GIpro X-type G2 | User's Guide

Gear position indicator with programmable engine speed and high speed warning

1. Foreword

Congratulations on your purchase of a GIpro X-type gear position indicator.

The GIpro products from HealTech Electronics Ltd. are the most advanced gear position indicators on the market today.

This GIpro model will fit all motorcycles and vehicles which have an electronic speedometer (either analogue or digital readout). Your speedometer is electronic if the odo/tripmeter has LCD readout. If your speedometer is cable driven, it is still possible to install this product with our universal GPX-WSS harness kit. Due to the advanced microprocessor and sophisticated firmware, the GIpro-X offers faster and more reliable readings than competing products.

The unit is also the smallest, most compact gear indicator available, making it easy to mount at the instrument cluster.

2. Installation

The Harness Kit required for the installation is supplied separately. Along with the X-type display unit, please make sure to order the correct wiring harness kit for your bike.

Please refer to the install instructions received with the Harness Kit.

3. Operation

After programming, the unit shows the actual gear position while riding. Optionally, it may also warn you when the set road speed and/or the set engine speed is exceeded.

Most motorcycles we list the GIpro X-type unit for are not equipped with Gear Position Sensor, therefore determining and displaying the gear in use is only possible when the engine is running and the clutch is fully released. At other times (clutch pulled-in, engine not running, bike stopped) the display will show a "–" sign. The GIpro will NOT show an incorrect gear in any circumstances, except for a split second when the clutch is released slowly (slipping) during a back shift.

4. Features

FAST AND ACCURATE
Instant and accurate indication of the selected gear (right after the clutch is released) for added control and safety. The sampling period can be adjusted to make the response quicker or slower, depending on shift speed and signal conditions.

TOUCH SENSOR
All settings can be done via the touch sensor so there's no opening on the housing, it is completely sealed and encapsulated in epoxy.

The touch sensitive area is on the TOP of the unit. However, after programming, the unit can be mounted even with the top side stuck to the dashboard (via the sticky pads supplied) and will function properly. It can also be used with the optional GIpro Mount.

QUICK INSTALLATION
Plug 'n Go wiring harness kits are available for most motorcycles. Easy to mount display. Complete installation can be done within 45 minutes on most motorcycles.

BRIGHT AND EFFECTIVE DISPLAY
Extra bright LED display, housed in a compact box. Available in 5 colors.

AUTO BRIGHTNESS CONTROL
The brightness of the display is adjusted automatically according to the ambient light intensity. The sensitivity of the sensor can be fine-tuned in the menu.

HIGH SPEED WARNING AND SHIFT LIGHT FUNCTION
If you wish, you may set the unit to warn you when the set road speed and/or the set engine speed is exceeded.

AUTO LEARNING FUNCTION
The unit learns the gear positions automatically, just start the learning function via the menu.

COMPATIBILITY
Compatible with all HealTech and most aftermarket products, including quick shifters.

ROBUST DESIGN
- Full SMT-design, encapsulated in epoxy
- Flash memory to store user settings even with the battery disconnected
- Only inspected, high quality components are built in
- Each unit is extensively tested prior to shipping, guaranteed to work
- 100% waterproof (IP68)

5. Setup (menu)

There are several parameters which can be changed or fine-tuned under the menu. If there are no gear positions stored in the unit, it automatically starts the Learning function after power-up as per chapter 5.2

Sign	Function	Description	See chapter
C	Code	Reading the firmware version	5.1
L	Learning	Learning the gear positions	5.2
F	Filtering	Adjusting the filtering (sampling period)	5.3
b	Brightness	Adjusting the sensitivity of the light sensor	5.4
H	HSW	High Speed Warning function	5.5
E	ESW	Engine Speed Warning (Shift Light) function	5.6
u	Upside down	Flipping the display upside down	5.7
d	Defaults	Resetting all values to factory defaults	5.8

Note: If the wheels start spinning or the engine is revved up then accessing the menu will be disabled even if you come to a stop. Cycle the ignition key to start over.

To access the menu follow these steps, in this order:
- The TOP side of the housing is the touch sensitive area so it must be kept free, away from all objects. If the unit is in a mount, remove it first.
- Have the ignition OFF (the display must be blank).
- Turn the ignition ON (the display should count up and then show "–"). If the display does not light up, switch the engine stop switch to RUN position.
- With your index finger (without gloves) tap the top side of the unit and hold your finger until the first menu sign shows up. Remove your finger now.

