XRDS -RF UHF-J-LMR400

XRDS-RF PL-259 UHF Male Clamp Coaxial Connectors Instruction Manual

Model: UHF-J-LMR400

1. Product Overview

The XRDS-RF PL-259 UHF Male Clamp Coaxial Connectors are designed for reliable signal transmission with various coaxial cable types. These connectors feature a robust construction and are engineered for low signal loss, making them suitable for a wide range of radio and communication applications.

Figure 1.1: The PL-259 connector being installed on a coaxial cable, highlighting its compatibility with LMR400, RG8, RG8U, KSR400, LMR400UF, RG213, CNT400, Belden9913, and 7D-FB coaxial cables.

Key Features:

- **Compatible Cable Types:** Works with LMR400, RG8, RG8U, KMR400, Belden 9913, and 7D-FB/RG213 Coaxial Cables.
- **Low Loss & Low VSWR:** Attenuation is less than 0.1dB and Voltage Standing Wave Ratio (VSWR) is less than 1.2 (DC-1G).
- **Durable Construction:** Features a brass body with nickel plating, a gold-plated brass center pin, and a Teflon (PTFE) insulator. Each connector includes a dust cap for protection.
- **Versatile Applications:** Ideal for use in ham radio, CB radio, marine ham cable systems, broadcast equipment, telecommunications, antenna extensions, Walkie Talkies, and phone signal boosters.

2. Product Components

Each PL-259 UHF Male Clamp Connector consists of several parts designed for secure and efficient cable termination. Familiarize yourself with the components before installation.

Figure 2.1: Exploded view showing the individual components of the PL-259 connector, including the clamp nut, body, center pin, gasket, clamp braid sleeve, insulator, and washers.

- **Clamp Nut:** Secures the cable assembly to the connector body.
- **Body:** The main housing of the connector.
- **Center Pin:** The conductive pin that connects to the cable's center conductor.
- **Gasket:** Provides weatherproofing and strain relief.
- **Clamp Braid Sleeve:** Compresses the cable braid for electrical contact and mechanical stability.
- **Insulator:** Electrically isolates the center pin from the connector body.
- **Washers:** Used for proper spacing and compression within the assembly.

3. Installation Instructions

Follow these steps carefully to ensure proper installation and optimal performance of your PL-259 UHF Male Clamp Connector. This guide is suitable for LMR400, RG8, RG8U, KMR400, Belden 9913, and 7D-FB/RG213 coaxial cables.

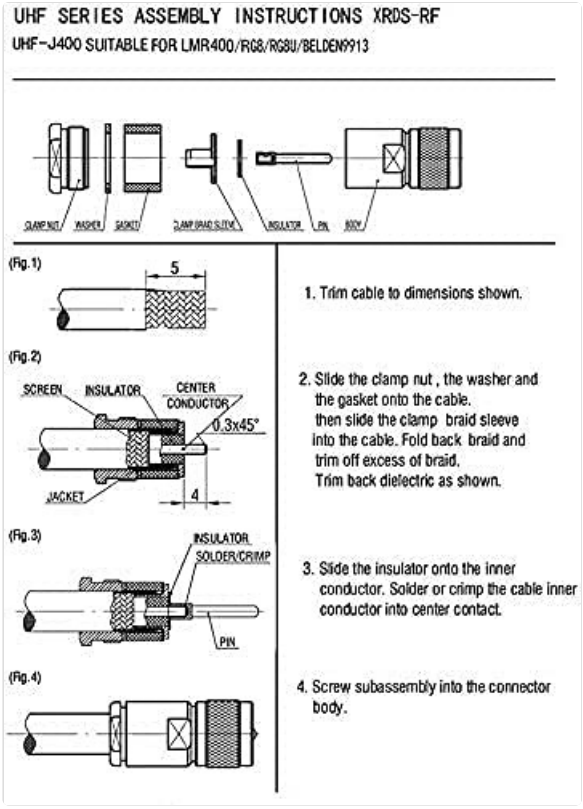

Figure 3.1: Assembly diagram for UHF series connectors, illustrating cable preparation and component placement with specific dimensions.

1. **Prepare the Cable:**
    - Slide the compression nut, the thinner metal washer, and the rubber sleeve over the end of the coaxial cable in that order.
    - Strip approximately 0.393 inches (10mm) of the outer jacket and insulation from the cable end. Be careful not to damage the shield braid.
    - Place the other metal washer over the braid, butting it against the outer jacket.
    - Fan out the shield braid away from the inner foil, spreading it completely over the metal washer.
    - Slide the metal ferrule (clamp braid sleeve) over the coax and insert its shank underneath the shield braid, pressing it down to form a "sandwich" with the metal washer and the braid in between.
    - Carefully trim off any exposed shield braid that extends beyond the ferrule and washer, ensuring it is flush with their outer diameter.
    - Strip approximately 0.210 inches (5.3mm) of the inner foil and center conductor insulation from the coax. Ensure no inner foil intrudes on the center conductor.
2. **Attach the Center Pin:**
    - Place the small nylon insulator washer over the center conductor and slide it down until it rests against the center conductor insulation.
    - Solder the center conductor pin to the center conductor. For stranded conductors, you may gently spread the strands slightly with an X-ACTO knife or pin to ensure a snug fit before soldering. For solid conductors, crimping is not recommended. Ensure solder flows into the pin cup to avoid cold solder joints. Avoid pre-tinning the center conductor as it can make fitting the pin difficult.
3. **Assemble the Connector Body:**
    - Once the solder joint has cooled, insert the completed cable end into the connector body. The

center pin should align easily with the hole in the connector body's nylon insulator.
    - Carefully push the connector body down over the center pin until it is fully seated. The end of the center pin will not protrude significantly beyond the connector end.
4. **Final Tightening and Weatherproofing:**
    - Slide the rubber sleeve, washer, and compression nut into the back of the connector and tighten the nut. Do not overtighten. The nut may not seat flush with the back of the connector, which is normal.
    - For enhanced weatherproofing, apply rubber splicing tape around the compression nut area.
5. **Test Continuity:**
    - Perform a quick test to verify there is no shorting between the center pin and the outer shell of the connector.

Installation Video Guide:

Your browser does not support the video tag.

Video 3.1: Official XRDS-RF video demonstrating the attachment process for PL-259 UHF Male Clamp Connectors. This video provides a visual guide to the steps outlined above.

4. Specifications

Feature	Detail
Model Number	UHF-J-LMR400
Connector Type	UHF Male (PL-259) Clamp Connector
Compatible Cable Types	LMR400, RG8, RG8U, KMR400, Belden 9913, 7D-FB/RG213
Characteristic Impedance	50 Ohm
VSWR (0-6GHz)	≤ 1.12
Attenuation (0-3GHz)	≤ 0.1dB
Attenuation (0-6GHz)	≤ 0.12dB
Max. Operating Frequency	0-3000MHz
Nominal Operating Temperature	-40°C to +80°C
Body Material	Brass, Nickel Plated
Pin Material	Brass, Gold Plated
Insulator Material	Teflon (PTFE)
Current Rating	50 Amps
Item Weight (per 5-pack)	0.23 Kilograms
Unit Count	5 Count

Figure 4.1: Detailed material and electrical specifications of the XRDS-RF PL-259 connector.

5. Troubleshooting

If you encounter issues during or after installation, consider the following common troubleshooting steps:

- **No Signal or Intermittent Signal:**
  - Check for proper soldering or crimping of the center pin. A cold solder joint or poor crimp can lead to signal loss.
  - Ensure there are no short circuits between the center conductor and the shield braid. Use a multimeter to test continuity and shorts.
  - Verify that the shield braid is properly clamped and making good electrical contact with the connector body.
  - Inspect the cable for any damage, kinks, or breaks.
- **High VSWR:**
  - High VSWR can indicate an impedance mismatch or a poor connection. Re-check all installation steps, especially cable stripping dimensions and center pin attachment.
  - Ensure the connector is fully tightened and seated correctly.

- **Difficulty Assembling:**
    - Ensure correct cable stripping dimensions. Incorrect lengths can make assembly difficult or lead to poor connections.
    - Refer to the assembly diagram (Figure 3.1) and the installation video (Video 3.1) for visual guidance.

6. Maintenance

These PL-259 connectors are designed for durability and require minimal maintenance. To ensure long-term performance:

- **Regular Inspection:** Periodically check connections for any signs of corrosion, loose fittings, or physical damage.
- **Cleanliness:** Keep the connector interfaces clean and free from dust, dirt, and moisture. Use a soft, dry cloth for cleaning.
- **Weather Protection:** If used outdoors, ensure proper weatherproofing (e.g., with rubber splicing tape) is maintained to prevent moisture ingress.

7. Warranty and Support

XRDS-RF is committed to providing high-quality products. These PL-259 Coaxial Connectors come with a full year of warranty from the date of purchase.
For technical support, warranty claims, or any product-related inquiries, please contact XRDS-RF customer service through your purchase platform or visit the official XRDS-RF store.

Manufacturer: XRDS-RF
Brand: XRDS-RF
Online Store: Visit the XRDS-RF Store on Amazon