

Dakota Digital

HLY-2004

TANK MOUNT SPEEDOMETER/TACHOMETER INFORMATION SYSTEM DIRECT PLUG-IN FOR 2004+ Harley Davidson® MODELS

POWER

Constant battery power and key switched power are supplied by the stock harness.

GROUND

Ground is supplied by the stock harness.

STATUS AND WARNING INDICATORS

An extra 6 pin harness is supplied for the indicators not found in the stock speedometer harness connector. The right turn, left turn, and high beam indicators are activated by 12 volts at their respective hook-up wires. The right turn signal wire is green, the left turn signal wire is orange, and the high beam wire is purple. These can be connected to the same wires that the stock indicator lights would be connected to. The display system wire colors may not match the wire colors in your electrical wire harness. The turn signals can also be activated by the data bus on most models, so the green and orange wires may not need to be connected to anything.

The neutral and low oil indicators are activated by ground at their respective hook-up wires. These can be connected to the same wires that the stock indicator lights would be connected to. The low oil wire is gray and the neutral wire is blue.

LOW VOLTAGE WARNING

When the voltage drops below the warning limit with the engine running, LO and your current voltage will be displayed. (default warning limit is 11.0V)

SECURITY SYSTEM INDICATOR

The security system indicator is a red light that is activated by the stock harness.

SPEEDOMETER

The speedometer is read from the engine control module (ECM) data bus. This can be calibrated to allow for differences in tires or gearing. Calibration is discussed in a later section.

TACHOMETER

The tachometer is read from the ECM data bus.

The bar displays rpm x1000 with a range of 350 – 8000 rpm.

TEMP GAUGE

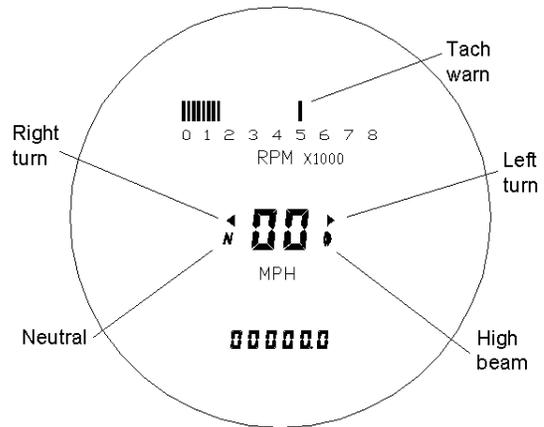
This reading is only available if the data is being supplied by the ECM and may not be available on all models. The temperature is read from a sensor on the head and is monitored by the ECM. The temperature is sent over the ECM data bus.

CRUISE INDICATOR

On bikes equipped with cruise control, the message display will briefly display CRS ON when the cruise switch is turned on, CR OFF when the cruise switch is turned off, and CRUISE when the cruise control is engaged.

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 brown 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 brown wire disconnected.



GAUGE SETUP AND CALIBRATION

The setup menus are entered by holding the switch in while turning the key on. The menus are as follows:

Main Menu	Sub Menu	Description
SPEED	ADJUST	adjust calibrate speed
	UNIT	select mph or kph units
	SERVICE	miles to service setting
TACH	WARN	set rpm shift warning point
CLOCK	MINUTE xx	adjust minutes
	HOUR xx	adjust hours
	CAL x	speed up or slow down the clock.
TEMP	UNIT	select F or C units
	WARN	set high temp warning point
VOLT	WARN	set low volt warning point
GEAR		transmission gear display selection
	OFF	disable gear position display
	PROGRM	program gears based on speed and rpm
INFO	MODEL	Gauge model number
	VER	Gauge revision code
DIAG	ENGINE	read out engine trouble codes ECM part number.
	SECUR	read out turn signal/security module trouble codes and part number.
DONE		Restart system with new settings

SPEEDOMETER SETUP

Press and hold the switch while turning the key on and starting the engine. Once the engine is running, release the switch. When "SPEED" is displayed, press the switch again and then release it. The message display should switch between "ADJUST", "UNIT", and "SERVIC".

METRIC SELECTION

If you are setting the system up for metric displays, press the switch when "UNIT" is displayed.

