

## Emerson 3L11-325

# Emerson 3L11-325 1/2-Inch Snap Disc Thermostat User Manual

Model: **3L11-325** | Brand: **Emerson**

## 1. INTRODUCTION

The Emerson 3L11-325 is a 1/2-inch bimetal disc thermostat designed for use in various appliances and HVAC systems. This device operates as an 'open on rise' thermostat, meaning its electrical contacts open when the temperature reaches its set range. It features a temperature range of 315 to 335 degrees Fahrenheit and is equipped with 1/4 inch quick connect terminations for easy installation. The thermostat includes a loose ring, stainless steel mounting brackets, and an aluminum disc cup, ensuring reliable performance and automatic reset functionality.

## 2. SAFETY INFORMATION

**WARNING: Electrical shock hazard. Disconnect power before installation or servicing. Installation should be performed by a qualified technician.**

- Always ensure the power supply to the appliance or HVAC system is completely disconnected before attempting any installation, maintenance, or inspection of the thermostat.
- This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm (Proposition 65 warning). Handle with care and wash hands after handling.
- Do not operate the thermostat beyond its specified temperature and electrical ratings.
- Ensure all electrical connections are secure and properly insulated to prevent short circuits or electrical hazards.

## 3. PRODUCT OVERVIEW

The Emerson 3L11-325 is a robust bimetal disc thermostat designed for precise temperature control. It is commonly utilized in various heating, ventilation, and air conditioning (HVAC) systems, as well as in a range of appliances where temperature regulation is critical. Its 'open on rise' characteristic makes it suitable for applications requiring a circuit to open when a specific temperature threshold is exceeded.



Figure 1: Top view of the Emerson 3L11-325 Snap Disc Thermostat, showing the metal disc and mounting tabs.

### Key Features:

- Bimetal disc thermostat for HVAC and appliance applications.
- "Open on Rise" operation: contacts open when temperature increases.
- Temperature range: 315°F to 335°F (157°C to 168°C).
- Equipped with loose ring, stainless steel mounting brackets, and aluminum disc cup.
- Features 1/4 inch quick connect terminations for electrical connections.
- Automatic reset functionality.

## 4. SETUP AND INSTALLATION

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Proper installation is crucial for the safe and effective operation of the thermostat. It is strongly recommended that installation be carried out by a qualified professional.

1. **Disconnect Power:** Before beginning any work, ensure that the main power supply to the appliance or HVAC system is completely turned off at the circuit breaker or fuse box. Verify with a voltage tester.
2. **Mounting Location:** Select a mounting location that accurately reflects the temperature to be controlled. The thermostat should be securely mounted using its integrated stainless steel mounting brackets. Ensure good thermal contact with the surface or air stream it is monitoring.
3. **Electrical Connections:** Connect the electrical wiring to the 1/4 inch quick connect terminations. Refer to the specific wiring diagram for your appliance or HVAC system. Ensure connections are firm and free from corrosion.
4. **Secure Installation:** Double-check that the thermostat is firmly mounted and all wiring is correctly routed and secured, preventing any accidental disconnections or damage.
5. **Restore Power:** Once installation is complete and verified, restore power to the system.



Figure 2: Angled view of the Emerson 3L11-325 Snap Disc Thermostat, highlighting the 1/4 inch quick connect terminals.

## 5. OPERATING PRINCIPLES

The Emerson 3L11-325 thermostat operates on a simple yet effective bimetallic principle. Its core component is a bimetal disc, which is a composite of two different metals bonded together, each with a different thermal expansion rate.

- **Normal Operation (Below Set Temperature):** When the ambient temperature around the thermostat is below its specified activation range (315-335°F), the bimetal disc remains in its normal, un-flexed state. In this state, the electrical contacts within the thermostat are **closed**, allowing electrical current to flow through the circuit it controls.
- **Activation (At or Above Set Temperature):** As the temperature rises and reaches the 315-335°F range, the bimetal disc heats up. Due to the differing expansion rates of the two metals, the disc rapidly flexes or "snaps" into an inverted position. This snapping action causes the internal electrical contacts to **open**, interrupting the electrical circuit. This is the "open on rise" function.
- **Automatic Reset (Temperature Drops):** When the temperature subsequently drops below the thermostat's reset point, the bimetal disc cools down and snaps back to its original position. This action automatically **closes** the electrical contacts, restoring the circuit.

This automatic reset feature ensures continuous temperature regulation without manual intervention.

## 6. MAINTENANCE

The Emerson 3L11-325 thermostat is designed for long-term, reliable operation with minimal maintenance. However, periodic checks can help ensure its continued performance.

- **Visual Inspection:** Annually, or as part of routine appliance/HVAC system maintenance, visually inspect the thermostat for any signs of physical damage, corrosion, or loose connections.
- **Cleanliness:** Ensure the area around the thermostat is free from dust, debris, or obstructions that could impede proper temperature sensing. Use a soft, dry cloth for cleaning; do not use liquids or abrasive cleaners.

- **Connection Integrity:** Verify that the 1/4 inch quick connect terminations remain securely attached and that wiring insulation is intact.
- **No User Serviceable Parts:** The thermostat itself contains no user-serviceable parts. Do not attempt to disassemble or repair the unit. If a malfunction is suspected, the unit should be replaced by a qualified technician.

