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### RR410 rally timer sales / rental price for regularity rally – 05/2023

CRISARTECH offers to configure your tailor-made regularity system, based on a display/computer and several options:

**RR410 Tripmaster/timer:** the calculator, 4"3 TFT colour display with touch screen:



It integrates an **interface for sensors and accessories for:**

- the infrared receiver for remote control with numeric keys (for easy distance corrections), control pad and coloured function keys,
- the buzzer that precisely guides the pilot (speed up / slow down),
- the main power switch (also controls accessory supply like pilot display and speed sensors),
- the USB plug for updates and file transfer using a simple USB stick.

This interface equipped with "automotive" quality connectors allows direct connection of the following optional accessories:

- two wheel speed sensors, compatible with positive pulse 3-wire sensors and most 2-wire sensors on the market,
- a GPS receiver,
- a 6 RGB led module (HUD),
- a "pilot" display.

The RR410 comes with a harness with an **OBDII** connector for connection to a modern car (after 2007) for training, reconnaissance... but **without** harness for historic vehicle.

The **cable clamp** to secure all the wires below the case:



One of the advantages of the RR410 is that it can take the benefit of a **precision 10 Hz GPS receiver** to:

- synchronize the time with an accuracy of 2 hundredths of a second on the official "UTC" time or on an organizer's clock while keeping this remarkable precision,
- measure the distances fairly accurately (excluding in a dense forest or tunnel). This can serve as a replacement for the wheel sensors in the event of a failure (without distance loss at swapping), or outright replacement of the wheel sensors if the co-driver has frequent readjustment points,
- readjust the distances automatically (see this option below). In this case, the sensors on wheel are no longer required.

The waterproof external **GPS** receiver is separated from the device so that it can be placed on the roof for optimal reception. The cable for this receiver has a cable of is about 3 m long.



As an option, an internal “backup” GPS receiver can be installed in the device during manufacturing. The co-pilot can switch from the external receiver to the internal receiver with 3 remote control taps or a tap on the screen.

Note:

- the reception is less good in the device,
- associated with the 12V backup battery, an internal GPS allows the RR410 to be transported near the organizer's clock to easily and precisely synchronize the RR410's clock.

Comment: our 2 types of precision GPS receivers can **simultaneously capture 3 constellations** of satellites among the 4 main ones chosen by the user:

- GPS (USA),
- Beidou (China),
- GLONASS (Russia),
- Galileo (Europe).

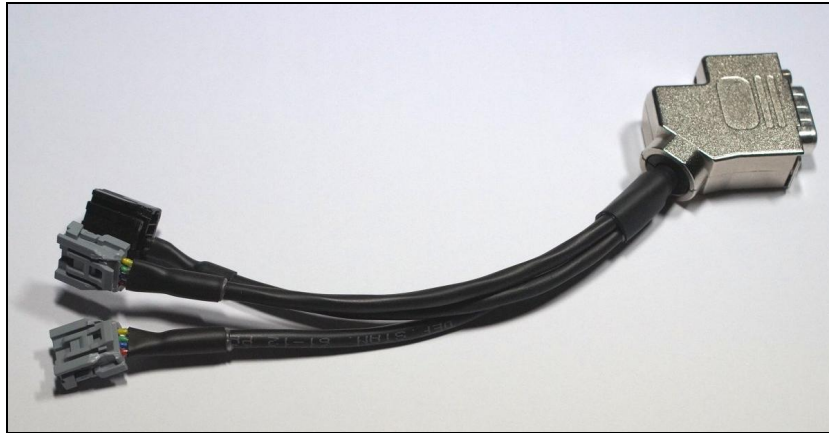
Accessories to be ordered separately:

- ready-to-connect **harness for historic vehicles** (power supply, left or right wheel sensor):



Note: to connect two sensors, two sensor harnesses must be ordered.

- **Blunik adapter :**



Allows you to quickly replace a *Blunik* device by a RR410 for tests, demonstration, small rallies...

