



UNISON
ECHO[®]
Design Guide





Unison Echo Control System

The Unison Echo control system offers flexible, intelligent, and scalable control – simply.

Whether you want to turn lights on and off, need multiple presets, daylighting and occupancy controls for energy savings, or the ability to control hue, saturation and intensity of color-changing LED luminaires, Echo has a solution for you. Echo's intelligent sensors can easily control lighting output by harvesting daylight to deliver just the right amount of illumination in a room. Utilizing occupancy and vacancy sensor technology Echo can save energy and help buildings adhere to stringent energy codes. A topology free, two-wire infrastructure means it's easy to install anywhere and adhere to your budget.

Echo is a distributed control system, with each room capable of being independently controlled. But thanks to its advanced design it can also combine or divide spaces for presets control and integrate with third-party systems. Its interfaces ensure your system can accept and send commands for integration with campus-wide AV or building management systems.

Simple and powerful, Unison Echo ensures you get the most from a system with the least amount of hassle.

Zone and Room Controllers

Echo Zone Controllers respond to Echo Control Stations and Responsive Controls to provide relay or dimming functions for their local zones. The Room Controllers provide output for multiple circuits to meet the power control needs of an entire space or room, with added functionality for integration and timeclock control built in.



Relay Controller

Model numbers ERC and EDRC

- One or two independently controlled outputs
- 120-277V, 20A power input
- Half-inch knockout mount
- Fully rated 20A relay per output



Phase-Adaptive Dimmer

Model number ELVD

- Reverse- or forward-phase operation
- Dimming mode auto-detection with optional manual selection
- 120V and 277V versions
- Supports loads up to 600W
- One-watt minimum load
- Half-inch knockout mount



0-10V Controller

Model numbers ELD and EDLD

- One or two independently controlled outputs
- 0-10V output per relay for driver and ballast control
- 120-277V, 20A power input
- Half-inch knockout mount
- Fully rated 20A relay per output



Smart Space Controller

Model numbers ESSC and EDSSC

- One or two independently controlled outputs
- 0-10V output per relay for driver and ballast control
- 120-277V, 20A power input
- 24VDC output sensor power output
- Contact input for occupancy or photo sensor
- Half-inch knockout mount
- Fully rated 20A relay per output

Room Controller

Model number ERMCT

- Four- and eight-zone models available
- UL924 Listed with integrated Sense Feed
- Supports multiple control spaces in a single controller
- Independent 120V, 277V, emergency and plug-load control in a single controller
- 0-10V control and relay outputs
- Integral power supply for up to six stations and power/output controllers
- Optional integral TimeClock for timed events





Control Stations

Echo control stations provide preset recall, zone control, color control and system security, ensuring that lighting looks are stored and recalled only when they need to be. Using Echo's two-wire, topology-free technology, your Echo system is easier to set up than ever before.



Inspire® One-, Two-, Four-, Six- and Eight-Button Stations

Model numbers E1001, E1002, E1004, E1006, E1008

- One, two, four, six or eight buttons
- Easy-to-change, user-specific back-lit button legends with preset or zone control
- Space raise/lower control
- Zone or preset activation with raise/lower control
- Fastener-free faceplate attachment
- Cream, Gray, Black or White finish
- Optional space off/on button
- Optional Room-combine control



Inspire Four-Button Fader Station

Model number E1104

- Fader station with four selection buttons for preset and zone control
- Real-time hue, saturation and intensity control of LEDs (when used with the DMX Scene Controller)
- Easy-to-change, user-specific back-lit button legends
- Space raise/lower control
- Zone or preset activation with raise/lower control
- Fastener-free faceplate attachment
- Cream, Gray, Black or White Finish



Preset Stations

Model number EPS05 and EPS10

- Available in five- and ten-button options
- LED indicator per button
- Available in Cream, Gray, Black or White finish



TimeClock

Model number E-ATC

- Intuitive six-button interface
- Large backlit display
- Time-of-day and astronomical events
- Holiday and special-event override
- Support for up to 16 spaces



EchoTouch

Model number E-TS

- Touchscreen control interface
- Color Control, color tuning, zone, preset, and sequence control
- Supports EchoConnect, DMX/RDM and sACN protocols
- Discovery, addressing, and mode selection of RDM fixtures
- Available with Cream, Gray, Black, or White Bezel



Responsive Controls

Echo Responsive Controls are the pinnacle of energy-saving technology. By automatically assessing the light level or occupancy status of a room, artificial lighting can then be reduced, saving you money and power while maintaining the right level of illumination.



Ceiling- and Wall-mount Dual Tech Occupancy/Vacancy Sensor

Model number E-DOC and E-DVAC

- Passive Infrared and Acoustic Detection technologies
- Occupancy and Vacancy detection options
- Ceiling-mount, small-room, large-room and high-ceiling options available. Wall-mount wide and narrow coverage available
- Thirty-second grace timer
- Walk test function for PIR and acoustic coverage
- Supports small motion detection up to 45ft
- Up to 2,000-square-foot coverage
- Available in Black and White finishes
- Meets ASHRE 90.1 and CA Title 20/24



Switch-mount Dual Tech Occupancy Sensor

Model number E-DOC-SM

- Passive Infrared and Acoustic Detection technologies
- One- and two-button options available
- Thirty-second grace timer
- Walk test function for PIR and acoustic coverage
- Supports small motion detection up to 45ft
- Cream, Gray, Black or White finish
- Meets ASHRE 90.1 and CA Title 20/24



Ceiling-mount PIR Occupancy and Vacancy Sensor

Model number EOCC and EVAC

- Occupancy and Vacancy sensor options
- Small-room, large-room and high-ceiling options available
- Passive Infrared (PIR) detection
- Thirty-second grace timer
- Walk test function
- Available in Black or White
- Meets ASHRE 90.1 and CA Title 20/24



Light Sensor

Model number ELS

The Echo Light Sensor automatically adjusts light levels to your target lux level and even supports two-sensor averaging, making it ideal for indoor, outdoor, and atrium use.

