

# Quickshifter /Autoblipper QS4

**SHIFTING  
CONTROLL**  
www.QS.vyrobce.cz

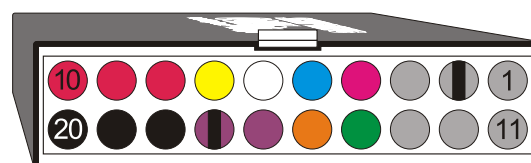
Quickshifter control unit “Shifting ContRoll QS4” (hereinafter referred to as QS4) is used for clutchless upwards shifting. Motorcycle with “fly-by-wire” can be use downward clutchless shifting (Autoblipper).

For setting of QS4 unit use *software QS4-ContRoll* and cable with USB-micro connector. For download go to [www.QS.vyrobce.cz/shifting-controll.html](http://www.QS.vyrobce.cz/shifting-controll.html)

QS unit can be used on closed road only. Incorrect use or connection may result damage of motorcycle parts or cause an injury.

1	Input 3
2	Input 2
3	Input 1
4	Input from Gear position sensor
5	RPM input
6	Injectors (12V output)
7	Ignition coils (12V output)
8,9,10	Supply, + 12V
11	Input 6
12	Input 5

13	Input 4
14	Accelerator input
15	Input from Speed sensor
16	Output 2 (max 500mA)
17	Output 1 (max 500mA)
18,19,20	GND, sense ground

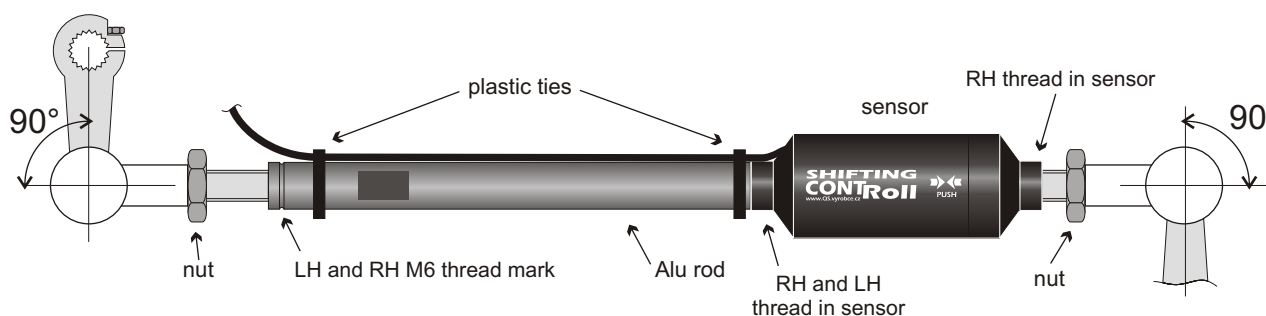


## Sensor installation

Modify the length of the aluminium rod with the sensor attached to match the original shifting rod length. You can cut maximum 15mm of each end. Connect the aluminium rods and tighten with the supplied bolts.

Adjust the shifting rod length so the angle is approx.  $90^\circ \pm 10^\circ$  to lever, then use a locking agent on the bolts. Be sure the shifting rod has moves freely by shifting through the gears. Use the plastic cable ties to fix the cable in place.

You can check proper function of the sensor in software. Go to “Monitor - Inputs”. When the sensor is stationary, GREY dot is by “Shifter”. When you make force on shifting pedal (movement to higher gear), dot is GREEN.

