

1. Installing RD 5

Drill two 7mm holes in your instrument panel and make a hole for the connection cables and antenna to feed through your panel.

Mount RD on your instruments panel using 2 M6 studs. It is advised to use rubber between RD and your panel to dampen vibrations.

Connect your remote control (blue label), power cable (red label) and the optional GPS mouse (green label) to the cables of RD. If you use a Power cable from TMS Products the black wire is the + and the blue wire is the - connection to your battery!

RD will run from its built in battery when battery power is lost for a maximum of a few hours. The built in battery doesn't need to be charged as it is charged when external battery power is connected again. After approximately 2 hours the internal battery will be fully charged. If no inputs are received from the sensor, the buttons or the GPS mouse, the RD will go to sleep mode and switch off the display to save power. When an input is received the RD will wake up again.

GPS:

When the RD GPS mouse is connected or an other compatible GPS device, RD can fully work from GPS information. This is especially useful when the wheel sensor gets damaged during a rally. In this case RD will still work! After 100m no input from the wheel sensor RD will switch to the GPS as input for the distance and speed. RD can also show Course Over Ground (COG) in the case of a connected GPS i.e. it can be used as a 'cap repeater'. The serial output of the GPS device can be connected to the brown wire of the Power cable.

2. Wireless Sensor installation

Introduction:

The wireless sensor counts the number of wheel rotations and transmits this wirelessly to the RD Wireless Tripmaster.

Normally the sensor is placed at the front wheel. A magnet in the braking disc is sensed by the wireless sensor.

The Wireless Sensor is made of two parts: The Radio Box and the M8 sensor.

M8 Sensor installation:

The M8 sensor should be placed at a maximum of 5 mm from the front wheel magnet. See figure 1 below.

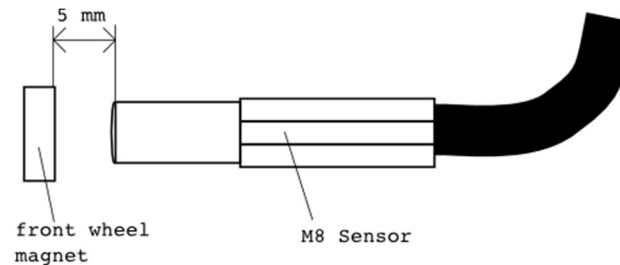


Figure 1. M8 Sensor Installation.

Radio Box installation:

The black Radio Box transmits the number of wheel rotations wirelessly to the RD Wireless Tripmaster. This box should be placed horizontally (e.g. the grey potting material facing the ground). The top and sides must be at least 1 centimeter away from any metal or carbon. See Figure 2.

Clearance area
(min 1 cm)

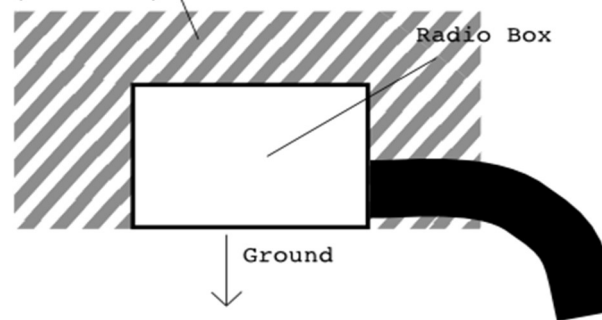


Figure 2. Radio Box Installation. Side View.

A good installation position for the Radio Box is on top of the brake caliper. The Radio Box is fixed with double sided tape and secured with two tie-wraps. See Picture 1.

The wire from the Radio Box to the M8 Sensor can be placed, and secured with tie-wraps, between the brake caliper and the front fork to protect it from damaging.

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Picture 1. Radio Box on top of brake caliper.



Setup menu items explained:

-Wheel:

This is the wheel circumference needed for RD to calculate the right distance traveled. During driving you can change this number to match your road book distances the best.

-GPS/road:

During driving it is possible to 'manipulate' the real distance measured by the GPS to match your road book distances the best.

- Time:

Set the clock of the RD here.

- Light:

Change the back light setting of the display. For sunlight conditions set the backlight to the maximum of 10, for low light conditions and during night time driving set the backlight lower.

- Mode:

Use the 10m setting for smaller type rallies. Set the mode to 100m resolution, i.e. only 1 digit behind the point, for bigger scale type rallies.

- Sensor ID:

This shows the ID of the wireless sensor that is matched with your RD.

