DISTRIBUTED LIGHTING CONTROL SYSTEM SPECIFICATION:

PART 2 – PRODUCTS

2.1 LIGHTLEEDER EVO LIGHTING CONTROLLERS:

A. LLEVO-TC Controller: Each controller shall be designed to be remotely installed and provide control of 4 remote load control relays. This controller shall have the same features as the Programmable Lighting Control Panels excluding add-ons and naming.
   1. Enclosure: Each controller shall be provided with a NEMA 1 galvanized steel enclosure with a removable screw cover. It shall also be provided with a 1/2" nipple and pre-drilled mounting holes.
   2. Plenum Rated: Each controller shall be suitable for plenum mounting. Controllers without this rating shall be unacceptable.
   3. Listing: Lighting control shall be UL/CUL listed and shall bear labels indicating compliance.
   4. Controller Power Supply: Each lighting controller shall be provided with a dualrated, UL-listed Class 2 power supply capable of 120/277 VAC or optional 120/347 VAC primary (50 to 60 Hz). It shall contain an internal self-resetting fuse.
   5. High Voltage Connections: Each controller shall be provided with 6' wire leads for terminating the high voltage connections. All connections shall be made to clearly and permanently labeled termination points.
   6. Low Voltage Connections: Controllers shall also be provided with RJ45 connectors for the data lines, and the relay connections. It shall also be provided push-to-connect connectors for occupancy sensors, and photo sensor inputs. All connections shall be made to clearly and permanently labeled termination points.
   7. Occupancy Sensor Inputs: It shall have 4 independent inputs, and each input shall be able to interface multiple occupancy sensors or hardwired switches. Each input shall control any or all the relays in the lighting controllers or the dimmer outputs. Each controller shall provide 24VDC total power for the occupancy sensors with the following current capabilities:
      - 200mA w/4 LightSync devices connected to the controller
      - 160mA w/3 LightSync devices connected to the controller
      - 120mA w/6 LightSync devices connected to the controller
      - 90mA w/5 LightSync devices connected to the controller
      - 60mA w/8 LightSync devices connected to the controller
   8. Photocell Inputs: It shall provide 2 integrated interfaces for ILC photocell heads. The photo controller shall be provided with 256 light to dark levels (0-1800fc). It shall allow the selection of 8 individual setpoints for OFF and ON and includes a selectable range of dead-band. It shall be programmable for a 2- or 30-second Each set point shall control any or all the relays in the lighting controllers or the dimmer outputs.
   9. Local Data Line Port: It shall provide an RJ45 data line port for up to 61 LightSync data line devices. It shall provide power for LightSync devices as described in #7 or additional power added with an optional Power Supply Repeater.
   10. Real-Time Clock: Each controller shall be provided with a Real-Time Clock used to perform all time-controlled functions. It shall use a high-voltage line-sync circuit for timing and a crystal for backup. Clock accuracy shall be held +/- 2 minutes per year and displayed to the second with the line-sync setting. Real-Time Clock functions shall include the time of day, day of the week, date, and automatic daylight-saving time and leap year adjustments. The time clock shall be protected against loss of time during a power outage for a period of up to 45 days without power of any type. Daylight Saving Time shall be adjustable with an enable/disable feature. Systems relying on a single clock device shall not be acceptable.
   11. Pre-Configured Programs: Each controller shall have up to 16 selectable preconfigured lighting application programs and 1 additional custom program.