Note: **this adapter is not recommended for use in main competitions** as it uses the connector which is not automotive grade. In addition, the power supply for the two wheel sensors goes over a single wire. Therefore, in the event of a short-circuit on one sensor, the second is also faulty (with direct connection of the sensors to RR410, each sensor has its own protected power supply).

- **infrared remote control** with numbers to type distances/average speed or correction distances for example, quickly and easily:



- RP380 "**pilot**" display: 4"3 TFT colour display used as high readability repeater. It displays the essential data to the pilots, in very readable characters (colours and high contrast):



This display is recommended for rallies on open roads, including navigation. Indeed, this allows the pilot to "participate" in the navigation because he has access to the distance in a very readable way. If the co-pilot progressively types in the distance of the next roadbook note, a decreasing distance is clearly displayed, which saves him from regularly asking "when are we turning left?". As he swerves to the left, he can look at the decreasing distance and avoid the big navigation pitfall: turning too soon.

- **HUD 6 RGB multicolored led module**, (equivalent to more than 18 leds) for "head-up" display on the windscreen:



The **regularity** to the 1/10th of a second while keeping your eyes on the road!

This "display" is recommended for sports rallies on closed roads. There is no navigation, and the pilot must be fully concentrated on the road. The advance/delay indication is displayed by reflection on the windscreen and it is the only indication necessary for the pilot in this exercise.

Note: the new model is connected **in place of** the pilot display, under the timer.

- **multi-socket** to simultaneously connect the pilot display and the new 6 LED module to RR410.

- **RAM 1" suction cup holder + ball:**



- **RAM 1" fixing ball** (actual product may differ from photograph: diamond, round or square base depending on availability):



Several possible uses:

- o screwed on a dashboard, it replaces the suction cup. The device is used with suction cup during reconnaissance or training, then with this support during the race, screwed in the racing car,
- o screwed behind the RR410/420, it comes with appropriate screws,
- o screwed behind the RP380, it comes with the adaptive plate and appropriate screws.



- **arm** (in aluminium):  
3 different lengths (from ball to ball):



Short (4.45 cm)



Standard (7.62cm)



Long (13.20cm)

- **ball holder for roll bar:**



**Examples of possible configurations:**

- rigid **suction cup** with double ball and aluminium medium arm for RR410/420:



- rigid **suction cup** holder with double kneecap and aluminium short arm for pilot display (RP380):

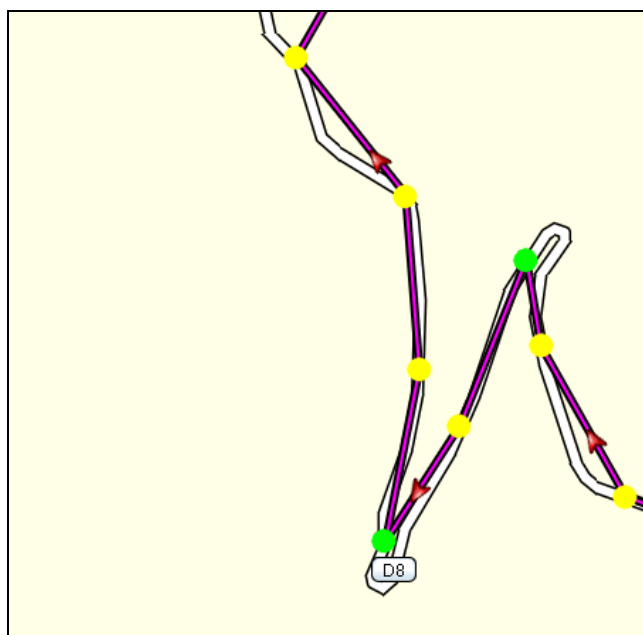


- **220V** power supply for "at-home" training (the timer has a "speed simulation" mode) or to enter data at the hotel before the rally:



**Note: this power supply is not recommended to power the RP380 pilot display in addition to the RR410.**

- software option **for automatic distance corrections by GPS** during the race from the way points taken during the reconnaissance. The **accuracy is about 2 meters**.



