

NISSEI RS-40

NISSEI RS-40 V/UHF SWR & Power Meter User Manual

Model: RS-40 (Item Model Number: RS-27)

1. INTRODUCTION

Thank you for choosing the NISSEI RS-40 V/UHF SWR & Power Meter. This compact and lightweight device is designed for accurate measurement of Forward Power and Standing Wave Ratio (SWR) in both mobile and home radio setups. It operates across two frequency ranges: 140-150MHz and 430-450MHz, with a measurable power range of 0-200W. The RS-40 provides direct readings without the need for calibration and features a low insertion loss structure, allowing it to remain permanently connected to your equipment. This manual provides essential information for the proper setup, operation, and maintenance of your RS-40 meter.

2. SAFETY INFORMATION

- Always ensure the meter is connected correctly to your radio equipment to prevent damage to the meter or the radio.
- Do not exceed the maximum measurable power range of 200W. Exceeding this limit may damage the internal components.
- Keep the device away from water and excessive moisture. While the product is water-resistant, it is not waterproof.
- Avoid dropping the device or subjecting it to strong impacts, as this may affect its accuracy and functionality.
- Do not attempt to open or repair the device yourself. Refer to qualified service personnel for any repairs.

3. PACKAGE CONTENTS

Please check the box for the following items:

- 1 x NISSEI RS-40 V/UHF SWR & Power Meter
- 1 x RS-232 Cable (Note: While the product listing mentions an RS-232 cable, this device typically does not require one for its primary function as a standalone SWR/Power meter. Please disregard if not applicable to your specific unit.)

4. PRODUCT OVERVIEW

The NISSEI RS-40 features a clear analog meter display and intuitive controls for power and SWR measurement.



Figure 4.1: Front View of RS-40 Meter

This image displays the front of the RS-40 meter. Key features visible include the large analog meter for SWR and Power readings, the 'FUNC.' switch (likely for selecting SWR or Power display), and the 'RANGE' switch (for selecting power ranges like 15W, 60W, 200W). The SO-239 connectors are visible on the top and bottom sides.



Figure 4.2: Side View of RS-40 Meter

This image shows a side perspective of the RS-40 meter, emphasizing one of the SO-239 coaxial connectors. These connectors are used to interface the meter with your radio and antenna system.

Components:

- **Analog Meter Display:** Shows SWR and Forward Power readings.
- **FUNC. Switch:** Selects between SWR and Power measurement modes.
- **RANGE Switch:** Selects the power measurement range (15W, 60W, 200W).

- **SO-239 Connectors:** Input and output ports for coaxial cables.

5. SETUP

Follow these steps to set up your NISSEI RS-40 SWR & Power Meter:

1. **Identify Connectors:** The RS-40 has two SO-239 connectors. One is for connecting to your radio (transceiver), and the other is for connecting to your antenna.
2. **Connect to Radio:** Connect a coaxial cable from the antenna output of your radio to the 'TX' or 'INPUT' connector on the RS-40 meter. (Refer to the meter's labeling for exact input/output ports if available, otherwise, standard practice is radio to meter input).
3. **Connect to Antenna:** Connect another coaxial cable from the 'ANT' or 'OUTPUT' connector on the RS-40 meter to your antenna.
4. **Secure Connections:** Ensure all coaxial cable connections are tight and secure to prevent signal loss and inaccurate readings.
5. **Placement:** Place the meter in a stable location where the display is easily visible during operation.

6. OPERATING INSTRUCTIONS

The RS-40 meter is designed for straightforward operation.

6.1. Measuring Forward Power

1. Set the **FUNC.** switch to 'POWER'.
2. Select the appropriate power range using the **RANGE** switch (15W, 60W, or 200W). Choose a range that is higher than your expected transmit power to avoid pegging the needle.
3. Transmit a continuous carrier (e.g., by pressing the PTT button on your microphone).
4. Read the Forward Power directly from the analog meter display. The meter will indicate the power output from your radio.

6.2. Measuring SWR (Standing Wave Ratio)

1. Set the **FUNC.** switch to 'SWR'.
2. Select a power range using the **RANGE** switch. Ensure your radio is transmitting at least 1W for accurate SWR measurement.
3. Transmit a continuous carrier.
4. Read the SWR value directly from the analog meter display. An SWR close to 1.0:1 indicates a good match between your radio and antenna. Higher values indicate a mismatch, which can lead to reduced performance and potential damage to your radio.

Note: The RS-40 meter does not require calibration for direct readings. Its low insertion loss (0.3 dB or lower) means it can be left connected permanently in your antenna line.

7. MAINTENANCE

The NISSEI RS-40 meter is designed for durability and requires minimal maintenance.

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the meter. Do not use abrasive cleaners or solvents, as they may damage the finish or display.

- **Storage:** When not in use for extended periods, store the meter in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Connector Care:** Keep the SO-239 connectors clean and free of dust or corrosion. Use a contact cleaner if necessary.
- **Inspection:** Periodically inspect the meter for any signs of physical damage or loose connections.

8. TROUBLESHOOTING

If you encounter issues with your RS-40 meter, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No reading on meter	Incorrect connections No RF power being transmitted Faulty coaxial cable	Check all cable connections between radio, meter, and antenna. Ensure your radio is transmitting power. Test with a different coaxial cable.
Inaccurate power reading	Incorrect power range selected Meter damage	Select a power range appropriate for your transmit power. If readings are consistently off, the meter may require service.
High SWR reading	Antenna mismatch Faulty antenna or cable Incorrect frequency for antenna	Check your antenna system for proper tuning. Inspect antenna and coaxial cables for damage. Ensure you are transmitting on a frequency within your antenna's designed range.
Meter needle pegs (goes past max)	Power output exceeds selected range	Switch to a higher power range (e.g., from 15W to 60W or 200W).

9. SPECIFICATIONS

Feature	Specification
Frequency Range	140-150MHz, 430-450MHz
Testing Functions	Forward Power, SWR
Measurable Power Range	0 - 200W
Power Ranges	15W, 60W, 200W
Accuracy (60/200W range)	(PEP) +/- 15%
Accuracy (15W range)	(AVG) +/- 10%
Min. Power (Fwd) Measured	1W
Insertion Loss	0.3 dB or lower
Connectors	SO-239 (UHF Female)
Dimensions (W x H x D)	2.75in x 3.1in x 1.12in (70mm x 78mm x 30mm)

Feature	Specification
Weight	0.39 lb / 180 g
Housing	Rugged metal

10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided at the time of purchase or contact your retailer. NISSEI products are typically covered by a manufacturer's warranty against defects in materials and workmanship. Keep your proof of purchase for warranty claims.

For further assistance, you may also visit the official NISSEI website or contact their customer service department. Contact details are usually available on the product packaging or the manufacturer's website.

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

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

Details

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

Submit question