To review or change a parameter, use the following controls:
- Short tap (tap and release the touch sensor): next menu item / increasing the value
- Long tap (hold your finger on the touch sensor until the display changes): select / ok

5.1 Reading the firmware version

In the menu, select the "**C**" sign and do a long tap. After this command, the firmware version number is shown (5 digits) repeatedly. If you contact us for support please let us know this number. To exit, do a long tap again or turn the ignition key off.

5.2 Learning the gear positions

If the unit does not indicate the gears correctly, redo the Learning procedure. In the menu, select the "**L**" sign and do a long tap. If there are no gear positions stored in the unit, it automatically starts the Learning function after power-up.

1. Make sure the engine is warmed up completely before starting the procedure so that the idle speed is normal.
2. Raise the rear wheel off the ground by using a stand.
   (If you do not have a stand, or your speedometer is driven off the front wheel, set up the unit while riding. Find a long, straight road with light traffic. The unit does not learn the same gear twice, this makes it easy to set up on the road. You can even shift down and stop during the setup if needed. Do not stare at the display, watch the road and ride with extreme care as always!)
3. After the 6-to-1 countdown, when you see the "**L**" sign flashing, start the engine and let it idle. If the RPM signal is received correctly, the "**L**" sign starts flashing quicker for a few seconds. The unit learns the idle speed.
4. When you see the "**1**" sign flashing, select 1st gear, release the clutch and keep the engine at approx. 3-4 times of your idle speed (usually 3000-4000 RPM). The display flashes faster while the SPEED signal is being received correctly. The unit is now learning the gear position. Depending on the bike model, the learning may take from a few seconds up to a minute.
5. When you see the "**n**" (next) sign, select the next gear. The gear number starts flashing faster when the unit is learning the new gear position.
   Repeat this step until all gears have been taught.
   Note: If you'd like to cancel or start over the process, turn the ignition key off.
6. Keep riding in top gear until the "**U**" (update) sign starts flashing (if your bike has 4 or 5 gears, it takes longer, about 15s). The unit is now programmed and should indicate all gears correctly.

Note: On power-up, the unit will count up from 1 to the number of gears programmed. If the learning procedure can not be completed, check the connections.

5.3 Adjusting the filtering

In the menu, select the "**F**" sign and do a long tap. The filtering (sampling period) can be adjusted to make the response quicker or slower during a gear change. It can be adjusted in 10 steps (from 0 to 9).

The factory default value is 4. Before changing this parameter, be sure to run the Learning procedure first.

- If the shift speed is quick (e.g. a quick shifter is used) and the indicated gears are always correct then DECREASE the value for faster response.

- If you notice that sometimes wrong gear is indicated momentarily during a gearshift or under hard acceleration, INCREASE the value for slower response.

Note: if wrong gear is displayed even with the filtering set to 9, there's a problem with the speed or RPM signals or the clutch is slipping.

5.4 Adjusting the sensitivity of the light sensor

In the menu, select the "**b**" sign and do a long tap. The ambient light sensor sensitivity can be adjusted in 10 steps (from 0 to 9). The factory default value is 4.

- INCREASE the value if more brightness is desired.

- DECREASE the value if you'd prefer less brightness.

Note: If you set the value to 9, the brightness will be always at maximum, regardless of the ambient light intensity.

5.5 High Speed Warning function

If you wish, you may program the device to warn you when your speed exceeds a set limit. The actual gear position will be flashing slowly above the set speed.

To ACTIVATE the HSW function:
- Start the engine and let it idle.
- In the menu, select the "**H**" sign and do a long tap. The display shows a spinning wheel animation.
- Start riding. The spinning wheel animation will speed up, indicating that it is learning the highest speed value.
- In top gear, slowly increase your speed to the desired target speed and keep it steady for about 3 seconds.
- Slow down carefully and stop (keep the engine running at idle). "**U**" (update) is shown and the target speed is programmed.

To DEACTIVATE the HSW function:
- In the menu, select the "**H**" sign and do a long tap. The display shows a spinning wheel animation.
- Do a long tap. The target speed is cleared and the function is deactivated.

