

MFJ

QRP SWR/Wattmeter

Model MFJ813

INSTRUCTION MANUAL

CAUTION: Read All Instructions Before Operating Equipment

MFJ ENTERPRISES, INC.

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MFJ-813 QRP HF SWR/Wattmeter

Introduction

The MFJ-813 is a HF-QRP Wattmeter that measures *forward power* and *reflected power* over a 0 to 5-W calibrated range. It also indicates *relative power* and reads *SWR* with any transmitter ranging from 100 mW to 50 Watts output. The unit's Bruene-style SWR bridge combines both RF current and RF voltage levels to ensure uniform accuracy across a wide range of load impedances, operating frequencies, and power levels.

Installation and Operation

1. Connect radio to the TRANSMITTER jack and antenna (or tuner) to the ANTENNA jack.
2. To read calibrated *forward* and *reflected* QRP power, set the SWR/POWER sensitivity potentiometer to the 5-W calibration mark on the panel and use the selector switch to toggle between FWD and REF readings.
3. For SWR readings at all power levels (100 mW to 50-W), set the selector switch for FWD/SET, apply a continuous carrier, and adjust the SWR/POWER knob for a full-scale meter reading. Next, switch to REV/SWR and read SWR on the red meter scale.
4. For relative power indications at any level between 100 mW and 50 W, press the selector for FWD/SET and adjust the SWR/POWER sensitivity control to provide a usable meter reading (near full scale provides the best resolution).

Calibration

Your MFJ-813 was calibrated at the factory and should deliver years of accurate service without further attention. However, routine calibration may be performed if you have access to the specified tools and the requisite technical skill to make the prescribed adjustments.

[] Null Trimcap: Adjustment requires an insulated tuning wand and an accurate 50-Ohm HF dummy load that can handle 5 Watts. Remove the box cover and locate the null trimmer at the rear of the PC board. Switch meter to REF/SWR and set the sensitivity control on the 5-Watt calibration mark. Connect the dummy load, set radio to 14-MHz, and key a 5-W carrier. Using the insulated wand, adjust the trim cap for *minimum meter indication*. When finished, reinstall cover.

[] Power Calibration: Adjustment requires an accurate 5-W signal source, a 1/16" Allen wrench, and a 5-Watt dummy load. Switch meter to FWD/SET, apply a 5-Watt carrier at 14 MHz, and carefully adjust the meter sensitivity knob for a full-scale (5-W) reading. If the knob pointer is not positioned exactly on the front-panel 5-Watt calibration mark when the meter reads full scale, loosen the knob with the 1/16" Allen wrench, reposition the pointer, and tighten firmly in place.

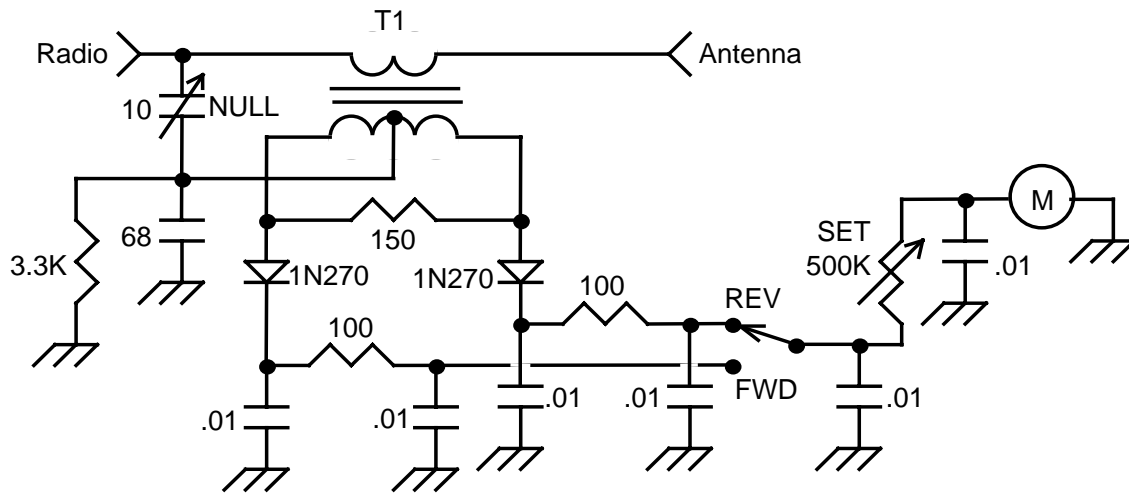
IMPORTANT WARNING: *Applying over 100 Watts of RF could damage your MFJ-813 permanently.* To check unknown power levels, set the SWR/POWER control fully counter-clockwise at minimum sensitivity, then increase slowly -- as needed -- for usable meter deflection. Also, note that the MFJ-813 is an averaging type wattmeter and does not provide accurate PEP readings for SSB transmissions. Averaged speech typically indicates 33%-50% of peak power output.

