Ohli Node

Fig. 1 - Ohli Node

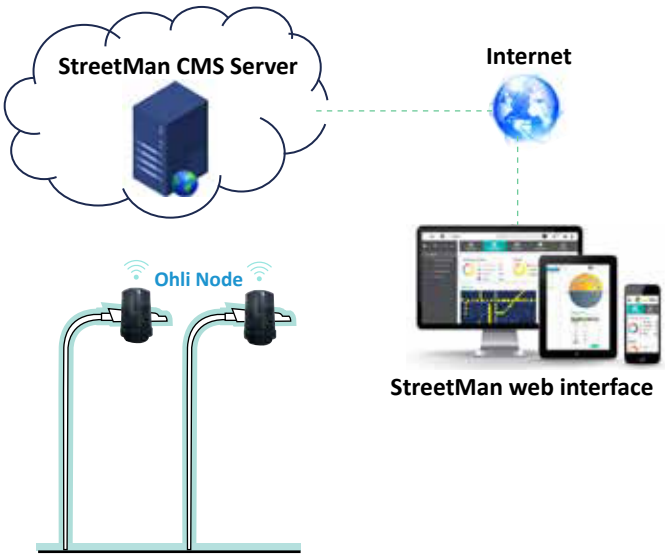

Fig. 2 – Smart Street Light Implementation

Overview

Ohli Node uses a built-in, industrially-rated, next generation, remotely programmable SIM card which works with multiple cellular providers (e.g. AT&T, Sprint, T-Mobile, Verizon, etc in the US; Vodafone, Deutsche Telekom, etc in Europe) and multiple networks (2G, 3G, 4G, LTE-M or NB-IoT) – out-of-the-box – in 170 countries..

Ohli Node NEMA Smart Light Controller as shown in Fig.1 is a remote-control device for HID or LED luminaires equipped with ANSI C136.41 NEMA receptacle. The controller connects with a cellular or NB-IoT network which in turn connects with Dhyan's StreetMan central management system, as shown in Fig.2. The controller is exceptionally suitable for various terrains and environments and comes with built-in tilt sensor and Global Positioning System (GPS).

Features

- NEMA interface, compatible with standard ANSI C136.41
- Built-in standard NB-IoT/2G/3G/4G/LTE-M remotely programmable SIM card to realize long-distance transmission, low-power operation, large-capacity networking, and high-reliability communication
- Connects to supporting cellular networks and supports remote control such as on/off, dimming, status monitoring of the streetlight etc.
- Built-in electric energy metering chip with 1% accuracy
- Built-in with tilt sensor to detect the uprightness of lamp post
- Monitored parameters includes: voltage, power, current, energy consumption, power factor, temperature and frequency, etc.
- Option for built-in real-time clock, can store device energy consumption data per day
- Service life- > 5 years

Electrical & Hardware Parameters

Input Voltage	110Vac~277VAC	Short Circuit Protection	No
Rated Voltage	230VAC	Over-Temperature Protection	Yes
Operating Voltage	105- 440 VAC (support for standard voltage 120V~ 277V and high voltage 120V ~480V	Housing Material	Polycarbonate
Power Frequency	47Hz to 63Hz	IP Protection	IP66
Maximum Output Power	500W	MTBF	>200K hours
Output Power	Class 5 (Typ. 21dbm)	Receiving Sensitivity	-135 dBm
Maximum Load Current	4A	Operating Temperature	-40℃ to +70℃
Standby Power Consumption	<2W	Storage Temperature	-40℃ to +85℃
NB-IoT Frequency	B1/B2/B3/B4/B5/B8/B12/B13/ B18/B19/B20/B25/B26/B28/ B66/B71/B85	Dimensions （L*W*H）	89mm*89mm*120mm
Dimming Output	• 0V-10V @ 27mA(max), PWM, DALI optional	Weight	0.3kg
Metering Accuracy	<1%	Maximum Ambient Temperature	80℃
ANSI standard	C136.41 NEMA 7-pin Smart City ready	Security	TLS/AES
OTA Support	Yes	Field firmware upgrades	Yes
THD	<10%	Safety Standard	CE
Tilt Sensor & GPS	Yes	Surge Protection	320J, 6KV/3KA (option for 405~440J)
Overload Protection	Yes	Electro Magnetic Compliance	EN55015, EN55022, FCC

