XX/XX/2015

Drawn By: Quote #: DWG Ref:

DETAILS

REV DATE

Scale: NOT TO SCALE

PIR/MICROPHONICS/BOTH OS - nCM PDT 10 RJB AUTOMATIC DIMMING CONTROL PHOTOCELL- CEILING MOUNT, LOW VOLTAGE DS - nCM ADCX RJB 16 AMP (120/227V) POWER/RELAY PACK WITH 0-10V DIMMING CONTROL, CHASE NIPPLE MOUNTING DP - nPP16 D EFP

SUBSCRIPT REFERENCES CIRCUIT/ZONE OF CONTROL 20 AMP (120V) RELAY PACK FOR PLUG LOAD CONTROL, CHASE NIPPLE MOUNTING PL - nPP20 PL SUBSCRIPT REFERENCES CIRCUIT/ZONE OF CONTROL

PASSIVE DUAL TECHNOLOGY (PDT)

LIGHTING CONTROLS LEGEND AND DESCRIPTIONS

EXTENDED RANGE 360° SENSOR-CEILING MOUNT, LOW VOLTAGE,

DETECTION TECHNOLOGY SHALL BE SELECTABLE AS FOLLOWS:

5 AMP (120/227V) POWER/RELAY PACK PHASE DIMMING CONTROL. CHASE NIPPLE MOUNTING (277V NOT AVAILABLE WITH ELV) PCD - nSP5 PCD (2W. 3W. MLV. ELV 120) SUBSCRIPT REFERENCES CIRCUIT/ZONE OF CONTROL LOW VOLTAGE ON/OFF TOGGLE SWITCH WITH DIMMING

1-ZONE = S1 - nPODM DX 2-ZONE = S2 - nPODM 2P DX 4-ZONE = S4 - nPODM 4P DX SUBSCRIPT REFERENCES ZONE OF CONTROL

LOW VOLTAGE SCENE SELECTOR WITH DIMMING 2-SCENE = SS2 - nPODM 4S DX 4-SCENE = SS4 - nPODM 4S DX SUBSCRIPT REFERENCES ZONE OF CONTROL

LOW VOLTAGE GRAPHIC TOUCHSCREEN CONTROLLER, INCLUDES 16-ZONES AND 16-SCENES WITH DIMMING GFXX - nPOD GFX SUBSCRIPT REFERENCES ZONE OF CONTROL

> LOW VOLTAGE WALL SWITCH OCCUPANCY SENSOR WITH ON/OFF/RAISE/LOWER, PASSIVE DUAL TECHNOLOGY (PDT) WS - nWSX PDT LV DX SUBSCRIPT REFERENCES ZONE OF CONTROL

SB-327 SPECIFICATION REQUIREMENTS: 1. **SENATE BILL No. 327** - LIHGTING CONTROLS MUST COMPLY WITH CALIFORNIA CIVIL CODE 1.81.26.

> 2. **GENERATION OF AUTHENTICAION** - THE DEVICE MUST CONTAIN A SECURITY FEATURE THAT REQUIRES A USER TO GENERATE A NEW MEANS OF AUTHENTICATION BEFORE ACCESS IS GRANTED TO THE DEVICE FOR THE FIRST TIME.

3. AUTHENTICATION - METHOD OF VERIFYING OF A USER. PROCESS, OR DEVICE TO ACCESS RESOURCES IN A INFORMATION SYSTEM.

4. CONTACT SDLA FOR AUTHENTICATION SETUP,

CONTROLS@SDLTG.COM - PHONE # 858-505-1055.

BUILDING MANAGEMENT SYSTEMS INTEGRATION

1. BACnet TESTING LABORATORIES (BTL) LISTED AS A BACnet

2. OPTIONAL AUTOMATIC DEMAND RESPONSE CLIENT OPTION

LEVELS THROUGH AN OpenADR 2.0a VIRTUAL END NODE.

REQUIRES OUTBOUND IP CONNECTION TO UTILITY DRAS.

