

Wiser™
EER260LLCR Load Control
Control de carga EER260LLCR
Contrôle de charge EER260LLCR

Installer's Guide / Guía de instalación / Guide de l'installateur

S1A90300

Rev. 03, 08/2012

Retain for future use. / Conservar para uso futuro. / À conserver pour usage ultérieur.



Schneider
Electric™

Wiser™ Load Control Installer's Guide

ENGLISH

Guía de instalación del control de carga Wiser™

ESPAÑOL

**Guide de l'installateur du contrôle de charge
Wiser^{MC}**

FRANÇAIS

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Installer's Guide

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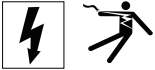


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Hazard Categories and Special Symbols

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **can result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol is not used with this signal word.

NOTE: Provides additional information to clarify or simplify a procedure.

Introduction

Product Description

The Wiser Load Controller is a locally or remotely-controlled load management device for use in energy management systems. The controller can be used as a demand response device and as a simple metering device.

As a demand response device, the controller allows an energy service provider to monitor energy use over a secure ZigBee® network and issue requests for reduced consumption. At the service provider's request, the controller automatically sheds the connected electrical load. An Opt-Out feature allows users to disable load shedding for a day or for a longer term.

As a simple metering device, the controller can measure energy consumption of 240 V and 120 V, up to 26 kW (60 A per phase). Two field-installable current transformers are required for 240 V measurement and one is required for 120 V measurement.

The controller has a programmable HVAC anti-cycling feature that provides a three minute delay before the air conditioner comes on after a demand response event. This helps protect the compressor from damage and energy-wasting On-Off cycling.

The controller has a timer that automatically switches the connected load on and off at times programmed by the user. A Wiser In-Home Display, reference EER20100, is required for programming the timer. For more information consult the *In-Home Display User's Guide*, S1B14482.

The controllers' circuit breaker provides local disconnect operation. The circuit breaker also provides overcurrent protection.

Parts List

The controller comes with:

- A Schneider Electric™ QO™ enclosure
- A deadfront with control electronics
- An extension cable for circuit breaker control
- *Installer's Guide* S1A90300 and *User's Guide* S1A90299

A Square D™ QOPL-ILC circuit breaker must be purchased separately. Optional current transformer kits are required for simple metering use. See page 6.

Circuit Breakers and Current Transformers

Table 1: Square D QOPL Circuit Breakers

Catalog Number	Rating (A)	No. of Poles	AIC Rating (kA)
QO115PLILC	15	1	10
QO120PLILC	20	1	10
QO230PLILC	30	2	10
QO240PLILC	40	2	10
QO250PLILC	50	2	10
QO260PLILC	60	2	10

Table 2: Current Transformers (CTs)

Catalog Number	Description	Rating
EER260LLCCT1	1 CT	120 to 240 V, 60 A
EER260LLCCT2	2 CTs	

Document Scope

This manual covers installation of the Wiser Load Controller, the Square D QOPL-ILC circuit breakers, and the optional current transformer kits.

Audience Definition

This manual is for installers of residential power distribution equipment. For the protection of personnel and equipment, a qualified person must perform the procedures in this instruction bulletin. The person must be:

- Able to read, interpret, and follow the instructions and precautions in this instruction bulletin and the other documentation referenced.
- Able to perform installation, commissioning, and diagnostic procedures while following the safety procedures recommended in NFPA 70E.
- Trained on the operation and fundamentals of residential and commercial power distribution apparatus, and familiar with the associated hazards.
- Licensed in accordance with local electrical installation code requirements.

