

IRC Components quickshifter uses a "Strain Gauge" style sensor that is IP65 rated with quick-disconnect plug. We have put an enormous amount of energy in the form of time, technology and knowledge to create a reliable performance-oriented product. This product is encouraged for use on a closed circuit only, is not homologated for road use. IRC is not liable for any injury or damage to the operator, vehicle, or third parties from the use of this product.

DISCLAIMERS

- System setup must always be done when bike is at complete halt and is parked on stands. A wrong setting could affect, partially or fully, the system's effectiveness, ultimately damaging the gearbox.

- System setting is the responsibility of the user and not of the manufacturer. While fixing sensors, take extra caution to not damage while screwing and unscrewing the bike. It is a delicate product.

- The use of this product is at the total discretion of the private parties.

Each system modification, both of hardware and software, as well as harness or single components, could affect the system functionality. It can do potential damage or cause injury to the user, vehicle, or to third parts and this will negate the product warranty.

- Installation must be done carefully. It is mandatory that you follow instructions provided in the manual book. After installation it is highly recommended that you do proper test of the product before riding on.

- Installation is an extremely crucial setup for system efficiency. Be sure it is done by competent and specialized mechanic.



WARNING

- Our quickshifter provides an additional throttle % when you need to downshifting. If the engine revs are high, near the red line, the system will provide this acceleration but the bike ECU will cut it to avoid the over revving with engine damage. Result is that the gear could be not engaged or not properly engaged. We suggest don't pass the 80% of max engine revs when you start the downshifting.
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1. CONNECTIONS

1.1 Fix the Main Board on underseat

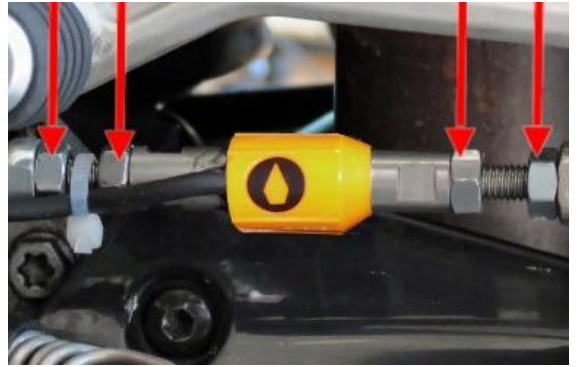
Under rear seat, in an accessible position



1.2 Load Cell installation

Sensor has "magic threads" i.e. both right and left. Connect the sensor to the shiftrod (This has to be bought separately it is not included in the kit). Once you have connected it, measure the shift-rod and cut it to customize it. After connecting, tighten the nuts and ensure the grub screws to avoid disconnections due to vibrations.

However, Install sensors and rod with uniball links on both the ends. Most bikes have stock uniballs. Check that the shiftrod does not rub or touch anything, as this could impair sensing. Try to fix sensors that does not get in connection with heated parts while riding. Make sure wire has a slight bend/loop so that it does not tighten up and pull the sensors up or down while shifting. Warranty does not cover ripped out wires



WARNING

To adjust sensor positioning, act on the proper planes on it.
Sensor failure could occur if acting on the cover

1.3 Quickshifter connector installation

Replace the OEM blipper plug with the Black plug of our system

2. DISPLAY

At key on, the system will be powered and the ECU makes a general check. When passed, the display will show the firmware Version.

Do not start any process, setting or action on sensor until the above routine is completed.

When the pre load threshold has passed (par. 3.4), the display will show "--" .

In case of failure, the display will show an "E" followed by a number. Give this code to the assistant.

3. SETTINGS

To set up initial program press both the buttons to enter into the system. Push lower button to scroll the menus forward. Push the upper one to scroll the menus backwards. Press and maintain the lower button to enter into the various menus. However, to exit from the menu and undermenus press upper or both buttons. System will go out of programming session if no button is pushed except the "r" menu. Also during programming, the quickshifter is disabled.



WARNING

Act only on the following setup. If a menue doesn't appear into the following list, don't modify it.

3.8 Setting Resting Voltage “tt”

Defines the sensor output value at rest. Adjustable as follows:

- “01”: 2.5 V (default)
- “02”: 2.4 V (for Ducati and Aprilia)

3.9 Definition of Output Type “dS”

This function defines the sensor output type and its characteristics.

- “dU”: purely analog output. The sensor sends a continuous signal proportional to the force applied to the rod, varying linearly between 0.5V and 4.5V.
- “dd”: digitized output. The sensor sends a voltage signal that is digitized, based on an activation threshold adjustable via menu.