B. LLEVO-INT-4 / LLEVO-INT-8 Relay Controller: Each controller shall be designed to be remotely installed and provide control of 4 or 8 integrated load control relays. This controller shall have the same features as the Programmable Lighting Control Panels excluding add-ons and naming.
   1. Enclosure: Each controller shall be provided with a NEMA 1 galvanized steel enclosure with a removable screw cover. It shall also be provided with 1/2" knockouts and pre-drilled mounting holes. Plenum Rated: Each controller shall be suitable for plenum mounting. Controllers without this rating shall be unacceptable.
   2. Listing: Lighting control shall be UL/CUL listed and shall bear labels indicating compliance.
   3. Controller Power Supply: Each lighting controller shall be provided with a dualrated, UL-listed Class 2 power supply capable of 120/277 VAC primary (50 to 60 Hz). It shall contain an internal fuse for protection.
   4. Relay Ratings: It shall be provided with 4- or 8- 50A load relays that shall be derated for 16 amps for durability. It shall control 16A for each set of 4 outputs:
      - 16A, 120/277VAC Electronic Ballast (LED)
      - 16A 120/277VAC Tungsten
      - 1/4 HP @ 120 VAC Motor Load
   6. High Voltage Connections: Each controller shall be provided with terminal blocks for terminating the high voltage connections. All connections shall be made to clearly and permanently labeled termination points.
   7. Low Voltage Connections: Controllers shall also be provided with RJ45 connectors for the data lines, and photo sensor connections. It shall also be provided push-to-connect and screw connectors for occupancy sensors, dimming, and low-voltage inputs. All connections shall be made to clearly and permanently labeled termination points. Occupancy Sensor Inputs: It shall have 4 independent inputs, and each input shall be able to interface multiple occupancy sensors or hardwired switches. Each input shall control any or all the relays in the lighting controllers or the dimmer outputs. Each controller shall provide 24VDC total power for the occupancy sensors with the following current capabilities:
      - 60mA w/4 LightSync devices connected to the controller
      - 50mA w/5 LightSync devices connected to the controller
      - 40mA w/6 LightSync devices connected to the controller
      - 20mA w/7 LightSync devices connected to the controller
      - 0mA w/8 LightSync devices connected to the controller
   9. Photocell Inputs: It shall provide an integrated interface for 1 ILC photocell head. The photo controller shall be provided with 256 light to dark levels (0-1800fc). It shall allow the selection of 8 individual setpoints for OFF and ON and includes a selectable range of dead-band. It shall be programmable for a 2- or 30-second Each set point shall control any or all the relays in the lighting controllers or the dimmer outputs.
   10. Local Data Line Port: It shall provide an RJ45 data line port for up to 17 LightSync data line devices. It shall provide power for LightSync devices as described in #8 or additional power added with an optional Power Supply Repeater.
   11. Dimming: It shall be provided with 4 or 8 independent 0-10V dimming control outputs that shall sink a maximum of 100mA per output. Each output shall be galvanically isolated up to 1500V to protect the electronics. Each output will revert to 100% upon a power loss.
   12. Real-Time Clock: Each controller shall be provided with a Real-Time Clock used to perform all time-controlled functions. It shall use a high-voltage line-sync circuit for timing and a crystal for backup. Clock accuracy shall be held +/- 2 minutes per year and displayed to the second with the line-sync setting. Real-Time Clock functions shall include the time of day, day of the week, date, and automatic daylight-saving time and leap year adjustments. The time clock shall be protected against loss of time during a power outage for a period of up to 45 days without power of any type. Daylight Saving Time shall be adjustable with an enable/disable feature. Systems relying on a single clock device shall not be acceptable.

13. Pre-Configured Programs: Each controller shall have up to 1 pre-configured default contractor program or 1 job-specific custom program.

D. LLEVO-INT-2 Relay Controller: Each controller shall be designed to be remotely installed and shall provide 2 integrated load control relays with dimming.
   1. Enclosure: Each controller shall be provided with a polycarbonate plastic enclosure provided with a ½" nipple and mounting tab.
   2. Plenum Rated: Each controller shall be suitable for plenum mounting. Controllers without this rating shall be unacceptable.
   3. Listing: Lighting control shall be UL/CUL listed and shall bear labels indicating compliance.
   4. Controller Power Supply: Each lighting controller shall be provided with a dualrated, UL-listed Class 2 power supply capable of 120/277 VAC primary (50 to 60 Hz). It shall contain an internal fuse for protection.
   5. Relay Ratings: It shall be provided with 2- 50A load relays that shall be de-rated for 20 amps for durability:
      - 16A, 120/277VAC Electronic Ballast (LED)
      - 20A 120/277VAC General
      - 1/4 HP @ 120 VAC Motor Load
   6. High Voltage Connections: Each controller shall be provided with color-coded wire leads. All connections shall be made to clearly and permanently labeled terminations.
   7. Low Voltage Connections: Controllers shall also be provided with RJ45 connectors for the data lines, occupancy sensor, and photo sensor connections. Dimming shall be provided with color-coded wire leads. All connections shall be permanently labeled terminations.
   8. Occupancy Sensor Inputs: It shall have 1 input with power provided. The input shall control any or all the relays in the lighting controllers or the dimmer outputs. Each controller shall provide 24VDC total power for the occupancy sensors with the following current capabilities:
      - 70mA w/1 LightSync device connected to the controller
      - 60mA w/2 LightSync devices connected to the controller
      - 50mA w/3 LightSync devices connected to the controller
      - 40mA w/4 LightSync devices connected to the controller
   9. Photocell Inputs: It shall provide an integrated interface for 1 ILC photocell head. The photo controller shall be provided with 256 light to dark levels (0-1800fc). It shall allow the selection of 8 individual setpoints for OFF and ON and includes a selectable range of dead-band. It shall be programmable for a 2- or 30-second Each set point shall control any or all the relays in the lighting controllers or the dimmer outputs.
   10. Local Data Line Port: It shall provide an RJ45 data line port for up to 17 LightSync data line devices. It shall provide power for LightSync devices as described in #9 or additional power added with an optional Power Supply Repeater.
   11. Dimming: It shall be provided with 2 independent 0-10V dimming control outputs that shall sink a maximum of 100mA per output. Each output shall be galvanically isolated up to 1500V to protect the electronics. Each output will revert to 100% upon a power loss.
   12. Pre-Configured Programs: Each controller shall have up to 1 pre-configured default contractor program or 1 job-specific custom program.

