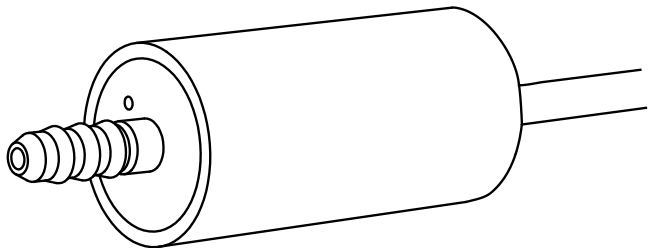




# FuelGaugePro Float-free Fuel Level Sensor



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**FGP-SENSOR** | INSTALLATION MANUAL

# Table of Contents

<b>Basic information</b>	<b>2</b>
<b>Fuel system requirements</b>	<b>2</b>
<b>Technical specification</b>	<b>3</b>
<b>Installation</b>	<b>4</b>
Installing the fuel sensor	4
Placement on fuel system without fuel pump	5
Placement on fuel system with fuel pump	5
<b>Setting up the FuelGaugePro - Low Fuel Warning Light function</b>	<b>7</b>
<b>Setting up the 3rd party microcontroller-based systems to read the signal from the sensor</b>	<b>8</b>
<b>Warranty</b>	<b>9</b>
<b>Safety notice</b>	<b>9</b>
<b>Troubleshooting</b>	<b>9</b>
<b>Recycling</b>	<b>10</b>

For more  
information



*Thank you for choosing our products. We strongly advise you to read this user manual thoroughly. It contains important instructions about installation, setup and use of the gauge. By obeying these instructions, the product will reward you with long-time reliability.*

## Basic information

The FuelGaugePro - Float-free Fuel Level Sensor uses hydrostatic pressure measuring method for measuring the fuel level without any float or movable parts in the fuel tank and generates corresponding signal.

The FuelGaugePro - Float-free Fuel Level Sensor can be used together with:

- compatible types of FuelGaugePro displays
- aftermarket fuel gauges through FuelGaugePro - Sending Unit that simulates resistance float
- FuelGaugePro – Low Fuel Level Warning Light
- microcontroller based system capable to read 12V PWM signal (Arduino etc...)

The Sensor is designed for connection to fuel line via supplied T-plug. After installing, the whole system needs to be calibrated (except bike specific kits where the system is factory calibrated).

## Fuel system requirements

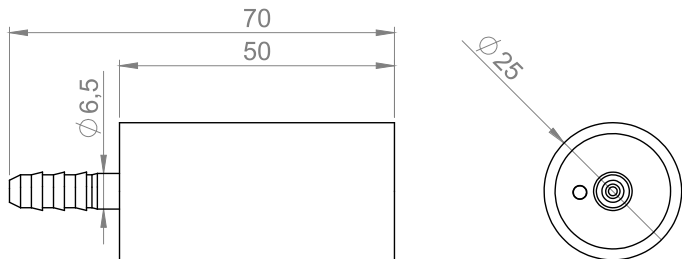
Because of its natural principle, it is **not possible** to connect it to a hose, into which the fuel is pumped by a **fuel pump** or where is a **fast fuel flow** (fuel systems with return line).

Sensor works only on these types of fuel systems:

- without fuel pump
- with fuel pump
  - o pump must be outside the fuel tank
  - o no air intake valve on the air input of the tank (there must be an atmospheric pressure in the fuel tank - not a vacuum)
  - o no fuel return line causing fast fuel flow

## Technical specification

Supply voltage:	7 – 15V DC
Energy consumption:	2W max without connected gauge
Fuse:	electronic non-destructible fuse (0,35A)
Maximal fuel level:	2m
Working temperature:	-30°C to + 85°C
Dimensions in millimeters:	



Sensor is shockproof and 100% waterproof.

Sensor doesn't lose its memory after being disconnected from power.