3.2. U.S. GOVERNMENT SECURITY STANDARD OF FEDERAL

ALLOWS ACTIVATION OF CONFIGURABLE LOAD SHED DIMMING

INFORMATION PROCESSING STANDARD (FIPS) PUBLICATION

140-2, LEVEL 1, INSIDE (VALIDATION CERTIFICATE PENDING).

CORRIDOR

nCM 10 RJB

DIMMING ZONE 120/277VAC 0-10V DIMMING

4. SECURITY FEATURE - A FEATURE OF A DEVICE DESIGNED TO PROVIDE SECURITY FOR THAT DEVICE. U.S. GOVERNMENT STANDARD OF FEDERAL INFORMATION PROCESSING STANDARD (FIPS) 140-2, LEVEL 1 COMPLIANT.

SB-327 AUTHENTICATION PROCESS: 1. REQUIRES 3 POINTS OF CONTACT - FACILITIES DEPARTMENT,

SPECIFICATIONS:

3.1. HTTPS SERVER

nCM 10 RJB

BUILDING CONTROLLER (B-BC).

3. ENHANCED SECURITY PROVIDED BY BOTH:

4. CONTACT SDLA FOR INTEGRATION WITH BMS,

CONTROLS@SDLTG.COM - PHONE # 858-505-1055.

OWNER'S REP, AND IT DEPARTMENT (EMAIL AND CONTACT REQUIRES 2 DATES FOR SCHEDULING.

3. INTEGRATION REQUIREMENTS (IP ADDRESS, SUBNET MASK, AND

3. VIDEO TRAINING GIVEN TO EVERYONE WHO PARTICIPATES IN THE 2-DAY IN PERSON OR REMOTE TRAINING.

ACUITY BRANDS SYSTEM - nLIGHT CONTROLLER SHALL BE COMPATIBLE WITH REST API OVER AN ENCRYPTED HTTPS CONNECTION. READ AND WRITE CONNECTION SHALL BE SECURABLE WITH A USERNAME/PASSWORD PAIR. PASSWORDS TO HAVE ADJUSTABLE COMPLEXITY TO COMPLY WITH CUSTOMER PASSWORD

GROUP-RELAY-STATE, AND GROUP-DIM-LEVEL. 1.2. GROUPING OF DEVICES FOR GROUP-RELAY-STATE AND GROUP-DIM-LEVEL WRITE ACCESS SHALL BE AUTOMATICALLY GENERATED BY THE SYSTEM

1.3. GROUP-RELAY-STATE AND GROUP-DIM-LEVEL RESPONSE TO REST API SHALL BE AVAILABLE WITHOUT REQUIRING MULTIPLE POST COMMANDS.

2. READ ACCESS OF END DEVICES (EMBEDDED nLIGHT FIXTURES) CONNECTED TO THE SYSTEM CONTROLLER SHALL BE MADE

STATUS. DEVICE-OCCUPANCY-STATE. GROUP-OCCUPANCY-STATE, MEASURED-LIGHT-LEVEL, DEVICE-RELAY-STATE, DEVICE-DIM-LEVEL, GROUP-RELAY-STATE, AND GROUP-DIM-LEVEL

GROUP-RELAY-STATE, AND GROUP-DIM-LEVEL READ ACCESS SHALL BE AUTOMATICALLY GENERATED BY THE SYSTEM CONTROLLER AND SHALL NOT REQUIRE CREATION BY THIRD PARTY SYSTEMS.

nPOD KEY WH

nCM 10 RJB

NOTE 1

BLK - 120VAC

ORN - 277VAC

AVAILABLE THROUGH: 2.1. READ ACCESS SHALL INCLUDE DEVICE-ONLINE/OFFLINE

2.2. GROUP OF DEVICES FOR GROUP-OCCUPANCY-STATE,

3. CONTACT SDLA FOR SETUP OF RESPI CONTROLS@SDLTG.COM -PHONE # 858-505-1055.

nCM 10 RJB

nPOD KEY WH

CORRIDOR/STAIRWELL DETAIL

L _ _ _ J L _ _ SYSTEM. TO

OPTION FOR

NETWORKED

ON DETAIL (1)

BRIDGE SHOWN

GENERAL NOTES:

1. DETAILS AND DESIGN IS BASED ON AN nLIGHT LIGHTING CONTROLS SYSTEM.

2. DETAILS ARE DIAGRAMMATIC AND FOR REFERENCE OF SYSTEM AND ROOM TYPE REQUIREMENTS TO MEET BASIS OF DESIGN. REFER TO MANUFACTURERS SHOP DRAWINGS FOR QUANTITIES AND DEVICES USED FOR EACH SPACE AND NETWORK.