Technical Assistance

If you have any problem with this unit first check the appropriate section of this manual. If the manual does not reference your problem or reading the manual does not solve your problem, you may call *MFJ Technical Service* at **662-323-0549** or the *MFJ Factory* at **662-323-5869**. You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by mail to MFJ Enterprises, Inc., 300 Industrial Park Road, Starkville, MS 39759; by Facsimile (FAX) to 662-323-6551; or by email to techinfo@mfjenterprises.com. Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.

Schematic



LIMITED 12 MONTH WARRANTY

MFJ Enterprises, Inc. warrants to the original owner of this product, if manufactured by MFJ Enterprises, Inc. and purchased from an authorized dealer or directly from MFJ Enterprises, Inc. to be free from defects in material and workmanship for a period of 12 months from date of purchase provided the following terms of this warranty are satisfied.

1. The purchaser must retain the dated proof-of-purchase (bill of sale, canceled check, credit card or money order receipt, etc.) describing the product to establish the validity of the warranty claim and submit the original or machine reproduction of such proof of purchase to MFJ Enterprises, Inc. at the time of warranty service. MFJ Enterprises, Inc. shall have the discretion to deny warranty without dated proof-of-purchase. Any evidence of alteration, erasure, or forgery shall be cause to void any and all warranty terms immediately.

2. MFJ Enterprises, Inc. agrees to repair or replace at MFJ's option without charge to the original owner any defective product under warranty provided the product is returned postage prepaid to MFJ Enterprises, Inc. with a personal check, cashiers check, or money order for **\$10.00** covering postage and handling.

3. This warranty is **NOT** void for owners who attempt to repair defective units. Technical consultation is available by calling the Service Department at 662-323-0549 or the MFJ Factory at 662-323-5869.

4. This warranty does not apply to kits sold by or manufactured by MFJ Enterprises, Inc.

5. Wired and tested PC board products are covered by this warranty provided **only the wired and tested PC board product is returned**. Wired and tested PC boards installed in the owner's cabinet or connected to switches, jacks, or cables, etc. sent to MFJ Enterprises, Inc. will be returned at the owner's expense unrepaired.

6. Under no circumstances is MFJ Enterprises, Inc. liable for consequential damages to person or property by the use of any MFJ products.

7. **Out-of-Warranty Service:** MFJ Enterprises, Inc. will repair any out-of-warranty product provided the unit is shipped prepaid. All repaired units will be shipped COD to the owner. Repair charges will be added to the COD fee unless other arrangements are made.

8. This warranty is given in lieu of any other warranty expressed or implied.

9. MFJ Enterprises, Inc. reserves the right to make changes or improvements in design or manufacture without incurring any obligation to install such changes upon any of the products previously manufactured.

10. All MFJ products to be serviced in-warranty or out-of-warranty should be addressed to:

**MFJ Enterprises, Inc.
300 Industrial Park Road
Starkville, Mississippi 39759 USA**

and must be accompanied by a letter describing the problem in detail along with a copy of your dated proof-of-purchase.

11. This warranty gives you specific rights, and you may also have other rights which vary from state to state.

