

Modular Tester user guide: capacitor outside foil side checker

© Jef Collin 2024

Revision 1/11/2024

The outside foil checker allows identification of the capacitor terminal connected to the foil on the outside of the capacitor.

Capacitors are made of two strips of foil with an insulating material in between (dielectricum), then rolled up. This means one foil will be on the outside and is more sensitive to pick up noise.

In old radios and tube amplifiers the outer foil terminal should be connected to the low impedance side (output of a stage) and non-outside foil terminal to the high impedance side (input of a stage) to minimize noise pickup.

The checker works on the principle that the environment is full of noise, specific 50Hz or 60Hz noise from the mains wiring in the house.

It will amplify the noise it measures over the cap, switch the polarity, and determine which side is more sensitive based on the amplitude of the signals.

Connect the capacitor with short wires since they will act as antennas.

Although some capacitors are very sensitive and the tester will pick up general environmental noise, it is recommended to touch the outside of the cap to induce directed noise to the outside foil.

Press the rotary encoder (right knob) and hold until the splash screen appears.

Press the rotary encoder to turn the testing on or off.

Turn the rotary encoder to select the sensitivity: Manual, low, medium or high.

In manual mode turn the manual gain potentiometer to adjust the sensitivity.

Press right encoder long for the menu, turn to select, press to select or toggle setting:

Return: return to main screen.

Scope on / Scope off: toggle the oscilloscope mode.

Go to sleep: put the module to sleep.

In scope mode an oscilloscope screen shows signals for both directions, same functions as the normal screen.

Calibration procedure

There is one point of calibration, the bias of the ADC circuit.

Adjust for 1.6V at pin 8 of U2.

