INSTRUCTIONS MANUAL

RV0 10/24

ODG

UPGRADE PACK

INSTRUMENTS CLUSTER

SPEEDOMETER

#136.16.12 (120 mph)
#136.16.20 (200 km/h)

PRESENTATION

This instrument was developed for automotive applications and adaptations.

It has total and partial odometers, as well as integrated turn signal.

Equipped with a digital system, it allows installation in vehicles with any gear ratio and tire external diameter.

It can be configured for use with HALL or INDUCTIVE type sensors.

Its lighting is translucent with 7 color options, and the pointer has white or red lighting.

A high-performance and durable electronic motor is responsible for the movement of the pointer, and the pointer returns to its resting position electronically.

FEATURES

Speedometer Total and partial odometer, configurable for any gear ratio and tire diameter. Compatible with HALL or INDUCTIVE speed sensors.

Translucent lighting with 7 selectable colors and Dimmer function to control the intensity of the lighting.

MASTER function allows you to change and control the color and intensity of the other instruments in the FullColor ODG line.To use this feature, you must connect the BROWN cables of all instruments and also the PURPLE cables.

INSTALLATION

The installation is relatively simple, however, it is recommended that it be done by a professional with experience in automotive electrical systems and the tools required.

Use a circuit test light to identify the function of the original cables of the old panel connector and other necessary signals.

We recommend not soldering the cable joints, as this makes the joint rigid and may cause the cable to break.

The instrument can be fixed directly to the panel, using the included fixing clamp.

The configuration keyboard should be fixed in the chosen location using the self-adhesive tape. Clean the surface where the key will be fixed well to ensure better adhesion.

Speed Sensor - (sensor not included)It is necessary to use a speed sensor, which can be of the HALL (3-wire) or INDUCTIVE (2-wire) type.

Speed Signal - The speed signal captured may have a square or sinusoidal waveform. Typically, three-terminal sensors are those that require power and provide square signals, while two-terminal sensors provide sinusoidal signals and do not require power. For this reason, the panel provides a three-wire harness for three-terminal sensors (sensor power: red 12V, ground: black, and square signal: green/purple) and an input for an inductive sensor: green/black.

Note: Ground the **Green/Purple** cable if you are not using it.
Insulate the **Green/Black** cable if you are not using it.

White Cable / Lighting Signal - The White cable of the main harness is responsible for lighting the panel. It must be connected directly to the headlight switch (half light / taillights) BEFORE the vehicle's original rheostat / dimmer.

Yellow Cable / +12V battery - The Yellow cable of the main harness is part of the panel power circuit. It must be connected directly to the battery positive (line 30). It is responsible for maintaining the instrument power supply and when the ignition is turned off, it allows the pointers to return to the beginning of the scale and the odometer values to be saved. As soon as the pointers return, the yellow cable circuit is turned off internally, completely interrupting battery consumption to prevent it from discharging.

Red Cable / +12V ignition - The red cable of the main harness is responsible for activating the instrument. It must be connected to the +12V post-key (line 15) that does not turn off when the starter motor is activated.

The original instrument harness normally has an accessory +12V, but this turns off during the start, causing the pointers to start twice and may even corrupt the panel's memory. It should not be used.

If the* instrument *displays fluctuations in the indications, it is likely that electromagnetic interference is occurring and causing such fluctuations. In this case,

check for wear on the spark plugs, spark plug wires, rotor and distributor cap. Always use suppressive spark plug wires and resistive spark plugs.

WE DO NOT RECOMMEND INSTALLING THIS PANEL ON VEHICLES WITH A POINTS DISTRIBUTOR due to the high noise level generated by this type of distributor.

ELECTRICAL CONNECTIONS

MAIN HARNESS

Red:	(+) Ignition Positive (Line 15)
Yellow:	(+) Direct battery positive (Line 30)
White:	(+) Headlight switch (half light)
Black:	(-) Ground (chassis or battery)
Brown:	Brightness intensity control output (DIMMER)
Green/Purple:	HALL type speed signal
Green/Black:	INDUCTIVE type speed signal
Purple:	Color control Output

DISPLAY

The dashboard has a high-contrast OLED display that display the odometers and settings. During normal use, the screen below is displayed

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The Total Odometer indicates the total distance traveled. It can be pre-loaded with the odometer value from the original dashboard, as will be demonstrated later.

The Partial Odometer also indicates the distance traveled, however, with a resolution of 0.1 mile and can be reset by pressing the **MPH** button for 3 seconds.

