

# ENDURANCE II

## QUICK-START

### 1. POWER OVERVIEW

Endurance II can run on the internal 3.0V watch type battery (#CR2032).

Install the power wire to enable the continuous backlight. Endurance II is polarity independent and has safeguards to avoid draining the vehicle battery. See the POWER CONNECTION section for more info.

### 2. MOUNT ENDURANCE II:

Endurance II is made to be bolted to the vehicle. Use the included handlebar mounts, or refer to the manual or [www.trailtech.net](http://www.trailtech.net) for other options like the CNC aluminum protector.



### 3. VEHICLE SENSORS:

Refer to the sensor installation sections. You should install both the wheel sensor and vehicle power connection.

*Installing the power wire enables a continuous and brighter backlight.  
Installing the wheel sensor enables speed and distance readouts.*



### 4. MAINTENANCE REMINDER:

Endurance II's maintenance icon appears after the countdown gets to 0. Increase the countdown in DATA SETTING MODE. The countdown can be based on either DISTANCE or TIME, select your preference in DATA SETTING MODE.

### 5. SLEEP MODE:

Endurance II goes to sleep if no vehicle activity is detected.

During sleep mode Endurance II uses the internal battery and will not draw down vehicle power.

- Wakes on external power
- Wakes on wheel movement
- Wakes on button press
- Backlight shuts off after 90 seconds of inactivity
- LCD shuts off and clock is displayed after 180 seconds of inactivity.



# ENDURANCE II

## QUICK-START

### 6. BUTTONS:

Endurance II has three screens. Press MODE to toggle between them.



#### RESET TRIP DATA:

<LEFT> + <MODE> = HOLD TO RESET VALUES FOR:  
Max Speed, Distance, Ride Time

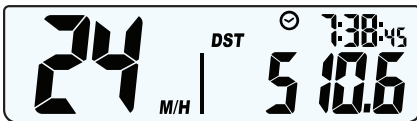
#### ADJUST TRIP DISTANCE:

<MODE> + 3 sec = ENTER ADJUST MODE  
<LEFT>, <RIGHT> = SCROLL VALUE

### 7. SCREENS:

Endurance II has 3 screens, press BUTTON 3 to cycle between screens. Hold all three buttons to enter data setting mode.

SCREEN 1

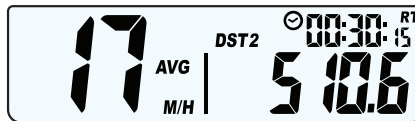


- Speed
- Trip Distance 1
- Clock

#### SCREEN 1 BUTTONS:

- Press and hold buttons 1 & 2 for three seconds to reset DST.
- Press and hold button 3 to enter DST adjustment. Use buttons 1 & 2 to increment and decrement your DST. Press button 3 to return to main screen.

SCREEN 2



- Speed - Average
- Trip Distance 2
- Ride Time

#### SCREEN 2 BUTTONS:

- Press and hold buttons 1 & 2 for three seconds to reset DST2, Ride Time, & AVG Speed.
- Press and hold button 3 to enter DST2 adjustment. Use buttons 1 & 2 to increment and decrement your DST2. Press button 3 to return to main screen.

SCREEN 3



- Speed - Max
- Odometer (ODO)
- Accumulated Ride Time (ART)

#### SCREEN 3 BUTTONS:

- Press and hold buttons 1 & 2 to reset Max Speed.
- To view time remaining until service maintenance interval icon is activated press and hold Button 3 for three seconds.
- When the maintenance icon is displayed, hold button 3 for three seconds to enter maintenance interval screen (to reset, hold button 1 & 2 for three seconds.)

### 8. DATA SETTING MODE :

HOLD DOWN ALL 3 BUTTONS to enter data setting mode. Adjust one setting at a time, then move on to the next one.

- <BUTTON 1> = Increase value
- <BUTTON 2> = Decrease value
- <BUTTON 3> = Move to next data setting screen

#### ORDER OF SETUP MODE:

1. Speed and Distance Format
2. Wheel Size
3. Time Format
4. Time of Day
5. Maintenance Format
6. Maintenance Countdown

M/H or KM/H

See MEASURE WHEEL SIZE section

12H or 24H

12:00:00

Based on ODO Distance or ART Time

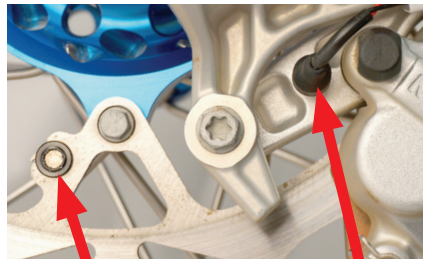
Distance or Time to Countdown From

## WHEEL SENSORS INSTALLS

### KTM WHEEL SENSOR

Trail Tech wheel sensors work with the KTM and Husqvarna OEM install location.

