



SAS '1 UNIQUE'
 10 Parc club du Millénaire
 1025 Rue Henri Becquerel
 34000 MONTPELLIER - France
 RCS Montpellier n° 540 063 997 APE : 7112B
 www.mod7ce.fr

INSTRUCTIONS MANUAL for dashboard 'MOD7-RR'

Thank you for purchasing this instrumentation MOD7CE® for Rally car.
 We hope you will be pleased to advise you around ...
 You are eager to try it so we did a compact instructions manual !



Application : The MOD7-RR is reserved for use in motorsport

Safety Warnings for installation and during wiring :

- Switch off the ignition and disconnect the ground terminal of the battery
- Keep the wiring harness far from hot spots of the engine (i.e. temperature)
- Install a fuse of 1A on the '+' power wire

Warnings for reliability :

- Use the mounting system supplied with dashboard ('silentbloc' x3 parts)
- Make sure that the positive power supply will stay below 16 volts
- Do not pull on wires or harness
- Do not spray the counter at high pressure
- Do not open the dashboard

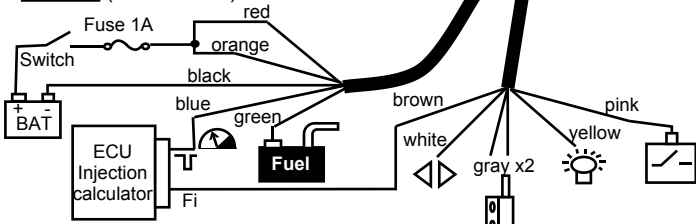
OPTIONS :

- The MOD7-RR offers all the following features has standard.
 No options are available for this version of dashboard MOD7CE

1 - FIXING the DASHBOARD :

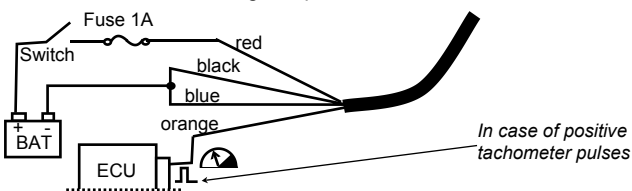
- Use the anti-vibration mountings : Drill 3 holes of 5 mm diameter on a bottom plate :

2 - WIRING (normal case) :

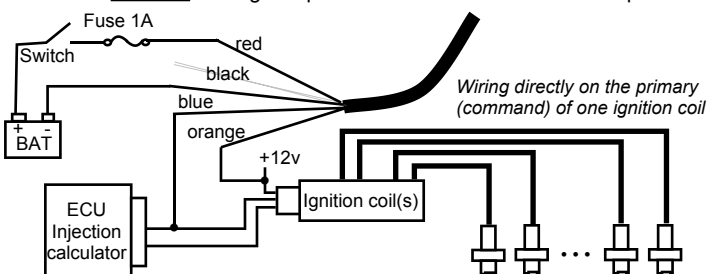


- **Black** = ground, • **Red** = 12v power supply, • **Green** = Fuel Gauge
- **Blue** = tachometer input -, • **Orange** = tachometer input +
- **Brown** = Fuel injection default input, • **White** = Turn (via 2 diodes supplied)
- **Yellow** = Headlight switch , • **Pink** = Oil pressure switch input
- **Gray** = Speed sensor (2 wires)

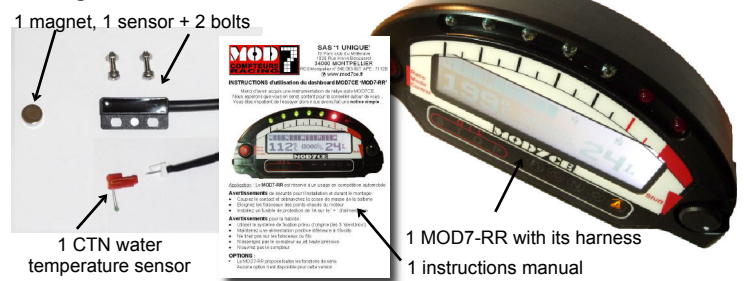
Variant 1 for WIRING : if engine speed remains at 0 or if it is unstable