SETTINGS:

Speedometer Sensor:

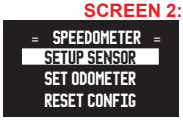
For the speedometer to correctly indicate the speed, it is necessary to configure it in the vehicle itself. To do this, after installing the dashboard and the speed sensor, with the ignition key off, press the **SET** button, turn the ignition key, and screen 1 will be displayed.

SCREEN 1:

Pressing the ↻ button changes the highlighted menu.

With the SPEEDOMETER option highlighted, press the **SET** key to confirm.

SCREEN 2:



On screen 2, select SETUP SENSOR.

The configuration can be done in two ways: By traveling a certain distance (264ft or 1 mile) or by maintaining a speed of 40 m/h for programming.

SCREEN 3:

To configure by distance, on screen 3, select the option that corresponds to the distance to be traveled for configuration.

SCREEN 4:

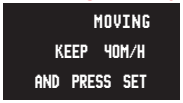
While on screen 4, travel or turn the wheel the number of times corresponding to the selected value. Note that the counter should increase as the wheel turns.

This counter indicates the number of pulses read from the sensor and not the distance traveled!!!

After traveling the selected distance, press **SET** to confirm the programming.

To configure by speed, on screen 3, use the ↻ key to select the 40 m/h option and then press the **SET** key to confirm.

SCREEN 5:



Screen 5 will be displayed.

At this point, in a safe place, start the vehicle moving

The words STOPPED or MOVING will appear on the yellow line, which serves to see if the sensor is working correctly.

If the vehicle does not indicate MOVING when driving, check the sensor connection.

When you are at 40 m/h, press and release the **SET** key.

The panel will initialize and will start to show the speed.

NOTE: *During this programming, all the pointers will remain stopped at the beginning of the scale.The speedometer's accuracy will depend directly on the speed m that the vehicle was going when this configuration was performed.*

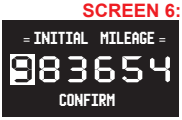
Total odometer - Preloading a mileage value:

It is possible to configure the total mileage value, allowing you to preload the odometer value from the vehicle's original panel. To do this, access the SPEEDOMETER ► SET ODOMETER function. (SCREENs 1 and 2)The configuration SCREEN 6 will be displayed.By pressing the **SET** key the value of the highlighted digit is incremented, pressing ↻ selects the next digit to be changed.

To finish, select CONFIRM and press **MPH**.

The panel will restart, completing the configuration.

SCREEN 6:



Reset configuration:

To return the speedometer to the factory settings (500 pulses per 0.1 mile and odometers reset), on SCREEN 2, select the RESET CONFIG option and confirm.

Note: *This procedure does not change the other settings.*

Resetting the Partial Odometer:

To reset the partial odometer count, at any time during operation, press the **SET** key for 3 seconds.

Selecting the Lighting Color:

To select the lighting color, follow the procedures below:

With the ignition key and headlights off, press and hold the **DIMM** key.

Turn on the headlights and wait 3 seconds, then release the key.

The panel will light up in the last programmed color. Each time you press and release the **DIMM** key again, the lighting color will change with each key press.

When you reach the desired color, just wait 15 seconds and the lighting will flash, indicating that the selected color has been memorized.

DIMMER - Adjusting the lighting intensity:

To adjust the lighting intensity, at any time the headlight is on, press the **DIMM** key. The lighting intensity will vary between minimum and maximum while the key is pressed, and the display will indicate the lighting intensity. When you release the key, the setting is saved.

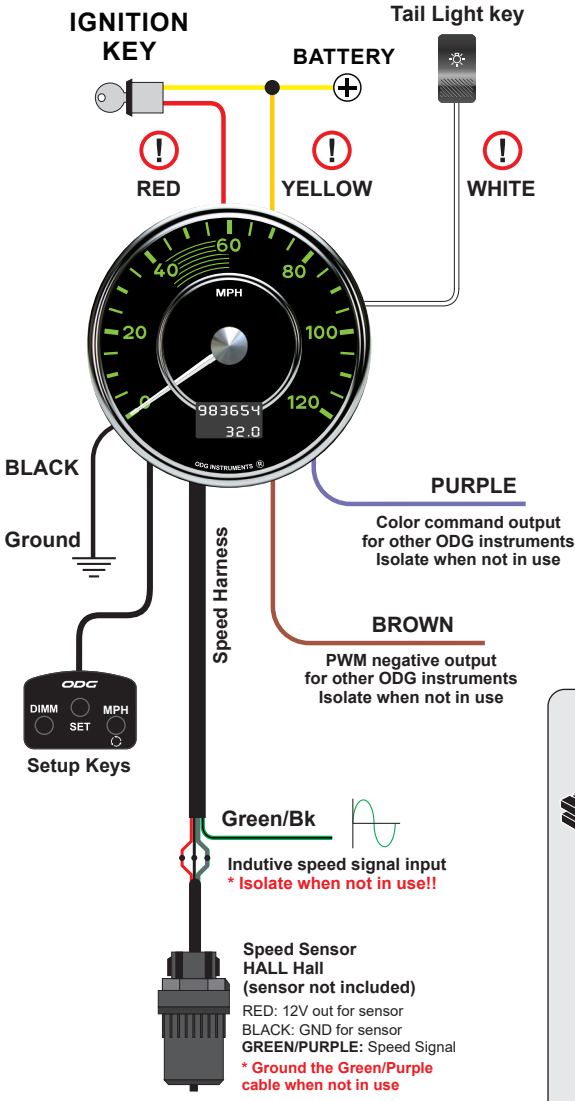
Note: *For the speedometer to control the intensity of the other instruments on the ODG lines, the* ***brown cables*** *of the other instruments must be connected to the brown cable of the speedometer. The* ***white cables*** *of all instruments must also be connected to each other.*