E. LSEVO-INT-2-RC Room Controller: Each controller shall be designed to be remotely installed and shall provide 2 integrated load control relays with dimming.
   1. Enclosure: Each controller shall be provided with a polycarbonate plastic enclosure provided with a ½" nipple and mounting tab.
   2. Plenum Rated: Each controller shall be suitable for plenum mounting. Controllers without this rating shall be unacceptable.
   3. Listing: Lighting control shall be UL/CUL listed and shall bear labels indicating compliance.
   4. Controller Power Supply: Each lighting controller shall be provided with a dualrated, UL-listed Class 2 power supply capable of 120/277 VAC primary (50 to 60 Hz). It shall contain an internal fuse for protection.
   5. Relay Ratings: It shall be provided with 2- 50A load relays that shall be de-rated for 20 amps for durability:
      - 16A, 120/277VAC Electronic Ballast (LED)
      - 20A 120/277VAC General
      - 1/4 HP @ 120 VAC Motor Load
   6. High Voltage Connections: Each controller shall be provided with color-coded wire leads. All connections shall be made to clearly and permanently labeled terminations.
   7. Low Voltage Connections: Controllers shall also be provided with RJ45 connectors for the data lines, occupancy sensor, and photo sensor connections. Dimming shall be provided with color-coded wire leads. All connections shall be permanently labeled terminations.
   8. Occupancy Sensor Inputs: It shall have 1 input with power provided. The input shall control any or all the relays in the lighting controllers or the dimmer outputs. Each controller shall provide 24VDC total power for the occupancy sensors with the following current capabilities:
      - 70mA w/1 LightSync device connected to the controller
      - 60mA w/2 LightSync devices connected to the controller
      - 50mA w/3 LightSync devices connected to the controller
   9. Photocell Inputs: It shall provide an integrated interface for 1 ILC photocell head. The photo controller shall be provided with 256 light to dark levels (0-1800fc). It shall allow the selection of 8 individual setpoints for OFF and ON and includes a selectable range of dead-band. It shall be programmable for a 2- or 30-second Each set point shall control any or all the relays in the lighting controllers or the dimmer outputs.
   10. Local Data Line Port: It shall provide an RJ45 data line port for up to 3 LightSync data line devices. It shall provide power for LightSync devices as described in #8 or additional power added with an optional Power Supply Repeater.
   11. Dimming: It shall be provided with 2 indepedent 0-10V dimming control outputs that shall sink a maximum of 100mA per output. Each output shall be galvanically isolated up to 1500V to protect the electronics. Each output will revert to 100% upon a power loss.
   12. Pre-Configured Programs: Each controller shall have up to 1 job-specific custom program.