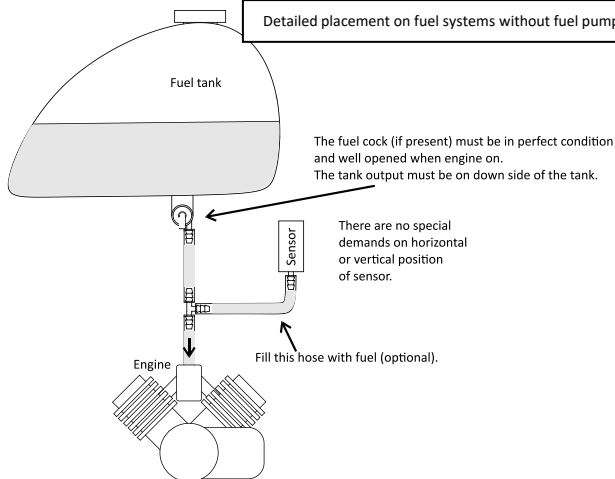
Sensor contains integrated atmospheric pressure changes compensation.

## Installation

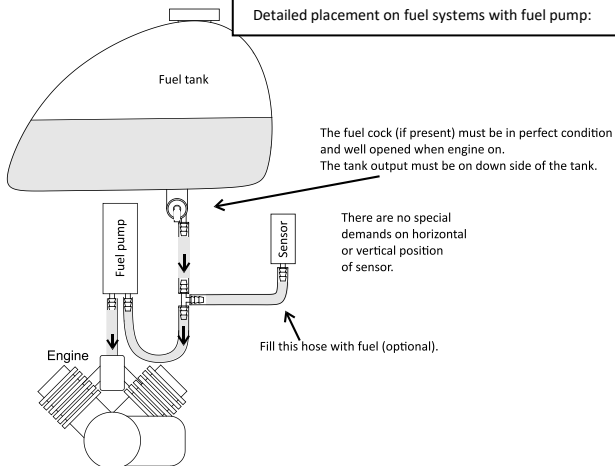
### 1. Install the Sensor on a suitable place

- a) Find the best place for attaching the Sensor.
  - Sensor must be physically lower than the fuel tank. It is better to fill the hose up with fuel. In some cases this can make the measuring more accurate.
  - Do not attach the device to the engine or other very hot places. It can handle temperature up to 80°C.
  - Sensor can be installed in any position.
  - Check, if all needed wires are long enough to reach desired place.
- b) Attach the Sensor on the desired place. You can use a nylon cable ties for example.
- c) Drain fuel from the tank or close the petcock.
- d) Cut the fuel line that goes from the tank to the engine/fuel pump and insert the T-plug.
- e) Connect the Sensor to the T-plug using a piece of fuel tube.

Detailed placement on fuel systems without fuel pump:



Detailed placement on fuel systems with fuel pump:



## 2. Connect the wires

### Red supply wire:

Connect after the ignition switch, so that the gauge switches itself on with the ignition key.

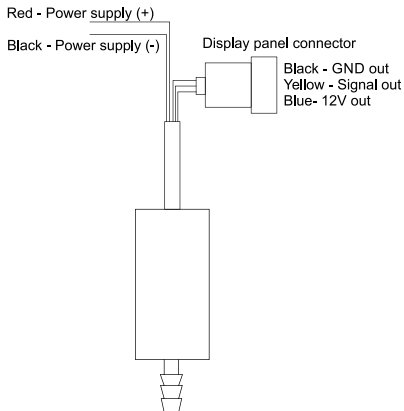
### Black supply wire:

Use the wire shoe and screw it on some place of the frame, or even to the (-) pole of the battery. It can be also attached to any other (-) wire (usually black) using the cut in connector included in the package.

*Supply wires are protected against reversed polarity.*

### Display panel connector:

Connect the FuelGaugePro original display panel or Low Fuel Warning Light here.



*Never connect any wires of display panel connector together. It can destroy the whole Sensor!*

If you are owner of FuelGaugePro - Low Fuel Warning Light, follow next steps.