3. LIGHTING CONTROL SUBMITTALS FOR NETWORKED SYSTEM SHALL INCLUDE THE FOLLOWING DOCUMENTS (NOT LIMITED TO 3.1. SHOP DRAWINGS SHOWING QUANTITY AND LOCATION OF

3.3. BASIS OF DESIGN PROGRAMMING OPERATION FOR EACH

ALL DEVICES. 3.2. STANDALONE/NETWORK SINGLE LINE DIAGRAM.

ROOM TYPE 3.4. DEVICE CUTSHEETS. 4. MANUFACTURER OR FACTORY REPRESENATIVE TO INCLUDE STARTUP AND COMMISSIONING OF THE LIGHTING CONTROL

SYSTEM. MUST INCLUDE A SITE VISIT FOR THE FOLLOWING: 4.1. A PRE-CONSTRUCTION MEETING TO CONFIRM DESIGN AND FIELD INSTALLATION REQUIREMENTS.

4.2. PROGRAMMING AND COMMISSIONING OF THE LIGHTING CONTROL SYSTEM TO MEET THE BASIS OF DESIGN AND TITLE 24 REQUIREMENTS. 4.3. MAINTENANCE / OWNER WALK THROUGH FOR MAKING FINAL ADJUSTMENTS TO PROGRAMMING.

5. CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING CONTROL DEVICES, CABLES, ACCESSORIES AS REQUIRED BY MANUFACTURER'S RECOMMENDATION TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL COMPLIANT TITLE 24

6. ALL DEVICES SHALL BE MOUNTED AND INSTALLED IN ACCESSIBLE CEILING LOCATIONS. CONTRACTOR WILL VERIFY

BEST FIT LOCATIONS IN THE FIELD. 7. CONTRACTOR TO VERIFY COMPATIBILITY BETWEEN DIMMING POWERPACKS AND INSTALLED FIXTURES.

8. CONTACT SDLA FOR COMPLETE nLIGHT LIGHTING CONTROLS

BOM, CONTROLS@SDLG.COM - PHONE # 858-505-1055.

TITLE 24 COMPLIANCE:

MANUAL AREA CONTROLS, <u>SECTION 130.1(a)</u>.

2. MULTI-LEVEL LIGHTING CONTROLS, SECTION 130.1(b).

3. SHUT-OFF CONTROLS, **SECTION 130.1(c)**. 4. AUTOMATIC DAYLIGHTING CONTROLS, **SECTION 130.1(d)**. 5. DEMAND RESPONSE CONTROLS, **SECTION 130.1(e)** AND **SECTION**

6. CONTROLS INTERACTIONS, SECTION 130.1(f). 7. CIRCUIT CONTROLS FOR 120-VOLT CONTROLLED RECEPTACLES

8. INDOOR LIGHTING CONTROLS BASIS OF DESIGN (SEE SDLA BASIS OF DESIGN TO COMPLY WITH T24), SECTION 120.8(c).

9. CONTACT SDLA FOR COMPLETE nLIGHT LIGHTING CONTROLS BOM, CONTROLS@SDLG.COM - PHONE # 858-505-1055.

SYSTEM OPERATIONS TRAINING OPTIONS, PER SECTION

 2-HOUR ONSITE OR REMOTE TRAINING. 2. 2-DAY IN PERSON OR REMOTE TRAINING @ SDLA, AT CUSTOMER

LOCATION, OR VIDEOCONFERENCING SOFTWARE.

