



Manufactured by **Dakota Digital**

HLY-1013 or HLY-1014 MINI SPEEDOMETER

Introduction:

The Odyssey gauge series from Dakota Digital, Inc. incorporates the reliability and quality of our standard gauges, along with several unique features and easy mounting. These features include:

- Weather-proof construction.
- Chrome trim.
- Odometer mileage storage.
- Simple user adjustable calibration.
- Speed input source can be 4000-128000 ppm; pulse generator, inductive pickup, hall effect sensor, or ECM.
- Microprocessor stabilized readings.
- Night dimming with lens label lighting.
- High Visibility VFD display for sunlight readability.

The Odyssey mini speedometer will show the current speed of your vehicle and can go into an odometer display mode to show the number miles accumulated since installing the unit.

The speedometer is fully adjustable from 1800 - 25600 pulse per mile (kilometer) speed signals. This allows it to be calibrated with 4000 to 128000 signal source that is up to $\pm 65\%$ off (± 39 at 60 mph). The odometer is calibrated to the speed reading.

Operation:

The gauge needs only the PWR and GND terminals connected to light up. When the DIM terminal has 12 volts, it will dim the display to a preset level for night viewing. The SND terminal should be connected to the vehicle speed sensor. See the sensor connection section for hookup. When the SW terminal has 12 volts, the gauge will display the odometer mileage. The SW terminal is also used for speed calibration. To simplify calibration and reading the mileage, a push-button switch can be wired between the SW terminal and 12 volts.

Calibrating the speedometer:

The speedometer is calibrated at the factory for an 8000 pulse per mile sender. 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.

METHOD 1, AUTOCAL

1. Make sure the key is off so the gauge is not powered.
2. Connect the SW terminal to power.
3. Turn the key on so the gauge is powered. The display will show “ - “.
4. Disconnect the SW terminal. The display will switch between “CAL” (auto cal) and “AdJ” (adjust).
5. When “CAL” is displayed connect the SW terminal to power. This will place the unit in auto calibration mode.
6. Disconnect the SW terminal. The display will show a single bar.
7. Drive exactly one mile. The bar will move around the display when a speed signal is being received.
8. Connect the SW terminal to power. The calibration value will be calculated and stored.
9. Disconnect the SW terminal. 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. Connect the SW terminal to power.
3. Turn the key on so the gauge is powered. The display will show “ - “.
4. Disconnect the SW terminal. The display will switch between “CAL” (auto cal) and “AdJ” (adjust).
5. When “AdJ” is displayed connect the SW terminal to power. This will place the unit in calibration adjustment mode.
6. Disconnect the SW terminal. The display show the speed and will flash.
7. Drive at a known speed. This can be done by following another vehicle that driving at a constant, known speed.
8. Connect the SW terminal to power. The speed reading will begin increasing until the SW terminal is disconnected. The next time the SW terminal has power, the speed reading will begin decreasing until it is disconnected.
9. Once the speedometer is reading correct disconnect the SW terminal. The new calibration will be saved if no adjustments are made for 15-20 seconds.

Displaying the odometer reading:

With the gauge powered up normally, apply 12 volts to the SW terminal. The display will show “odo” followed by the thousands of miles, followed by the hundreds of miles. When you remove power from the SW terminal, the gauge will finish its current cycle and then return to displaying the speed.

The number 9,357 would be displayed as “odo” – “ 09” – “357” – “ ”.

Connecting to speed signal:

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

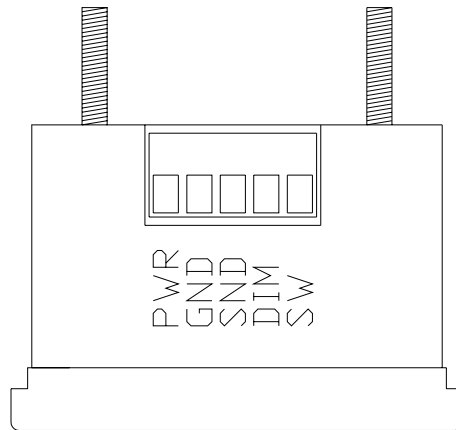
For inductive pickup's, connect one terminal from the pickup to ground and connect the other terminal to the SND terminal on the gauge.