## Setting up the FuelGaugePro - Low Fuel Warning Light function

*Use only if you are connecting the Sensor together with FuelGaugePro - Low Fuel Warning Light kit.*

It is needed to switch the output from continuous signal (factory settings) used for gauges to on/off signal needed for Warning Light and store the threshold fuel level in the memory.

- Connect the Warning Light to the Display panel connector.
- Fill the required fuel amount to the tank and make sure you have petcock opened well to all its hydrostatic pressure can push on the Sensor.
- Power the Sensor up.
- Hold the magnet included in package near one of two possible places of the Sensor as you can see on the picture. You should see the Warning Light start flashing slowly.
- Hold the magnet on place for 5-10 second until the Warning Light start flashing way faster. After that immediately remove the magnet. Your threshold is now set and the Sensor is switched to work as a Low Fuel Level Warning Light.



If you need to switch the function back to continuous signal for feeding other types of gauges, follow next steps.

- Proximity the included magnet as you can seem on the picture. If Sensor recognizes the magnet, the Warning Light start flashing slowly.
- Hold the magnet for ca. 40-60 second until the connected Warning Light start flashing very fast (strobe). *(There are total 3 different flashing speeds from slow to fast. You need to wait for the fastest one.)*
- Take the magnet out.

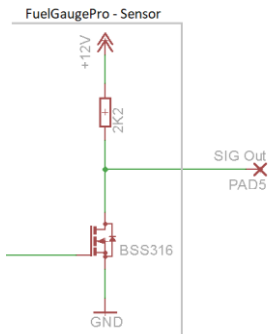
If you want to use the sensor without any FuelGaugePro display panel and using it in your own gauge design, follow next steps.

## Setting up the 3<sup>rd</sup> party microcontroller-based systems to read the signal from the FuelGaugePro – Float-free Fuel Level Sensor

*Use only if you will use the Sensor together with another device capable to read Sensor signal – DIY dashboard projects etc...*

Sensor output circuit: See the picture.  
Output signal: 0-12V PWM  
Frequency: 100Hz

Duty cycle represents the hydrostatic pressure.  
*The atmospheric pressure changes are compensated.*



## Warranty

Product is covered by 2 years Limited Warranty (from the date of purchase). Limited Warranty covers any defects in material or manufacturing defects under normal use and maintenance. **We reserve the right not to accept the claim in the case of mechanical damage that could be related to the defect of the product or if the product was disassembled by unauthorized service.**

This limited warranty also does not cover any problem that is caused by conditions, malfunctions or damage not resulting from defects in material or workmanship.

During warranty period, we will repair or replace defective product or defective parts. To obtain warranty service, you must first contact us to determine the problem and the most appropriate solution for you.

## Safety notice

This device should be installed by specialized garage or service. Inappropriate mounting or electrical connection may result in damaging this or any other electrical devices in the motorcycle. Improper installation of fuel hoses can cause the fuel to leak and a fire resulting in damage the motorcycle and the owner's health.

Device is not approved for use at public roads. You use it at your own risk and responsibility.

## Troubleshooting

If you obey all the instructions, this fuel gauge should work properly without problems. In case of any problems, feel free to contact us.

- If the gauge doesn't show anything on the display, check out all the connections of the device.
- If the gauge shows nonsense and is calibrated correctly, try checking, if you filled up the fuel hoses like explained on page three.
- Wrong data display is often caused by dirty fuel strainer in the fuel tank, dirty fuel filter if the gauge is connected after it or just marginally opened fuel cock. In case of problems, try to check/replace these parts. This fault is often represented by the amount of fuel dependant on engine revs. Pressure sensor fail is very improbable – problems are usually caused by something else.

If nothing helps, contact us.

## Recycling

Retired device should be given to places specified for retrieving electrical garbage. Package should be thrown into a specific container for recycled garbage.

Device meets RoHS Directive.



Motorcycle Electronics

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Product website:

