

current
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LightSweep – Lighting Control System

Components and Applications



What is Lighting Controls

Lighting control is an ideal solution to ensure the comfort of residents, tenants, consumers, or employees.

Lighting control represents any device, group of devices or systems that turn lights ON/OFF, change light level, or create scenes.



LightSweep™ modular control solution

Modularity



Easier to meet specification, potentially improving price competitiveness (avoids “over spec”); CAT5 connectivity

Simple Design



Snap-in modules enable easy factory or field installation, quick field replacement, and simple upgrades. Easy to program in standalone configuration

Customization



Switch, dim, schedules and sensors allow for complete control solutions. Create custom zones, scenes, and constraints at any time, resulting in enhance flexibility (and value) to end user

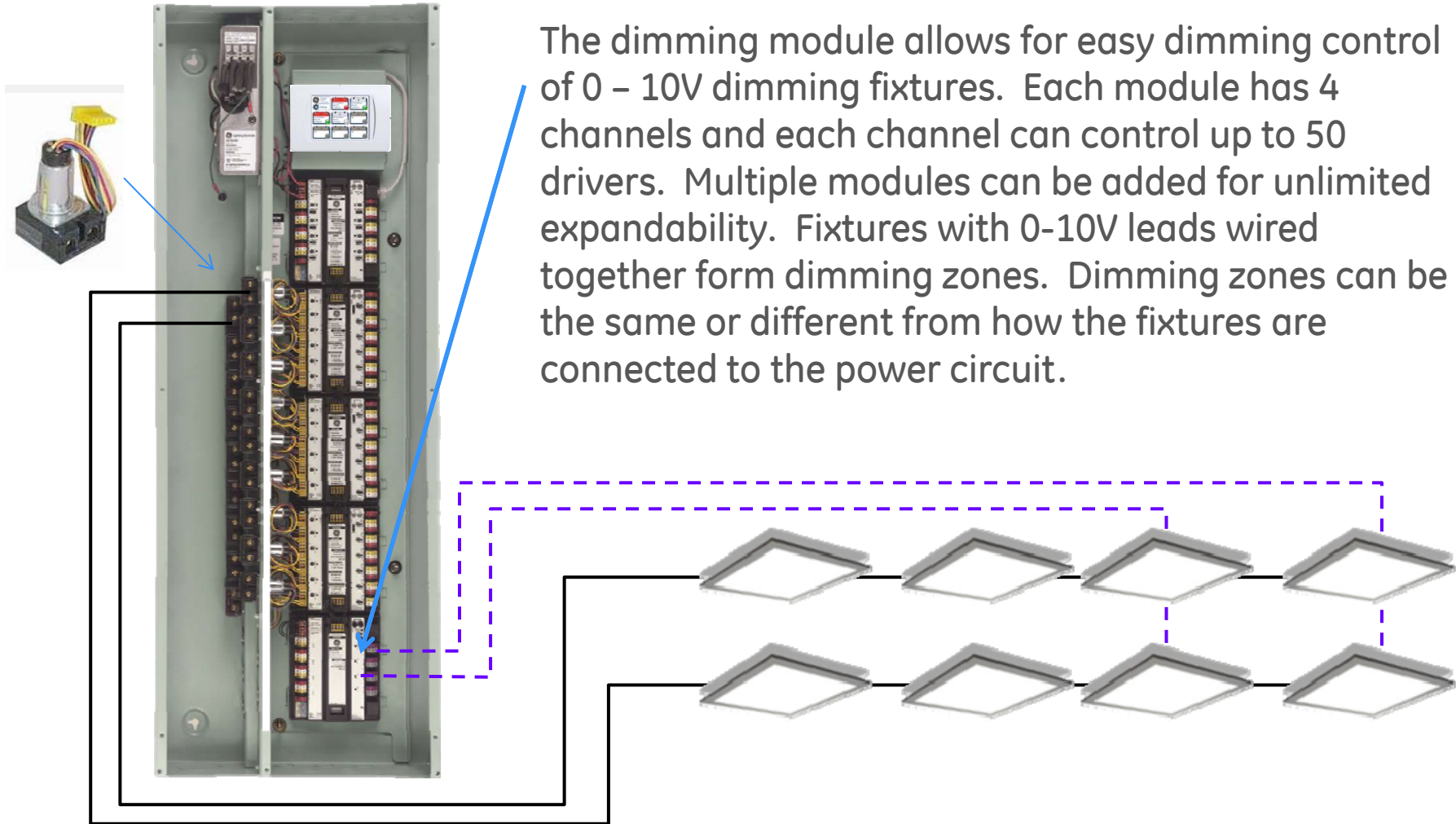
BACnet



Easier to integrate with 3rd party products (e.g., field devices, wireless networks, BMS). Provides software and webserver connectivity.



LightSweep - ON/OFF and Dimming Control



System Components



Relay Modules – CLCRM6/CLCRMS6
Each controls 6 relays.
Pushbuttons for local override
LED status indicator.
Available with individual switch inputs or without.



Scheduler - CLCDLS
Eight schedules and 16 lighting groups.
Allows to program the entire system – sensors, switches, timers, Astronomic clock, network troubleshooting, remote control.
Can be installed in the panel or remote on CAT5.



