



GraviProbe 2.0 Addendum

How to: Replace pressure sensors



What is needed?

- GraviProbe
- Pipe wrench
- New sensor(s)
- Included umbraco key
- Vaseline
- Tablet

1. Replace the sensors (Device)





1.1 Replace tip pressure sensor

1.1.1 Screw loose the protective with bare hand





1.1.2 Pull out sensor



Take the pipe wrench and put it on the outside of the sensor, then carefully pull out the sensor by wiggling a bit.

Note: DO NOT touch the inside of the sensor as it is extremely sensitive.

Note: Don't pull too hard so the wires will not be damaged.



1.1.3 Replace damaged sensor



Disconnect the damaged sensor and reconnect a new sensor.



1.1.4 Insert new sensor



Put a little Vaseline on the outside of the sensor (seal). Then push the wires to the inside of the GraviProbe and push the sensor in place.

Note: Make sure the cables are pushed to the inside and are not stuck between the sensor and the GraviProbe.



1.2 Replace tail pressure sensor

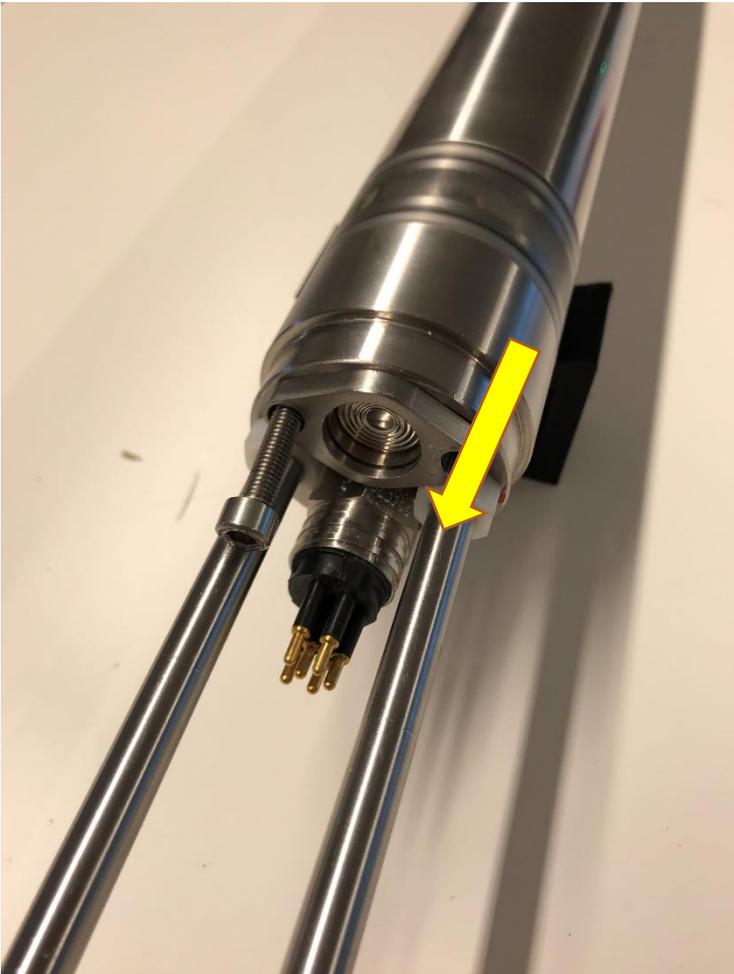
1.2.1 Screw loose the plate



Take the included umbraco key and loosen the two screws.



1.2.2 Remove the plate



Use one screw to pull off the plate to not damage the sensor.



1.2.3 Repeat step 1.1.2 – 1.2.4

Carefully pull out the sensor with a pipe wrench and disconnect the sensor. Attach the new sensor and place it back. Add a little Vaseline to the seal.

Note: Be careful when reassembling the plate and the two screws. Make sure the plate is correctly placed and that there is no gap between the plate and the GraviProbe.



2. Adjust the sensors (Admin)

2.1 Turn on the device and the tablet

2.2 Connect the tablet to the device (wifi)

2.3 Start the app

On the tablet start the GraviProbe app. In the menu of the GraviProbe app go to: GraviProbes. On the top right of the page there will be a "Config" button that leads the user to a browser page. The page will be shown inside the app.

The screenshot displays the GraviProbe app interface on a tablet. At the top, a blue header bar contains a back arrow, the device ID 'GRAVI00100008', the timestamp 'Mar 11, 2019, 2:50:50 PM', and a 'CONFIG' button with a gear icon, which is highlighted with a red box. Below the header, the interface is organized into a grid of six white panels with blue titles:

- System**: Host: 192.168.100.1, CPU: 89 %, Memory: 74 %, Disk space: 66 %, Date: Mar 11, 2019, 2:50:50 PM
- Battery**: Capacity: 69.16%, Charge: 1,383.12 mAh, Voltage: 11.79 volt, Current: -0.15 mA, Temperature: 31.16 °C
- Body - GP.50.942**: length: 0.942 m, Mass: 7.93 kg, Diameter: 5 cm
- Sensors**: Acceleration: SENSOR.ACC.MAIN.20, Pressure Tip: 3.5bar (SENSOR.PRESS.TIP.3_5), Pressure Tail: 3.5bar (SENSOR.PRESS.TIP.3_5)
- Firmware versions**: Api: v1.0.8
- Logger**: Filename: 1552312112.gpbin

At the bottom of the screen, there is a grey navigation bar with three icons: a blue square, a hamburger menu, and an information icon.



