SECTION 26 09 43
Network Lighting Controls

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PART 1 - GENERAL

Specifier: Part 1 to be completed by specifier.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide products of **Crestron Electronics, Inc., Rockleigh, NJ 07647**, Phone (800)237-2041, Fax: (201)767-1903.

2.2 DIMMING MODULES:

Specifier: Edit the following paragraph to reflect module being specified.
CLX-2DIM8 - 8 Channel Dimmer Module, 2 Feeds
CLX-1DIM8 - 8 Channel Dimmer Module, Single Feed
CLX-1DIM4 - 4 Channel Dimmer Module, Single Feed
CLX-2DIM2 - 2 Channel Dimmer Module, 2 Feeds

1. Basis of Design Product: **Crestron Dimming Module, model CLX-2DIM8**
2. Module provides 8 channels of dimming for the following load types:
    a. Incandescent
    b. Magnetic low-voltage
    c. Neon/cold cathode
    d. Dimmable 2-wire fluorescent loads
3. Module provides air-gap relays on every channel output.
    a. Channels may be operated in relay switch mode.
4. Module includes a daisy-chainable bus connection port:
    a. Complete Integration: Single cable integration with Central Automation Controller and Building Management System.
    b. Lighting control modules, control keypads and control processors utilize the same control bus and may be daisy chained.
    c. Lighting control system and AV control system utilize the same primary communication protocol.

d. Communication protocol adaptors or translation interfaces between AV control system and lighting control system will not be accepted.

5. Module includes override interconnect port which activates instant preset channel output levels while pins are shorted.

2.3 ELECTRONIC DIMMING MODULES:

1. Basis of Design Product: **Crestron Dimming Module, model CLX-1DELV4**
2. Module provides 4 channels of dimming for the following load types:

   a. Electronic low-voltage.
   b. Incandescent loads.

3. Each channel is rated for 1200 Watts, with a total module rating of 1920 Watts.

4. Module provides air-gap relays on every channel output.

   a. Channels may be operated in relay switch mode.

5. Module includes a daisy-chainable bus connection port:

   a. Complete Integration: Single cable integration with Central Automation Controller and Building Management System.
   b. Lighting control modules, control keypads and control processors utilize the same control bus and may be daisy chained.
   c. Lighting control system and AV control system utilize the same primary communication protocol.
   d. Communication protocol adaptors or translation interfaces between AV control system and lighting control system will not be accepted.

6. Module includes override interconnect port which activates instant preset channel output levels while pins are shorted.

2.4 SWITCHING MODULES:

1. Basis of Design Product: **Crestron High Inrush Switching Module, model CLX-4HSW4**
2. Module provides 4 channels of switching for the following load types:

   a. High-inrush
   b. HID lighting
   c. Fluorescent ballasts
   d. Incandescent
   e. Low-Voltage
   f. Neon/cold cathode lighting

3. Module provides air-gap relays on every channel output.

   a. Each channel is rated for 16 Amps

4. Module includes a daisy-chainable bus connection port:

a. Complete Integration: Single cable integration with Central Automation Controller and Building Management System.
b. Lighting control modules, control keypads and control processors utilize the same control bus and may be daisy chained.
c. Lighting control system and AV control system utilize the same primary communication protocol.
d. Communication protocol adaptors or translation interfaces between AV control system and lighting control system will not be accepted.

5. Module includes override interconnect port which activates instant preset channel output levels while pins are shorted.

2.5 FAN CONTROL MODULE:

1. Basis of Design Product: **Crestron Fan Speed Control Module, model CLX-1FAN4**
2. Module provides 4 channels of capacitive-type speed control for ceiling fan motors.

a. Each channel provides 4 preset speed settings and off.

3. Module provides air-gap relays on every channel output.

a. Each channel rated for 2 Amps, with a total module rating of 8 Amps.

