



# **JABATAN KEJURUTERAAN MAJLIS BANDARAYA SEBERANG PERAI**

## **SISTEM PEMANTAUAN LAMPU JALAN MBSP**

### **SPESIFIKASI SISTEM**

( Tarikh Kemaskini : September 2021 )



# 1 Contents

1	SISTEM PEMANTAUAN LAMPU JALAN MBSP .....	2
1.1	INTRODUCTION.....	2
1.2	OVERVIEW .....	2
1.2.1	OVERVIEW DIAGRAM .....	2
1.2.2	OPERATION.....	3
2	SISTEM PEMANTAUAN LAMPU JALAN MPSP .....	4
2.1	Dashboard .....	5-6
3	INSTALLATION & DIMENSION .....	7
4	BLOCK DIAGRAM .....	8
5	WIRING.....	9-12
6	PRODUCT FEATURE.....	12
7	SPECIFICATION .....	13
7.1	OPERATING ENVIRONMENT.....	13
7.2	POWER ANALYZER .....	13
7.3	INTERFACE I/O .....	14
7.4	POWER BACKUP.....	14

## 2 SISTEM PEMANTAUAN LAMPU JALAN MBSP

### 2.1 INTRODUCTION

**MBSP STREET VIEW<sup>®</sup>** allows you to access, control, and monitor electronic devices and detect any leakage in street light. **MBSP STREET VIEW<sup>®</sup>**, lets you use data intelligently to save energy, improve operations, and lower maintenance costs.

**MBSP STREET VIEW<sup>®</sup>** is part of the **SISTEM PEMANTAUAN LAMPU JALAN MBSP** management system. It uses IP Communications technology in order to communicate with the **SISTEM PEMANTAUAN LAMPU JALAN MBSP**. Management System. **MBSP STREET VIEW<sup>®</sup>** solution for monitoring street light power. The data process in device is sent through the cloud. The device is easy to set up in the Feeder Pillar. The device has multiple voltage monitoring, current monitoring, high voltage input and digital input.