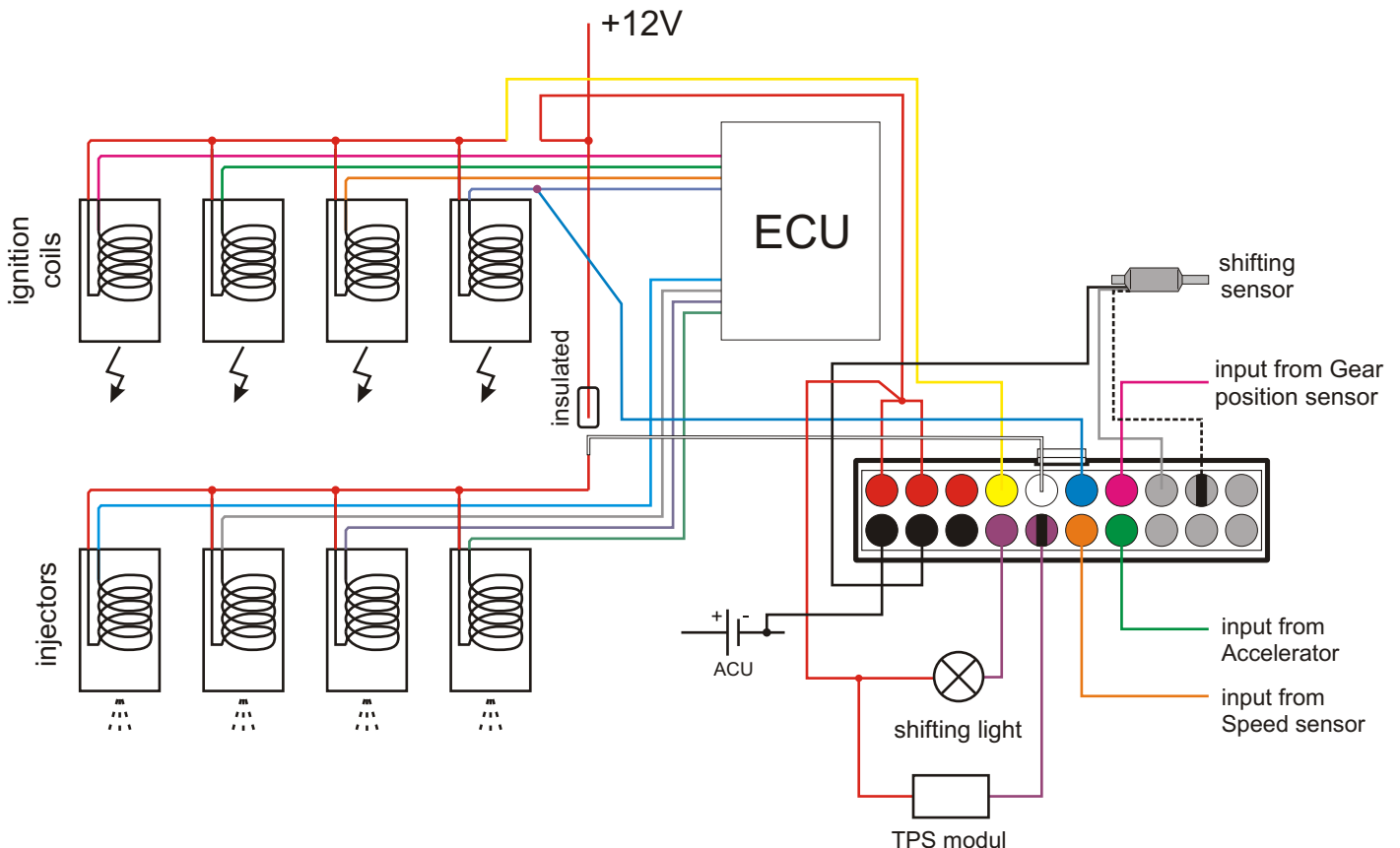


# QS4 unit connection

If you have Plug&Play kit - go to page 8

All ignition coils and all injectors have +12V supply, the same as all the injectors. Colors of wires may vary on different motorcycle models. The general connection is on wiring diagram bellow. Connection for your specific bike is in the end of manual or on [www.QS.vyrobce.cz](http://www.QS.vyrobce.cz)

- 1) Interrupt the +12V supply wire to ignition coils. Connect the red wire from the QS unit (position 9+10) into the wire with 12 volts (after putting the key into the ignition there is a +12V on). Connect the yellow wire from the QS unit (position 7) into the wire leading to ignition coils.
- 2) Interrupt the +12V supply wire leading to injectors. Insulate the live wire end. Connect the white wire from QS unit (position 6) into the wire leading to injectors. Connecting is not necessary for all bike. For GSX-R mode required.
- 3) Connect the black wire of the QS unit (position 20) into the minus terminal or somewhere to a motorcycle frame.
- 4) Connect the shifting sensor to QS wiring harness (2pins connector in QS bundle, positions 3+19). Bi-directional sensor to position 2 yet.
- 5) Connect the blue wire from the QS unit (position 5) to a random ignition coil or signal for tachometer if you want to use a shifting light or other RPM function. Use a wire with a different color on an ignition coils (a controlled minus terminal by an engine ECU).
- 6) Connect the pink wire from the QS unit (position 4) into an output from the gear position sensor if you want to use a function of a different kill times for each gear.
- 7) Join the shifting light connector to the QS unit wiring harness black 2pin connector (position 10(+) and 17(-)).
- 8) Throttle position - necessary for autoblipper function only. Connect output from accelerator to green wire in QS unit (position 14)