Depending on the selected output type, refer to the corresponding sections below:

dU: Purely Analog Output

3.4 Full-Scale Adjustment “L” for Upshift

It is possible to set the load threshold corresponding to the voltage value of 4.5V.

When used with OEM ECUs, higher “L” values make the gear shift stiffer, while lower values make it softer.

- For 50 kg full scale: set **L = 16**
- For 100 kg full scale: set **L = 32**

3.7 Full-Scale Adjustment “LS” for Downshift

It is possible to set the load threshold corresponding to the voltage value of 0.5V.

When used with OEM ECUs, higher “LS” values make the gear shift stiffer, while lower values make it softer.

- For 50 kg full scale: set **LS = 16**
- For 100 kg full scale: set **LS = 32**



Too high preloads could affect the gearbox reliability and makes the shifting “harsh”. A too low preload could cause unpredicted up/ signal cut of power for a while.
So properly adjust these parameters

3.11 Working Direction Setting “CE”

Referring to the movement of the gear rod, this parameter defines the working direction to obtain positive signals (i.e., towards 5 V): “C” = Compression or “E” = Extension.

3.9 Basic Filtering Definition “dL”

At rest, the value is always that set on “tt”.

- “15”: The resting signal is filtered within a ± 3 kg threshold to avoid interference on the ECU.
- “20”: The output signal is always raw, unfiltered (use this setting on **Aprilia APX**).

dd: Digitized Output

3.4 Preload Adjustment “L” for Upshift

It is possible to set the load threshold at which the sensor sends the cut signal during upshift.

Default value: **15**, adjustable in the range **07–40 kg**.

3.7 Preload Adjustment “LS” for Downshift

It is possible to set the load threshold at which the sensor sends the cut signal during downshift.

Default value: **15**, adjustable in the range **07–40 kg**.



Too high preloads could affect the gearbox reliability and makes the shifting “harsh”. A too low preload could cause unpredicted up/ signal cut of power for a while.
So properly adjust these parameters

3.5 Displaying Current Load "S"

By entering this menu, it is possible to view the current load.
This function is useful for setting the preload (see section 3.4).

3.5.1 Displaying Maximum Load "--"

By pressing and holding the lower button, the display will flash "--" for about 10 seconds, after which the maximum load detected during the interval will be shown.

This function is useful for adjusting the preloads (see sections 3.4 and 3.7).

3.11 Working Direction Setting "CE"

Referring to the movement of the gear rod during downshifting (for Honda, consider the upshift direction), it is possible to set the working direction as "C" = Compression or "E" = Extension.

With this configuration, the signal will rise towards 5 V.

3.9 Analog Threshold Definition "dL"

At rest, the value is always the one set on "dS".

This parameter modifies the voltage range for upshift and downshift.

- "05": 1.4 – 3.6 V (use for Aprilia and Ducati)
- "10": 0.5 – 4.3 V (default)

3.1 Gear Shift Pulse Duration Adjustment "t"

The duration of the gear shift pulse can be adjusted within the range **20 – 98 ms**.

Default: **60 ms**.

3.6 Dark Time Duration Adjustment "tS"

Allows setting the minimum time that must elapse between one gear shift and the next.

The time displayed on the screen must be multiplied by 10 to obtain the actual time.

Example: a display value of 50 means a dark time of 500 ms.

4. TROUBLESHOOTING

5.2 System continuously cut even when the foot isn't acting on the pedal:

Check you don't have "E1" on the display. If yes, contact your dealer.

Check the sensor: Tight the nuts and the eventual grubs to avoid disconnections and loss of functionality due to vibrations as per Par.1

If a LIPO or any other lightweight battery is used, check it eventually replace it.

5.3 Upshifting doesn't work:

Check "CE" according to above par. 3.11.

Check that when upshifting the display will show "- -" for a while and that you can hear a "click". If no, properly set "L" according to the above 5.1.

Check you don't have "E1" on the display. If yes, contact your dealer.

Check the sensor: Tight the nuts and the eventual grubs to avoid disconnections and loss of functionality due to vibrations as per Par.1

If a LIPO or any other lightweight battery is used, check it eventually replace it.

5.5 System works in reverse manner:

Check "CE" according to above par. 3.11.

5.6 Gears aren't fully engaged during Upshifting or go out after a while:

Check "L" and "LS", according to above 3.4 and 3.6. Eventually increase/reduce it a couple of points and test.

5. WORKING CONDITIONS

5V; -20°C ÷ +60°C

Enjoy your choice.

For any questions or troubleshooting queries, please contact us at:
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