

Edison ECNR-45

Edison ECNR-45 Time Delay Fuse User Manual

Model: ECNR-45 (Pack of 10)

Brand: Edison

1. INTRODUCTION AND PRODUCT OVERVIEW

The Edison ECNR-45 Time Delay Fuse is a dual-element, current-limiting Class RK5 fuse designed for robust protection in various electrical applications. This pack contains 10 fuses, each rated at 45 Amps and 250 Volts. These fuses are specifically engineered to handle temporary overcurrents, such as motor starting surges, without opening, while still providing reliable protection against sustained overloads and short circuits.

They are recommended for AC power distribution mains, feeders, and branch circuits, including those for motors, transformers, lighting, and heating systems. The dual-element construction allows for superior overload and cycling capabilities, making them suitable for industrial applications requiring a minimum time-delay of 10 seconds at 5 times the fuse rating.



Figure 1: A pack of 10 Edison ECNR-45 Time Delay Fuses.

2. SAFETY INFORMATION

WARNING: Electrical shock hazard. Improper installation or use of fuses can result in serious injury or death. Always follow local electrical codes and safety regulations.

- Installation and replacement of fuses should only be performed by qualified personnel.
- Ensure all power to the circuit is disconnected and verified before attempting any installation, inspection, or replacement.
- Always replace a blown fuse with a fuse of the exact same type, voltage rating, and ampere rating. Using an incorrect fuse can lead to equipment damage, fire, or personal injury.
- Do not bypass or tamper with fuses. Fuses are critical safety devices designed to protect electrical systems and equipment.
- These fuses are UL Listed (Class RK5, Guide JDDZ, File E162363) and CSA Certified (C22.2, No. 248.12, Class 1422-02, File 700489), indicating compliance with recognized safety standards.

3. PRODUCT FEATURES

- **Quantity:** Sold as a pack of 10 fuses.
- **Ampere Rating:** 45 Amp.
- **Voltage Rating:** 250V AC or less.
- **Fuse Class:** Class RK5, indicating high interrupting rating and current-limiting capabilities.
- **Dual-Element Construction:** Provides superior protection against both sustained overloads and short circuits, while accommodating temporary inrush currents.
- **Time-Delay Characteristic:** Offers a minimum time-delay of 10 seconds at 5 times the fuse rating, ideal for motor circuits and other inductive loads.
- **Dimensions:** Approximately 3 inches in length and 13/16 inches in diameter.
- **Material:** Constructed with copper elements for reliable conductivity.
- **Agency Approvals:** UL Listed and CSA Certified for safety and performance.



Figure 2: A single Edison ECNR-45 Time Delay Fuse.

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and effective operation of the fuse.

1. **De-energize the Circuit:** Before handling any electrical components, ensure that the power supply to the circuit where the fuse will be installed is completely turned off at the main breaker or disconnect switch. Verify with a voltage tester.
2. **Identify Fuse Holder:** Locate the appropriate fuse holder or fuse block in your electrical panel or equipment.
3. **Verify Compatibility:** Confirm that the fuse holder is designed for Class RK5 cartridge fuses of the correct physical dimensions (3" length x 13/16" diameter) and that the circuit requires a 45 Amp, 250V fuse.
4. **Insert Fuse:** Carefully insert the Edison ECNR-45 fuse into the fuse holder. Ensure it is seated firmly and correctly. Do not force the fuse.
5. **Restore Power:** Once the fuse is securely in place and all covers are reinstalled, restore power to the circuit.

Always consult the equipment's specific wiring diagrams and safety instructions. If unsure, seek assistance from a licensed electrician.



Figure 3: Edison ECNR-45 Time Delay Fuse showing its approximate dimensions.

5. OPERATING PRINCIPLES

The Edison ECNR-45 is a time-delay fuse, meaning it is designed to allow temporary overcurrents (like the inrush current when a motor starts) to pass without blowing, while still providing protection against sustained overloads and short circuits.

Its dual-element construction consists of two distinct elements:

- **Overload Element:** This element is designed to open on sustained overloads. It has a time-delay characteristic that allows it to absorb temporary current surges without melting.
- **Short-Circuit Element:** This element reacts quickly to high-level short-circuit currents, providing rapid interruption to protect equipment from severe damage.

This combination ensures comprehensive protection for a wide range of applications, particularly those with inductive loads that draw high starting currents.

6. MAINTENANCE

Fuses generally require minimal maintenance. However, periodic inspection is recommended to ensure continued safety and performance.

- **Visual Inspection:** Periodically inspect fuses and fuse holders for signs of damage, corrosion, or overheating (discoloration). Ensure connections are secure.
- **Replacement:** Fuses are single-use protective devices. If a fuse blows, it must be replaced. Do not attempt to repair a blown fuse.
- **Storage:** Store spare fuses in a dry, cool environment, away from direct sunlight and extreme temperatures, to maintain their integrity.

Always de-energize the circuit before performing any inspection or replacement.

7. TROUBLESHOOTING

If a circuit protected by an Edison ECNR-45 fuse loses power, it typically indicates that the fuse has operated (blown) due to an overcurrent condition.

1. **De-energize Circuit:** Turn off the power to the affected circuit at the main breaker or disconnect.
2. **Identify Blown Fuse:** Visually inspect the fuse. While these fuses may not always show obvious signs of blowing externally, a continuity tester can confirm if the fuse has opened.
3. **Determine Cause:** Before replacing the fuse, investigate the cause of the overcurrent. Common causes include:
 - Overloaded circuit (too many devices connected).
 - Short circuit in wiring or equipment.
 - Faulty appliance or motor.
4. **Replace Fuse:** Replace the blown fuse with a new Edison ECNR-45 fuse of the identical ampere and voltage rating. Never use a fuse with a higher rating or bypass the fuse.
5. **Restore Power:** Once the cause is addressed and the new fuse is installed, restore power to the circuit. If the new fuse blows immediately, do not replace it again; there is a persistent fault that requires professional diagnosis.

If you are unable to identify the cause of the blown fuse or if fuses continue to blow, consult a qualified electrician.

8. SPECIFICATIONS

Specification	Value
Model Number	ECNR-45 (ECNR45_BX_5 for pack)
Ampere Rating	45 Amps
Voltage Rating	250 Volts AC
Fuse Class	RK5

Specification	Value
Dimensions (Length x Diameter)	3 inches x 13/16 inches
Material	Copper
Item Weight (Pack of 10)	2 Pounds
Agency Approvals	UL Listed, CSA Certified

9. WARRANTY AND SUPPORT

Edison fuses are manufactured to high-quality standards. For specific warranty information or technical support regarding your Edison ECNR-45 fuses, please refer to the documentation provided with your purchase or contact the manufacturer directly.

For general inquiries or to find authorized distributors, you may visit the official Edison Electric website or contact their customer service department.

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