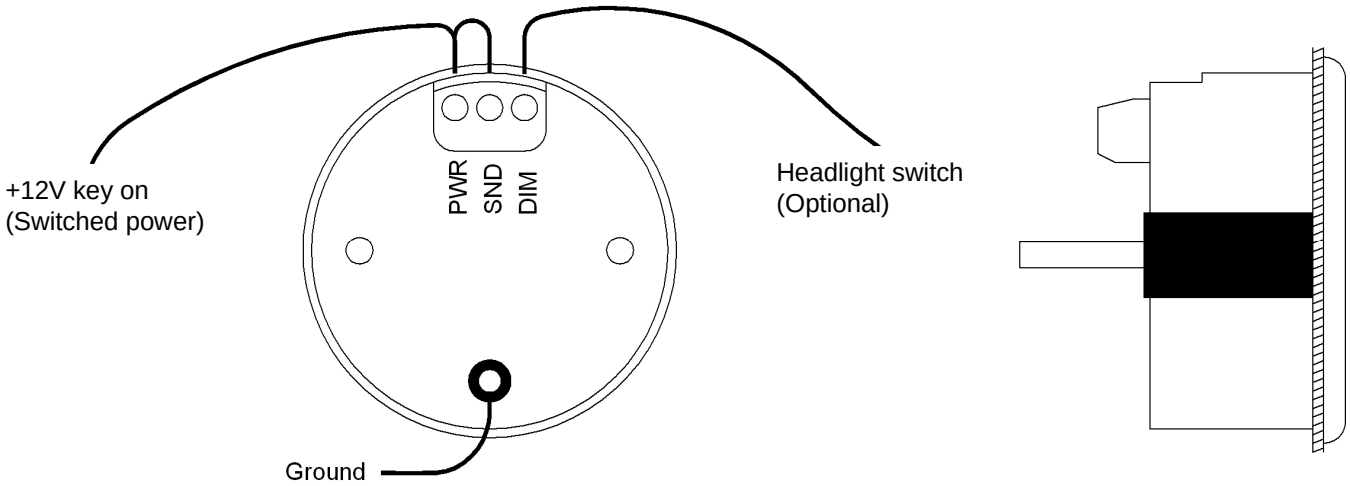
Dakota Digital

HLY-3051 ROUND VOLTMETER GAUGE REV. A
(weather and vibration resistant for exposed environments)

Wiring:

GND	-	Connect to a main ground location.
PWR	-	Connect to fused switched 12VDC power. (An accessory terminal will work for this.)
DIM	-	Night Dimming: provide 12VDC to dim display
SND	-	Voltage measuring point, usually jumper over to the PWR terminal.



Mounting:

The gauge requires a round hole 2-1/16" in diameter. The gauge 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". Gauge depth including the mounting studs is 1-7/8".

Factory settings:

Lo warning point:	11.1VDC
Hi warning point:	15.4VDC

- The voltage gauge will light with 8.0 – 17.0VDC on the PWR terminal. The SND terminal can monitor voltages between 1.0 - 18.0VDC if monitoring another source..
- The gauge has a user adjustable lower and upper warning level, which can be set to indicate low voltage and overcharging conditions.

The SND terminal is the voltage sensing input. To read the vehicle system voltage, connect this to the PWR terminal. To read the voltage at a second battery or other remote location, connect a wire from the SND terminal to the voltage to be monitored.

Setting the warning limits:

The SND terminal is used to enter and change the warning settings. You will need a wire connected to the SND terminal that can be powered separate from the gauge. The DIM switch should be off or the DIM terminal unhooked so that it does not interfere with the setup.

1. To enter the set mode, turn the key on with the SND wire not powered. The gauge will display "SEt".
2. Power the SND wire. The gauge will display " HI". (If you wait too long the gauge will exit the setup routine and you will need to repeat step # 1).
3. Release the SND wire. The gauge will display a number between 13.9 and 16.9.
4. Each time you momentarily power the SND wire the number will increase by one.
5. When the desired high warning value is displayed, keep the SND wire powered for about 2 seconds. The gauge will display "LO".
6. Release the SND wire. The gauge will display a number between 9.7 and 12.6.
7. Each time you momentarily power the SND wire the number will increase by one.
8. When the desired low warning value is displayed, keep the SND wire powered for about 2 seconds. The gauge will display "--".
9. Turn the key off.

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 does not have a good ground.	Connect to a different ground location.
	Gauge is damaged.	Return gauge for service. (see instructions)
Gauge lights up, but does not read correctly.	Loose connection on SND terminal.	Reconnect wire.
	Poor ground connection.	Move ground to different location
	Voltage or wiring problem in the vehicle wiring harness.	Check wiring harness for loose or damaged wires.
Gauge lights up, but displays "Er0".	Gauge is damaged.	Gauge must be returned for service. (see instructions)
Gauge lights up, but displays "---".	SND terminal is shorted to ground.	Check wire for damaged insulation. Replace if necessary.
Gauge lights up, but displays "EEE".	Sender is not connected to gauge.	Connect SND terminal on gauge to +12VDC.
	Wire between gauge and sender is broken.	Test and replace wire.
	Gauge is damaged.	Return gauge for service. (see instructions)
Gauge lights up, but displays "Er3".	Gauge is not calibrated correctly.	Gauge must be recalibrated. (contact factory)
Gauge lights up, but displays "Er5".	Warning limits are not set properly.	See "Setting the warning limits" in the manual.
Gauge flashes constantly.	Warning limits are not set properly.	Reset warning limits.
	Vehicle is over or under charging.	Check alternator and battery.
	SND terminal is not connected.	Make sure SND terminal is connected properly.
Gauge will not dim.	DIM terminal is not connected correctly.	Check wiring connections.
Gauge remains dim at all times.	DIM terminal is getting power all of the time.	Connect DIM wire to location that only has power when the headlight is on.
	Battery is very low.	Recharge or replace vehicle battery.
	Gauge is damaged.	Return gauge for service. (see instructions)

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. Any returns for warranty work must include a copy of the dated invoice or bill of sale.

Technical specifications

Minimum operating voltage	-	7VDC
Maximum operating voltage	-	17VDC
(operating at or near maximum voltage for an extended time can damage unit)		
Gauge Resolution	-	0.1VDC
Low Warning Range	-	9.6 – 12.6VDC
High Warning Range	-	13.9 – 16.9VDC
Gauge accuracy	-	±0.1VDC
Typical current draw (@ 13.8V)	-	0.1 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 MERCHANTABLITY, SHALL BE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. ANY ACTION FOR BREACH OF ANY WARRANTY HEREUNDER INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABLITY 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 that 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 if 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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