### 2.2 OVERVIEW

#### 2.2.1 OVERVIEW DIAGRAM

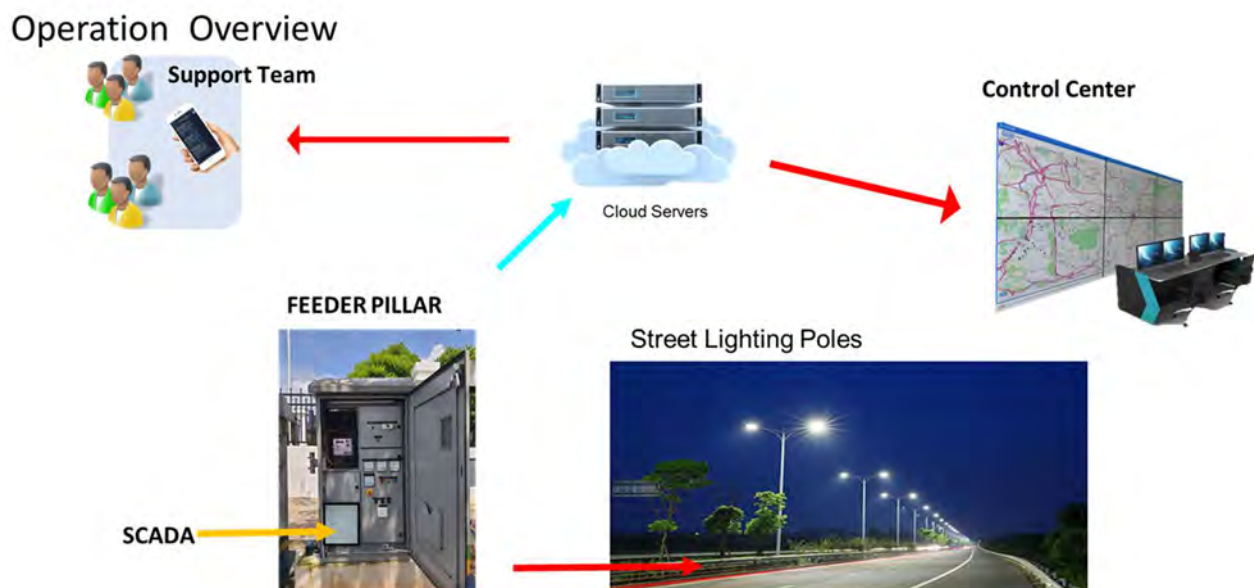


Figure 1 overview



### 2.2.2 OPERATION

**MBSP STREET VIEW@** will process all input it receive. The input are MCCB, RCCB, Sub RCCB, phase, current, timer, photocell, and door switch. If MCCB and RCCB turn off **MBSP STREET VIEW@** will detect as fault and send data through cloud. If Sub RCCB and timer and has turn on daylight the **MBSP STREET VIEW@** will detect as fault and send data through cloud. If photocell has power and Sub RCCB off **MBSP STREET VIEW@** will detect as fault and send data through cloud.