Note:
- Accessing the HSW function is possible only if the Learning was completed earlier.
- Running the Learning procedure again will clear the HSW if it was active.
- If the HSW function is activate and you run the activation procedure again, the target speed value will be updated to the new one.

5.6 Engine Speed Warning (Shift Light) function

If you wish, you may program the device to warn you when the engine RPM exceeds a set limit. The actual gear position will be flashing rapidly with full brightness above the set RPM.

To ACTIVATE the ESW function:
- Start the engine and let it idle.
- In the menu, select the "**E**" sign and do a long tap. The display shows a spinning wheel animation.
- Start riding. The spinning wheel animation will speed up, indicating that it is learning the highest RPM value.
- In 2nd gear reach the desired target RPM and keep it steady for about 3 seconds.
- Slow down carefully and stop (keep the engine running at idle). "**U**" (update) is shown and the target RPM is programmed.

To DEACTIVATE the ESW function:
- In the menu, select the "**E**" sign and do a long tap. The display shows a spinning wheel animation.
- Do a long tap. The target RPM is cleared and the function is deactivated.

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Notes:
- Accessing the ESW function is possible only if the Learning was completed earlier.
- Running the Learning procedure again will clear the ESW if it was active.
- If the ESW function is active and you run the activation procedure again, the target RPM value will be updated to the new one.
- The HSW and ESW functions can be used simultaneously if desired. If both the actual speed and actual RPM values are over the target, the ESW has higher priority i.e. the display will be flashing rapidly.

5.7 Flipping the display upside down (or vice versa)

In the menu, select the "**u**" sign and do a long tap.
The display is now flipped.

5.8 Resetting all values to factory defaults

In the menu, select the "**d**" sign and do a long tap.

This command will restore the factory defaults:
- Learning: stored gear positions are cleared
- Filtering: 4
- HSW: deactive
- ESW: deactive
- Brightness: 4
- Upside down: normal view

6. Cleaning the display

Clean the display with wet sponge. Use pure water only, without any detergents. Do not clean with dry cloth as it may scratch the front face. Do not spray high pressure water directly on the display.

7. Warranty

The unit is completely sealed and epoxy encapsulated, which gives extreme protection for the internal parts from shocks, vibrations and water. To ensure trouble-free operation from the start, all units have been extensively tested prior to shipment.

Our dealers are offering a 30-day money-back guarantee on HealTech products, thus you will get your money back if the product does not fulfill your expectations. (All parts must be returned in original condition for full refund.) Furthermore the product is covered by our 2-year replacement warranty from the date of purchase.

8. Specifications

- Supply voltage: +8V to +24V
- Maximum supply current at 12V: 60 mA
- Reverse polarity and transient protection
- Unit size: 20 x 30 x 13 mm (0.7 x 1.2 x 0.5 inches)
- Operating temp: -40C to +80C (-40F to +176F)
- Waterproof (IP68)

HEALTECH ELECTRONICS

Smart Tech for your **Ride!**

GIpro X-type G2

Install Guide for **GPX-U01** Harness Kit

Before installing this Harness Kit, please make sure you got the right parts for your bike. See the part numbers on the packaging and use the ***Product Advisor*** on our website to check compatibility.

These instructions are applicable to a wide range of motorcycles and describe the main install steps needed for a successful installation.
You can find motorcycle specific Supplementary Manuals on our website. Please visit:

www.healtech-electronics.com/GPXT

1. Overview

You need to connect 4 wires to the bike's wiring harness. Good quality quick connectors are supplied (4 pcs wire taps). No need to cut any wires and no need for soldering.

All connections can be done either under the fuel tank, at the ECU box or behind the instrument cluster.

The table below shows the connection overview:

GIpro wire	Connect to
Red	+12V switched power lead
Black	Ground lead or chassis ground
White	Speed Signal, tap anywhere between the Speed Sensor and instrument cluster. On some ABS models, tap the speed signal anywhere between the ABS computer and ECU box.
Green	Tacho signal, tap anywhere between the ECU box and instrument cluster. Alternatively, tap the signal wire from the 2-wire Crankshaft Sensor (Pickup coil), anywhere between the sensor and ECU box.

To complete the install, it is recommended that you consult with your dealer and/or refer to the Service Manual available for your bike.