Fault Alerts and Resulting Operations

Fault Alert	Conditions	Resulting Operations	Notes
Over Temperature	＞95℃±2℃	Reports fault alert, shutdown, recovers to pre-shutdown condition[1] @ temperature＜90℃±2℃	Ohli Node internal temperature, not environment temperature
Under Temperature	＜-25℃±2℃	Reports fault alert, no shutdown,	Ohli Node internal temperature, not
		removes fault alert @ temperature＞-25℃±2℃	environment temperature
Open Circuit (at Output)	Power＜5W±1W	Reports fault alert @ Power＜5W±1W, no shutdown, removes fault alert @＞5W±1W	
Over Power	＞520W±5W or ＞4.2A±200mA	Reports fault alert, shutdown, resets[2], then recovers。	
Over Voltage	＞285V±3V	Reports fault alert, shutdown, recovers to pre-shutdown condition @＜280V±3V	
Under Voltage	＜95V±3V	Reports fault alert, shutdown, recovers to pre-shutdown condition @＞100V±3V	

Note: 1. State before shutdown: Working state of the product when no alarm is generated, if the product fails at 50% dimming, it will be restored to this state after the failure is removed.

2. Restart: The product needs to be powered off and then powered on again.

3. Execution actions: All execution within 4 seconds

Smart Functions Details

Smart Function	Details
Dimming	Dimming control is carried out over NB-IoT with 0-10V output and PWM output. PWM outputs 0-100% at <2% accuracy, non-polarity
Energy Metering	Integrated with metering circuitry at 2% accuracy reading Input Voltage, Input Current, Active Power. Power Factor and Temperature. Performs electrical parameter read-back via NB-IoT.
Fault Reporting	Reports real-time fault conditions such as Open-Loop, Over-Voltage, Under-Voltage, Temperature etc.

Dimensions

The overall dimensions of **Ohli Node** are shown in Fig. 3.