4. CONTACT SDLA FOR TRAINING, CONTROLS@SDLTG.COM -PHONE # 858-505-1055.

nLIGHT REST API SPECIFICATIONS:

REQUIREMENTS

1. WRITE ACCESS OF END DEVICES CONNECTED TO THE SYSTEM CONTROLLER SHALL BE MADE AVAILABLE THROUGH:

1.1. WRITE ACCESS SHALL INCLUDE COMMAND OF DEVICE-RELAY-STATE, DEVICE-DIM-LEVEL,

CONTROLLER AND SHALL NOT REQUIRE CREATION BY THIRD PARTY SYSTEMS.

ORN - 277VAC OPTION FOR **NETWORKED** SYSTEM. TO **BRIDGE SHOWN** ON DETAIL (1)

TIME CLOCK

| X | X

| X | X

XX

| X | X

| X | X

| X | X

| X | X

| X | X

XX

| X | X

| X | X | X

| X | X | X |

| X | X | X

| X | X |

OCCUPANCY SENSOR

X X 100 7.5 10 10

X X 70 7.5 10 10

X X 70 7.5 10 10

100

100

X X 70 7.5 10 10

OF NO OCCUPANCY THE LIGHTS WILL TURN OFF. OWNER TO VERIFY TIME SCHEDULES.

WALL SWITCH TO ACTIVATE A 2-HOUR OVERRIDE. OWNER TO VERIFY TIME SCHEDULES.

nCM PDT 9 RJB

REQUIRE 0-10V DIMMING WIRES TO BE PULLED THROUGH THE LCP, PER SECTION 130.2(c)2(A).

X 70 7.5 10 10

X 100 17.5 10 20

X 70 7.5 10 10

X | 100 | 7.5 | 10 | 10

X 70 7.5 10 10

100 7.5 50 10*

| 100 | 10 | 50 | 12.5

100 | 7.5 | 10 | 10

10

DUSK

TBD

OPERATIONAL HOURS THE DIM LEVEL WILL GO TO 50% AFTER 7.5 MINUTES OF NO OCCUPANCY, AND THEN AFTER A TOTAL OF 10 MINUTES

DAYLIGHT ZONE

BLK - 120VAC

ORN - 277VAC

120/277VAC 0-10V DIMMING

SECONDARY

DAYLIGHT ZONE

120/277VAC 0-10V DIMMING

NOTE 1

BLK - 120VAC

** 5 MINUTES BEFORE THE LIGHTING IS SCHEDULED TO TURN OFF, THE LIGHTS WILL TURN OFF FOR 1 SECOND AND THEN GO BACK TO IT'S

*** AUTOMATIC SCHEDULING CONTROLS SHALL BE CAPABLE OF REDUCING THE LIGHTING BETWEEN 50% AND 90% AND HAVE A MINIMUM OF

TWO NIGHTTIME PERIODS. DIMMING CONTROLLED AT FIXTURE LEVEL, USING NLIGHT AIR WIRELESS LIGHTING COTNROLS WILL NOT

PREVIOUS DIMMING LEVEL. THIS BLINK WARNING PREVENTS FALSE OFFS AND GIVES AUTHORIZED PERSONNEL A WARNING TO PRESS

100 | 10 | 50 | 12.5 | TBD | TBD

* DURING OPERATIONAL HOURS THE LIGHTING DIM LEVEL WILL GO TO 50% AFTER 7.5 MINUTES OF NO OCCUPANCY. OUTSIDE OF

TBD

ROOM TYPE

CLASSROOMS

COPY ROOMS

EXTERIOR

BREAKROOMS/KITCHENS

CONFERENCE ROOMS

CORRIDORS/STAIRWELLS

MULTIPURPOSE ROOMS

RESTAURANTS/STORES

SMALL OFFICES < 250 SQ FT

STORAGE ROOMS > 100 SQ FT

OPEN OFFICE AREAS

PARKING GARAGE

RESTROOMS

WAREHOUSES

WALL SWITCH DAYLIGHT SENSOR OTHER

| X |

nCM ADCX RJB

X

X

| X

| X

nWSX PDT LV DX WH GENERAL LIGHTING ZONE 120/277VAC 0-10V DIMMING NOTE 1 BLK - 120VAC **OPTION FOR ORN - 277VAC NETWORKED** SYSTEM. TO BRIDGE SHOWN ON DETAIL (1)

nECYD NLTAIR G2

nECY MVOLT ENC GFXK

nlight backbone network detail

CONNECTION TO LAN/WAN FOR

ADDITIONAL nECY CONTROLLERS \

SENSORVIEW SOFTWARE, ADR (

AND/OR BAS INTEGRATION ackslash

NETWORK CONTROLLER INCLUDES THE FOLLOWING CAPABILITIES:

2. ASTRONOMICAL TIME CLOCK VIA SENSORVIEW SOFTWARE.

ACTIVATION OF CONFIGURABLE LOAD SHED DIMMING LEVELS

API SYSTEMS. BACnet TESTING LABORATORIES LISTED B-BC.

6. SECURITY FIPS PUBLICATION 140-2, LEVEL 1 INSIDE

4. AUTOMATIC DEMAND RESPONSE (ADR) CLIENT THAT ALLOWS

5. SOFTWARE INTEGRATION FOR BACNET IP/MSTP BAS OR REST

(VALIDATION CERTIFICATE PENDING); COMPLIES WITH CALIFORNIA

CIVIL CODE TITLE 1.81.26, SECURITY OF CONNECTED DEVICES,

7. FOLLOW SB-327 END-USER AUTHENTICATION PROCESS TO

3. ETHERNET PORT TO CONNECT TO LAN/WAN NETWORK.

1. STANDALONE AND NETWORKED nLIGHT SYSTEM

THROUGH AN OpenADR 2.0a VIRTUAL END NODE.

APPROVED UNDER SENATE BILL NO. 327 (2018).

PROVIDE A COMPLIANT SB-327 SYSTEM.

8. DEMAND RESPONSE READY DEVICE.

FUNCTIONALITY.