Specifications

Table 3: Technical Specifications

Enclosure rating	Type 3R enclosure, 60 A, 120/240 Vac. Accepts only 1 single-pole QOPL circuit breaker or 1 double-pole QOPL circuit breaker. Do not install more than 1 circuit breaker in the enclosure.
Operating temperature	-4 to 104 °F (-20 to 40 °C) without derating
Storage temperature	-40 to 185 °F (-40 to 85 °C)
Humidity	5 to 95% noncondensing
Altitude	0 to 10,000 ft (0 to 3,048 m)
Transmission power	100 mW
Power measurement accuracy¹	120 V operation: <ul style="list-style-type: none"> No power under 160 W is reported. Best accuracy from 160 W to 770 W is +/- 7%. Best accuracy from 771 W to 6.5 kW is +/- 5%. 240 V operation: <ul style="list-style-type: none"> No power under 420 W is reported. Best accuracy from 420 W to 1.5 kW is +/- 7%. Best accuracy from 1.51 kW to 13 kW is +/- 5%
Power measurement reporting resolution¹	Minimum power resolution: 1 kW Minimum current resolution: 0.06 A
Certifications, codes, and standards	UL Listed per UL 498, Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures. cUL Listed per CSA C22.2 No. 5. Tested per UL 916, Energy Management Equipment, and CSA C22.2 No. 205 Signal Equipment.
RF characteristics, within band	FCC compliance: 47CFR 15.247 (operating frequency 2.4 GHz) Part 15B RF standard: IEEE 802.15.4: 2003 ZigBee® Smart Energy
RF characteristics, out of band	IEC 61000-4-2, 2001, Electrostatic Discharge, Level 4 EN 301 489-17, Radiated Immunity, 3 V/m IEC 61000-4-4, 2001, EFT/Burst Immunity, Severity Level 3 IEC 61000-4-5, 2001, Surge Immunity, Severity Level 3 IEC 61000-4-6, 2003, Conducted RF Immunity, 10 V/m IEC 61000-4-11, 2002, Voltage Dips and Interruptions IEEE C37.90.1, 2000, EFT / Surge Relay Systems

¹ Power measurement specifications are applicable when an optional current transformer kit is installed.

Dimensions

ENGLISH

Figure 1: Dimensions: Front, Sides, Top, Bottom

Dimensions: in.
mm

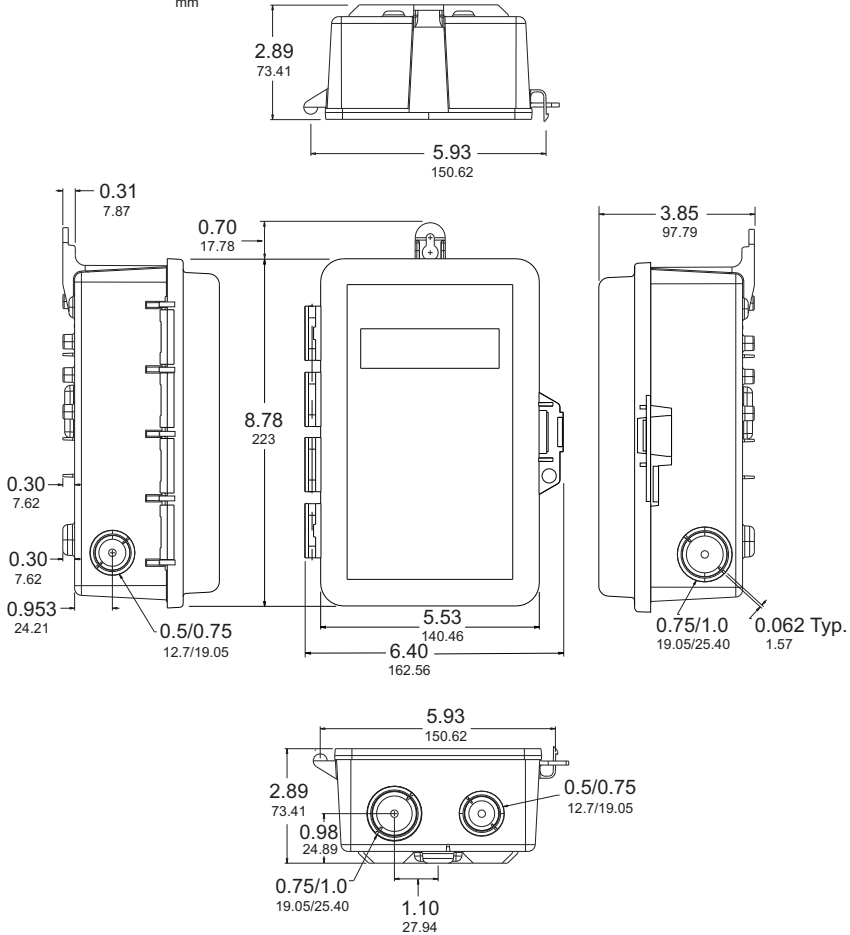
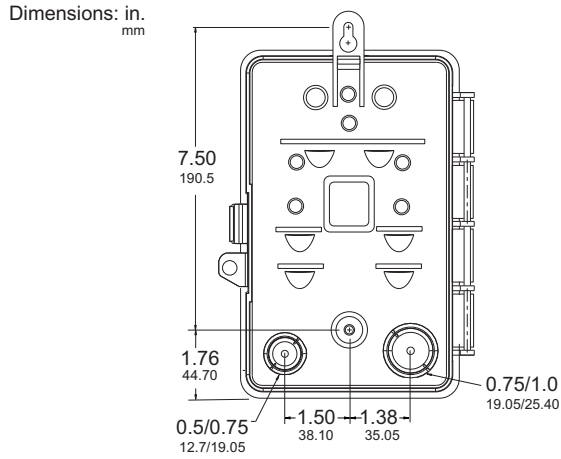