2.4 Adjust sensors

Go to tab "Sensors" and change the range of the pressure tip and pressure tail sensor to the newly installed (3.5, 10, 20 or 35 bar).

GRAVI00100008

Network configuration

WAN Connection Type ⓘ

Dynamic IP

Static IP

IP Address: 192.168.100.1

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.100.1

SAVE

GRAVI00100008

Sensors

Pressure tip

Model number: SENSOR.PRESS.TIP.3_5

Scaler: 26214

Range: 3.5 bar ▾

Offset (m.): 0.076

Pressure tail

Model number: SENSOR.PRESS.TIP.3_5

Scaler: 26214

Range: 3.5 bar ▾

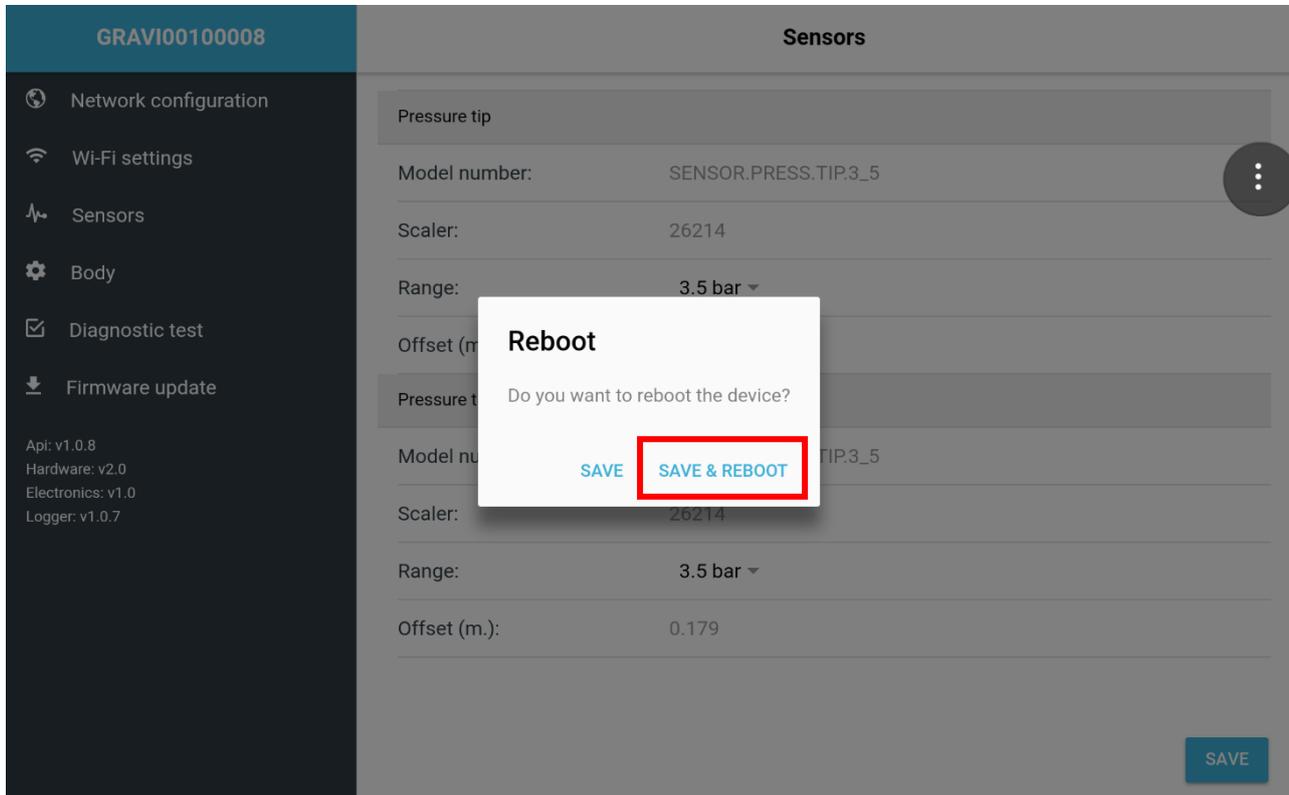
Offset (m.): 0.179

SAVE



2.5 Save & reboot

Confirm the adjustments of the sensors by tapping “Save & Reboot”. After this, the GraviProbe will save all its settings and restart. When the device is fully booted, it's immediately ready for use again.





3. Diagnostic test

On the Admin page there is also a page called Diagnostic test. To see if the installation of the new sensors were successful it is designated to do a test. You can start all tests in one time by clicking the "START ALL" button on the top right side of the Admin page or you can select one test individually.

3.1 Led

 Check LED's 
Red 
Green 
Blue 

Check if the LED lights of the GraviProbe turn first Red then Green and then Blue.

3.2 Sensor

 Check Sensors 
Tip pressure sensor 
Tail pressure sensor 
Acceleration sensor 

When testing the sensors, the program will readout data from all the sensors for about 10 seconds. When no data has been recorded a timeout popup will be shown. The designated values are:

- Acceleration sensor -> between -10 and 10 m/s²
- Tip pressure sensor -> between 3100 and 3400
- Tail pressure sensor -> between 3100 and 3400



3.3 Battery

 Check Battery 	
Capacity:	
Charge:	
Voltage:	
Current:	
Temperature:	

Check the current Capacity, Charge, Voltage, Current and Temperature of the battery.