

# MODEL HLY-5021

## BAR MOUNT DIGITAL TACHOMETER

***Dakota Digital***

3421 W. Hovland Ave., Sioux Falls, SD 57107  
Phone: (605) 332-6513 FAX: (605) 339-4106  
www.dakotadigital.com

*Please read this before beginning installation or wiring.*

### **POWER**

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

A good quality, solid state ignition switch should be used. The contacts on a mechanical "bar" switch can bounce due to the vibration and cause the system to momentarily lose power and reset itself.

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 display system. This should be connected directly to the negative cable on the battery. Connecting to a tank or frame ground can cause a weak or intermittent ground connection. A poor ground connection can cause improper or erratic operation.

### **TACHOMETER**

The tachometer is used by connecting the green wire from the main power harness to the negative side of the coil or to an ignition module tach output. On dual coil systems, connect the green wire to a tach output from the ignition module or to the negative side of one of the coils. The tachometer is adjustable for 1 - 15 cylinder settings. The 1 cylinder setting is used for single-fire(dual coil) ignition systems without a buffered tach output.

The gauge displays the engine rpm directly from 250 – 9990 and rpmx1000 for 10,000 – 18,000. 11,400 rpm would be displayed as "11.4-". The decimal point and the dash indicate the reading has changed from rpm to rpmx1000.

The rpm readout will flash when the rpm exceeds the warning point. The warning point is adjustable.

The update rate for the digital readout is adjustable for either a ½ second averaged update or a 1/8 second rapid update. The averaged update rate is recommended for most applications since rapidly changing numbers can be difficult to read.

### **HIGH RPM RECALL**

Pressing the function switch while the gauge is running will display "HI" and then the current high rpm. This will repeat every 2 seconds. Holding the function switch for 8 seconds will reset the high rpm.

The high rpm recall is updated every 1/8 second regardless of the display update rate. This allows it to catch the highest rpm which might be missed at the slow update rate.

## SETTING THE WARNING LIMITS, CYLINDER SETUP, AND UPDATE SPEED:

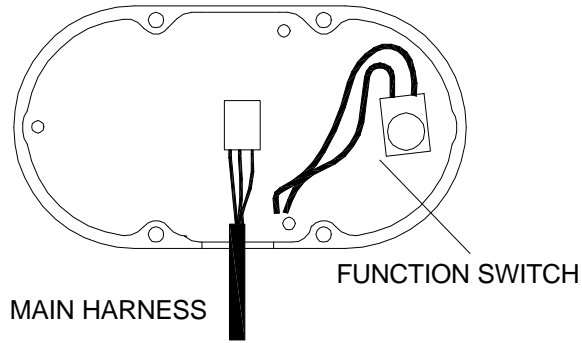
The following instructions are used to set the tachometer calibration and warning point:

1. To enter the set mode, turn the key on with the function switch pressed. The gauge will display "SEt".
2. Release the switch. The gauge will display "HI" and then change to the current hi rpm warning point. (2800 – 15,200)
3. Each time you momentarily press the switch the warning will increase 200rpm.
4. When the desired warning value is displayed, keep the switch held for about 2 seconds. The gauge will display "CYL".
5. Release the switch. The gauge will display the current cylinder setting. (1-15)
6. Each time you momentarily press the switch the number will increase by 1.
7. When the desired cylinder setting is displayed, keep the switch held for about 2 seconds. The gauge will display "SPd".
8. Release the switch. The gauge will display the current update speed. (slow "SLO" or fast "FSt").
9. Each time you momentarily press the switch the display will change.
10. When the desired update speed is displayed, keep the switch held for about 2 seconds. The gauge will display "--".
11. Turn the key off.

## TROUBLESHOOTING GUIDE.

<b>Problem</b>	<b>Possible cause</b>	<b>Solution</b>
Gauge will not light up	Red wire does not have power. Black wire is not getting a good ground. Gauge is damaged.	Connect to a location that has power. Connect ground to a different location. Return gauge for repair.
Gauge lights up, but displays "Er3"	Cylinder setting is invalid	Gauge must be recalibrated for correct number of cylinders. (see instructions)
Gauge lights up, but displays "Er4"	Gauge update rate is invalid	Gauge display update must be reset. (see instructions)
Gauge lights up, but displays "Er5"	Gauge warning setting is invalid.	The rpm warning point must be reset. (see instructions)
Gauge lights up, but rpm will only show zero.	Green wire is not connected properly. Gauge is not getting a tach signal from the engine. Tach output from ignition module not working. Gauge is not calibrated	Check connection from green wire to engine tach signal. Check location that the tach signal wire is connected at the ignition system. Check for 4-8 V AC on tach signal wire, Replace ignition module if necessary. Gauge must be recalibrated (see instructions).
Tach reading is erratic or jumps around.	Tach signal wire is loose or broken. Update rate is too fast. Poor ground connection.	Check all wire connections and cables for breaks. Reset display update speed to slow. Check ground on tachometer and ignition/engine.
Tach reading is incorrect.	Electrical interference on tach signal wire. Gauge is not calibrated correctly.	Reroute tach wire away from coil and spark plug wires. Gauge must be calibrated.
Gauge will not go into the SETUP mode.	Switch is not being held in during power up. Switch is defective.	Press and hold switch while powering the gauge. Return gauge for repair.