2.2 SWITCH STATIONS AND COVER PLATES

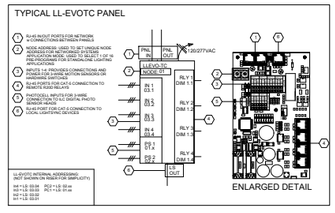
Switching and Control Devices:

1. Device Node Capacity: The lighting controller shall support switch input control of up to 64 data line LightSync devices locally. The first 8 device nodes shall be powered by the LightLEEDer EVO controller. The addition of a power supply or power supply/repeater shall be required for each additional 20-device node. Each LightSync device shall have a unique address and shall be capable of being programmed to the applicable functions.
2. Data Line Media: The data line shall consist of RS485 communications protocol transmitted over CAT-5, CAT-5E, or CAT-6 Cable. The cable shall have male RJ45 connectors installed on each end for interfacing controllers and LightSync devices. Both daisy-chain and "T" (3-direction branching) of cable runs shall be permitted. "T" branching shall be accomplished by the addition of power supply/repeaters.
3. LightSync Switch Stations: LightSync data line switch stations shall be available in momentary push button (1-7 switches and pilots) and each switch shall have an associated pilot light. It shall be provided with optional dimming Raise and Lower buttons. Switches can be provided as Scene Multi-zone, Scene Stations, Multi-zone Stations, or Non-Dim Stations. Each button shall control any or all the relays in the lighting controllers or the dimmer outputs on the network. There shall be an option to program each pilot LED to indicate the state of any Relay, Group, Preset, Scene, and static ON or OFF. It shall also have the capability to reverse the status: LED is ON if the relay is OFF etc.
4. LightSync Photocell Controllers: The photo controller shall be provided with 256 light to dark levels (0-1800fc). It shall allow the selection of 8 individual setpoints for OFF and ON and includes a selectable range of dead-band. It shall be programmable for a 2- or 30-second delay. Each set point shall control any or all the relays in the lighting controllers or the dimmer outputs on the network.
5. LightSync Input Modules: The input module shall provide 4 inputs that accept momentary, momentary PB, and maintained switch closures. Each input shall be optically isolated and can accept dry contact closures or 12-24VDC signals. Each input shall control any or all the relays in the lighting controllers or the dimmer outputs on the network. It shall provide four pilot outputs that provide the true status of relays, groups, and presets. It shall be installed in the control panel or remotely mounted.
6. LightSync Occupancy Sensor Input Module: The occupancy sensor input module shall provide power and inputs for motion sensors. It shall have 4 or 8 independent inputs that shall be able to interface multiple sensors. Each input shall control any or all of the relays in the lighting controllers or the dimmer outputs on the network. It shall have the ability to set AND/OR conditional logic. It shall be installed in the control panel or remotely mounted.
7. Graphical Touch Screen Control Station: The Touch screen control station shall display the status and control the lighting control panel relay outputs via preprogrammed control objects on standard or custom bitmap screens.