- Single-head option for indoor, outdoor and atrium settings (0-6500 lux)
- Remote head-mounting option
- Built-in target lux configuration
- Two-sensor averaging for ideal light levels in a light-changing environment
- Available in Black or White



Control Interfaces

Echo interfaces expand the control capabilities of your Echo Control system allowing Echo control systems to grow and interact with other ETC and Echoflex products, as well as integrate with third-party systems.



EchoAccess®

Model number EACC

- Enables configuration of connected Echo devices
- Activate, deactivate and record presets
- Set light levels or combine spaces remotely
- Wall-mountable Bluetooth® interface with sleek design or WiFi connection using the Echo Expansion Bridge
- Bluetooth interface utilizes EchoConnect® control network



Echo Expansion Bridge

Model number EEB

- Combines up to four Echo subnets for up to 64 control and output devices
- Integrates with Paradigm® systems, providing building-wide system integration
- Connects to Wi-Fi via network for use with EchoAccess mobile app
- Utilizes EchoConnect control network plus 24VDC power



DMX Scene Controller

Model number EDMXC

- Uses DMX-snapshot technology or EchoAccess to capture lighting presets
- Easy-to-use remote programming
- Controls hue, saturation and intensity for multi-address DMX luminaires
- Supports up to 32 presets
- Dynamic Color Picker available with EchoAccess mobile app
- Utilizes EchoConnect control network plus 24VDC power



Echo Echoflex Interface

Model number EEI

- Provides 4 inputs and 4 outputs for interface with Echoflex wireless devices within radio range
- Built-in 902 MHz EnOcean wireless radio
- Utilizes EchoConnect control network plus 24VDC power



Contact Interfaces

Model numbers ECII and ECOI

- Available with 4 inputs or 4 outputs
- Inputs accept wet or dry contacts
- Inputs support momentary or maintained closures (per input)
- Output Interface provides triggers for third-party systems
- Outputs support normally open or normally closed operation (per output)
- Programmable through EchoAccess mobile app
- Utilizes EchoConnect control network plus 24VDC power input



Demand Response Interface

Model number EDRI

- Accepts Demand Response closure to reduce total load during times of peak demand
- Shares Demand Response status across the Echo control network
- Utilizes EchoConnect control network plus 24VDC power



BACnet Interface

Model number EBI

- Allows Echo Control System integration with building management systems
- Supports BACnet IP for simple Ethernet based integration
- Utilizes EchoConnect control network plus 24VDC power

Power Infrastructure

Echo's power infrastructure components give users power control solutions for every lighting application. Panels allow for the separation of circuits into multiple spaces for independent control within each room, while supporting Ethernet uplinks to larger systems for building control and reporting.



Echo Relay Panel Mains Feed

Model number ERP-MF

The Echo Relay Panel Mains Feed features relay and line dimming control, switching with integral breakers, and options for low-voltage control. Its built-in power supply supports up to six stations and power controllers.

- Supports 10A, 15A or 20A breakers
- 28 circuit panel with support for 24 relays/dimmers and 4 hot circuits
- 20A mechanically held air-gap relays
- Optional 300-watt dimmer available per circuit
- Optional 0-10V or DALI output
- Optional network interface
- Astronomical and Real-time clock



Echo Relay Panel Feedthrough

Model number ERP-FT

The Echo Relay Panel Feedthrough offers creative power distribution for all load types with relay switching for multiple voltages in a single panel. Its built-in power supply supports up to six stations and power controllers.

- 120V and 277V power control
- Up to 48 relay outputs
- Optional 0-10V or DALI output
- Astronomical and Real-time clock



DRd Power Control (with Echo Control)

Model number DRd

DRd features modular dimming and switching with optional network interface cards and low-voltage control. Its optional power supply supports up to 16 stations and up to 15 external power-control devices.

- Up to 48 circuits of dimming and relays
- 5A or 20A circuits for relay and dimming controls
- 120V or 277V panels available



Sensor IQ Intelligent Breaker Panel

Model number SensorIQ

The Sensor IQ Intelligent Breaker Panel is a mains-fed power panel that provides switching, 0-10V dimming, and DALI control for stage and houselight systems.

- Relay control for one-, two- and three-pole circuits
- Supports 15- and 30-amp breakers
- 12, 24 or 48 circuits panel options
- Direct connection for up to six Zone and Room Controllers and six Inspire Stations or Responsive Controls
- 120V or 277V options available
- Astronomical and Real-time clock

Station Power Supplies

Model number E-SPM, E-SPS and E-APS

The EchoConnect Station Power Supply provides EchoConnect power for stations, responsive controls and power controllers. The EchoConnect Station Power Supplies come in a variety of mounting options and form factors, making them ideal for healthcare facilities, office buildings, retail locations, houses of worship, schools, and more.

- Up to 1640 feet of control wiring
- Supports up to 16 power controllers or power panels
- Supports up to 16 stations or responsive controls
- Multiple form factors and mounting options available
- Optional 24vDC auxiliary power output





Exceptional lighting for brilliant classrooms

Just like the best teachers, ETC's Unison Echo lighting control system is intelligent, friendly and flexible. Echo's intelligent sensors and controls automate any system and allow compliance with stringent energy codes, helping schools save energy and money. A wide variety of stations and interfaces means Echo is friendly to every level of user and budget. And Echo is also flexible enough to handle any configuration or installation, with local control and integration options.

Advanced Placement

Echo Inspire stations can be installed anywhere they're needed in a classroom. A single button by the door can activate all the lights while a larger station with multiple presets is ready for use at the instructor's desk. Additional stations at the back of the room can also support necessary functions for presentations and flexible use.

