



S1 Sequential

# Load sensing gear knob

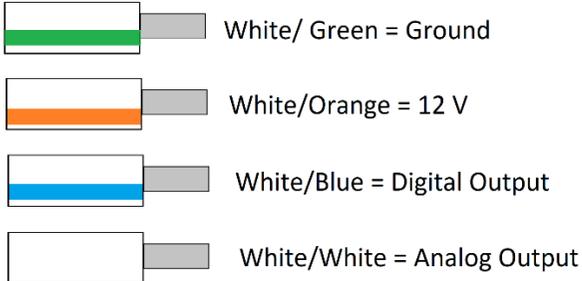


This Load sensing gear knob operates using solid state hall effect sensing to accurately measure the force applied the gear knob these measurements are then processed by an on board 32bit processor to allow for various user-friendly features including:

- Adjustable digital trigger in both directions
- Invert option on digital output
- Adjustable scalable analog output
- Cut and inhibit timers on digital outputs
- 12x1.75, 10x1.5 & blank adaptor inserts allow easy fitment to most cars.
- Factory programmed so programming is necessary

These features are to solve the common problems found interfacing with an ecu and the removable threaded inserts allow fitment to almost any lever.

# Wiring Colours



## Wiring Descriptions

**White/Green:** connected to ground with the ecu ground.

**White/Orange:** 12v supply for gear knob

**White/Blue:** Digital output, this can be configured to switch to ground when activated or to be normally switched to ground then switch to open upon activation, in this way a pull up resistor may be added to provide a positive trigger.

**White/White:** Analog output, 0-5V, 2.5V at zero force. This outputs a voltage relative to force.

### **Fitment**

The gear knob is supplied with 3 adaptors to allow easy fitment to many vehicles, one of these is a blank to allow any custom installation to be completed without risking damage to the gear knob. An easy way to fit:

- Fit and tighten the appropriate adaptor to the lever.
- Remove outer shell from the gear knob and fit to the adaptor with the cable facing the right side of the car.
- Fit and tighten the 4 supplied grub screws.
- Fit gear knob shell and cap.

Alternatively the thread insert can be fitted to the gear knob and the orientation corrected with shim washers.

## Optional Programming

Various parameters can be changed via the usb connector under the top cover. The easiest way to get an understanding of these is to hover the headings with the mouse pointer to read the explanation. The software for this can be downloaded at

[www.s1sequential.com/hallgearknobdownload](http://www.s1sequential.com/hallgearknobdownload) .

**Low trig:** This is the force in grams at which the digital output is triggered when pushing away from the driver. This will usually only be used on H pattern gearboxes. If you do not want to use this set the number to -60000 (please note the negative symbol which must be used).

**High trig:** Sets the force in grams that the digital output will be active at when the gear knob is pulled towards the driver. If you do not want to activate the output set to 60000.

**Max force:** Sets the force that the analog output will be scaled too.

**Timer:** This can be set to keep the digital output activated for a set time in milliseconds after the

trigger threshold is first crossed. If you don't want to use this feature set to zero.

**Wait:** This prevents double cuts at the end of shift by deactivating the gear knob for the time set here in Milliseconds. If you don't want to use this feature set to zero.

### **Ground when active/floating when active**

*Ground when active* will complete a path to ground when activated and will be floating (neither positive or negative) when disconnected.

*Floating when active* is the opposite and will be normally connected to ground and be floating when active. With the use of a pull up resistor this allows for a positive when switched output.

### **Calibration area**

This is used for factory programming but can be accessed by the user, the code 1234 will have to be entered to unlock this.

*Set Zero* is used to zero the sensor

*Set 5kg* is used when 5kg force is applied

Set -5kg is used when -5kg force is applied

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### Load Sensing Gear knob

Calibration code:

Ground when active  
 Floating when active

Low trig:  High trig:  Timer:   Force (g): 0 Digital status: Run

Max force:  Wait:

Time	Force (g)
0	-5000
100	-5000
200	-5000
300	-5000
400	-5000
500	-5000