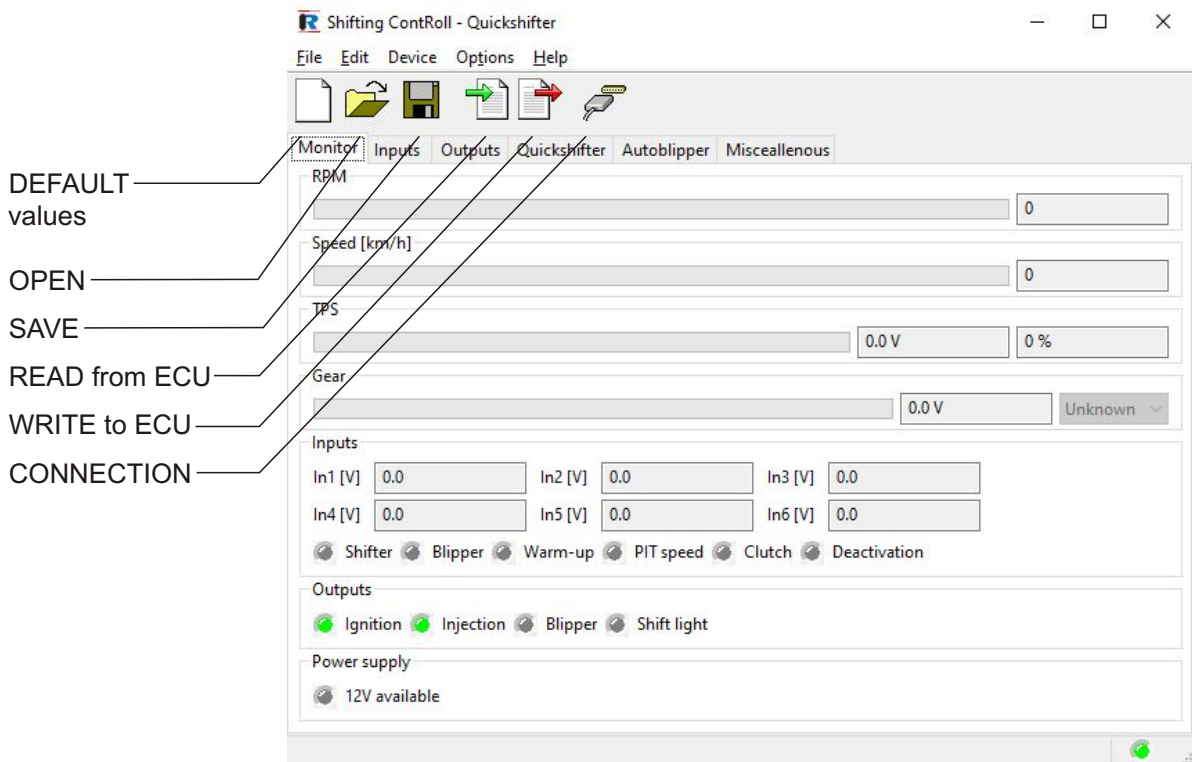


# QS4 unit setting

Download software [Shifting ContRoll 4.exe](http://www.QS.vyrobce.cz/shifting-controll.html) from page [www.QS.vyrobce.cz/shifting-controll.html](http://www.QS.vyrobce.cz/shifting-controll.html)

Run software [Shifting ContRoll 4](http://www.QS.vyrobce.cz/shifting-controll.html) and push "CONNECTION".  
Table with connected QS4 is shown - press "OK".

Check update for you device: MENU> Device> Firmware Update.



All values are illustrative - not for your bike

Green= connected  
Grey= not connected

## Monitor

RPM - display current RPM

Speed - currently motorcycle speed

TPS - display current accelerator position (%) and voltage (V).

Gear - display current gear and voltages (V) from gear position sensor.

