



RALLYSAFE RALLY CAR FITTING KIT MANUAL

## RallySafe® Fitting Kit Manual – RALLY CAR

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### **\*\*Product Disclaimer\*\***

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## RallySafe® Fitting Kit Components

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The RallySafe Fitting Kit includes:

- RallySafe Installation and Fitting Kit Instruction Sheet;
- 3-in-1 antenna with leads (Lead length and option of either bolt-on (preferred) or stick-on to be selected at time of order);
- Internal radio antenna with lead (Lead length to be selected at time of order);
- 6 – 24v wiring loom with plug (Length to be selected at time of order, making sure to include 300mm spare cable at mounting point);
- Mount, either roll cage or flat, with 25mm ball joint, to be bolted through dash;
- Adjustable mount connector/knuckle (Length to be selected at time of order).



(Contents may differ slightly to image shown)

**N.B. The RallySafe Display Unit is NOT part of the fitting kit and will be available at Documentation or Scrutineering**

## 12 Volt Power Supply (Please read carefully)

RallySafe requires a continual reliable power supply from 9 to 28 volts DC. For your safety and continuity of service, it is imperative that the unit is connected to an un-switched supply on the battery's positive terminal or the battery's positive side of the isolation switch. **Ensure that power is supplied to the unit at all times. Do not use an ignition switched power supply.**

We recommend a 5-amp (Max) blade type or similar quality fuse is used at the battery supply end of the RallySafe power lead.

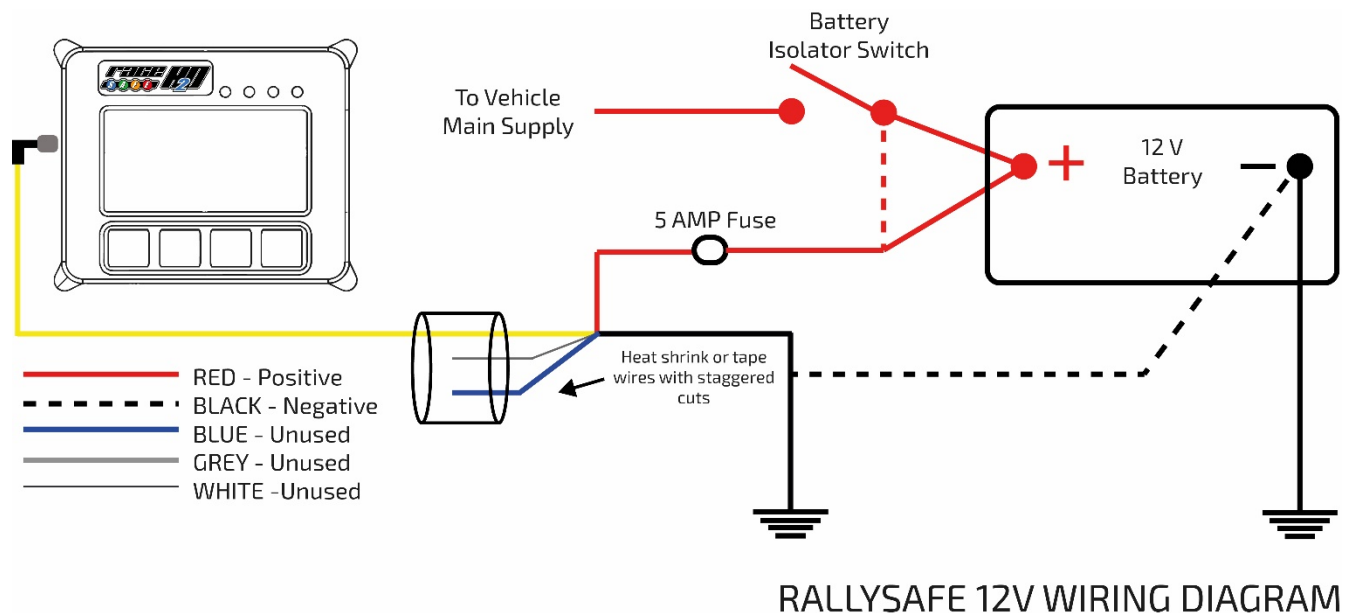
**Zero volts or battery negative can be picked up at any suitable earthing point providing the isolation switch does not switch the negative side of the battery.**

The RallySafe unit has an internal battery that is kept charged via the car's power supply. It acts as a reserve supply to power the unit in the case of an accident where a car's power supply is interrupted. i.e. car battery smashed or dislodged.