Echo plays well with others

Echo Contact Interfaces mean your lighting system can easily integrate with the AV or building management system. The Contact Input Interface accepts triggers from external sources to change the lighting while the Contact Output Interface provides seamless integration with third-party management solutions.

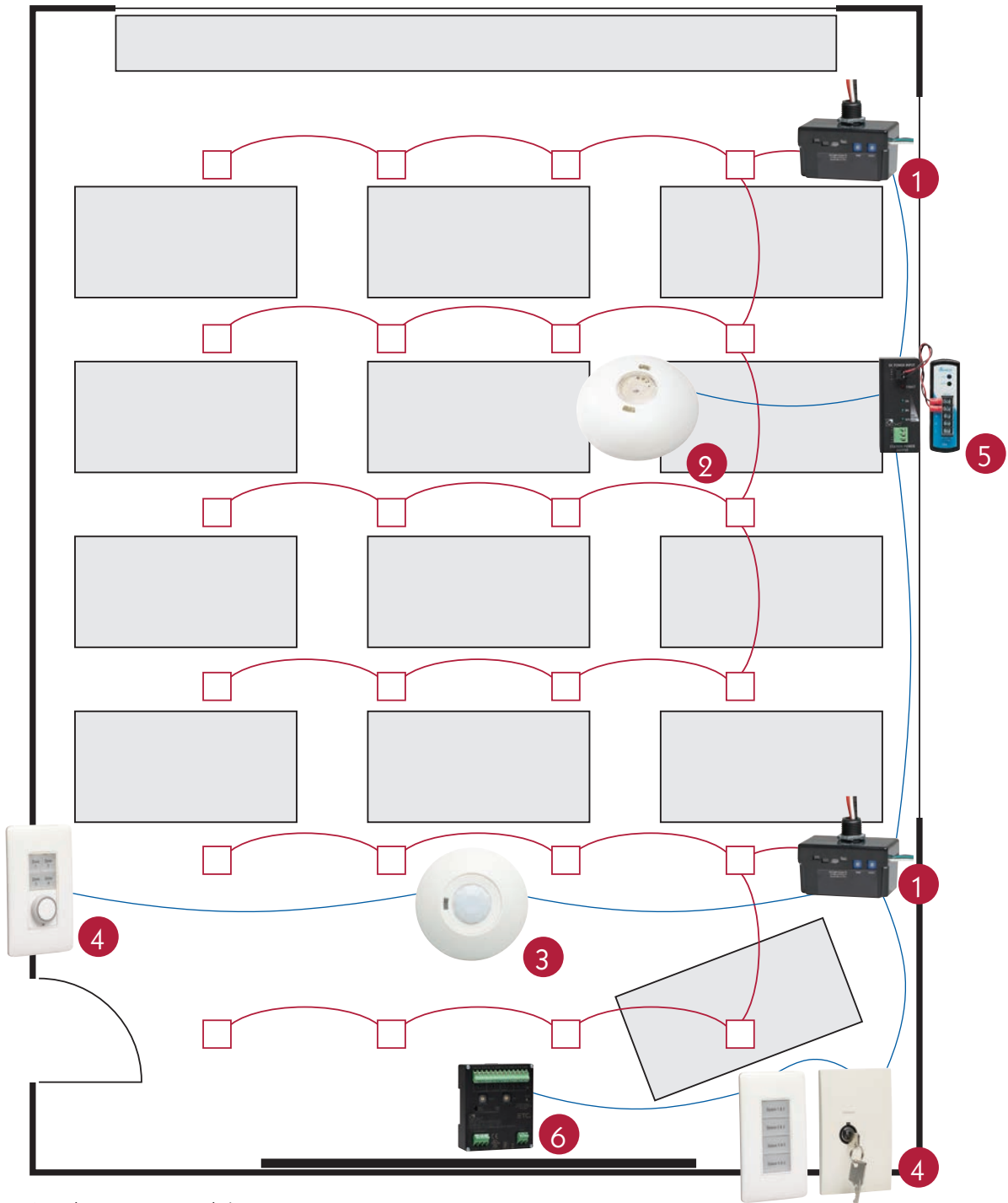
Easy energy calculus

The Echo system turns schools green with its suite of advanced sensors. The Echo Light Sensor monitors natural sunlight and adjusts the output of the electric lighting accordingly, reducing power usage. Echo Dual Tech and passive infrared Occupancy and Vacancy Sensors can be installed in spaces that remain empty for periods of time throughout the day, ensuring that the lights are running only when the area is in use.

Individual Attention

Echo's Astronomical and Real-time clock can activate recorded presets in one or more spaces, allowing an Echo Power Control System to be divided into smaller groups for classroom by classroom control – and even a variety of looks within a single classroom. Individual control still allows the lighting to be adjusted as required without affecting other areas.

- 1 Echo Zone Controllers**
Can divide spaces into zones to control areas of light separately or all together
- 2 Echo Light Sensor**
Harvests natural light and reduces electric lighting to save energy
- 3 Echo Dual Tech Occupancy/Vacancy Sensor**
Couples passive infrared (PIR) detection with acoustic detection to automatically turn lights on when a room is in use and switch them off when a space is empty.
- 4 Inspire Control Stations**
Sleek button and fader stations that can be located anywhere for convenient lighting control
- 5 EchoConnect**
A configuration- and topology- free network that includes data and power on a single pair of wires to deliver distributed lighting intelligence
- 6 Echo Contact Interfaces**
Simple integration with external systems allowing Echo to respond to external triggers, and generate triggers for integration with AV- and campus-wide control and monitoring systems