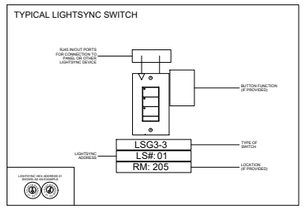
GENERAL ONE-LINE NOTES

A. ELECTRICAL CONTRACTOR TO PROVIDE CAT-5 DATA CABLE. SEE CAT-5 REQUIREMENTS SHEET & RJ45 CONNECTOR DETAIL.TEST ALL CABLE LENGTHS AND TERMINATIONS W/CAT-5 TESTER.
B. ALL CABLING SHOWN ON DIAGRAM TO BE CAT-5 UNLESS SHOWN WITH CROSSES INDICATING NUMBER OF CONDUCTORS REQUIRED.18 AWG WIRING REQUIRED FOR LOW VOLTAGE OCCUPANCY / PHOTOSENSOR CONNECTIONS. REFER TO DOCUMENTATION PROVIDED BY ILC FOR EXACT WIRING TYPE SPECIFICATION.
C. ALL LOW VOLTAGE COMMUNICATION CABLE & HARDWIRE LOW VOLTAGE CONTROL WIRING TO BE INSTALLED PER NATIONAL ELECTRICAL CODE FOR CLASS-2 LOW VOLTAGE WIRING.
D. CLASS-2 LOW VOLTAGE WIRING SHALL NOT BE MIXED WITH OR RUN IN LINE VOLTAGE RACEWAYS. SEPARATE LOW VOLTAGE RUNS FROM LINE VOLTAGE BY A MINIMUM DISTANCE OF 1-FOOT.
E. CAT-5 DATA CABLE TO BE INSTALLED IN A DAISY CHAIN FROM ONE PANEL OR DEVICE TO THE NEXT. NO "STAR" OR "T" CONFIGURATIONS ALLOWED WITHOUT POWER SUPPLY REPEATERS.
F. CAT-5 LightSync DATALINE HAS A MAXIMUM CUMULATIVE POWER DISTANCE OF 2000FT (667M) BEFORE REQUIRING ADDITIONAL POWER-SUPPLY REPEATERS. DISTANCE MAY BE REDUCED DUE TO NUMBER OF LOW VOLTAGE INPUTS REQUIRED. REFER TO ILC SUBMITTAL DOCUMENTATION FOR PROJECT SPECIFIC REQUIREMENTS AND MAXIMUMS.
G. ALL CLASS-2 & CAT-5 DATA CABLE RUNS TO BE PROVIDED AND INSTALLED WITH THE APPROPRIATE JACKET TYPE OR CONDUIT FOR THE INSTALLATION ENVIRONMENT OR CONDITIONS ON SITE.
H. EACH LIGHTING CONTROLLER REQUIRES A DEDICATED 120V OR 277V CIRCUIT FOR CONTROL POWER TRANSFORMERS.
I. ADDITIONAL ILC POWER OR DATA REPEATING DEVICES MAY BE REQUIRED FOR PROPER SYSTEM OPERATION, BASED ON THE ACTUAL NUMBER AND DISTANCES OF LightSync DEVICES TO BE INSTALLED ON CAT-5 DATA LINE. SEE SHEET TB1408 FOR DETAILS. CONTACT ILC TECHNICAL SUPPORT AT 1-800-922-8004 FOR FURTHER ASSISTANCE.
J. ANY UNDERGROUND DATA CABLE RUNS MUST BE RAN WITH FIBER OPTIC CABLE & RS485 CONVERTERS OR THE WARRANTY WILL VOID.
K. LightSync DEVICES MAY COME UNIQUELY PRE-ADDRESSED AND ARE LOCATION SPECIFIC. IT'S THE CONTRACTORS RESPONSIBILITY TO PROPERLY PLACE DEVICES.
L. ASSUME ALL CABLING WITHOUT CONDUCTOR SLASHES IS TO BE CAT5/5e/6 UNLESS OTHERWISE NOTED ON THE RISER OR PRODUCT INFORMATION SHEETS.

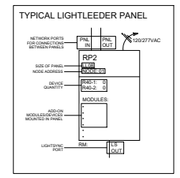
TYPICAL LL-EVOTC PANEL



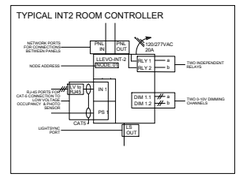
TYPICAL LIGHTSYNC SWITCH



TYPICAL LIGHTLEEDER PANEL



TYPICAL INT2 ROOM CONTROLLER



RISER SYMBOLS

LIGHTSYNC WALL STATIONS

- LSG3-xx-#: LIGHTSYNC G3 DATALINE SWITCH DEVICE 1 TO 7 ZONES
- LSG3-xx-#-MZD: LIGHTSYNC MULTI-ZONE DIMMER STATION 1 TO 6 ZONES
- LSG3-xx-#-S: LIGHTSYNC SCENE STATION 1 TO 5 SCENES
- LSG3-xx-#-SMZD: LIGHTSYNC MULTI-ZONE DIMMER / SCENE COMBO STATION 2-4 ZONES & 2-4 SCENES
- LSKS-xx: LIGHTSYNC DATALINE KEY SWITCH STATION
- LSTS2-#: LIGHTLEEDER TOUCH SCREEN 3.5" AND 7.0" VERSIONS

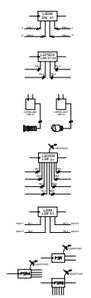
LIGHTSYNC WALL SWITCH/SENSORS

- LSWS-xx-#: LIGHTSYNC DATALINE SWITCH SENSOR DEVICE 1 TO 3 ZONES
- LSWS-xx-#-MZD: LIGHTSYNC MULTI-ZONE DIMMER SWITCH SENSOR 1 TO 3 ZONES
- LSWS-xx-#-S: LIGHTSYNC SCENE SWITCH SENSOR 1 TO 3 SCENES
- LSWS-xx-#-SMZD: LIGHTSYNC MULTI-ZONE DIMMER / SCENE COMBO SWITCH SENSOR 1-3 ZONES & 1-3 SCENES

