

Littelfuse FLNR045

Instruction Manual

Littelfuse FLNR045 FUS 250V T/D Class RK5 45A

1. INTRODUCTION

This manual provides essential information for the safe and effective use of the Littelfuse FLNR045 FUS 250V T/D Class RK5 45A fuse. Please read this manual thoroughly before installation or operation and retain it for future reference. This fuse is designed for use in panel accessories and electrical systems requiring reliable overcurrent protection.

2. SAFETY INFORMATION

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

- Ensure power is disconnected at the main circuit breaker or fuse panel before installing, inspecting, or replacing fuses.
- Only qualified personnel should perform electrical work.
- Use appropriate personal protective equipment (PPE), such as insulated gloves and eye protection.
- Verify the correct fuse rating (voltage and amperage) for the circuit. Using an incorrect fuse can lead to equipment damage or fire.
- Do not bypass or tamper with fuses.

3. PRODUCT DESCRIPTION AND FEATURES

The Littelfuse FLNR045 is a 45 Amp, 250 Volt, Class RK5, dual-element, time-delay fuse. It is designed to provide superior protection for motors and other inductive loads against both overloads and short-circuits. Its time-delay characteristic allows for temporary inrush currents without nuisance opening, while still providing fast-acting protection under short-circuit conditions.



Figure 3.1: A Littelfuse FLNR045 Class RK5 time-delay fuse. This image shows the cylindrical body of the fuse with the Littelfuse brand and "CLASS RK5 Time Delay Dual Element" visible on its label.

Key Features:

- **Dual-Element Construction:** Provides both overload and short-circuit protection.
- **Time-Delay Characteristic:** Prevents nuisance blowing from temporary overcurrents, such as motor starting.
- **Class RK5 Rating:** Offers current-limiting capabilities, reducing damage to components during short-circuit events.
- **UL Listed:** Meets safety standards for reliable performance.

4. SETUP AND INSTALLATION

Installation of the FLNR045 fuse should only be performed by a qualified electrician in accordance with all applicable national and local electrical codes.

1. **De-energize Circuit:** Before beginning any work, ensure that the circuit where the fuse is to be installed

or replaced is completely de-energized. Verify with a voltage tester.

2. **Identify Fuse Holder:** Locate the appropriate fuse holder or disconnect switch for the circuit requiring protection.
3. **Insert Fuse:** Carefully insert the FLNR045 fuse into the fuse clips or holder, ensuring a secure and proper connection. Do not force the fuse.
4. **Verify Installation:** Double-check that the fuse is seated correctly and that all connections are tight.
5. **Re-energize Circuit:** Once installation is complete and verified, restore power to the circuit.

It is critical to match the fuse's voltage and amperage ratings to the circuit's requirements. Using a fuse with an incorrect rating can lead to system failure or hazardous conditions.

5. OPERATING PRINCIPLES

The Littelfuse FLNR045 is a current-limiting, time-delay fuse. This means it is designed to:

- **Protect against Overloads:** The dual-element construction allows the fuse to withstand temporary overcurrents (e.g., motor starting surges) for a specified duration without opening. If an overload persists, the fuse element will melt and open the circuit.
- **Protect against Short-Circuits:** In the event of a severe short-circuit, the fuse acts very quickly to interrupt the fault current, limiting the peak current and energy let-through. This rapid response helps prevent damage to upstream and downstream components.

The time-delay feature is particularly beneficial in circuits with inductive loads that draw high inrush currents upon startup, preventing unnecessary fuse blows and ensuring continuous operation.

6. MAINTENANCE

Fuses are generally maintenance-free components. However, periodic inspection of the fuse and its holder is recommended as part of routine electrical system maintenance.

- **Visual Inspection:** With power disconnected, visually inspect the fuse for any signs of damage, discoloration, or cracking.
- **Holder Inspection:** Check the fuse holder clips for corrosion, looseness, or signs of overheating. Ensure good contact with the fuse ends.
- **Replacement:** If a fuse has blown (indicated by an open circuit when tested with a multimeter, or visible damage), it must be replaced with an identical fuse (same brand, model, voltage, and amperage rating). Never replace a fuse with one of a higher rating.

