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## MODEL FSI-5

## DUAL METER STANDING WAVE BRIDGE

## INSTRUCTION MANUALS

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**\* Model FSI-5 SWR POWER METER \***

Model FSI-5 is SWR & POWER Meter with Directional Coupler installed and its character is to measure the wide frequency range precisely by the very easy operation. For SWR measurement, it uses Directional Coupler, comparing the power supplied to and reflected from transmitter and the independent SWR indicates the measurement. For power measurement, the power meter indicates the travelling wave power detected by Directional Coupler and its frequency range is determined by the figure of Variable Resistor which is for sensitivity adjustment. Model FSI-5 is a through type power meter in its construction, so RF component is not directly detected from co-ax line. Accordingly, there is very little loss connecting it between transmitter and antenna circuit and QSO is available as it is connected.

**SPECIFICATIONS**

Measuring Way	Directional Coupler
Measuring Range	RF Power 0-1 KW SWR 1 : 1-1 : 3 V.S.W.R.
Frequency Range	3.5-150 MHz
Circuit Impedance	50-75 ohm
Measuring Accuracy	RF Power $\pm 20\%$ SWR $\pm 5\%$
Connector	SO-239
Meter Sensitivity	SWR Meter 100 $\mu$ A F.S.D. POWER Meter 100 $\mu$ A F.S.D.
Dimensions	120(W) $\times$ 50(H) $\times$ 65(D)mm.
Weight	450g.

**OPERATION****\* Connection of Model**

1. Turn off the output power of transmitter. Disconnect the co-ax cable which leads to antenna from transmitter.
2. Connect the antenna terminal of transmitter and the "TRANSMITTER" connector of Model FSI-5 with the same kind of cable as the cable from the antenna. This co-ax cable is preferably short, and should be less than 1 meter long.
3. Connect the co-ax cable which leads to the antenna to the "ANTENNA" connector of Model FSI-5. When any antenna coupler is set between transmitter and antenna, connect Model FSI-5 between transmitter and antenna coupler. In this case, any type of feeder is acceptable between antenna coupler and antenna, but use 50 ohm or 75 ohm co-ax cable which fits to the transmitter output power impedance between transmitter and Model

**\* SWR Measurement \***

1. Turn transmitter on, under the condition that Model FSI-5 is correctly connected.
2. POWER Meter and SWR Meter swing at the same time. Adjust the center knob so that the left side POWER Meter indicates "100/50". This position is the position of "SET". You can now read SWR figure on the right side SWR Meter directly.
3. The indication of SWR Meter shows the ratio of the travelling wave power from transmitter and the reflected wave power from antenna circuit, so the higher the indication of SWR Meter, the larger the reflected wave power. The reflected wave power is not delivered from antenna and it is more preferable that its power is less. If SWR Meter indicates less than 1.3, the condition is good. The table below shows the ratio of the travelling wave power and the reflected wave power against the SWR figure.

SWR	W(REF)/W(FOR)%	SWR	W(REF)/W(FOR)%
1.1	0.227	1.5	4.00
1.2	0.827	2.0	11.1
1.3	1.71	2.5	18.4
1.4	2.78	3.0	25.0

4. In case Antenna Coupler is set between Model FSI-5 and antenna, adjust Antenna Coupler to make SWR figure as small as possible.