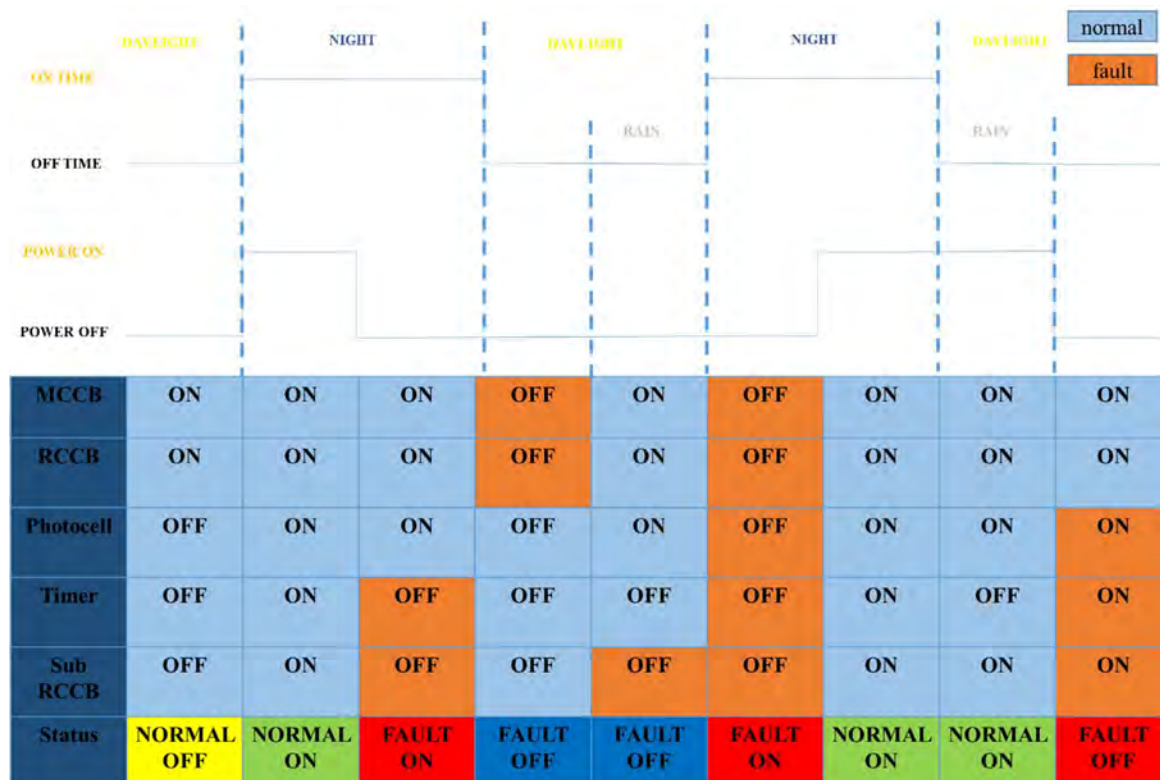


Figure 2 normal-fault diagram situation

### 3 SISTEM PEMANTAUAN LAMPU JALAN MBSP

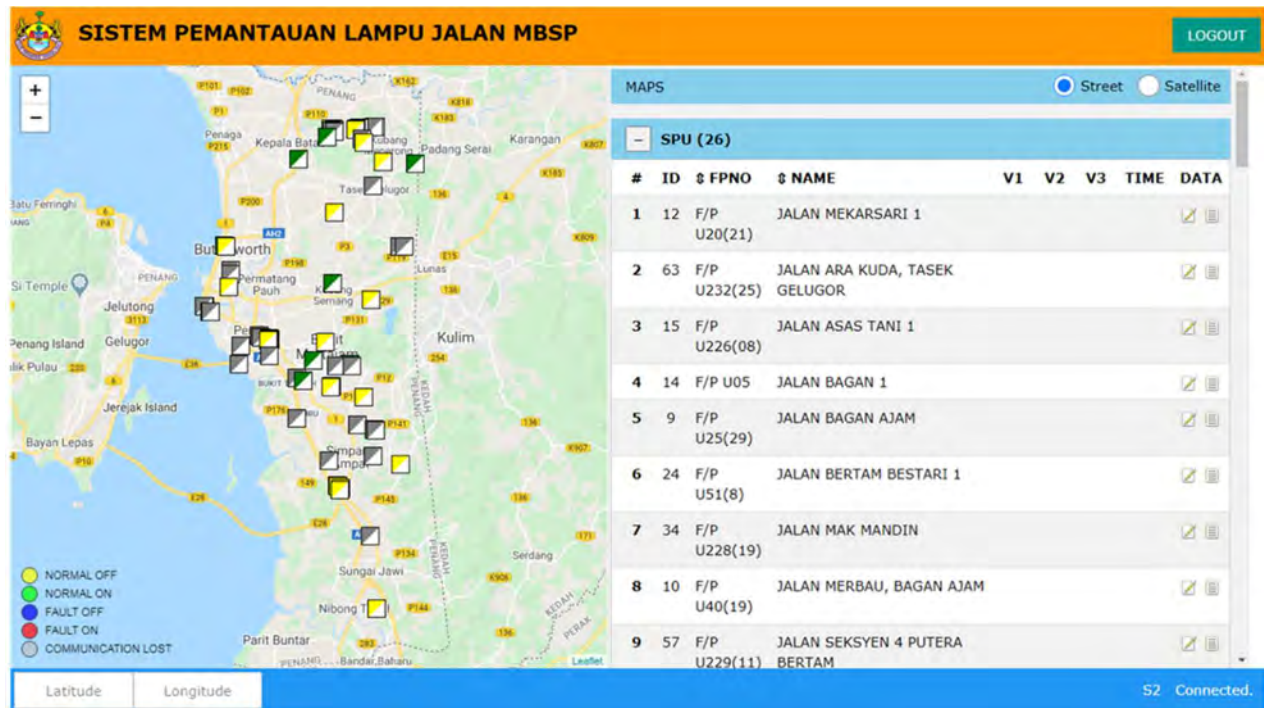


Figure 3 SISTEM PEMANTAUAN LAMPU JALAN MBSP

The website show the status of street light at the site. The status are **NORMAL OFF**, **NORMAL ON**, **FAULT OFF** and **FAULT ON**.

- **NORMAL OFF** = is street light off during daylight or clear weather.
- **NORMAL ON** = is street light on during night or rain.
- **FAULT OFF** = is fault during night.
- **FAULT ON** = is fault during daylight.
- **COMMUNICATION LOST** = status means the connection is lost.



### 3.1 Dashboard

In **SISTEM PEMANTAUAN LAMPU JALAN MBSP** we show the status in feeder pillar. It show real-time status feeder pillar in the site.