LIGHTSYNC CEILING SENSOR

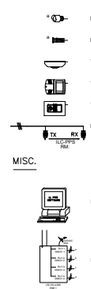
- LSCS-#: LIGHTSYNC CEILING MOTION SENSOR SMALL / LARGE MOTION

REMOTE MOUNT DEVICES



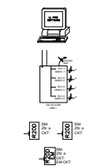
- LSDM-R: LIGHTSYNC DIMMING MODULE 0-10V DIMMABLE FIXTURE CONTROLLER
- LSPSC4-R: LIGHTSYNC PHOTO SENSOR CONTROLLER 4 HEAD PHOTOSENSOR CONTROLLER
- LSPSC-OUT/IND: LIGHTSYNC SINGLE PHOTO SENSOR CONTROLLER COMBO DEVICE LOW CONTROLLER AND EXTERIOR OR INTERIOR PHOTO SENSOR
- LSOSM-R: CONDITIONAL OCCUPANCY SENSOR MODULE PROVIDES POWER & 8 INPUTS FOR OCCUPANCY SENSORS
- LSIM-R: LIGHTSYNC INPUT MODULE ACCEPTS DRY CONTACT CLOSURES OR 12-24 VDC SIGNALS
- PSRR: POWER SUPPLY REPEATER MODULE ALLOWS FOR ADDITIONAL DATALINE DEVICES

LOW VOLTAGE SENSORS



- PC-OUT: LIGHTSYNC OUTDOOR PHOTO SENSOR HEAD CONNECTS TO PHOTO SENSOR CONTROLLER OR LL-EVOTC
- PC-IND: LIGHTSYNC INDOOR PHOTO SENSOR HEAD CONNECTS TO PHOTO SENSOR CONTROLLER OR LL-EVOTC
- VARIOUS: CEILING MOUNTED MOTION SENSOR SEE RISER FOR MODEL NUMBER
- VARIOUS: WALL/CORNER MOUNTED MOTION SENSOR SEE RISER FOR MODEL NUMBER
- VARIOUS: WALL SWITCH MOUNTED MOTION SENSOR SEE RISER FOR MODEL NUMBER
- ILC-PPS: LOW VOLTAGE ROOM PARTITION SENSOR THRU-BEAM SENSOR TRANSMITTER AND RECEIVER

MISC.



- LLPRO: DESKTOP COMPUTER SETUP SOFTWARE ILC PROVIDEDSOFTWARE FOR SYSTEM PROGRAMMING (COMPUTER NOT INCLUDED)
- LSLVD-R: LIGHTSYNC LINE VOLTAGE DIMMER FORWARD PHASE 4 CHANNEL DIMMER MODULE
- R20_: REMOTE 20 RELAY 16 AMP RELAY, 0-10V DIMMING OPTION, UL924 OPTION

