



Setup & Installation

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1. Introduction

The following file contains information about setting up and running the single level dobona board called DoboL. The DoboL is a small Wi-Fi enabled board that could be placed near a water or diesel tank to read its level and send it over the internet to a server. Depending on its type, a 2-wire 4-20mA pressure sensor placed either inside or below the tank will convey the pressure reading to the DoboL which will send it to the cloud. A user downloaded application from either Apple store or Google play can remotely read this level online. Furthermore, the DoboL can have a limit setup that when exceeded will send an alarm email to the user to alert him of an abnormal level (either high or low). Typical usage for the DoboL board could be for tank level monitoring of water or diesel tanks in domestic or commercial buildings. The DoboL can be powered by either 12Vdc/500mA or 24Vdc/500mA supply (not provided). The exact terminal connections are drawn on the DoboL enclosure fascia.

2. Prerequisites

To install DoboL, the user must:

- Have basic information about installing electrical components, otherwise call an electrician to do the required wiring
- Own a DoboL board
- Have a Wi-Fi internet connection
- Download the “dobona” application from the Play Store (Android) or the Apple Store (iOS)

3. How to setup the board?

1. User installs DoboL at a location close to the tank. The pressure sensor has to be properly installed and wired. The DoboL has to be covered by the Wi-Fi internet router. A certified electrician must be called in to do the electrical branching.
2. User downloads dobona app to his android or apple phone/tablet.
3. User makes sure that the jumper on his board is plugged in before powering up the DoboL for the first time. User should make sure he has a constant internet connection during all of the setup session.
4. User launches dobona app. the first screen that appears is the live log screen with scrollable fifty lines, each for setting up a separate board. The red font with the downward thumb shows that no board has been setup so far (Fig.1).

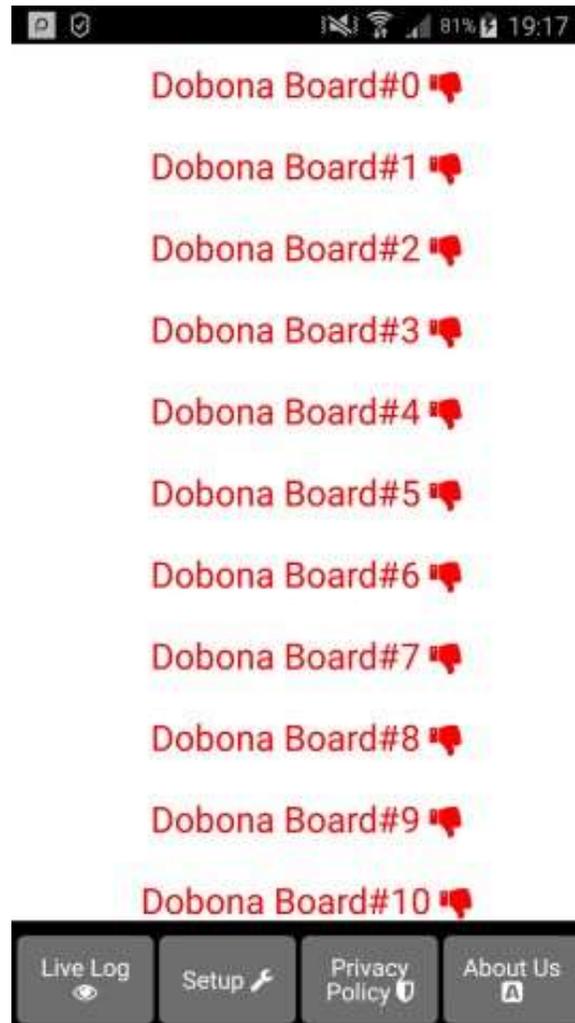


Fig 1.

5. Since no board has been setup yet, the user should press on the setup button on the bottom of the screen to move to the setup page, which looks similar the live log page but with a beige background (Fig.2).



Fig 2.

6. In order to setup a board, the should press any of the red lines. Supposing he presses on the first line (Dobona board#1), after which he is presented with a popup screen to choose the board type (Fig.3). since we are interested in DoboL board only, the user should press the DoboL (level).

