

The SGRACE is our latest high performance creation; we have put down an enormous amount of energy both in time, technology and knowledge to create a reliable and innovative product. It is a "Strain Gauge" sensor type that, thanks to own electronic and manufacturing tricks, guarantees reliable and long lasting performances. This product is intended for use on a closed circuit only. It's not homologated for road use. The manufacturer of this product is not liable for any kind of damage or injury deriving to the operator, vehicle, or to third parties from the use of this product.

MADE IN ITALY



DISCLAIMERS



- System setup must always be done with bike stop and on stands.
- A wrong setting could affect, partially or fully, the system effectiveness damaging the gearbox.
- System setting is responsibility of the user and not of the manufacturer. Take care to sensor fixing to avoid it unscrew or interfere with other parts of the bike.
- The use of this product is at the total discretion of the private parties.
- The manufacturer of this product is not liable for any kind of damage or injury deriving to the operator, vehicle, or to third parties from the use of the product.
- Each system modification, both hardware and software and harness or single components, could affect the system functionality with potential damage or injury caused to the operator, vehicle, or to third parts and delete the product warranty.
- Installation must be done carefully following these instructions. It's strongly recommended to test the product and the bike after the installation.
- Installation is a very critical operation for system effectiveness. Be sure that it is done by competent and specialized personnel.

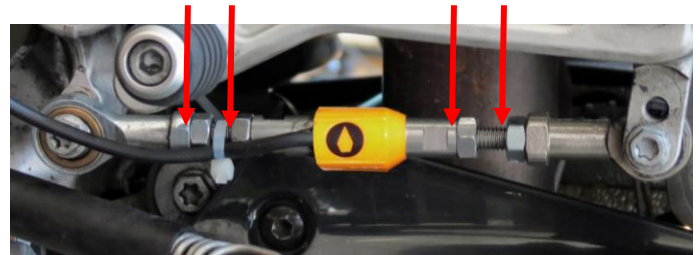
This manual is issued on Oct 22nd 2019 in Rev. 4.0. It's the end user responsibility to periodically visit the website www.irccomponents.it in order to check new releases of the manual.

1. SENSOR INSTALLATION



WARNING: SGRace ECU If connected to the ignition harness of CDI engine it can damage the ECU of the SGRACE. In such a scenario either contact the support team for a solution.

Sensor has "magic threads" i.e. both right and left. Connect the sensor (LABELED SENSOR) to the provided shiftrod. Cut it if necessary. Tight the nuts and the eventual grubs to avoid disconnections and loss of functionality due to vibrations.



Install sensor and rod with uniball links on both ends, most bikes have uniballs stock, check that the shiftrod does not rub or touch anything. Put sensor far from very hot parts. Make sure wire has a slight bend/loop so it does not tighten up and pull at the sensor during up or down shift.

Warranty does not cover ripped out wires.



WARNING: To adjust sensor positioning, act on the proper planes. Sensor failure could occur of acting on the cover.

2. DISPLAY

After powering, the ECU makes a general check and, if passed, the display will show the firmware version.



WARNING: don't act on the sensor till this procedure has finished.

Whenever the pre load threshold is passed (par. 3.3), the display will show "--".

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

3. INITIAL SET UP

Press both buttons to enter in the programming. Push lower button to scroll the menus forward while push the upper one to scroll backwards.

Press and maintain the lower button to enter into the various menus. To exit from the menu and undermenus, press upper or both buttons. System will go out of programming if no buttons are pushed except the "r"

menu. During programming, the quickshifter is not working.



WARNING: Act only on the following setup options. Don't touch the other menus.

3.1 Signal time programming "t"

Set at the maximum allowed value. If the ECU requires a different cut time, it can be adjusted within 20÷99ms.

3.3 Change in between commonly closed/open circuit "OC"

"O": commonly open circuit, default value for mostly all ECU, "C": commonly closed circuit, for Power Commander V and some others.

3.4 Pre Load adjustment "L"

Default setting "12" it's possible to change the load necessary to apply on the sensor for having the upshift signal. With ignition on, engine off, try to select the upper gear. Shift lever should move through the spring load in gearbox until gear resistance is felt. If rpm is above the set value at par. 3.8, the panel led should show "--" for a while. If this happen too early or too late consequently change the preload set.