As the RallySafe unit is aware of movement and location, it will automatically go into power save/sleep mode after 5 minutes of no movement detected. However, the unit will continue to function when sending safety signals while on stage. The unit can be "woken" up by pressing any button or by movement of the car.

In the yellow power loom there are 5 wires. **White blue and grey must be stagger cut and heat shrinked or taped back so they can't short to ground or to each other.** Red and black are used as follows:

## Connection Diagram



## Mounting and Antenna Leads



A standard installation. Note: unit and aerial placed in clear and unobstructed view.



Rear panel of the unit, with all aerial and power leads connected.



A minimum 300mm of the RallySafe Power Supply Cable and Antenna Leads should be left at the unit mounting bracket location for connection to the unit



### Antenna leads are connected as follows (There may be variations with the type and number of leads).

1. The WI-FI lead, colour-coded **Blue**, is connected to the terminal labelled "Wi-Fi" on the RallySafe unit (Right Hand Thread). Terminals may be on the side or rear of the unit and/or colour-coded Blue. *Please note, if you have two blue radio antenna leads, one from the external antenna and one from the internal antenna, use the internal antenna lead. Please neatly coil and stow the spare external antenna lead as it may be used in the future.*
2. The Satellite Communication antenna lead is connected to the centre or rear terminal labelled "IRI" (Left Hand Thread). It may also be colour-coded **Yellow** (this may be not marked on the 2-in-1 antenna).
3. The GPS antenna lead labelled "GPS", is connected to the terminal labelled "GPS" on the RallySafe unit (Right Hand Thread). Terminals may be on the side or rear of the unit and/or colour-coded **Green**.
4. GSM, if optional, has a small stick antenna supplied with the RallySafe unit, and is connected to corresponding terminal labelled "GSM" on the RallySafe unit (Left Hand Thread). The terminal may be on the side or rear of the unit and/or colour-coded **Red**.

## Unit Mounting & Dimensions

The preferred method for mounting the RallySafe unit is a RAM style 50mm x 75mm flat base with ball, bolted through the dash with a 3mm aluminum backing plate. It should be in a central, protected location, and both easily visible and accessible by both the driver and co-driver/nav. Photographs of preferred mounting and positioning can be seen below.

An alternative mounting method for the RallySafe unit is on the roll cage forward leg on the co-driver's side, on a right angle roll cage bracket with ball and connector clamp (also shown in photos above and below).

The RallySafe unit should preferably be mounted in a vertical position where peripheral vision can catch screen warnings and notifications. Some drivers prefer to be able to see the unit, others prefer to let the co-driver view the screen and call the safety signals as required.

### MOUNTING EXAMPLES



*Here the 25mm rubber ball mount is securely attached to the A pillar bar of the roll cage.*

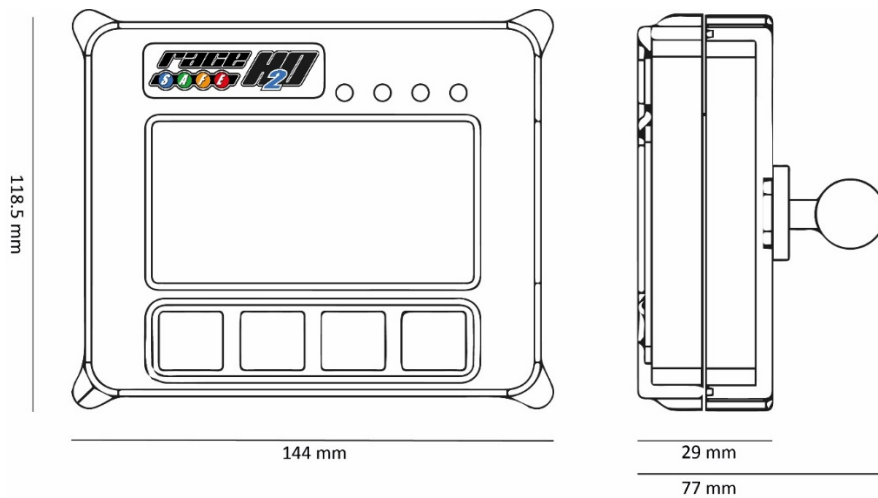


*The RallySafe unit then mounts to the 25mm rubber ball mount (connected through the RallySafe connector).*