Figure 2: Dimensions: Back

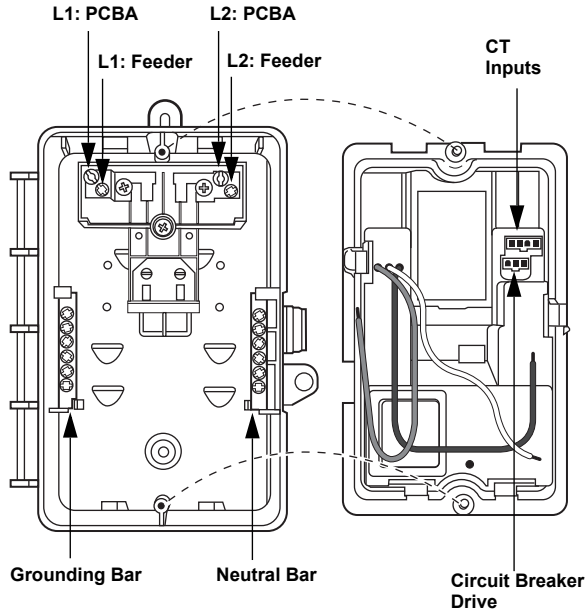


Terminal Descriptions

Table 4: Terminal Descriptions

Terminal	Function	Voltage Range	Current Range
L1: PCBA L2: PCBA	Connection point for PCBA power supply	120 Vac phase-to-ground/neutral; 240 Vac phase-to-phase, -6% / +13%	15 to 60 A
CB drive	Provides voltage and current to the circuit breaker motor.	+/- 24 Vdc	1.5 A
CT inputs	Provide current feedback for metering function.	For CT ratings, see Table 2 (page 6).	

Figure 3: Terminal Locations



Installation

Safety Precautions

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn OFF all power supplying this equipment before working on or inside the equipment.
- Always use a properly rated voltage sensing device to confirm that power is off.
- Replace all devices, doors, and covers before turning on power to this equipment.
- Petroleum-based paints, solvents, or sprays can cause plastic to degrade. Do not allow petroleum-based paints, solvents, or sprays to contact the nonmetallic parts of this product.
- Before starting a wiring installation or addition, consult a local building or electrical inspector for current National Electrical Code® requirements. Local codes vary, but are adopted and enforced to promote safe electrical installations. A permit may be needed to do electrical work, and some codes may require an inspection of the electrical work.
- This equipment is not suitable for use in the corrosive environments present in agricultural buildings. See NEC 547 or CEC 2-400.

Failure to follow these instructions will result in death or serious injury.

WARNING

IMPROPER GROUNDING

- Use Listed grounding bushings or grounding plate on the conduit fitting.
- Connect the jumper wire from the equipment grounding terminal to the grounding bushing or the grounding plate.

Failure to follow these instructions can result in death or serious injury.

NOTICE

PRODUCT OVERVOLTAGE

Do not perform high-potential dielectric testing on the controller. Damage to the control electronics may result.

Failure to follow these instructions can result in equipment damage.