ILC NETWORK LIGHTING CONTROLS PRODUCTS

LINE VOLTAGE WALL SWITCH / SENSORS:	
STANDALONE SINGLE RELAY =	#ONW-D-1001-MV-N SERIES
STANDALONE DUAL RELAY =	#ONW-D-1001-DMV-N SERIES
STANDALONE SINGLE RELAY WITH 0-10VDC =	#OSW-D-010 SERIES
LOW VOLTAGE DUAL TECH WALLBOX =	ONW-D-1001-SP-W
LOW VOLTAGE PIR WALLBOX =	ONW-P-1001-SP-W
LOW VOLTAGE CEILING SENSORS:	
ONE-WAY DIRECTIONAL =	#OAC-7-501 (DT, P, U, DUAL TECH, PIR, ULTRASONIC 500 sq.ft)
360 DEG COVERAGE =	#OAC-7-1000 (DT, P, U, DUAL TECH, PIR, ULTRASONIC 1000 sq.ft)
360 DEG COVERAGE =	#OAC-7-2000 (DT, P, U, DUAL TECH, PIR, ULTRASONIC 2000 sq.ft)
LOW VOLTAGE PARTITION SENSORS:	
PARTITION SENSOR =	#ILC-PPS
DAYLIGHT SENSORS:	
INTERIOR SENSOR w/CONTROLLER=	#LSPSC-IND
INTERIOR SENSOR w/o CONTROLLER=	#PS-IND
EXTERIOR SENSOR w/ CONTROLLER=	#LSPSC-OUT
EXTERIOR SENSOR w/o CONTROLLER=	#PS-OUT
CONTROL UNITS:	
4 OUTPUT CONTROLLER WITH BUILT IN TIMECLOCK =	#LLEVO-TC (c/w 4xOCC & 2xPS INPUTS)
REMOTE RELAYS FOR USE WITH LLEVO-TC =	#R20 (20A RELAY) #R20D (20A RELAY c/w 0-10V) #R20D-EM (20A RELAY c/w 0-10V & UL924 RELAY)
4 RELAY CONTROLLER WITH BUILT IN TIMECLOCK =	#LLEVO-INT-4 (c/w 4xOCC & 1xPS INPUTS & 4x0-10V)
8 RELAY CONTROLLER WITH BUILT IN TIMECLOCK =	#LLEVO-INT-8 (c/w 4xOCC & 1xPS INPUTS & 8x0-10V)
2 RELAY ROOM CONTROLLER =	#LLEVO-INT-2 (c/w 1xOCC & 1xPS INPUTS & 2x0-10V)
EXPANSION OUTPUT MODULES:	
4 OUTPUT EXPANSION MODULE =	#LSEVO-4X
8 OUTPUT EXPANSION MODULE =	#LSEVO-8X
REMOTE RELAYS FOR USE WITH LSEVO-7X =	#R20 (20A RELAY) #R20D (20A RELAY c/w 0-10V) #R20D-EM (20A RELAY c/w 0-10V & UL924 RELAY)
2 RELAY EXPANSION MODULE =	#LSEVO-INT-2-RC (c/w 1xOCC & 1xPS INPUTS & 2x0-10V)
FORWARD PHASE DIMMING EXPANSION MODULE =	#LSLVD-4-500 (4 CHANNEL, 500W EACH)
DIGITAL WALL CONTROLS:	
PRESET =	#LSG3-7 (1 - 7 ZONES)
DIMMING =	#LSG3-7-MZD (1 - 6 ZONES w/DIMMING)
SCENE =	#LSG3-7-S (1 - 5 SCENES w/DIMMING)
TOUCH SCREEN =	#LSTS2-7.7 (7.0", 4.3", 3.5")
KEYED SWITCH =	#LSKS OR #LSDKS
TOUCH BUTTON (WET LOCATION) =	#WTB-7-7 (19mm or 27mm, 1 - 3 BUTTONS)
TOUCH BUTTON (TAMPER RESISTANT) =	#LSTB-SS-7 (1 - 3 BUTTONS)
DIGITAL OCCUPANCY SENSORS:	
360 DEG COVERAGE =	#LSCS-06 (DT, PHOTO 600 sq.ft)
360 DEG COVERAGE =	#LSCS-20 (DT, PHOTO 2000 sq.ft)
DIGITAL WALL SWITCH SENSOR:	
PRESET =	#LSWS-7 (1 - 7 ZONES)
DIMMING =	#LSWS-7-MZD (1 - 3 ZONES w/DIMMING)
SCENE =	#LSWS-7-S (1 - 3 SCENES w/DIMMING)
PERIPHERAL EXPANSION MODULES:	
CONTACT 4 x INPUT MODULE =	#LSIM-R
CONTACT 4 x OUTPUT MODULE =	#LSDCO-7-R (MNT=MAINTAINED, MOM=MOMENTARY)
4 x 0-10V DIMMING MODULE =	#LSDIM-R
4 x PHOTOSENSOR INPUT MODULE =	#LSPSC4-R
8 x OCCUPANCY SENSOR INPUT MODULE =	#LSOSM-R
DMX BASIC OUTPUT MODULE =	#LSDMX-R
NETWORK COMMUNICATION COMPONENTS:	
CENTRALIZED NETWORK CONTROLLER =	#LLNC-HLD
DATALINE POWER SUPPLY / REPEATER =	#PSR7-R (4 OR 6 OUTPUT)
NETWORK RELAY PANELS:	
RELAY PANEL 40A 1, 2 or 3 POLE RELAYS =	#LL7 (04,08,16,24,32,40,48,56,64 CAPACITY)
UL924 EM RELAY PANEL 40A 1, 2 or 3 POLE RELAYS =	#LL7-EM (08,16,24,32,40,48,56,64 CAPACITY)
NEMA4 RELAY PANEL 40A 1, 2 or 3 POLE RELAYS =	#LL7-N4 (08,16,24,32,40,48,56,64 CAPACITY)
NEMA4X RELAY PANEL 40A 1, 2 or 3 POLE RELAYS =	#LL7-N4X (08,16,24,32,40,48,56,64 CAPACITY)
SYSTEM EXTERNAL INTEGRATION MODULES:	
BACNET/IP or BACNET MS/TP =	#LLSI-BAC7-? (IP or MSTP, N or P Network/Panel)
MODBUS =	#LLSI-MOD-? (N or P Network/Panel)
MODBUS TCP =	#LLSI-MODTCP-? (N or P Network/Panel)
RS232 / RS485 =	#LLSI-ASCII-P
DMX512 INPUT =	#LLDMX-I
RS232 =	#LLSSI-RS232 (Remote Mount Option)

