



ECOWISE®
EW50/1
EW50/1
Commercial

**The Ultimate
Smart Grid
Solution**

**INSTRUCTION
MANUAL**

Welcome!

Congratulations on selecting the ECOWISE® unit to manage your energy supply needs. ECOWISE® units reduce the amount of electric energy your home or commercial establishment needs to run efficiently and save on your electric bill!

For more information on this and other products from THE TECHNOWISE GROUP™, please visit our website at: www.technowisegroup.com.

How does it work?

The ECOWISE® unit modifies and reconstructs the AC waveforms at a more efficient power level without adding undesirable harmonic distortion. ECOWISE® units optimize voltages used by consumers, thereby reducing the amount of wasted energy consumed by appliances, lights and other electrical devices.

The unit manages the voltage provided by your utility company to an optimum level which allows appliances and other electrical devices to operate more efficiently. The result is a lower electric bill, less maintenance on appliances, and the availability of more energy for additional homes and commercial establishments without the need to add additional electric power infrastructure.



Before Installing the Unit

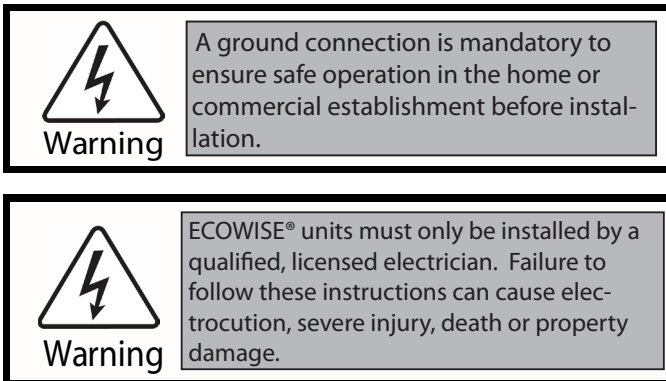
Before installing the ECOWISE® unit, the following actions must be taken into account to validate the warranty:

- Use a qualified, licensed electrical contractor.
- Have the ECOWISE® Site Survey completed and available.
- Establish adequate grounding for the home or commercial establishment.
- The ECOWISE® unit must be fed from the utility through a circuit breaker or fuse sized to the proper value upstream of the ECOWISE® unit. This circuit breaker or fuse is required to protect the home or commercial establishment against the unlikely event of an internal short circuit.

A qualified, licensed electrical contractor will set up a pre-installation site survey to evaluate the maximum power of the home or commercial establishment and the maximum power the utility company is delivering. This survey will help determine the correct ECOWISE® model to be installed.

Next, the survey will determine if an upstream circuit breaker or fuse is present and the proper grounding exists for the home or commercial establishment. The ECOWISE® unit must be installed with proper grounding present.

Finally, for ease of installation and safety, the ECOWISE® unit needs to be installed only by a qualified, licensed electrician according to the local electrical codes.



Installation

Once the pre-installation procedure is completed, it is time to install the ECOWISE® unit. Figure 1 shows a typical installation.

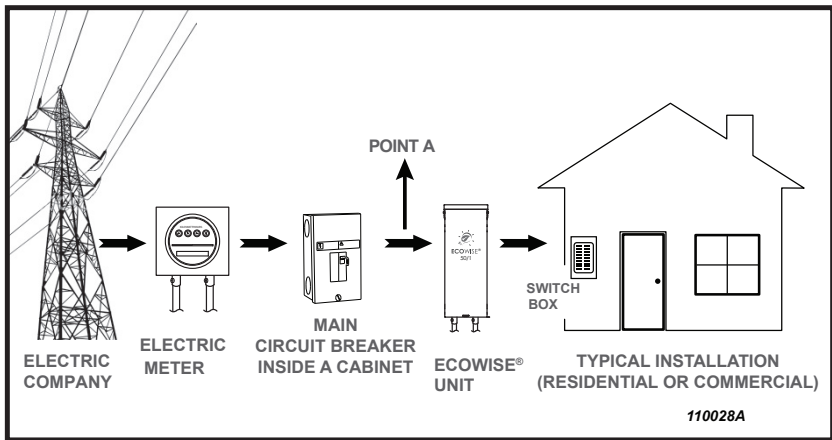


Figure 1. A Typical Installation

Installation Tools and Supplies


Installation of the ECOWISE® unit requires a few tools and supplies. Your electrical contractor will need to have these items:

- Level
- The cable size must be at least 6 AWG copper wire (13 mm²) or 4 AWG aluminum wire (21 mm²).
- Drill and drill bits (either ¼" (6.35 mm) size or ½" (12.7 mm) hammer drill size depending on the surface material)
- Multi-Meter
- Phillips screw driver
- Blade screw driver
- Wire cutter
- Wire stripper
- Electrical Tape to Isolate
- # 8 screws (or equivalent) and anchors

All mounting hardware and electrical connectors need to be supplied by the installer, since installation supplies will vary in each country according to their electrical codes.

Step 1.

Power to the home or commercial establishment must be turned off prior to installation. Make sure power is completely turned off at point A (Refer to Figure 1). This can be accomplished by turning off the main circuit breaker, (see Figure 1), or by contacting your electric utility to disconnect the power. Use a multi-meter to verify that there is no voltage present in the home or commercial establishment.



Warning

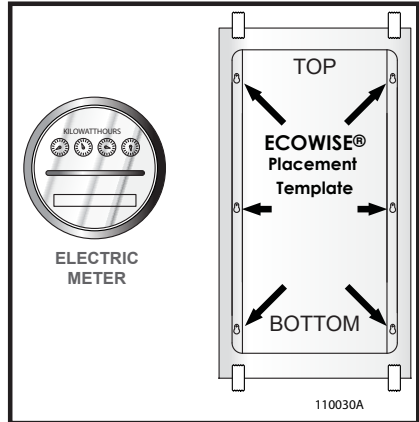
Please ensure that an upstream circuit breaker or fuse is present. If no, one should be installed by a certified electrician following local electrical codes prior to installing the ECOWISE® units.

Step 2.

Refer to the ECOWISE® Site Survey to identify the appropriate location where the ECO-WISE® unit will be mounted.

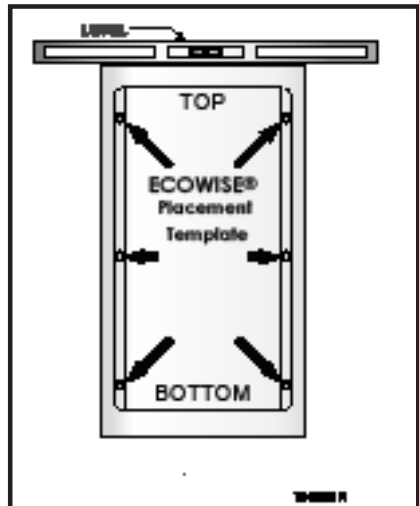
Remove the placement template from the packing box and attach tape to the corners to secure it to the surface.

NOTE: In this example, the main circuit breaker is not shown.



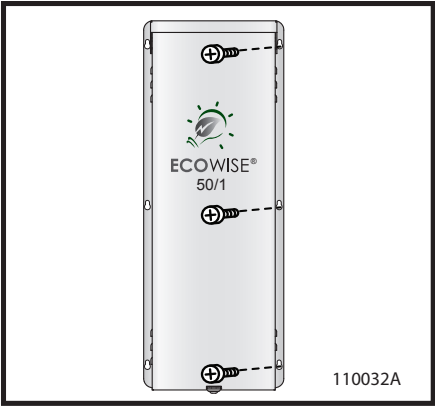
Step 3.

Use a level to ensure that the template is level before you begin to locate and drill the screw holes.