Before You Install the Controller

1. Identify the target load. Examples of permissible loads:
 - Resistive loads such as water heaters
 - Motor loads such as pumps
 - Combined loads such as HVACGenerator loads may not be connected.
2. Select a location for mounting the controller that meets local and national electrical code requirements.
3. The controller can function as a load disconnect. If an existing disconnect switch is already present on the load, it can be removed.

240 V Installation

1. Loosen two Phillips screws (**A**) and remove the deadfront. Remove the extension cable (**B**) from inside the enclosure.

Figure 4: Removing the Deadfront

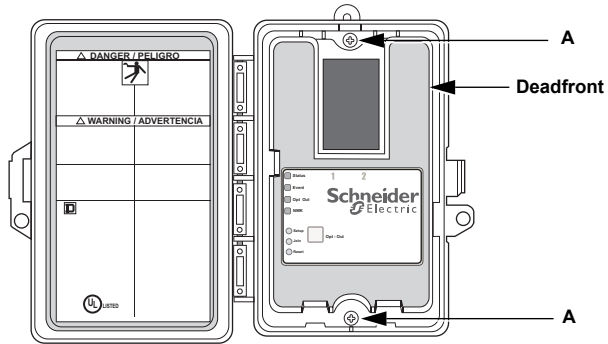
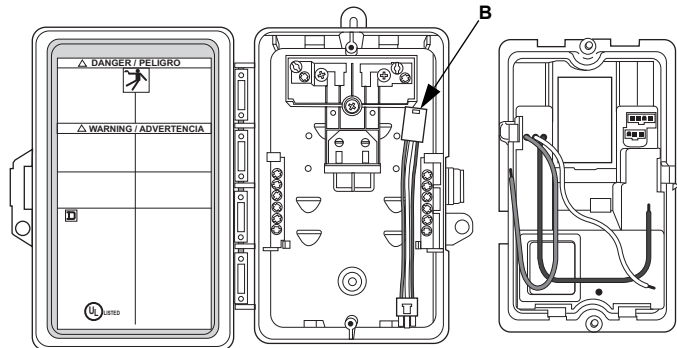


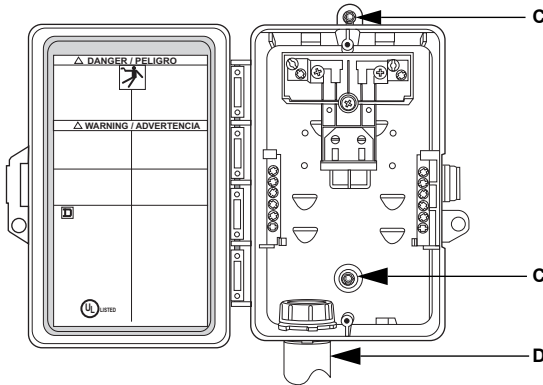
Figure 5: Inside of Enclosure and Back of Deadfront



2. Remove the enclosure knockout sized appropriately for your connector. See Figures 1 and 2 (pages 8 and 9) for knockout locations and sizes.

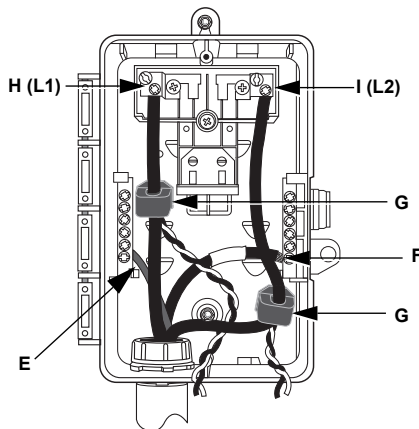
3. Mount the enclosure on the mounting surface with two screws (C).
4. Install a connector appropriate for the application (D, conduit shown).

Figure 6: Mounting the Enclosure



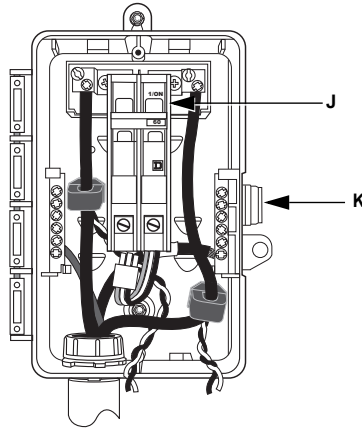
5. Connect the feeder grounding wire (E) to the enclosure grounding bar and connect the neutral wire (F, if present) to the enclosure neutral bar.
6. If the controller will be used for simple metering, install one or two current transformers (G, ordered separately) on each feeder wire.
7. Connect the feeder wires to terminals L1 (H) and L2 (I).

