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› Gardner Bender AML-204 Heavy-Duty Copper Lug 4 AWG 3/8 inch Stud Instruction Manual

## Gardner Bender AML-204

# Gardner Bender AML-204 Heavy-Duty Copper Lug Instruction Manual

Model: AML-204 | Brand: Gardner Bender

## 1. INTRODUCTION

The Gardner Bender AML-204 heavy-duty tin-plated copper lugs are designed for reliable electrical connections. These lugs are suitable for 4 AWG (American Wire Gauge) wire and feature a 3/8 inch stud/screw size. Manufactured from pure copper for maximum current flow and tin-plated for corrosion resistance, these UL listed lugs ensure durable and efficient performance in various electrical applications.



Image 1.1: Gardner Bender AML-204 Heavy-Duty Copper Lug. This image displays the tin-plated copper lug, highlighting its robust construction and the crimp barrel for wire insertion, along with the stud hole for connection.

## 2. SAFETY INFORMATION

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**WARNING: Electrical work can be dangerous. Always follow local electrical codes and safety guidelines. If you are unsure about any procedure, consult a qualified electrician.**

- Always disconnect power to the circuit before installing or removing electrical components.
- Wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves.
- Ensure all connections are secure and properly insulated to prevent short circuits and electrical hazards.
- Use only tools designed for electrical work, such as proper crimping tools for lugs.
- Do not exceed the specified wire gauge or current ratings for the lug.

## 3. PACKAGE CONTENTS

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Your Gardner Bender AML-204 package typically includes:

- 2 x Gardner Bender AML-204 Heavy-Duty Copper Lugs (4 AWG, 3/8 inch Stud)

## 4. SPECIFICATIONS

| Feature                          | Detail                                                                                                                                   |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Model Number                     | AML-204                                                                                                                                  |
| Wire Gauge Compatibility         | 4 AWG (American Wire Gauge)                                                                                                              |
| Stud/Screw Size                  | 3/8 inch                                                                                                                                 |
| Material                         | Pure Copper, Tin-Plated                                                                                                                  |
| Connector Type                   | Crimp                                                                                                                                    |
| Specification Met                | UL Listed                                                                                                                                |
| Temperature Rating               | Up to 221°C (430°F)                                                                                                                      |
| Color                            | Silver (due to tin plating)                                                                                                              |
| Product Dimensions (Approx. Lug) | Refer to technical drawings for precise lug dimensions. (Note: Provided dimensions 3.56"L x 1.27"W x 10.16"H likely refer to packaging.) |
| Item Weight (per lug)            | Approximately 0.32 ounces (0.64 ounces for 2-pack)                                                                                       |

*Note: The lug itself is uninsulated. The 'Insulation Material: Polyvinyl Chloride' specification found in some listings may refer to packaging or a generic category.*

## 5. INSTALLATION INSTRUCTIONS

Follow these steps to properly install the Gardner Bender AML-204 copper lug:

- 1. Prepare the Wire:** Strip approximately 1/2 to 3/4 inch of insulation from the end of the 4 AWG wire. Ensure the exposed copper strands are clean and free of damage. The length of the stripped wire should match the depth of the lug's barrel.
- 2. Insert Wire into Lug:** Carefully insert the stripped end of the 4 AWG wire into the barrel of the copper lug. Ensure all wire strands are fully seated within the lug barrel and no stray strands are outside.
- 3. Crimp the Lug:** Using a heavy-duty crimping tool appropriate for 4 AWG copper lugs, position the lug in the crimper's die. Apply firm and even pressure to crimp the lug onto the wire. A proper crimp should be tight and secure, ensuring good electrical contact and mechanical strength. Multiple crimps may be necessary depending on the crimping tool.
- 4. Inspect the Crimp:** After crimping, visually inspect the connection. The lug should be firmly attached to the wire, and the wire should not pull out with moderate force. The crimp should appear uniform and not excessively deformed.
- 5. Connect to Stud:** Place the lug's stud hole over the 3/8 inch stud or screw of the electrical component. Secure it firmly with a washer and nut, ensuring a tight electrical and mechanical connection. Do not overtighten, but ensure sufficient torque to prevent loosening.
- 6. Insulate (Optional but Recommended):** For added safety and protection against environmental factors, consider insulating the crimped connection using heat-shrink tubing or electrical tape, especially in exposed or

high-vibration environments.

## 6. OPERATING INSTRUCTIONS

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Once properly installed, the Gardner Bender AML-204 copper lug functions as a secure electrical termination point. No specific 'operating' steps are required beyond ensuring the connection remains tight and free from corrosion. These lugs are designed for continuous electrical current flow within their specified ratings.

## 7. CARE AND MAINTENANCE

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To ensure the longevity and reliable performance of your copper lugs:

- **Regular Inspection:** Periodically inspect all lug connections for signs of corrosion, loosening, or damage.
- **Cleanliness:** Keep the connection points clean and free from dirt, dust, and moisture.
- **Corrosion Protection:** While tin-plated for corrosion resistance, in harsh environments, consider applying an anti-corrosion compound to the connection points.
- **Tightness:** Re-tighten any loose connections as necessary, ensuring not to overtighten.

## 8. TROUBLESHOOTING

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Most issues related to copper lugs stem from improper installation or environmental factors. Consider the following if you encounter problems:

- **Loose Connection:** If a connection feels loose or shows signs of arcing (scorching, discoloration), disconnect power, inspect the crimp and stud connection, and re-secure. Ensure the correct crimping tool was used and applied sufficient force.
- **Corrosion:** If corrosion is present, disconnect power, clean the affected areas thoroughly, and re-establish the connection. Consider additional environmental protection.
- **Overheating:** An overheating lug indicates excessive current, a poor connection, or an undersized wire/lug for the application. Disconnect power immediately and investigate the cause. Ensure the wire gauge and lug are appropriate for the current load.

## 9. WARRANTY INFORMATION

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Gardner Bender products are typically covered by a limited manufacturer's warranty against defects in materials and workmanship. For specific warranty terms, conditions, and duration, please refer to the official Gardner Bender website or contact their customer support directly. Keep your proof of purchase for warranty claims.

## 10. CUSTOMER SUPPORT

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For technical assistance, product inquiries, or warranty support, please contact Gardner Bender directly:

- **Website:** Visit the official Gardner Bender website for product information, FAQs, and contact details.
- **Contact:** Refer to the 'Contact Us' section on their website for phone numbers or email support.

When contacting support, please have your product model number (AML-204) and any relevant purchase information ready.

## ASK A QUESTION ABOUT THIS MANUAL

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Example: How do I reset this device or fix this error?

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Model number, symptoms, what you tried, or the section of the manual you are using.

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