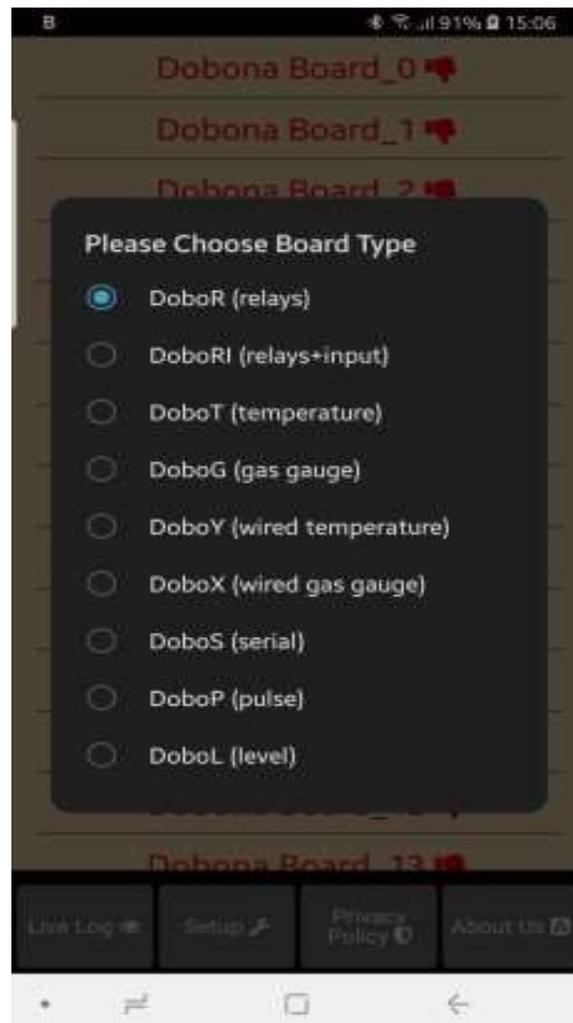


Fig 3.

7. User is then presented with the next screen where he is prompted to enter a name for the dobona board he chose (Fig.4). Supposing he writes "Diesel_Tank" as name and makes sure the phone/tablet has an internet connection, and presses on the next button, he is taken to a new screen to register the board on the server (Fig.5).

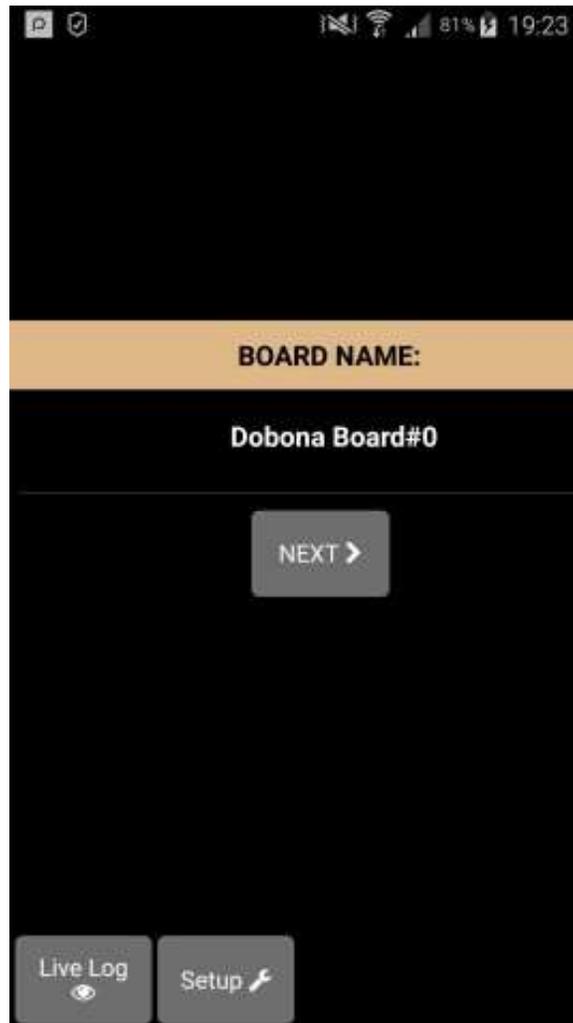


Fig 4.

