

LCR 6200 Load Control Receiver

Customer Service: 1-800-815-2258

Instructional Leaflet

This instructional leaflet contains general installation information for the LCR 6200 Load Control Receiver. The LCR 6200 is used to control remote electric loads and is activated by commands sent through the SelectComm™ and ZigBee communication modules.

No special test equipment or programming is required to install the LCR 6200 in the field.

The LCR 6200 addressing must be configured for your demand response system prior to operation.



CAUTION: Observe precautions for handling electrostatic sensitive devices.

MISE EN GARDE: Respectez les précautions de manipulation des dispositifs à décharge électrostatique.





SAFETY FOR LIFE



Cooper Power Systems™ products meet or exceed all applicable industry standards relating to product safety. We actively promote safe practices in the use and maintenance of our products through our service literature, instructional training programs, and the continuous efforts of all Cooper Power Systems employees involved in product design, manufacture, marketing, and service.

We strongly urge that you always follow all locally approved safety procedures and safety instructions when working around high voltage lines and equipment and support our "Safety For Life" mission.

SAFETY INFORMATION

The instructions in this document are not intended as a substitute for proper training or adequate experience in the safe operation of the equipment described. Only competent technicians, who are familiar with this equipment should install, operate, and service it.

A competent technician has these qualifications:

- *Is thoroughly familiar with these instructions.*
- *Is trained in industry-accepted high and low-voltage safe operating practices and procedures.*
- *Is trained and authorized to energize, de-energize, clear, and ground power distribution equipment.*
- *Is trained in the care and use of protective equipment such as flash clothing, safety glasses, face shield, hard hat, rubber gloves, hot stick, etc.*

Following is important safety information. For safe installation and operation of this equipment, be sure to read and understand all cautions and warnings.

Hazard Statement Definitions

This document may contain four types of hazard statements:



DANGER: Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury or equipment damage.



CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in equipment damage only.

Safety Instructions

Following are general danger and warning statements that apply to PLC equipment. Additional statements, related to specific tasks and procedures, are located throughout the document.



DANGER: Hazardous voltage. Contact with hazardous voltage will cause death or severe personal injury. Follow all locally approved safety procedures when working around high and low-voltage lines and equipment.

G103.3



DANGER: Before installing, operating, maintaining, or testing this equipment, carefully read and understand the contents of this document. Improper operation, handling, or maintenance can result in death, severe personal injury, and equipment damage.

G101.0



DANGER: This equipment is not intended to protect human life. Follow all locally approved procedures and safety practices when installing or operating this equipment. Failure to comply may result in death, severe personal injury, and equipment damage.

G102.1



DANGER: Power distribution and transmission equipment must be properly selected for the intended application. It must be installed and serviced by competent personnel who have been trained and understand proper safety procedures. These instructions are written for such personnel and are not a substitute for adequate training and experience in safety procedures. Failure to properly select, install, or maintain power distribution and transmission equipment can result in death, severe personal injury, and equipment damage.

G102.1



Installing the LCR 6200

Complete the following steps to install an LCR 6200:

1. Mount the LCR 6200 at the desired location, which is preferably a flat, non-vibrating surface.

The LCR enclosure has two pre-drilled mounting tabs. Cooper Power Systems recommends pan head screws up to 1/4" in size for mounting the LCR. The distance between the mounting holes is 8.25 inches, and the diameter of the mounting holes is 0.3125 inches.

For a rain-tight rating, mount the LCR so that the "This Way Up" arrow on the label points up.

2. Remove electrical power from the AC circuits that are to supply power to the LCR and the load to be controlled.



WARNING: Dangerous voltages are present. Multiple disconnects may be required to de-energize all circuits.

AVERTISSEMENT: Présence de tensions dangereuses. Il pourrait être nécessaire de procéder à des débranchements multiples pour mettre tous les circuits hors tension.

3. Wire the LCR 6200 according to the wiring diagram located on the LCR cover.

Install the wiring within a 1/2" liquid-tight, non-metallic, flexible conduit or make sure the wiring is close nipped into an approved junction box or wiring compartment.

All wiring connections are made to factory-installed leads that are rated for 600 VAC, 105° C. No polarity requirements apply to the output leads.

4. Locate and record the LCR address, Install Code, EUI-64 address, and any other necessary information.

5. Apply electrical power to the LCR.

6. Commission the ZigBee module by performing the steps described in ["Commissioning the ZigBee Module" on page 4](#).

7. If desired, perform a test shed as described in the section ["Test Button" on page 5](#).

8. Close the LCR door, secure the latch, and install a utility seal.

Commissioning the ZigBee Module

Perform the following steps to commission the ZigBee communication module in the LCR 6200:

1. Make sure a ZigBee Gateway device has been previously installed and commissioned.
2. Locate and record the serial number of the ZigBee Gateway device.
3. Coordinate with the Yukon™ Master Station operator to create an LCR 6200 using the Install Code and EUI-64 address of the LCR, which were recorded in [step 4 on page 3](#).