PROJECT KEY NOTES:

1. WIRED CENTRALIZED AND DISTRIBUTED SYSTEMS ONLY

intelligent lighting controls

5229 Edina Industrial Blvd.
Minneapolis, MN 55439
952.829.1900 | ilc-usa.com

#	REVISIONS	DATE
1	xx	xx

DATE: 01/01/2024

SCALE: NONE

DRAWN BY: CW

Project:

LLEVO BOILERPLATE

Title:

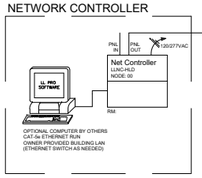
RISER DIAGRAM

GO#

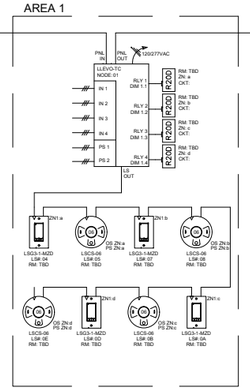
Sheet:

R1

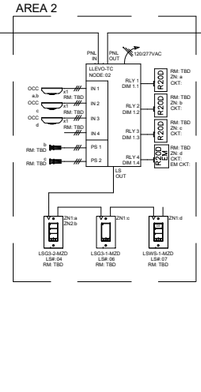
NETWORK CONTROLLER



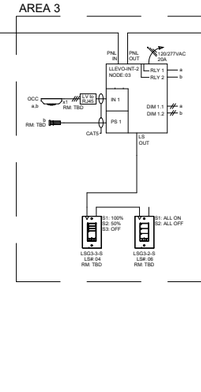
AREA 1



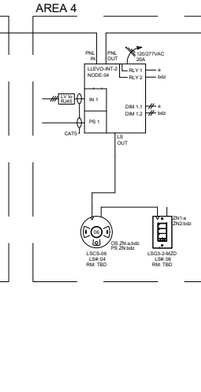
AREA 2



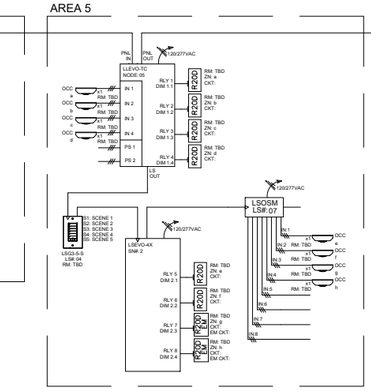
AREA 3



AREA 4



AREA 5



DLCS SCHEDULE

SYSTEM TOPOLOGY	COMMUNICATION TOPOLOGY	FIXTURE INTEGRATED SENSING	BAS INTEGRATION	REMARKS
NETWORKED	WIRED	NO	NO	

STANDALONE DEVICE AVAILABLE ON NON-NETWORKED SYSTEMS AS NEEDED AND WHERE ALLOWED BY CODE. → NON NETWORKED STAND ALONE

REQUIRES "NETWORK" SYSTEM TOPOLOGY. MAY REQUIRE COORDINATION WITH M AND BAS DESIGNERS → YES