



LoRa enabled Street Light Controller (without E-meter)

Model: LoRa®

Technology: LoRaWAN® sensor based

Communication: Wireless

Datasheet 1.0

Table of Contents

1. Brief Description	3
1.1 Key Features	
1.1 Application	
2. Images of Street light Controller:	4
3. LoRa Device	5
3.1 Features	
3.1 Specification	
4. SOFTWARE DESCRIPTION	6
4.1 ON, OFF and Dimmer Operation	
4.1 Weather Based Automation (Optional)	
5. Streetlight with Controller:	7
5.1 Features:	
6. IMPORTANT NOTICE	8
6.1 Disclaimer	
6.1 Contact Information	

1. Brief Description

LoRa Enabled Street light controller is having feature to control streetlight through ambient light, commands, scheduling etc. With these features this retrofit street light controller makes streetlight smarter. This controller has LoRa module, through which it makes two-way communication. Gateway will work as a mediator between Streetlight controller and LoRa network server. This controller has unique MAC address which is unique identifier as well.

1.1 Features

1. 90-240V power supply.
2. 120 Watts max load capacity.
3. Surge protection.
4. RTC based scheduling.
5. Light dimming.
6. On/Off Scheduling
7. Weather based Ambient Light(optional).
8. Command Centre Control
9. Scheduled based Automation.
10. Super Cap used for power back-up for LoRa device.
11. Multicast for LoRa devices

1.2 Applications

1. Smart Lighting.

2. Image of Street light Controller:



98mm,77mm

Image: - NMEA with 7 pin connectors

3. Specification of LoRa device

Parameter	Range
Frequency range	865 to 867 MHz
Modulation	LoRa® Spread-Spectrum
RF output power	Up to 20 dBm
Receiver sensitivity	-137 dBm (SF 12; SB 125 kHz, CR 4/6)
RF data rate	0.24 to 5 kbps
RF range	up to 5000 m (line of sight)
Operating voltage	3 V to 3.7 V, Separate 5V option
Current consumption	< 10 μ A (module in sleep, RTC running) 23 mA (Rx) 123 mA (Tx mode)
Operating temperature	-40°C to +85°C

4. SOFTWARE DESCRIPTION

4.1 ON, OFF and Dimmer Operation

- **ON and OFF operation**

Micro Controller STM32 assigned for ON & OFF operation of streetlight through relay. Dedicated pins initialize as pull-down, extremely high frequency & output push pull mode.

- **Dimmer operation**

Dimmer is use for changing the intensity of streetlight. The intensity can be adjusting from 10% to 100%. This dimmer intensity adjustment done by PWM (Pulse Width Modulation). Dedicated Pin used to operate dimmer. In normal condition when streetlight turns to ON dimmer intensity static with 15%. Which can be change as per requirement.

4.2 Weather Based Automation (Optional)

Weather based automation done by using Lux Sensor (Ambient light Sensor). This sensor measures the lux value in environment and give current output to controller using ADC (Analog to digital Converter) output. The Application of “Weather Based Automation” in “Smart Street Light Controller”, if lux value less then threshold value then streetlight automatically turns to ON. The controller also calculates the lux percentage and according to lux percentage dimmer intensity will adjust.

5. Streetlight with Controller:



6. IMPORTANT NOTICE

6.1 Disclaimer

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