Press and release the switch until "KPH" is displayed.

Press and hold the switch until "DONE" is displayed.

SPEED CALIBRATION

The speed calibration is not required unless you have changed out the stock transmission or stock tires.

Adjust

When "ADJUST" is displayed press and release the switch. The system will toggle between "SLOWER" and "FASTER" each time the switch is momentarily pressed. Select whether you need to make the speedometer read faster or slower and then press and hold the switch. "CL" and a number will now be displayed. 1.00 represents no change in the calibration from stock. 1.25 would be 25 % faster, 0.75 would be 25% slower. When the desired cal ratio is displayed, press and hold the switch.

MILES TO NEXT SERVICE SETUP

The service mileage is a countdown mile meter. The service mile display can be disabled or can be set to count down from 500 – 7500 miles. If the service mile is enabled and it gets to 0 miles it will display "SERVIC DUE". If the push button switch is pressed and held while "SERVIC DUE" is displayed, the service miles will be reset.

To change the service miles, enable, or disable the reading, go to the SPEED setup menu and then select "SERVIC".

The current setting will be displayed. "OFF" or a mileage from 500 – 7500.

Press and release the switch until the desired setting is displayed.

Press and hold the switch until "DONE" is displayed.

TACHOMETER SETUP

The rpm warning/shift point can be adjusted from 2000 – 8000. The tachometer will read from 350 – 8000 rpm.

Press and hold the switch while turning the key on. Release the switch. When "TACH" is displayed, press the switch again and then release it. "WARN" will now be displayed. Press and release the switch.

The current warning point will be displayed.

Press and release the switch until the desired setting is displayed.

Press and hold the switch until "DONE" is displayed.

GEAR INDICATOR SETUP

This gauge can optionally display the gear position. The gauge can learn the positions based on speed and rpm. It will work with 3, 4, 5, or 6 speed transmissions.

To program the gear positions in, begin at a section of road where you can gradually shift through all of the gears. Press and hold the switch while turning the key on and starting the engine. Once the engine is running, release the switch. When "GEAR" is displayed, press the switch again and then release it.

The display will show the current selection, "OFF" or "PROGRM". Press and release the switch to change the selection.

When "PROGRM" is displayed, press and hold the switch to begin the gear programming. The message will show "LO RPM" if the engine rpm is below 1500, or "LO SPD" if the vehicle speed is below 5.

Begin driving in 1st gear. The display should show GEAR 1 and the "1" should be flashing. Drive at a steady speed then press and release the switch. The "1" should stop flashing for a few seconds and then switch to a flashing "2".

Shift to 2nd gear and drive at a steady speed. Press and release the switch again.

Repeat this through each gear. When you are done, press and hold the switch until the display shows "DONE".

Press and release the switch to restart the gauge in normal operation.

INFO MENU

The INFO menu is used to get the gauge model number and gauge revision code. This will normally only be used for diagnostic and troubleshooting.

FUNCTION SWITCH

The function switch on the front of the speedometer allows access to all of the mileage, rpm, and performance information. Pressing and releasing the function switch toggles through the different displays. The display sequence is as follows:

	<u>SPEED MENU</u>		
ODOMTR	>	000000	odometer mileage
TRIP A	>	A 000.0	trip meter mileage A
TRIP B	>	B 000.0	trip meter mileage B
SERVIC	>	S 0000	miles since last service (if programmed)
GEAR	>		current gear position (if programmed)
KPH	>	KPH 00	metric speed conversion (to mph if metric unit is selected)
CRS ON	>		only visible if cruise switch is on
CRUSE	>		only visible if cruise is engaged
CLOCK	>	12:00	current time
T MENU	>		switch to tach menu
P MENU	>		switch to performance menu
	<u>TACH MENU</u>		
HOURS	>	HR 0.0	re-settable hour meter
WARN	>	W 0000	current rpm warning or SHIFT if over set point
RPM	>	R 0000	rpm reading in alpha display
LO OIL	>		only visible if input is activated
VOLTS	>	V 00.0	displays voltage to gauge
S MENU	>		switch to speed menu
P MENU	>		switch to performance menu
	<u>PERFORMANCE MENU</u>		
TEMP	>	250 F	engine temperature
HI RPM	>	H 0000	high rpm recall
HI SPD	>	HI 00	high speed recall
0-60 T	>	60 00.0	0-60mph time (0-100kph)
QUARTR	>	QT 00.0	quarter mile time
QT MPH	>	QT 00	quarter mile speed
S MENU	>		switch to speed menu
T MENU	>		switch to tach menu

