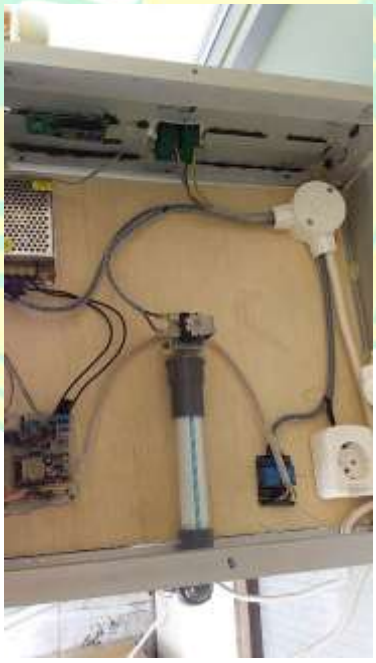
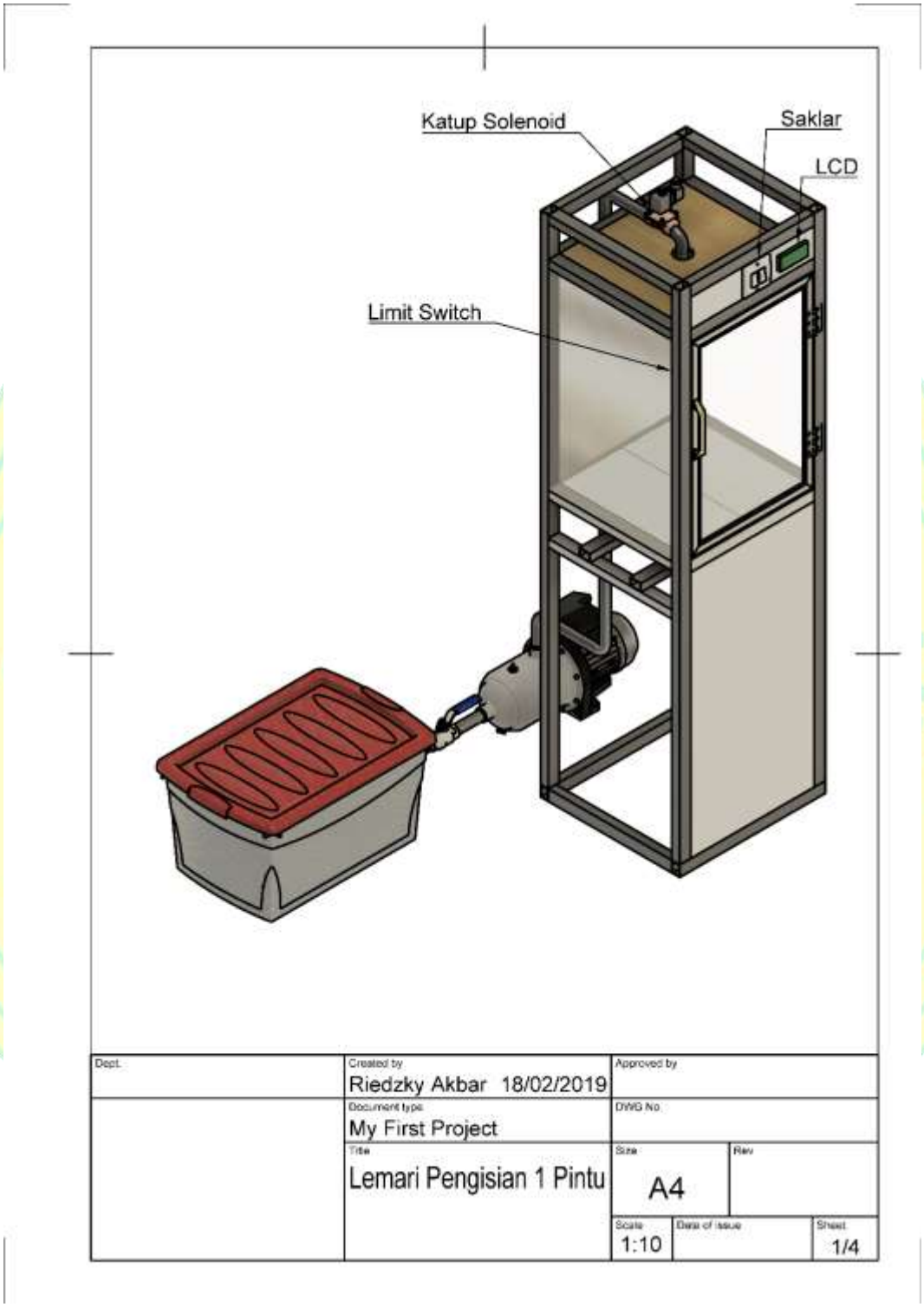
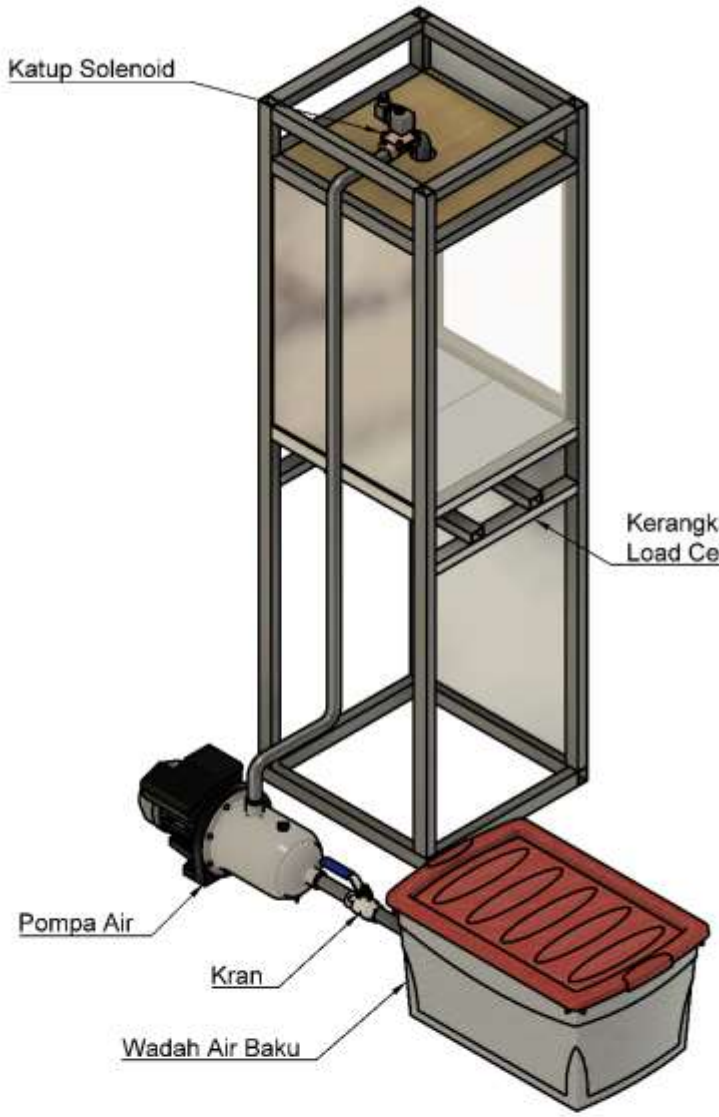
LAMPIRAN

Lampiran 1. Dokumentasi Foto Alat

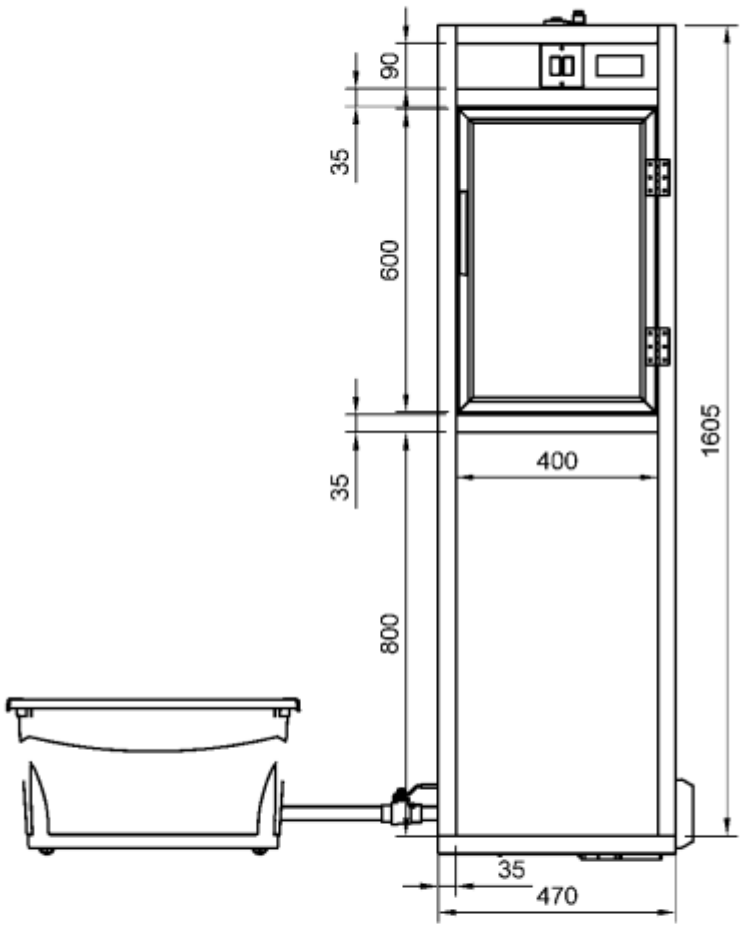


Lampiran 2. Gambar Teknik

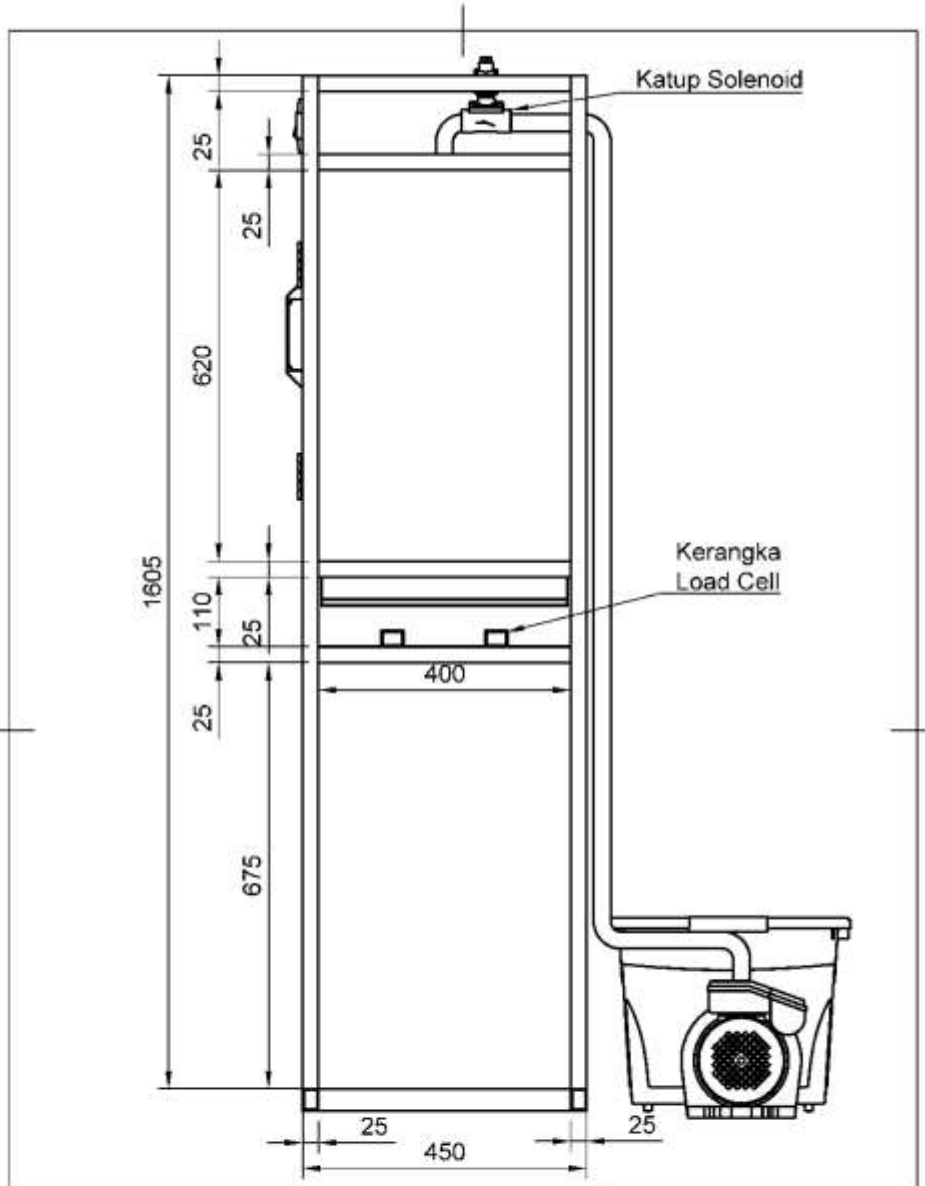




Dept.	Created by: Riedzky Akbar 18/02/2019	Approved by:	
	Document type: My First Project	DWG No.	
	Title: Lemari Pengisian 1 Pintu	Size: A4	Rev:
		Scale: 1:10	Date of issue:
			Sheet: 2/4



Dept.	Created by Riedzky Akbar 18/02/2019	Approved by	