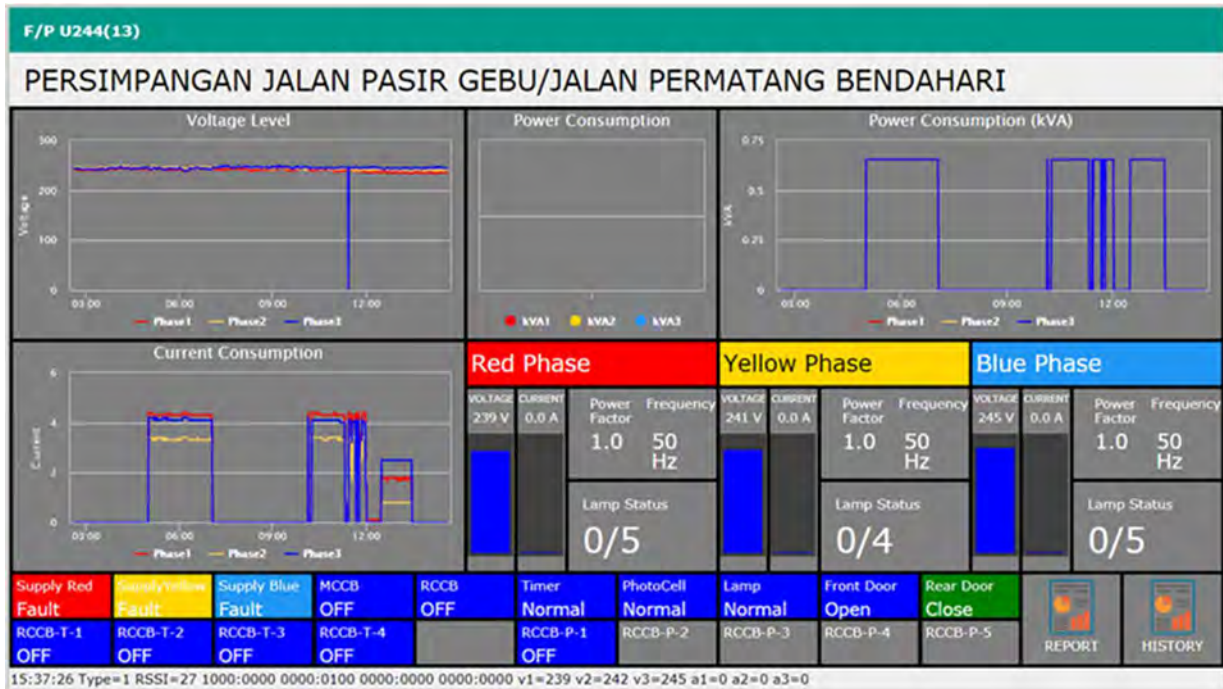


Figure 4 Dashboard

The system generate report by selecting date and the date picked then the report is generated. The report contain kilowatt hour and billing.

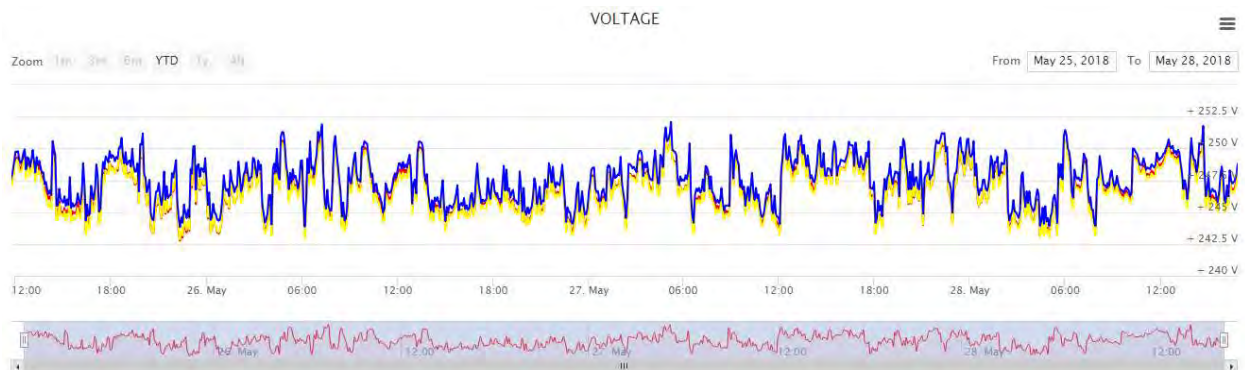


Figure 5 voltage graph



The system generate graph by selecting date and the date picked then the graph is generated. The graph contain voltage against time.