3.5 Actual Load displaying "S"

Entering in this menu it's possible to read the actual load value. Useful feature for preload adjustment and for gearbox check and maintenance.

3.5.1 Max Load displaying "--"

At this point, pressing and holding the lower button, the display will show blinking "--" for about 10s. Afterwards it will show the max load value registered in this period Useful feature for preload adjustment and for gearbox reliability and maintenance. During this menu the sensor is enabled.

3.9 Type of analog output "dS"

If your system has the analog output, this function allows to set the type of output: "dC": 0÷5V with 0 load at 2.5V. "dU": 0÷5V with 0 load at 5V. "DD": 0÷5V with 0 load con at 0V.

3.10 Bottom/Upper limits "dr"

If your system has the analog output, set "5"=±50Kg, "10"=±100Kg.

3.11 Pushing/Pulling"CE"

"C" Pushing, "E" Pulling.

4. CONNECTIONS

In general consider that **Red** is the positive of the signal, **White** is the negative of the signal, **Blue** is the +12V powered and **Black** is the ground.

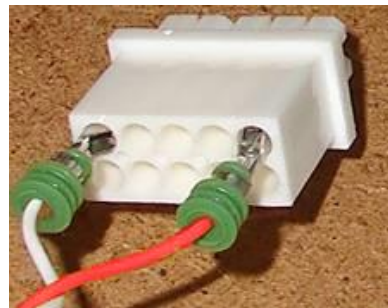
3.2.1 POWER COMMANDER 5 PCV:

Connect Blue wire to an ignition switch controlled +12v source and Black to ground.

Connect White to PCV port 4 and Red to port 5. Choose if necessary, the normally closed circuit as above par. 3.3.

3.2.2 POWER COMMANDER III USB:

Connect Blue wire to an ignition switch controlled +12v source and Black to ground. With the connector tongue towards the bottom and seen from wire side, connect the Red into the upwards right hole and the White into the upwards left hole.



3.2.3 RAPID BIKE EVO and PSC PRO:

Insert the connector as received, otherwise, with the connector tongue towards the bottom and seen from wire side, Blue on left position, Black and White together in the central position, Red in the right position.

4.2.4 RAPID BIKE 3:

Connect Blue wire to an ignition switch controlled +12v source and Black and White to ground. Connect the Red to the Rapid Bike Brown.

4.2.5 YEC:

Connect Blue wire to an ignition switch controlled +12v source and Black to the ground. Connect the Red and the White to the YEC ports. A Pulldown resistor could be necessary in between signal input and a +5V source.

4.2.6 YAMAHA MODIFIED IN YEC:

Connect the resistor as per modified YEC instructions. Should be one 10KOhm resistor between White/Red (signal) and Blue (L=+5V) of the YEC.

Connect Red wire of the SGRACE to the White/Red of the bike EXUP connector (A: PIN 25).

Connect white wire of the SGRACE to the Black/blue wire of the Exup connector.

Connect Blue wire to an ignition switch controlled +12v source and Black to the ground.

4.2.7 HRC:

Connect Blue wire to ignition switched + 12v and Black to ground.

Follow HRC ECU instructions. Usually connect the Red to the green/red (pos 27 QSSW) and the White to the ground (usually the green wire of the ECU where the horn is connected, but check). In some versions <06 connect the red to Pin22 (green/white wire). HRC harness has a

positions for the strain gauge load cell quickshifter. DO NOT USE THEM.

Set the cut time (suggested 65ms) as per par. 3.1.

4.2.8 SUZUKI MODIFIED IN YOSHIMURA:

Connect Blue wire to ignition switched + 12v and Black to ground.

Follow Yoshi ECU instructions. Usually connect the Red to the blue-white wire of the black ADJBOX connector, on the pin 52 (COV1). Connect the White wire to the black/brown of the ADJBOX connector.

5. ANALOG OUTPUT FOR DATA LOGGERS

A not used **Green** wire comes out from the connector. Connect it to your data logger. Output is 0÷5V. Refer to paragraph 3.9 and 3.10 for further information on setup.

6. WORKING CONDITIONS

8÷17.5V; -20°C÷+95°C.

We appreciated your business.

For every questions and problem contact us any time through: tech@irccomponents.com

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