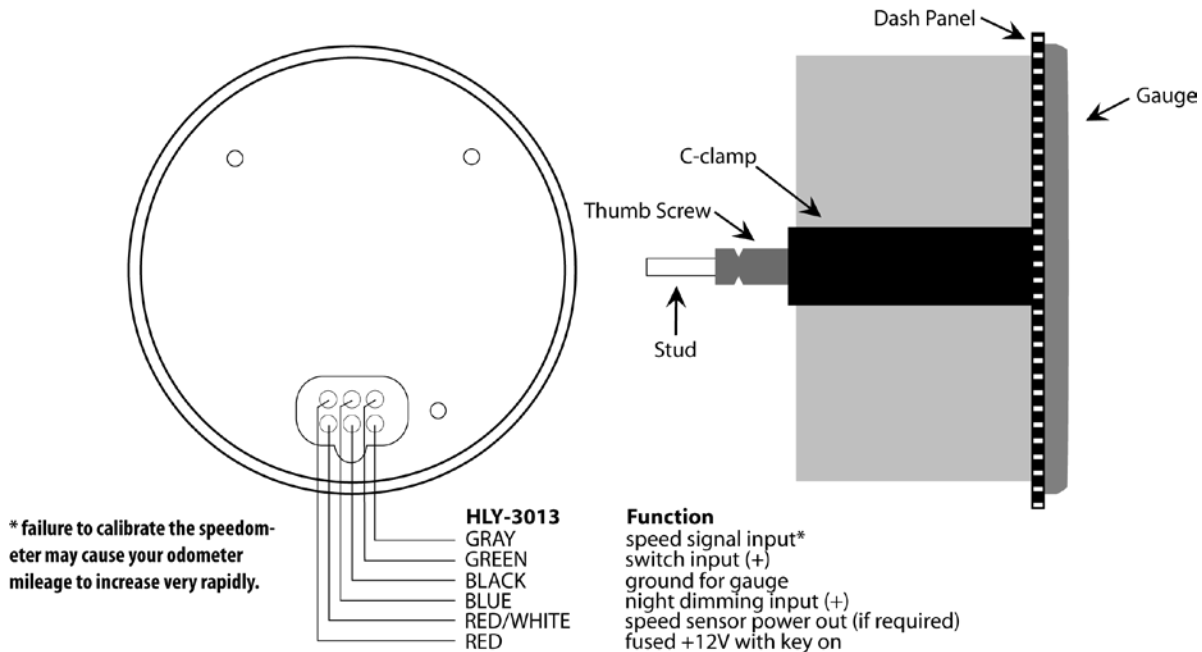


Dakota Digital

HLY-3013 or HLY-3014 MINI SPEEDOMETER (weather and vibration resistant for exposed environments)



POWER

Connect the red wire from the main harness to accessory power from the ignition switch.

Never connect this to a battery charger alone. It needs to have a 12 volt battery connected to it. Battery chargers have an unregulated voltage output that will cause the system to not operate properly.

GROUND

The black wire is the main ground for the gauge. A poor ground connection can cause improper or erratic operation. The black wire loops over to the top screw on the back of the case to ensure a good case ground.

SPEEDOMETER

Failure to calibrate the speedometer may cause your odometer mileage to increase very rapidly.

The gray wire connects to the vehicle speed sensor. For two wire pulse generators attached to a speedometer cable, attach one wire from the sensor to the speedometer ground and connect the other to the gray wire. If the signal is being shared by a cruise control or ECM, make sure they all use a common ground for the pulse generator.

For inductive pickup's, connect one terminal from the pickup to ground and connect the other terminal to the gray wire on the gauge.

For 3 wire Hall-effect sensors, refer to the installation instructions for the sensor to determine wire color code. Most 3 wire sensors use the following color code: RED – power, BLACK – ground, WHITE – speed signal. Connect the sensor signal wire to the gauge gray wire, connect the sensor power wire to the gauge white w/red stripe, and connect the sensor ground wire to the gauge black wire. If the bike's harness provides +5V power and ground to the sensor, please leave all wires connected to the bike as from the factory and "Tee" into the signal wire.

