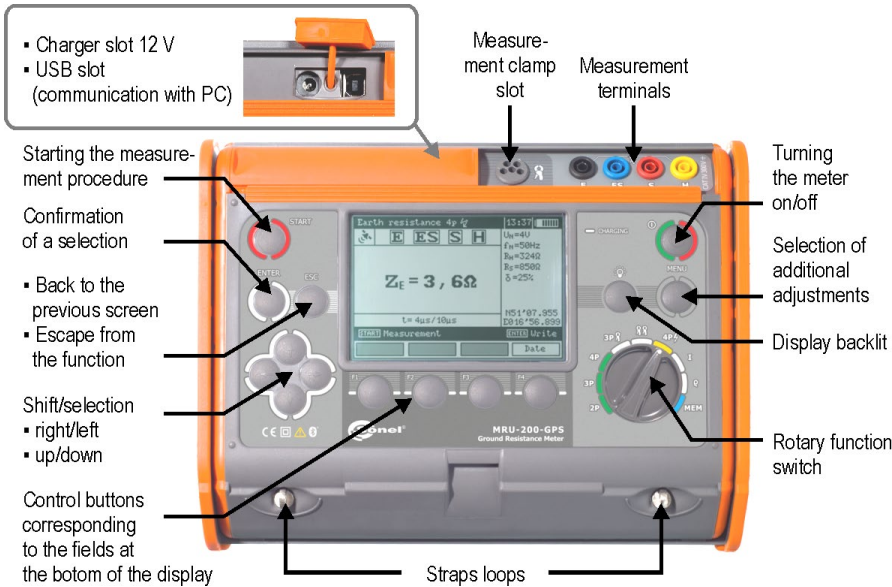




The meter is designed for measurements at interference voltages which do not exceed 24 V for R_E measurements and 3 V for R_{CONT} measurements. The voltage is measured up to 100 V, but above 40 V is indicated as dangerous. The meter must not be connected to voltages exceeding 100 V.



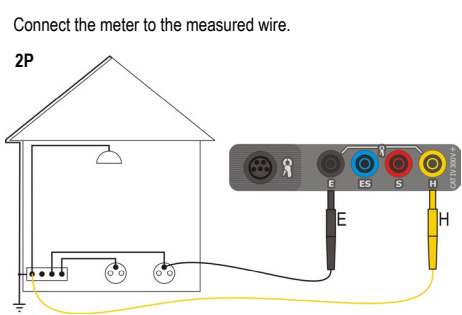
$U_M > 24V!$	The voltage on the measurement points exceeds 24 V but is lower than 40 V. The measurement is blocked.	NOISE!	The value of the interfering signal is too high. The result may be distorted by additional uncertainty.	LIMIT!	The uncertainty of the electrode resistance >30%. Uncertainties calculated on the basis of the measured values.
$U_M > 40V!$ and a continuous sonic signal	The voltage on the measurement points exceeds 40 V. The measurement is blocked.	$R > 19,99k\Omega$ $R_E > 19,99k\Omega$ $R_S > 19,9k\Omega$ $R_H > 19,9k\Omega$ $\rho > 999k\Omega m$	Measurement range exceeded.	$I_L > max$	Excessive interfering current, the measurement error may exceed the basic error.

First steps

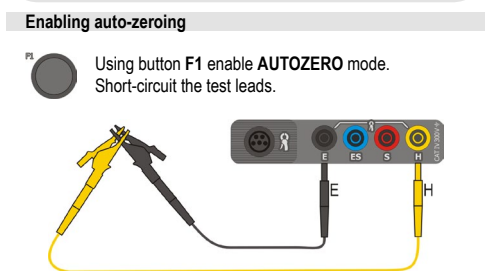
- Turn on the meter**
- Select the method and connect**
- Configure**
- Obtain the result**

Measurements

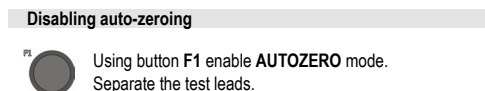
Wire continuity measurement



In order to eliminate the influence of the resistance of the test leads over the result of the measurement, its compensation (auto-zeroing) has to be done.

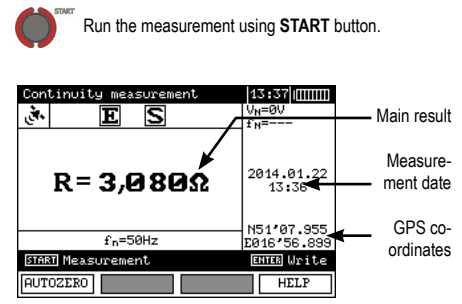


Press START.