Group Switch Module – CLCGSM8
Eight programmable inputs – configurable as Switch or Sensor (photocell or occupancy sensor).
Also provides power to all components in the panel and attached to the network.



Programmable Switches - CLCSWTx
Soft touch switches can be field configured as 1, 2, 4 or 8 buttons.
Each button can control any configuration of ON/OFF relays and dimming channels, allowing to create very complex control scenes.
As the face plate is transparent, the switch color can be changed easily by typing a new label.



Power Injector - CLCPIM
Provides power to all components in the panel and on the network when no programmable inputs are needed.



Dimming Module – CLCDIM4
Four dimming channels – using 0-10V controls. Each channel can sync up to 25 mA (50 ballasts).
Four analog inputs for photocells – each linked to its own output.
Can be programmed to dim based on a single sensor with different offsets for each channel or to create scenes operated by programmable switch, sensors or time schedules.
Can be installed in the panel or remote connected with CAT5.



Sensors – Photocells and Occupancy sensors
Are used to create a fully functional and automated system.
Sensors connected to the system can create different scenarios for different times of day.

System Components



BACnet Controller- CLCBnet

The CLCBnet controller allows to expand the system, to add front-end control using custom graphics or interface to BMS via the BACnet protocol. It is a fully programmable controller.

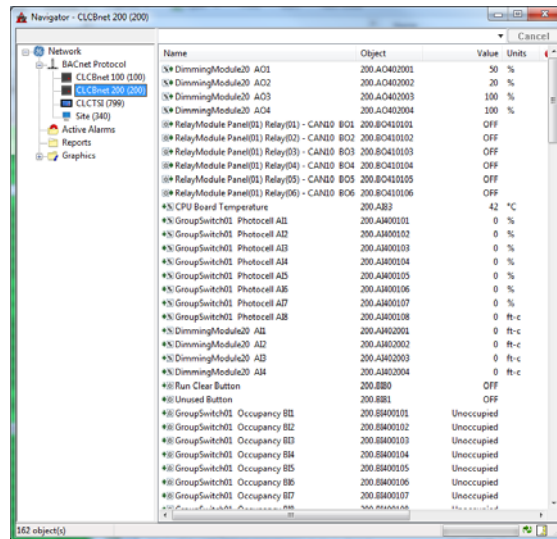


Touchscreen- CLCTSI-x. Requires the CLCBnet controller.

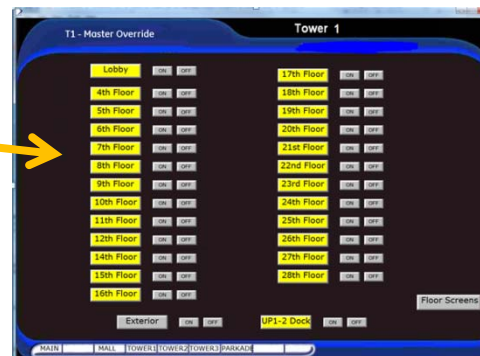
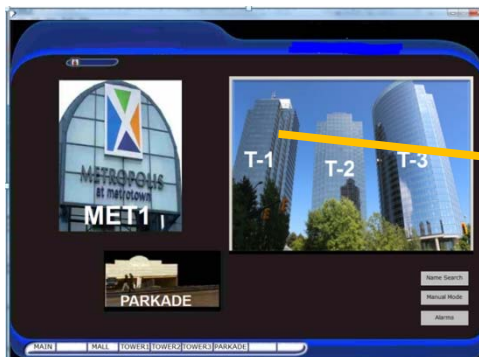
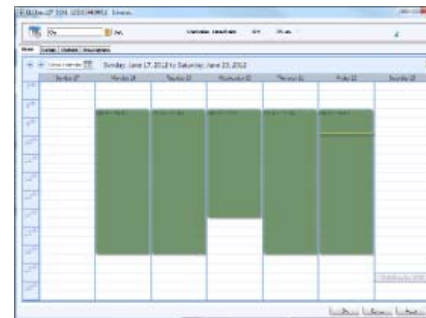
The CLCTSI screen is used as an interface with custom graphics. The display can host multiple screens with link buttons for navigation.

- CLCTSI-1 – acts as a switch interface –scene controls : ON, OFF, dimming, pre-sets.
- CLCTSI-2 – adds the Scheduling capabilities – user can change system schedules
- CLCTSI-3 – runs a web server module, all graphic screens are accessible through a web browser.

Software



- The Basic Software – Navigator – is used for system setup and administration:
 - associated inputs and outputs
 - create trigger points – photocell, schedules, switches, occupancy sensors etc.
 - Program or change time schedules
 - Override relays, groups, dimming outputs.
- It allows to create custom programs setup alarms, events and trends, hardware troubleshooting.



WEB Server Module

The web server allows to monitor and control the system using the Internet Explorer or any other browsers.

Using custom graphic screens, can provide an easy to use lighting control display that can be launched on a PC, iPad or iPhone device. This application allows to turn relays ON/OFF, call preset scenes or change time schedules.

