

IMPORTANT SAFEGUARDS
READ AND FOLLOW ALL SAFETY INSTRUCTIONS

PRECAUTIONS

When using electrical equipment, basic safety precautions should always be followed including the following:

Read and understand all instructions before beginning installation.

NOTICE: For installation by a licensed electrician in accordance with National and/or Local Electrical Codes and the provided following instructions.

CAUTION: RISK OF ELECTRICAL SHOCK. Turn power off at service panel before beginning installation of device. Never wire energized electrical components.

Disconnect switch or a circuit breaker must be provided and marked as the disconnecting device.

Disconnect switch / circuit breaker must be within reach of operator.

CAUTION: USE COPPER CONDUCTOR ONLY.

Confirm device ratings are suitable for application prior to installation. Use of device in applications beyond its specified ratings or in applications other than its intended use may cause an unsafe condition and will void manufacturer's warranty.

NOTICE: DO NOT INSTALL IF PRODUCT APPEARS TO BE DAMAGED.

NOTICE: Do not use outdoors.

NOTICE: Do not mount near gas or electric heaters.

NOTICE: Do not use this equipment for other than its intended use.

SAVE THESE INSTRUCTIONS AND PROVIDE TO OWNER AFTER INSTALLATION IS COMPLETED

DESCRIPTION

Hubbell Control Solutions' NXRCFX Room Controller is a self-contained intelligent power pack. The NXRCFX contains one or two independently controlled outputs and one or two independently controlled 0-10VDC dimming channels for dimmable ballasts or LED drivers. The NXRCFX also features two dedicated zone segment buses (FX Bus) optimized for use with NX enabled in-fixture devices and digital sensors. Two additional SmartPORTS™ are also provided for plug and play support of NX occupancy sensors, daylight sensors, wall stations and accessory devices. The NXRCFX Room Controller can operate in either stand alone or networked applications with other NX room control or network devices.

SPECIFICATIONS

MOUNTING

- Mounts directly to an external junction box through an extended 1/2" chase nipple

ELECTRICAL

Input:

- 120/277/347VAC, 20A Max, 50/60 Hz
- Single feed connection regardless of one or two relays

Output¹:

- 20A, Tungsten, 120VAC only
- 20A, Magnetic Ballast
- 16A, Electronic Ballast
- 1 H.P. Motor @120V, 3/4 H.P. @277V; 1/2 H.P.@347V

Low Voltage Ports:

- Class 2
- 24VDC, 250mA MAX (all outputs combined)
- RS485 digital communication

ELECTRICAL (CONTINUED)

Standby Power (W):

- 120VAC: 1.2W
- 277VAC: 1.5W
- 347VAC: 1.5W

Dimming

- Class 2/Class 1
- Installation as Class 1 requires 600 volt insulation on dimming conductors sharing a conduit with line voltage conductors

Power Metering²:

- NXRC devices are factory calibrated to provide power metering accuracy of +/- 5% (Rating assumes standard load within specified voltage and temperature rating for NXRC; all values provided in Watts)¹

OPERATING ENVIRONMENT

- Operating temperature: 32° to 104°F (0° to 40°C)
- Relative humidity (non-condensing): 0% to 95%

CERTIFICATIONS

- Conforms with UL916 and Certified to CAN/CSA C22.2 No. 205-M1983
- IC Approved
- Title 24 compliance

WARRANTY

- 5 year limited warranty
- See [HCS Standard Warranty](#) for additional information

¹ For (2) relay models the maximum combined output of both relays: 20A
² Power metering only available with NXRC2-1RD-UNV and NXRC2-2RD-UNV options)

INSTALLATION

NOTICE: DO NOT DISCARD THE INCLUDED MAC ADDRESS LABELS AFFIXED TO THE DEVICE. THESE WILL BE REQUIRED LATER FOR COMMISSIONING. (SEE STEP (5) BELOW)

