

GENERAL NOTES

DLM

1. Plug of GoM[®] (PnG): Default Operation.
Upon initial power up, the DLM system automatically identifies the devices on the Local Network then enters the WattStopper patented Plug n' Go[®] configuration to allow basic operation of all DLM devices. In most applications the relationship between quantity of loads, switches and occupancy sensors will not require any adjustments. PnG automatically maximizes lighting energy efficiency.
2. Push n' Learn[®] (PnL): Custom Operation
A "Configure" (Config) button on most DLM devices allows easy access to the WattStopper patented PnL technology to modify system operation. Functionality of the Config button is standardized across all DLM devices to facilitate the operation of the Config LED indicators. In addition, the Configuration Tool provides remote infrared access to PnL and sensor adjustment parameters.

Analogy

- A. Contractor is responsible for field verification of required number of power packs.
- B. One power pack is required for each circuit that is to be controlled.
- C. Maximum number of sensors that can be wired in parallel to a single power pack is dependent on sensor model (see individual data sheets for mA consumption).

- i. WHEN LIGHTING SYSTEM IS INDICATED WITH A CONNECTION TO A REMOTE EMERGENCY POWER SOURCE (I.E. AN INVERTER OR GENERATOR) PROVIDE UL924 LISTED INTERFACE EQUIPMENT TO ALLOW THE OVERRIDE OF THE LOCAL SWITCHING AND/OR DIMMING CONTROLS DURING A POWER OUTAGE.
- j. WHEN LIGHTING FIXTURES/CONTROLS ARE PROVIDED WITH LUTRON 3-WIRE DIMMING BALLASTS, AN INTERFACE DEVICE SHALL BE PROVIDED TO ALLOW 0-10V CONTROL OF LUTRON 3-WIRE DIMMING BALLASTS. MOUNT INTERFACE IN A NEMA1 ENCLOSURE IN ACCESSIBLE CEILING SPACE ADJACENT TO ITS ASSOCIATED CONTROL UNIT.
- k. WHEN LIGHTING FIXTURES/CONTROLS ARE LINE VOLTAGE DIMMED OR PROVIDED ELECTRONIC LOW-VOLTAGE, MAGNETIC LOW-VOLTAGE, NEON / COLD CATHODE, LUTRON TU-WIRE DIMMING BALLASTS, AN INTERFACE DEVICE SHALL BE PROVIDED TO ALLOW LINE VOLTAGE CONTROL. MOUNT INTERFACE IN A NEMA1 ENCLOSURE IN ACCESSIBLE CEILING SPACE ADJACENT TO ITS ASSOCIATED CONTROL UNIT.
- l. WHEN AV SYSTEM INTERFACE IS INDICATED, PROVIDE TWO-WAY CAPABLE RS-232 COMMUNICATIONS INTERFACE TO ALLOW AV CONTROL SYSTEM TO CALL ADDRESSABLE LIGHTING/ROOM SCENES. COMMUNICATIONS INTERFACE SHALL PROVIDE FEEDBACK TO THE AV CONTROL SYSTEM FOR LIGHT LEVEL STATUS.
- m. WHEN MOVEABLE PARTITION INTERFACE IS INDICATED, PROVIDE ALL COMPONENTS, SENSORS, WIRING, POWER SUPPLIES AND PROGRAMMING NECESSARY TO MONITOR & REPORT MOVEABLE PARTITION(S) OPEN/CLOSED STATUS. DLCS SYSTEM SHALL AUTOMATICALLY ADOPT SINGLE ROOM OR MULTI-ROOM CONTROL PROFILES AS REQUIRED BY PARTITION STATUS.