If is not right, go to bookmark "Inputs"

Inputs - voltage on each inputs

Outputs -

grey = output is not activated

green= output is activated

Power supply -Green = QS4 has supply 12V

## Inputs

In 1, 2, 3 - input setting

None = input is off

Blipper = AB module is activated by switch

Shifter = QS in stocj ECU is activated by switch

Shifter/Blipper = input for sensor with analog output

WarmUp = engine will be faster warm-up by activation. Gearbox in neutral position is necessary.

PitSpeed = for function "PitSpeed" activation. More on page 7

Clutch = not available at this moment

Deactivation = AB and QS function will not function if input will grounded

NO = sensor is closed by force (Normal Open)

NC = sensor is open by force (Normal Close)

Input	Function	Sensor
In1	Shifter	Switch NC
In2	Blipper	Switch NC
In3	Warm-up	Switch NC
In4	Pit Speed	Switch NC
In5	Clutch	Switch NC
In6	None	Switch NC

Gear	Position [mV]
1	2200
N	5000
2	2500
3	3200
4	3800
5	4400
6	4800

Parameter	Value
Min [mV]	0
Max [mV]	5000

Tachometer - amount of pulses on RPM input (pin 6) for 2 rev of crankshaft.

Gear position - voltages for each gear. Switch ignition On, don't run the engine. Shift 1st gear and push button "GET" for 1st gear. Do it again for other gears.

Throttle position - necessary for Autoblipper function only

Min. = minimum voltage from accelerator sensor

Switch ignition ON, don't touch on throttle and press "Get"

Max. = maximum voltage from accelerator sensor

Switch ignition ON, full throttle and press "Get"

## Outputs

Out 1, 2, 3 - output setting

None = output is off

Blipper = output for AB module activation

Shift Light = output is grounded when is reach setting RPM. You can you it for shifting light.

Output	Feature
Out1	Shift light
Out2	Blipper

## Quickshifter map

Kill time map - time of engine kill depend on RPM (rows) and Gear (columns).

When is no signal on GEAR input detected, values in column "1" will be used.

too short time = hard shifting or shift to bad neutral between gears

too long time = motorcycle jerk forward by shifting

Ignition driving mode

Standart- ignition and injection will interupt in same time. Injection will work "Ignition on delay" time before ignition.

GSX-R - set if your bike show FI by shifting (50% IGN / 50% INJ)

Ignition only - ignition will be kill only for whole kill time

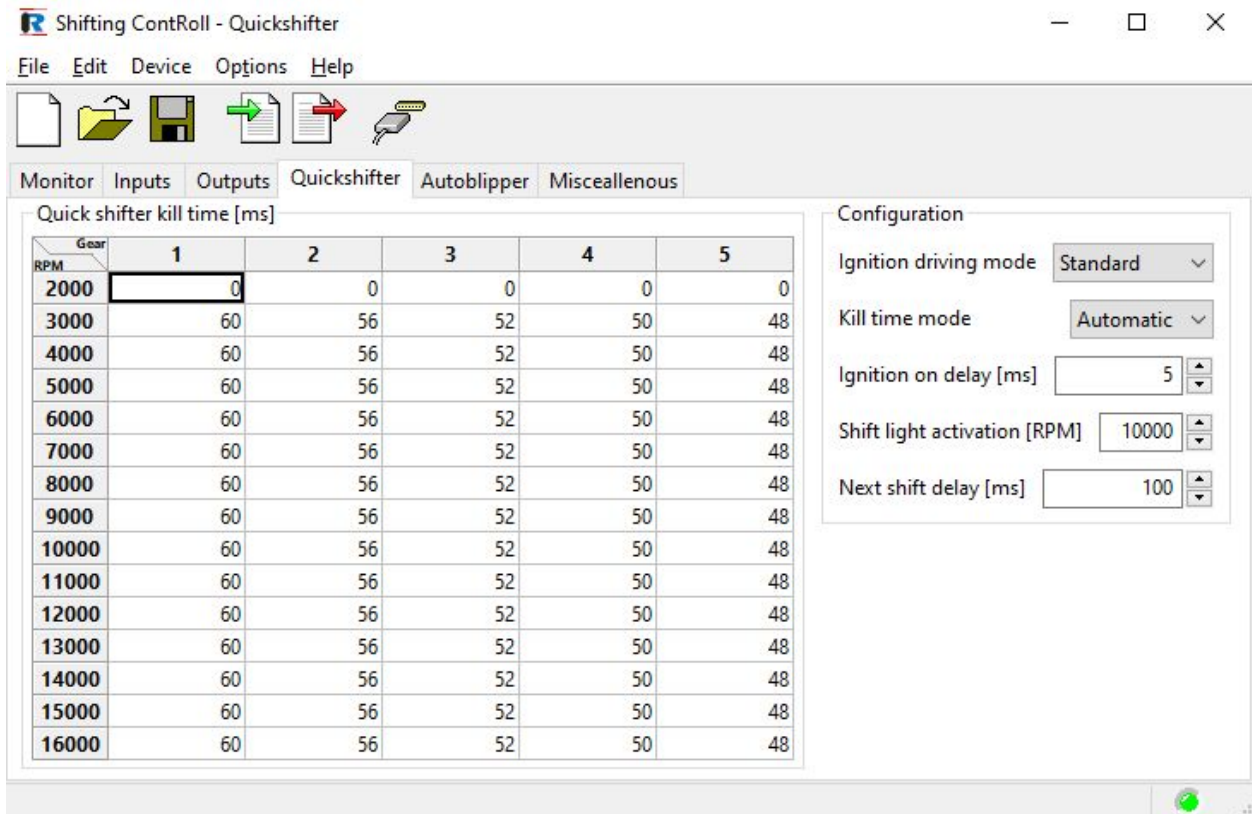
Injection only - injection will be kill only for whole kill time