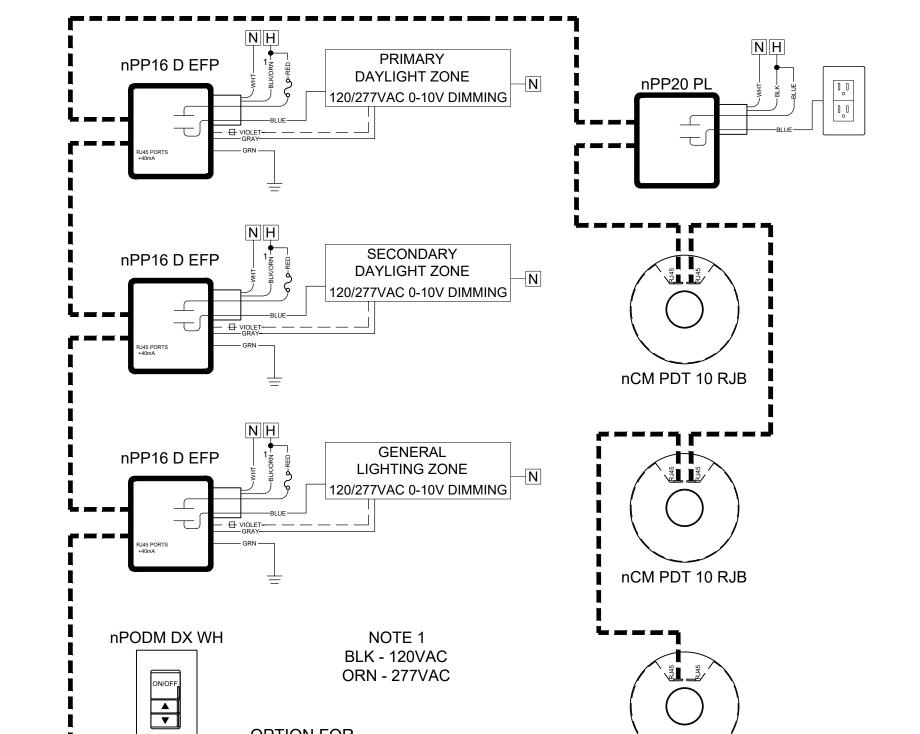
TO ADDITIONAL nLIGHT DEVICES

REQUIRED OR AS INDICATED ON

AND/OR ENABLED FIXTURES IF

FLOOR PLANS





nCM ADCX RJB

OPTION FOR

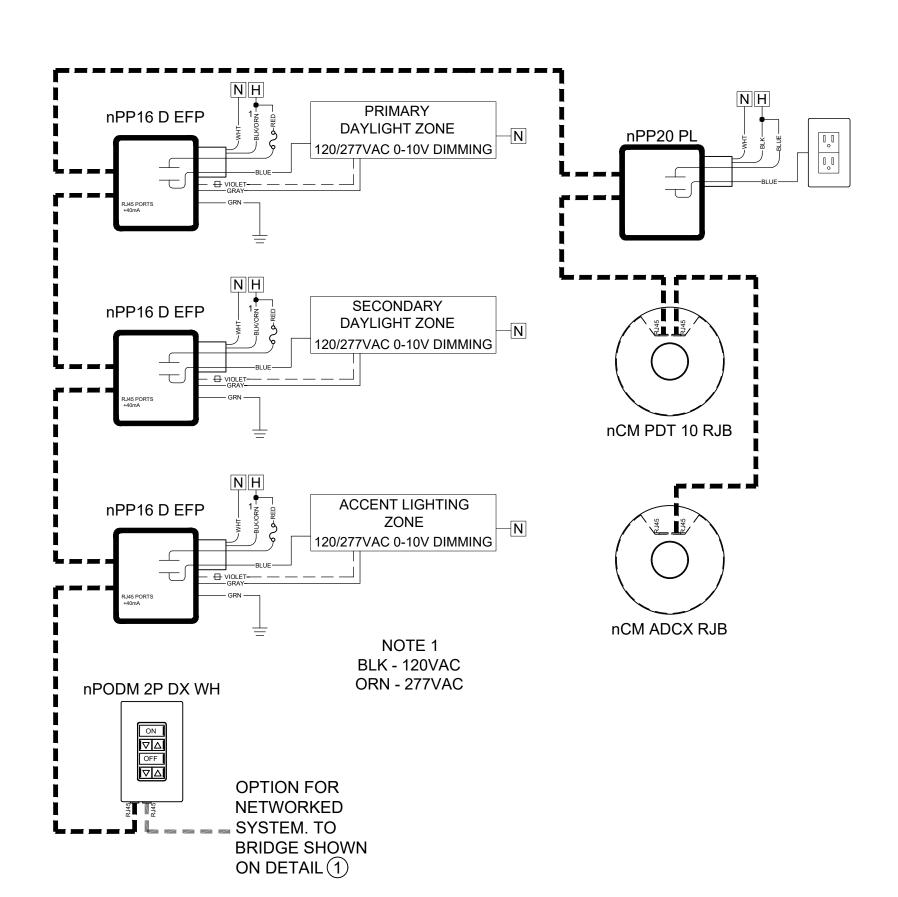
NETWORKED

BRIDGE SHOWN

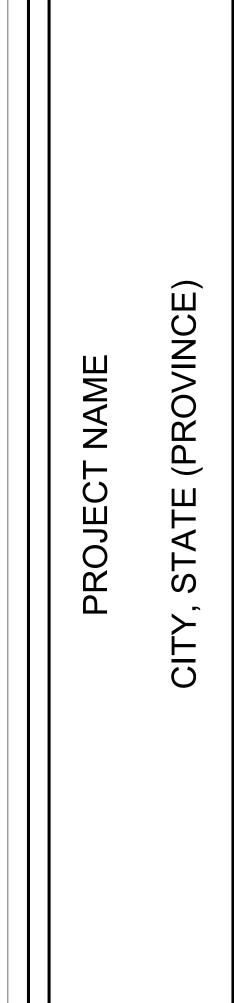
ON DETAIL (1)

L____SYSTEM. TO





CONFERENCE DETAIL



Scale: NOT TO SCALE

