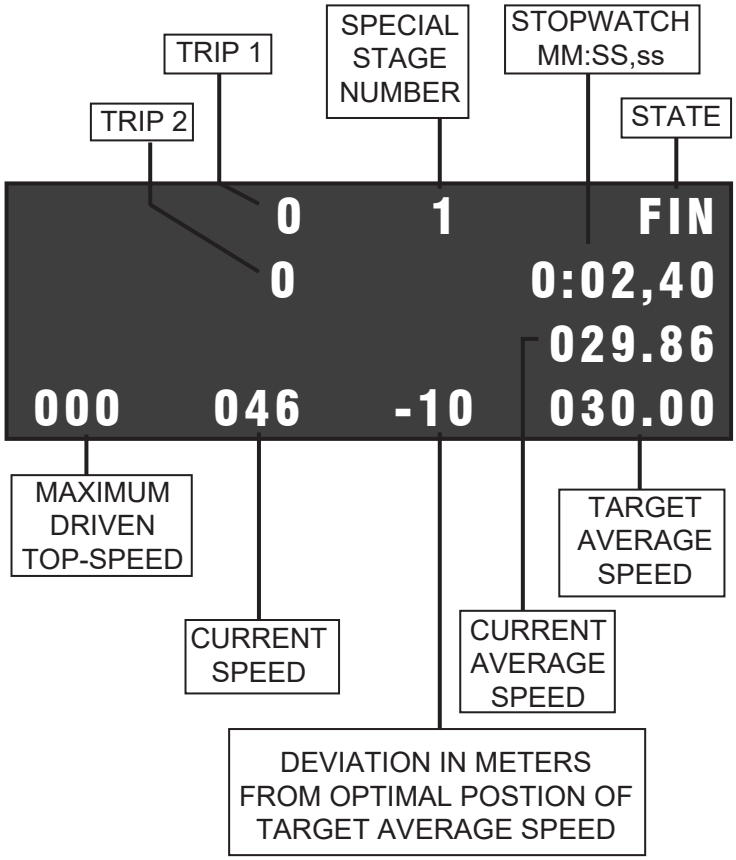
Setup 22:
Only used when using the finish-countdown-stopwatch or finish-countdown-distance in the external display. In this setup set the predicted finish time and finish distance to which the finish-countdown will be concluded.

Setup 23: change on distance, change on time
Determine whether a change in average speed from the automatic list is set on a certain distance or certain time. This setup-option can also be found in the QUICK MENU during the HOT- and STA-states using ☰ and OK.

"Do you want to load Stage # from memory (for recalibration)?" Yes or No.

If in Setup21: Use automatic list either Recalibration only or Completely automatic is selected, this question will be prompted with each switch to a new Stage. If yes is selected, the Tripmaster will look for any automatic lists uploaded from the mobile app corresponding with the right stage number. This can either be for only recalibration or fully automatic average speed target switching.

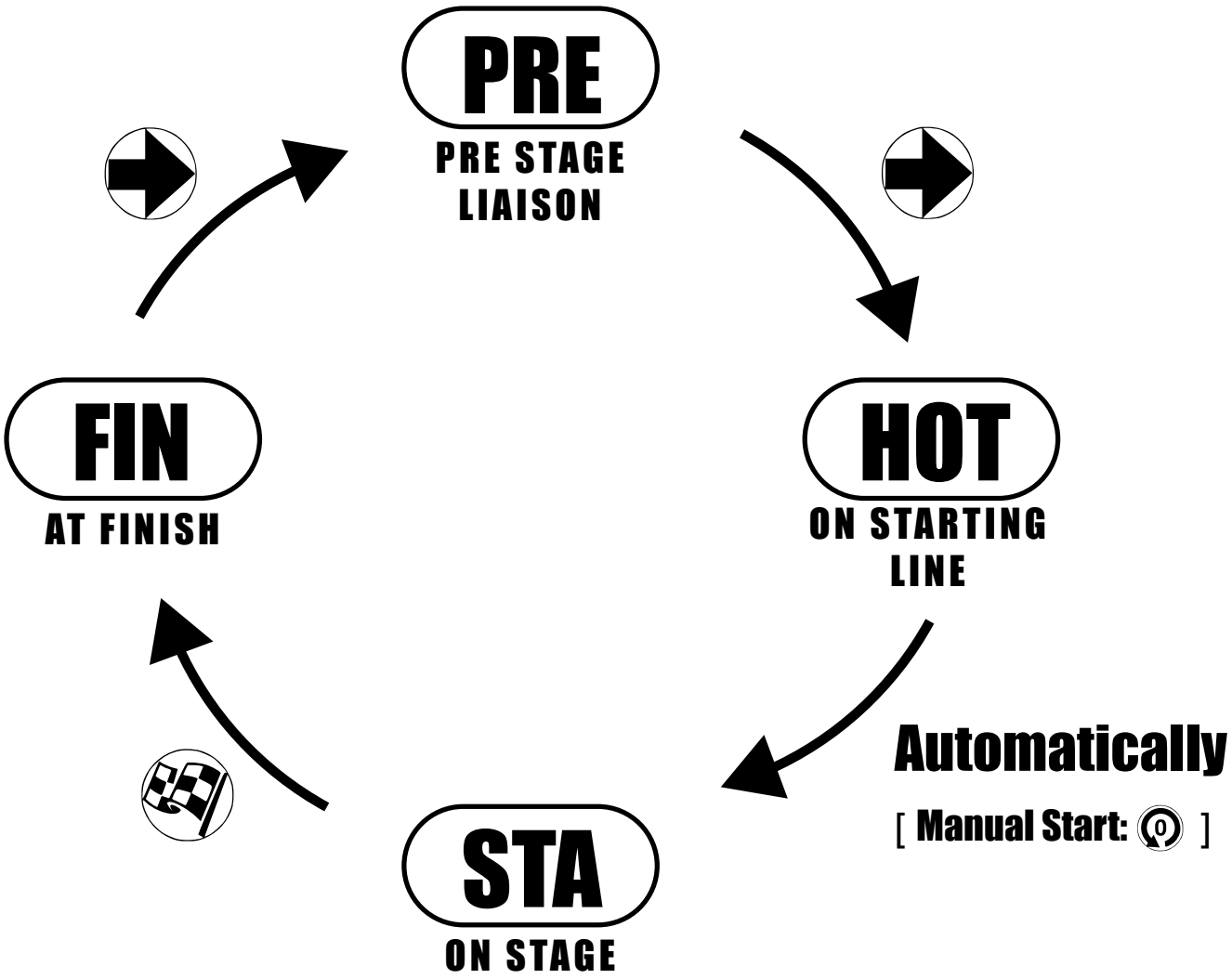
1.4 Display Explanation



ITEM	DESCRIPTION
TRIP 1	The Trip distance (in m or 1/100mi)
TRIP 2	The Total Special Stage distance (in m or 1/100mi)
STAGE NUMBER	The current Special Stage number (can be found in Stages menu)
STATE	The current State (PRE, HOT, STA, FIN)
STOPWATCH	Stopwatch: minutes, seconds, hundreths (steps of 0.04s)
MAXIMUM DRIVEN TOP-SPEED	The maximum driven top speed (in km/h or mi/h)
DEVIATION IN METERS FROM OPTIMAL POSITION OF TARGET AVERAGE SPEED	The deviation (in m) from where you should be when you would have driven exactly on your ideal average speed. '-100' would mean the car is 100 meters behind on the ideal driven distance at that moment in time. '100' would mean the car is 100m ahead of it's ideal target average speed distance.
CURRENT SPEED	The current speed (in km/h or mi/h)
TARGET AVERAGE SPEED	The target average speed to be driven. This can be altered on stage (see §2.6 Average Speed)

2.0 RALLY AND REGULARITY

The Alma 1 Tripmaster works with four different states, following the pattern of Rally Special Stages. First off, there is the route towards the Special Stage, the prepare mode *(PRE-state)*. While on the starting line, waiting for the countdown, the Tripmaster is set to the HOT-state. While on the stage, the Tripmaster automatically *(or manually)* switches to the stage mode *(STA-state)* upon starting. And upon finishing press and switch to the finish mode *(FIN-state)*, where all the stage-details like time and deviation from average speed can be viewed. Afterwards the Tripmaster is switched back to the PRE-state, in preparation for the next up Special Stage.



2.1 PRE-state

This state is meant for driving towards the Special Stage. Use ⓪ to reset your trip1 as assistance to roadbook guidance. Press ☰ to open the MAIN MENU and STAGES MENU.

When at a complete stop at the starting line of the Special Stage, press ➡ to switch to the HOT-state.

2.2 HOT-state

All values are reset to 0 and the Stages-number will start blinking, indicating that the Tripmaster is ready. The Tripmaster will automatically switch from the HOT-state to the STA-state once the vehicle starts moving. If you are suppressing the Automatic Start function, the Stages-number will not be blinking.

Automatic start: When the vehicle starts moving, the Tripmaster automatically goes to the STA-state and starts.

Manual start: Press *(and hold)* the ⓪ button. Upon releasing ⓪ the Tripmaster will go to the STA-state and starts. (*Even if the vehicle starts moving in the meantime, providing a delayed-start function)*

To return back to the PRE-state, press the 🏁 button.

2.3 STA-state

You're driving on the Special Stage and the Stopwatch is running and the Distance is counting.
Press ⓪ to reset the Trip1 value to zero.
To return to the HOT-state, long-press 🏁.
To end the stage, press 🏁 and switch to the FIN-state. *(Preferably on exact timing with passing the finish line of the Special Stage for accurate measurements).*

2.4 FIN-state

The FIN-state will show you the final collected data from the previous stage. This data can also be found in the STAGES MENU. The Trip distances continue measuring, in compliance with the roadbook for the liaison stages. Use ⓪ to reset Trip1.

To continue to the next PRE-state and prepare for the next Special Stage press ➡.
(If there is no Liaison Stage, but the TC's are following up directly after another, immediately switch to the PRE-state within the TC-zone.)

2.5 Main Menu in HOT/STA-state

Using , in both the HOT-state and the STA-state will show an extended MAIN MENU with a couple quick-select options, use to navigate and to switch MENU items. The quick-select items are as followed:

2.5.1 REVERSE, PAUSED, FORWARD

Manually select if the Tripmaster measures and counts upwards, downwards or is paused. This can be useful when a wrong route has been taken: put the Tripmaster in REVERSE when trying to get back to the main route (and PAUSED if turning the car around is necessary, making sure the extra meters from turning are not counted). If connected accordingly, it is also possible to automatically detect when the car is set in reverse or in forward.

2.5.2 Use sensors

Just Like Setup 6. Decide which sensors are to be used on-stage. In case that, due to intense driving, one of the sensors failes to function.

2.5.3 Delay distance, Delay stopwatch

If you are to arrive late at a self-start, it is still possible to start with the correct values using the following method. While driving to the self-start, to suppress the HOT-state automatically starting and switching to the STA-state, press and hold the button when switching from PRE-state to HOT-state. Release the button at exact original starting time. This way the recorded time will be measured correctly corresponding with the original given starting time.

To reset the measured distance, when arriving at the original starting line, select the Delay distance from the MENU, and follow the on-screen instructions.

This can also be done the other way around, by resetting the measured time and keeping the measured distance as is, by using the Delay stopwatch option.

2.5.4 Change @ time, Change @ distance

Determine whether a change in average speed from the automatic list is set on a certain distance or certain time. This setup-option can also be found in the SETUP MENU. *(Setup 23)* This is of importance when using the *Target average speed* or the M*anual average speed target list*.

2.5.5 Stages

In the STAGES MENU all information is stored about the previous driven Stages.
Use to scroll through the different Stages.

Each Stage shows the driven distance, the average speed and the maximum driven speed in the left column; the stage time in the upper-right and the 0-100 sprint time in the lower-right.

To reset a stage, press and follow the onscreen instructions.

To reset all stages, scroll down from Stage 1 to the option to reset all stages. It is advised to reset all stages prior to a new Rally Event.

Scroll down from Stage 1, past the reset screen, to view the total Event time driven across all measured stages.

To overwrite a stage, first reset that specific stage, and while viewing that stage's details select the stage using the button.

2.6 Average Speed

2.6.1 Target average speed

It is possible to alter the target average speed, shown in the lower-right of the main Tripmaster screen, in the PRE-, HOT- and STA-states. Use ⬆⬇ to change the values and use ➡ to alter the numeral. Press OK to accept. As long as the new target average speed remains blinking, it has not yet been activated. Only upon releasing the OK button will the new target average speed take into effect: if changing the target average speed on Stage, the former target value will remain active in the background until the new target average speed has been activated.

2.6.2 Manual average speed target list

Instead of changing the average speed target during the Stage, it is also possible to prematurely compose a list of target average speed values, which can be activated in sequential order. This list can be composed in Setup 18.

During the HOT-state and the STA-state, the next value on the list can be selected by pressing ➡. To let the new average speed target take into effect, press OK.
Meanwhile the old target average speed will keep running in the background. Select the next target average speed the same way.

It is even possible to alter the newly selected target average speed before activating it, by using ⬆⬇ prior to pressing the OK button. Altering manually switching the average speed target and using the average speed list is also possible.

The next target average speed is the one viewed on the initial screen of Setup:18. To reset the list, make sure the first value is viewed before leaving the Setup Menu. This value will then be up next when switching target average speeds.

Note: there is just a slight difference in changing the average speed target manually or changing from the list. changing the target average speed manually on stage: first ⬆⬇, then ➡, accept with OK; changing the target average speed from the list: first ➡, then accept with OK.

Note: the difference between Change @ time and Change @ distance. When changing average speed (both when using the target average speed manually or using the pre-made list) you want to change the average speed target at the right moment, even though you yourself may be off.

It is possible to either change the average speed at a certain time. Which means that you'd switch average speeds, even though you are currently not yet at the designated location to change, but the pre-calculated time of switch is now.

Or you change the average speed at a certain distance. Which means that, even though the timing is off, you are at the right location of speed alteration and you switch to a different average speed.

It is of importance to differ at which unit, either time or distance, you change, because the Tripmaster will recalculate the right distance/time accordingly. Usually the change @ time is used.

3.0 REGULARITY ADVANCED

3.1 Automatic average speed transitions

The Alma 1 also has the possibility to automatically switch the target average speed at specified points. For creating these lists with target distances, times and average speeds, the mobile application is used. Using this app it is also possible to alter most of the SETUP items, view info gathered about the driven Stages and change the Average speed target lists. The app, which can be found on Android phones in the Play Store, is named Korsmit Rally Electronics Alma 1. (*Currently the app is only available on the Play Store).*

The Alma app is connected to the Alma Tripmaster using Bluetooth. First make sure that both on the Alma Tripmaster *(Setup: 11)* and on your mobile device Bluetooth is turned on. Connect using the PIN-code provided with the Alma Tripmaster. Open the app and select App Configuration at the bottom. If the Alma is correctly connected, the model variant will be displayed in the centre box. If not, press Search for devices and connect using the PIN, the bluetooth device is called KREXXXX . Make sure that the selected Version is the latest available *(currently Version 6.x.x)*

(If the Alma and the app are connected, but somehow do not correspond, try turning Bluetooth on and off again in the Alma SETUP MENU (Setup 11). It is also possible to reset the connection using the app by pressing on the Korsmit logo in the main screen of the application.)

3.1.1 App menu: Setup

In the Setup-menu of the app a lot of the menu-items found in the SETUP MENU on the Alma Tripmaster can be edited. To download the corresponding values press the Download-button next to each of the items *(for some items this is done automatically and there will be no download button present).*

Edit the correct values and press the Upload-button on the right-side of the corresponding value. The list with wheel-circumference-values is automatically uploaded. It is possible to alter different saved pre-sets for both the Sensors as well as the amount of registered pulses per wheel revolution. (*P: [#number])* for both Sensor 1 and Sensor 2.

3.1.2 App menu: Stages

In the Stages-menu the gathered information on the previous driven stages can be found. Use the arrow keys to select a stage and press the Download-button to access the information. It is also possible to reset a single stage or reset all gathered information of all the stages.

3.1.3 App menu: Automatic Average Speed

The Automatic Average Speed function allows the Tripmaster to switch the average speed target automatically on a certain distance or time. This is done by creating a list of distances, times, and corresponding average speeds in the Alma app under the Automatic Average Speed menu.

Start by creating a new list, by pressing the list-button on the left of the row with buttons. Choose in the bottom of the screen which of the three – distance, time or average speed – is the unknown variable. *(Usually only two variables are given by the Rally Event organization, like at a certain distance a change to a certain average speed.)*

Enter the correct information on the corresponding line. A new line will be added to the list automatically. Or press the information-icon to the right of the line to manually add or remove a line. It is also possible to let the app automatically use the same time or distance interval for each new line. Simply check the corresponding 'use automatic distance/time' option and fill in the magnitude of each interval.

Fill in the corresponding Stage number in the upper of the green boxes on the lower right. *(0 is the currently selected stage on the Alma.)* And press the upload-button - second-from-right in the button row.

Use the Open, Save and Save As *(in order from left to right, next to the list-button)* buttons to store the list on your mobile device for later usage. Use the Bluetooth-button to (re)connect to the Alma and use the 0-button to reset all saved Automatic Lists on the Alma Tripmaster.