* See classroom control riser on page 12



Sophisticated controls for office buildings

Sound business and environmental sense

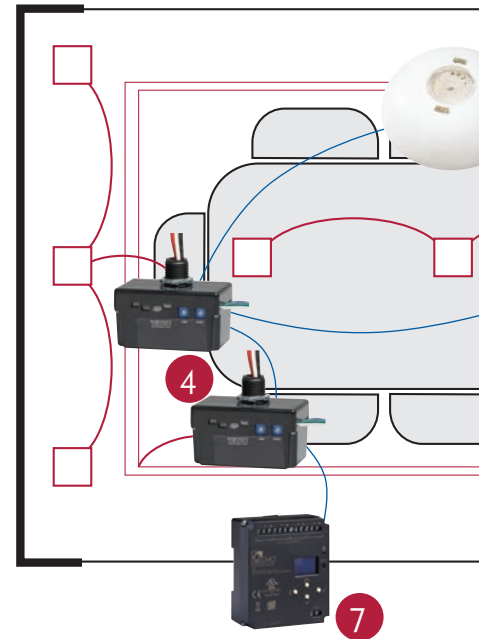
Every aspect of the Echo control system is tuned to create the ideal illumination environment while conserving resources and reducing costs. Echo Power Control Systems allow users to schedule designated on/off times using an Astronomical and Real-time clock with fully configurable holiday and special event overrides, all of which means lights are only on when users want them to be. Echo Dual Tech and Passive Infrared Occupancy and Vacancy Sensors cut down on wasted energy by turning lights on when a space is in use and off when it's empty. When the system is installed in daylit spaces the Light Sensor will detect natural light and adjust luminaire output accordingly, making sure a space isn't over- or under-lit. Unison Echo products help office buildings meet changing energy codes, including ASHRE 90.1, CA Title 20/24 and IECC standards.

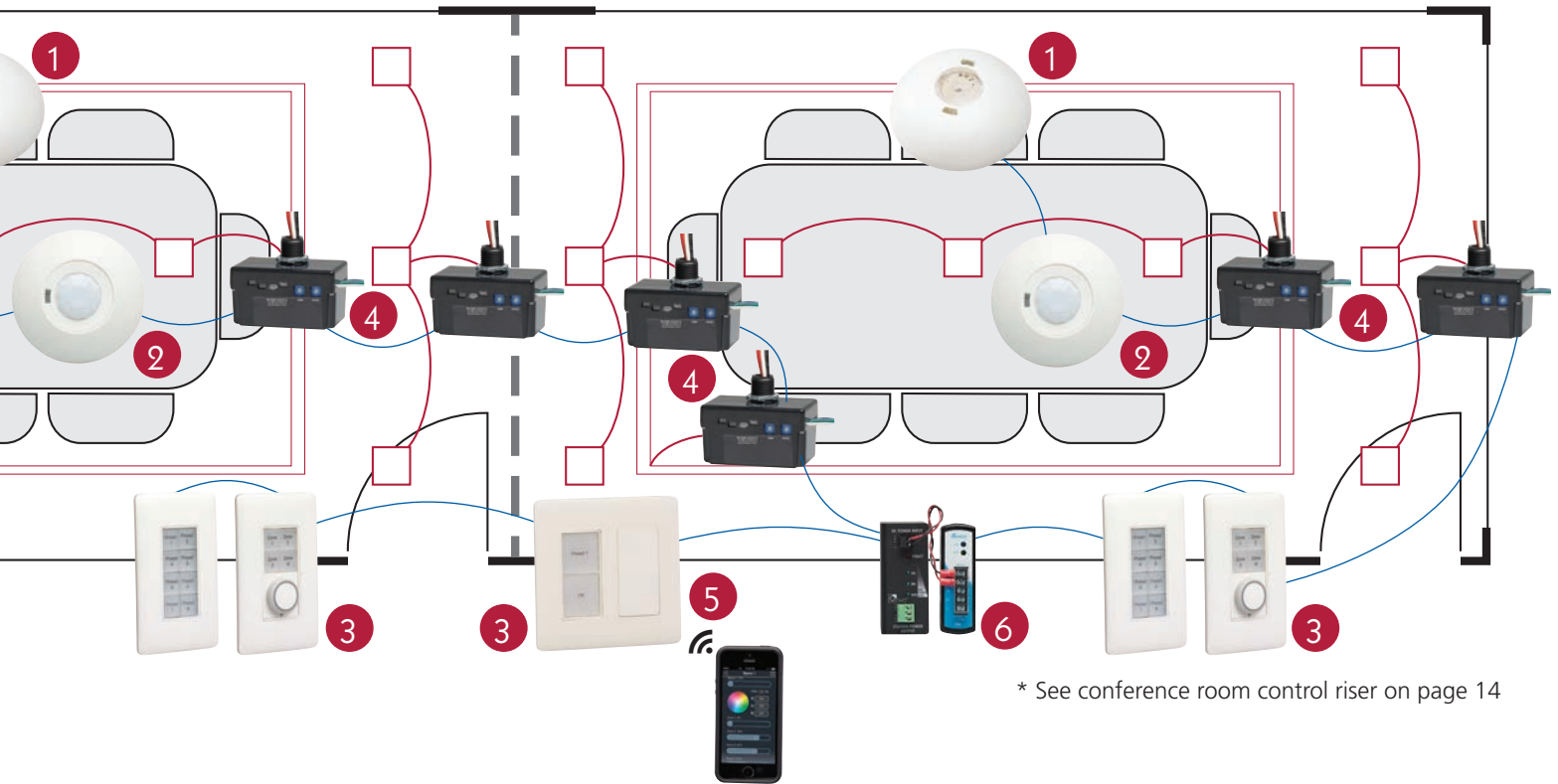
Breakout spaces

With the Inspire stations, customized controls are simple to create. The Inspire stations are available with various button quantities, faceplate color options, and user-designated button labels. Easy programming lets users create individualized presets with different looks available at the press of a button. ETC's EchoAccess app lets users remotely control and configure Echo control systems via Bluetooth from any iOS or Android device.