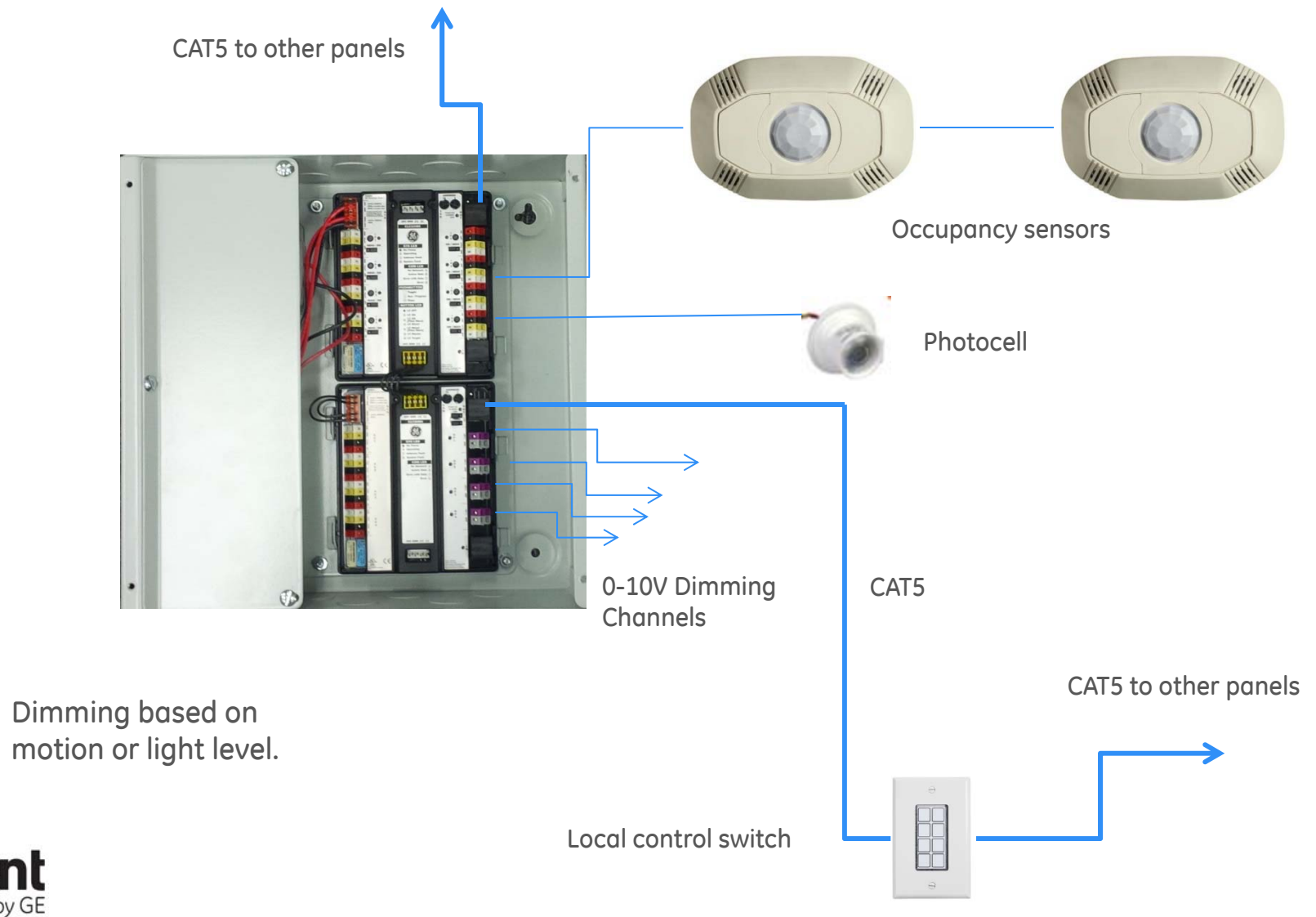
Stand-alone office controls



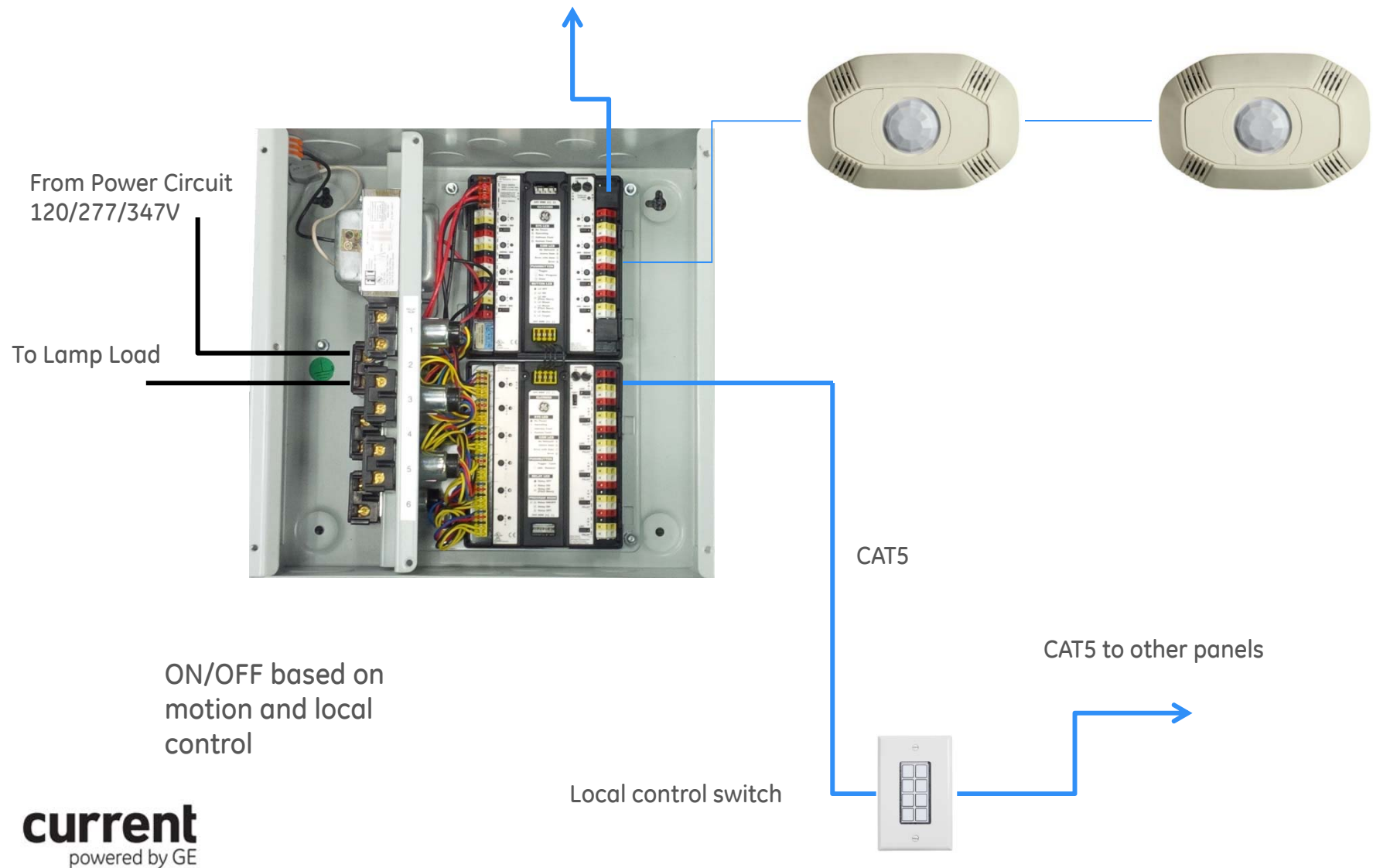
Office Controls:

- Occupancy/Vacancy sensors – motion based controls
- Photocell for daylight harvesting using the 0-10V dimming controls
- Programmable switch for lighting scene selection

CLCP06 – Corridor/Office Controller



CLCP06 – Classroom Controller

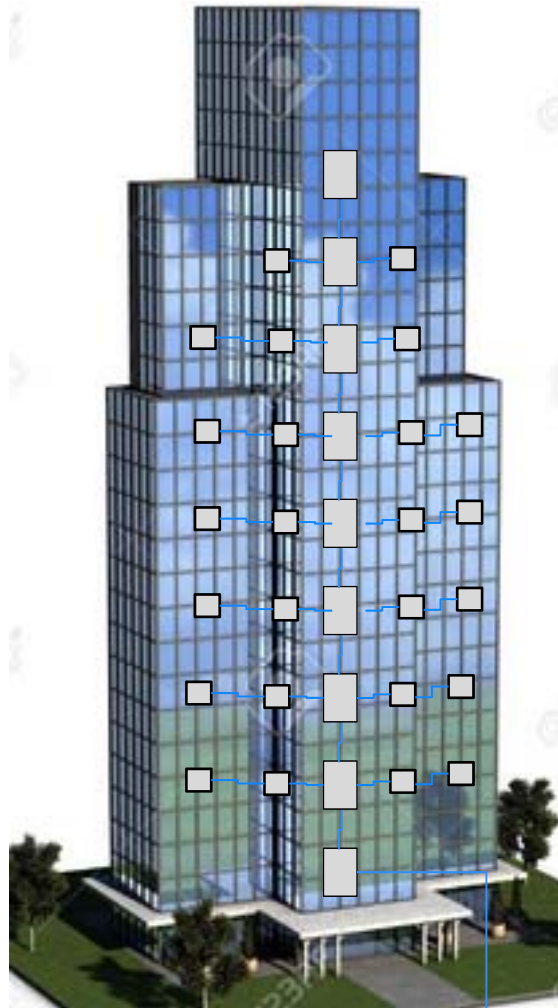


Commercial – Office space

Large office buildings are configured as an integrated system with computer interface using WEB browsers and/or integrated to BMS.

A larger panel on each floor – installed in electrical rooms – controls the core building lighting as corridors, lobbies, large open office spaces.

Smaller panels, dimming panels and programmable switch stations are connected with CAT5 to provide local control for smaller offices, conference rooms and multi-purpose rooms. Occupancy sensors and photocells are connected to the system to enhance the control strategy.