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 speed signal wire to the SND terminal on the gauge.

For speed sensor integrated into a vehicle wiring harness, consult a service manual to determine the color code and location of the speedometer signal wire. Connect this wire to the SND terminal.

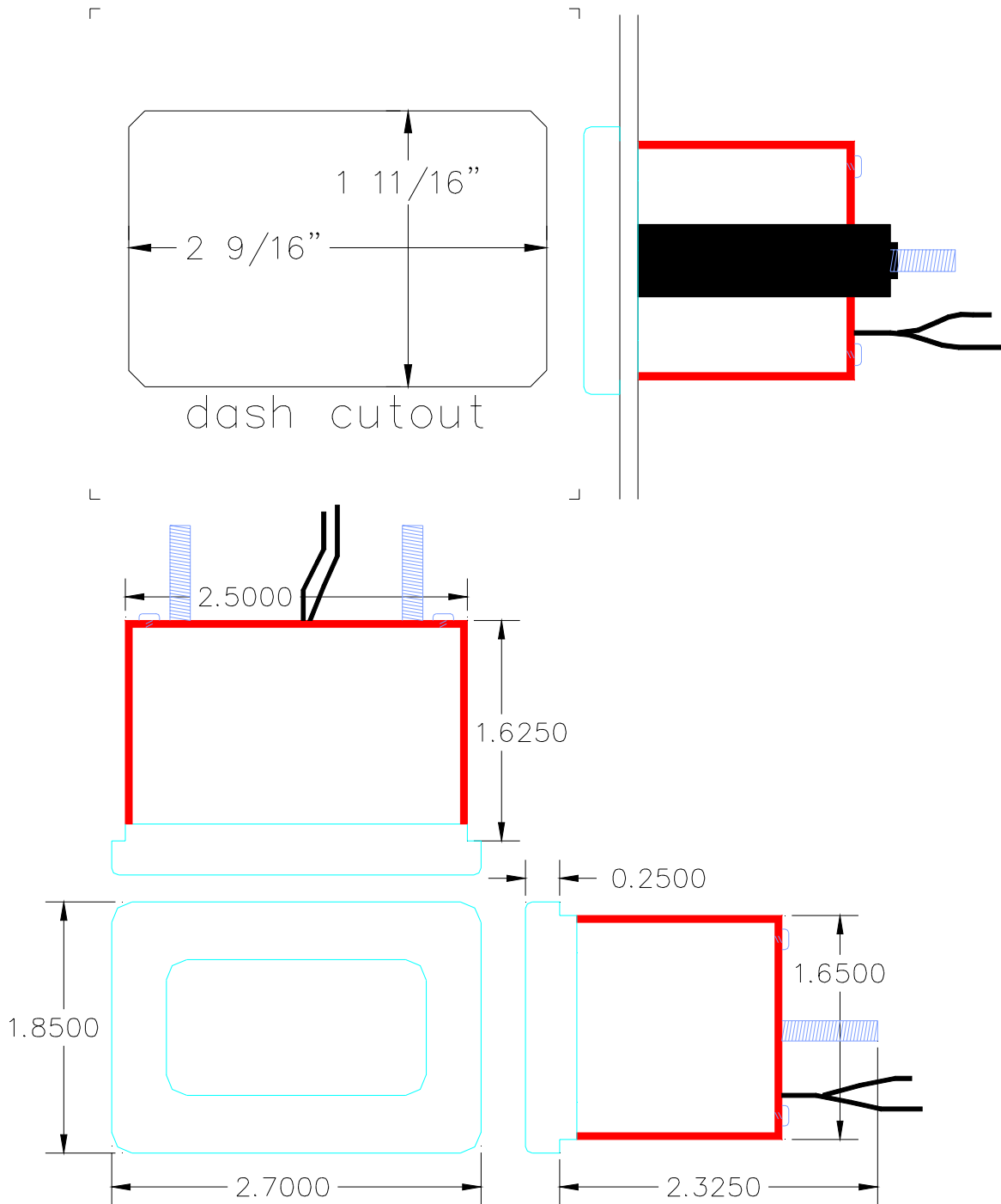
Wiring:

- | | | |
|-----|---|--|
| PWR | - | connect to a 12V accessory terminal for power. |
| GND | - | connect to a good ground point in the vehicle. |
| SND | - | connect to vehicle speed signal or speed sender. |
| DIM | - | connect to the tail light circuit. |
| SW | - | connect to push-button switch or leave open. |



Mounting:

The gauge requires a rectangular cut out that is about 2 9/16" x 1 11/16". 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. Figure 2 shows the required cut out for the gauge. Figure 3 shows how the gauge mounts.



Troubleshooting guide.

| Problem | Possible cause | Solution |
|---|---|--|
| Gauge will not light up | PWR terminal does not have power. | Connect to a location that has power. |
| | GND terminal is not getting a good ground. | Connect ground to a different location. |
| Gauge lights up, but speed will only show zero. | Gauge is damaged. | Return gauge for repair. (see instructions) |
| | SND terminal is not connected properly. | Check connection from gray wire to speed signal wire. |
| | Speed sensor not grounded properly. | Move ground to different location, preferably close to speedometer ground. |
| | Speed sensor is not being turned by transmission. | Check cable connection between sensor and transmission. Sensor can be tested by spinning the cable with a drill. |
| Speed reading is erratic or jumps around. | Gauge is not calibrated | Gauge must be recalibrated (see instructions). |
| | Speed sensor wire is loose or broken. | Check all wire connections and inspect wire for breaks. |
| | Cable is loose or broken. | Check cable between sensor and transmission. |
| | Poor ground connection. | Check ground connection on speedometer and sensor. |
| Speed reading is incorrect. | Gauge is not calibrated correctly. | Gauge must be calibrated (see instructions). |
| Gauge will not dim. | Blue wire is not connected correctly. | Check wiring connections. Blue wire should have 12 volts with headlights on. |
| Gauge remains dim at all times. | Blue wire is getting power all of the time. | Connect blue wire to location that only has power when the headlights are on. |

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 units.

Should you ever need to send the unit back for repairs, please 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 a complete description of the problem, your full name and address (street address preferred), and a telephone number where you can be reached during the day. An authorization number for products being returned for repair is not needed. Do not send any money. We will bill you for the repair charges.

Technical specifications

| | | |
|--|---|---------------------------|
| Minimum operating voltage | - | 7 volts |
| Maximum operating voltage | - | 18 volts |
| (operating at or near maximum rating for an extended time can damage unit) | | |
| Speed resolution | - | 1 MPH (KPH) |
| Odometer resolution | - | 1 mile (kilometer) |
| Speedometer max reading | - | 255 MPH (KPH) |
| Odometer max mileage | - | 99,999 miles (kilometers) |
| Typical current draw (@ 13.8V) | - | 0.13 A |

ODYSSEY SERIES DIGITAL GAUGE LIMITED WARRANTY

DAKOTA DIGITAL (the Company) 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 the Company's option) without charge for parts or labor directly related to repairs of the defect(s).

To obtain repair or replacement within the terms of this Warranty, the product is to be delivered with proof of warranty coverage (e.g. dated bill of sale), name, address, phone number, and specification of defects, transportation prepaid, to the factory. This Warranty is valid for the original purchaser only and may not be transferred.

This warranty does not cover nor extend to damage to vehicle electrical system. 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 express 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. IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WHATSOEVER. No person or representative is authorized to assume for the Company any liability other than expressed herein in connection with the sale of this product.

The Company does not warrant that this product cannot be compromised or circumvented. THE EXTENT OF THE COMPANY'S LIABILITY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT PROVIDED ABOVE AND, IN NO EVENT, SHALL THE COMPANY'S LIABILITY EXCEED THE PURCHASE PRICE PAID TO THE PURCHASER FOR THE PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damage so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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