Echo expands with your business

Since the Echo control system is adaptable, adjustments can be made at any time, allowing button station relocation, preset reprogramming, and power controls to be reconfigured to match changes in layouts. New spaces aren't a problem either, since new offices and areas can be added to the Echo control system without interrupting lighting in the rest of the building. The Echo Expansion Bridge expands systems even further with support for up to 64 stations or sensors and 64 power controllers, creating larger, more robust Echo control systems.

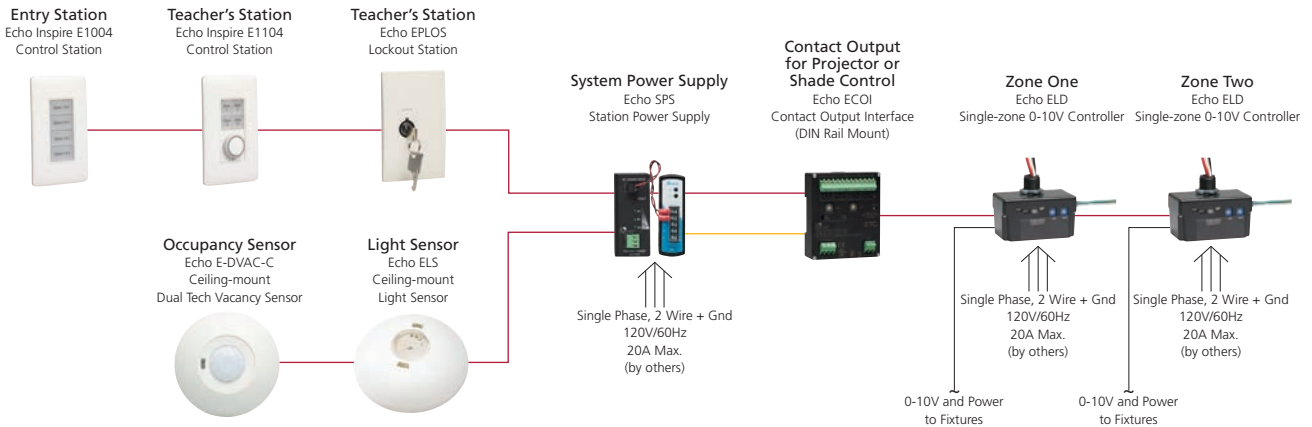




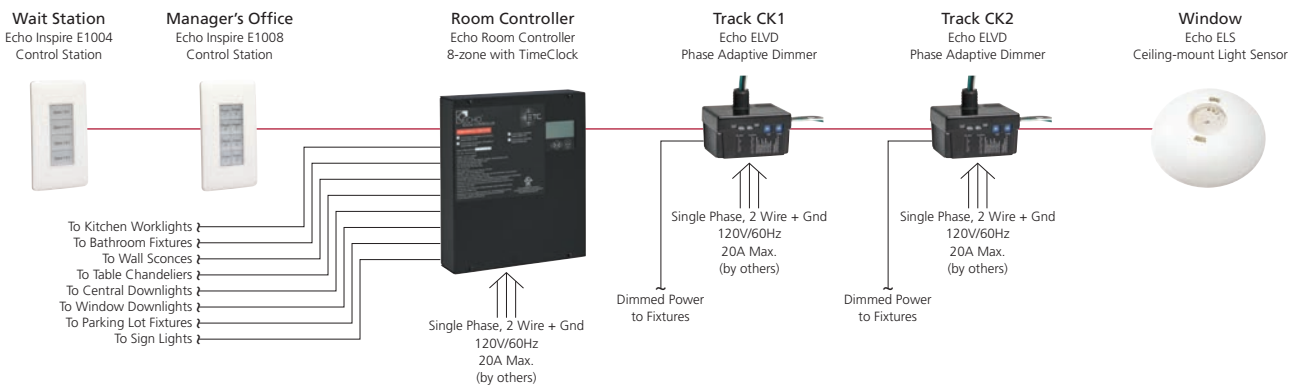
* See conference room control riser on page 14

- 1 Echo Light Sensor**
Harvests natural light and reduces electric lighting sources to save energy
- 2 Echo Dual Tech Occupancy/Vacancy Sensor**
Couples passive infrared (PIR) detection with acoustic detection to automatically turn lights on when a room is in use and switch them off when a space is empty.
- 3 Inspire Control Stations**
Sleek button and fader stations that can be located anywhere for convenient lighting control
- 4 Echo Zone Controller**
One or two relays with optional 0-10V dimming output
- 5 EchoAccess**
Provides remote control and configuration of any Echo system via iOS and Android smartphones and tablets with varying levels of password protection and access
- 6 EchoConnect**
A configuration- and topology- free network that includes data and power on a single pair of wires to deliver distributed lighting intelligence
- 7 Echo Expansion Bridge**
Supports up to 64 Echo stations and sensors within a single Echo control system. Allows for communication with a Paradigm lighting control systems for building-wide control