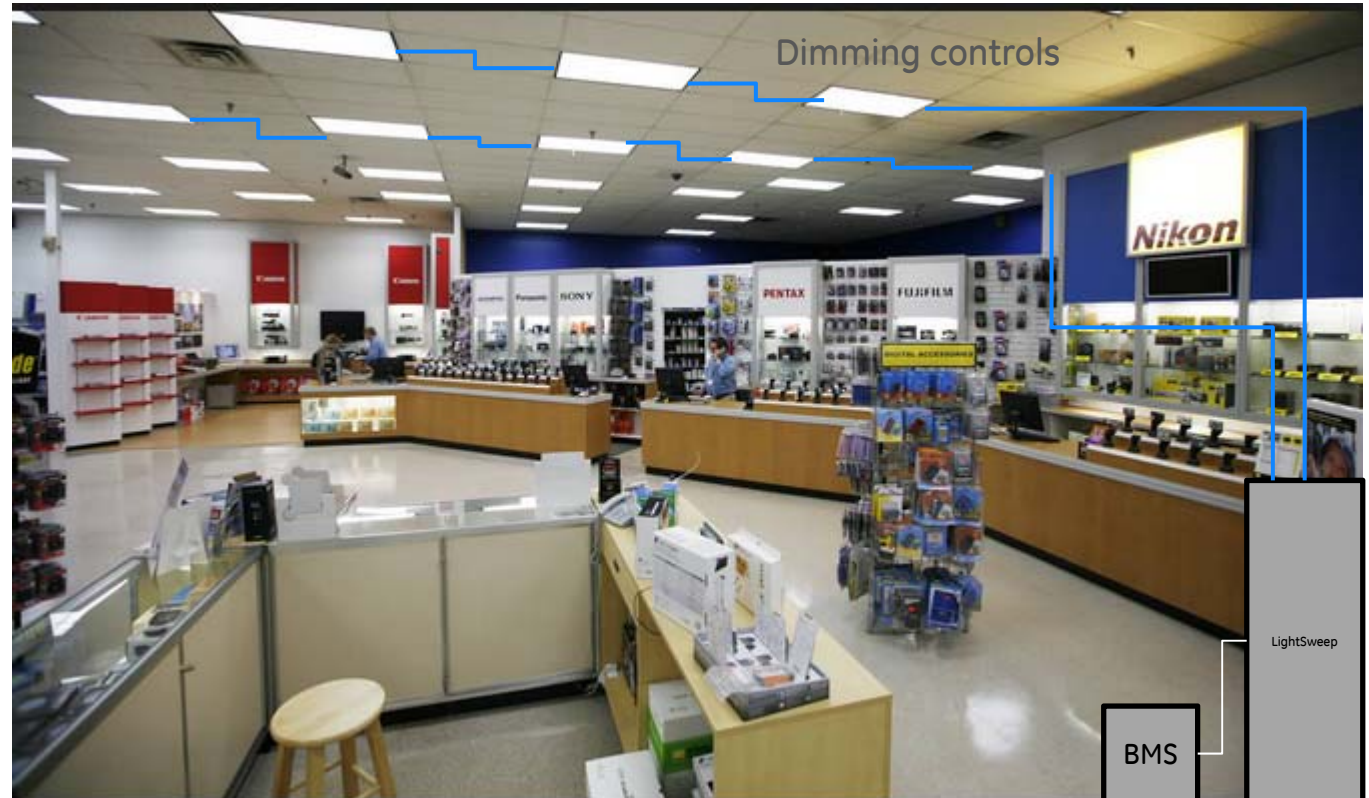
-  Large Relay panel – in electrical room
-  Small panels – CLCP06 – installed in office space
-  BACnet network – CAT5/CAT6 – between relay panels on different floors
-  CAN bus – CAT5/CAT6 – connecting switch stations dimming modules and small panels.



Retail Space

Retail Space Controls:

- Stand-alone or integrated with BMS:
- Relay for ON/OFF (open/close hours)
- 0-10V dimming:
 - 50% cleaning and re-stocking
 - 100% customer
 - 80% - Demand Response
- Integration with BMS using BACnet protocol