	Document type My First Project	DWG No.	
	Title Lemari Pengisian 1 Pintu	Size A4	Rev
		Scale 1:10	Date of issue Sheet 3/4



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	Title: Lemari Pengisian 1 Pintu	Size: A4	Rev
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Lampiran 3. Data-data Pengukuran

Lampiran 4. *Source Code* Program

```
/*
   Spigo!
   Sistem Pengisian Galon
Otomatis. */

#include <Arduino.h>
#include <ESP8266WiFi.h>
#include <ESP8266WiFiMulti.h>
#include <ESP8266HTTPClient.h>
#include <WiFiClient.h>
#include <LiquidCrystal_I2C.h>
#include <HX711.h>

LiquidCrystal_I2C lcd(0x27,
16, 2);
HX711 loadcell;

//============================
=====
//==PENGATURAN GALON KOSONG &
ISI==
//============================
=====
int bb5 = 206;  //batas bawah
galon 5 liter
int ba5 = 309;  //batas atas
galon 5 liter
int bb10 = 326; //batas bawah
galon 10 liter
int ba10 = 489; //batas atas
galon 10 liter
int bb19 = 622; //batas bawah
galon 19 liter
int ba19 = 933; //batas atas
galon 19 liter
int isi5 = 4950;  //netto 5L
int isi10 = 11950;//netto 10L
int isi19 = 18900;//netto 19L
int berkos = 0; //berat galon
kosong

int channel = 0;

int res;  //respon code http
String postData;
String depot =
"Prototipe";  //nama depot
String pintu =
"A";          //nama pintu

/* Load Cell */
const int LOADCELL_DOUT_PIN =
12;
const int LOADCELL_SCK_PIN =
14;
//const long LOADCELL_OFFSET =
50682624;
const float kalibrasi = 92.21;
int beban;

/* Set credentials. */
const char *ssid =
"gelas";  //ssid & password
access point.