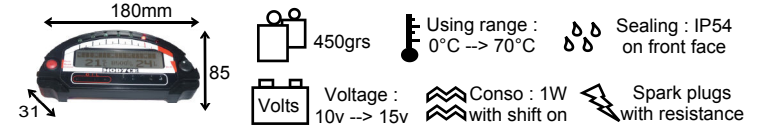
Variant 2 for WIRING : if engine speed remains at 0 or if car is multiplexed



Package contents for dashboard MOD7-RR :



Technical specifications :



Tachometer :

- Digital display : 9900 rpm max, Bargraph display : 9900 rpm max
- Memorized the max engine speed. Accuracy : 100rpm (digital) & 250rpm (bargraph)

Vehicule Speed (sensor + magnet supplied) :

- Maxi 250 km/h
- Memorized the maximum speed. Accuracy : 1 km/h

Distances :

- Total Distance displayed on screen at power on, 99999 km max
- Day Trip with manual reset to 0.0, 999.9 km max

Engine water Temperature (resistive 'CTN' sensor supplied) :

- from 0 to +135°C with programmable alert from 70 to 130°C
- Memorized the maximum temperature. Accuracy : +/- 2°C

Digital fuel Gauge (works on the resistive original tank gauge) :

- To be program up to 60 liters with steps of 4 liters

Battery default Indication (alert led and logo on lcd) :

- Indicates a battery voltage below 12v (loading default)
- Indicates a battery voltage above 15v (voltage regulator default)

Graphic LCD display 10 x 2.5 cm always backlit in white

- Selection / Control : 1 push button on the left side of the screen

Shift light :

- Programmable from 4000 to 10500 rpm with 100 rpm of accuracy
- Sequential turn on in 2 colors. Each led has its own rpm for turning on
- Adjustment of brightness by potentiometer at the right side of the screen

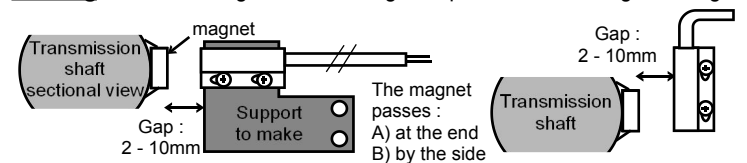
Led indicators :

- Low oil pressure - 'STOP' Red, Lights - Blue, Injection - Orange, Turn - Orange

3 - INSTALLATION of the SPEED SENSOR :

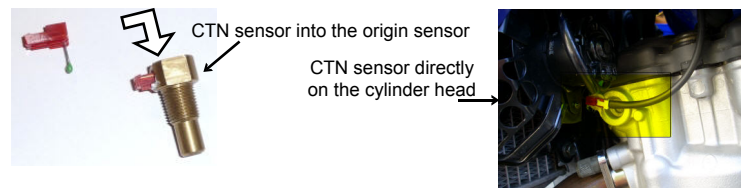
- Paste the cylindrical magnet on the half-transmission shaft near the gearbox output. Use a goog epoxy glue and even a clamp.
- Install the 'PLA' speed sensor (temporarily, pending to confirm its position during the test sensor in paragraph 4 Settings) on an aluminium bracket (don't use steel) attached at one end to the engine block.
- Connect the 2 sensor wires to the 2 gray wires of the dashboard MOD7-RR

Warning : Sensor is fragile. Avoid hitting the speed sensor during installing



4 - INSTALLATION of the WATER TEMPERATURE SENSOR :

- **Choose where you want to take the motor temperature**
- 1 - or reusing the origin temperature sensor (make sure that this sensor is only used by the old temperature meter not by the ECU)...
- 2 - or by using a screw of the cylinder head of the engine with a minimum of 8 mm diameter
- **Drill** the screw or the origin sensor 15mm long with a diam. 4mm forest.
- **Fill** the drill hole with a silicone resin
- **Immerse** the CTN sensor into, until the connector flush
- **Make** a bead of resin to the base of the connector and allow to dry
- **Connect** the white connector of the dashboard harness to the CTN sensor



5 - Fuel Gauge (notes for a perfect operation) :

- **To display the amount of fuel in the tank**, the dashboard MOD7-RR must convert the resistance of the origin gauge according to a calibration. For this, the original gauge has to wires (most common case) or 3 wires (in this case, connect the cursor wire with one other terminal of the gauge) :
- **Connect** the wire of the cursor to the GREEN wire of the dashboard
- **Connect** the ground wire of the gauge to the BLACK wire of the dashboard

6 - SETTINGS :

- **Enter** in the settings menu, when engine is off after power on.
- **Press** the button for **1 seconde**, the top line of the display shows the parameter to be modify followed by its value currently stored :

1 - '**Bargraph Maxi**' allows you to choose the last scale value of the bargraph. The bargraph will be displayed from 4000 rpm before this value up to 1000 rpm after this value. Bargraph displays a total of 5000 rpm !
Thus, if you set **08** for 'Bargraph Maxi', the engine speed in bargraph will be displayed from 4000 rpm (= 8000 - 4000) to 9000 rpm (= 8000 + 1000).