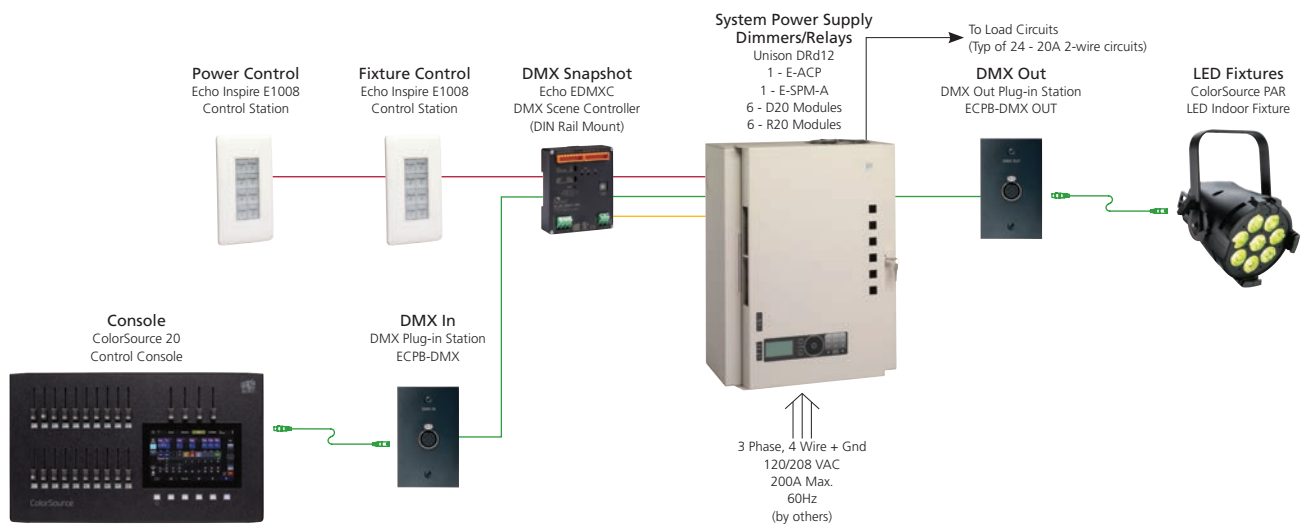
Classroom



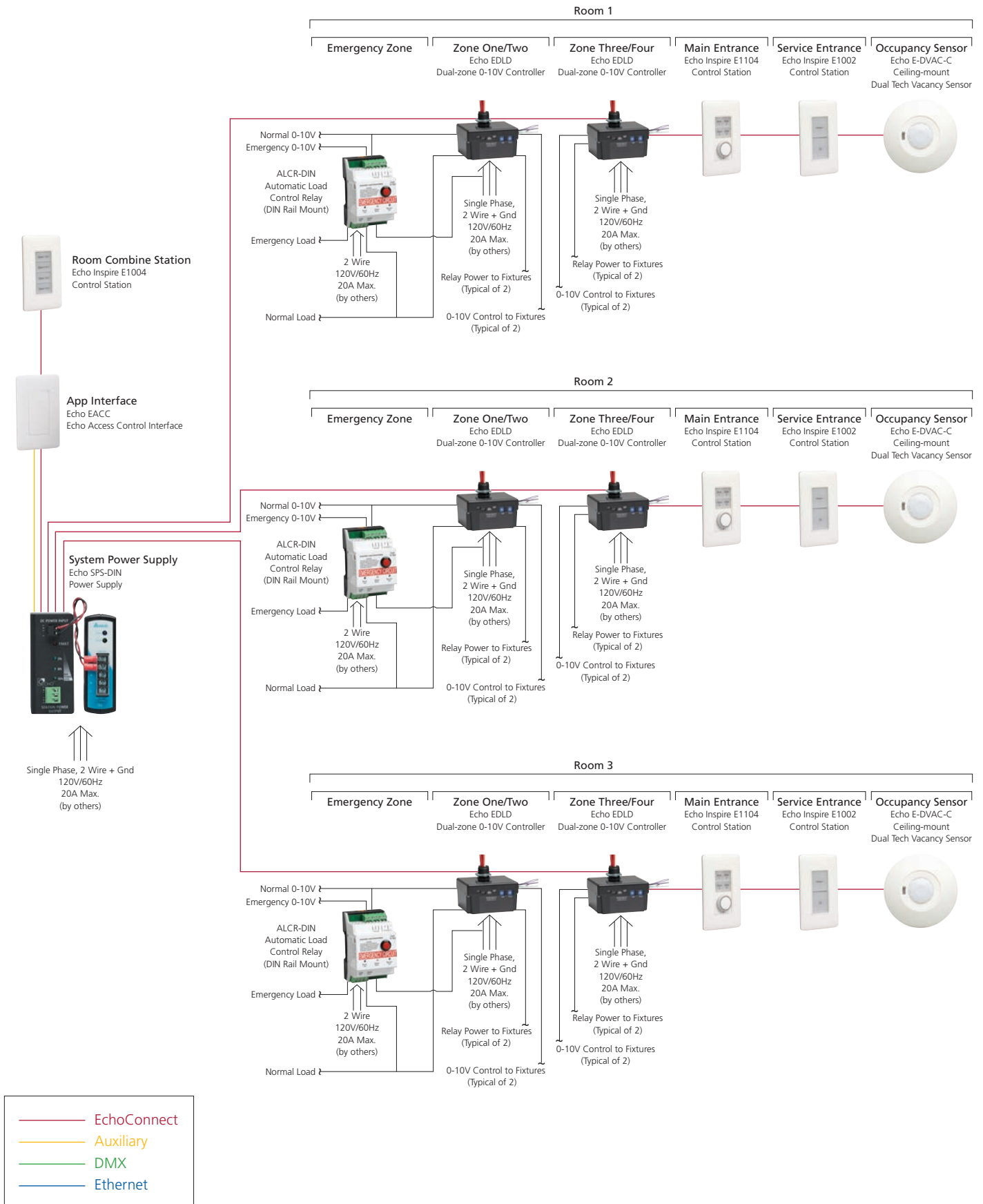
Restaurant



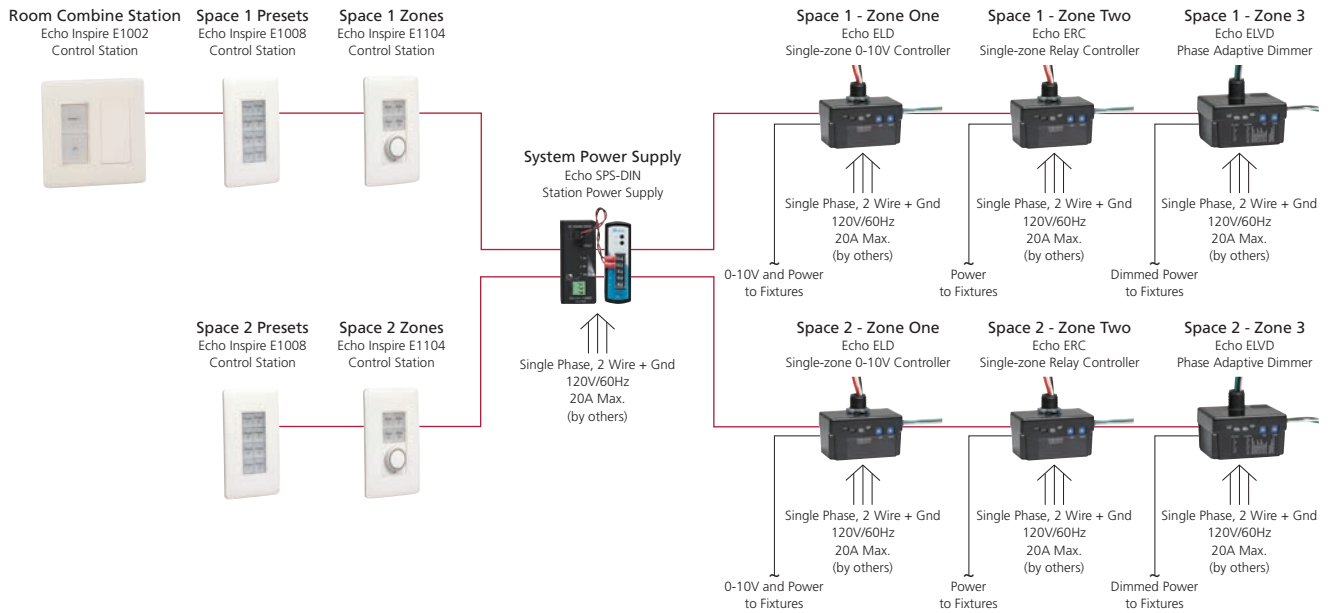
Small Church



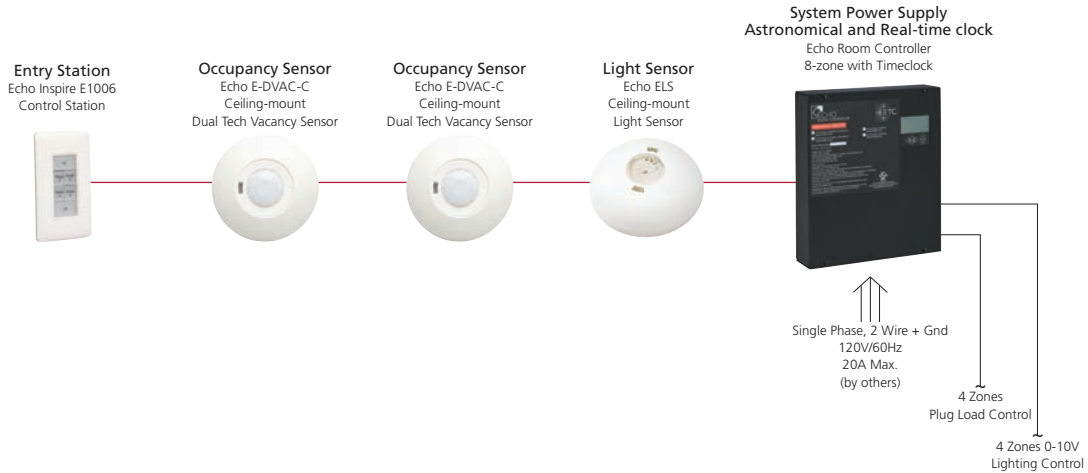
Ballroom



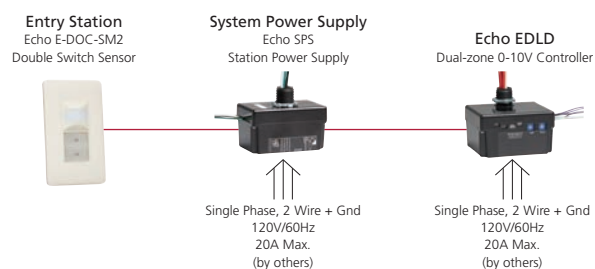
Conference Room



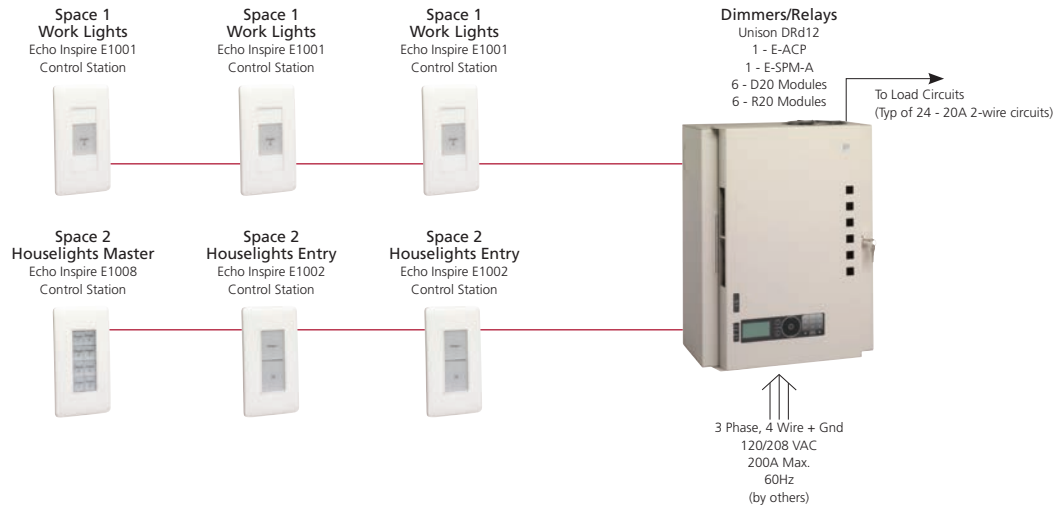
Open Office Space



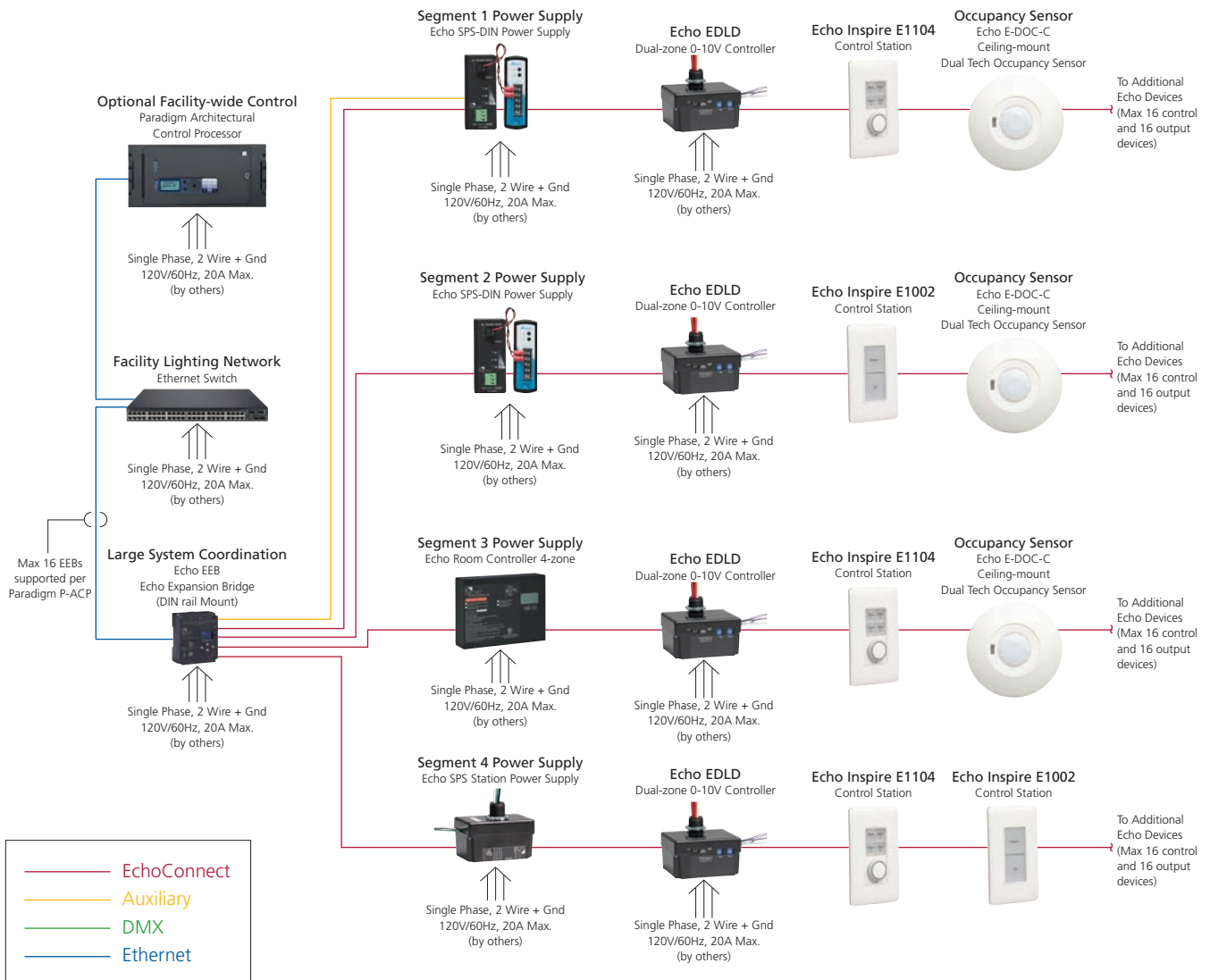
Private Office (no windows)



Small Theater



Integrated System



Echo Frequently Asked Questions

The Echo system is simple and powerful—but can still require a bit of guidance. If you're ready to start putting your system together, head online to www.etcconnect.com/EchoCalculator. There you'll be able to download an interactive PDF that will guide you through your equipment choices, and check your work to be sure you have a compatible system. To help you out more, here are some of the frequently asked questions we get about putting together an Echo system, along with their answers.

