

## *RoadProcessors*

### **REMOTE COUNTER In Slave or Stand alone mode**

This "REMOTE COUNTER" was designed by an active off-road driver using all his experience and knowledge in the design process.

The unit shipped with this manual has successfully passed tests on the road and offroad too. So we are confident that it has undergone stringent testing.

The "REMOTE COUNTER" is easy to work with, all the functions are easy to use by a beginner team or an advanced team as simple as the remote control for your TV set.

Our company also produces an intercom system, a speed corrector, and a tiptronic controller for almost any automatic transmission as well as the MASTER COUNTER which is the maser unit in slave-master setup.

Please visit our web site at <http://www.roadprocessors.com> for more info.

RoadProcessors offers a limited warranty. See descriptions below:

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### **PRODUCT WARRANTY**

RoadProcessors warrants all products and parts of its own manufacture against defects in material or workmanship for a period of one (1) year from date of shipment when given normal and proper usage as determined by RoadProcessors upon examinations, and when owned by the original purchaser. RoadProcessors will repair or replace F.O.B. original shipping point (but not install) any part or parts of its manufacture which in its judgment, shall disclose defects in either material or workmanship. This warranty becomes void if article claimed to be defective has been repaired or altered in any way or when the article has been subject to misuse, negligence or accident, or when instructions for installing or operating have been disregarded. WE MAKE NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKE NO WARRANTY OR MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE, AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY. THE REMEDIES HEREIN ABOVE AFFORDED TO THE PURCHASER ARE EXCLUSIVE OF ALL OTHER REMEDIES PROVIDED BY LAW. ROADPROCESSORS SHALL NOT BE LIABLE FOR INDIRECT OR CONSEQUENTIAL DAMAGES WHERE THE LOSS SUSTAINED IS OF A COMMERCIAL NATURE.

### **PRODUCT IMPROVEMENTS**

The RoadProcessors reserves the right to make product improvements at any time without responsibility or obligation to make similar changes or add similar improvements on engines delivered prior to those changes.

### **WARRANTY EXCLUSIONS**

The following services or expenses will not be reimbursed under the warranty:

1. Calibrating the "REMOTE COUNTER" in car for its tire size.
2. Repairs as a result of neglect, misuse, improper application, accident and installations that do not meet minimum standards as set forth in the instruction manual.
3. Damage or loss of personal property, loss of revenue, towing charges, storage fees, fuel and telephone calls.
4. Damages or losses related to handling and shipping.
5. All transportation charges will be the obligation of the owner, such as freight, travel, time and tolls.
6. Warranty items returned to the factory collect will be billed to the shipper.

### **WARRANTY AUTHORIZATION**

All repairs and/or claims must be approved by RoadProcessors prior to performance of work.

### **RETURN OF MATERIAL TO THE FACTORY**

All material to be returned must be authorized in advance by RoadProcessors. Contact the service department for assignment of a return goods number. Ship material on a prepaid basis, after receiving the return goods form..

## Specifications:

The “REMOTE COUNTER” is made with SMD (surface mounted devices) technology. A PCB is mounted in a water proofed metal box with a front panel which will prevent dust from damaging the interior.

The “REMOTE COUNTER” is sold with a mounting bracket which allows the user to mount the unit on any surface, horizontal or vertical or at any angle.

- ✓ Dimensions are:  
153x 86x33 millimeters
- ✓ The unit weighs 330g with the cable attached. It is shipped with a purpose made connection cable (1.5 m)
- ✓ **Two green LED displays**  
Upper display has digits size of **14**mm and five digits  
Lower display has digits size of **20**mm. and four digits

The “REMOTE COUNTER” can work in pair with “MASTER COUNTER” or as a stand alone unit So the manual is divided in two section. One for a SLAVE mode when “MASTER COUNTER” is present.