1. Turn power off at the service panel before beginning installation.

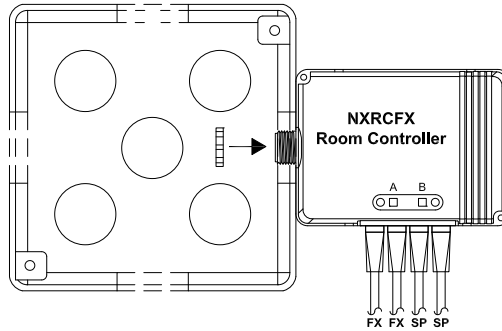


FIGURE 1: NXRCFX ROOM CONTROLLER MOUNTED TO 4x4 Junction Box

2. Mount the Room Controller to the outside of a 1/2" knockout in a 4" square or larger steel electrical junction box using the Room Controller's extended 1/2" chase nipple. Secure to the junction box using the enclosed EMT lock nut. (See Figure 1 below for reference)
3. Following the applicable wiring diagram provided in Figure 2, connect wires to line voltage feed, neutral, and corresponding loads.

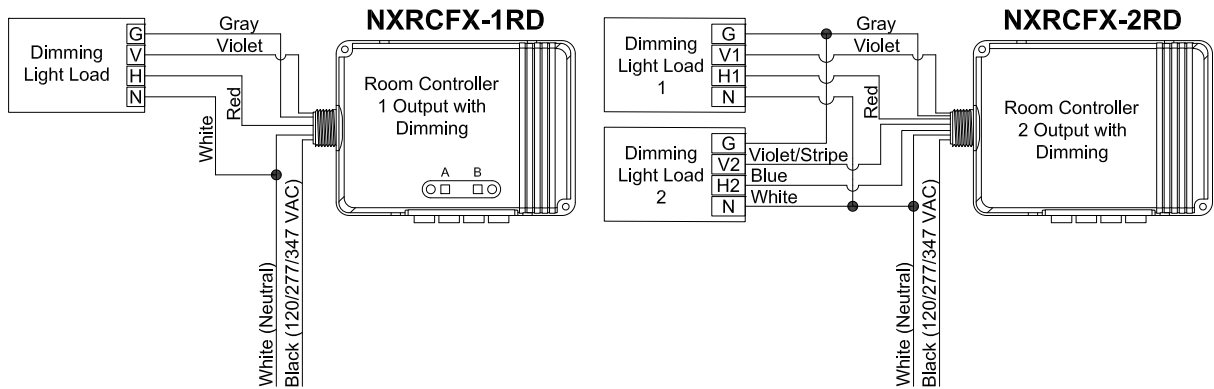


FIGURE 2: NXRCFX ROOM CONTROLLER WIRING DIAGRAM

4. If applicable for dimming loads, connect low voltage violet and gray dimming wires to 0-10VDC dimming ballast or LED driver. NOTE: 0-10VDC Wires have 600V rated insulation
5. Remove the MAC address labels affixed to the outside of the unit. Place the provided MAC address label(s) in a log book and record the location of the Room Controller with the circuit(s) it controls. The MAC address will be needed later during the system setup process
6. If NX control devices (e.g. occupancy sensors, daylight sensors, or wall stations) are going to be utilized connect them using a CAT5 device cable to one of the two ports labeled SmartPORT (SP). If using digital NX SMP sensors these devices can be connected, or daisy chained to either a FX Bus Port or SmartPORT (SP).
7. If connecting multiple Room Controllers or NX enabled luminaires together all connections must be made utilizing one of the two FX ports provided on the device. Up to 32 NX Room Controllers or NX enabled luminaires can be connected per zone segment utilizing the FX ports.
8. Once wiring is complete reapply power at the service panel.

TESTING INSTALLATION

Operational function of the NXRCFX Room Controller can be tested utilizing the push-buttons located on the back of the housing. This allows for manual control of the device in order to verify that both dimming and switched outputs are correctly wired. The push-button sequences are outlined below for manual test operation.

1. To turn ON and OFF Load A (Red Wire) momentarily press Button A to toggle Load A.
2. To turn ON and OFF Load B (Blue Wire) momentarily press Button B to toggle Load B.
3. To Dim Load A, with Load A ON, press and hold Button A to dim down Load A. Release Button A then again press and hold Button A to dim up Load A.
4. To Dim Load B, with Load B ON, press and hold Button B to dim down Load B. Release Button B then again press and hold Button B to dim up Load B.

OPERATION GUIDE

The NX Room Controller is designed to control and manage lighting with a single room or zone in a building. Working in conjunction with an occupancy sensor(s), daylight sensor, and wall station(s) the room controller intelligently responds to inputs to perform the required lighting control sequence of operation. The room controller operates with the connected control devices as a stand-alone local control system or can be extended to participate in a building-wide networked lighting control system with the addition of the NXHNB2 Network Bridge Module.