Q: EchoConnect power supplies are measured in "U"s. What's a "U"?

A: A "U" is a unit of power measurement. A unit counts as one control product and one output product. For example, a 6U power supply would power 6 control products and 6 output products.

Q: When should I use a 6U vs. a 16U power supply?

A: If you have more than 6 control products (stations, sensors, access, etc.) or more than 6 output products (zone controllers, panels, DMX Scene, etc.) you will need a 16U power supply.

Q: When do I need Aux power?

A: If you have a TimeClock, EchoAccess, DMX Scene Controller, Echo-Echoflex Interface, Echo Contact Interface, or Echo Expansion Bridge you need an Aux power unit.

Q: Do I have to use ETC's EchoConnect Station Power Supplies?

A: Yes. An EchoConnect power supply is required in all Echo systems.

Q: Do I have to use ETC's 24V Aux for auxiliary power?

A: No. Any 24 volt power supply will work. It is not required to be provided by ETC but it is required by the products.

Q: What does it mean that EchoAccess is a bonus power-wise?

A: The first EchoAccess in a system does not count against your power supply count. So you can have 7 stations on a 6U power supply if one is an EchoAccess station.

Q: Can I use more than one power supply?

A: No. Only one power supply may be used at a time. Output products that also have power supplies in them have the option to have the power supply turned off.

Q: What if I need more than 16 stations?

A: Add an Echo Expansion Bridge! That will give you a new max of 64U. But remember, you'll still need power supplies to account for all the products.



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