For speed sensor integrated into a vehicle wiring harness (most **Metric Cruisers** w/factory VSS utilize a 3-wire Hall-effect sensor), consult a service manual to determine the color code and location of the speedometer signal. **If the factory harness supplies +5V to the sensor, please utilize the factory connection in place of the white/red power wire.**

For 2004+ Harley and 2003 V-Rod applications make sure to simply "Tee" into the white wire on the speed sensor to make certain the ECM will still receive its proper VSS signal from the sensor.

2006+ Sportsters utilize a black/blue wire for the VSS signal in place of the white wire on most big-twin models.

The speedometer is fully adjustable and calibration is discussed in the **Speedometer Calibration** section. VSS wires should be isolated from the ignition system. Coils, plug wires, or tachometer signal wires routed near or with the VSS wire can cause: erratic speedometer operation, speed reading at a standstill, incorrect or difficult calibration.

SPEEDOMETER CALIBRATION

Failure to calibrate the speedometer may cause your odometer mileage to increase very rapidly.

The speedometer calibration is done using the function switch. The speedometer can be calibrated two different ways. The first method is to place the unit in auto-cal mode and drive exactly one mile (one km for metric). The second method is to place the unit in adjust mode and the speed reading can be moved up or down while driving. ***The green wire is used to enter and change the warning settings. You will need a switch connected with one side to the green wire and the other side to 12 volts.***

METHOD 1, AUTOCAL

1. Make sure the key is off so the gauge is not powered.
2. Press and hold the function switch.
3. Turn the key on. With the switch still held, start the engine. The display will show " - ".
4. Release the function switch. The display will switch between "CAL" (auto cal) and "Adj".
5. When "CAL" is displayed press the function switch. This will place the unit in auto calibration mode.
6. Release the function switch. The display will show -0.0.
7. Drive exactly one mile (or 1km). The number will increase as it counts up the pulses received from the speed sensor.
8. Press and release the function switch. The calibration value will be calculated and stored. The gauge will now restart in normal mode with the new speed calibration.

METHOD 2, ADJUST SPEED

1. Make sure the key is off so the gauge is not powered.
2. Press and hold the function switch.
3. Turn the key on. With the switch still held, start the engine. The display will show " -- ".
4. Release the function switch. The display will switch between "CAL" (auto cal) and "Adj" (adjust).
5. When "Adj" is displayed press the function switch. This will place the unit in calibration adjustment mode.
6. Release the function switch. The display shows the speed and flashes continuously.
7. Drive at a known speed. Following another vehicle that is driving at a constant, known speed can do this.
8. Press the function switch. The speed reading will begin increasing until the function switch is released. The next time the function switch is pressed, the speed reading will begin decreasing until it is released.
9. Once the speedometer is reading correct release the function switch. The new calibration will be saved if no adjustments are made for 7-10 seconds.

FUNCTION SWITCH/READING MILEAGE

The function switch is connected with one wire to a 12 volt source and the other wire to the GREEN wire from the speedometer harness. If the White/Red wire is not being used to power a speed sensor, it can be used to provide power to the switch. The function switch is used for calibration and to read out the odometer mileage. Pressing and holding the function switch while the gauge is running will display the odometer mileage as follows:

"odo" > thousands > hundreds > tenths
65,432.1 would be displayed as follows: "odo" > "65" > "432" > ".1"

Pressing and releasing the function switch while the gauge is running will display the trip mileage as follows:

"trP" > hundreds > tenths
123.4 would be displayed as follows: "trP" > "123" > ".4"

The trip mileage will continue to be displayed until the functions switch is momentarily pressed again. Pressing and holding the function switch while the trip mileage is being displayed will reset it to zero.

NIGHT DIMMING

Your display system has a dimming feature that dims the display intensity. Normally the system is at full brightness for daytime viewing. When the blue wire has 12 volts the display intensity will be reduced. Connect this to a toggle switch if you wish to use this feature. To have the system at full brightness all of the time, leave the blue wire disconnected.