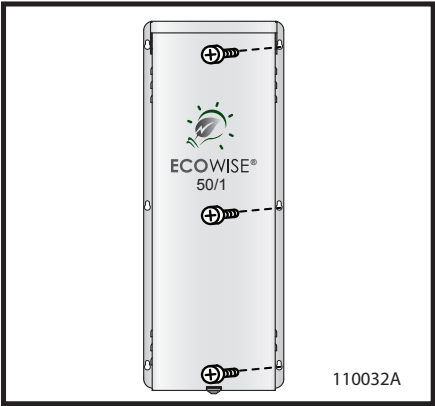
Step 4.

Drill the holes at the six (6) locations marked on the template. Insert the anchors.



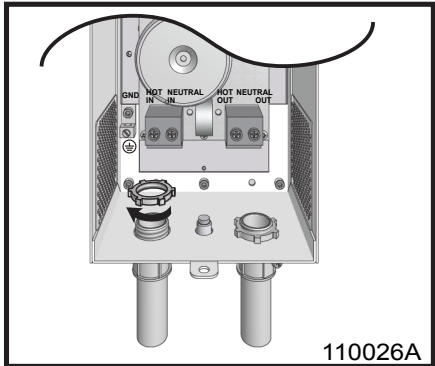
Step 5.

Position the unit over the screw holes and fasten the screws to secure the unit to the surface.



Step 6.

Open the cover of the unit and install conduit pipe adaptors in the holes at the bottom and tighten fully.



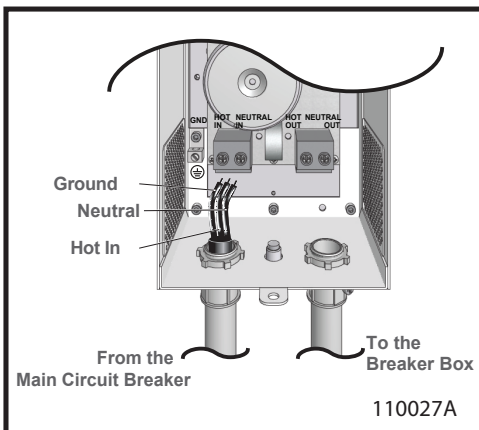


Warning

Make sure that power has been turned off at point A (Figure 1) and that the home or commercial establishment is de-energized.

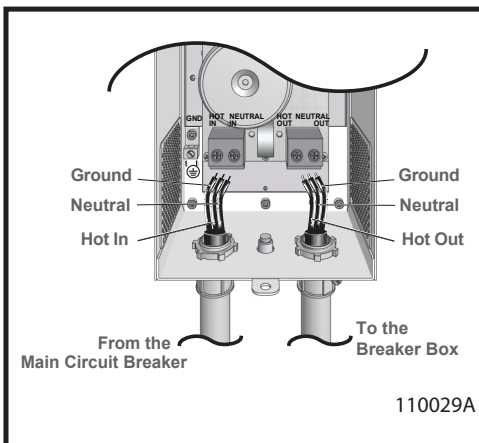
Step 7.

Use conduit pipes and connectors to run wires from the main circuit breaker through the conduit to the ECOWISE® unit (left side). Locate the ground wire as shown in this example.



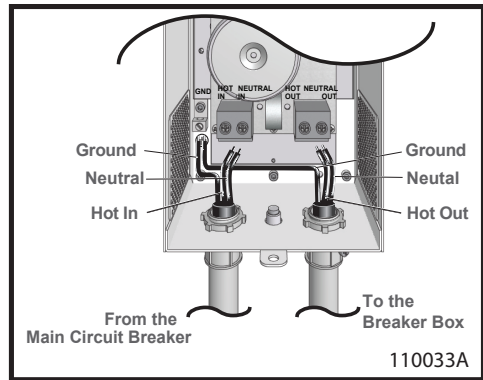
Step 8.