Screw the wheel sensor into the OEM caliper position. Insert the black magnet into the pre-drilled hole in the rotor and secure with the retainer clip.



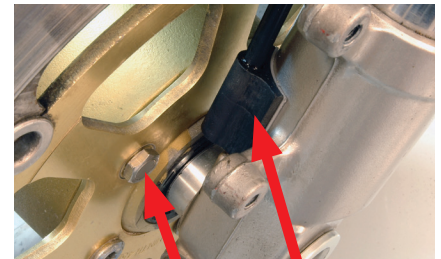
KTM Magnetic Retainer

KTM OEM Wheel Sensor Position

### CONVENTIONAL FORK SENSOR

If the fork is close to the brake rotor, then the VHB fork sensor can be used. Peel and stick the sensor to the fork.

Try to have the tip of the sensor about 1/2 inch away from the magnet in the rotor.



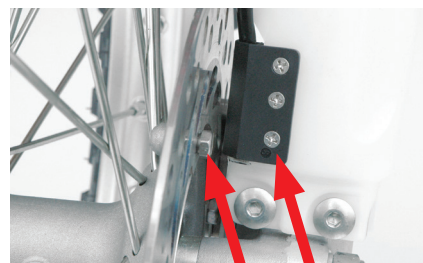
Rotor Bolt Magnet

Conventional Fork VHB Wheel Sensor

### INVERTED FORK WHEEL SENSOR

If there are fork guards next to the brake rotor, then the fork guard wheel sensor can be installed as shown.

Try to have the tip of the sensor about 1/2 inch away from the magnet in the rotor.



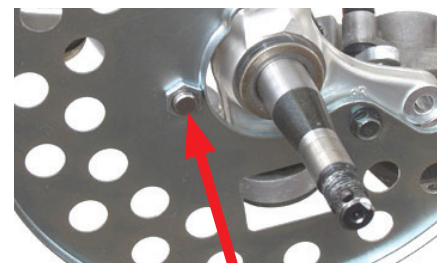
Rotor Bolt Magnet

Inverted Fork Wheel Sensor

### ROTOR SHIELD WHEEL SENSOR

For UTVs and quads with a rotor shield, position the sensor there.

Drill a 3/8" hole and use the jam nuts to secure the sensor to the rotor shield. Use loctite rather than over-tightening the jam nuts.

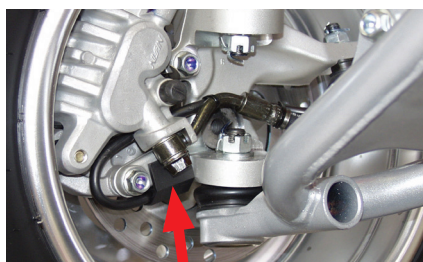


Rotor Shield Wheel Sensor

### BRAKE CALIPER WHEEL SENSOR

Some ATVs require mounting the wheel sensor directly to the brake caliper.

Drill a 1/8" hole through the caliper mount, then use the self-tapping screw to secure the sensor.

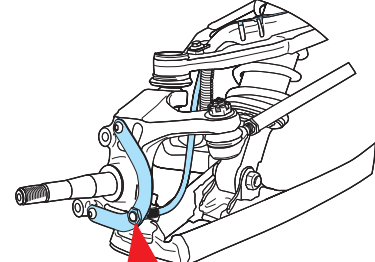


Brake Caliper Wheel Sensor

### C-BRACKET WHEEL SENSOR

Some kits include a metal C-bracket to help mount the sensor, as shown.

Use the jam nuts to secure the sensor to the C-bracket. Use loctite rather than over-tightening the jam nuts.



C-Bracket Wheel Sensor

### MAGNET INSTALLATION:

Install a magnet on the brake rotor to trigger the speed sensor each wheel rotation.