MOUNTING:

The gauge requires a round hole 2-1/16" in diameter. It should be inserted into the opening from the front and the U-clamp will be installed from the back. Tighten the two nuts on the U-clamp so that the gauge is secure. Gauge depth to the back of the case is 1-1/2". Gauge depth including the mounting studs is 2-3/8".

Troubleshooting guide.

Problem

Gauge will not light up

Possible cause

Red wire does not have power.

Black wire is not getting a good ground.

Gauge is damaged.

Speed calibration is invalid

Solution

Connect to a location that has power.

Connect ground to a different location.

Return gauge for repair.

Gauge must be recalibrated.

Gauge lights up, but displays "Er3"

Gauge lights up, but speed will only show zero.

Gray wire is not connected properly.

Speed sensor not grounded properly.

Speed sensor is not being turned by transmission.

Check connection from gray wire to speed signal wire.

Move ground to different location, preferably close to the speedometer.

Check cable connection between sensor and transmission. Sensor can be tested by spinning the cable with a drill.

Gauge must be recalibrated.

Test speed sensor and replace if necessary.

Speed reading is erratic or jumps around.

Speed sensor wire is loose or broken.

Cable is loose or broken.

Poor ground connection.

Poor ground connection.

Check all wire connections and cables for breaks.

Check cable between sensor and transmission or front wheel.

Check ground on speedometer and sensor.

Check that power is not connected to a Noisy source such as ignition coil power

Gauge must be calibrated.

Speed reading is incorrect.

Gauge is not calibrated correctly.

Gauge will not dim.

Blue wire is not connected correctly.

Gauge remains dim at all times.

Blue wire is getting power all of the time.

Gauge will not go into the SETUP mode.

Switch is not being held in during power up.

Switch is not connected properly.

Switch is defective.

Blue wire is getting power all of the time.

Switch is not connected properly.

Switch is defective.

Check wiring. Blue wire should have 12 volts to dim gauge.

Connect blue wire to a switch that has power only when the gauge should dim.

Press and hold switch while powering the gauge.

Make sure that the switch supplies 12V to the GREEN wire when pressed.

Replace push button switch.

Disconnect or ground the blue wire while doing the gauge setup.

Make sure that the switch supplies 12V to the GREEN wire when pressed.

Replace push button switch.

Gauge will not display the odometer/trip meter.

WIRING COLOR CODE FOR GAUGE:

RED	+12 volt power with key on
BLACK	ground for gauge and case (the ring terminal should attach to the top screw on the case.)
GRAY	speed signal input
WHITE/RED	speed sensor power out (if required)
GREEN	function (trip select/reset) switch (+12V to 2 nd wire on switch)
BLUE	night dimming

SERVICE AND REPAIR

DAKOTA DIGITAL offers complete service and repair of its product line. In addition, technical consultation is available to help you work through any questions or problems you may be having installing one of our products. Please read through the Troubleshooting Guide. There, you will find the solution to most problems.

Should you ever need to send the unit back for repairs, please call our technical support line, (605) 332-6513, to request a Return Merchandise Authorization number. Package the product in a good quality box along with plenty of packing material. Ship the product by UPS or insured Parcel Post. Be sure to include the RMA number on the package, and include a complete description of the problem with RMA number, your full name and address (street address preferred), and a telephone number where you can be reached during the day. Any returns for warranty work must include a copy of the dated sales receipt from your place of purchase. Send no money. We will bill you after repair.

Dakota Digital 24 Month Warranty

DAKOTA DIGITAL warrants to the ORIGINAL PURCHASER of this product that should it, under normal use and condition, be proven defective in material or workmanship within 24 MONTHS FROM THE DATE OF PURCHASE, such defect(s) will be repaired or replaced at Dakota Digital's option.

This warranty does not cover nor extend to damage to the vehicle's systems, and does not cover removal or reinstallation of the product. This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident.

This Warranty is in lieu of all other expressed warranties or liabilities. Any implied warranties, including any implied warranty of merchantability, shall be limited to the duration of this written warranty. Any action for breach of any warranty hereunder, including any implied warranty of merchantability, must be brought within a period of 24 months from date of original purchase. No person or representative is authorized to assume, for Dakota Digital, any liability other than expressed herein in connection with the sale of this product.

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