8. User must enter the ssid and password of the internet enabled Wi-Fi network where the DoboL will be installed. The reg.key is automatically generated by the server. If the user wants to receive an email notification whenever the level is exceeded, he should tick the “register phone for email notification”. A field to enter the email will appear on the screen where the user can enter his email. So far, only linear tanks are supported (either square, rectangular or vertical cylinder). The “email if above” option should be ticked if the user wishes to receive an email whenever the alarm level is exceeded, or left unticked if he wishes to receive an email whenever the level drops below the alarm level. The alarm field must also be filled with the level limit, even if not used. After completion, the user presses on the save and register on server button to send the entered data to the server and move to the next screen. If the DoboT board has already been setup from a previous phone/tablet and the user



wants to enable his phone to control it, he should press on the pen thumbnail to enter the previously setup DoboT reg.key before pressing on the save and register on server button. If the reg.key, ssid and password are correct, then he will be directed to the live_log screen to read the temperature (in this case go directly to step 10).

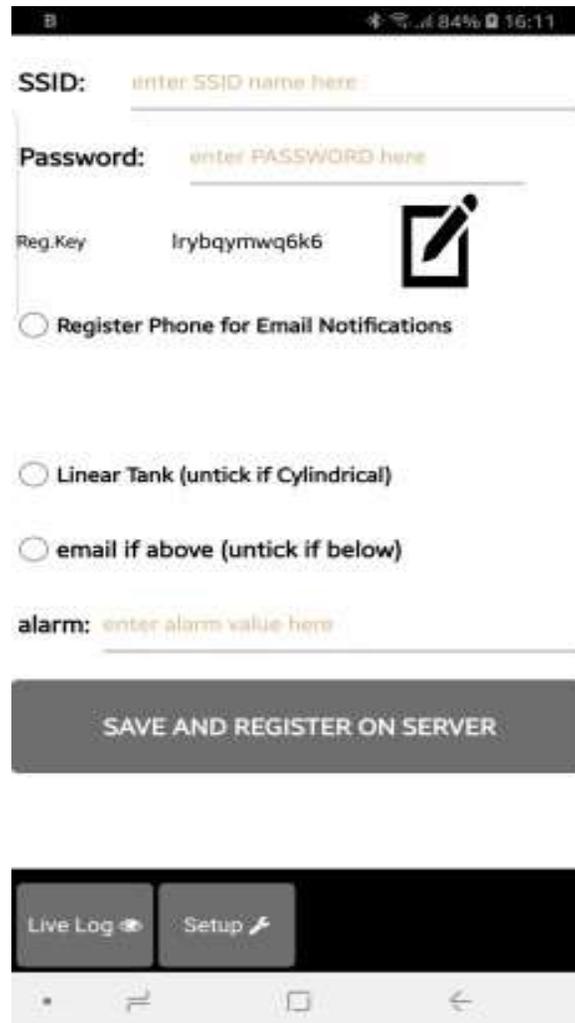


Fig 5.

9. On the next page (Fig.6) the user has to switch the phone/tablet Wi-Fi connection to the “Dobona_xxxx” network that should appear on the list of available Wi-Fi networks. That network requires no password. He can tick the high speed communication for the fastest communication between DoboL and the server, the enable power up notification for receiving an email after each DoboT powering up. Pressing the send info to dobona will send the entered data to the DoboL. If the



connection was successful then the “Dobona” network should disappear from the list of available networks on the phone/tablet, and the user is taken to the live log screen (Fig.7). He will notice that the Dobona board#0 is now replaced with Diesel_Tank with a green font and thumbs up to indicate that the board has been setup. Please check section “4. How to run the board” in order to run DoboL.

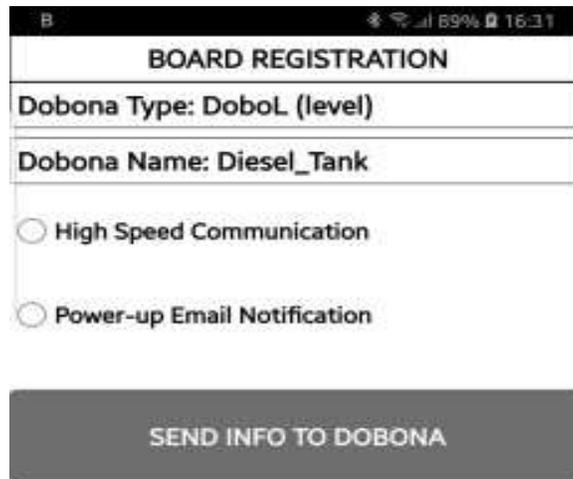


Fig 6.