To match a new sensor with your RD, use the + or - button to switch to 'searching'. Now move a magnet next to the wireless sensor (E.g. turn your wheel when the wireless sensor is already installed on the bike) to match it with your Tripmaster.

When finished setting up, go back to the main menu and scroll through the menu options using the + and - button on your remote control.

4. Start using RD

Start a new trip:

Go to the trip or stage mode and hold the Mode button till the following message appears:

```
rally-dash.com    v4.2
  Start?
  [blinking]
```

Hold the Mode button to reset your RD to 0.

TRIP mode:

123.4
TRIP / STAGE SPEED COG TIME

Use the trip mode to follow the most common type of road books. Push the upper and lower button of your remote control to adjust the total distance traveled and match it with your road book.

STAGE mode:

2 12.3
TRIP / STAGE SPEED COG TIME

Use the stage mode to zero the distance with each new stage of your road book. Push the + or - button on your remote control to increase or decrease the stage number.

SPEED mode:

145 89 KPH
81 TRIP / STAGE SPEED / COG TIME

Use the speed mode to monitor your speed. Also the average speed and maximum speed since the start of your trip are shown here.

COG mode: (only works when a GPS device is connected)

214 °
TRIP / STAGE SPEED / COG / TIME

Use the COG mode to display the true heading in degrees. With this functionality there is no need for a separate CAP (Course) repeater.

TIME mode:

12:34
TRIP / STAGE SPEED / COG / TIME

3. Setting up RD

Switch on the power to your RD. The display shows the menu options at the bottom:

```
\TRIP/ STAGE SPEED COG TIME
```

Use the + and - button on your remote control to scroll to the 'SETUP' menu option:

```
WHEEL : 218 CM ▲●
GPS/ROAD : 0.0 %
TIME : 13:43 [ ]
STAGE SPEED COG TIME \SETUP/
```

Push the Mode button to go into the setup menu:

```
WHEEL : 218 CM ▲●
GPS/ROAD : 0.0 %
TIME : 13:43 [ ]
LIGHT : 6
```

Use the + and - button to do the settings. The Mode button will bring you to the next item.

As long as the sensor is closed the sensor indicator will be filled. Turn your wheel to test the sensor connection to your RD. The sensor indicator should blink every time the magnet in your wheel passes the sensor. When an NMEA GPS device is connected to RD the GPS indicator will blink every time that GPS information is received.

Use the time mode to keep a 'rally time' on your steering wheel while rallying through multiple time zones and make sure you are in time at the start of a new trip.

You can switch between all modes while driving. For example if you want to calibrate your wheel circumference to better match the road book, you can do this while driving.

5. Tips & Tricks

- Always use an inline circuit breaker in the power line to your RD.
- Use an On/Off switch to power your navigation equipment. This will make sure the battery of your bike doesn't get drained when your bike is stalled for a longer period.
- When installing the wireless sensor, make sure there is no metal close to the wireless sensor and the antenna of the Tripmaster can 'see' the wireless sensor.
- For extra redundancy of your navigation equipment, and/or when you want to have a separate CAP repeater, use a second RD connected to an RD Power box. The RD Power box will feed through the GPS signal to your secondary RD.
- It is also possible to use RD with GPS as input only. Be aware that when start driving RD will only show distance after traveling 100m in a straight line as it wait for a wheel sensor input first.
- Note that when using the RD as a CAP Repeater that after a stop with your bike, the CAP Repeater will show 0 until you start driving again.

6. Specifications

Dimensions	80x46x22 mm
Weight	170 g
Housing	
Material	Aluminium
IP rating	IP67
Display	
Type	High contrast graphical LCD
Resolution	132x32 pixels
Dimension	51x15 mm
Backlight	White LED
Font	Optimized 9 mm and 13 mm
Power	
Input voltage	9-15 VDC
Input current	0.150 A (Maximum) 0.250 A (GPS mouse connected) 0.070 A (In sleep mode)
Protection	Reversed voltage and load dump
Backup battery	
Charge time	< 3 hours
Operating time	> 4 hours
Connectors	
IP rating	IP67
Size	8 mm
Connections	
Number of connections	3
Functions	red Power and GPS receiver blue Remote green RD GPS Mouse
GPS receiver input	
Protocol	NMEA 0183
Interface	RS232
Transfer rate	4800, 8, n, 1
Control Modes	Menu driven Trip, Stage, Speed, Course over ground (COG), Time



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