## Unit Dimensions



## Antenna Installation

All leads on both external and internal antennas must run on the inside of all roll cage bars. This is to stop cable crushing on impact. The preferred route is to go down from the antenna, underneath the closest part of the roll cage (roof cross or main hoop), follow that along to the roof hoop, then go down the inside A pillar to the unit. Any excess cable must be run so that the cable is not bent any tighter than a 100mm radius. We recommend running it across the underside of the dash and back (do not coil in tight loops). Cables must be tied neatly along the whole installation all the way to the unit so they can't be accidentally caught or dislodged. All this will be checked at scrutineering and you may be required to fix it before your car can pass. When antenna fittings are not in use, please safely tuck them away to avoid any damage.

### Bolt-on Antenna (Preferred):

The antenna is mounted through a 12mm hole in a central location on the **ROOF** of the vehicle, preferably 50mm forward of the main roll bar hoop, allowing the cabling to pass through the roof and follow the cage bars back to the RallySafe unit location. The antenna is a fully watertight unit which seals against the roof surface. (High pressure water against the antenna may cause damage, please be mindful when washing interior and exterior of vehicle)

*In special circumstances, a temporary stick-on antenna that does not require a hole through the roof can be ordered. It is highly recommended, however, that the standard 3-in-1 antenna be used, as it significantly improves communications.*



## Step By Step Process for the Bolt-on Antenna



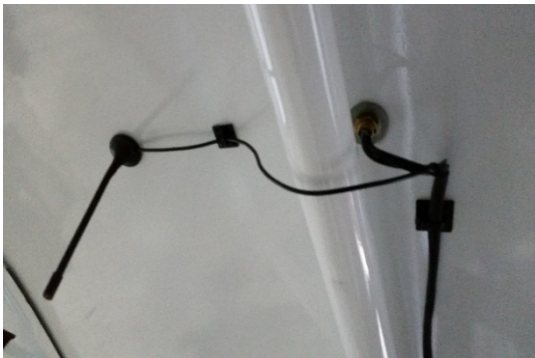
### Stick-on Antenna (Alternative):

The antenna is mounted on the **ROOF** of the vehicle, preferably within easy cable reach of the final RS unit mounting position allowing the cabling to then pass through the door seal and follow the cage bars back to the RS unit location. The antenna is a fully watertight unit which seals against the roof surface. Cabling will need to be suitably taped and protected to the outside of the car.

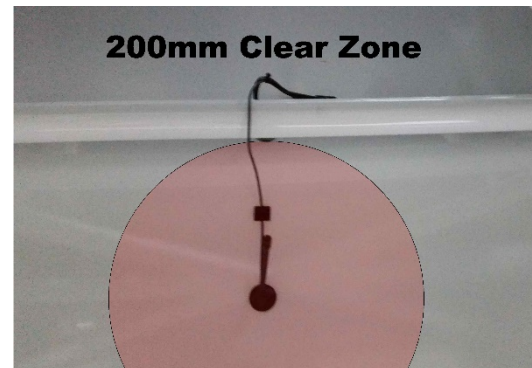


## Internal Wi-Fi:

The Internal Wi-Fi should be placed on the inside of the **ROOF** in a clear uncluttered area, with a 200mm radius clear of any bar work or solid metal object. The internal Wi-Fi antenna has a magnetic base with double-sided tape for adhesion. The cable is then run to the RallySafe unit. **Please keep cable inside roll cage so as not to be crushed in the event of an accident.** Poor positioning or mounting of this antenna will result in decreased range of car-to-car functions i.e. Push-to-Pass safety warnings etc. This is also important for relaying your safety status out via other vehicles to race control if damage occurs to your external antenna.



*Here the antenna is stuck to the inside centre of the roof (Preferred)*



*Please note the internal antenna must be 200mm AWAY from any roll cage components*

## Unit Power Consumption Figures & Specifications

### Power Cable Conductor Specifications

Number of Conductors	5
External Diameter	2.5mm
Material	Copper
Current Rating	5A

### Unit Power Consumption at 12 Volts

Power on Transit Mode	.200A
Power on Transit Mode - Charging	.300A
Power Down – Sleep Mode	.002A
Transmitting Incident on Stage	.250A

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