Fig 7.

10. Now pressing on the Diesel_Tank line will display the live log screen related to the DoboL board that has been setup (Fig.8). The level is displayed on the screen together with the last time the DoboL board checked with the server. This information is important for the user to know if the DoboL and its internet connection are working. If for instance the screen displays an unusually long time, it could be an indication that the DoboL or its internet connection or router are facing issues.

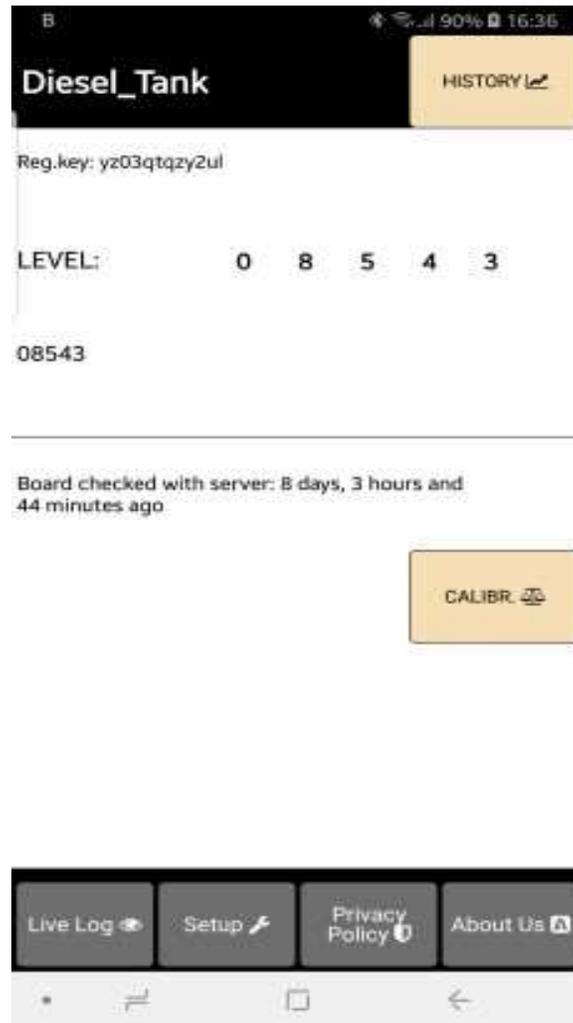


Fig 8.

Notice the “HISTORY” button on the screen upper right corner. Pressing it will launch the default browser and display the board history chart for the past 31 days on an hourly basis (Fig.9). Please note that if the browser does not launch on some devices, then the user should enable JavaScript from the browser settings before loading the page again. The user can also download the chart data points as a .CSV file to his device by pressing the “Download” button. Note that if the chart contains red stars with numbers above them, they denote the number of hours the board did not communicate with the server. This could have been caused by internet going down or power cut to the board... They are also saved in the third column of the CSV file. The user is urged to select the geographical location of the board and to save it to the server by pressing the “Save Timezone” button. This is important for the server to save the Date/Time chart data according to the board local Timezone.



Fig 9.

Also notice the “CALIBR.” Button which when pressed will launch the default browser and display the board calibration page (Fig.10). It should be noted that throughout the calibration procedure, the internet must be available for the DoboL board. The “Offset Volume level” denotes the volume of the tank, if any, that cannot be read by the pressure sensor. Let’s say for example we have a rectangular-shaped tank with 1m width, 1m length and 2m height, and the pressure gauge is placed to the side of the tank and 10cm above its bottom. The first thing to note is that the 10cm of liquid at the bottom of the tank cannot be gauged since they fall below the



pressure sensor. So the ‘ungauged’ volume of the tank is: $1\text{m} \times 1\text{m} \times 10\text{cm} = 100$ liters. So we enter 100 in the “Offset volume level” field. Next, we remove the sensor from the tank (letting it read the atmospheric pressure only). After reading on the app that the sensor is sending this atmospheric pressure reading to the cloud, enter zero in the “Minimum/current volume level” and press the “Save” button.