const char *password =
"12121212";

//Alamat web server yang
berisi file upload PHP
const char *host =
"https://riedzky.co.id/sup";
 //website atau Alamat IP

const int rly1 = 4;   //Pin
relay 1 (Solenoid)
const int rly2 = 5;   //Pin
relay 2 (Pompa)
const int buzzPin = 15;  //Pin
buzzer
const int pinP = 13;  //Pin
magnetic switch (pintu)
int p;  //State magnetic
switch (pintu)
String Mode;  //untuk mode
saat standby atau mengisi
int a = 0;

//============================
============================
============
//              Pengaturan
Saat Dinyalakan Pertama Kali
//============================
============================
============

void setup() {

  //Inisialisasi pin I/O (PIN
GPIO, BUKAN NOMOR PIN)
  //Contoh: GPIO23 (PIN 37)
  pinMode(buzzPin,
OUTPUT);   //Buzzer
  pinMode(rly1,
OUTPUT);  //Relay Ch 1
  pinMode(rly2,
OUTPUT);  //Relay Ch 2
  pinMode(pinP,
INPUT);   //Magnetic Switch
  digitalWrite(buzzPin,
LOW);  //OFF
```

```
  digitalWrite(rly1, HIGH);
//OFF
  digitalWrite(rly2, HIGH);
//OFF

  Wire.begin(0, 2);

  // inisialisasi LCD
  lcd.init();
  // menghidupkan backlight
LCD
  lcd.backlight();

  lcd.setCursor(0, 0);
  lcd.print("Spigo!
Ver.4.7.1");
  lcd.setCursor(0, 1);
  lcd.print("   Loading...   "
);
  delay(2000);
  lcd.clear();

  p =
digitalRead(pinP);  //cek
pintu
  if (p == 0) { //jika
tertutup
    lcd.clear();
    lcd.setCursor(0, 0);
    lcd.print("Silahkan
buka   ");
    lcd.setCursor(0, 1);
    lcd.print("pintu
pengisian!");
    delay(2000);
    while (1) {
      p =
digitalRead(pinP);  //cek
pintu
      if (p == 1) { //jika
terbuka
        kalimatOpening();
        break;
      }
    }
  }
  else if (p == 1) { //jika
pintu terbuka
    kalimatOpening();
  }
  for (;;) {
    p =
digitalRead(pinP);  //cek
pintu
    if (p == 0) {  //jika
tertutup
      lcd.setCursor(0, 0);
      lcd.print("Mengkalibrasi
...");
      lcd.setCursor(0, 1);
      lcd.print("Jangan
disenggol");
      //bunyi buzzer
      tone(buzzPin, 1000);
      delay(1000);
      noTone(buzzPin);
      delay(200);
      break;
    }
  }

  loadcell.begin(LOADCELL_DOUT
_PIN, LOADCELL_SCK_PIN);
  loadcell.set_scale(kalibrasi
);
  loadcell.tare(); //Reset the
scale to 0
  delay(500);
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("Selesai...");
  delay(500);
  lcd.setCursor(0, 0);
  lcd.print("Menghubungkan ");
  lcd.setCursor(0, 1);
  lcd.print("ke internet...");

  Serial.begin(115200);
  //
Serial.setDebugOutput(true);

  Serial.println();
  Serial.println();
  Serial.println();

  for (uint8_t t = 4; t > 0;
t--) {
    Serial.printf("[SETUP]
WAIT %d...\n", t);
    Serial.flush();
    delay(1000);
  }

  WiFi.mode(WIFI_STA);

  WiFi.begin(ssid, password);
  Serial.println("");

  Serial.print("Connecting");
  // Wait for connection
  while (WiFi.status() !=
WL_CONNECTED) {
    delay(500);
    Serial.print(".");
    a++;
    if (a > 10) {
      lcd.clear();
      lcd.setCursor(0, 0);
```

```
      lcd.print("Offline..");

      break;
    }
  }
  if (a < 11) {
    lcd.clear();
    lcd.setCursor(0, 0);
    lcd.print("Terhubung
ke  ");
    lcd.setCursor(0, 1);
    lcd.print(ssid);

    //If connection successful
show IP address in serial
monitor
    Serial.println("");
    Serial.print("Connected to
");
    Serial.println(ssid);
    Serial.print("IP address:
");
    Serial.println(WiFi.localI
P());  //IP address assigned
to your ESP
  }
  Mode = "standby";
  //buzzer aktif
  tone(buzzPin, 500);
  delay(500);
  noTone(buzzPin);
  delay(200);
  tone(buzzPin, 500);
  delay(500);
  noTone(buzzPin);
  delay(200);
}

//============================
============================
=============
//                    Main
Program Loop
//============================
============================
=============
void loop() {

  while (Mode == "standby") {
    Serial.println("standby");
stdby:
    if ((digitalRead(pinP)) ==
1) { //jika pintu terbuka
      beban =
loadcell.get_units(10);
      lcd.clear();
      lcd.setCursor(0, 0);
      lcd.print(String("Ready!