Kill time mode = if will be kill time depend on gear

Ignition on delay = time in miliseconds when will begin injection before ignition

Shift Light RPM = RPM value for switch On shift light

Next shift delay = delay in miliseconds when next signal from QS sensor will be ignored for Quickshifter function



Gear	1	2	3	4	5
2000	0	0	0	0	0
3000	60	56	52	50	48
4000	60	56	52	50	48
5000	60	56	52	50	48
6000	60	56	52	50	48
7000	60	56	52	50	48
8000	60	56	52	50	48
9000	60	56	52	50	48
10000	60	56	52	50	48
11000	60	56	52	50	48
12000	60	56	52	50	48
13000	60	56	52	50	48
14000	60	56	52	50	48
15000	60	56	52	50	48
16000	60	56	52	50	48

Configuration

Ignition driving mode: Standard

Kill time mode: Automatic

Ignition on delay [ms]: 5

Shift light activation [RPM]: 10000

Next shift delay [ms]: 100

## Autoblipper map

Blipper map - time of rev rising by blipper activation depend on RPM (rows) and Gear (columns).  
When is no signal on GEAR input detected, values in column "2" will be used.

too short time= hard shifting or shift to bad neutral between gears

too long time = motorcycle jerk forward by shifting

Throttle position limit = maximum accelerator position for blipper activation (works below this value)

Next shift delay = delay in milliseconds when next signal from QS sensor will be ignored for  
Autoblipper function

The screenshot shows the 'Shifting ContRoll - Quickshifter' software window. The 'Autoblipper' tab is active, displaying a table for 'Autoblipper opening time [ms]' and a 'Configuration' panel.

RPM	2	3	4	5	6
2000	0	0	0	0	0
3000	80	80	80	80	80
4000	80	80	80	80	80
5000	80	80	80	80	80
6000	80	80	80	80	80
7000	80	80	80	80	80
8000	80	80	80	80	80
9000	80	80	80	80	80
10000	80	80	80	80	80
11000	80	80	80	80	80
12000	80	80	80	80	80
13000	80	80	80	80	80
14000	0	0	0	0	0
15000	0	0	0	0	0
16000	0	0	0	0	0

Configuration panel:

- Throttle position limit [%]: 10
- Next shift delay [ms]: 100

## Warm-up

Function for bikes with fly-by-wire (electronic throttle) only. Activation by input “Warm-up” is grounded. In this time REV rise up for faster engine warming. Neutral is necessary.

Active time = time when RPM rise up

Inactive time = time when RPM drops down

Max RPM = warm-up will work up this RPM value only

## Temp. activate Warm-up for testing

Use this function for test of TPS modul. Rev will go up automatically for time “Active time” and go down for time “Inactive time”.