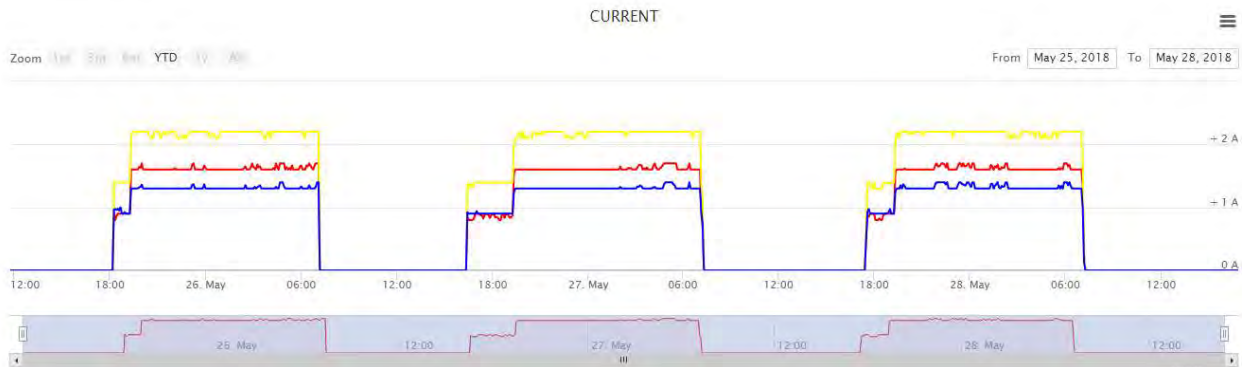


Figure 6 current graph

The system generate graph by selecting date and the date picked then the graph is generated. The graph contain current against time.



Figure 7 power graph

The system generate graph by selecting date and the date picked then the graph is generated. The graph contain power against time.



