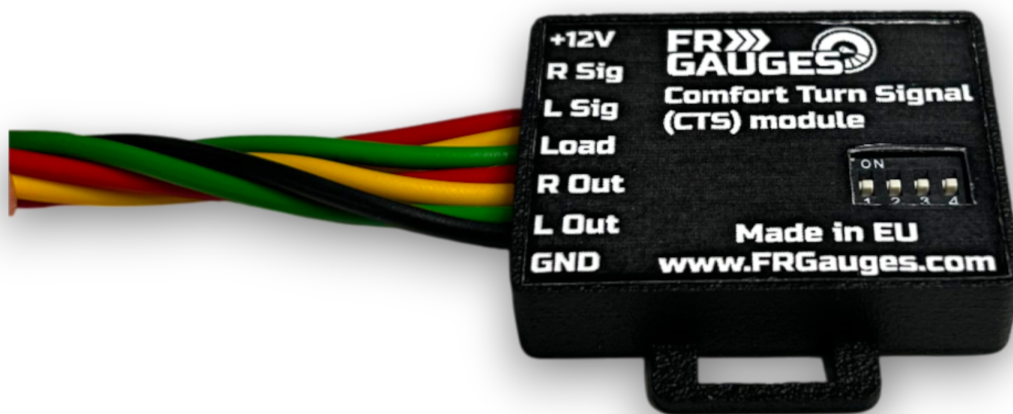


Comfort turn signal (CTS) module

Instruction manual



Introduction

Thanks for buying a product from FR Gauges. This is comfort turn signal (CTS) module! This instruction manual will guide You through installation, setup and usage to ensure the best possible experience!

FR Gauges comfort turn signal (CTS) module is a universal (one touch) comfort turn signal module that can be fitted in any vehicle that uses turn signal relay or electronic control unit for switching turn signal lights when turn signal stalk is briefly tapped. You can set the blink count from 2 to 5 times. Choose blinking frequency and select the positive (thermal flasher relays) or negative (electronic control module signal is pulled low) turn signal flasher type according to Your vehicle.

Key features of comfort turn signal (CTS) module:

- Configurable turn signal blink count from 2 to 5 blinks.
- Configurable turn signal blinking frequency between 1.0 Hz and 1.5 Hz.
- Turn signal system selection between electronic control module (where usually signal gets pulled low) and thermal flasher relay.

Technical specifications

Name	Description
Dimmensions: width, height, length (mm), (in)	(±44.00mm, ±46.00mm, ±9.90mm) (±1.73in, ±1.81in, ±0.38in)
Weight: (g), (oz)	(±40 g), (±1.41 oz)
Operating temperature: (°C), (°F)	(from -40°C to +80°C) (from -40°F to 176.0°F)
Operating voltage: (V)	+9 VDC - +20 VDC
Current consumption: (mA)	Up to 100 mA MAX
Output current: (W)	Up to 400 W @ 15V

Supported turn signal systems

Ignition system	Details
ECU signal switching	Most of the time when vehicle uses some sort of electronic control unit to switch turn signals it has signal pins/wires that are being pulled low to ground via turn signal stalk thus activating turn signals. Some ECU's use positive signal input to the pins to trigger turn signals.
Thermal flasher relay	Most of the time almost all thermal flasher relays are used with positive side switching.



What's in the package?

- 1x FR Gauges comfort turn signal (CTS) module.
- 1x Instruction manual.

Disclaimer before installation

This product is sold as a **component only requiring full installation and assembly** by the end user or a qualified installer. It is **not delivered ready to use**, and it is the responsibility of the purchaser to ensure that all components are correctly and safely assembled and installed before any use.

This product is not certified, approved, or intended for use publicly (on public roads or highways). Use of this product on public roads may be in violation of local, state, or federal regulations. The purchaser and/or installer is solely responsible for ensuring compliance with all applicable laws and regulations.

By purchasing, installing, or using this product, the user and/or installer acknowledges and agrees that:

- Installation is undertaken at their own risk.
- It is their sole responsibility to ensure that the product is installed correctly and safely, in accordance with any provided instructions or guidelines.
- They assume full responsibility for any and all **risks, damages, injuries, or losses**—including but not limited to:
 - **Damage to personal or third-party property**
 - **Damage to vehicles or equipment**
 - **Injury or harm to themselves or others**
 - **Any legal consequences resulting from use on public roads**

The manufacturer and seller **disclaim all liability** for damages or injuries resulting from improper installation, misuse, or use in any unlawful or unsafe manner. No warranties, expressed or implied, are made with respect to the suitability of this product for any particular purpose beyond that which is expressly stated.

