SURAIELEC 60 Amp Non-Fused AC Disconnect Box with Pull-Out Switch and GFCI Receptacle

SURAIELEC 60 Amp Non-Fused AC Disconnect Box with GFCI Receptacle User Manual

Model: 60 Amp Non-Fused AC Disconnect Box with Pull-Out Switch and GFCI Receptacle
Brand: SURAIELEC

1. Introduction

This manual provides essential information for the safe installation, operation, and maintenance of your SURAIELEC 60 Amp Non-Fused AC Disconnect Box with GFCI Receptacle. This device is designed to provide a safe and convenient method for disconnecting power to outdoor HVAC units, such as mini-splits, heat pumps, and central air conditioning systems. It also includes an integrated GFCI receptacle for powering service tools.

Please read this manual thoroughly before installation and retain it for future reference. Proper installation and adherence to safety guidelines are crucial for optimal performance and user safety.

2. Safety Information

WARNING: Risk of electric shock. Installation and servicing must be performed by a qualified electrician in accordance with all national and local electrical codes.

- Always disconnect power at the main circuit breaker before installing or servicing this unit.
- Ensure all wiring connections are secure and properly insulated.
- Do not operate the unit if it is damaged or if any components are missing.
- This disconnect box is ETL Listed, indicating compliance with recognized safety standards.
- The NEMA 3R enclosure provides protection against rain, sleet, snow, and external ice formation.
- The integrated GFCI receptacle is for temporary use with service tools only. Do not use for permanent loads.

3. Package Contents

- SURAIELEC 60 Amp Non-Fused AC Disconnect Box with Pull-Out Switch and GFCI Receptacle (1 unit)

4. Specifications

Feature	Specification
Rated Current	60 Amp
Rated Voltage	240 Vac
HP Rating	10 HP
Switch Type	Non-Fusible Pull-Out
Phase Type	Single Phase
Number of Wires	3-Wire
Number of Poles	2-Pole
GFCI Receptacle Voltage	125 Vac
GFCI Receptacle Current	20 Amp
GFCI Type	Weather-Resistant (WR) & Tamper-Resistant (TR)
Enclosure Rating	NEMA 3R
Material	Galvanized Steel
Dimensions (H x W x D)	7.7" x 5.1" x 3.3" (approximate)
Certifications	ETL Listed

Figure 4.1: Internal structure and key electrical specifications of the disconnect box, including HP Rating (240Vac 10HP), Voltage (240 Vac), Switch Type (Non-Fusible), Current (60 Amp), and GFCI Receptacle specifications (125 Vac, 20 Amp, WR & TR).

5. Installation (Setup)

IMPORTANT: Ensure power is OFF at the main breaker before beginning installation.

1. **Mounting Location:** Select a suitable outdoor location near the HVAC unit, ensuring it is accessible for servicing and complies with local electrical codes. The NEMA 3R enclosure is designed for outdoor use.
2. **Mounting the Box:** Securely mount the disconnect box to a sturdy surface using appropriate fasteners (not included).

3. **Wiring Access:** The enclosure features 7 knockouts located on the sides, back, and bottom for flexible conduit entry. Use a hammer or knockout punch to remove the desired knockouts.
4. **Wiring:** Open the lid of the disconnect box. The lid is designed to stay open at a 90-degree angle for easier access during wiring. Connect the incoming power supply and outgoing load wires to the appropriate terminals inside the box. Ensure all connections are tight and correct according to the wiring diagram (refer to local electrical codes and the HVAC unit's manual for specific wiring requirements). The box provides ample wiring space.
5. **GFCI Receptacle Wiring:** The GFCI receptacle operates on an independent circuit. Ensure it is wired correctly according to its specific requirements.
6. **Close and Secure:** Once wiring is complete and verified, close the lid of the disconnect box. The enclosure is lockable to prevent unauthorized access (lock not included).

Figure 5.1: This image displays the disconnect box with its lid open, revealing the interior and multiple knockouts for wiring. Separate diagrams show the overall dimensions (7.7" H x 5.1" W x 3.3" D) and a close-up of a knockout being removed with a hammer, illustrating ease of installation.

Figure 5.2: The disconnect box is shown with its lid securely held open at a 90-degree angle, facilitating wiring. An inset highlights the lockable feature of the enclosure for added security.

6. Operation

6.1. Pull-Out Switch

The disconnect box features a non-fused pull-out switch for manually disconnecting power to the HVAC unit.

