

BACnet® Integration



The BACnet® Interface Module enables the integration of the ENCELIUM® EXTEND Networked Light Management System (LMS) with any BACnet compatible building automation system. The ENCELIUM EXTEND LMS operates autonomously while lighting status, lighting levels and energy usage are all shared and may be controlled via BACnet. Connection between the two systems is established via BACnet/IP.

The BACnet Interface:

- Reports daylight readings by photo sensors.
- Enables BACnet switching and dimming control.
- Provides load shedding control over the lighting load (including for the purpose of demand response).
 - The ENCELIUM EXTEND LMS provides information about the estimated amount of lighting load available for reduction, either by selected groups (Group Sheddable Load) or in total (Sheddable Load). In turn, load shedding requests can be made for each selected group individually or the ENCELIUM EXTEND LMS can initiate prioritized load shedding by predefined zones through a single request to reduce the total lighting load.
 - Both types of load shed requests can be defined in watts to achieve precise load reduction or by the common method of shed shedding by a percentage of the current lighting load.
- Notifies the ENCELIUM EXTEND LMS of an emergency through a BACnet connected fire alarm input to turn all lights on
- Shares occupancy information obtained by the ENCELIUM EXTEND LMS with a BACnet client to integrate HVAC with occupancy.
- Allows schedules defined through BACnet devices
- Supports both centralized & distributed architectures

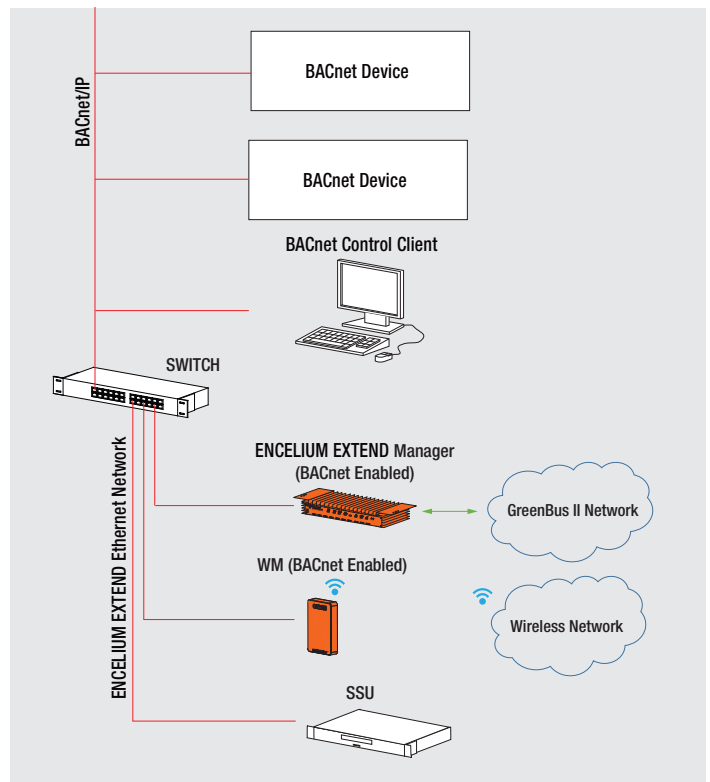
To ensure smooth and user-friendly integration, the BACnet Interface creates objects with names and descriptions that can be customized to accommodate any BACnet client's naming scheme. It also exports standard BACnet object properties in a clear, structured manner and can define an unlimited number of groups of luminaires.

The BACnet Interface adheres to the ANSI/ASHRAE standard 135-2004 "BACnet" (ISSN 1041-2336).

Key Features & Benefits

- Reports daylight readings obtained by photo sensors
- Enables BACnet switching and dimming control
- Provides load shedding control over the lighting load
- Notifies the ENCELIUM® EXTEND LMS of an emergency through a BACnet connected fire alarm input to turn all lights on
- Shares occupancy information obtained by ENCELIUM EXTEND LMS

ENCELIUM® EXTEND Networked Light Management System Architecture



System Architecture

This illustration shows BACnet integration with the ENCELIUM EXTEND Networked Light Management System – hybrid configuration.

ENCELIUM EXTEND Networked Light Management System is available in different configurations: Wired, Wireless & Hybrid. Wired systems are based on GreenBus II® architecture, wireless systems are based on ZigBee® Pro network stack and hybrid systems are implemented by combining GreenBus II architecture and ZigBee Pro network stack.

Ordering Information

Item #	Ordering Description	Communication Network	Modifiers
SWBACNET	EN-SW-BACNET	Wireless/GBII	–

Technical Description

The ENCELIUM® EXTEND LMS BACnet® Interface Module shares the following information with BACnet clients:

Property	BACnet Type	Description
Light Zone State	Binary Value*	State of the defined lighting zone – ON or OFF
Light Zone Dimming	Analog Value*	Light output level of the defined lighting zone, from 100% (maximum light output) to 0% (minimum light output)
Fire Alarm State	Binary Input	State of the fire alarm system – alarm activated or alarm not activated
Occupancy State	Binary Output	State of the defined occupancy sensor – occupancy detected or not detected
Photo Sensor Daylight Readings	Analog Output	Reports daylight readings by photosensors
Sheddable Load	Analog Output	Reports the total lighting load available for load reduction according to the ENCELIUM EXTEND LMS, defined in watts
Shed Status	Analog Output	Reports the total current load reduction achieved according to ENCELIUM EXTEND LMS defined prioritization, defined in watts
Shed Request	Analog Input	Requested total amount of load reduction, defined in watts or as a percentage of sheddable load
Sheddable Load (Group)	Analog Output	(As above, unprioritized for the selected group)
Shed Status (Group)	Analog Output	(As above, unprioritized for the selected group)
Shed Request (Group)	Analog Input	(As above, unprioritized for the selected group)
Load Shedding Total Demand	Analog Output	Reports the total lighting demand of all devices in a load shedding group (in Watts).
Schedules	Schedule	A periodic schedule that may recur during a range of dates, with optional exceptions at arbitrary times on arbitrary dates

*Read/write BACnet properties

System Requirements

An ENCELIUM EXTEND Networked Light Management System with an ENCELIUM EXTEND Manager or Wireless Manager (WM) connected to a BACnet system via BACnet/IP.

Connections

A connection from the BACnet network to the ENCELIUM EXTEND network switch is required to communicate between the ENCELIUM EXTEND Networked Light Management System and the BACnet system.

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