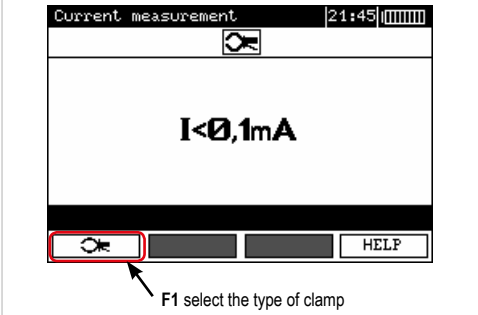
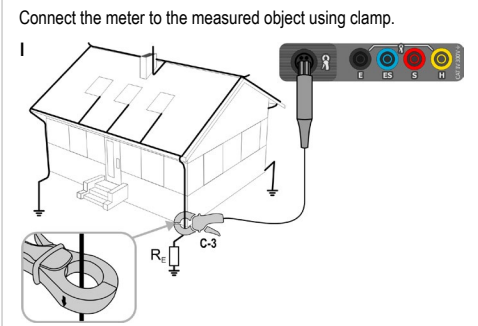


Press START.

It is sufficient to realize compensation once for the given test leads. It is also remembered once the meter has been turned off, until the next successful auto-reset procedure.

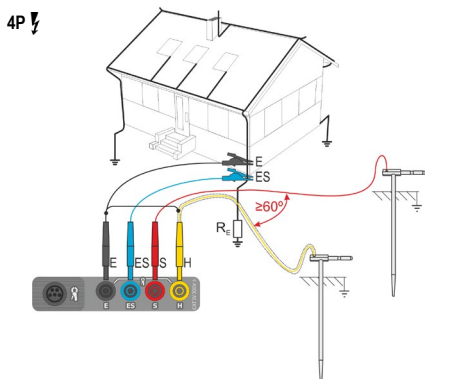
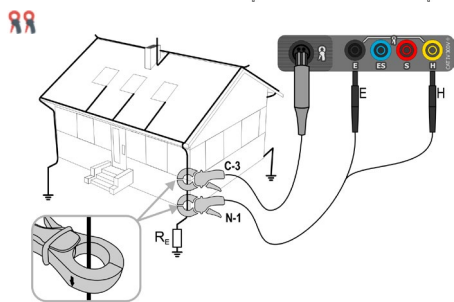
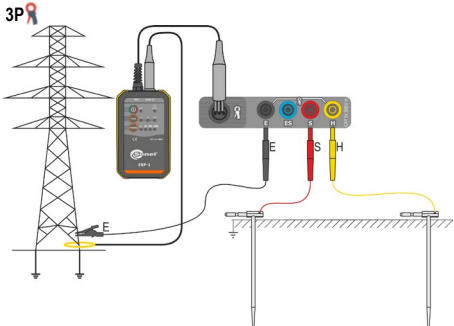
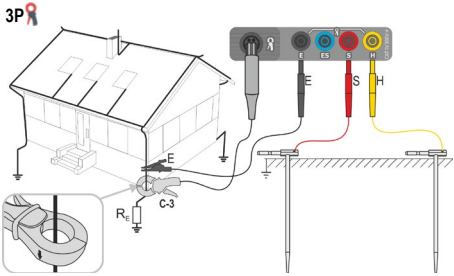
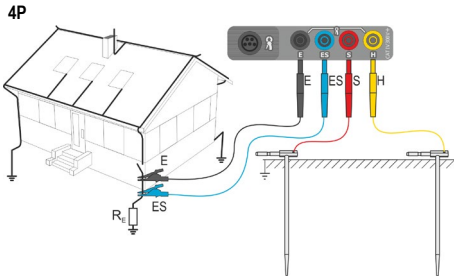
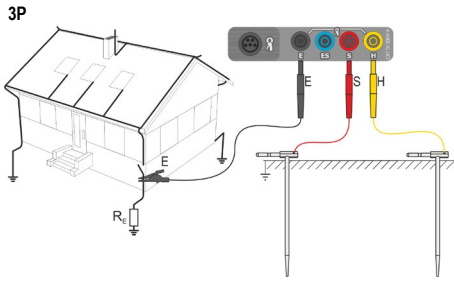


Current measurement

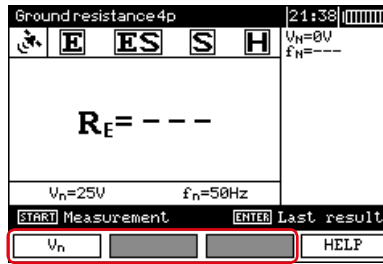


Using START button run the measurement.