### VIEW FROM BACK WITH COVER REMOVED



### WIRING

In order to ensure that there are no problems with voltage drops causing the system to shut down, a heavy duty, solid state ignition switch is recommended. Also, the black wire should be connected directly to the negative battery terminal to avoid erratic operation due to a poor ground connection.

The wire color code for the 3-wire main display system harness is as follows:

RED	+12 volt with key on
BLACK	ground (connect directly to battery)
GREEN	tachometer signal

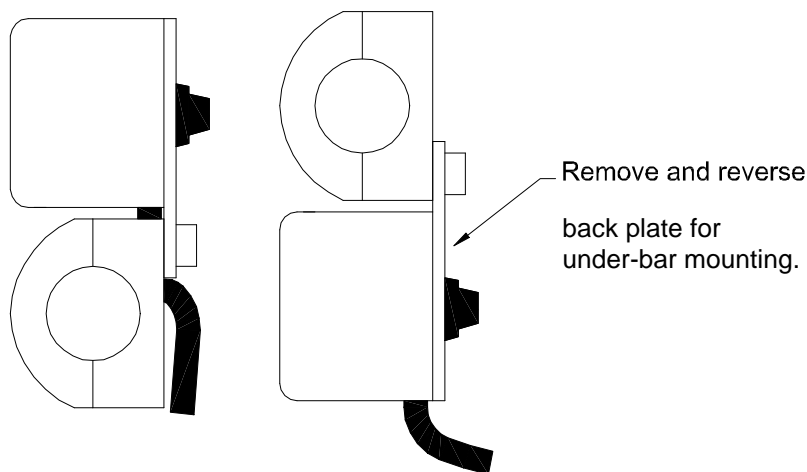
### MOUNTING

A mounting bracket must be purchased for your application. Some of the current brackets are: BKT-5001 1" bar mount, BKT-5002 flat triple-tree mount, BKT-5003 35° triple-tree mount, BKT-5004 1-1/4" bar mount, BKT-5005 1-1/2" bar mount, and BKT-5006 1" riser bar mount. The bar mount brackets can be used for above-the-bar mounting or below-the-bar mounting. The triple-tree mounts are only available for above-the-bar mounting.

The triple-tree mounting bracket replaces the original handle bar mount. The gauge attaches to the back side of the bracket with the supplied screws.

The bar mount brackets have a curved front bracket and two rear brackets. The longer screws attach the gauge to the back side of the bracket and the shorter screws go into the recessed openings on the rear brackets.

Drawings for using bar mount brackets above the bar and below the bar.



## **WARRANTY**

All DAKOTA DIGITAL instruments are warranted free of defects in material and workmanship for 3 years from the date of purchase. In the event of a problem with one of our products within the warranty period, DAKOTA DIGITAL will replace or repair the instrument at no charge. (The decision to repair or replace is solely that of DAKOTA DIGITAL. DAKOTA DIGITAL is not responsible for shipping costs of products returned under warranty or for labor charges for product installation and removal.) This warranty becomes invalid if the product is misused, altered or installed incorrectly.

**For warranty coverage, you must first call to receive an RMA#.** Ship the product transportation prepaid via UPS or insured Parcel Post. A copy of the original invoice or dated bill of sale along with a description of the defect is also required. Make sure that the RMA number is clearly visible on the outside of the package as well as inside on the paper work.

The above warranties, both expressed and implied, do not cover damages caused by improper installation, misuse, abuse, fire, unauthorized modifications, floods or acts of God, or reimbursement of customer or shop time. The extent of the warranty is limited only to the product and does not cover any loss or damage to vehicle, equipment, or non-DAKOTA DIGITAL products.

## **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 your RMA#, 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. **A return authorization number (RMA#) for products being return for repair is required.** Do not send any money. We will bill you for the repair charges.

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