Due to the large number of bike models and vehicles compatible with this Kit, model specific wire colors and install instructions are not described in this document.

2. Installation

Disclaimer: Do not attempt to install the product if you don't have basic mechanical and electrical skills. HealTech Electronics Ltd. and its distributors shall not be liable for any loss or damage caused by improper installation. If in doubt, please consult with your dealer.

1. The ignition key should be in OFF position. Remove the seat, raise and support the fuel tank.

2. **Locate** the Speed Sensor coupler.

   Most motorcycles have the speed sensor mounted on the gearbox. Others have the sensor mounted either at the front or at the rear wheel.
   Trace the cable until you find the speed sensor coupler. It is a 3-pole connector (except BMW, which use 2-pole).

   If in doubt, check the bike's Service Manual or ask your dealer for the location of the Speed Sensor coupler.

   Confirmation:
   Separate the Speed Sensor coupler. Rotate the wheels while the ignition is on. The speedometer should indicate 0. If so, turn the ignition off, reconnect the coupler and proceed to the next step. Otherwise, if the speedometer registers a speed other than 0, you have not disconnected the correct coupler and need to look again.

   ABS models:
   Some bikes equipped with ABS do not have a speed sensor *(e.g. Yamaha FJR1300 2006+, VMAX 2009+, Ducati ST4 2005+)*. The speed signal is generated by the ABS computer. On these bikes, tap the speed signal wire between the ABS computer and ECU box. Refer to the bike's Service Manual for the wiring.

3. **Identify** the wires of the speed sensor by using a voltmeter, or refer to the Service Manual for the wiring.
   The speed sensor has 3 wires (except BMW):
   - *The **Ground** wire should have continuity to chassis ground, when ignition is turned off.*
   - *The **Power** wire should be constant 5V to 12V, when ignition is turned on.*
   - *Voltage on the **Signal** wire should cycle between 0V and 5V when the wheel is rotated.*

4. **Connect** the GIpro **Black** wire to the Ground wire of the sensor, using the **Red wire tap** connector supplied.

   Usage: Place the unstripped run wire (sensor ground) inside the run channel. Close the side cover until latched. Cut off the excess length, then insert the unstripped tap wire (Black) completely and check its position. Insert the blade (u-contact) and press down by finger pressure. Then, fully depress the u-contact with pliers. Close the hinged top cover until latched.

   Alternatively, connect the GIpro Black wire to chassis ground.

5. **Connect** the GIpro **Red** wire to a switched +12V power lead, such as the hot wire of the rear brake light switch, or to a power lead at the fusebox. You can use the Power lead of the speed sensor if its voltage is higher than 9V.
   Again, use the Red wire tap connector supplied.

6. Connect the 4-pole GIpro harness connector to the GIpro display connector.

7. Check whether the Power and Ground connections are correct:

   Test #1:
   Select Neutral and turn ignition On →
   The GIpro display should count from **6** to **1**, then "**L**" flashes slowly.
   (If not, the display is not receiving power and/or ground.)

8. **Connect** the GIpro **White** wire to the Signal wire of the speed sensor (or to the speed signal wire from the ABS computer). As before, use the Red wire tap connector supplied.

   Test #2:
   Rotate the wheels → the GIpro display should indicate a rolling wheel.
   (If not, the display is not receiving the speed signal.)

9. **Connect** the GIpro **Green** wire to the Signal wire of the **Crankshaft sensor** (Pickup coil). The Crankshaft sensor is inside the crankcase, usually near the Alternator. It has two wires. Alternatively, tap the tacho signal wire near the ECU box. Again, use the Red wire tap connector supplied.

   Test #3:
   Start the engine → "**L**" should flash **faster** for a few seconds.
   (If not, the display is not receiving the RPM signal.)

10. Peel off the green plastic from the back of the unit, and mount the display.

11. Neatly route the GIpro harness from the wire taps to the mounting location, preferably along the frame.
    Do not bend the harness near the 4-pole connectors.
    Do not route the harness very close to the exhaust pipe or cylinder head.

12. Use black tape to secure and isolate the 4-pole connectors.

13. To minimize cable stress, use the supplied cable ties to fasten the unit and harness to other cables.

14. If all tests work fine, refer to the User's Guide for setup instructions.