- **To Disconnect Power (OFF):** Firmly grasp the pull-out handle and pull it straight out from the unit. The handle can be stored in the 'OFF' position within the unit to prevent accidental re-engagement and misplacement.

- **To Connect Power (ON):** Align the pull-out handle with the slots and push it firmly into the unit until it is fully seated. This will restore power to the connected HVAC system.

Figure 6.1: This image illustrates the pull-out switch mechanism. The top part shows the switch removed, and the bottom part shows a hand inserting and removing the switch from the 'ON' and 'OFF' positions, highlighting its simple operation.

6.2. GFCI Receptacle

The integrated GFCI receptacle provides a convenient power source for temporary use with service tools during maintenance or installation.

- **Using the GFCI:** Plug your 125V, 20A compatible tool into the receptacle.
- **Testing the GFCI:** Periodically press the 'TEST' button on the GFCI receptacle. The 'RESET' button should pop out, indicating the GFCI has tripped. Press 'RESET' to restore power. If it does not trip, the GFCI may be faulty and should be replaced.
- **Resetting the GFCI:** If the GFCI trips (power is interrupted), press the 'RESET' button firmly to restore power. If it trips repeatedly, there may be a ground fault in the connected tool or wiring.

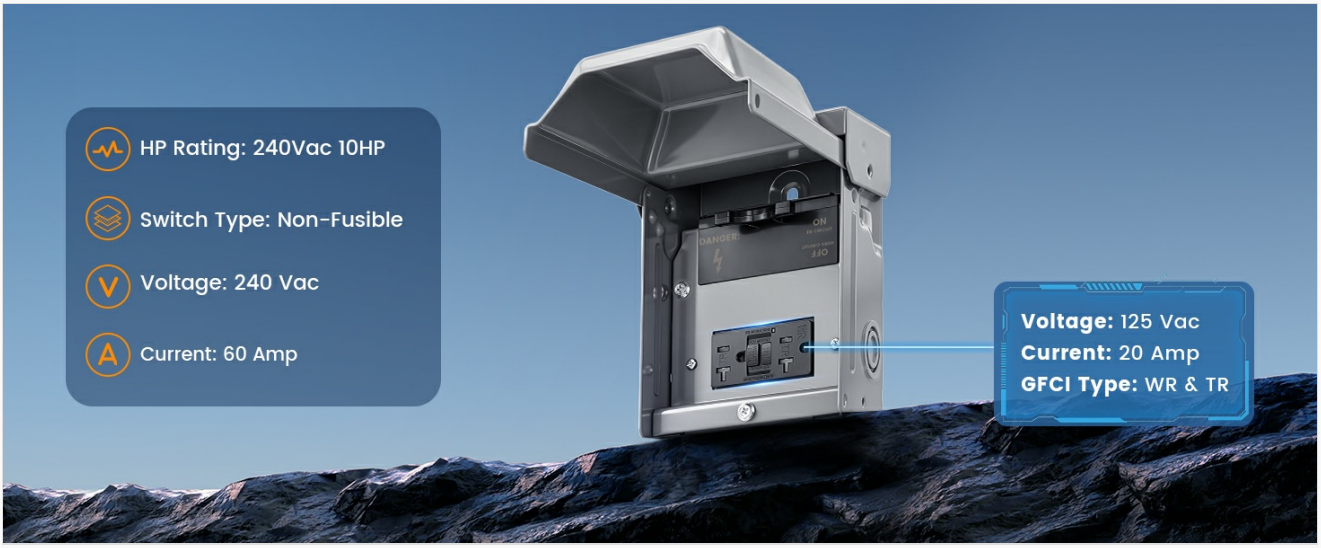

Figure 6.2: The SURAIELEC 60A Outdoor AC Disconnect Box with GFCI Outlet is shown installed on a wall next to an outdoor HVAC unit, demonstrating its typical application. Icons indicate GFCI Outlet, Weatherproof, Pull-out Switch, and ETL Listed features.

7. Maintenance

Regular maintenance helps ensure the longevity and safe operation of your disconnect box.

- **Cleaning:** Periodically clean the exterior of the enclosure with a damp cloth to remove dirt and debris. Do not

use abrasive cleaners or solvents. Ensure the lid is closed and secured during cleaning.

- **Inspection:** Annually inspect the enclosure for any signs of physical damage, corrosion, or loose connections. The galvanized steel construction and NEMA 3R rating provide excellent resistance to weather and rust.
- **GFCI Test:** Test the GFCI receptacle monthly as described in Section 6.2.
- **Wiring Check:** If comfortable and qualified, periodically check internal wiring connections for tightness, especially after extreme temperature fluctuations. Always disconnect power at the main breaker before opening the enclosure for inspection.

