

## MODEL P5453 SWR INSTRUMENT and FIELD STRENGTH INDICATOR

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The PACE Model P5453 is a compact instrument for checking antenna installation and transmitter operation. Continuous monitoring of the transmitter output is possible by having the instrument in the circuit at all times. The PACE Model P5453 can be used to check transmit field strength by disconnecting it from the feedline and attaching a small pickup antenna.

#### INSTRUCTIONS FOR CHECKING "STANDING WAVE RATIO" (SWR)

- a. Turn the transmitter off. Disconnect the antenna coaxial cable at the transmitter output.
- b. Connect the P5453 "TRANS" connector to transmitter output and "ANT" to antenna connector. A short cable equipped with a male coax connector on both ends will be required between the transmitter and the P5453.
- c. Set the center switch to "FWD" and rotate the adjusting knob to near minimum position (counter-clockwise).
- d. Turn on the transmitter and rotate the adjusting knob for full meter swing.
- e. Next, set the switch to "REF". Read the meter scale. The indication will give the reading directly (top scale).
- f. A perfect matching, 1 to 1 ratio is ideal. Adjustments to the antenna system should be made so that the "SWR" is as low as possible. A "SWR" reading of 2.0 is considered satisfactory, taking into consideration the line losses and slight mismatching. The operator is referred to the manufacturers instructions with each antenna for the correct matching procedure. Never attempt to adjust the radio transmitter to the antenna.
- g. For use with other than 27 MHz operation, the power required for the SWR bridge operation is dependent on the frequency, about 25 watts at 3.5 MHz, 15 watts at 7 MHz, and proportionately lower powers at higher frequencies. If the transmitter power is not sufficient and a full meter swing cannot be achieved in step e, above, then adjust the transmitter and antenna system for the lowest possible swing at the "REF" position of the switch.

#### INSTRUCTIONS FOR MEASURING TRANSMITTER FIELD STRENGTH

- a. Set the switch to "FWD".
- b. Fasten the collapsible pickup antenna to the jack at the top of the case and extend it to full length.
- c. Bring the P5453 near the transmitter or antenna system, with the transmitter in operation. (Note, the P5453 is not connected in the system in any way.) Be careful that the pickup antenna does not come into contact with any metallic portion of the transmitter or the antenna.
- d. The adjusting knob is rotated to obtain a convenient reading on the meter. In the presence of strong RF fields, shorten the antenna.
- e. After the above steps have been completed, any adjustments performed on the transmitter or antenna will be reflected by an increase or decrease on the meter while reading the RF scale.

#### IN-CIRCUIT MONITORING

The P5453 can be placed in the circuit for continuous monitoring the transmitter output up to 1 kw. Set the switch to "FWD" and adjust the knob for a meter swing to about midscale with the transmitter on. Any abnormal variation in the transmitting system will be detected quickly. The instrument consumes practically no power for this purpose.

#### DETERMINING PERCENTAGE POWER OUTPUT

By utilizing the (%) REF power (center scale) reading the wattage output of your transmitter may be determined by calculations.

WARNING: SEVERE DAMAGE CAN OCCUR IF THE GAIN IS SET TOO HIGH WHEN POWER IS APPLIED.

((P)) PACE COMMUNICATIONS

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