CONNECTING MULTIPLE ROOM CONTROLLERS

The NXRCFX Room Controllers can be inter-connected to expand the number of relays and dimmers in a zone segment or to allow the use of more than one input voltage. Utilizing standard CAT5 patch cables, the room controllers can be connected in a daisy chain configuration using the FX ports. (See Figure 3 below) The FX ports are dedicated ports for other FX bus enabled devices such as NX enabled luminaires or digital devices (e.g. NXSMP sensors or NXSW wall stations). The SP ports are reserved for the connection of room control devices such as wall switch stations, sensors, and accessory devices. Do not exceed a maximum of 32 NXRCFX Room Controllers, NX enabled luminaires, and/or NXSMP digital sensors.

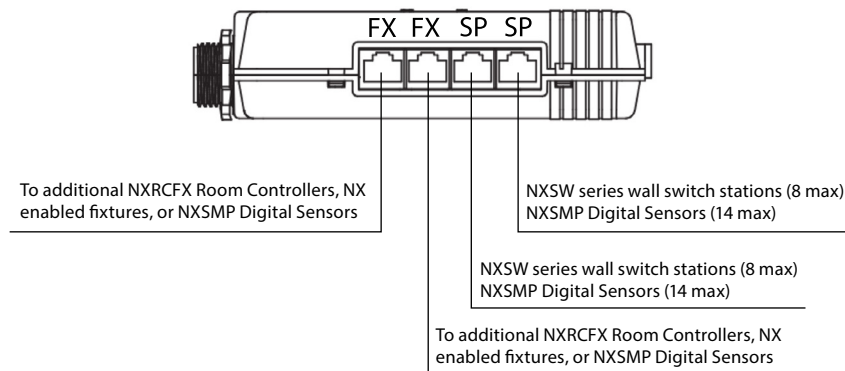


FIGURE 3: CONNECTING ADDITIONAL ROOM CONTROLLERS OR DEVICES TO THE NXRCFX

CONNECTING LOW VOLTAGE CONTROL DEVICES

The NXRCFX Room Controller provides a source of 24VDC current to power connected control devices such as wall stations and sensors. A maximum of 250mA of 24VDC current is available to power connected devices. Each input device consumes different amounts of current depending on its function. To simplify the calculation for power that is either supplied or consumed by a NX device the NX system utilizes Power Budget Units (PBU). PBUs are a pre-calculated value assigned to every SmartPORT device. This allows for a quick determination of power requirements without the need for lengthy calculations. The NXRCFX can supply a max of +30 PBUs. The below table provides PBUs by device.

NX Devices	PBUs Consumed by Device
NX Switch Station	-1
NX SimpleTouch	-15
NXDS Analog Daylight Sensor	-1
NXOS Analog PIR Only Occupancy Sensor	-1
NXOS Analog Dual Technology Occupancy Sensor	-3
NXSMP Digital Occupancy & Daylight Sensors	-3
NXRM Radio Module	-15
NX Audio Visual Module	-1
NX Single Contact Closure Module Input	-1
NX Single Contact Closure Module Output	-3

TABLE 1: POWER BUDGET UNIT CONSUMPTION BY DEVICE

72-00655

DIGITAL SMART SENSOR MODULES

NXSMP Digital Smart Sensors can be connected to both FX and SP ports. Utilizing the FX ports a maximum of 32 NXSMP Digital Sensors, NXRCFX Room Controllers and/or NX enabled luminaires can be connected in a daisy chain fashion using the FX ports. NXSMP Digital Sensors can also be placed on the SP ports but are limited up to 14 sensors per room controller.