Figure 7: Installing the CTs and 240 V Feeder Wires



8. Install the circuit breaker (**J**, ordered separately).
9. For wire stress relief, hang the deadfront on the bracket (**K**) provided at the right edge of the enclosure. See Figures 8 and 9.

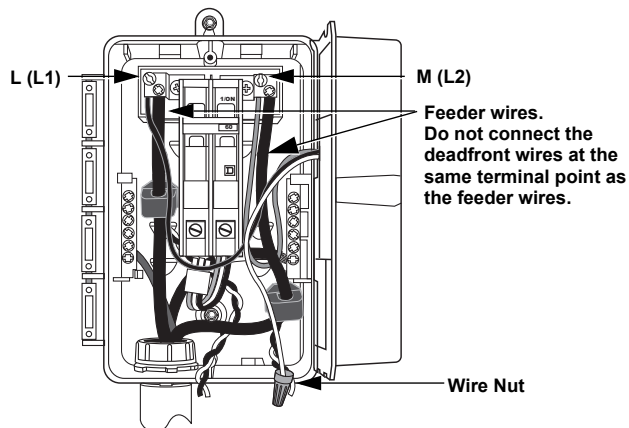
Figure 8: Installing the Circuit Breaker



10. Connect the wires from the deadfront:

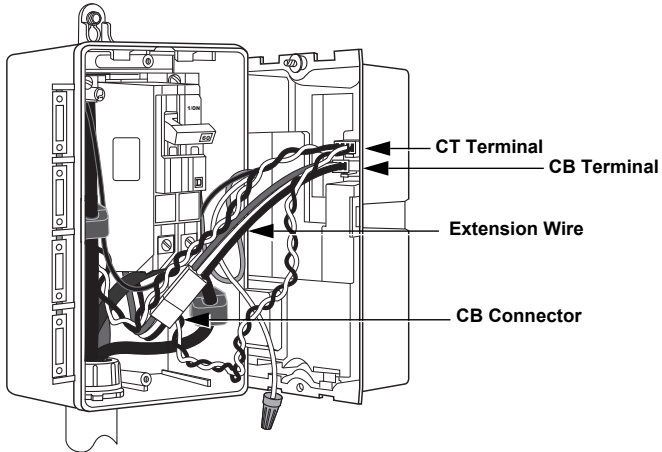
- Connect the black wire to terminal L1 at point (**L**).
- Connect the blue wire to terminal L2 at point (**M**).
- Install a wire nut on the neutral wire (white). This wire is not used for 240 V operation.

Figure 9: Connecting the Wires from the Deadfront



11. Connect the extension wire to the circuit breaker (CB) connector and to the CB terminal on the deadfront, as shown in Figure 10.
12. Connect the current transformer (CT) leads to the CT terminal on the deadfront. See Figure 10.

Figure 10: Connecting the CB and CTs



13. Connect the load to the circuit breaker.
14. Replace the deadfront and secure it with two screws.
15. Close the enclosure door.

120 V Installation

1. Loosen two Phillips screws (**A**) and remove the deadfront. Remove the extension cable (**B**) from inside the box.

Figure 11: Removing the Deadfront

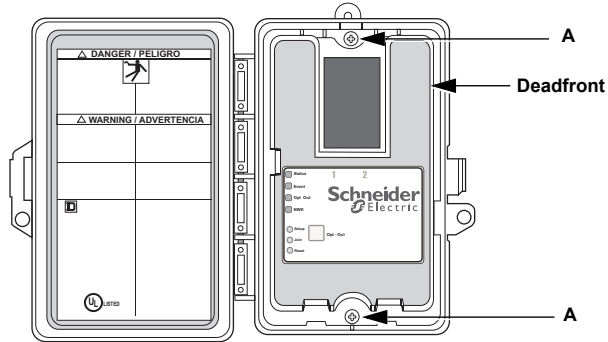
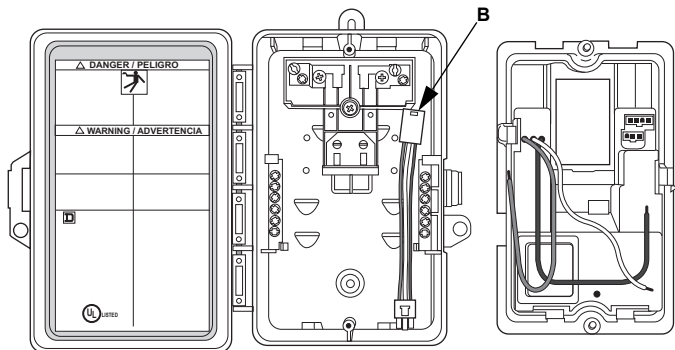