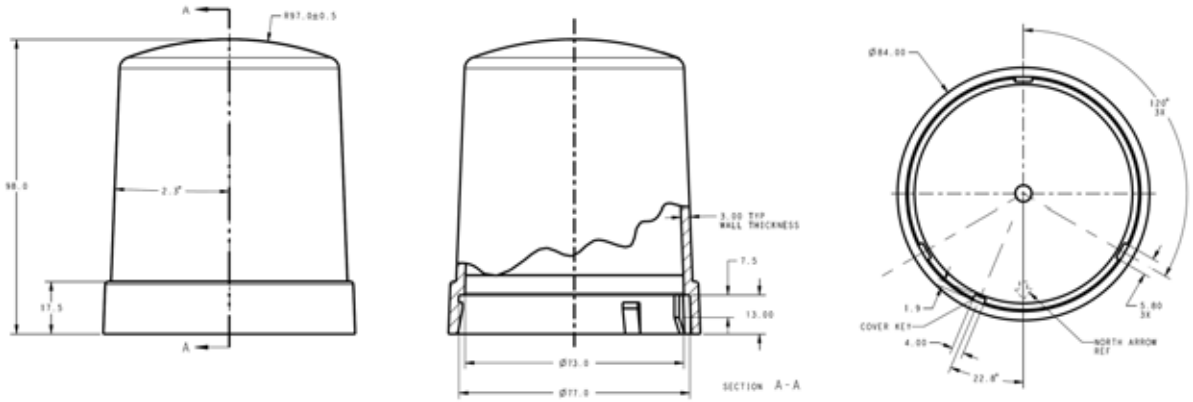

Fig. 3 - Ohli Node Dimensions

Wiring and Installation

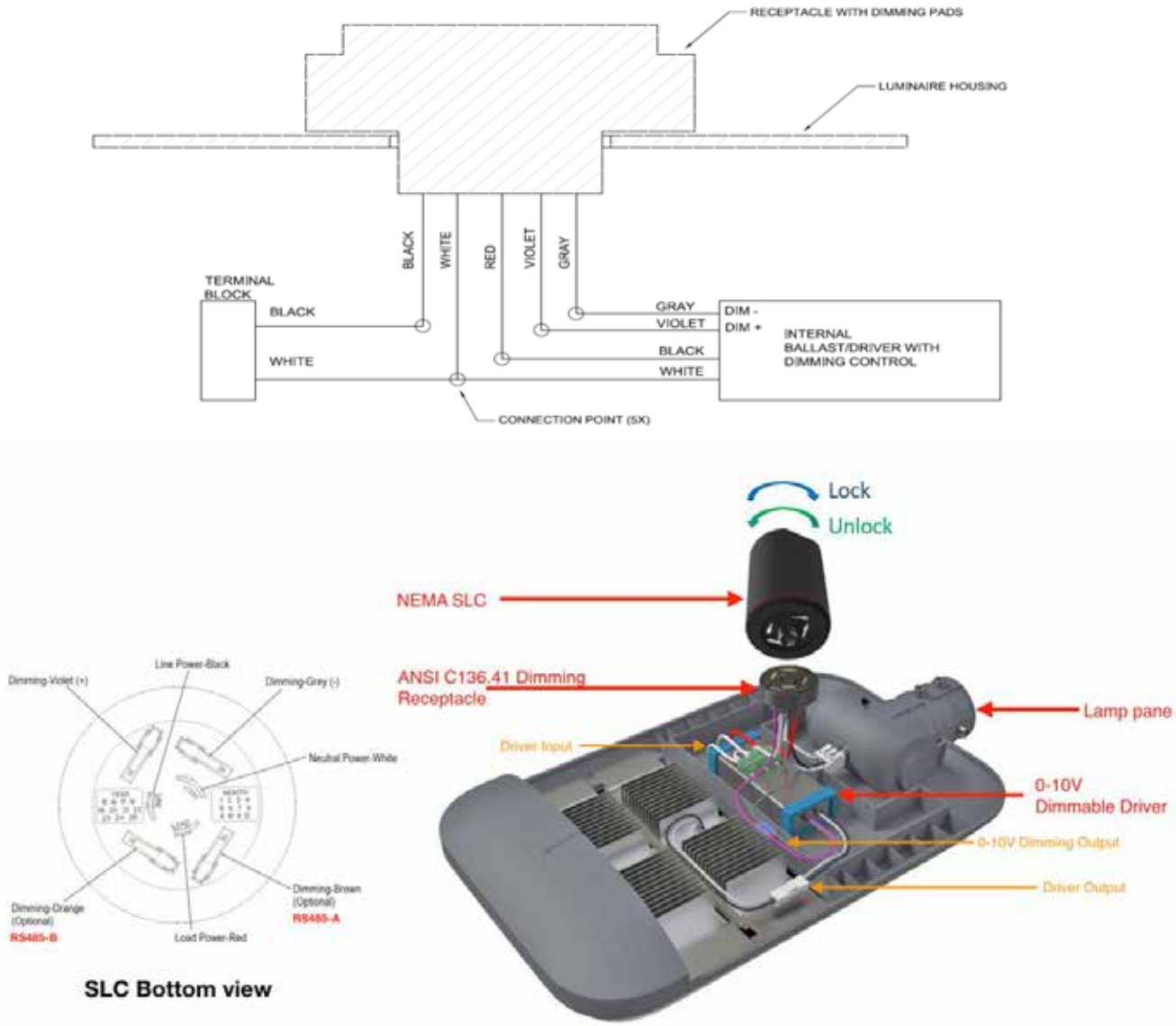

Fig. 4 – Ohli Node Installation Diagram

To lock the Ohli Node onto the NEMA-enabled lamp, align the pins and mount the unit onto the NEMA adaptor in clockwise manner. To unlock, turn anti-clockwise.

Contact Information

For more information regarding the Ohli Node including pricing, and ordering please contact:
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