Industrial & Campus Applications

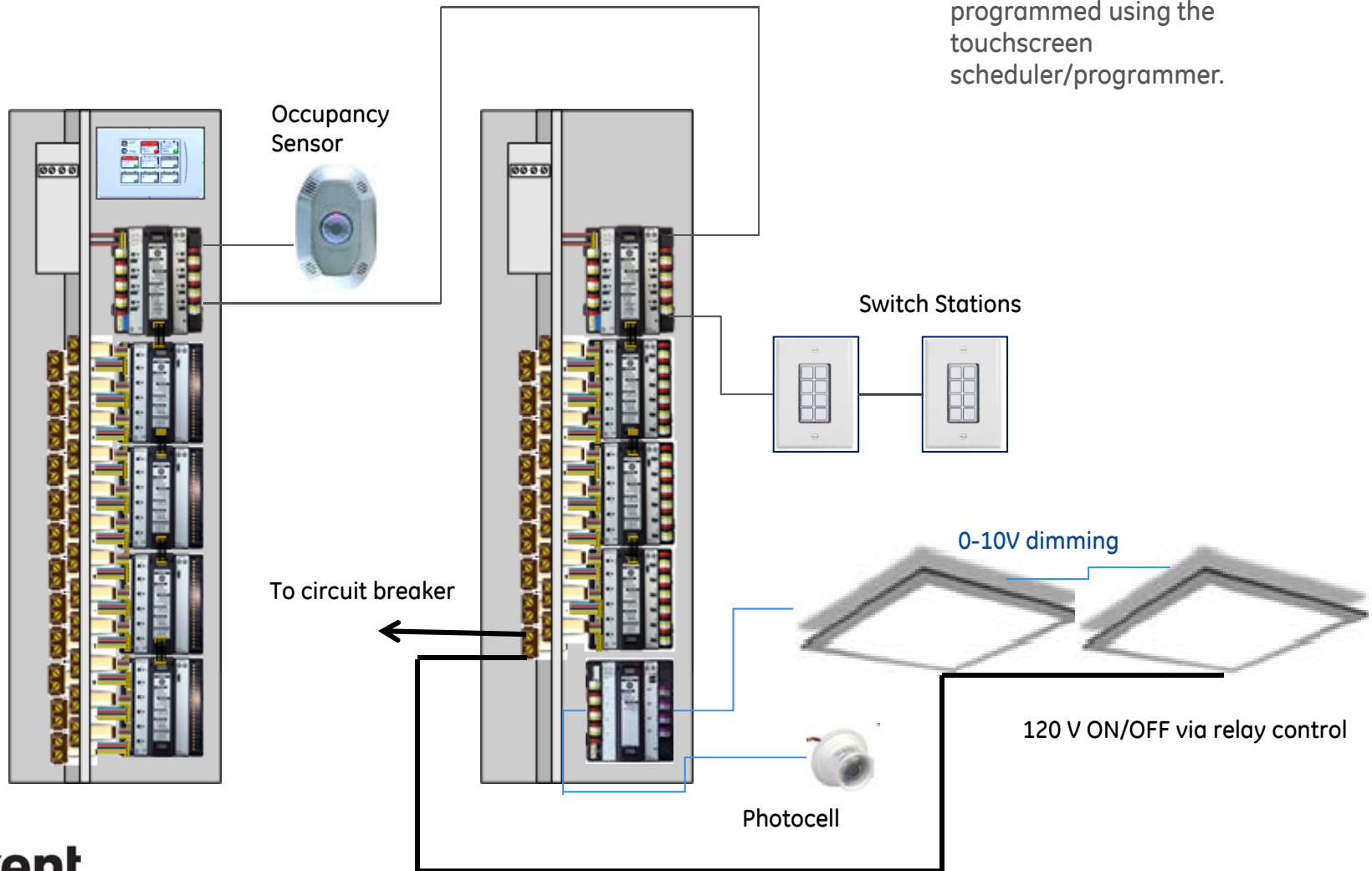
Industrial and campus applications are using BACnet UDP IP communication, which allows remote access and communication between panels using the IT network infrastructure.

Panels can be programmed to share information – for example an exterior photocell information can be shared to all panels controlling site lighting – and can operate without the need of a computer front-end. System integration to BMS provides increased energy savings.

