EDMI

SOLUTIONS

Smart Streetlight Cabinet Controller

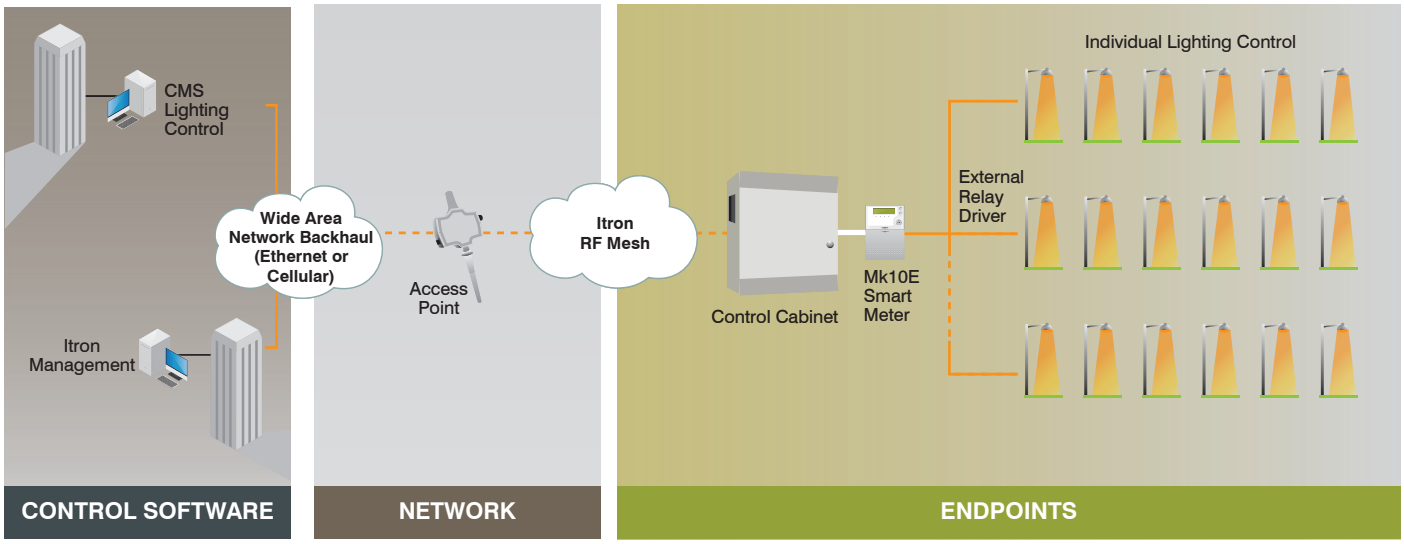
A Foundation for Smart Streetlight Management

Introduction

The conventional method for switching a bank of streetlights is via a pre-programmed timer, regardless of other external factors.

Fitted with an EDMI Mk10E smart meter connected to Itron's RF Mesh technology, the EDMI Smart Streetlight control cabinet presents an elegant solution to this problem. When provided with the ability to switch streetlights in response to multiple inputs including external signals, a smart streetlight network consumes energy more efficiently and reduces maintenance costs through advanced notification of failures.

Smart Streetlight System Architecture



The addition of remote communications and multiple switching relays to streetlight cabinets introduces a wide range of potential new functionality, including real-time monitoring and control of lights, and the ability to operate cameras and other sensors using the same supply network.

An EDMI Mk10E equipped cabinet allows for switching of multiple relays and precise monitoring of a wide range of power quality values, while an integrated Itron's network module provides connectivity via self-healing RF mesh technology. System control and monitoring is performed using CMS Lighting Control Software and Itron's Network Management software, with backhaul communications to Itron's RF base stations provided over Ethernet or cellular.

Key Benefits

Smart Streetlight System enables:

ON DEMAND CONTROL

Adjust street lighting operation and brightness in response to real time events including weather, traffic, accidents and public events

REDUCE CARBON FOOTPRINT

Network control of streetlights can reduce energy consumption by up to 30%

FAILURES NOTIFICATION

Proactive notification of failures

EFFICIENCY IMPROVEMENT

Improve operations and maintenance efficiency

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Key Features

MULTIPLE CONTROL

Support for scheduled and on-demand on/off control for up to three (3) relays

CABINET DOOR ALARM

Support for cabinet door open/closed alarm

INTERVAL READING

Provide interval read for a range of PQ channels including total power, active energy, voltage by phase, and frequency

ON-DEMAND REGISTER READ

Support on-demand register read for a wide range of values including total power, total active energy, current by phase, active power by phase, active energy by phase, and temperature

POWER QUALITY ALARM

Support power quality alarm notification including low power, high power, low power factor alarm

GPS COORDINATES

Support capturing GPS coordinates

MANUAL BYPASS MODE

Support manual bypass mode allowing operator to conduct maintenance work safely

Mk10E Specifications

Standards and Compliance
- Class 0.5S and Class 1

Measured Values
- 3 elements 4 quadrants
- Import/Export/Absolute Wh, varh and VAh
- Fundamental Wh
- Per quadrant Wh, varh and VAh
- Phase A,B,C and Total
- W, var, VA, Vrms, Irms
- Power factor, frequency, phasor angles
- Supports ripple control/AFLC

Power Quality Indication
- Total Harmonic Distortion (THD)
- Unbalance (sequence components)
- Sag/Swell
  - 5 Cycle resolution
  - Records time/date/phase duration/ average and worst excursion
  - Programmable trigger levels

Data Memory
- Up to 2.1 MB of non-volatile memory

Load Survey/Profile
- Over 5000 days storage (2 channels, 30-minute intervals)
- AMI ready
- Up to 32 channels and 4 independent surveys
- Intervals programmable from 1 to 60 minutes

Time of Use
- Up to 8 rates plus unified rate
- Up to 32 separate import and export registers

Communications
- Supports Itron RF Mesh
  - Radio Frequency Range: 865 – 868, 870 – 873, 902 – 928 MHz
  - Data Rate: 50 – 300 kbps
  - Spread Spectrum: Frequency Hopping
  - Transmitter Output: 27 – 30 dBm (1W)
  - Addressing: IPv6
  - Encryption: Advanced Encryption Standard (AES-128 or AES-256)
  - Security: Secure Hash Algorithm 256 bit (SHA-256) and RSA-1024 or ECC-256

Dimensions
- 262mm (H) x 175mm (W) x 95mm (D)

For more details of Mk10E please refer to the website

Smart Lights Switching Technology

In collaboration with one of the world's premier RF networking firms, Itron, EDMI's streetlight control cabinet solution will be instrumental in transforming traditional street lighting banks into systems worthy of being included under the title "Smart City". Remote control of street lighting cabinets allows for monitoring and response of the city in real time and switching lights as required to reduce maintenance and improve energy efficiency. EDMI expects strong and sustained demand for smart metering solutions, and the streetlight control cabinet provides a valuable extension to our range of products.

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10 million+

Manufacturing capacity per annum

18 million+

Smart meters deployed worldwide

GLOBAL ENERGY SOLUTION LEADER

42 years' experience

Established in 1978

Since 1978, EDMI has been delivering the best breed of smart metering solutions with smart electricity and gas meters across transmission, commercial and industrial, residential and sub-metering markets.

EDMI prides itself on its dedication to quality, compliance and customer service. We are international leaders in smart metering innovation and recognise our obligation to combine the best of cutting-edge technologies with a strong commitment to quality and reliability.

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