## 4 INSTALLATION & DIMENSION

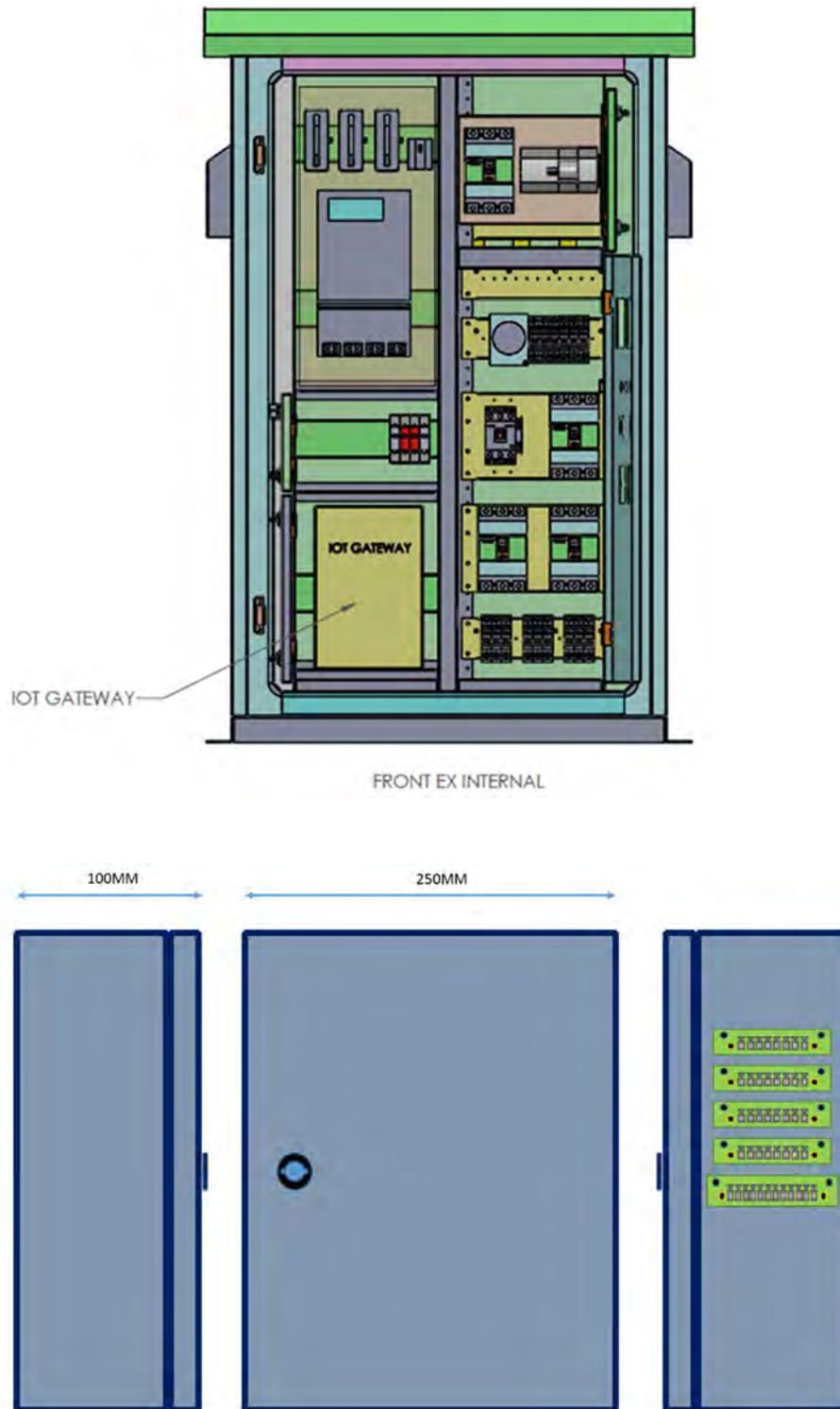


Figure 8 dimension MBSP STREET VIEW@





## 5 BLOCK DIAGRAM

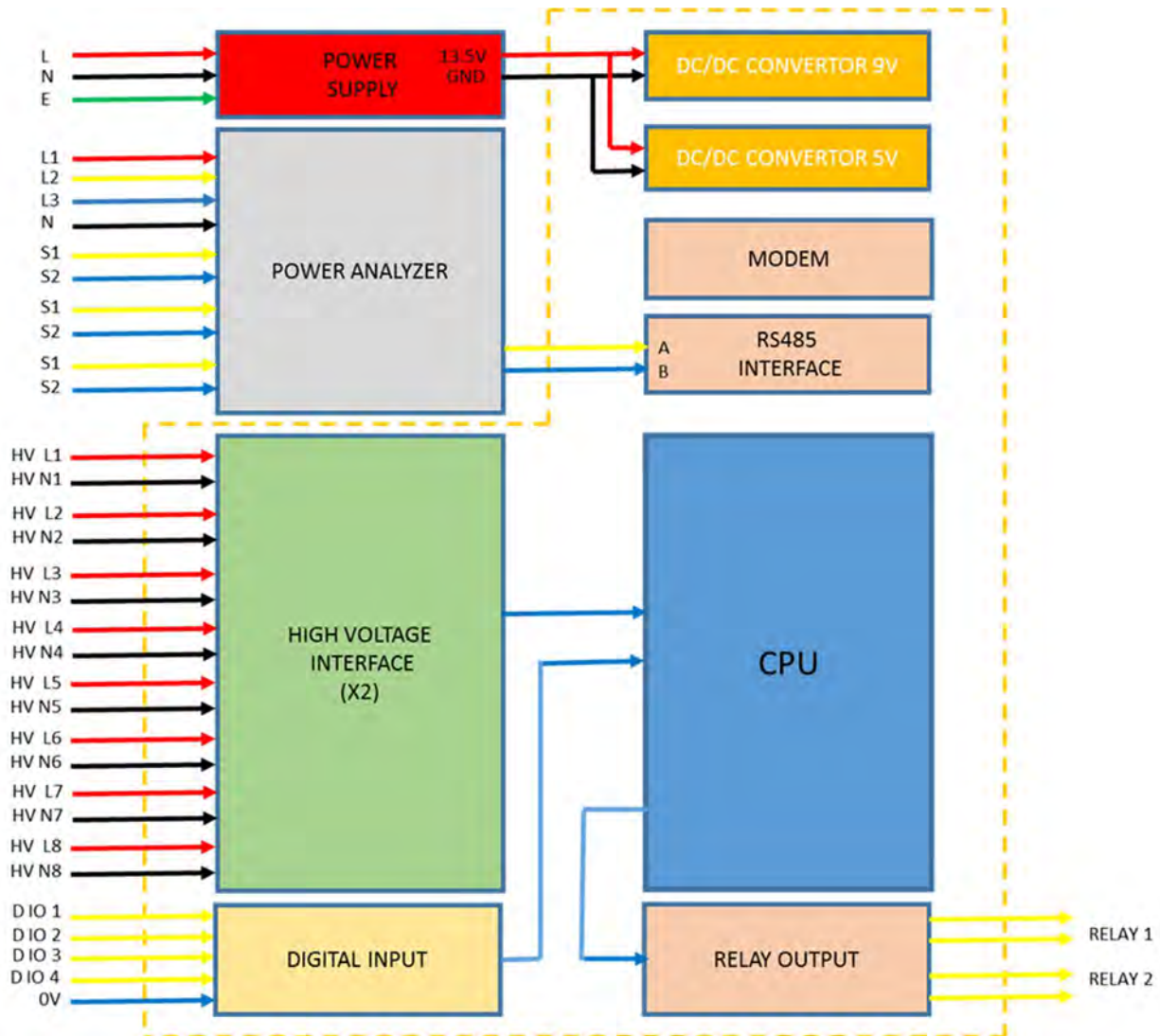


Figure 9 block diagram

## 6 WIRING

The connecting port in figure .4

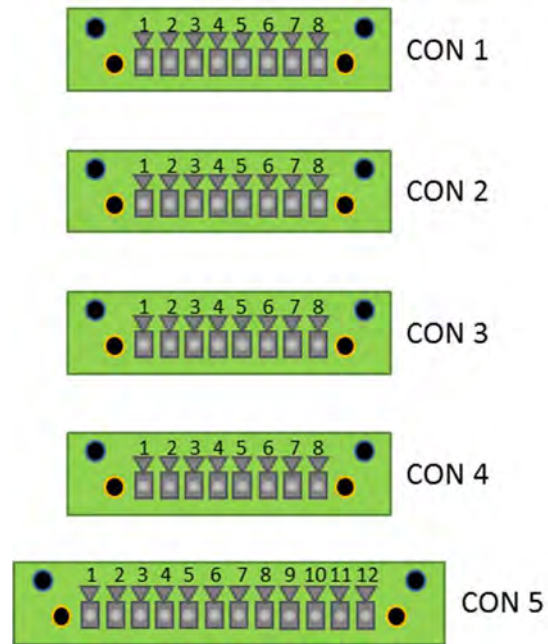


Figure 10 Pin Configuration

Definition connecting port

PIN No.	Connector No.	Description
1	CON 1	Supply RED Phase
2	CON 1	NEUTRAL
3	CON 1	Supply YELLOW Phase
4	CON 1	NEUTRAL
5	CON 1	Supply BLUE Phase
6	CON 1	NEUTRAL
7	CON 1	RCCB-P-5
8	CON 1	NEUTRAL



<b>PIN No.</b>	<b>Connector No.</b>	<b>Description</b>
1	CON 2	RCCB-P-1
2	CON 2	NEUTRAL
3	CON 2	RCCB-P-2
4	CON 2	NEUTRAL
5	CON 2	RCCB-P-3
6	CON 2	NEUTRAL
7	CON 2	RCCB-P-4
8	CON 2	NEUTRAL

<b>PIN No.</b>	<b>Connector No.</b>	<b>Description</b>
1	CON 3	MCCB
2	CON 3	NEUTRAL
3	CON 3	RCCB
4	CON 3	NEUTRAL
5	CON 3	TIMER
6	CON 3	NEUTRAL
7	CON 3	PHOTOCELL
8	CON 3	NEUTRAL