- n. WHEN NETWORKED LIGHTING CONTROL RELAY PANEL(S) ARE INDICATED, PROVIDE ALL COMPONENTS, WIRING, AND PROGRAMMING NECESSARY TO INTEGRATE RELAY PANELS WITHIN THE DLCS SYSTEM.
5. GENERAL SYSTEM REQUIREMENTS:
 - a. ALL EQUIPMENT SHALL FEATURE A PRE-SET DEFAULT OPERATION. UPON INITIAL POWER UP, THE SYSTEM SHALL AUTOMATICALLY IDENTIFY THE DEVICES ON THE LOCAL NETWORK THEN ENTERS THE PRE-SET CONFIGURATION TO ALLOW BASIC OPERATION OF ALL DEVICES. IN MOST APPLICATIONS THE RELATIONSHIP BETWEEN QUANTITY OF LOADS, SWITCHES AND OCCUPANCY SENSORS WILL NOT REQUIRE ANY ADJUSTMENTS - ALTHOUGH AN ADJUSTMENT TO THE AUTOMATIC SETTINGS SHALL BE INCLUDED IN THE BASE BID.
 - b. ALL EQUIPMENT SHALL FEATURE A CONFIGURATION (CONFIG) BUTTON ON MOST DEVICES THAT ALLOWS EASY ACCESS TO THE INTEGRATED AUTO-CONFIGURATION TECHNOLOGY TO MODIFY SYSTEM OPERATION. FUNCTIONALITY OF THE CONFIG BUTTON SHALL BE STANDARDIZED THROUGHOUT THE PRODUCT LINE, AS IS THE OPERATION OF THE CONFIG LED INDICATORS.
 - c. NETWORK DLCS SYSTEM CONTROL/CONFIGURATION SOFTWARE SHALL BE PRE-CONFIGURED TO THE MAXIMUM EXTENT POSSIBLE OFF-SITE AT THE DLCS FACTORY OR ENGINEERING FACILITY. THE CONTRACTOR SHALL DOCUMENT EVERY NETWORK COMPONENT'S LOCATION (ROOM AND FLOOR NUMBER) AND ITS' RESPECTIVE SERIAL NUMBER OR OTHER DEVICE IDENTIFIER ON A FULL SIZE FLOOR PLAN IN PDF FORMAT. HANDWRITTEN DOCUMENTATION IS UNACCEPTABLE. THE PREFERRED ACCEPTABLE METHOD OF NETWORK COMPONENT DOCUMENTATION IS COLLECTION OF FACTORY-PROVIDED, SELF-ADHESIVE, BAR-CODE IDENTIFIERS DESIGNED TO BE REMOVED FROM NETWORK COMPONENTS AS THEY ARE INSTALLED IN THE FIELD. BAR CODES IDENTIFIERS SHALL BE APPLIED TO A PAPER COPY OF A FLOOR PLAN WHICH SHALL BE PROVIDED TO THE FACTORY FOR USE IN OFF-SITE DLCS NETWORK PROGRAMMING AND CONFIGURATION. THE RESULTS OF EITHER METHOD SHALL BE SCANNED AND SUBMITTED AS A PART OF THE PROJECT CLOSEOUT DOCUMENTATION.
 - d. NETWORK SYSTEMS SHALL BE INSTALLED BY VENDOR-CERTIFIED CONTRACTOR FIELD PERSONNEL TO PERFORM NETWORK INSTALLATIONS INCLUDING ACCURATE, REPEATABLE COMMUNICATIONS CABLING TERMINATIONS (BOTH LAN AND MS/TP TYPE). INCLUDE CERTIFICATES FOR EACH CERTIFIED INSTALLER TO BE UTILIZED ON THE PROJECT AS A PART OF THE PROJECT SUBMITTALS. A CERTIFIED FIELD INSTALLER SHALL BE ON-SITE SUPERVISING COMMUNICATIONS CABLING AND CABLING TERMINATIONS AT ALL TIMES WHEN THIS WORK IS OCCURRING ON THE PROJECT.
 - e. PRIOR TO NETWORK SYSTEM FACTORY START-UP, THE CONTRACTOR SHALL 1) TEST ALL COMMUNICATIONS CABLING FOR SHORTS, POLARITY REVERSALS AND BAD TERMINATIONS/CONNECTIONS AND MAKE NECESSARY REPAIRS AND 2) DEMONSTRATE FULL CONNECTIVITY TO ALL NETWORK AND LOCAL (IN-ROOM) DEVICES VIA MS/TP CAPTURE OR OTHER VENDOR SPECIFIC TESTING PROCESS. CONTRACTOR SHALL PROVIDE A TEST REPORT OUTLINING TEST COMPLETION AND ANY REPAIRS MADE AND CERTIFY THAT NETWORK DEVICE AND LOCAL DEVICE CONNECTIVITY HAS BEEN ACHIEVED PRIOR TO SCHEDULED FACTORY START-UP. BASED ON PAST PROJECT EXPERIENCE, FAILURE TO PERFORM ANY OF THE ABOVE STEPS HAS RESULTED IN BOTH VERY INEFFICIENT FACTORY START-UP AND PROJECT DELIVERY DELAY. ANY ADDITIONAL COSTS ARISING OUT OF A FAILURE TO COMPLETE THIS TESTING SHALL BE BORNE SOLELY BY THE CONTRACTOR.
