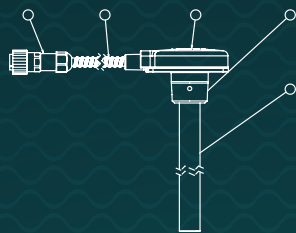


# QUICK INSTALL

## LIGO - fuel level sensor

Analog, Frequency, RS232, RS485

**LIGO®**

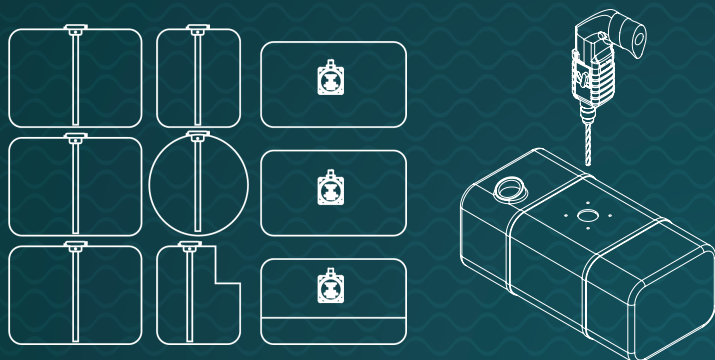


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### STEP 1: DETERMINING THE POSITION TO INSTALL

- Determining the exact position to install the fuel level sensor on the surface of the tank.
- At the determined position, drilling a hole with  $\Phi = 40$  on the tank's surface and drilling 4 holes for 4 screws.

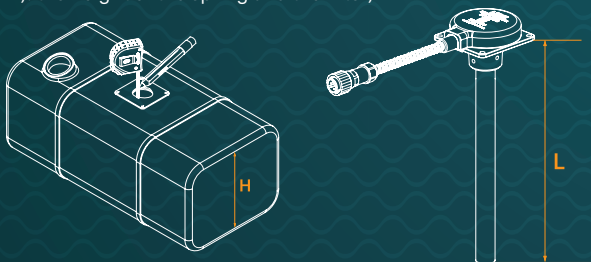


### STEP 2: MEASURING AND CUTTING PROBES

- Measuring and cutting the probe following by the formula:

$$L_m = H - 25$$

L: the initial length of the probe  
L<sub>m</sub>: the probe length after being cut  
H: the height of the tank  
(25 (mm): the height of the spring and the filter)



**Note:** After being cut, the probe must be cleaned by the deburring tool. You are required not to let anything touch two tubes. The probe should be washed with fuel to make the cut tube the clearest.

### STEP 3: RECALIBRATING MIN, MAX LEVEL

- Connecting the sensor to LIGO MOBILE CONFIGURATOR. Then, using phones or mobile devices to connect Wi-Fi network of the configurator with the default password: "12345678". Next, accessing the browser on mobile devices with IP address: <http://192.168.100.1>.

#### Recalibrating Min level:

- Letting the sensor outside. Then, pressing "SET EMPTY" button on the display and waiting until the pop-up form "Set Empty OK" appears on the screen. The sensor is recalibrated with Min level

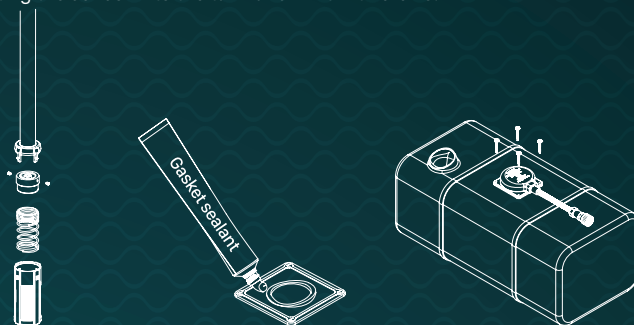
#### Recalibrating Max level:

- Fulfilling the calibration tube with fuel. Then, dipping the whole probe in the tube at the fullest level – it is equal to the two holes near to the top of the sensor.
- Pressing "SET FULL" button and waiting for the pop-up form "Set Full OK". The sensor is recalibrated Max level.



### STEP 4: INSTALLING THE SENSOR INTO THE TANK

- Installing the spring and the anti-dust filter in the sensor.
- Putting the sensor into the tank and fix it with crews.



#### Note:

- It is recommended to use high temperature and diesel resistant gaskets

### STEP 5: CONNECTING THE SENSOR TO THE EXTERNAL DEVICE

- Connecting the sensor to the external device with the 7 – meter cable. The colors and signals of the wire should be in order as in the below pictures:



AF		
Color		Description
Black		GND (0V)
Yellow		Out (Analog/ Freq)
Red		(15-37VDC) or (7.5-75VDC) SP Pro

RS232/RS485		
Color		Description
Black		GND (0V)
Yellow		RXD/B-
Blue		TXD/A+
Red		(15-37VDC) or (7.5-75VDC) SP Pro

### STEP 6: RECALIBRATION

- In order to make the sensor work the most effectively, the recalibration is required by dividing various times of pouring fuel into the tank. The figuration of each time is equal to 1/10, 1/30 ...the whole volume of the tank. After each time of pouring, the value which the sensor can measure will be noted and assigned on the device or the sensor. Looking at the standard table below for references.

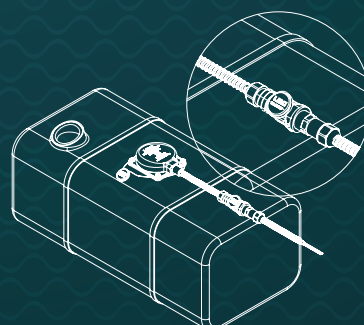
Volume of the tank V, (litres)	Filling step n, (litres)	Number of control points $m=V/n$
0...60	3	20
61...100	5	12-20
101...500	10	10-50
501...1000	20	20-50
>1000	As possible	...

#### Note:

- The interval between each pouring should be 1-2 minutes apart at least or waiting the sensor to update all values to the device before the next pouring.

### STEP 7: SEALING

- After finishing the installation and calibration process, the sensor must be sealed, avoiding being removed and destroyed during the using period



#### Note:

- THE TAPE MUST BE WRAPPED ON THE CONNECTOR TO PROTECT ITS DURABILITY