3.1.4 App menu: Manuel Average Speed

Using the Manuel Average Speed menu download, alter and upload the manual average speed target list as can be found in Setup 18 in the SETUP MENU of the Alma Tripmaster.

3.2 Distance alteration and recalibration

While a stopwatch – if started at the right time – will always stay accurate, distance driven (and therefore the deviation from average speed) can deviate from your optimal measurements. Either through cutting corners or a slight calibration offset compared to the measurements of the Rally Event organization.

To compensate this possible alteration in driven distance on stage there are two main possibilities. The first is recalibration, meaning that, at chosen route-book points, the Tripmaster's distance is reset to the corresponding distance of the route-book. The second is adding and subtracting in order to compensate for cutting corners (or taking too wide turns).

3.2.1 Recalibration (clicker)

In the Rally Regularity Sport it is sometimes necessary to recalibrate the Tripmaster's measured distance on stage with corresponding values from the routebook. This can be done by using pre-programmed distances in the app discussed at §3.1 and the third button of the three-button wireless clicker.

To select a certain point for recalibration, select a line in the list, press the information-button at the end of the row and select Select line for recalibration. The line will now become pink. Fill in the right Distance to which the Tripmaster is to reset. When within a certain range *(distance-wise)* of the recalibration-point, pressing the C-button on the wireless clicker will reset the Trip distance to the pre-programmed recalibration distance.

To Alter the range in which the Tripmaster will recalibrate if activated, use the lower green square on the lower right. This deviation is measured in meters.

Release the C-button on the wireless clicker at the exact moment a routebook situation is passed and, if pre-programmed correctly, the Trip2 will reset the current distance to the corresponding distance of the routebook. Ensuring that the right driven distance *(and therefore the right deviation from the average speed)* is used.

3.2.2 Adding and subtracting to the Trip distance (clicker)

Using the wired two-button or wireless three-button clicker it is possible to add and subtract a certain distance from the measured Trip distance. This can be used to counter 'missed' meters from the driver cutting corners or subtract measured distance caused by wheel spins (drifting).

The added or subtracted distance per click can be altered in Setup 16. Optimally you would try to find a distance per click where a small cut can be compensated with one click, a regular cut with two clicks and where deep corner cutting can be compensated with three clicks. This differs per car and driver and takes a lot of trial and error to perfect.

Use the A button on the clicker to add and the B button on the clicker to subtract.

3.2.3 App menu: Distance Adjustment

It is possible to alter the driven distance *(in STA and PRE)*. Enter the new overwriting distance, select Distance and press Upload. The amount of registered pulses is altered and the measured distance is overwritten.

It is also possible to alter the distance while the amount of registered pulses stays the same, meaning that the previously calibrated wheel circumference will be altered. This option can be used for on-stage calibration or calibration based on distances provided by the Rally Event organization.
Drive the given distance, enter the new (overwriting) distance, select Calibration and press Upload.

This option does alter the calibrated wheel circumference, so use with utmost caution.
It is advised to note down the original wheel circumferences and also use the calibration-function in the SETUP MENU for a more controlled calibration setup.

REGULARITY SUMMARY

CHANGING AVERAGE SPEED

Target average speed
Changing the target average speed manually on the go (PRE-, HOT-, STA-state).
See §2.6 Average Speed – Target average speed.

Manual Average speed target list
Pre-compose a list with different average speed values, from which you can activate different average speed values in sequential order.
See §2.6 Average speed - Manual average speed target list

Automatic average speed
Pre-compose a list based on times, distances and average speeds, in which you let the Alma Tripmaster calculate and automatically activate certain (changes in) average speeds on stage.
This is done using the mobile application.
See §3.1 Automatic average speed transitions

ADJUSTING AND RECALIBRATING DISTANCE ON STAGE

Adding and subtracting for conering
Use the wired two-button's or wireless three-button clicker's A and B button to add and subtract small distance-alterations. Used to counter corner cutting and wide driving.
See §3.5 Adding and subtracting to the Trip distance

Recalibration
Pre-compose a list (same list as Automatic average speed list) in which you let the Alma Tripmaster know at which moments the Tripmaster's distance is to be reset to a certain value (often route-book points/distances). Activation at these points is done using the C-button on the wireless three-button clicker.
See §3.2.1 Recalibration

Korsmit Rally Electronics
M: +31 (0) 76 5994922
E: udo@korsmit.com

Pastoor Bielarsstraat 22
4884 AK Wernhout
www.korsmit.com

KORSMIT
Rally Electronics