NEBULAE®
DESIGN TO CONNECT

www.nebulae.io

CASE STUDY

A detailed anatomy of NLC1200, a controller designed and developed by **Nebulae®**, a business vertical of **System Level Solutions.**

SLS
System Level Solutions

www.slscorp.com

CHALLENGE

With industries expanding their respective engineering and product bases, the primary challenge which continued to hinder the likelihood of their potential application prospects remained the absence of a promising framework that would give real-time updates on power status for varied input voltages. Hence, the purpose was to overcome this challenge by developing a robust device that apart from being designed immaculately to support easy integration, was capable of reading and monitoring the ON & OFF status of devices operating at differential input values.

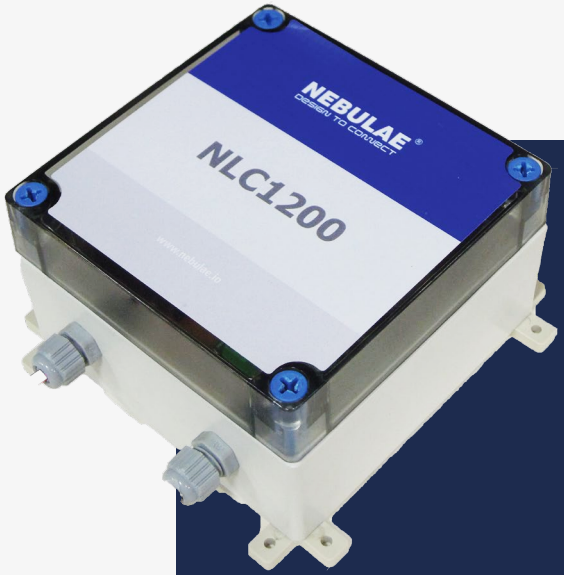
APPROACH

To identify the most feasible opportunities, Nebulae® took a thorough observation of the most commonly used devices, their areas of application, and the respective input values at which they usually operated. As per the results, real-time updates & monitoring of power status remained the need of the hour, besides scalability and remote access. The next step was to come up with an industry-standard data acquisition system that could monitor the ON/OFF status for relevant input values and serve an array of applications with ease.

BREAKTHROUGH

Taking into cognizance every industrial and non-industrial requirement, Nebulae® designed and developed a compact Nebulink® Controller NLC1200 that is used to read and monitor the ON/OFF status for different voltage supplies within a range of 230VAC to 250VAC, besides incorporating a replaceable module to comply with VDC input values. It supports a pole/wall mounting arrangement that makes it easy to install. Being capable of measuring power, flow, and temperature data, it caters to areas that include but are not limited to remote and machine condition monitoring. Moreover, having inbuilt compliance for Nebulae® and Yalgaar® SDKs, NLC1200 allows the end-user to-

- Easily integrate into their existing infrastructure.
- Easily monitor and manage the data wirelessly.



TECHNICAL SPECIFICATIONS

ESP32-BASED DUAL-CORE XTENSA® 32-BIT LX6 MICROPROCESSOR
Uses a module with inbuilt WiFi and Bluetooth support for seamless connectivity

VOLTAGE MEASUREMENT FROM 230VAC - 250VAC*
Currently reads input power values varying from 230VAC to 250VAC*

*Replaceable module to comply with VDC values

2 INPUT POWER CHANNELS
230VAC analog channels for interfacing with the sensors

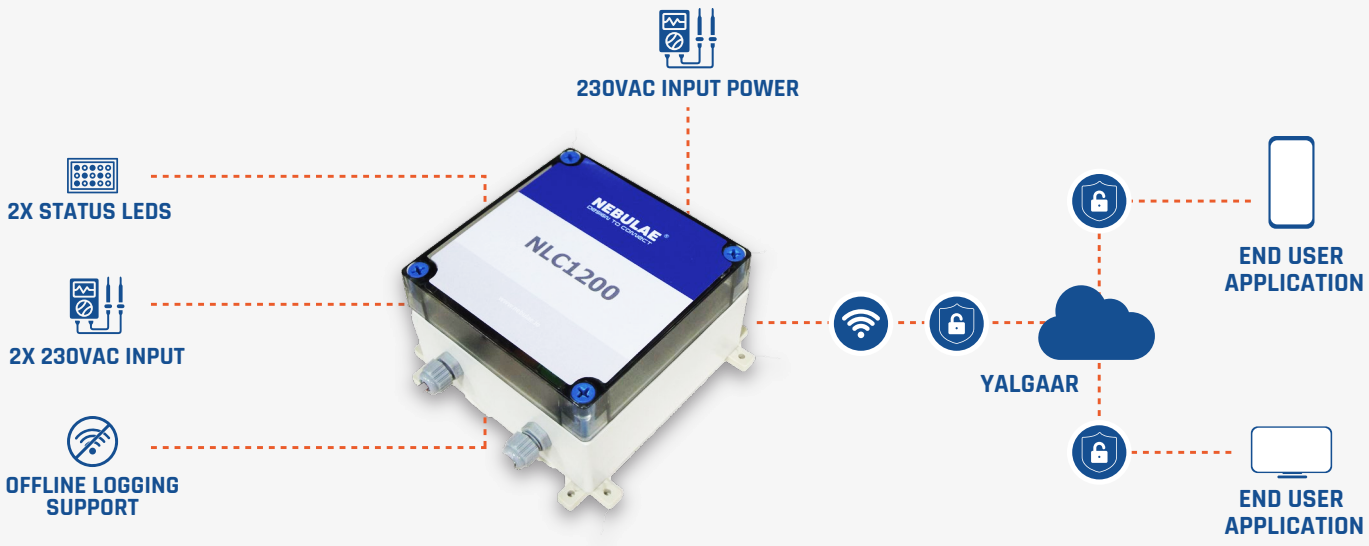
TWO STATUS LEDS
One for power and the other for WiFi status indication

NEBULAE® & YALGAAR® SDKS
Easy integration, real-time data transfer, cloud storage, and end application development

WiFi CONNECTIVITY
IEEE 802.11 b/g/n AP/STA mode configuration, eliminating the need for an additional cloud communication setup

WiFi COMMISSIONING
Supports easy WiFi commissioning with an open-source Android app

COMPACT AND EASY TO INSTALL
Compact device with wall/pole mounting, accounting for easy deployment irrespective of the place



BENEFITS

- Remote monitoring of different devices (IoT and otherwise) with cloud connectivity
- In-built fuse protection for input fluctuations
- Power status notifications for the connected device(s) along with time and duration details
- Easy to integrate with the existing infrastructure
- Offline logging support
- Ready-to-use SDKs for end app development
- Compact and small-sized
- High cost-based efficiency

APPLICATIONS

- Remote monitoring of pumps in sewage treatment plans
- Motor Protection: winding and bearing temperature
- Generator Monitoring & Protection
- Electrical Substation Monitoring
- Drying Ovens
- Fermentation Processes
- Flow Monitoring
- Power Monitoring
- Machine Condition Monitoring
- Metal & Mining Applications
- Monitoring of air compressors, pumps, transformers, & fans
- Blowers DG temperature monitoring