> ")/* + String(beban)*/);
      lcd.setCursor(0, 1);
      lcd.print("Letakkan
Galon!");
      delay(500);
    }
    else if
((digitalRead(pinP)) == 0)
{  //jika pintu tertutup
      beban =
loadcell.get_units(10);
      if (beban < -3) { //jika
nilai tanpa beban minus
        loadcell.tare();  //re
set ke 0
      }
      else if ((beban >= 40)
&& (beban < 100)) { //jika
nilai tanpa beban minus
        loadcell.tare();  //re
set ke 0
      }
      else if ((beban >= -3)
&& (beban < 40)) {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print(String("Read
y! > ") + String(beban));
        lcd.setCursor(0, 1);
        lcd.print("Blm ada
galon ");
        berkos = 0;
      }
      else if ((beban >= bb5)
&& (beban < ba5)) {
        Mode = "5 liter";
        berkos = beban;
        goto mod5;
      }
      else if ((beban >= bb10)
&& (beban < ba10)) {
        Mode = "10 liter";
        berkos = beban;
        goto mod10;
      }
      else if ((beban >= bb19)
&& (beban < ba19)) {
        Mode = "19 liter";
        berkos = beban;
        goto mod19;
      }
      else if (beban > 1000) {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print(String("Erro
r! > ") + String(beban));
        lcd.setCursor(0, 1);
        lcd.print("<Mode
Manual>");
      }
```

```
    }
  }

  //==========================
==========================
  //==5 LITER
  //==========================
==========================

  while (Mode == "5 liter") {
mod5:
    Serial.println("Masuk mode
5 Liter");
    for (int i = 3; i >= 0; i-
-) {
      lcd.clear();
      lcd.setCursor(0, 0);
      lcd.print("Baca Galon 5
L");
      lcd.setCursor(0, 1);
      lcd.print(String("Isi
dalam ") + String(i));
      if ((digitalRead(pinP))
== 1) {  //jika pintu terbuka
        Mode = "standby";
        goto stdby;
      }
      delay(1000);
    }
    for (;;) {
mengisi5:
      Serial.println("Mengisii
Galon 5 Liter");
      beban =
loadcell.get_units(2);
      if ((digitalRead(pinP))
== 0) {  //jika pintu tertutup
        if (beban < 40) {
          Mode = "standby";
          goto stdby;
        }
        digitalWrite(rly1, 0);
//Rly Solenoid ON
        delay(500);
        digitalWrite(rly2, 0);
//Rly Pompa ON
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Mengisi
Galon ");
        lcd.setCursor(0, 1);
        lcd.print(String("  5L
,   ") + String(beban));
        if (beban > (isi5 +
berkos)) {
          digitalWrite(rly1,
1); //Rly Pompa OFF
          delay(500);
          digitalWrite(rly2,
1); //Rly Solenoid OFF
          Mode = "5 selesai";
          goto slsi5;
        }
      }
      else if
((digitalRead(pinP)) == 1)
{  //jika pintu terbuka
        digitalWrite(rly1, 1);
//Rly Pompa OFF
        delay(500);
        digitalWrite(rly2, 1);
//Rly Solenoid OFF
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Tertunda!")