This way, when changing the intensity using the DIMMER function, all instruments will have their intensity changed.

Checking settings:

To view the values of the saved settings, turn on only the headlight and then press the **SET** key. A screen will be displayed with the W values (pulses per 0.1 mile) and the firmware version.

ELECTRICAL DIAGRAM:

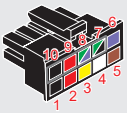


*The **RED** cable must be connected to the +12V ignition that does not turn off when starting, preventing the device from starting when turning the key and trying to start again when starting.*

*The **YELLOW** cable must be connected to the +12V battery (line 30), as it is responsible for maintaining the device's power supply and allows the pointer to return to its initial position after the ignition is turned off.*

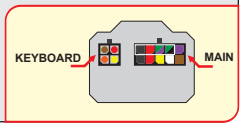
*The **WHITE** cable must be connected before the potentiometer/rheostat (if the vehicle has an original dimmer). Directly to the cable that comes out of the Headlight/Taillight switch that powers the external lamps and does not have brightness control.*

MAIN HARNESS - 10 Ways

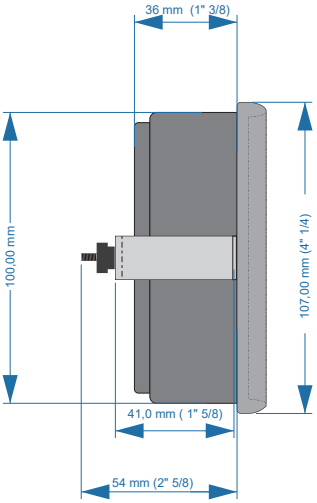


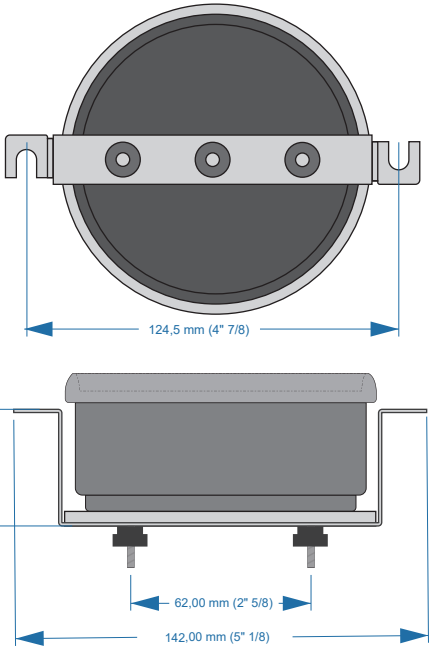
1 - Black	GND
2 - Red	+12V Ignition
3 - Yellow	+12V Battery
4 - Branco	+12V Taillight
5 - Brown	Dimmer Output
6 - Purple	Color Command Output

7- Gr/Bk *	Inductive Speed Sensor
8 - Gr/Pr *	Hall Speed Signal
9- Red	+12V Ign. to speed.
10- Black	GND to speed sens.



DIMENSIONS:





TECHNICAL SPECIFICATIONS

Supply Voltage: . . . . . 9 a 16 Vdc
Compatible Speed Sensor: . . . . . .Sensor type HALL or INDUCTIVE
Maximum number of pulses for speedometer: 2000 pulses/0.1mile
Operating Current: . . . . . 750mA (max)
Resting Current: . . . . . < 1mA
Cables: . . . . . 20AWG x 20"

PACKAGE CONTENT

1 Speedometer
1 Main Harness
1 Configuration Keyboard
1 Mounting Bracket
1 Instructions Manual
1 Warranty Certificate
1 ODG Sticker

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