***Innovative function developed by CRISARTECH**  
that has proven itself during the Monte-Carlo Historique and Tour de Corse Historique rallies*

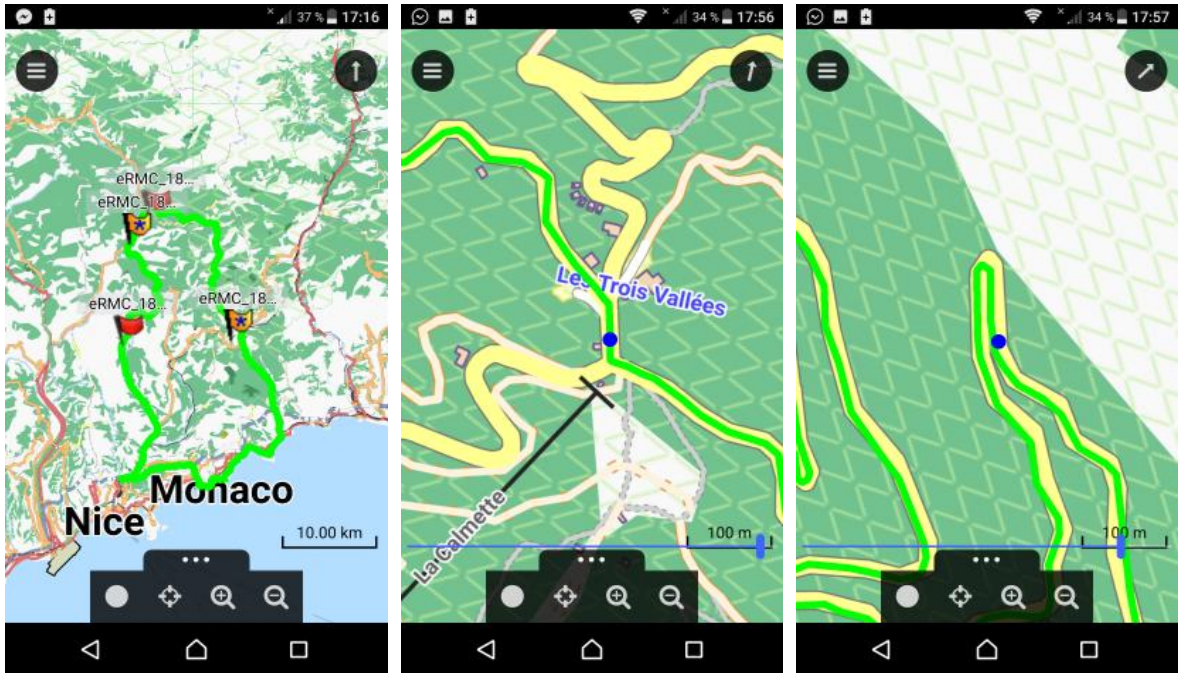
Note: this option requires a **10 Hz precision receiver GPS** sold separately (see above).

- **GPS signal repeater:**



The GPS precision signal is used by both the timer and a navigation application on a tablet or smartphone (**Android only**):

- o this allows the co-pilot to monitor the proper functioning of the GPS,
- o thanks to the high sensitivity of the GPS located on the roof of the car, **the application does not "switch off" anymore**, even in the Turini,
- o the application **refreshes the position 10 times per second** (instead of 1 time with a tablet or smartphone GPS!) and with almost no delay, which allows the co-pilot to announce the changes of direction, as well as the shape of the turns very precisely, and **even the braking points in the fog**.



Note: Now supplied with  $\mu$ -USB and USB-C adapter to work with any **ANDROID** device.

Warning: this accessory requires an externally connected GPS receiver.

- **cigarette lighter harness:**



Warning: it is strongly advised not to use a cigarette lighter socket without the emergency power supply below, due to the risk of accidental disconnections.



- **12V emergency power supply:**



With a **high-capacity Li-Ion battery**, this accessory makes it possible to operate an RR410 with approximately 3 hours of battery life. Possible uses are:

- guaranteeing the operation of the timer in the event of a power failure (blown fuse, unplugged connector or wire, etc.),
- simplifying the wiring by connecting the timer to the ignition power which avoids pulling a wire directly from the battery, maybe using a cigarette lighter socket,
- using the timer outside the car (in house to enter the average speeds or time organizer verification, in the hotel to load / unload data ...).