Use conduit pipes and connectors to run wires from the fuse box or breaker box through the conduit to the ECOWISE® unit (right side). Locate the ground wire as shown in this example.



Step 9.

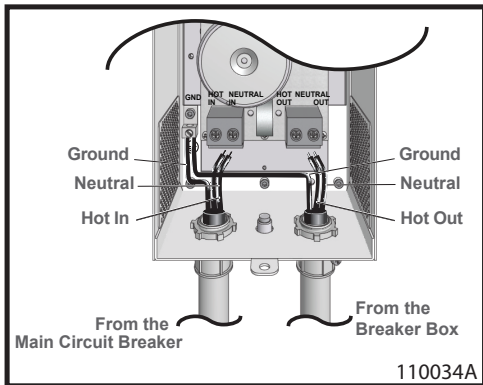
Measure, cut, and strip the wires that pass from the main circuit breaker and the wires that pass from the fuse box or circuit breaker panel to the ECOWISE® unit.



Step 10.

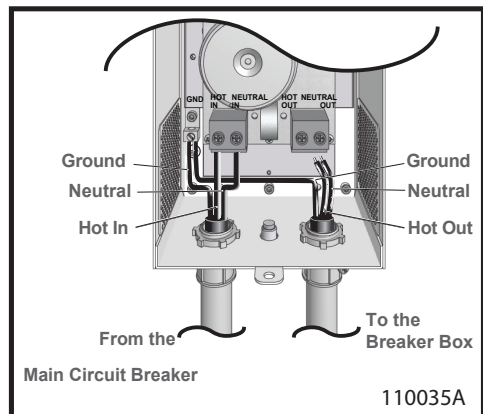
Insert the ground wires into the ground lug and tighten fully to 40 in-lb. (46.08 kg-cm).

NOTE: Ground wires must be properly used for safety reasons and for warranty of the ECOWISE® unit to be effective. A ground connection is mandatory to ensure safe operation.



Step 11.

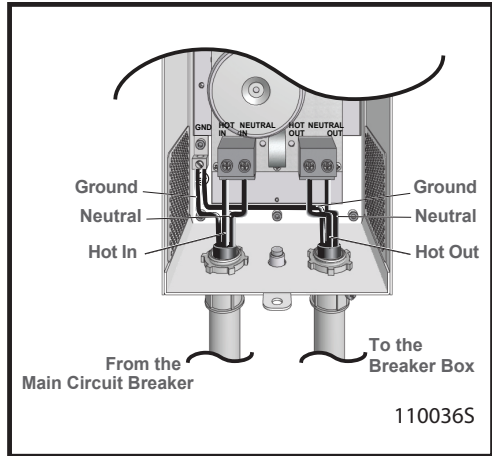
Connect the hot wire of the main circuit breaker to the ECOWISE® unit's HOT IN terminal and tighten fully to 30 in-lb. (34.56 kg-cm). Connect the neutral wire of the main circuit breaker to the NEUTRAL IN terminal of the ECOWISE® unit (left side) and tighten fully to 30 in-lb. (34.56 kg-cm).



Step 12.

Connect the hot wire of the breaker box or fuse box to the HOT OUT terminal of the ECOWISE® unit and tighten fully to 30 lb-in (34.56 kg-cm).

Connect the neutral wire from the breaker box or fuse box to the NEUTRAL OUT terminal of the ECOWISE® unit (right side) and tighten fully to 30 lb-in (34.56 kg-cm).



Completing the Installation

After following the proper installation procedures, it is time to apply power back to the home or commercial establishment. Please ensure that all the breakers in the home or commercial establishment are in the OFF position (disconnected). When power is initiated, the green light (LED) of the ECOWISE® unit will blink 9 times and will then remain lit, indicating that the unit is functioning correctly. Using a multi-meter, verify the input and output voltages on the ECOWISE® unit. Turn on each breaker one at a time. You will now begin to experience the ECOWISE® lifestyle of true energy savings.