One for stand alone operations, without “MASTER COUNTER” present

**SECTION for SLAVE mode**  
“MASTER COUNTER” fully operational

- ✓ **Resolution 1m or 10m** depends on resolution chosen in “MASTER COUNTER”
- ✓ **A precise stopper** display from the “MASTER COUNTER” but it will show only full seconds without hundreds or tenths of seconds.
- ✓ **A speedometer** display will show ground speed in km/h will also display miles per hour on three digits upper display.
- ✓ **Static memory for one calibration**
- ✓ **Memory for last displays** on power lost or switch off
- ✓ **Battery saver** puts the unit into sleep mode after ten minutes of vehicle inactivity.
- ✓ **Can read any speed sensors**, ABS sensors or any movement sensors.
- ✓ **Works in yards/miles and meters/kilometer**
- ✓ **Can work in master – slave setup.**  
The “Remote Counter” will display speed over ground and as well as the “active” display of the “MASTER COUNTER” .

## Connections :

New users just need to connect five wires to the “REMOTE COUNTER” in order to make it work.

The wires are:

1. 12 volts always on
2. Speed signal from the back of transmission (VSS vehicle speed sensor) same as it goes to “MASTER COUNTER”
3. transmission “+” to the “MASTER COUNTER”
4. transmission “-“ to the “MASTER COUNTER”
4. Chassis ground connection  
(optional remote zeroing button wire)

The colors in cable are:

Function	color
Power supply (+12volts)	wire color yellow
Speed sensor pulses	wire color green
GND	wire color brown
Data transition “+”	Wire color red
Data transmission “-“	Wire color blue
Zeroing remote button	Wire color white

## CALIBRATING

When “REMOTE COUNTER” works with “MASTER COUNTER” the calibrating parameter is send to “REMOTE COUNTER” from the “MASTER COUNTER” on every power up the master unit.

So the “REMOTE COUNTER” will learn its calibration from “MASTER COUNTER” which will be needed in time of switched off or other failer to the “MASTER COUNTER”

The “REMOTE COUNTER” is shipped with pre set calibration of 20 centimeters per one pulse. So initially you will see some distance counted when in stand alone setup.

If the unit has not been successfully calibrated then on every start up, the word “C-1 will appear on upper displays for 3 seconds. After successful calibration, it will display C 1 for three seconds. Please note that while there is custom calibration in the memory of the unit then the sign “-“ is omitted so you can know that the unit is working on your own calibration, Once calibrated, the unit will retain its data for its entire lifetime or until re-calibrated, without any power needing to be applied. You only need to repeat calibration if either the tire size or the speed sensor changes.

**The button functions are as follows:**

RESET Is used to reset or clear the lower display but that it only works in stand alone mode.

The RESET button has a active calibrating function for two minutes after power up the unit in stand alone mode.

When in master-slave setup and “MASTER COUNTER” fully operational there is need to calibrate the unit and for that instance calibrating function is not present while unit work in master-slave setup.

NOTE. How to calibrate read in the section STAND ALLONE.  
will be needed only when the tire sizes change or the speed sensor changes.

**OPERATION:**

The “REMOTE COUNTER” will display what the “MASTER COUNTER” will send to it. For example the part, total or stopper. The unit will inform the driver what is being displayed by lighting a LED on top of one off “PART” , “TOTAL” , “STOPPER” signs.

**SECTION for STAND ALLONE mode**  
“MASTER COUNTER” is not present or not operational

✓ **Resolution 1m**

The resolution is one meter on the display but its counting is based on the pulses from the onboard hall effects sensor (in most cars one pulse between 20cm and 40cm). This means that the counter is as precise as the sensor will permit – less centimeters per pulse will mean greater detail in the measurement.

✓ **A speedometer** display will show ground speed in km/h will also display miles per hour on three digits upper display.

✓ **Static memory for one calibration**

✓ **Memory for last displays** on power lost or switch off

✓ **Battery saver** puts the unit into sleep mode after ten minutes of vehicle inactivity.

✓ **Can read any speed sensors**, ABS sensors or any movement sensors.