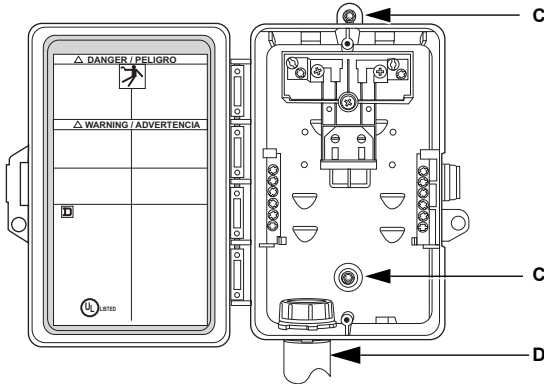
Figure 12: Inside of Enclosure



2. Remove the enclosure knockout sized appropriately for your connector. See Figures 1 and 2 (pages 8 and 9) for knockout locations.

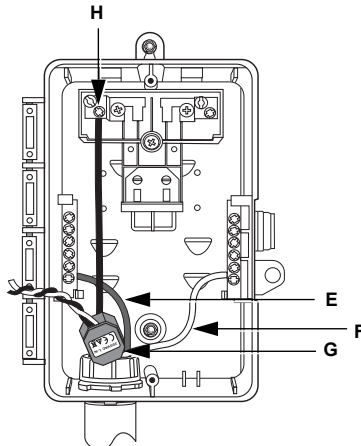
3. Mount the enclosure on the mounting surface with two screws (C).
4. Install a connector appropriate for the application (D, conduit shown).

Figure 13: Mounting the Enclosure



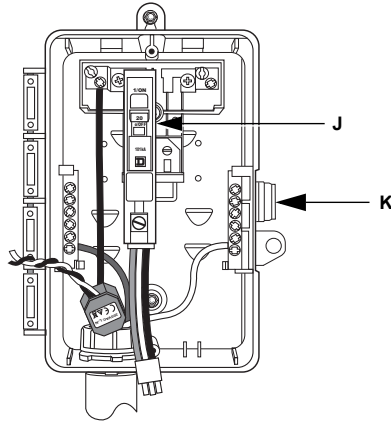
5. Connect the feeder grounding wire (E) to the enclosure grounding bar, and connect the neutral wire (F, if present) to the enclosure neutral bar.
6. If the controller will be used for simple metering, install one current transformer (G, ordered separately) on the feeder wire.
7. Connect the feeder wire to terminal L1 at point (H).

Figure 14: Installing the CT and 120 V Feeder Wire



8. Install the circuit breaker (**J**, ordered separately).
9. For wire stress relief, hang the deadfront on the bracket (**K**) provided at right edge of the enclosure. See Figures 15 and 16.

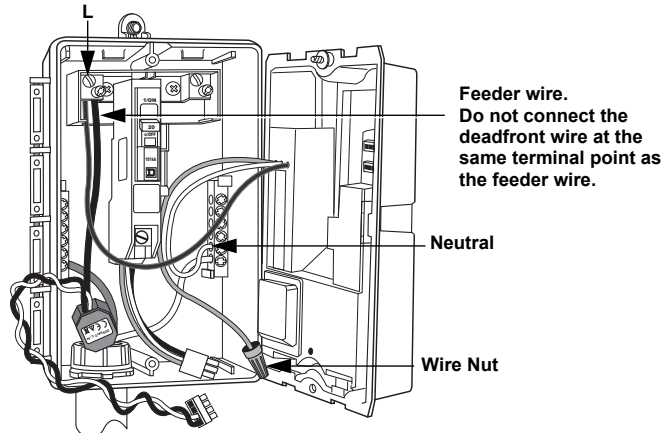
Figure 15: Installing the Circuit Breaker