LEGACY OCCUPANCY SENSORS

The NXRCFX Room Controller is compatible with any low voltage Hubbell Control Solutions vacancy/occupancy sensor that uses the red/black/blue control wires. A low voltage wiring adaptor (RJ45ADAPTOR) is required to make the wiring transition from leads on the sensor to the RJ45 SmartPORT on the room controller. Hubbell Control Solutions sensors ordered under the NXOS series model numbers are supplied with the RJ45 adaptor included. Legacy Occupancy Sensors can be connected to either of the SP ports located on the room controller. (See Figure 3)

DIGITAL SWITCH STATIONS

The NX Digital Wall Stations (NXSW) can be connected to the SP ports located on the room controller. (See Figure 4) When connecting NX Wall Stations do not exceed eight switches per SP port. Once connected, NX Wall Stations automatically configure to control all loads and provide basic control. NX Wall Stations can be further configured or customized through the use of the controlHUBB mobile application or the NXAC Area Controller user interface. For additional information on NX Wall Station functions please refer to the NX Wall Station Guide.

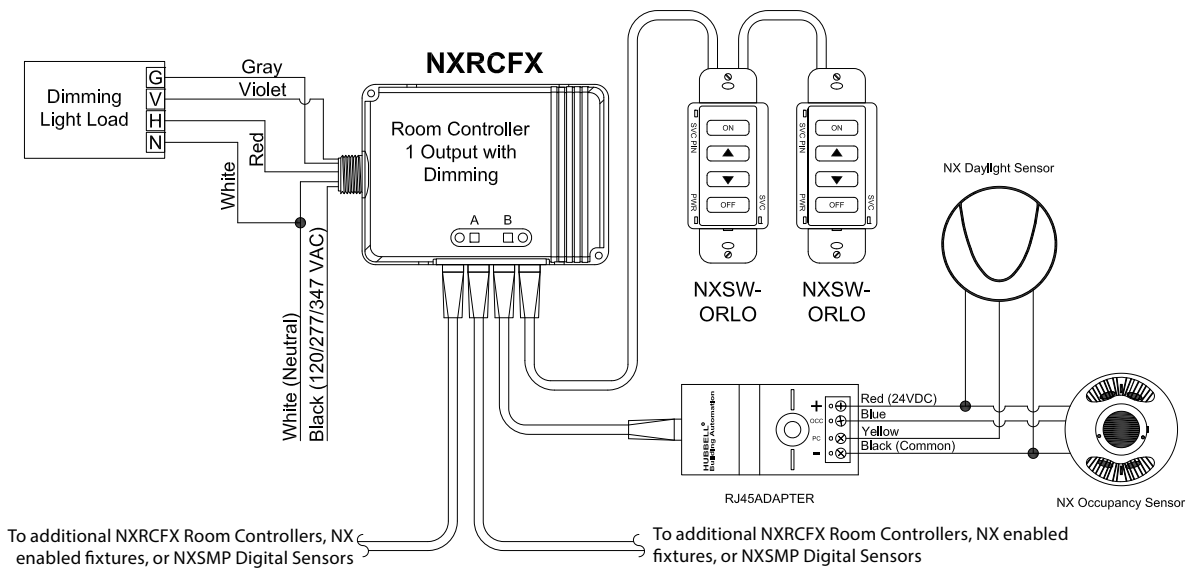


FIGURE 4: CONNECTING NX DEVICES TO THE NXRCFX ROOM CONTROLLER

LEGACY DAYLIGHT SENSOR

The NXDS open loop daylight sensor can be connected to either SP port using the supplied RJ45 adaptor. (See Figure 4) The model NXDS daylight sensor will self-configure to control Load A (Red Switched Wire and Violet Dimming Wire) in Test Mode. The NXDS will become active 30 seconds after the load has been turned on. While the unit is in Test Mode, the photocell operation can be verified by observing Load A while simultaneously covering the NXDS or exposing the photocell to bright light. The above process will confirm that the NXDS a NXRCFX are functioning properly. The NXDS must be calibrated in order to meet project specific requirements. Configuration of the NXDS can be performed utilizing the controlHUBB mobile application or NXAC area controller interface.

RESETTING THE ROOM CONTROLLER TO FACTORY DEFAULT SETTINGS

Should you wish to erase all manual configuration and restore the room controller to its factory default settings, perform the following step:

Simultaneously press and hold buttons A and B on the room controller. After a few seconds, LED A and B will begin alternately blink. Continue to hold buttons A and B until the blink pattern changes to a double blink pattern. Release buttons A and B. When the blinking stops, all loads will turn on indicating the room controller has been reset to factory default settings. After a reset, the room will auto configure based on the connected devices.

Tip: If the installation has more than one room controller connected together in the room, the reset process done on any one of the room controllers will reset all of the room controllers.