✓ **Works in yards/miles and meters/kilometer**

✓ **Can work in master – slave setup.**

The “Remote Counter” will display speed over ground and as well as the “active” display of the “MASTER COUNTER” . Will do that as soon as the “REMOTE COUNTER’ will sense presence of “MASTER COUNTER”

## Connections :

New users just need to connect five wires to the “REMOTE COUNTER” in order to make it work.

The wires are:

1. 12 volts always on
2. Speed signal from the back of transmission (VSS vehicle speed sensor) same as it goes to “MASTER COUNTER”
3. transmission “+” to the “MASTER COUNTER” optional when in stand alone
4. transmission “-“ to the “MASTER COUNTER” optional when in stand alone
4. Chassis ground connection  
(optional remote zeroing button wire)

The colors in cable are:

Function	color
Power supply (+12volts)	wire color <b>yellow</b>
Speed sensor pulses	wire color <b>green</b>
GND	wire color <b>brown</b>
Data transition “+”	Wire color <b>red</b>
Data transmittion “-“	Wire color <b>blue</b>
Zeroing remote button	Wire color <b>white</b>

## CALIBRATING

When “REMOTE COUNTER” works in stand alone setup the calibration is possible to make only up to two minutes after power up the unit.

In order to calibrate the “REMOTE COUNTER” one will need to:

Power up the unit then press and hold the RESET button for five seconds till the upper display will come blank and all of the LEDs will be blank that is suggesting the unit is in calibrating mode.

Then start driving a distance of one kilometer. The lower display will show number of impulses counted.

On the end of the one kilometer distance press the reset button to finish calibrating.

The unit will deducts the measure for one impulse and will display that info in lower display in a such way cm.mm for one pulse.

After 2 seconds both displays will show 0 the unit is ready to show distance on lower display and speed over ground on upper display.

The calibration can only finish when a distance of 1000 meters is driven in a time of between 30 and 360 seconds. If these criteria have not been met then an error message will be displayed in the lower display. The “REMOTE COUNTER” is shipped with pre set calibration of 20 centimeters per one pulse. So initially you will see some distance counted.

If the unit has not been successfully calibrated then on every start up, the word “C-1 will appear on upper displays for 3 seconds. After successful calibration, it will display C 1 for three seconds. Please note that while there is custom calibration in the memory of the unit then the sign “-“ is omitted so you can know that the unit is working on your own calibration, Once calibrated, the unit will retain its data for its entire lifetime or until re-calibrated, without any power needing to be applied. You only need to repeat calibration if either the tire size or the speed sensor changes.

The meter will start counting distance right after it is switched on by the on/off switch mounted on the right upper side of the unit.

### **The button functions are as follows:**

RESET Is used to reset or clear the lower display but that it only works in stand alone mode.

The RESET button has a active calibrating function for two minutes after power up the unit in stand alone mode.

When in master-slave setup and “MASTER COUNTER” fully operational there is need to calibrate the unit and for that instance calibrating function is not present while unit work in master-slave setup.

### **OPERATION:**

The “REMOTE COUNTER” in stand alone mode will display on the lower display distance driven. On the upper display it will show speed over ground in km/h or mil/h . User can clear the lower display by pressing the reset button or optional remote button connected to wire color white and GND.

Upon powering the “REMOTE COUNTER” a user can choose the mesuering units between meters or yards by means of holding pressed the reset button while powering the unit. Then on lower display you can see ENG which informs that the unit is counting yards or SI when counting meters.

## Troubleshooting:

Problem	Checking	Solution
1. No power. All displays are dark none of the LED's are lit	Test if a 12 volts light bulb or Volt meter report 12volts between the chassis and wire color yellow	If the bulb lights and there is 12 volts on the wire color yellow then send the unit to road-processors for repair
2. Distance is not counted	With a volt meter check if pulses check are present on wire color green	no pulses means wiring to speed sensor is faulty. If pulses are present then return unit to roadprocessors for repair
4. Unit works erratically	check if stable 12 volts is supplied on wire color yellow use a light bulb between wire yellow and chassis.	repair any bad connections

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