10. Connect the wires from the deadfront:

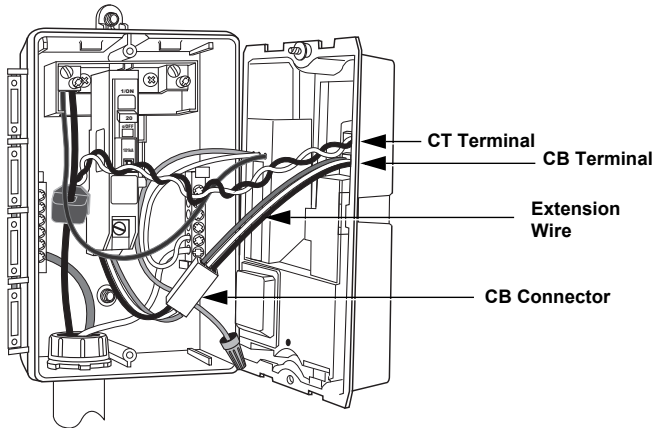
- Connect the black wire to terminal L1 at point (**L**).
- Connect the neutral wire (white) to the neutral bar.
- Install a wire nut on the blue wire. This wire is not used for 120 V operation.

Figure 16: Connecting the Wires from the Deadfront



11. Connect the extension wire to the circuit breaker connector and to the circuit breaker (CB) terminal on the deadfront, as shown in Figure 17.
12. Connect the current transformer (CT) lead to the CT terminal on the deadfront. See Figure 17.

Figure 17: Connecting the CB and the CT

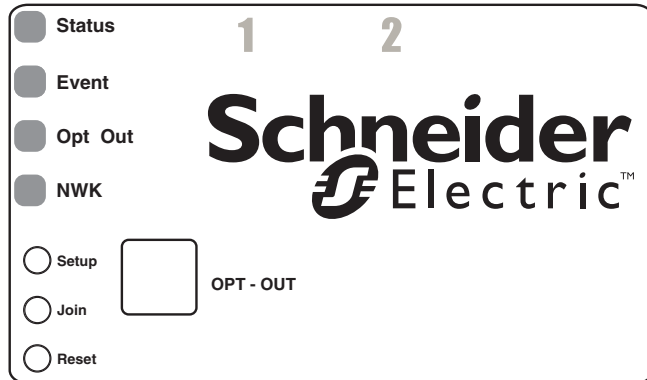


13. Connect the load to the circuit breaker.
14. Install the deadfront and secure it with two screws.
15. Close the enclosure door.

User Interface

The user interface consists of four buttons and four LEDs. The Setup, Join, and Reset buttons are just under the surface of the front panel and can be pressed with a tool such as a paper clip.

Figure 18: User Interface



Setup Button

The Setup button is used to configure the controller for simple metering and HVAC anti-cycling. The Setup button is functional only when the controller is in a hold state (see Reset Button below) and has not joined a network.

Join Button

The Join button is used to connect the controller to the ZigBee® network. Once the controller is on the network, the Join button no longer functions.

Reset Button

The Reset button is used to remove the controller from the network and reset the control electronics. Two reset options are available.

1. A short hold reset removes the controller from the network and resets the control electronics while preserving user-selected options.

2. A long hold reset removes the controller from the network, returns it to its factory default settings, and clears all user-selected options and memory.

See Reset and Factory Reset on page 24 for more information.

Opt-Out Button

The Opt-Out button is used to opt out of demand response events until midnight on the day the opt out is selected, or for a longer term. It is also used to cancel an opt out. For more information, see the *Wiser™ EER260LLCR Load Control User's Guide*, document number S1A90299.

LED Indications

Table 5: Circuit Breaker Status LED

Color	Behavior	Meaning
Green	Steady on	Circuit breaker contacts are commanded closed (load commanded on).
Red	Steady on	Circuit breaker contacts are commanded open (load commanded off).