Notes:

- the timer can still detect and display low battery voltage alerts (alternator failure, too many consumers such as headlights...) but does not know the charge level of this battery,
- the autonomy is divided by about two, with the simultaneous use of the pilot display.
- sold **without** 220V power supply

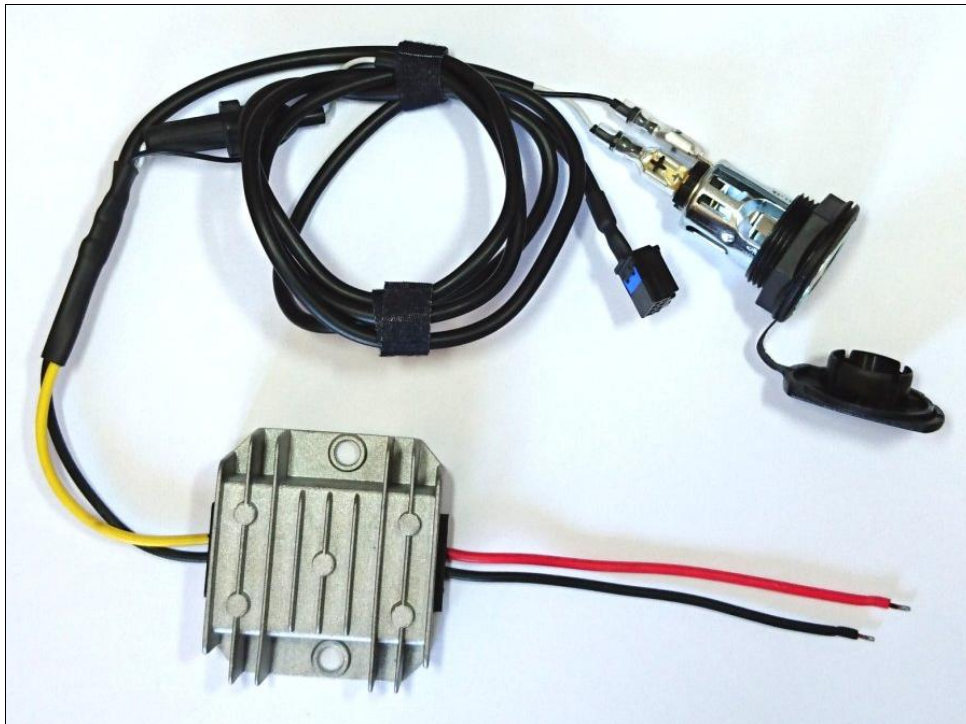
- **"Y" power harness for Tripy:**



Used to share the timer power supply with a *Tripy*, with connector requested by *Tripy* to power the geolocation/chrono system.

Particularly interesting when combined with the **emergency battery and the cigarette lighter socket** for modern vehicles whose diagnostic socket is not usable, in particular *FIA electric rallies*.

- **power converter for 6V cars with optional cigarette lighter:**



Provides **12V power** for:

- the RR410 timer and its accessories,
- the speed sensor(s),
- optional "cigar lighter" plug to charge the phone, GPS ... Maximum 2A, fuse protection to prevent an overload on this socket which could cut the timer power.

Note: the timer can no longer detect low battery voltage alerts.

- **protective cover for RR410 or RP380:**



Protects the screen during transport.

- **transport case:**



To store / transport:

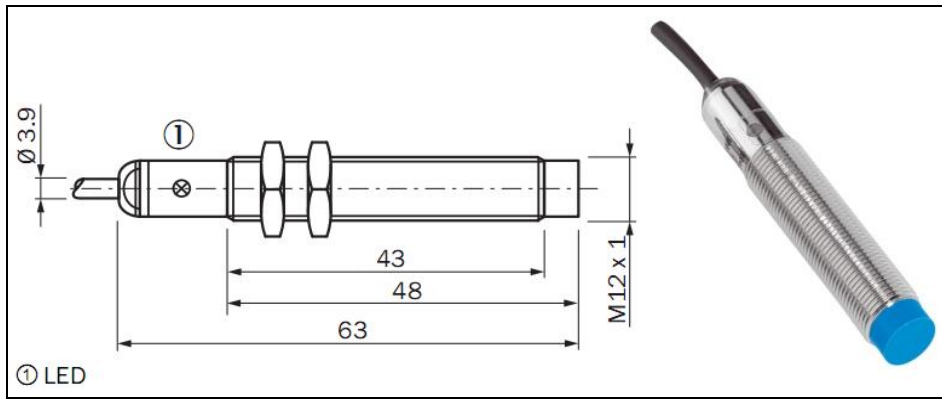
- RR420 or RR410 (without protective cover),
- RP380 (without protective cover),
- two suction cup supports,
- IR remote control,
- various accessories (OBDII beam, GPS receiver, LED6 module,...).

Shockproof, waterproof, possibility to add two padlocks.

Dimensions: 336 x 300 x 148 mm

Weight: 1.6 kg

- **inductive sensor:**

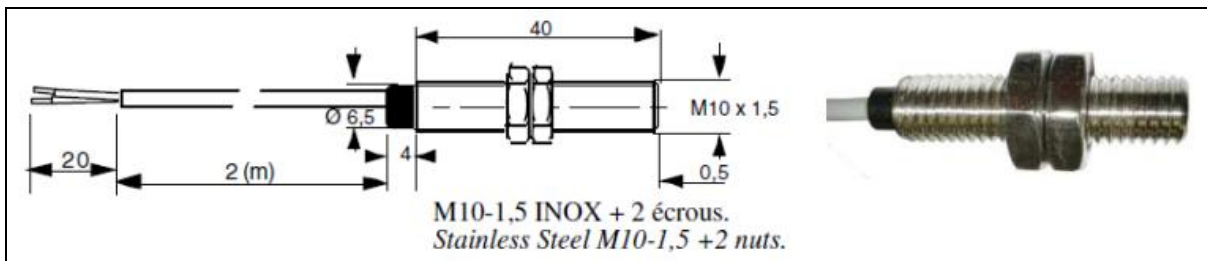


3-wire type, aims for screw heads or other ferromagnetic "targets" (avoid stainless steel) up to 8 mm.  
Cable length: 5 m.

**Lights up when it detects the "target".**

Non flushed installation. **Protected against reverse connections and short circuits.**

- **magnetic sensor:**

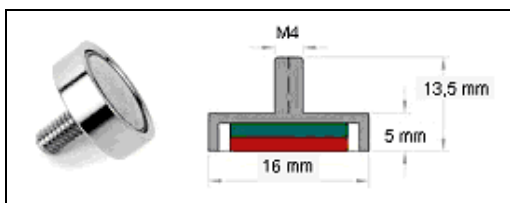


2-wire type, ILS technology (without polarity), stainless steel body, requires minimum 1 magnet, 2 better, 4 being the best.

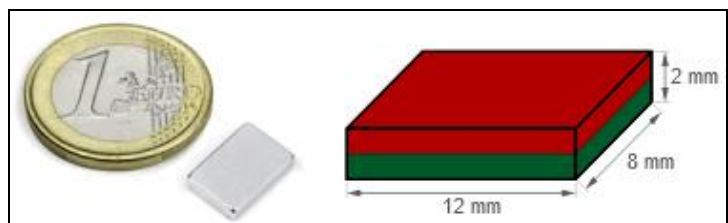
Cable length: **2 m.**

**Not protected against short circuit.**

- **neodymium magnet:** very powerful and compact, but **max. temperature 80 °C**

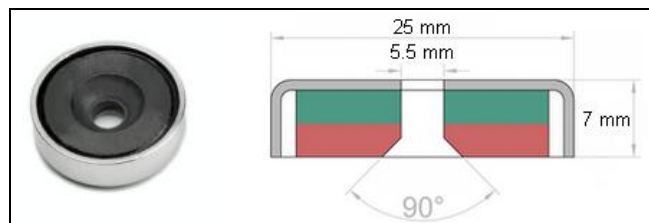


In stainless steel pot, with M4 pin, approx.  
**12 mm** air gap with sensor above