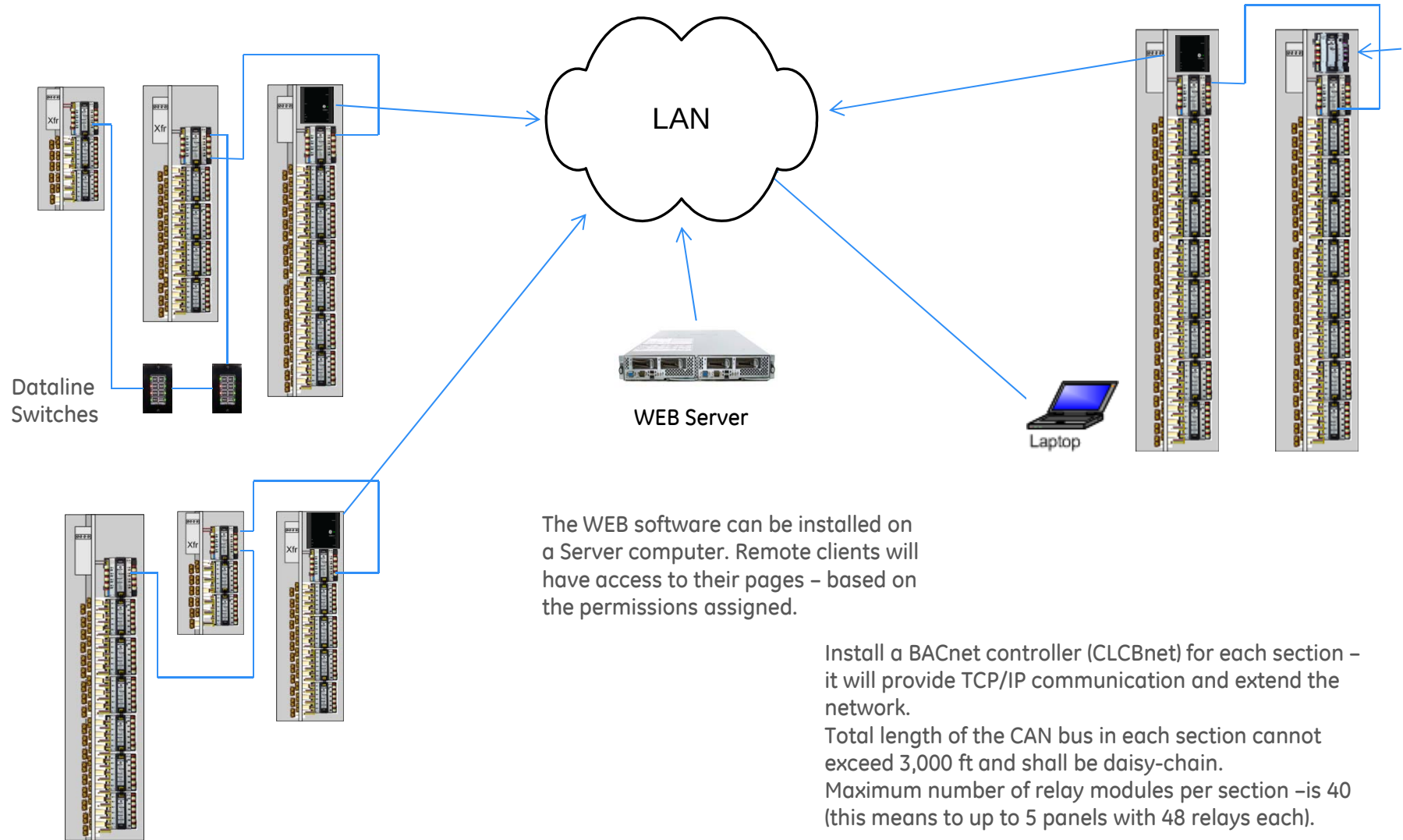


System Architecture – small to medium size, stand-alone

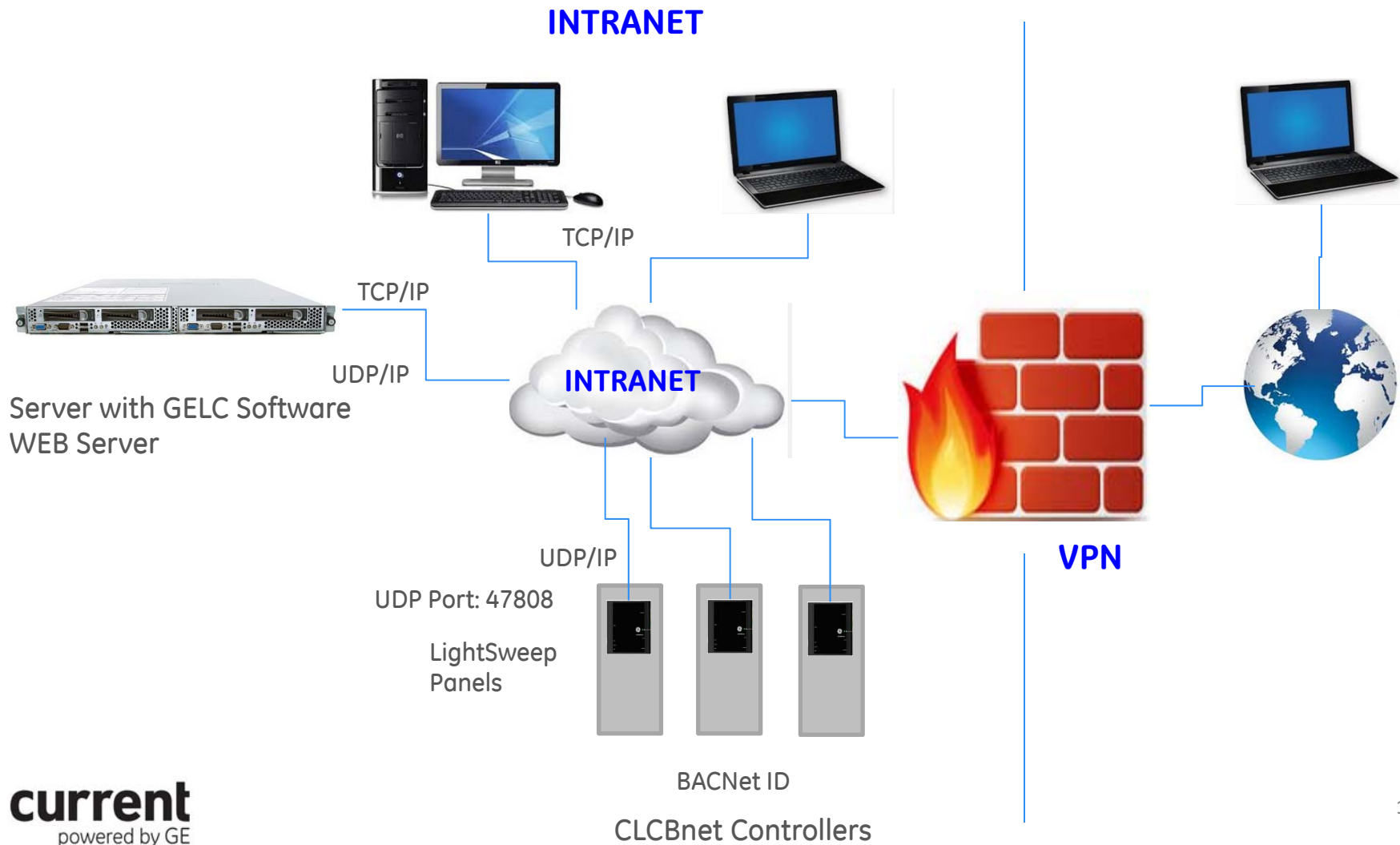
The lighting control system is programmed using the touchscreen scheduler/programmer.