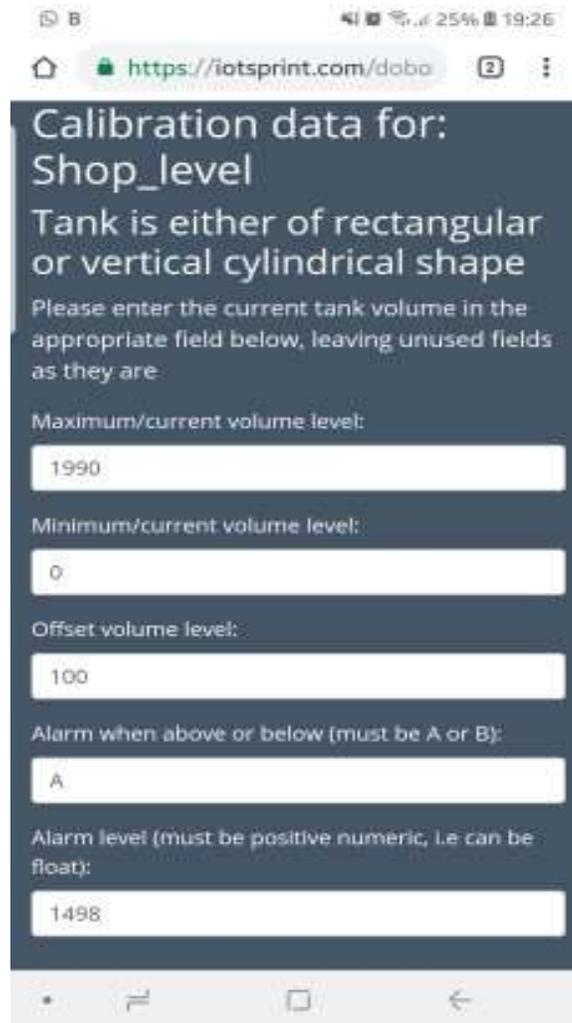


Fig 10.

Next, Reconnect the pressure sensor to the tank and wait for the new data to be sent back to the app. Then press on the “CALIBR.” Button (Fig.8) so that the calibration page launches back on the default browser. Here, enter the **CURRENT** volume of the tank in liters. Let’s say the current level of liquid is at 1.5m above the sensor position, so the current volume in liters is: $1\text{m} \times 1\text{m} \times 1.5\text{m} = 1500$ liters. So enter 1500 in the “Maximum/current volume level” and press the “Save” button. It should be noted that



the above or below and the level alarm that were entered during setup could also be changed in this page if the user wishes. The calibration procedure is now over and the sensor will be sending from now any new volume reached (whether the tank is being emptied or filled to another level...).

4. How to run the board?

After successful setup, the user must:

- Power down the DoboL by removing its supply
- Remove the jumper on the DoboL board
- House the DoboL back in its enclosure
- Place the enclosure in its final panel destination
- Power up the DoboL. The DoboL will now seek the user-entered router SSID and password to connect to the internet and send updates to the remote server. It should be noted that poor internet service or weak local router Wi-Fi coverage will impact DoboL performance.

5. How to delete the board setup?

In order to delete an already setup DoboL from the user phone/tablet, he must:

- Launch the dobona app
- Press on the Setup button on the bottom of the screen
- The user must make sure his phone/tablet is connected to the internet
- Press on the green line of the board name (Diesel_Tank in our case)
- The below screen is displayed (Fig.11)



Fig 11.

- Enter the board SSID in the input field and then press on the OK button. The app. will send info to the server to delete the “Diesel_Tank” board information and will also delete it from the phone if the server acknowledges that the entered SSID was correct.

6. Contact information

For more information or comments, please do not hesitate to contact the Dobona technical team by email at: info@iotsprint.com

We are available from 8:00AM (GMT+3) to 6:00PM (GMT+3).