Earth resistance measurement R_E



Configuration and R_E measurement



Enter settings

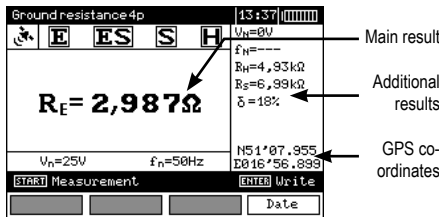
- F1 voltage/pulse shape
- F2 selection of C-3/ERP-1 (3P+clamp method)
- F3 selection of the number of pole legs (ERP-1)



Using button **START** run the measurement.



Using button **F4** display coordinates of the measured point.



Main result

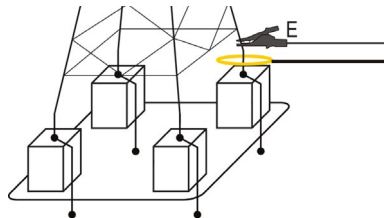
Additional results

GPS co-ordinates

- U_n voltage on the measurement points
- f_n interference frequency
- I_n interfering current
- R_n resistance of current electrode
- R_s resistance of voltage electrode
- δ additional uncertainty caused by the resistance of the electrodes
- $R_1 \dots R_n$ earth resistance of the pole leg no. 1...4

Measurement of R_E of poles using ERP-1 adapter

Connect the meter to the leg of the measured pole.



ERP-1

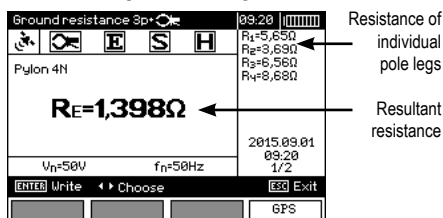
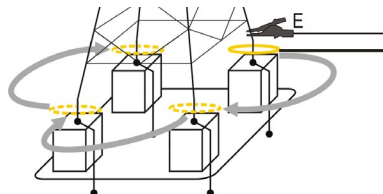
- FLEX** Using **FLEX** button select the type of flexible clamps connected to the device.
- TURNS** Using **TURNS** button select the number of flexible clamp wraps around the pole leg.

MRU-200 / MRU-200-GPS

Press **F2** and select ERP-1 adapter.



Using **START** button run the measurement. Wrap the clamps around next legs according to instructions on the display. Keep one direction of connecting to pole legs (clockwise or counter-clockwise).

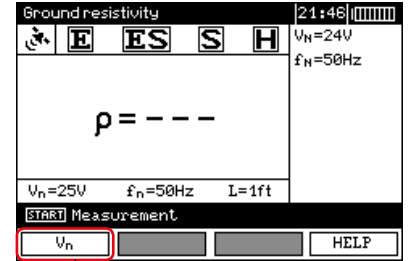
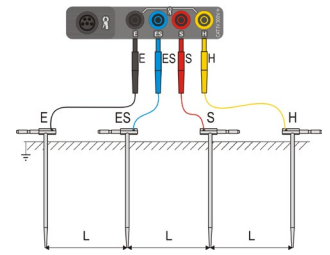


Resistance of individual pole legs

Resultant resistance

Earth resistivity measurement

Connect the meter to the measured earth.



Enter settings

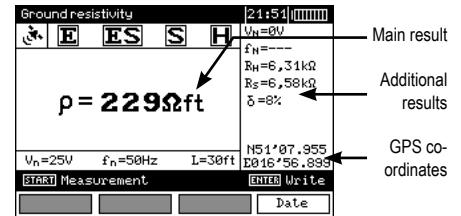
- F1 measuring voltage



Press **START**. Using buttons **▲ ▼** enter the distance between electrodes.



Using button **ENTER** run the measurement.

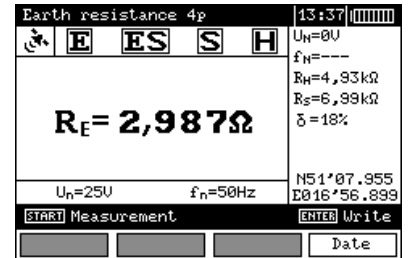


Main result

Additional results

GPS co-ordinates

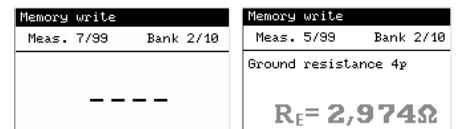
Saving a result to the memory



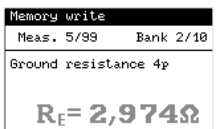
After the measurement press **ENTER**.



Select memory cell using buttons **▲ ▼**. Select memory bank using buttons **◀ ▶**.



Target cell empty



Target cell occupied



Press **ENTER** to save the result.

Sonel
test & measurement



Find more information in the user manual and on our website www.soneltest.com