Last 3 Pages Viewed: DCMonitoring for VGPIoT - Datacente... > Demo Board 1 > Demo Board 2

Demo Board 2

Front side



General

On this page you will find the process of the **installation** & the **configuration** of 1 of our **Demo Boards**. I will refer to this board as the **level meter board**.

There are currently 3 Demo Boards being tested in our affiliate in Turnhout.

Description

Demo board 2 is a board that can **measure** the amount of **liquid** that is still left in the tank. There is also another sensor that can **detect water**.

Schematics

Visual schematic

A schematic overview of the installed modules on the level meter board.

6/16/23, 5:44 PM

Demo Board 2 - ImasWiki



BPMN schematic







Components

• 1x Raspberry Pi 4 B's 8GB (https://www.raspberrypi.com/products/raspberry-pi-4-model-b/)



1x HMTECH 10" display (https://www.amazon.com/HMTECH-Raspberry-Touchscreen-1024x600-Portabl



1x USB-C power supply (https://www.sossolutions.nl/3a-usb-c-voedingsadapter-voor-raspberry-pi-4?gclid
 =Cj0KCQiA0oagBhDHARIsAI-BbgfYDe0NciZEuTCj58KnTNkzp9ccT42XB9CHikkBCmmCseNA4Y4NnTg

aAtHbEALw_wcB)



• 1x NCD tank level sensor (https://store.ncd.io/product/tank-level-sensor-ultrasonic-wireless/)



1x NCD water detection sensor (https://store.ncd.io/product/industrial-iot-wireless-water-detect-sensor/)



Configuration

Hardware

The screen is connected to the switch with an ethernet cable.

Switch connection

Demo board 2	Switch	IP	
Screen	Port 6	10.1.65.115	

6/16/23, 5:44 PM

If you want to establish a remote connection, install VNC Viewer (https://www.realvnc.com/en/connect/downlo ad/viewer/)

Screen

A Raspberry Pi is connected to the 10" display with an HDMI cable.

Build overview



Schematic overview



Software

Node-Red

Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways.

It provides a browser-based editor that makes it easy to wire together flows using the wide range of nodes in the palette that can be deployed to its runtime in a single-click.

Node-red is already installed on the Raspberry Pi

If you want to install Node-Red yourself, follow the procedure on their website.

Official site: https://nodered.org/

In our case Node-Red is already installed on the smartbox.

Node-red configuration: http://10.1.60.233:1880/

L	level
-1	
-	II 41:b5:ea:e7 - 2 payload.level TESTING ↓ test - level ↓ test - level
1	
н	
1	
Т	
L.	

OS

We can access the screen's OS with ssh. Ssh allows you to login to the pi's terminal.

Hostname	RPI Version	Environment	OS	Location	IP	Owner	Status
raspberrypi	RPI4	1	raspios_arm64 (ht tps://downloads.ra spberrypi.org/rasp ios_arm64/image s/)	lmas	10.1.65.115	Demoboard 2	Online

Login

ssh pi@10.1.65.115	Copy Code

NOTE: The password can be found in Keepass

```
[3:50:21] swillems → ~ ssh pi@10.1.65.115
pi@10.1.65.115's password:
Linux raspberrypi 5.15.61-v8+ #1579 SMP PREEMPT Fri Aug 26 11:16:44 BST 2022 aarch64
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Mar 3 14:50:04 2023 from 10.1.248.9
SSH is enabled and the default password for the 'pi' user has not been changed.
This is a security risk – please login as the 'pi' user and type 'passwd' to set a new password.
pi@raspberrypi:~ $ ls
Bookshelf
                               Downloads
                   Desktop
                                            Music
                                                      Public
                                                                Templates websockify
prowser_startup.sh Documents imgMode.txt
                                           Pictures sfClient Videos
```

Startup script

This script automatically sets the screen into kiosk mode. This means it can only be used as a monitor and not an editor.

browser_startup.sh

1	#!/bin/bash	Copy Code
2	i=0	
3	while ! ping -c 1 -n -w 1 10.1.60.233 &> /dev/null	
4	do	
5	((i++))	
6	done	
7	export DISPLAY=:0.0	
8	<pre>firefoxkiosk "http://10.1.60.233:1880/ui/#!/4?socketid=IGVRXnqqQ8qs1kTWAADN"</pre>	

The script opens a firefox browser an goes to the user interface of Node-Red.

UI view: http://10.1.60.233:1880/ui/#!/4?socketid=IGVRXnqqQ8qs1kTWAADN

≡ Level Meter			
Level	History		
0		plant department ALERT	

Back to: Demo Boards for VGPIoT (CDP) Back to: Main Page

DemoBoards VGPIoT