7. TROUBLESHOOTING

If a circuit protected by the FLNR045 fuse loses power, the fuse may have blown due to an overcurrent condition. Follow these steps:

1. **De-energize Circuit:** Immediately disconnect power to the affected circuit at the main panel.
2. **Identify Blown Fuse:** Carefully remove the fuse (using appropriate tools if necessary) and test it with a multimeter for continuity. A blown fuse will show an open circuit (no continuity).
3. **Investigate Cause:** Before replacing the fuse, identify and rectify the cause of the overcurrent. Common causes include:
 - Short-circuit in wiring or equipment.

- Overloaded circuit (too many devices drawing power).
- Faulty appliance or motor.

4. **Replace Fuse:** Once the fault is cleared, replace the blown fuse with a new Littelfuse FLNR045 fuse. Ensure the replacement fuse has the exact same ratings.
5. **Re-energize and Monitor:** Restore power and monitor the circuit for proper operation. If the new fuse blows immediately, there is still an unresolved issue in the circuit that requires professional attention.

Do not repeatedly replace fuses without addressing the underlying problem, as this can lead to serious electrical hazards.


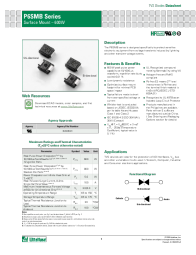
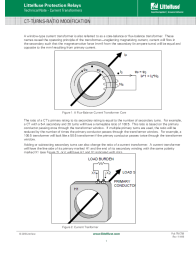

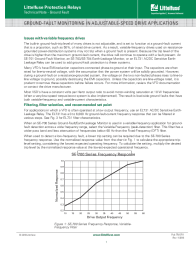
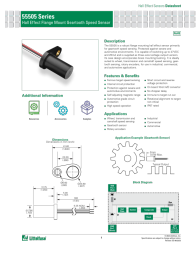
8. SPECIFICATIONS

Specification	Value
Model Number	FLNR045
Brand	Littelfuse
Voltage Rating	250 Volts AC
Amperage Rating	45 Amps
Fuse Class	RK5
Characteristic	Time-Delay, Dual-Element
Material	Stone (Insulating Body)
Compliance	UL Listed
Category	Panel Accessories, Fuse

9. WARRANTY AND SUPPORT

For information regarding warranty, technical support, or service for your Littelfuse FLNR045 fuse, please contact Littelfuse directly through their official website or customer service channels. Keep your purchase receipt for any warranty claims.

Littelfuse Official Website: www.littelfuse.com

	<p>Littelfuse JLLN Series Class T Fuses Fast-Acting, High Interrupting Capacity</p> <p>Explore Littelfuse JLLN Series Class T fuses, offering compact design, fast-acting overload and short-circuit protection, and high interrupting ratings up to 200,000 AIR. Ideal for drives, inverters, and power supplies. View specifications, ordering information, and dimensions.</p>
	<p>Littelfuse P6SMB Series 600W Surface Mount TVS Diodes Datasheet</p> <p>Datasheet for Littelfuse P6SMB Series 600W Surface Mount Transient Voltage Suppressor (TVS) Diodes. Includes features, benefits, electrical characteristics, ratings, curves, soldering parameters, physical and environmental specifications, and part numbering information.</p>
	<p>CT Turns Ratio Modification Guide: Littelfuse Technical Note</p> <p>Learn how to modify the turns ratio of Littelfuse current transformers (CTs) with this technical note, including methods for adding and subtracting turns, and practical examples. Understand the principles of CT operation and ratio adjustments.</p>
	<p>PTS526 Series Microminiature SMT Top Actuated Tactile Switch Datasheet</p> <p>Datasheet for the Littelfuse PTS526 Series microminiature SMT top-actuated tactile switch. Features a 5.2 x 5.2 mm footprint, variable heights, and multiple actuation forces, suitable for IoT, home automation, and remote control applications. Includes detailed specifications, mechanical characteristics, dimensions, and ordering information.</p>
	<p>Ground-Fault Monitoring in Adjustable-Speed Drive Applications Littelfuse Technical Note</p> <p>Technical note from Littelfuse on ground-fault monitoring for adjustable-speed drives (VFDs) using SE-700 and EL731 series relays. Covers issues, filtering, recommended settings, and current transformer location for resistance-grounded systems.</p>
	<p>Littelfuse 55505 Series Hall Effect Geartooth Speed Sensor Datasheet</p> <p>Datasheet for the Littelfuse 55505 Series Hall Effect Flange Mount Geartooth Speed Sensor, detailing its features, applications, electrical ratings, and part numbering system for industrial, commercial, and automotive use.</p>