Figure 7.1: The disconnect box is shown installed outdoors, with an inset image demonstrating a rusted metal surface crossed out, emphasizing the NEMA 3R rainproof and rust-resistant features of the enclosure.

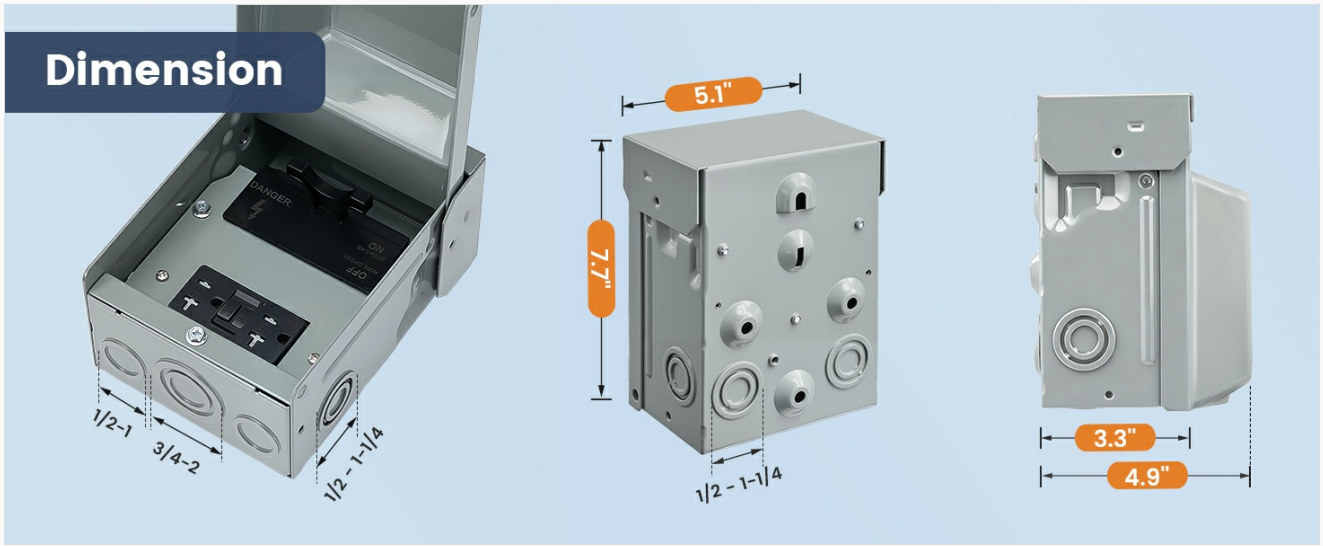

Figure 7.2: Two panels illustrate the Tamper-Resistant (TR) and Weather-Resistant (WR) features of the GFCI receptacle. One shows a protective shield icon over the GFCI, and the other shows the box in a rainy outdoor setting, highlighting its durability against elements.

8. Troubleshooting

If you encounter issues with your disconnect box, refer to the following troubleshooting steps:

- **No Power to HVAC Unit:**
  - Ensure the pull-out switch is fully inserted into the 'ON' position.
  - Check the main circuit breaker for the HVAC unit in your electrical panel to ensure it has not tripped.
  - Verify all wiring connections inside the disconnect box are secure (only by a qualified electrician with power off).

- **GFCI Receptacle Not Working / Tripping:**
  - Press the 'RESET' button firmly.
  - If it trips immediately, unplug the connected tool and try resetting. If it still trips, the GFCI may be faulty or there is an issue with its wiring.
  - If it trips with a tool plugged in, the tool may have a ground fault. Try a different tool.
  - Ensure the GFCI is not overloaded (maximum 20 Amp).
- **Physical Damage to Enclosure:**
  - If the enclosure is significantly damaged, it may compromise its NEMA 3R rating and safety. Consider replacement.

For issues not resolved by these steps, contact a qualified electrician or SURAIELEC customer support.

9. Warranty and Support

SURAIELEC products are manufactured to high-quality standards. For warranty information or technical support, please refer to the product packaging or contact SURAIELEC customer service directly. Please have your product model and purchase date available when contacting support.

Contact Information: Refer to the SURAIELEC official website or your purchase documentation for the most current contact details.