;
        lcd.setCursor(0, 1);
        lcd.print("Tutup
pintunya..");
      }
      goto mengisi5;
    }
  }
  while (Mode = "5 selesai") {
slsi5:
    beban =
loadcell.get_units(10);
    Serial.println("Selesai
mengisi 5 Liter");
    //buzzer aktif
    tone(buzzPin, 1000);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    digitalWrite(rly1, 1);
//Rly Pompa OFF
    delay(500);
    digitalWrite(rly2, 1);
//Rly Solenoid OFF
    lcd.clear();
    lcd.setCursor(0, 0);
    lcd.print(String("Selesai!
> ")/* + String(beban)*/);
    lcd.setCursor(0, 1);
    lcd.print("Ambil galon
5L");
    delay(500);
    if (((digitalRead(pinP))
== 1) && (Mode == "5 selesai")
&& (a > 10)) { //jika pintu
terbuka dan ada koneksi
internet
      postData = "depot=" +
depot + "&pintu=" + pintu +
"&galon=5 Liter" ;
      res = pos(postData);
      if (res == 200) {
```

```
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Ok!");
        lcd.setCursor(0, 1);
        lcd.print("Tercatat
5L");
        //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
      }
      else {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print(String("Offl
ine! ") + String(res));
        lcd.setCursor(0, 1);
        lcd.print("Tdk
Tercatat 5L");
        //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
      }
      delay(2000);
      Mode = "standby";
      break;
    }
  }

  //============================
==========================
  //==10 LITER
  //============================
==========================

  while (Mode == "10 liter") {
mod10:
    Serial.println("Masuk mode
10 Liter");
    for (int i = 3; i >= 0; i-
-) {
      lcd.clear();
      lcd.setCursor(0, 0);
      lcd.print("Baca Galon
10L");
      lcd.setCursor(0, 1);
      lcd.print(String("Isi
dalam ") + String(i));
      if ((digitalRead(pinP))
== 1) {  //jika pintu terbuka
        Mode = "standby";
        goto stdby;
      }
      delay(1000);
    }
    for (;;) {
mengisi10:
      Serial.println("Mengisii
Galon 10 Liter");
      beban =
loadcell.get_units(2);
      if ((digitalRead(pinP))
== 0) {  //jika pintu tertutup
        if (beban < 40) {
          Mode = "standby";
          goto stdby;
        }
        digitalWrite(rly1, 0);
//Rly Solenoid ON
        delay(500);
        digitalWrite(rly2, 0);
//Rly Pompa ON
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Mengisi
Galon ");
        lcd.setCursor(0, 1);
        lcd.print(String("
10L,    ") + String(beban));
        if (beban > (isi10 +
berkos)) {
          digitalWrite(rly1,
1); //Rly Pompa OFF
          delay(500);
          digitalWrite(rly2,
1); //Rly Solenoid OFF
          Mode = "10 selesai";
          goto slsi10;
        }
      }
      else if
((digitalRead(pinP)) == 1)
{  //jika pintu terbuka
        digitalWrite(rly1, 1);
//Rly Pompa OFF
        delay(500);
        digitalWrite(rly2, 1);
//Rly Solenoid OFF
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Tertunda!")
;
        lcd.setCursor(0, 1);
        lcd.print("Tutup
pintunya..");
```

```
      }
      goto mengisi10;
    }
  }
  while (Mode = "10 selesai")
{
slsi10:
    beban =
loadcell.get_units(10);
    Serial.println("Selesai
mengisi 10 Liter");
    //buzzer aktif
    tone(buzzPin, 1000);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    digitalWrite(rly1, 1);
//Rly Pompa OFF
    delay(500);
    digitalWrite(rly2, 1);
//Rly Solenoid OFF
    lcd.clear();
    lcd.setCursor(0, 0);
    lcd.print(String("Selesai!