If you do not accept these terms, **do not install or use this product**. Return it immediately in unused condition for a refund under the terms of the return policy.

Installation

For installing the module You need to connect from 5 to 7 wires from comfort turn signal (CTS) module to Your vehicle, depending on which configuration You are going to use:

Pinout of comfort turn signal (CTS) module wiring loom:

Number	Wire color	Function
1	RED	Voltage supply via ignition switch
2	YELLOW	Right side input signal / ground pulldown
3	GREEN	Left side input signal / ground pulldown
4	RED	Voltage supply from turn signal relay load pin or +12V for positive signal switching
5	YELLOW	Right side output (for use with relay or high side signal switching)
6	GREEN	Left side output (for use with relay or high side signal switching)
7	BLACK	Ground

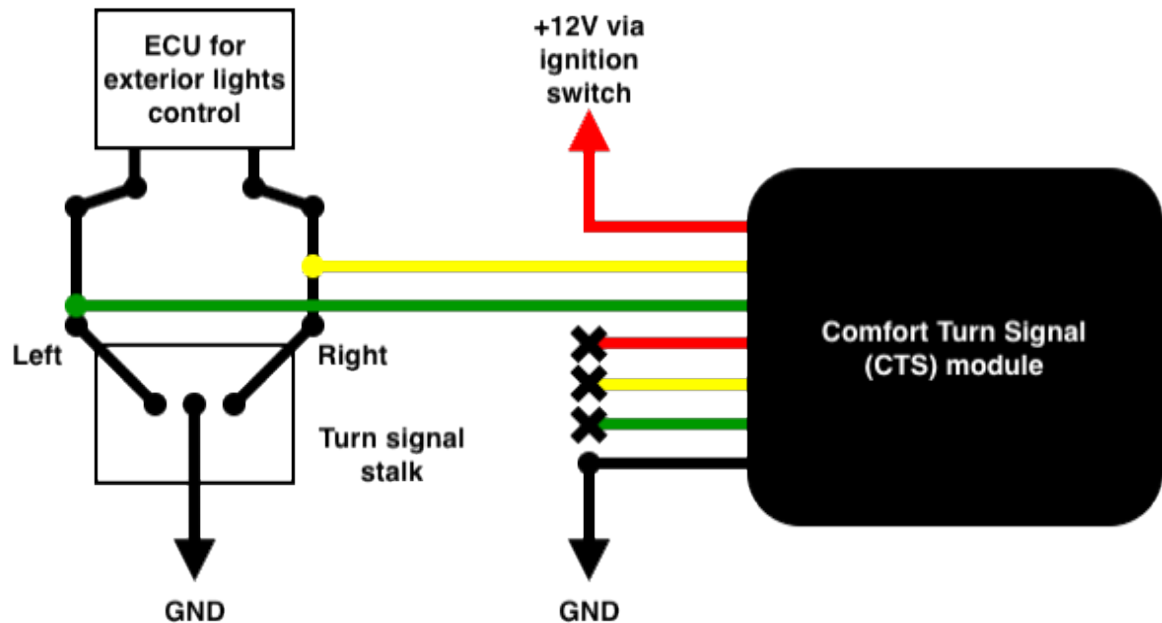
Once You have determined which turn signal type is being used by Your vehicle according to the wiring diagram or by contacting Us with specific vehicle data, You can proceed now to the next installation steps.

Also red corner +12V wire should be fused with automotive grade 1A fuse.