To change the value for 'Bargraph Maxi' :

- **Press the button for 1 seconde**, an arrow appears
- **Each pulse press on the button** increases the last scale value of 1 thousand of rpm (after 10 for 10000 rpm, it returns to 05 = 5000 rpm)
- **Press the button for 1 seconde** to exit this setting.
- **Briefly press the button** to move to the next setting.

2 - '**Rpm Led 1**' to '**Rpm Led 7**' allows you to program the engine speed for each of the 7 leds of the shift light. Each led is independent of the others, but we recommend to set the leds with the a spacing engine speed growing from 200 to 500 rpm. A very good think is to use the green leds for viewing the optimum operating range of the engine and the red leds to prevent the approach of the ignition breaker (The first red led 500 rpm before, and the second red led 200 rpm before the ignition breaker)

To change the value for 'Rpm Led x' (where x goes from 1 to 7)

- **Press the button for 1 seconde**, an arrow appears
 - **Each pulse press on the button** increases the rpm value of the selected led of 100 rpm. (After 10500 rpm, it returns to 4000 rpm)
 - **Press the button for 1 seconde** to exit this setting.
 - **Briefly press the button** to move to the next setting.
- Note :* After 'Rpm Led 7', you will move to the next parameter

3 - '**Alerte Temp**' allows you to program an alert temperature value that turns on the warning led :  To determinate this excessive temperature, let run the engine at slow motion until the fan comes. Read the temperature value displayed on the lcd screen of the dashboard and add 5 to 10°C to this value in order to program 'Alerte Temp'.

To change the value for 'Alerte Temp' :

- **Press the button for 1 seconde**, an arrow appears
- **Each pulse press on the button** increases the alert temperature value of 2°C (After 130°C, it returns to 70°C)
- **Press the button for 1 seconde** to exit this setting.
- **Briefly press the button** to move to the next parameter.

7 USING

After power on, the screen of the dashboard MOD7-RR will display :

- on the upper line of the screen :
 - The **Total Distance** in km,
 - The **Day Trip** in km,
 - The **Running Time** of the dashboard in hours.
- on the lower line of the screen :
 - The **Engine Temperature** in °C
 - The **Amount of Fuel** remaining in the tank in liters.

This screen (called 'presentation' with engine off) allows you to access to the settings if you want to (see paragraph 6).


As the engine is running or after a brief press on the button, the upper line will display the bargraph for the engine speed with the maximum calibration defined in the settings with parameter 'Bargraph Maxi'.
The lower line of the screen will always displayed the engine temperature at the left end, and the amount of fuel at the right end

Between these 2 values, you will read the engine speed directly in rpm
Press briefly on the button will display the vehicle speed (very useful on the road) in km/h.

Press briefly on the button an other time will display the day trip in km.
To reset to 0.0 the day trip, just push on the button for 1 seconde.
Attention ! The trip returns to 0.0 only on lcd screen, not in memory e²prom. This will be done when the speed will return to 0 after a short run or one or two wheel rotation(s)
A new brief press on the button will clear the function in the middle of the screen
A last brief press on the button will display the engine speed, and so on...

When you stop the engine while the power remains on the dashboard, the values for engine speed, engine temperature and vehicle speed are replaced by the **maximum reached values** for these 3 parameters

Controlling the SHIFT LIGHT :

The Shift light can be enable (normal state after power on) or disable with a long press for 1 seconde on the button. A little logo at the lower right end of the lcd screen '  ' indicates that the shift light is enable.

If the shift light is disable, the logo will disappear.

When you power up the dashboard, the shift light is turned 'ON' automatically

4 - '**Wheel Circ**' allows you to choose the wheel circumference and to show the state of the speed sensor (for testing its position).

