

AN OVERVIEW AND APPLICATION DISCUSSION ON A Z-LYNK SYSTEM

A Z-LYNK System is a very versatile solution which offers a broad range of capabilities and solutions aimed at remote targeting, environmental monitoring and load control using advanced M2M technology.

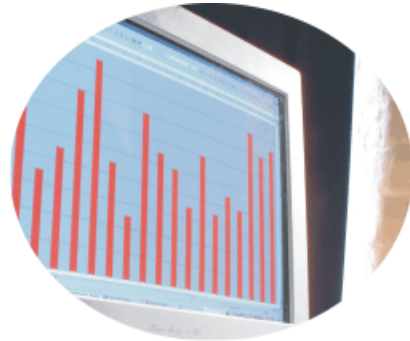
A Z-LYNK system is the perfect way to efficiently manage equipment operation within a building, campus or wide geographical network. The system is fully scalable whether the system is employed for use with an individual piece of equipment or to manage many thousands of devices you can take advantage of Z-LYNK's advanced monitoring and load control capabilities.

Central to the system is an advanced, fully Web enabled energy monitoring and control software that links together sets of remote sensors and load switching devices. The system will allow you to control a whole host of loads and their functions, including heating and managing light levels within a specific room, unit, building, area or closed space and much more. Essentially, it is the complete solution you have been looking for in remote monitoring and management.



Users can view real time and historic data taken from meters, light sensors and environmental variables.

Regardless of the size of the application, large or small, single or multi-site, we have a range of solutions to ensure that we are able to provide the best fit for your requirements.



Z-LYNK has the following main functions:

- **LOAD CONTROL**
- **MONITORING**
- **LOGGING**



Markets and Applications

Z-LYNK is in use across a diverse range of clients and applications. In its entirety, the product suite presents an expansive array of functionality covering monitoring, control and logging. The system comprises a suite of modular hardware which may be mixed and matched to form a complete system, able to offer functionality of monitoring and automated load control linked to:

- Time
- Energy consumption
- Temperature
- Light level
- Power Frequency
- Voltage Level
- Or any combination of rules using the above parameters

A key function is the ability to control remote loads using existing wiring via a **unique** power line control technology.

Supporting the hardware is the central software that provides the user with an extensive range of control, reporting and monitoring functionality.

The flexibility offered both regarding functionality and size of system finds applications across any type or size of company. This is true for users from literally one load through to tens of thousands of loads spread across multiple locations.

Capabilities and Benefits are listed below

- Continually monitors critical variables, such as temperature, light and equipment status
- Helps businesses conform to legislation and building regulations
- Demand side management
- Acquires accurate data from site for energy use
- Automatically turn on air conditioning systems or remotely shut-down machinery should temperature levels become critical
- Automatically control lighting against daylight levels and time schedules
- Provides accurate data for billing (sub-meter reading, water, gas, electricity, load and hence energy)
- Identifies maximum demand, peaks and troughs of electricity used
- Reduce energy consumption
- Remote site management - two way communication between the user and the unit
- Identifies incorrect set-up and configuration of existing systems
- Can trigger back up-power sources in the event of a power failure (if running on its own power supply)
- Backup generators & UPS systems
- Potential to identify new business practices
- Immediate return on investment

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Typical user types:

- Commercial and Industrial
- SME
- Retail Outlets
- Public and Government Buildings
- Hotels
- Lighting control
- Health
- Mini Building Management System (BMS)
- Agriculture, Equestrian, Farming, Fisheries, Greenhouses & Horticultural
- HVAC&R (Heating, Ventilation, Air-conditioning & Refrigeration)
- Utilities
- Transport / Logistics & Marine
- Compressors & Boilers
- Compressed air
- Factory Equipment