Example: If the odometer mileage is currently displayed and you want to change to the 0-60 time, press and release the switch until "P MENU" is displayed. Wait until the display switches to "HI RPM". Press and release the switch until "60 TIM" is displayed. After a couple of seconds the display will show the current 0-60 time.

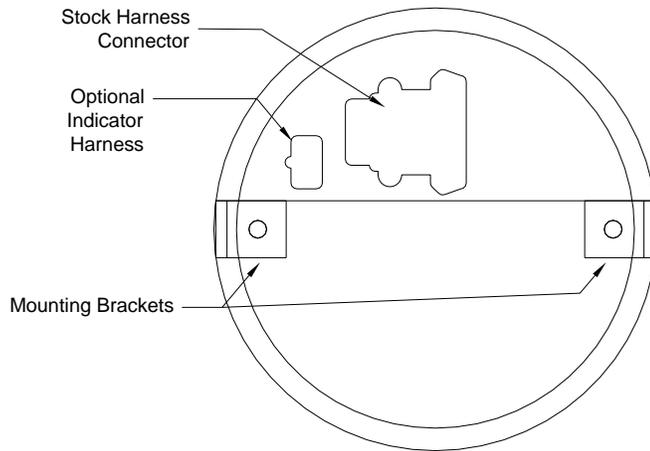
All primary wire connections are made by simply plugging the gauge into the stock harness.

WIRING COLOR CODE FOR INDICATOR HARNESS:

HLY-2004	Stock harness color	Function
PURPLE	WHITE	high beam indicator
ORANGE	VIOLET	left turn indicator
GREEN	BROWN	right turn indicator
BLUE	TAN	neutral indicator
GRAY	GREEN/YELLOW	oil warning indicator
BROWN	normally not used	night dimming

MOUNTING:

The base system is universal enough to fit in either a new-style, clip-in (1995 or newer) or into the older style, bolt-in. This allows it to be used with a stock dash or most any type of custom dash. The rubber mounts with studs on both sides are used for the bolt-in style. The L-brackets are used for the clip in style.



WARRANTY

All DAKOTA DIGITAL instruments are warranted free of defects in material and workmanship for 2 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. **A note or letter must be included describing the problem.**

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. You can contact our technicians at 605-332-6513 or by email at dakotasupport@dakotadigital.com.

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.

Troubleshooting guide.

Problem

Gauge will not light up

Possible cause

Orange/White wire does not have power.

Brown/Gray wire does not have power.

Black wire is not getting a good ground.

Gauge is damaged.

No data from ECM.

Solution

Inspect and repair stock harness.

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Return gauge for repair. (see instructions)

Check engine trouble codes.

Gauge lights up, but speed will only show zero.

Sensor is not sending a speed signal.

Check wiring and test sensor.

Speed reading is incorrect.

Gauge is not calibrated correctly.

Gauge must be calibrated (see instructions).

Gauge lights up, but tach will only show zero.

No data from ECM.

Check engine trouble codes.

Gauge will not dim.

Gauge is not calibrated
Brown wire is not connected correctly.

Gauge must be recalibrated (see instructions).
Check wiring connections. Brown wire should have 12 volts when the gauge should dim.

Gauge remains dim at all times.

Brown wire is getting power all of the time.

Connect brown wire to location that only has power when the headlights are on.

High beam, Left turn, or Right turn indicator does not work.

Loose or incorrect connection to indicator wire.

Check that the appropriate indicator wire has about 0 volts when the indicator should be off and about 12 volts when the indicator should be on.

Neutral low oil, or cruise indicator does not work.

Loose or incorrect connection to indicator wire.

Check that the appropriate indicator wire has about 12 volts when the indicator should be off and about 0 volts when the indicator should be on.

Dakota Digital

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