

Manual  
Alma Rally Plus  
&  
Alma Rally Plus Off-road

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Version 1.2.1

Korsmit Rally Electronics

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Legend:

- BUTTON** = the pressed button
- PRE** = Views or menu stage
- τρπ1** = Screens

## Summary

- Start tripmaster (ON/OFF Switch).
- Wait until text message is ended.
- When arrived to startline of the Special Stage (and there is no movement anymore), press **STOP** for at least two seconds.
- Start driving (when you are allowed 😊)
- When crossing the finishline, press **stop**
- When the light is too bright, toggle the light dim switch.

## Background

The Alma Rally Plus tripmaster is specially designed as a basic tripmaster with all necessary functions for driving rally like the Alma Rally but with 2 screens. It has for each display stopwatch, 2 distances and speed. It also has the autostart function. The light can be dimmed for perfect view during the day and night. It shares its housing and some electronics with the Double external display of the bigger tripmeters. Inside it is two times an alma Rally that only share the **STOP**, **TRIP**, **ON/OFF** and **DIM** buttons, the power supply and the Puls input.

The calibration can be manually adjusted by adjusting the puls distance. The value that is adjusted is the distance in millimeters per pulse.. It can also be automatically adjusted by calibrating the tripmeter over an exact distance of 1000 meter. Each display has to be calibrated independently but this can be done simultaneously.

Next to the distance, also te stopwatch can be adjusted, because of small deviations between different processors. This is a static deviation which means that the tripmeter is repeatable. If the stopwatch is adjusted, the different time measurements are accurate.

## 1.Information

### Views:

- Trip 1 (ΤΠ1) = Distance from corner to corner. Can be set to **ZERO** with the external foot switch or button
- Trip 2 (ΤΠ2) = Stage distance
- Speed (ΣΠΔ) = Current Speed
- Stopwatch (ΣΤΠ) = Stage stopwatch

## 2.Operation

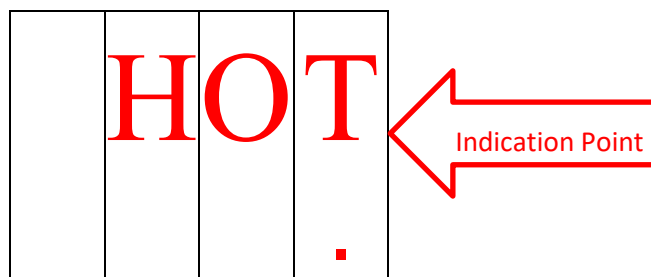
The Alma Rally Plus tripmaster has 3 functional buttons (next to the ON/OFF and light dim switches)

- **STOP**
- **SELECT** (2 times, 1 per display)
- **TRIP**

When the Alma Rally starts up, it starts with a rolling text "Alma Rally". When we need to go to the calibration menu, the **SELECT** button must be pressed during the end of the message. The calibration menu is described in chapter 3.

With the **SELECT** button, the different views can be selected.

When, in any view, the **STOP** button is pressed for about 2 seconds, the tripmaster goes to the **HOT** stage by blinking **HOT** in the screen. The bottom right point will start blinking (see picture 1, indication Point). The **Trip1**, **Trip2** and **STOPWATCH** values will reset to 0.



When the vehicle starts moving, the distance measuring and stopwatch starts and the indication points will be on continuously to indicate the measuring is going on.

Because sometimes on vehicles with a lot of pulses in a wheel, it can be that the vehicle is exactly stopped at the edge of a puls and a small (wind) movement can already activate the puls. Or there can be another reason for handstarting the system. This can be done by pressing the **TRIP** button the setting the tripmeter in the **HOT** stage. When the **TRIP** button is released(!), the measuring will start.

With the **SELECT** button the different views can be seen. The indication point will always indicate that the measuring is going on.

At the end of a stage, the **STOP** button can be pressed to stop the **stopwatch**. This will make it possible to read your time. The **Trip2** will continue measuring. This is done because a lot of roadbooks will give your distance from the beginning of your special stage.

### 3.Setup

When the Alma Rally starts up, it starts with a rolling text “Alma Rally”. When we need to go to the calibration menu, the **SELECT** button must be pressed during the end of the message.

The words  $\chi\lambda\beta$  (calibration menu) will appear for a short time to indicate that the calibration menu is entered.

In the first level of the menu we have 3 items:

$\Delta\iota\sigma$	Distance menu	to calibrate the puls distance for distance measurement	<i>1:distance</i>
$\Sigma\tau\pi$	Stopwatch menu	to calibrate the stopwatch	<i>2:Stopwatch</i>
1.1.1	Software version	The version of the current program	<i>3:Version</i>

You can go with the **SELECT** button through the menu items and a certain item can be select with the **STOP** button. This is the general rule for the complete setup menu.

#### *Canceling:*

While cancelling is not possible but might be necessary when doing for example a calibration run, the tripmeter should just be turned off. Values are saved at exiting an individual menu item or when the word  $\Delta ONE$  appears.

#### 1: Distance menu ( $\Delta\iota\sigma$ )

You can go with the **SELECT** button through the menu items and a certain item can be select with the **STOP** button. The menu consists of 2 possibilities:

<b>MAN</b>	Manual setup	to adjust the calibration value	<i>1:MAN</i>
<b>AYTO</b>	Automatic calibration	to do an automatic calibration run	<i>2:AUTO</i>

#### 1.1 Manual adjustment (**MAN**)

In this item, the value of the calibration appears. This are millimeters at the wheel circumference per incoming puls. This can be manually adjusted if a small deviation occurs (or if a different set of tires is put under the car with a certain calibration number).