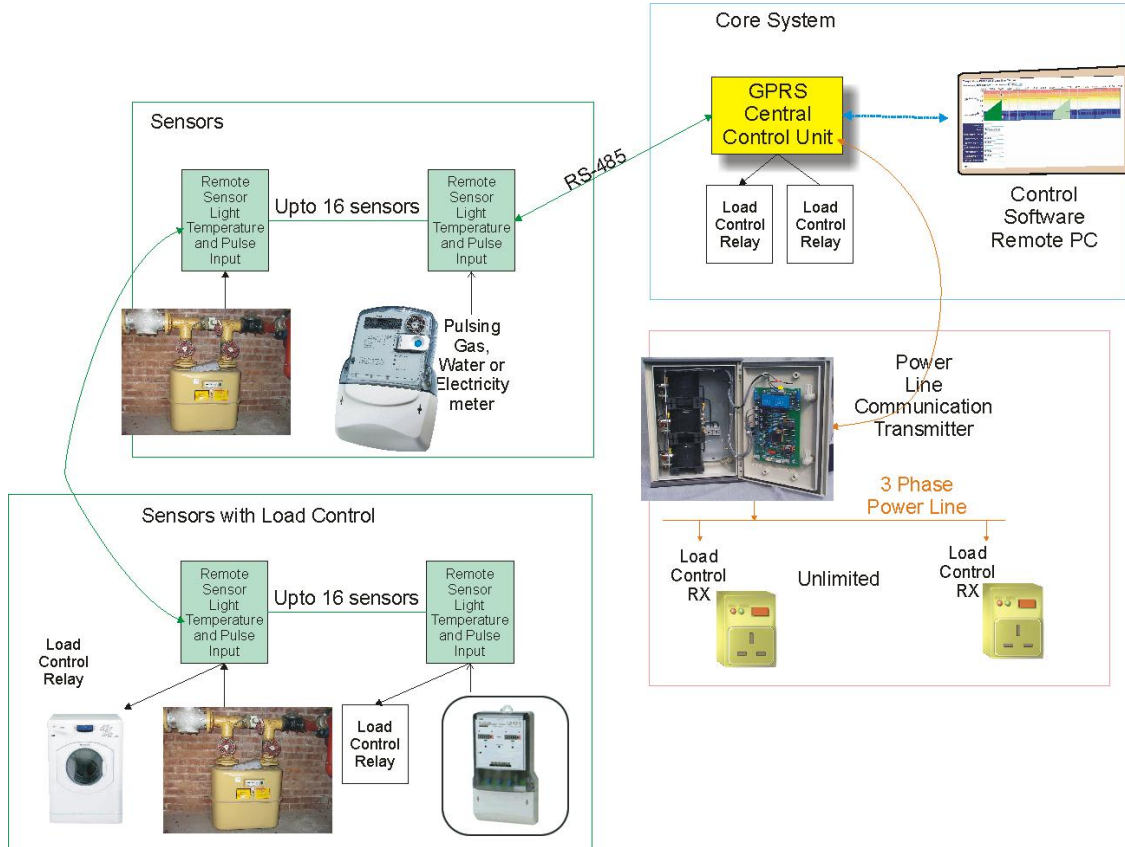
Monitoring and Alarms:

The system enables you to control and monitor electrical loads. However, the suite also provides as standard, the ability to import any unit of measurement or fuel type required. This may include for example:

- Gas Consumption
- Water Usage
- Maximum Demand
- Steam
- Effluent Flow
- Footfall
- Temperature
- Light Level

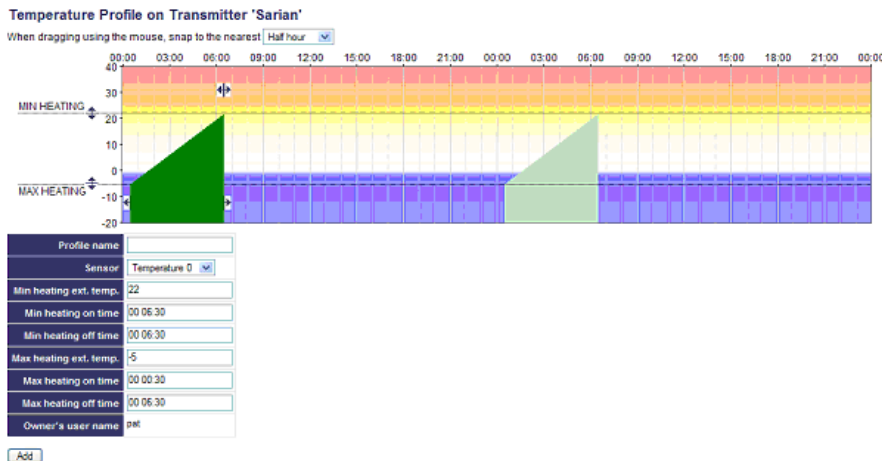
When pre-defined parameters have been breached, alert notifications may be sent via SMS or email in human language to any number of named users, enabling personnel to respond promptly.

System Components and Architecture



The Software Suite

Z-LYNK's software suite is the most sophisticated and comprehensive fully web based energy suite available. The functionality is presented may be selected to meet your specific requirements.



The package is extremely user friendly, providing a range of powerful configuration, load control and reporting options, accessible through an intuitive interface suitable for users of any experience. With so many varied requirements, the software ensures that all your energy

related data is automatically gathered into a single application for control and monitoring. The user can change any of the settings on any of the central control units to map a load or groups of loads to be affected by a multiple set of parameters creating a new process control application.

Z-LYNK's software suite is 100% web based; the database is run and accessed from a single server location via a browser application on your PC. The software may either be installed at your site or remote location and is then accessed either across the corporate network or over the internet.

This provides significant benefits in:

- Everything is handled through the simplicity of an extremely intuitive user interface.
- Providing internal access
- Access for remote sites and users
- Multi-site applications

By integrating all of your load management and energy monitoring across a site or multiple sites ensures that you have a complete picture of all energy consumption and management related activities across your company.

The software is able to manage anything for a single load, single site, and multiple sites through to a whole city!



Central Controller

A central controller is integral part of the Z-LYNK equipment at each site and provides a local hub to collect data from intelligent sensors plus an interface to a *unique* power line communication controller. Each sensor can collect data from pulsing meters, measure local temperature and light level. Multiple sensors can be associated with each local controller. Sensor data is collected, stored and periodically uploaded via GPRS to the software.