System Architecture – large installation



Lighting Control IT Network Configuration



Services Provided by GE Team

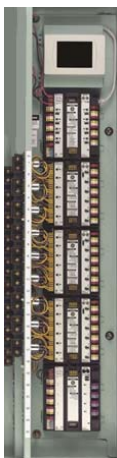
Roles and Responsibilities

- Provide Application Support
- Prepare Quotes and Submittal Drawings
- Document Job Specific O & M Manuals
- Provide Field Services
- Provide Software Services
- Conduct Training
 - Resources:
 - TLCsupport@ge.com
 - Phone: 877-584-2685

ORDERING



CLCXFRMV
or
CLCXFR347



INTR~~12~~-
INTR~~24~~-
INTR~~36~~-
INTR~~48~~-



CLCTUB~~12~~
CLCTUB~~24~~
CLCTUB~~36~~
CLCTUB~~48~~



CLCCOV~~12~~S
CLCCOV~~24~~S
CLCCOV~~36~~S
CLCCOV~~48~~S

Relay Panel

Interior Capacity	Installed Options					
	Switch Inputs	Number Relays	Power Module	BACnet	Dim*	Time-Clock
☐ INTR12 ☒ INTR24 ☐ INTR36 ☐ INTR48	☐ N - (no inputs) ☒ S - (inputs)	18 multiple of 6 to max of interior capacity	☒ G - (Group) ☐ P - (Injector) ☐ N/A*	☐ B	1 (No. mods)	☒ S

Part Number Example:

INTR24-S18-G01S

Dimming Panel

Interior Capacity	Installed Options		
	Dim*	BACnet*	
☐ INTD12 ☒ INTD24	5 (No. mods)	☐ B	☒ S

Part Number Example:

INTD24-000-005S

Panel Components

1

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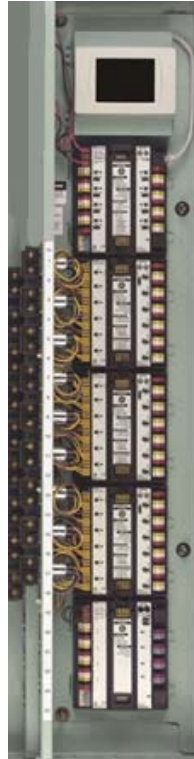
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CLCXFRMV
or
CLCXFR347

INTR**12**-
INTR**24**-
INTR**36**-
INTR**48**-

CLCTUB**12**
CLCTUB**24**
CLCTUB**36**
CLCTUB**48**

CLCCOV**12S**
CLCCOV**24S**
CLCCOV**36S**
CLCCOV**48S**

Interior Configuration – Relay Panel

Interior Capacity	Installed Options					
	Switch Inputs	Number Relays	Power Module	BACnet	Dim*	Time-Clock
☐ INTR12	☐ N – (no inputs)	18 multiple of 6 to max of interior capacity	☒ G – (Group)	☐ B	<u>1</u> (No. mods)	☒ S
☒ INTR24	☒ S – (inputs)		☐ P – (Injector)			
☐ INTR36			☐ N/A*			
☐ INTR48						

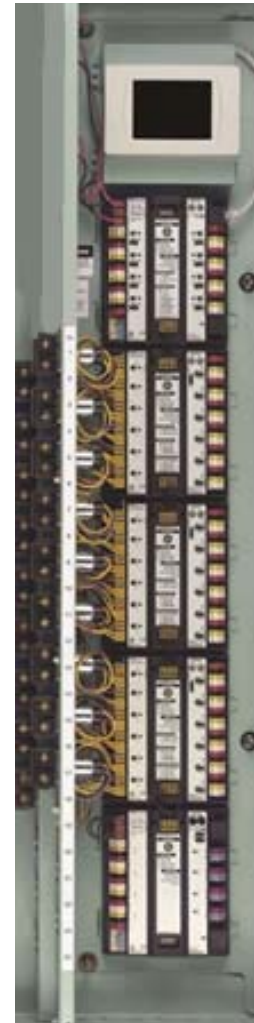
Part Number Example:

INTR24-S18-G01S

Relays

Touchscreen Display

LightSweep
Control Modules

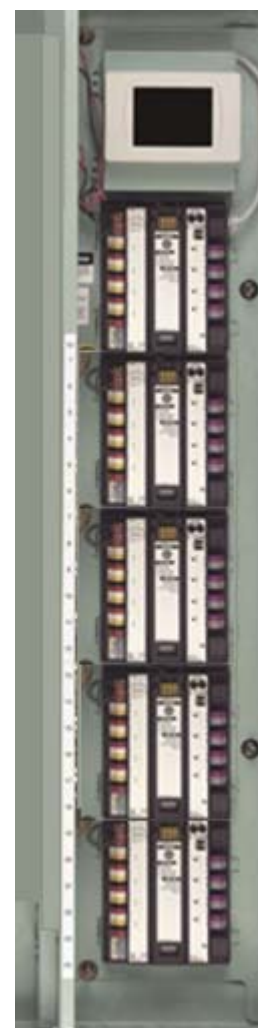


Interior Configuration – Dimming Panel

Interior Capacity	Installed Options		
	Dim*	BACnet*	
☐ INTD12 ☒ INTD24	<u>5</u> (No. mods)	☐ B	☒ S

Part Number Example:

INTD24-000-005S



Touchscreen Display



LightSweep
Dimming
Modules



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