> ")/* + String(beban)*/);
    lcd.setCursor(0, 1);
    lcd.print("Ambil galon
10L");
    delay(500);
    if (((digitalRead(pinP))
== 1) && (Mode == "10
selesai") && (a > 10))
{ //jika pintu terbuka dan ada
koneksi internet
      postData = "depot=" +
depot + "&pintu=" + pintu +
"&galon=10 Liter" ;
      res = pos(postData);
      if (res == 200) {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Ok!");
        lcd.setCursor(0, 1);
        lcd.print("Tercatat
10L");
        //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
      }
      else {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print(String("Offl
ine! ") + String(res));
        lcd.setCursor(0, 1);
        lcd.print("Tdk
Tercatat 10L");
        //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
      }
      delay(2000);
      Mode = "standby";
      break;
    }
  }

  //============================
==========================
  //==19 LITER
  //============================
==========================

  while (Mode == "19 liter") {
mod19:
    Serial.println("Masuk mode
19 Liter");
    for (int i = 3; i >= 0; i-
-) {
      lcd.clear();
      lcd.setCursor(0, 0);
      lcd.print("Baca Galon
19L");
      lcd.setCursor(0, 1);
      lcd.print(String("Isi
dalam ") + String(i));
      if ((digitalRead(pinP))
== 1) {  //jika pintu terbuka
        Mode = "standby";
        goto stdby;
      }
      delay(1000);
    }
    for (;;) {
mengisi19:
      Serial.println("Mengisii
Galon 19 Liter");
      beban =
loadcell.get_units(2);
      if ((digitalRead(pinP))
== 0) {  //jika pintu tertutup
        if (beban < 40) {
          Mode = "standby";
          goto stdby;
```

```
        }
        digitalWrite(rly1, 0);
//Rly Solenoid ON
        delay(500);
        digitalWrite(rly2, 0);
//Rly Pompa ON
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Mengisi
Galon ");
        lcd.setCursor(0, 1);
        lcd.print(String("
19L,    ") + String(beban));
        if (beban > (isi19 +
berkos)) {
          digitalWrite(rly1,
1); //Rly Pompa OFF
          delay(500);
          digitalWrite(rly2,
1); //Rly Solenoid OFF
          Mode = "19 selesai";
          goto slsi19;
        }
      }
      else if
((digitalRead(pinP)) == 1)
{  //jika pintu terbuka
        digitalWrite(rly1, 1);
//Rly Pompa OFF
        delay(500);
        digitalWrite(rly2, 1);
//Rly Solenoid OFF
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Tertunda!")
;
        lcd.setCursor(0, 1);
        lcd.print("Tutup
pintunya..");
      }
      goto mengisi19;
    }
  }
  while (Mode = "19 selesai")
{
slsi19:
    beban =
loadcell.get_units(10);
    Serial.println("Selesai
mengisi 19 Liter");
    //buzzer aktif
    tone(buzzPin, 1000);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    digitalWrite(rly1, 1);
//Rly Pompa OFF
    delay(500);
    digitalWrite(rly2, 1);
//Rly Solenoid OFF
    lcd.clear();
    lcd.setCursor(0, 0);
    lcd.print(String("Selesai!
> ")/* + String(beban)*/);
    lcd.setCursor(0, 1);
    lcd.print("Ambil galon
19L");
    delay(500);
    if (((digitalRead(pinP))
== 1) && (Mode == "19
selesai") && (a > 10))
{  //jika pintu terbuka dan
ada koneksi internet
      postData = "depot=" +
depot + "&pintu=" + pintu +
"&galon=19 Liter" ;
      res = pos(postData);
      if (res == 200) {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print("Ok!");
        lcd.setCursor(0, 1);
        lcd.print("Tercatat
19L");
        //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
      }
      else {
        lcd.clear();
        lcd.setCursor(0, 0);
        lcd.print(String("Offl
ine! ") + String(res));
        lcd.setCursor(0, 1);
        lcd.print("Tdk
Tercatat 19L");
        //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
    //buzzer aktif
    tone(buzzPin, 200);
    delay(1000);
    noTone(buzzPin);
    delay(200);
      }
      delay(2000);
      Mode = "standby";
      break;
```

```
        }
    }
}
```


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