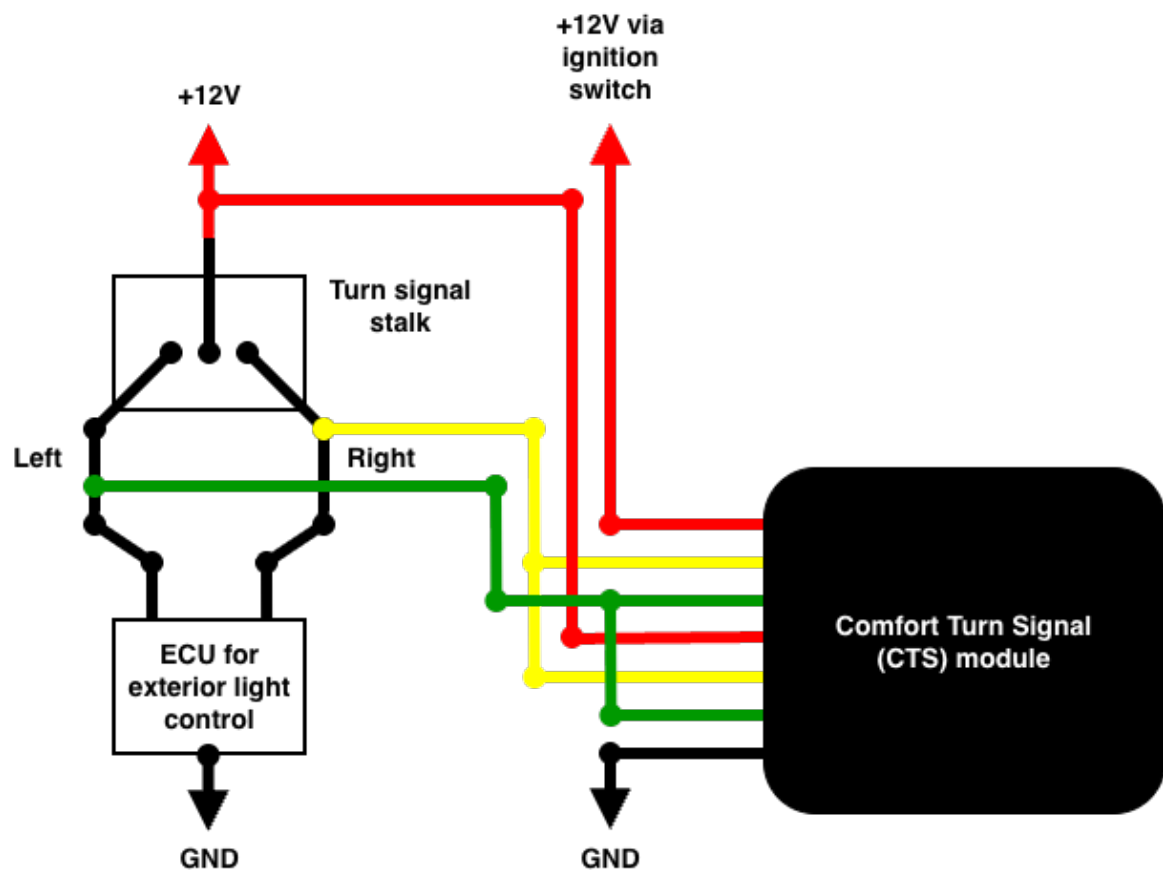
NOTE: Before connecting any wires make sure that at least ignition is switched off or even better battery is disconnected, not to damage any of Your vehicle electric components by wrong connection and to avoid hot plugging.