When pressing the **SELECT** button, the value will increase or decrease. When **holding** the **SELECT** button, the word  $\delta\epsilon\chi$  or  $\iota\nu\chi$  will appear, indicating that a button press will increase or decrease the value. To leave the menu item, the **STOP** button must be pressed and the value is saved. The menu will go back to the *Distance menu*.

#### 1.2 Automatic Calibration (**AYTO**)

To do an automatic calibration we need to drive a defined distance of exactly 1000 meters (calibration section).

In the menu first **1000** will appear to indicate we need to go and drive 1000 meters. When we are at the beginning of the calibration section, we need to press **STOP** to start the calibration. We will see

the pulses counting in the screen. When arriving at the end of the calibration section, we need to press **STOP**. The newly measured calibration value will appear in the screen. When these value can be accepted, the **STOP** button needs to be pressed to accept the new value. The value will be saved and **ΔONE** will appear in the screen. If, for any reason, the value is not acceptable, the tripmaster needs to be turned off before pressing the **STOP** button. The tripmaster will go back to **δισ**

In this item, the value of the calibration appears. This are millimeters at the wheel circumference per incoming puls. This can be manually adjusted if a small deviation occurs (or if a different set of tires is put under the car with a certain calibration number).

When pressing the **SELECT** button, the value will increase or decrease. When **holding** the **SELECT** button, the word **δεχ** or **ινχ** will appear, indicating that a button press will increase or decrease the value. To leave the menu item, the **STOP** button must be pressed and the value is saved. The menu will go back to the *Distance menu*.

## 2: Stopwatch menu (**Δισ**)

This menu is to fine adjust the stopwatch. The stopwatch comes with a standard value from the factory, so can still be fine adjusted by hand to make the accuracy even higher.

You can go with the **SELECT** button through the menu items and a certain item can be select with the **STOP** button. The menu consists of 2 possibilities:

<b>MAN</b>	Manual setup	to adjust the calibration value	<i>1:MAN</i>
<b>AYTO</b>	Automatic calibration	to do an automatic calibration run	<i>2:AUTO</i>

### 1.1 Manual adjustment (**MAN**)

In this item, the value of the calibration appears. This are millimeters at the wheel circumference per incoming puls. This can be manually adjusted if a small deviation occurs (or if a different set of tires is put under the car with a certain calibration number).

When pressing the **SELECT** button, the value will increase or decrease. When **holding** the **SELECT** button, the word **δεχ** or **ινχ** will appear, indicating that a button press will increase or decrease the value. To leave the menu item, the **STOP** button must be pressed and the value is saved. The menu will go back to the *Distance menu*.

## 3: Version (**1.1.1**)

In this item, when the **STOP** button is pressed, the tripmaster will leave the setup menu and continue normally.

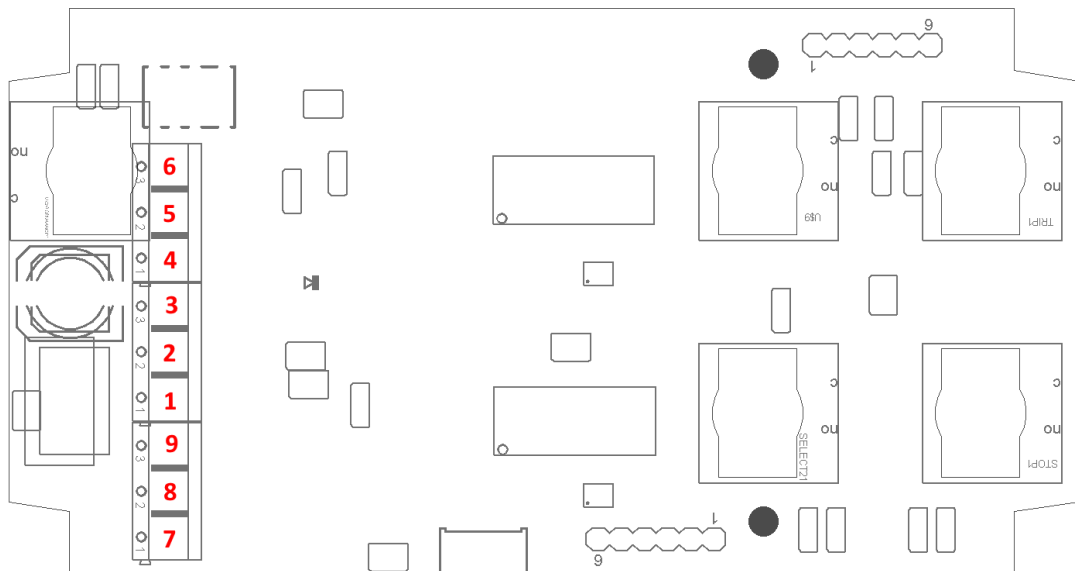


## 4.Installation

### IMPORTANT REMARKS:

- -The Alma Rally Plus has no fuse or protection against reverse polarity. Make sure all connections are correct before putting power on the device. Also make sure you do not remove or install any wires when there is power on the device while if you touch the printed circuit board with a GND or 12 Volt wire, you can make a short circuit which likely destroys the device!!
- Make also sure that the wires are completely under and inside the contact blocks and there are no parts of the wires exposed to the pcb.
- Use small wires. There is very little current used and big wires do not fit into the housing.
- Make sure that the pin-headers on the printed circuit board do not insert into your wires and nothing is blocked while closing the housing.

### Connections:



1	2	3	4	5	6
+ 12 – 24 Volt (in)	N.C.	GND (in)	Ext <b>STOP</b> Button	Input Puls	Ext <b>TRIP</b> Button
Obligatory	N.C.	Obligatory	Optional	Obligatory	Optional

7	8	9
+ 5 Volt (out) for External Display	Signal to external display	GND (out) for External Display
Optional	Optional	Optional