The controller is programmed by a remote user to action a series of logical tasks or against rules related to input from the sensors. This function is similar to Programmable Logic Controller (PLC) and allows the controller to manage complex process control applications without continuous input from a user. Once programmed the local controller will continuously monitor and act as an automatic and effective energy management tool.

The controller uses GPRS communication to link back to the control software.

The central controller is a discreet unit managing either a whole site or an individual asset.

Sensors

Up to 16 sensors can be connected to each Central Control unit. Each sensor can monitor light level, temperature, pulse meter or binary switching state.

The sensors provide constant updates to the central control unit and used to provide physical measurement of parameters used to manage loads or provide environmental status information.

Load Control

We offer both wired and wireless hardware solutions for load control, depending on the individual circumstances of your organisation or the type of application.

Wire Control

The main control unit has the ability to switch a load independently of the powerline.

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Power Line Communication

The Z-LYNK system employs a totally unique technology to control remote loads via the existing power line infrastructure without modification to that infrastructure.



Above is a Z-LYNK HPT Controller measuring just 600*600*400 (H*W*D mm)

Easily wall mounted this compact unit transmits across the 11kV network to an unlimited number of end points

The power line controller can either be installed on the 11/33 kV power lines to cover a large geographical area such as a city,

or locally in a building connected to the 415 LV supply.



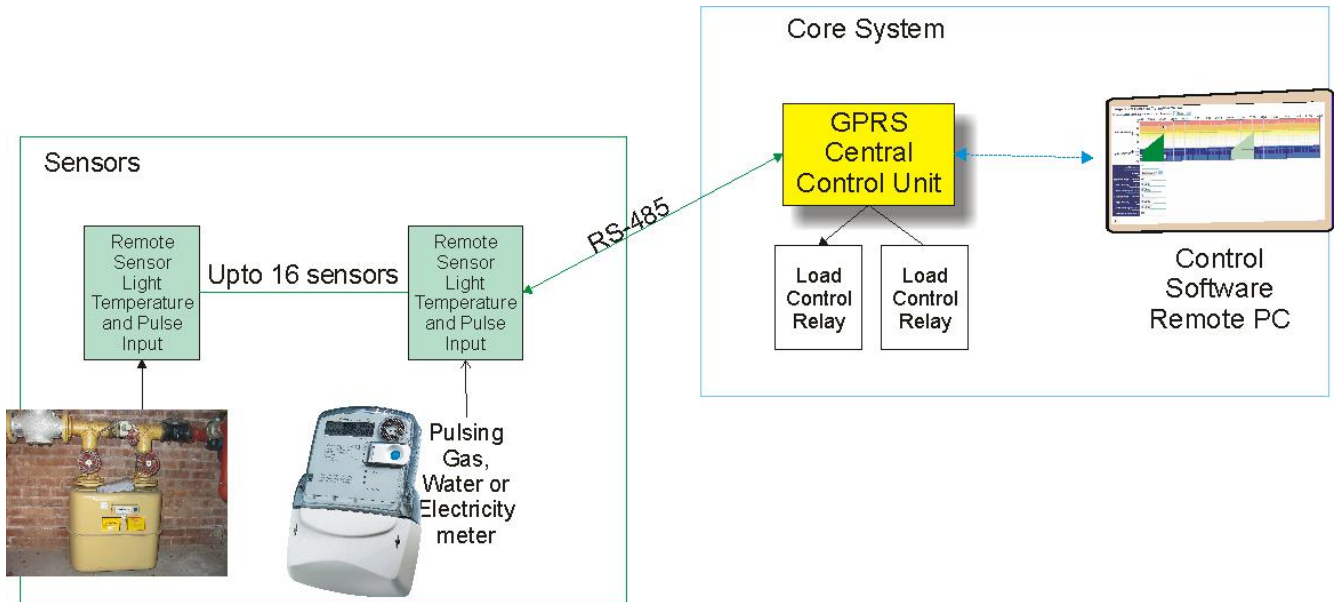
Z-LYNK LPT Controller measuring just 400*300*200 (H*W*D mm)

Quickly and easily connected at 415V communicating to receiver end points on all three phases without any modification to internal wiring

These controllers simply use the existing power wiring or network infrastructure without modification to send digital instructions to control remote loads. An unlimited number of loads can then be controlled either individually, in groups or in total.

Typical Applications i)

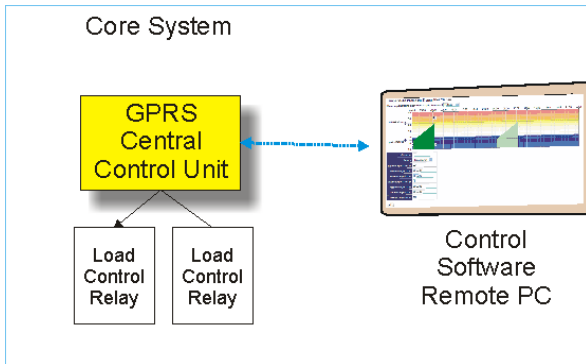
Remote Sensing of temperature, Light or Utility consumption



Typical Applications ii)

General or specific load control

Wired Control



Power Line Control