Basic installation wiring diagrams

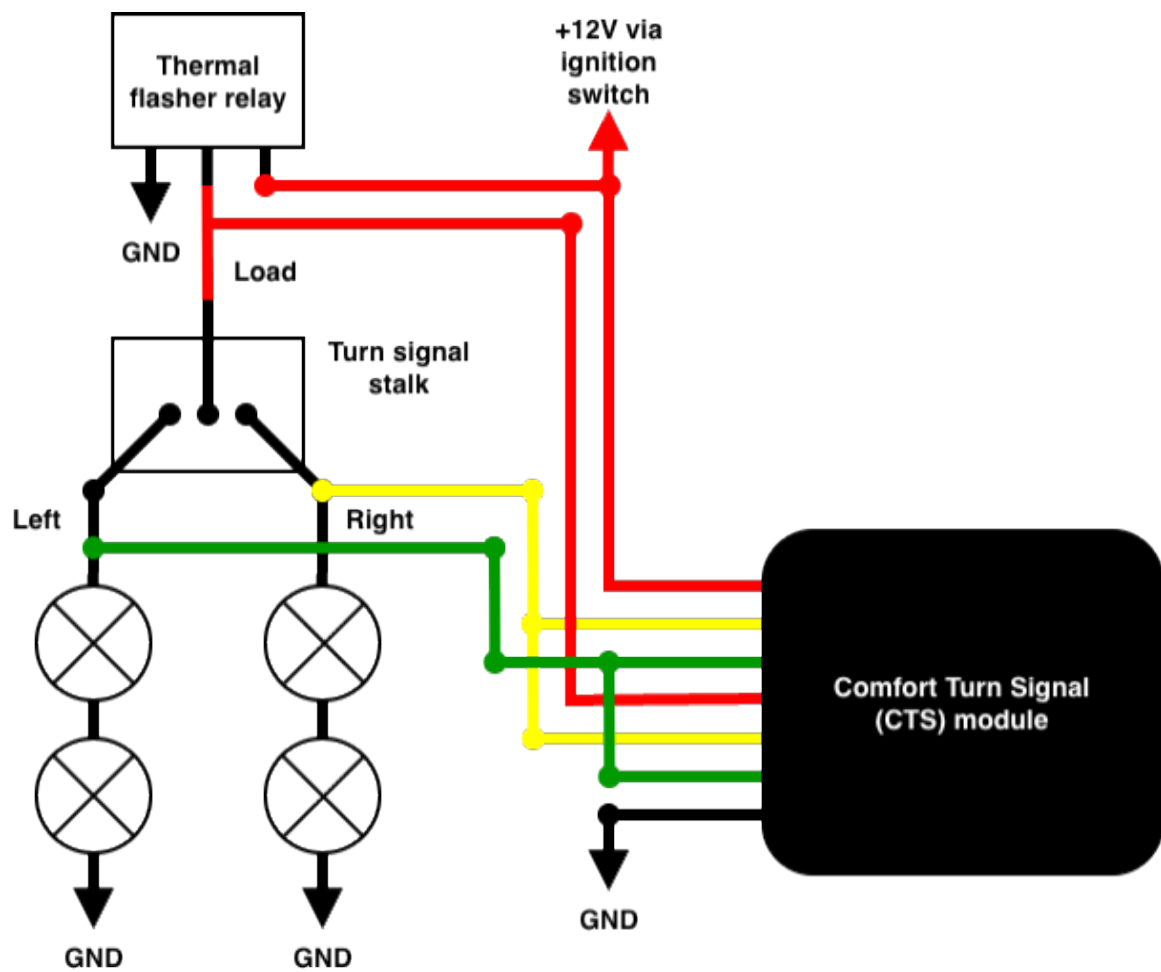
ECU with low side switching:



ECU with high side switching:



Thermal flasher relay:



Mounting

Mounting location can be selected by the user. To attach comfort turn signal (CTS) module it is recommended to use a zip tie or double sided tape to prevent prolonged vibration stress for the module and wires.

Set up

After successfully installing and mounting comfort turn signal (CTS) module You need to choose settings via DIP switches.

DIP switches functions

DIP 1	DIP 2	DIP 3	DIP 4
Blink count	Blink count	Blinking frequency between 1.5 Hz and 2.0 Hz	Positive or negative side switching

DIP 1 and DIP 2 switches (blink count)

DIP 1 position	DIP 2 position	Blink count
OFF	OFF	2
ON	OFF	3
OFF	ON	4
ON	ON	5

DIP 3 switch (blinking frequency)

DIP 3 position	Blinking frequency
ON	1.5 Hz
OFF	2.0 Hz

Note: Some vehicles turn signal systems / relays switch at higher or lower frequency, You can manually adjust the frequency via DIP 3 switch.

DIP 4 switch (switching type)

DIP 4 position	Switching type
ON	*Negative side switching
OFF	**Positive side switching

*Negative side switching - Most of the time used with ECU's which signal pins are being pulled low to the ground.

**Positive side switching - Most of the time used with thermal flasher relays and some rare ECU's.

Warning: never select negative side switching if Your system uses positive side switching, because You may damage the module. Always make sure that the signal is being pulled low with the turn signal stalk before activating negative side switching.

Operation

Operation of the comfort turn signal (CTS) module is very simple, just briefly tap turn signal stalk in either direction and then turn signals will blink automatically from 2 to 5 times depending which setting You have chosen via DIP switches. If during automatic blinking of one side You will trigger another side turn signal, the current side will cancel and the latest triggered side will automatically start blinking.

Warranty

For every customer We provide a 2 year warranty, in case Your product malfunctions or stops working, just reach us via the platform You've bought the product or email Us directly using: **contacts@frgauges.com** And we'll send You replacement free of charge including free shipping. Just make sure that You have order number. We also might ask to ship defective product back to Us, to be able to determine the cause of failure.