Remove one of the stock rotor bolts and install the magnetic rotor bolt as shown, do not overtighten past 10 ft-lb of torque. If the magnetic bolt will not work, the kit includes a spare magnet that can be installed into one of the rotor spaces. Use the included retainer clip or epoxy such as JB Weld to secure.



Magnetic Rotor Bolt



Magnetic Retainer or Spare Magnet

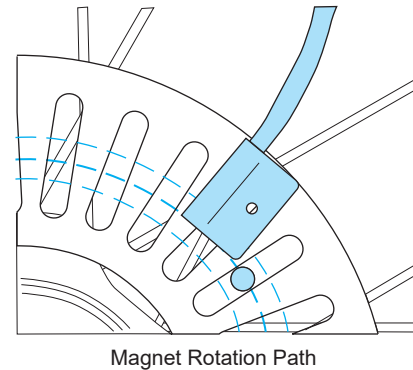
## WHEEL SENSORS SETUP

### WHEEL SENSOR TEST:

Test for correct sensor/magnet placement before permanently mounting.

1. Set the vehicle on a stand so that the front (left) wheel spins easily.
2. Plug the wheel sensor cable into the computer.
3. Install the magnetic bolt.
4. Hold the sensor in place on the caliper mount by hand. While someone watches the computer, roll the wheel. If the computer does not register, move the magnet or sensor and try again. There should be 1/2" or less gap between the sensor and magnet.

**Do not mount so that the magnet passes the middle section of the sensor. Either the sensor will not register at all; or the sensor will register twice, causing a "double trigger" effect (computer displays twice the true speed.)** If a double-trigger is unavoidable, divide the wheel size setting in the computer by 2 to correct the problem.



Magnet Rotation Path

### MEASURE WHEEL SIZE:

Knowing your exact wheel size is critical for the wheel sensor to calculate correct speed and distance data.

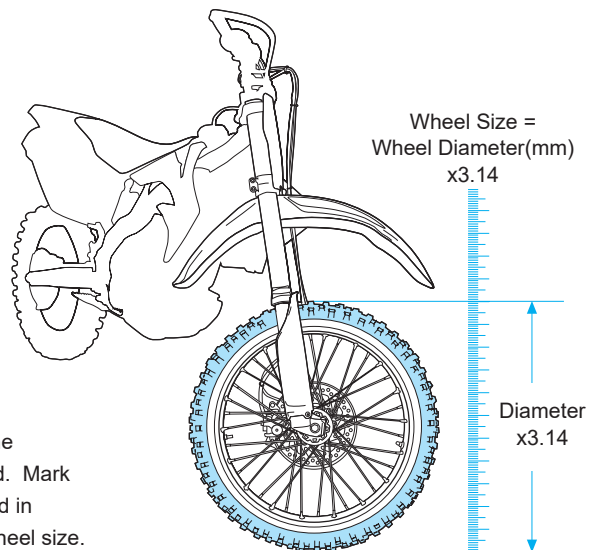
When comparing calibration to GPS data, use a long straight section of road with no tight corners or small vertical movements.

#### Method 1: Ruler

Find the circumference of front wheel by measuring its diameter in millimeters. Multiply the Wheel Diameter by 3.14. The result is your wheel size.

#### Method 2: Rolling

On a flat surface, mark the tire sidewall and the ground with a marking pen. Roll the wheel until the mark on the tire completes one revolution and is back on the ground. Mark the ground at this location. Measure the distance between the marks on the ground in millimeters (multiply inches by 25.4 to convert to mm). Use this number for your wheel size. For accuracy, the rider's weight should be on the bike when making the measurement.



#### Method 3: Distance Measurement

This is the most accurate method.

1. Set the wheel size to 2110mm (motorcycle) or 1675 (ATV).
2. Find a length of road where the distance is known.
3. Ride the distance, noting how far the computer reads (i.e. the road is known to be 5 miles and the computer shows 4.95 miles.)
4. Use the numbers to solve for X in the following equation:

$$(\text{new wheel size}) = \frac{(\text{actual miles}) \times (\text{current wheel size})}{(\text{current miles})}$$

$$X = \frac{5 \times 2110}{4.95} \quad \Rightarrow \quad X = \frac{10550}{4.95} \quad \Rightarrow \quad X = 2131$$

#### Generic/Average Sizes:

Motorcycle: 2110 mm  
ATV: 1675 mm

#### Wheel Size:

Enter the number you calculate from one of the above formulas into setup mode.