## 7. TROUBLESHOOTING

If you experience issues with your Emerson 3L11-325 thermostat, consider the following troubleshooting steps. Always ensure power is disconnected before inspecting the unit.

Problem	Possible Cause	Solution
Thermostat does not open circuit at high temperature.	Unit malfunction; incorrect temperature sensing.	Verify ambient temperature. If temperature is within range and contacts remain closed, the unit may be faulty and require replacement.
Thermostat does not close circuit at low temperature.	Unit malfunction; contacts stuck open.	Verify ambient temperature. If temperature is below reset point and contacts remain open, the unit may be faulty and require replacement.
Intermittent operation.	Loose electrical connections; unstable temperature environment.	Check all 1/4 inch quick connect terminations for secure fit. Ensure thermostat is not exposed to rapid temperature fluctuations.
No power to controlled device.	Thermostat contacts open; external power issue.	Check if ambient temperature is above the thermostat's activation range. Verify main power supply to the system.

If troubleshooting steps do not resolve the issue, consult a qualified technician for further diagnosis and repair or replacement.

## 8. SPECIFICATIONS

Brand	Emerson
Model Number	3L11-325
Thermostat Type	Bimetal Disc, Snap Action
Operation	Open on Rise
Temperature Range	315°F to 335°F (157°C to 168°C)
Terminations	1/4 inch Quick Connect
Mounting	Loose ring, stainless steel mounting brackets
Reset Type	Automatic
Item Weight	Approximately 0.2 ounces (0.01 Pounds)
Product Dimensions	1.23 x 1.32 x 0.37 inches

<b>Specific Uses</b>	Residential, temperature control, appliances, HVAC systems
<b>UPC</b>	786710503719

## 9. WARRANTY AND SUPPORT


For detailed warranty information, terms, and conditions related to your Emerson 3L11-325 Snap Disc Thermostat, please refer to the official Emerson website or the documentation provided with your purchase. Keep your proof of purchase, such as a receipt or invoice, as it may be required for warranty claims.

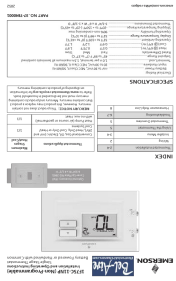
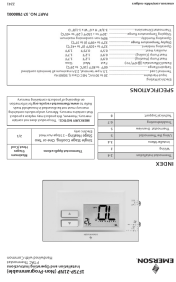
For technical assistance, product inquiries, or to locate authorized service centers, please contact Emerson customer support directly. Contact information can typically be found on the official Emerson website or on the product packaging.

You can visit the official Emerson website for more information: [www.emerson.com](http://www.emerson.com)

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## Related Documents - 3L11-325

	<p><a href="#">Emerson 1F83H-21PR Programmable Heat Pump Thermostat Installation and Operation Guide</a></p> <p>Comprehensive installation and operating instructions for the Emerson 1F83H-21PR 80 Series Programmable Heat Pump Thermostat. Learn about wiring, setup, user menus, scheduling, and troubleshooting.</p>
	<p><a href="#">Emerson Blue Easy Set 1H/1C Thermostat Installation and User Guide</a></p> <p>Comprehensive guide for the Emerson Blue Easy Set 1H/1C non-programmable thermostat, covering installation, operation, features like Home, Sleep, and Away temperature pre-sets, filter reminders, and troubleshooting.</p>
	<p><a href="#">Emerson Blue Thermostat 1F98EZ-1421/1F98EZ-1441 Homeowner User Guide</a></p> <p>Comprehensive homeowner user guide for the Emerson Blue Thermostat models 1F98EZ-1421 and 1F98EZ-1441, detailing setup, programming, system operation, diagnostics, and maintenance.</p>
	<p><a href="#">Emerson 1F85U-22NP Universal Thermostat Installation and Operating Instructions</a></p> <p>Comprehensive guide for installing and operating the Emerson 1F85U-22NP Universal Thermostat. Covers setup, features, troubleshooting, and specifications for optimal home climate control.</p>

 <p>1F75C-11NP</p> <p>Emerson 1F75C-11NP Non-Programmable Single Stage Thermostat. Covers wiring, setup, installer menu, testing, and troubleshooting.</p>	<p><a href="#">Emerson 1F75C-11NP Non-Programmable Thermostat Installation and Operating Instructions</a></p> <p>Installation and operating instructions for the Emerson 1F75C-11NP Non-Programmable Single Stage Thermostat. Covers wiring, setup, installer menu, testing, and troubleshooting.</p>
 <p>1F75P-21NP</p> <p>Emerson 1F75P-21NP Non-Programmable PTAC Thermostat. Learn about wiring, configuration, features, and troubleshooting.</p>	<p><a href="#">Emerson 1F75P-21NP PTAC Thermostat Installation and Operating Instructions</a></p> <p>Comprehensive guide for installing and operating the Emerson 1F75P-21NP Non-Programmable PTAC Thermostat. Learn about wiring, configuration, features, and troubleshooting.</p>