Farun FS 222

SWR-POWER INDICATOR

INTRODUCTION:

This test instrument is a compact 3-function test meter designed to indicate the condition of any 52 ohm CB antenna system and transmitter (see specifications). By testing for Standing Wave Ratio, relative RF power, comparing antennas can be accomplished with this meter. It is designed to be used for base stations or mobile operations and can be permanently installed in the antenna system without any measurable loss of power.

SWR METER:

The SWR function of the test instrument is probably the most useful test performed. Testing for the SWR or Standing Wave Ratio provides the operator of the transmitter a good indication of the condition of his antennas are located externally on the transmitter. In order to get the maximum amount of power radiated from the antenna, the lead line or coax and the antenna should be matched to the transmitter. Because a perfect match is never achieved, the amount of mismatch can be measured by measuring the amount of Standing Waves that exist in the coax of antenna feed line. Measuring the Standing Waves can be accomplished by sampling the forward "FWR" power and the reflected "REF" power and comparing them and then expressing this difference as a ratio of reflected power to forward power. The following ratios are examples of the amount of power loss for a Standing Wave Ratio.

POW LOSS SWR:

0% = 1:1; 2% = 1.3:1; 3% = 1.5:1; 6% = 1.7:1; 11% = 2:1; 25% = 3:1; 38% = 4:1; 70% = 10:1
A ratio of from 1.1:1 to a 2:1 is usually considered satisfactory for most operations.

POWER METER FUNCTION:

The power meter function is provided to monitor the condition of the transmitter by measuring the relative RF power being generated in the transmitter. This meter will measure up to 100 watts of RF power. There will be no measurable power loss if the meter is left in the coax as a permanent installation.

INSTALLATION FOR SWR AND POWER MEASURMENTS:

To use this meter as a Standing Wave Ratio meter or as an RF power meter it must be connected in the antenna feed line. With the transmitter off, disconnect the coax from the transmitter, and connect that coax to the end of the SWR power marked ANT. Connect the short length of coax between the transmitter and the end of the SWR power meter marked TRANS. This meter can be installed permanently for SWR or power meter operation.

SWR MEASUREMENT:

CAUTION: DO NOT TURN THE TRANSMITER ON WHILE THE ANTENNA AND TEST METER ARE DISCONNECTED!
1. With the meter properly connected and the transmitter off, place the lower slide switch to the "FWD" position.
2. Key to the transmitter and adjust the calibration potentiometer for a full scale deflection of the "SET" mark on the meter.
3. While the transmitter is on, place the REF switch to the "SWR" position and read the meter on the upper scale. This is the VSWR.

NOTE: IF THE SWR IS ABOVE 2:1 THE ANTENNA MAY NEED TUNING OR THERE MAY BE A PROBLEM IN THE ANTENNA SYSTEM.

POWER MEASUREMENT:

CAUTION: DO NOT TURN THE TRANSMITTER ON WHILE THE ANTENNA AND TEST METER ARE DISCONNECTED!
1. Connect the meter in the antenna feed in the same manner as for the SWR measurement.
2. For measuring power below 10 watts, place the top switch 10W-100W in the 10W position. For measuring power above 10 watts, use the 100W position.

NOTE: FOR ACCURATE POWER READINGS, THE SWR SHOULD BE NO HIGHER THAN 1.5:1.
3. Tum the transmitter on and read the power from the meter. If the 100W range is used multiply the reading by 10.

CAUTION: ABNORMALLY HIGH READING OR READINGS ABOVE THE RATED POWER OF THE TRANSMITTER COULD INDICATE A FAULTY ANTENNA SYSTEM. CHECK ALL CONNECTORS FOR TIGHTNESS OR CORROSION.

SPECIFICATIONS:

SWR..... 1:1 - 1:3
RF power.....1W - 10W - 100W
Impedance 52Ω
Frequency range .....3.5 - 150Mhz