WATTSTOPPER®

TECHNICAL BULLETIN

THE DIGITAL LIGHTING MANAGEMENT EXPORT TABLE:
INTEGRATING DLM WITH A BUILDING AUTOMATION SYSTEM VIA BACNET IP

DLM EXPORT TABLE AND BACNET IP

Wattstopper Digital Lighting Management (DLM) distributed controls are designed to operate as stand alone lighting control systems out of the box, but they are also capable of integration with other building control systems. Adding an LMBC-300 Network Bridge module to a DLM local network provides BACnet MS/TP connectivity and access to a wide range of integration points for control and monitoring.

The DLM systems can then be integrated via BACnet IP using a Wattstopper Segment Manager to provide a single point of connection between the lighting control local networks and the building automation system (BAS), and a process that exposes only selected points for integration. This technique defines a clear separation between the scope of the lighting control system and the BAS.

Alternately, the individual DLM local networks may be treated as BACnet Application Specific Controllers for native integration as described in TB175.

SEGMENT MANAGER FUNCTIONALITY

An LMSM-3E or LMSM-6E Segment Manager is the key component in this simple third party integration using BACnet IP. The Segment Manager is configured as a front end controller complete with a web browser-based graphical user interface (GUI). It manages all the local networks and is capable of providing user access to numerous device settings, status, and configuration parameters as well as settings for each room as a whole.

The Segment Manager GUI includes an Export Table feature that allows selection of available points, outlined in the chart below, for exposure to the BAS, and creates an alias of the selected native BACnet object instances. Once the table has been created, the object list resides within a single BACnet device instance (the Segment Manager). The object list documentation can then be exported as a file in a choice of formats shared with the BAS programmer. This process simplifies integration by exposing only objects that are relevant to the application.

The following guidelines are intended to insure a successful integration between a Wattstopper DLM lighting control system and a third party BAS using a BACnet IP connection.
The intended result of the integration must be clearly defined and documented. Documentation should include the desired sequences of operation, noting all lighting control points that are to be monitored (read only) by the BAS and those that are to be writable. This information must be available to Wattstopper prior to final configuration of the lighting control system.

Network configuration requirements including static IP address, gateway, DNS server, etc. for the Segment Manager must be documented and made available to Wattstopper prior to final configuration of the lighting control system.

Note that the Segment Manager provides two independent network interface (NIC) connections. Only the primary port, #1, can be used for a BACnet IP connection to the BAS. If the Wattstopper GUI is to be accessed from outside the BAS network, port #2 must be configured and used for the alternate network connection.
CONFIRM OPERATION AND CREATE EXPORT TABLE

Before any integration can occur, the DLM lighting control system must be completely configured, verified, and fully functional. This includes the creation of the Export Table to match the documented operating requirements.

FOLLOW LIGHTING CONTROL BEST PRACTICES

We strongly discourage direct third party control of load relays and dimmers in rooms equipped with occupancy sensors since the practice can create problematic control sequences for users in the space. If the sequence of operation must include BAS control of load relays or dimmers be sure to give careful consideration to proper use of the BO and AO priority arrays. Loads controlled by DLM occupancy sensors and wall switches operate within the room using priority level 8. DLM daylighting loads operate at priority level 7. Note: the intention to control loads at other than priority level 8 must be established prior to creation of the Export Table.

1. Click the tab with the blue arrow and toggle Export Table Configuration on.

2. Right click on products you wish to export in the device tree.