NOTE *The Install Code and EUI-64 address are located on labels inside the LCR.*

4. Instruct the Yukon Master Station operator to assign the LCR 6200 to the ZigBee Gateway device with the serial number recorded in [step 2](#).
5. Instruct the Yukon Master Station operator to start the commissioning process by clicking the Commission button located on the hardware page of the LCR 6200 that was created in [step 3](#).
6. Push and hold the Test button on the LCR receiver board for more than five seconds to instruct the ZigBee module to join the ZigBee network.

NOTE *The commissioning process may take up to five minutes to complete. When the commissioning process is complete, the LCR Status LCD turns on solid and the ZigBee status of the LCR changes to Commissioned in the Yukon software.*

LCR 6200 LEDs

The LCR 6200 LEDs have the following meanings:

Load Status (Red)

- **LED Off** – LED is off when the load is not being controlled.
- **LED On** – LED is on when the load is being controlled.

LCR Status (Green)

- **LED Off** – LED is off when there is no communication, the LCR is out of service, or the LCR status LED is disabled.
- **LED On** – LED is on solid when the ZigBee module is connected to a network.
- **LED Fast Blink** – LED blinks with a pattern of half a second on and half a second off when the ZigBee module is in the process of commissioning.
- **LED Very Fast Blink** – LED blinks very fast when the ZigBee module is scanning for a network.
- **LED Slow Blink** – LED blinks with a pattern of one second on and one second off if the ZigBee module did not find a network or the ZigBee module left a network and did not rejoin that network.



Test Button

The Test button, located on the LCR receiver board, can perform the following functions.

Cancel Control and Power Detection at Power-On

Push and hold the Test button while applying power to the unit to cancel any current control or cold load pickup and bypass the power stability detection.

Test Relay Control

Push and release the Test button to control the relay for a configurable period of time. Push the Test button multiple times to increment the control time by the configurable period of time.

For example, if the configurable period of time is set to 30 seconds, push the Test button four times to control for two minutes.

The relay control initiated by the Test button is implemented as a standard timed load control command, zero delay, and zero random extension. This overrides any other currently implemented or delayed control.

When controlling equipment such as well pumps or air conditioning compressors, push the Test button more than once to ensure that the control time is not too short.

Commissioning

Push and hold the push Test button for more than five seconds to instruct the ZigBee module to join the ZigBee network.

LCR 6200 Specifications

Communications

SelectComm 4020 VHF Paging Communication Module

SelectComm 5020 900 MHz FLEX Paging Communication Module

ZigBee Communication Module

Operating Requirements

Power Source:

240 VAC (+10% -20%)

Frequency:

60 Hz ($\pm 2\%$)

Consult Cooper Power Systems for 50 Hz operation.

Temperature:

-40°F to +185°F (-40°C to +85°C)

Humidity:

0% to 95%, non-condensing

Relay Control

5 A at 120 VAC resistive, Form C

Housing

NEMA 3R injection-molded, UV-stabilized gray polycarbonate plastic. Rain-tight per UL916.

Dimensions (Including Mounting Tabs)

5.95 H x 9.25 W x 3.22 D in.
(15.11 H x 23.50 W x 8.18 D cm)

Electrostatic Discharge

15 kV through Air per ANSI C12.1 (IEC 61000-4-2)

Surge Withstand Capability

Oscillatory:

6 kV @ 100 kHz waveform per
ANSI C12.1 (IEEE C62.41)

Fast Transient:

6 kV @ 1.2x50 μ s - 8x20 μ s waveform per
ANSI C12.1 (IEEE C62.41)

Wire Size Limits

This energy management device is designed, tested and certified to UL Standard 916, which contains allowances for field wiring system conductor sizing. It is intended to be connected directly to the equipment it is controlling, using the following wiring requirements:

- Use 12 AWG field wiring leads for installation with 8 AWG or 10 AWG branch-circuit conductors.
- Use 18 AWG field wiring leads for installation with 12 AWG or smaller branch-circuit conductors.

In the event that this energy management device is connected directly to a branch-circuit overcurrent protection device, the following wire size limitations apply:

- Use 12 AWG wire for 25 A or smaller circuits.
- Use 18 AWG wire for 7 A or smaller circuits.





FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

These devices operate under Part 15 of the FCC rules. Modifications to these devices not expressly authorized by Cooper Power Systems may affect your ability to legally operate these devices.

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