

Field Tester / Feldmessgerät 30

The field tester was developed and adopted by the German military forces in 1930. It was designed for demanding use in the field. It was the main diagnostic tool of the signals soldier. The feldmessgerät 30 is the forefather of today's multimeters.

The unit is housed in a hardwood box with a latching hinged lid. It is compact, measuring 5 ¾ x 4 ½ x 3 (Imperial); 150 x 110 x 75 (Metric) It is light and has a leather carry handle. Inside the bottom of the case behind a sliding metal cover is stored the 4.5 volt operating battery and a small compartment for the test leads.



The feldmessgerät 30 can perform the following basic electrical test functions are supported; voltage testing, battery testing, resistance measurement and continuity testing. The operating instructions are written in German inside the cover. The feldmessgerät 30 can also self test, showing the battery voltage. Pressing the button "P" and the meter needle will register the internal battery voltage as in the photo to the right.



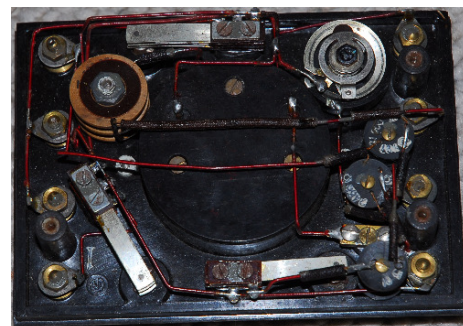
On the left the bottom of the unit with the sliding cover removed showing the battery and test lead stowage.



Internal Details

The feldmessgerät 30 internals are modular, they are secured in the case by four machine screws in the top of the battery compartment. When the tester is removed from the case you can easily access all of the components, which are mounted to the reverse of the faceplate.

To the right you can see a photo of the internals when removed from the wooden case. The meter is in the centre, test lead contacts along both sides, rheostats to the top and the contacts of the momentary press test button on the lower left. (Remember the components are reverse of the way they appear on the top side.)



Operating Instructions

Below is a rough translation of the operating instructions for the Feldmessgerät 30. **Acthung! As with any testing device use caution when high voltages or currents may be encountered.**

Operating Instructions:

1. Voltage measurement.
 Connection of one voltage which can be measured to:
 - 6V at terminal + and -6V: Reading x 1
 - 60V at terminal + and -60V: Reading x 10
 - 300V at terminal + and -300V: Reading x 50
2. Battery cell testing.
 - a. Testing new cells.
 - i. Testing voltage:
 Batteries from 1 to 3 elements between terminal + and -6 Volt attach.
 Voltage must be at least:
 - 1.5V with 1 cell
 - 3.0V with 2 series connected cells
 - 4.5V with 3 series connected cells
 - ii. Testing internal resistance:
 Connected as above. Button N pressed (shunt link 15 Ω). Immediately after pressing the button read N. Minimum voltage should be:
 - 1.4V with 1 cell
 - 2.6V with 2 series connected cells
 - 3.7V with 3 series connected cells
 - b. Supervise from elements in the use.
 Connected as above. Pressing button N 2 Min., read. Minimum voltage should be:
 - 1 cell
 - 2 series connected cells
 - 3 series connected cells
3. Resistance test.
 Connect leads to be tested between terminal L1 and L2/E. The Ω scale is valid only for a measuring voltage of 4 volts, from there first for measuring voltage is shown through pressing button P. Above a 4 volt deviation, turn knob marked „Spannungs-Reigler“. Clockwise increases the pointer range, anti-clockwise decreases. To measure resistance press the M button and read Ω scale.
4. Line testing.
 - a. External current measurement:
 Connect the lines between terminals to be tested, + and - 300 V. If no external current is present, then the meter does not move.
 - b. Loop measurement:
 Connection of the line branches at terminals L1 and L2/E. Measurement of the loop resistance exactly as under section 3.
 - c. Isolation against ground:
 Connection of the line at terminal L1, terminal L2/E, which can be examined, with earth connect. Measurement of the insulation resistance against earth is exactly as under section 3.