<b>PIN No.</b>	<b>Connector No.</b>	<b>Description</b>
1	CON 4	RCCB-T-1
2	CON 4	NEUTRAL
3	CON 4	RCCB-T-2
4	CON 4	NEUTRAL
5	CON 4	RCCB-T-3
6	CON 4	NEUTRAL
7	CON 4	RCCB-T-4
8	CON 4	NEUTRAL

<b>PIN No.</b>	<b>Connector No.</b>	<b>Description</b>
1	CON 5	FRONT DOOR
2	CON 5	BACK DOOR
3	CON 5	COMM 0V
4	CON 5	S1 RED PHASE CT1
5	CON 5	S2 RED PHASE CT1
6	CON 5	S1 YELLOW PHASE CT2
7	CON 5	S2 YELLOW PHASE CT2
8	CON 5	S1 BLUE PHASE CT3
9	CON 5	S2 BLUE PHASE CT3
10	CON 5	BATT +
11	CON 5	BATT -



12

CON 5

Table 1

## 7 PRODUCT FEATURE

- **Wireless Technology** - utilizes the latest developments in wireless technology and employs RF/GSM technology to program, monitor and control geographically distributed remote streetlights.
- **Monitor** -  
The groups of street lights are equipped with communication modules and as per program med frequency.
- **Control** - The street lighting system can be switched on or off based on selected group of light poles and the switching time can be programmed on daily/monthly basis.
- **Alarm Call Service** - The system can generate and send Telegram to the concerned authority on occurrence of any programmed event with exact time stamping.
- **Fault Monitoring** -  
In case of abnormal situation, the remote terminal unit automatically generates alarm messages sends them Media App (Telegram). The message contains detailed data on the fault(s) with exact time stamp.
- **Report Generation** -  
The Master Control Station generates various detailed real time reports. It also helps to maintain history of events.
- **Environmental** – Temperature, Humidity, CO2 and rain sensor can be attached to unit.



## 8 SPECIFICATION

### 8.1 OPERATING ENVIRONMENT

- Operating temperature  $-25^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$
- Storage temperature  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Relative humidity 0 to 90%, non-condensing
- Altitude Up to 2000m

### 8.2 Processor

- CPU: Allwinner H2+, Quad-core Cortex-A7.
- 512MB DDR 3 SDRAM.

### 8.3 POWER ANALYZER

- Phase to neutral voltages 100 to 289V a.c.
- Voltages between phases 173 to 500V a.c.
- Imported active energy 0 to 9999999.9 kWh
- Exported active energy 0 to 9999999.9 kWh
- Total active energy 0 to 9999999.9 kWh
- Total reactive energy 0 to 9999999.9 kVArh
- Voltage inputs through 4-way fixed connector with  $2.5\text{mm}^2$  stranded wire capacity.
- Four phase four wire (3p4w) unbalanced.
- Line frequency measured from L1 voltage or L3 voltage.
- Three current inputs (six physical terminals) with  $2.5\text{mm}^2$  stranded wire capacity for connection of external CTs.
- Nominal rated input current 5A or 1A a.c. Rms. Voltage 0.5% of range maximum
- Current 0.5% of nominal
- Frequency 0.2% of mid-frequency
- Power factor 1% of unity (0.01)
- Two-way fixed connector with  $2.5\text{mm}^2$  stranded wire capacity. 85 to 275V a.c. 50/60Hz  $\pm 10\%$  or 120V to 380V d.c.  $\pm 20\%$ . Consumption  $< 10\text{W}$
- An RS485 communication channel that can be programmed for Modbus RTU protocol
- An relay output indicating real-time measured energy.(configurable)
- An pulse output 3200imp/kWh (not configurable)
- The Modbus configuration (Baud rate etc.) and the pulse relay output assignments (kW/kVArh, import/export etc.) are configured through the Set-up screens.
- Operating temperature  $-25^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Storage temperature  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$



## 8.4 INTERFACE I/O

- 4 wire 3 phase input
- 16 high voltage input
- 4 digital input
- 3 Current transformer input
- 4 relay output

## 8.5 POWER BACKUP

- Sealed lead battery
- 12 V
- 7.5AH



### 8.6 EXAMPLE WIRING DIAGRAM