Glue-on model, approx. **12 mm** "air gap" with  
sensor above

- **"classic" ferrite magnet:**



Powerful (about **12 mm** "air gap" with sensor above), max temperature. **250 ° C.**

Purchase order, price including French VAT 05/2023:

<u>Designation</u>	<u>Customer Price with French tax</u>	<u>Qty</u>	<u>Total</u>
RR410 tripmaster / timer for regularity rallies with internal interface box	1 030.00 €		
Option: internal GPS with external wiring (for new RR410 only)	165.00 €		
Option: distance auto-correction by GPS (GPS receiver not included)	95.00 €		
Spare OBD harness	40.00 €		
Spare pilot harness	50.00 €		
12V power harness for HV (with assembled and sheathed connector)	9.00 €		
2 or 3 wires wheel sensor harness for HV (with assembled, sheathed connect.) 0.5 m	9.00 €		
2 or 3 wires wheel sensor harness for HV (with assembled, sheathed connect.) 2 m	11.00 €		
Blunik adapter harness	82.00 €		
Tripy power supply with "Y" harness	30.00 €		
Waterproof precision GPS receiver 10 Hz	155.00 €		
Audible indication in the intercom harness (for RR420 only)	24.00 €		
6 multicolored leds HUD module	235.00 €		
Multi socket for pilot display + 6 leds module on RR410	60.00 €		
IR remote control with digits	40.00 €		
Suction cup + RAM 1" ball plate	29.50 €		
RAM 1" ball plate to screw on board (without screws)	12.00 €		
RAM 1" ball for roll bar	33.00 €		
RAM short arm 4.45 cm	24.00 €		
RAM medium arm 7.62 cm	22.50 €		
RAM long arm 13.2 cm	34.50 €		
RAM 1" ball plate to screw behind RR410/RR420 (with screws)	12.00 €		
RAM 1" ball plate to screw behind other displays (with plate and screws)	18.50 €		
RP380 pilot display (TFT colour 4.3")	475.00 €		
Power converter for 6V car	48.00 €		
Power converter for 6V car with protected 12V-2A lighter option	80.00 €		
220 V. power to use outside of vehicle	24.00 €		
Cigarette lighter harness	34.00 €		
12 V. "3 h" emergency power supply (Li-Ion battery inside)	95.00 €		
Inductive wheel sensor (without connector, aim for the screw heads...)	64.00 €		
Magnetic wheel sensor (without connector, needs at least one magnet)	40.00 €		
16 mm diam. neodym magnet with M4 thread	5.00 €		
12 x 8 x 2 mm neodym magnet to stick	2.00 €		
25 mm diam. ferit magnet (high temp.) with fixing hole	5.00 €		
GPS signal repeater	115.00 €		
Protective cover for RR420 / TR420	49.00 €		
Protective cover for other systems	45.00 €		
Reinforced, waterproof transport case	154.00 €		
Tripy connector	5.00 €		
<b>TOTAL</b>			

Prices are non-contractual and may vary according to accessories supply and options compatibility.

**See typical configurations on the following pages**

Send your order to [order@crisartech.com](mailto:order@crisartech.com)

**CRISARTECH can also rent this equipment for the duration of the race.  
Price based on 25% of the sale price + 50€**

# ADDITIONAL SERVICES

For some rallies like the Monte-Carlo Historique or Tour de Corse Historique, CRISARTECH can provide services such as:

- **GPS auto-correction** files for RR410/420,
- **rally route in digital form** to replace the traditional roadbook (for Garmin Navigation GPS, tablet or smartphone),
- traditional **roadbook**...

**Ease and performance assured!**

**CRISARTECH also provides individual or group training, do not hesitate to contact us...**

# EXAMPLES OF CONFIGURATIONS

Here are some examples of configurations, among all the possibilities, do not hesitate to contact us for other combinations or services:

**“Starter VHR”** pack: (minimum recommended configuration for HV rallies): timer is shared, screwed on dashboard. The remote control allows the co-driver to easily readjust distances. The existing sensors are kept.