 - f. NETWORK SYSTEMS SHALL BE INSPECTED, STARTED UP, CONFIGURED AND PROGRAMMED BY FACTORY START-UP TECHNICIANS TO MEET THE INTENDED CONTROLS SCENARIOS AND FUNCTIONALITY DESIRED BY THE SYSTEM USER. WHERE NETWORK SYSTEMS ARE INTEGRATED WITH BUILDING MANAGEMENT SYSTEMS (BMS), THE FACTORY TECHNICIAN SHALL ASSIST THE CONTROLS INTEGRATOR WITH DLCS POINT INTEGRATION.
6. INSTALLATION OF CONTROL UNITS, OCCUPANCY/VACANCY SENSORS AND DAYLIGHTING CONTROLS:
 - a. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORS IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE PER THE MANUFACTURER'S RECOMMENDATIONS. ROOMS SHALL HAVE NINETY (90) TO ONE HUNDRED (100) PERCENT COVERAGE AND SHALL ACCOMMODATE ALL HABITS OF SINGLE OR MULTIPLE OCCUPANTS AT ANY LOCATION WITHIN THE ROOM. THE LOCATIONS AND QUANTITIES OF SENSORS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE ONLY THE ROOMS THAT ARE TO BE PROVIDED WITH SENSORS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS AS REQUIRED TO PROPERLY AND COMPLETELY COVER THE RESPECTIVE ROOM. ADDITIONALLY, IT MAY BE NECESSARY FOR THE CONTRACTOR TO MAKE ADJUSTMENTS, CHANGE THE LOCATION OR TYPE OF SENSOR TO OBTAIN PROPER OPERATION IN A SPECIFIC ROOM. THE USE OF FACTORY SUPPLIED INTERNAL MASKING (PIR) SHALL BE PROVIDED / INSTALLED AS REQUIRED TO LIMIT DETECTION TO WITHIN THE CONTROLLED SPACE ONLY. THE CONTRACTOR SHALL HAVE FINAL RESPONSIBILITY FOR PROPER OPERATION OF THE SYSTEM IN EACH ROOM AND SHOULD THEREFORE MAKE LABOR ALLOWANCES FOR CHANGES AND ADJUSTMENTS.
 - b. CEILING MOUNTED SENSORS SHOULD BE LOCATED IN THE SPACE TO BE COVERED, A MINIMUM OF 4', PREFERABLE 5' AWAY FROM THE LATCH SIDE OF THE DOOR, 2' TO 3" AWAY FROM THE WALL AND 3' TO 4' FROM AN AIR SUPPLY REGISTER. DO NOT MOUNT SENSORS OVER A DOORWAY OR BEHIND A FULL HEIGHT DOOR. SENSORS SHALL BE AIMED IN THE DIRECTION OF THE SPACE TO BE COVERED. DO NOT AIM SENSORS TOWARD A DOORWAY. THE USE OF FACTORY SUPPLIED INTERNAL MASKING (PIR) SHALL BE PROVIDED / INSTALLED AS REQUIRED TO LIMIT DETECTION TO WITHIN THE CONTROLLED SPACE ONLY.
 - c. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL SENSORS SHALL BE ADJUSTED FOR A TIME DELAY OF TWENTY (20) MINUTES.
 - d. EACH DAYLIGHTING CONTROL SYSTEM / ZONE SHALL BE INSTALLED / ADJUSTED AS FOLLOWS:
 - d.a. AUTOMATIC SWITCHING / DIMMING CONTROL PLACEMENT: IT IS IMPORTANT TO SELECT A LOCATION IN

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