4. Module includes a daisy-chainable bus connection port:

a. Complete Integration: Single cable integration with Central Automation Controller and Building Management System.
b. Lighting control modules, control keypads and control processors utilize the same control bus and may be daisy chained.
c. Lighting control system and AV control system utilize the same primary communication protocol.
d. Communication protocol adaptors or translation interfaces between AV control system and lighting control system will not be accepted.

5. Module includes override interconnect port which activates instant preset channel output levels while pins are shorted.

2.6 MOTOR CONTROL MODULE:

1. Basis of Design Product: **Crestron Motor Control Module, model CLX-1MC4**
2. Module provides control of up to 4 bidirectional motors.

a. Each channel is rated for 10 Amps, with a total module rating of 16 Amps.

3. Module includes a daisy-chainable bus connection port:

a. Complete Integration: Single cable integration with Central Automation Controller and Building Management System.
b. Lighting control modules, control keypads and control processors utilize the same control bus and may be daisy chained.
c. Lighting control system and AV control system utilize the same primary communication protocol.

d. Communication protocol adaptors or translation interfaces between AV control system and lighting control system will not be accepted.

4. Module includes override interconnect port which activates instant preset channel output levels while pins are shorted.

2.7 MODULE ACCESSORIES

A. Terminal Blocks –

1. All modules terminations are made using a DIN rail termination blocks.

Specifier: Edit the following paragraph to reflect termination blocks for modules specified above.

CLT-2DIM8 termination block for model CLX-2DIM8
CLT-1DIM8 termination block for model CLX-1DIM8
CLT-1DIM4 termination block for model CLX-1DIM4
CLT-2DIM2 termination block for model CLX-2DIM2
CLT-1DELV4 termination block for model CLX-1DELV4
CLT-4HSW4 termination block for model CLX-4HSW4
CLT-1MC4 termination block for model CLX-1MC4

2. Electrical bypass jumpers on each terminal facilitate testing of each circuit and protect the module during installation.

B. Module Enclosures –

Specifier: Enclosures to be specified according to number of modules in system and location conditions.

CAEN-2X1 Enclosure, 2 modules high x 1 module wide
CAEN-4X1 Enclosure, 4 modules high x 1 module wide
CAEN-4X2 Enclosure, 4 modules high x 2 module wide
CAEN-7X1 Enclosure, 7 modules high x 1 module wide
CAEN-7X2 Enclosure, 7 modules high x 2 module wide

1. Enclosures are available in an assortment of sizes,

2. Enclosures may be surface or flush wall mounted.

2.8 CENTRAL SIGNAL PROCESSOR

A. Control Processor: Network connected dual bus programmable control processor for low voltage controls, devices, and subsystems through multiple control interfaces. SNMP support, with built-in firewall, NAT, and router. 4-wire bus providing 24 VDC power to network devices, with two independent sensing inputs. In separate enclosure.

1. Basis of Design: **Crestron Professional Automation Control System Model PAC2**.

2.9 CONDUCTORS AND CABLING

A. Power Supply Side of Remote-Control Power Sources: Comply with requirements of Division 26 Section "Low-Voltage Electrical Power Conductors."

B. UTP Cable: 100-ohm, UTP. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444 and NFPA 70 for the following types:

1. Communications Control Cable, Non-Plenum Rated: 22 AWG data pair stranded bare copper, and 18 AWG power pair stranded bare copper, Type CM.

    a. Basis of Design Product: **Crestron CRESNET-NP**.

2. Communications Control Cable, Plenum Rated: 22 AWG data pair, stranded bare copper and 18 AWG power pair, stranded bare copper, Type CMP, complying with NFPA 262.

    a. Basis of Design Product: **Crestron CRESNET-P**.

3. Communications High-Power Control Cable, Non-Plenum Rated: 22 AWG stranded bare copper data pair, and 12 AWG stranded bare copper power pair, Type CM.

    a. Basis of Design Product: **Crestron CRESNET-HP-NP**.

PART 3 - EXECUTION

Specifier: Part 3 to be completed by specifier.