- The 1st number gives the value in cm of the circumference of the wheel
- The following symbol shows the state of the sensor : open ' / ' or close ' - ' .
 - It must be closed if the magnet is in front of the sensor, and open in the other case
- The 2nd number indicates the number of switching of the sensor on a full wheel rotation. In order to have a correct speed value, this number must be 1 after a complete wheel rotation. If this number remains to 0, it means that the sensor don't work (*Verify the following points : magnet is too far from sensor, or not in front of the sensor, or the sensor is broken or not connected to the dashboard*). If the number reaches more than 1, it means that the sensor detects the magnet several times because of its position. Please return in paragraph 3 to modify its position.

To change the value for 'Wheel Circ' :

- **Press the button for 1 seconde**, an arrow appears
- **Each pulse press on the button** increases the value of the circumference of 1cm. (After 228cm, it returns to 140cm)
- **Press the button for 1 seconde** to exit this setting.
- **Briefly press the button** to move to the next setting.

5 - '**Rpm Pulse Nb**' allows you to adapt the display to the engine speed.

This parameter allows to divide the engine speed value by 1 or 2.

For example, if the engine speed value at slow motion seems to be the double, than program an 'Rpm Pulse Nb' with 02 in order to divide the displayed value by 2

To change the value for 'Rpm Pulse Nb' :

- **Press the button for 1 seconde** to move the value from 01 to 02.
- **Press**, an other time, **the button for 1 seconde** to move back the value to 01
- **Briefly press the button** to move to the next setting.

6 - '**Fuel Prog**' allows you to calibrate the fuel gauge from 0 to 60 liters

The 1st number indicates the gauge value read and convert by the controller.


The 2nd number indicates the fuel quantity, in liters, you must have in the tank.

To program the value of each step of 4 liters :


- a) **Fill the tank with the quantity of fuel** displayed on the lcd screen,
- **Press the button for 1 seconde** to memorize this level
(*Note : the value of the 1st number must decrease while the fuel level increases*)
- **Briefly press the button** to move to the next step of program and return to the point 'a)'. If your tank is already full for the next step, you must memorize all the steps until 60 liters with the same amount of fuel.


After 'Fuel Prog xxx 60L', a brief press on the button exits from the config menu while saving all your parameters. Then, you can switch off the contact key if you want to, or start the engine and run the car...


NOTA 1 :

When the temperature indicates 199°, it means either the temperature is lower than 0°C, or the temperature is too high (higher than 135°C). This can arrived if no sensor is connected. Please check this point
When the temperature reach the program alert value, the orange right end led is activate : 

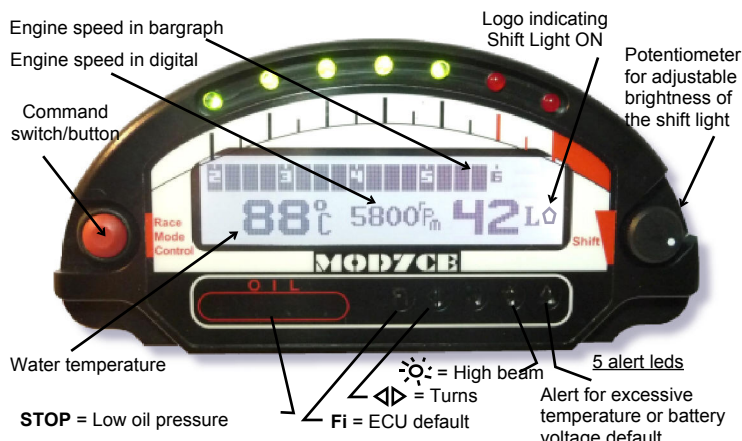
NOTA 2 :

When the battery voltage is lower than 12v (for example when the alternator belt slipping or broken, or when the battery terminals are corroded or are improper tightening, a battery logo  followed with a down arrow pointing is displayed alternately with the amount of fuel every 30 seconds

When the battery voltage is higher than 15v (in case of problem with the charging regulator), the logo  followed with a up arrow pointing is displayed alternately with the amount of fuel every 30 seconds

The alerte led  is also 'on'.

Example of the display of the MOD7-RR



Becareful when you clean your dashboard !

Please use only a soft cloth, clean and dry to clean your dashboard and its screen and lexan. Note that a new lexan can be ordered for approx. 15€