# Part 1. Wireless Phase Adaptive Dimmer

* 1. WIRELESS CONTROLLER
     1. Phase Dimmer
        1. The Lighting Controller shall be either Echoflex model ER6CD-xU or ER12CD-xU Series Phase Adaptive Dimmer by Echoflex Solutions Inc., or approved equal
        2. Mechanical
           1. The Controller shall mount to a ½” electrical junction box knock-out using the threaded nipple and retaining nut
           2. The Controller shall have learn and clear buttons for manual linking of stations and sensors

The buttons shall be accessible when the Controller is mounted

* + - * 1. The Controller shall have two LED indicators to display power/operational mode and linked status.
        2. The Controller shall be UL2043 plenum rated
      1. Electrical
         1. The Controller shall be available as a 600W, 120 VAC, 60Hz model or as 1200W, 120 or 277 VAC, 60 Hz models.
         2. The Controller shall provide fully rated line voltage dimming power of:

600W at 120 VAC

1200W at 120 or 277 VAC

* + - * 1. The Controller shall support forward or reverse phase dimming for tungsten, 2 wire fluorescent ballasts, line voltage LED, electronic low-voltage transformer, or magnetic low-voltage transformer loads (120 VAC only)
        2. The Controller shall use a 902 MHz EnOcean radio. Systems that use other radio frequencies shall not be acceptable
        3. The internal radio shall have a range of at least 80 feet (24 m) in commercial office spaces (typical), up to 330 feet (100 m) line-of-sight
        4. The Controller shall be ETL listed, conform to UL 508, and certified to CAN/CSA Standard 22.2 #14
        5. The Controller shall comply with FCC Part 15.231 and IC RSS-210
      1. Functional
         1. The Controller shall provide line voltage dimming control for an individual light fixture or lighting zone
         2. The Controller shall have the ability to sense forward or reverse phase loads and adjust automatically. Controllers that require manual or software means of changing the dimming phase are not acceptable

The Controller shall provide the option of locking the output phase control into forward phase or reverse phase

##### The Controller shall support wireless Echoflex switches and sensors for dimming control

###### The Controller shall support linking of at least 20 wireless devices in any combination of Echoflex stations, sensors, interfaces, or gateways. Systems that do not support at least 20 remote devices shall not be acceptable

##### The Controller shall provide the option of single or dual-hop wireless signal repeating to other controllers. Systems that do not provide signal repeating shall not be acceptable

##### The Controller shall support Central Command functions for use with integrated control systems

* + - * 1. The Controller shall support Demand Response commands that provide a temporary ceiling to the maximum dimming output level
        2. The Controller shall store values for a minimum of 15 Presets

Presets shall include a ramp time and output value

* + - * 1. The Controller shall support Preset Command messages

Supported Preset commands shall include: Preset Teach, Preset Activate, Zone Raise/Lower Start, Zone Raise/Lower End, Zone Set Output Level, Preset Record, Lockout, and Zone Mask Set

* + - * 1. The Controller shall support a minimum of 24 Groups defined by a group mask

If a Preset Command transmitting device is linked to the Controller and the message includes a group mask shared with the Controller, the Controller will respond to the command

* + - * 1. The Controller shall support commissioning and linking through software and/or mechanical means. Controllers that do not support both shall not be acceptable
        2. The Controller shall provide configuration variables that allow customization of the controller’s operation with linked sensors, switches, interfaces, and gateways
        3. The Controller shall provide the option of reporting operational status wirelessly
        4. The Controller shall save all configuration settings and linked device details in non-volatile memory

The Controller shall provide the option of saving user-defined configuration settings and linked devices as recoverable default settings

* + - * 1. The Controller shall provide the option of resetting to factory defaults

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