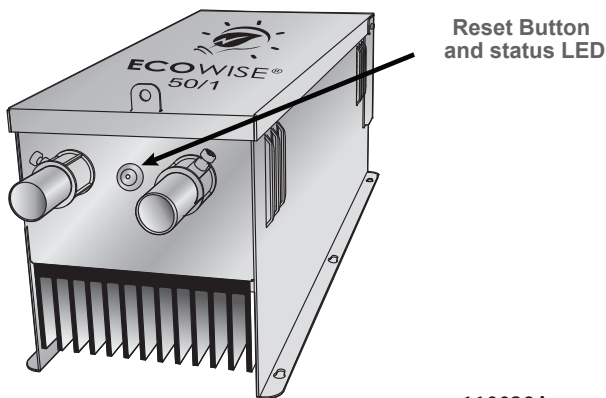
Troubleshooting

ECOWISE® has been designed for trouble-free operation. However, in the unlikely event of a malfunction, please follow the subsequent steps to determine the cause of the failure. (See the troubleshooting chart on page 10)

The ECOWISE® unit has built-in safety features that prevent damage to your appliances, such as short circuits, overcurrents, power failures, etc. The green LED light blinks at certain intervals to indicate the status of the unit. The reset switch with an integrated LED light is located in the bottom of the unit (See Figure 2), continually monitors the unit's status. The reset switch can be used to clear any fault once the corrective action has been taken.

Should you ever experience an interruption in your electrical service, always check the breaker box first. A tripped breaker could be the cause of interruption of power. If none of the breakers are tripped, please look at the LED at the bottom of the unit to see its status. The blinking light will indicate the cause of the problem by the number of times it blinks as indicated on the Troubleshooting Chart, on page 10.

When power to your home or commercial establishment is interrupted, please note the number of times that the light (LED) blinks and refer to the Troubleshooting Chart for more information and corrective actions. Once you verify the LED status, contact your ECOWISE® representative to determine which corrective actions to take, or if you have any questions.



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Troubleshooting Table

Use this table to determine the status of the ECOWISE® unit.

| Status of the Light (LED) | Possible Damage Causes | Resolution |
|---------------------------|--|---|
| Constantly lit | The unit works properly. | N/A |
| Turned OFF | No power is applied to the unit. | Check for local power outage with your utility company or check that your breaker box is not turned off. |
| Blinks once (1) | "Short-circuit" condition exists | Turn loads completely off by turning off breakers to the home or business. Then press the restart button to restore. If the problem persists, contact your local ECOWISE® representative. |
| Blinks twice (2) | "Over-current" condition exists | Turn loads completely off by turning off breakers to the home or business. Then press the restart button to restore. If the problem persists, contact your local ECOWISE® representative. |
| Blinks three (3) times | "Over-heating" condition exists | Turn loads completely off by turning off breakers to the home or business. Then press the restart button to restore. If the problem persists, contact your local ECOWISE® representative. |
| Blinks four (4) times | "Extreme Overcurrent" condition exists | Turn loads completely off by turning off breakers to the home or business. Then press the restart button to restore. If the problem persists, contact your local ECOWISE® representative. |
| Blinks five (5) times | "Invalid Temperature" condition exists | Contact your local ECOWISE® representative. |
| Blinks six (6) times | "Low Voltage" condition exists | Contact your utility company to report the low voltage condition. |
| Blinks seven (7) times | "Load Manager Over Limit" condition | Turn loads completely off by turning off breakers to the home or business. Then press the restart button to restore. If the problem persists, contact your local ECOWISE® representative. |

Warranty Information

The TECHNOWISE Group™ warrants for a period of one year from the date of shipment that this product will be free from defects in material and workmanship and will meet published specifications for this product at the time of shipment, assuming normal use and normal operating conditions.

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| | |
|---------------------------|---------------|
| Input Voltage: | 127 V~ |
| Nominal Current: | 50 A |
| Nominal Frequency: | 60Hz |

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