Sales price: RR410 + remote control + harness 12V + 2 harnesses sensors:  
1 month rental price:

**1 097 €inc. VAT**  
**Contact us**

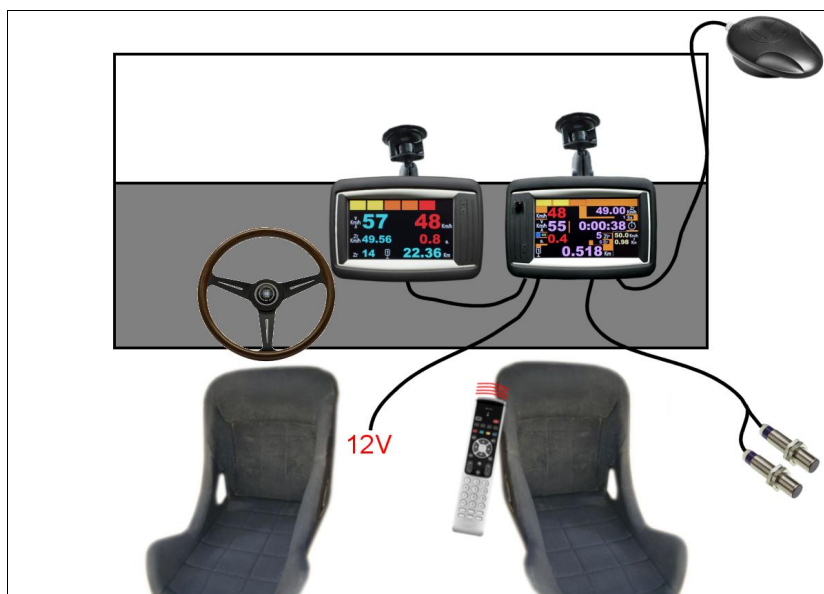
**“Starter VHRS”** pack: (minimum recommended configuration for HV rallies): timer is shared, GPS auto-correction (from reconnaissance made with an OBDII compatible vehicle or purchased from CRISARTECH), **without sensor:**



Sales price: RR410 + external GPS + GPS auto-correction + 12V harness:  
1 month rental price:

**1 289 €inc. VAT**  
**Contact us**

"**Comfort VHR**" pack: The timer is positioned on the co-pilot's side. The pilot has a colour screen to help with navigation and the buzzer helps with regulation. The GPS receiver synchronizes the time automatically and can take over from faulty sensors.



Sales price: RR410 + RP380 + external GPS + remote control + 12V harness + 2 sensors harnesses + suction cups + sensors: **1 991 €inc. VAT**

1 month rental price (sensors sold additionally, not included):

**Contact us**

"**Comfort VHRS**" pack: GPS auto-correction (based on scouting made with an OBDII compatible vehicle or purchased from CRISARTECH). The timer is positioned on the co-driver side, the driver has the LEDs displayed 'HUD' on the windshield and the buzzer for regulating while keeping his eyes on the road. The co-pilot has a remote control to easily manipulate the timer while driving:



Sales price: RR410 + external GPS + GPS auto-correction + Led HUD + remote control + 12V harness + suction cup: **1 628 €inc. VAT**

1 month rental price:

**Contact us**



**Complete** configuration for **all rallies** (but it is possible to add more accessories): pilot display, distance corrections by GPS (from data acquired with OBDII compatible vehicle or bought from CRISARTECH), emergency power supply, suction cups, remote control, 220V power adaptor, two inductive sensors, transport case:



Sales price: RR410 + RP380 + multi-socket + internal GPS + external GPS + GPS auto-correction + Led HUD + remote control + harnesses (power, sensors) + emergency power supply + suction cup + 220V power + 2 sensors + transport case: **2819 €inc. VAT**

1 month rental price (sensors sold additionally, not included):

**Contact us**

Prices are non-contractual and may vary according to accessories supply.

These are just a few examples.  
Compose your own configuration by contacting us  
by phone to create a personalized quote.