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Dosy TFB-3001-S

Dosy TFB-3001-S In-Line Wattmeter and Frequency Counter User Manual

Model: TFB-3001-S

1. INTRODUCTION

The Dosy TFB-3001-S is a versatile in-line wattmeter and frequency counter designed for use with AM, USB, and LSB radio frequencies. It provides simultaneous readouts for Standing Wave Ratio (SWR), RF power (in watts), and AM modulation, along with a built-in frequency counter. This device is suitable for both CB and amateur radio users, allowing accurate measurement of frequency within the 1.8 MHz to 50 MHz range.



Figure 1: Front view of the Dosy TFB-3001-S In-Line Wattmeter and Frequency Counter. The unit features three analog meters for SWR, RF Power, and Modulation, along with a digital frequency display. Control knobs for SWR, Watt Range, and Modulation are located below the meters.

2. PACKAGE CONTENTS

Verify that all items are present in the package before proceeding with installation.

- Dosy TFB-3001-S In-Line Wattmeter and Frequency Counter Unit
- 3-foot plug-in speaker lead
- Power pack

3. KEY FEATURES

- Built-in Frequency Counter: Accurately measures frequency from 1.8 MHz to 50 MHz.
- "S" Designation: Optimized for single side-band (SSB) users.
- Multi-Mode Compatibility: Supports AM, USB, and LSB frequencies.
- Simultaneous Meter Readouts: Three 2.5-inch lighted meters display SWR, RF Power (Watts), and AM Modulation concurrently.
- Multiple Watt Ranges: Selectable power ranges of 0-10, 0-100, and 0-1000 Watts.
- Peak Watt Measurement: Capable of reading peak watts.
- Speaker Lead Included: A 3-foot plug-in speaker lead is provided for tone generation into the microphone, useful for radios without hard-wiring.
- Momentary Toggle: Allows for single side-band reading without voice transmission.

4. SETUP AND INSTALLATION

1. **Power Connection:** Connect the included power pack to the unit's power input and then to a standard electrical outlet. Ensure the unit is powered off before making connections.
2. **In-Line Connection:**
 - Connect your radio's antenna output to the "TRANSMITTER" (or "TX") input on the TFB-3001-S.
 - Connect your antenna to the "ANTENNA" (or "ANT") output on the TFB-3001-S.
 - Use appropriate coaxial cables and connectors for all connections.
3. **Speaker Lead Connection (Optional):** If your radio lacks hard-wiring for tone generation, connect the 3-foot plug-in speaker lead from the TFB-3001-S to your radio's microphone input. This allows for tone generation for SSB readings.
4. **Initial Power On:** Once all connections are secure, switch the unit on. The meters should illuminate, and the frequency counter display should activate.

5. OPERATING INSTRUCTIONS

5.1. SWR Measurement

The left-most meter displays the Standing Wave Ratio (SWR).

1. Set the SWR/MOD SET switch to "SWR".
2. Transmit a carrier (e.g., key your microphone in AM mode).
3. Adjust the "SET" knob until the meter needle aligns with the "SET" mark on the SWR scale.
4. Flip the SWR/MOD SET switch to "MOD". The meter will now display your SWR reading. An SWR of 1.5:1 or lower is generally desirable.

5.2. RF Power (Watts) Measurement

The center meter displays RF power in watts.

1. Select the appropriate watt range (0-10, 0-100, or 0-1000) using the "WATTS" selector knob. Choose a range that is higher than your expected output power to avoid pegging the meter.
2. Transmit a carrier. The meter will indicate your RF power output.
3. The unit also reads peak watts, which is particularly useful for SSB transmissions.

5.3. AM Modulation Measurement

The right-most meter displays AM modulation percentage.

1. Set the SWR/MOD SET switch to "MOD".
2. Transmit a carrier and speak into the microphone.
3. Adjust the "MOD" knob until the meter needle aligns with the "SET" mark on the modulation scale.
4. The meter will then display your modulation percentage. Aim for modulation levels below 100% to prevent over-modulation and distortion.

5.4. Frequency Counter Operation

The digital display shows the operating frequency.

- Ensure the frequency counter is switched "ON".
- When transmitting, the display will show the current frequency of your radio signal within the 1.8 MHz to 50 MHz range.
- For single side-band (SSB) users, a momentary toggle switch allows for frequency reading without requiring voice modulation, providing a stable carrier for measurement.

6. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Avoid abrasive cleaners or solvents.
- **Storage:** Store the unit in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Connections:** Periodically check all cable connections for tightness and wear.

7. TROUBLESHOOTING

- **No Power:**
 - Ensure the power pack is securely connected to both the unit and a working electrical outlet.
 - Verify the unit's power switch is in the "ON" position.
- **Inaccurate Readings:**
 - Check all coaxial cable connections for proper seating and integrity.
 - Ensure the correct watt range is selected for power measurements.
 - Recalibrate SWR and Modulation meters as described in the operating instructions.
 - Verify the frequency counter is switched "ON" for frequency readings.
- **No Frequency Display:**

- Confirm the frequency counter's power switch is "ON".
- Ensure the radio is transmitting within the 1.8 MHz to 50 MHz range.

8. SPECIFICATIONS

Model	TFB-3001-S
Brand	Dosy
Frequency Range	1.8 MHz to 50 MHz
Watt Ranges	0-10, 0-100, 0-1000 Watts
Meter Type	Three 2.5-inch lighted analog meters
Display	Digital Frequency Counter
Supported Modes	AM, USB, LSB
Special Feature	S-Designation for Single Side-Band Users
Item Weight	3.98 pounds (approx. 1.8 kg)
Package Dimensions	11.46 x 8.58 x 7.6 inches (approx. 29.1 x 21.8 x 19.3 cm)
Included Components	3-foot plug-in speaker lead, power pack
Compatible Devices	Radios without hard-wiring
International Protection Rating	IP44 (Water Resistant)

9. WARRANTY AND SUPPORT

For information regarding warranty coverage, technical support, or service, please refer to the documentation provided with your purchase or contact Dosy customer service directly. Keep your proof of purchase for warranty claims.