Table 6: Event LED

Color	Behavior	Meaning
Green	Steady on	No demand response events are present or scheduled. The controller is ready to accept commands.
Green	Slow blink	A future demand response event is in queue.
Green	Fast blink	The controller is servicing a demand response event.
Red	Fast blink	The controller is in Opt-Out mode and a demand response event is in progress or scheduled.

Table 7: Opt-Out LED

Color	Behavior	Meaning
Green	Steady on	The controller will respond to demand response events.

Table 7: Opt-Out LED (continued)

Color	Behavior	Meaning
Red	Slow blink	Opt Out has been selected for one day. The controller will resume demand response mode at midnight.
Red	Steady on	Long-term Opt Out has been selected. Criticality levels have no affect.

Table 8: NWK (Network) LED

Color	Behavior	Meaning
Red	Steady on	The controller is not on the network.
Red	Slow blink	The controller is joining the network.
Green	Steady on	The controller is attached to the network and has communication.
Orange	Steady on	Successful short reset.
Red	Fast blink	System-detected error.

Initial Configuration or Configuration After a Factory Reset

1. Provide the installation code and MAC address printed on the controller to your energy service provider and request that the network device be placed in Join mode. Contact your service provider for instructions.
2. Wait for confirmation that the service provider's network device is in Join mode before proceeding with Step 3.
3. Manually place the circuit breaker handle in the Off position and turn on power to the controller. The controller will operate all the LEDs during initialization.
4. Press and hold the Reset button until the NWK (Network) LED turns solid red.
5. Press and hold the Setup button for longer than 5 seconds. This puts the controller in Simple Metering Setup mode, indicated by the Opt-Out LED flashing red and the NWK LED displaying solid red.

6. Press the Setup button to cycle through the three simple metering states:
 - Simple metering at 240 Vac input, indicated by the Event and Circuit Breaker Status LEDs both displaying solid red.
 - Simple metering at 120 Vac input, indicated by the Circuit Breaker Status LED displaying solid red. The Event LED is off in this state.
 - Simple metering disabled. The Circuit Breaker Status LED and Event LED are off in this state. If you have not installed current transformers, this is the only simple metering state you may select.
7. **Read this entire step before performing it.** You confirm the simple metering selection and configure HVAC anti-cycling in the same step.
 - To confirm the simple metering selection **without** enabling anti-cycling, press the Opt-Out button until the Opt-Out LED slowly flashes red. All three LEDs will then flash green three times and the controller will return to the hold state.
 - To confirm the simple metering selection **with** anti-cycling enabled, press and hold the Opt-Out button until the Opt-Out LED turns solid red. All three LEDs will flash green three times and the controller will return to the hold state.
8. Press the Join button to join the network. The NWK (Network) LED will slowly blink red, and then turn steady green indicating that the controller has joined the network.
9. Request that the energy service provider send a short demand response event. Check the status of the controller's LEDs and the reaction of the connected load to verify remote operation of the controller.
10. If the controller is in Simple Metering mode, with the load running, request that the service provider issue a read to verify remote operation.

Reset and Factory Reset

The load controller is factory set with simple metering disabled and anti-cycling disabled.

To reset the controller to the factory settings, press and hold the Reset button for 30 seconds or longer until the Network (NWK) LED turns solid red.

To reset the controller electronics while saving the user configuration, press the Reset button until the Network (NWK) LED slowly blinks red. The NWK LED will turn solid orange. Press Join to rejoin the network.

Product Support

The Schneider Electric Customer Care Center (CCC) is your single point of contact for information about the Wiser Load Controller. Qualified personnel are available to answer your customer service and technical support questions. Call toll free 1-855-559-4737.

FCC Radio Frequency Interference Statement

This controller 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 controller is an intentional radiator. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this controller does cause harmful interference to radio or television reception, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the controller and the receiver.
- Connect the receiver into an outlet on a different circuit.
- Consult the receiver dealer or an experienced radio/TV technician for help.

Do not make changes or modifications to the controller which are not expressly approved by Schneider Electric. Any changes or modifications may result in the loss of authority to operate the equipment.

Schneider Electric USA, Inc.

8001 Knightdale Blvd.
Knightdale, NC 27545 U.S.A.
1-855-559-4737
www.schneider-electric.com

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