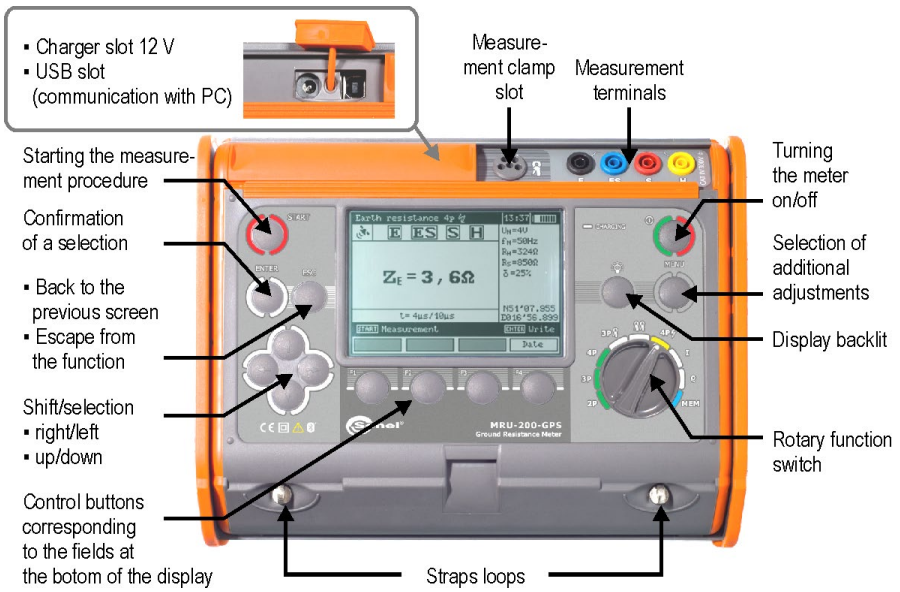
Sonel MRU-200 / 200-GPS

Earth Resistance Meter ● QuickStart

v1.01 | 20.05.2020

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.

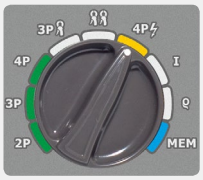


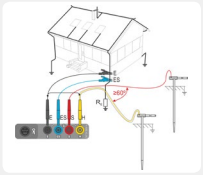
U_N>24V!	The voltage on the measurement points exceeds 24 V but is lower than 40 V. The measurement is blocked.	**NOISE!**	The value of the interfering signal is too high. The result may be distorted by additional uncertainty.	**LIMIT!**	The uncertainty of the electrode resistance >30%. Uncertainties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

First steps

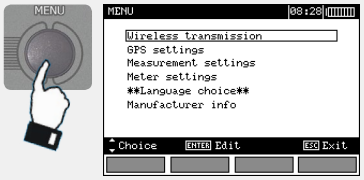
1 Turn on the meter

2 Select the method and connect



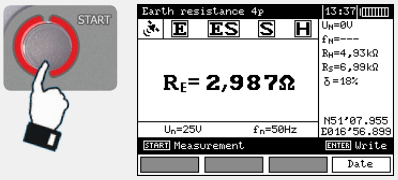


3 Configure



In **MRU-200-GPS** you can enable GPS.

4 Obtain the result

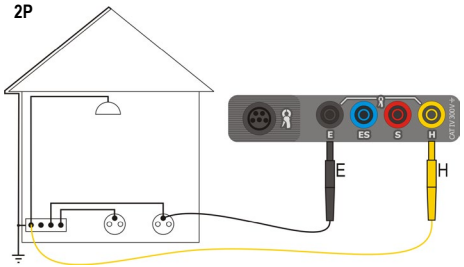


Measurements

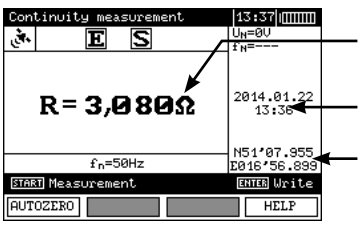
Wire continuity measurement

Connect the meter to the measured wire.

2P



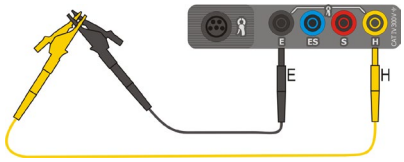
Run the measurement using **START** button.



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.

Enabling auto-zeroing

Using button **F1** enable **AUTOZERO** mode.
Short-circuit the test leads.



Press **START**.

Disabling auto-zeroing

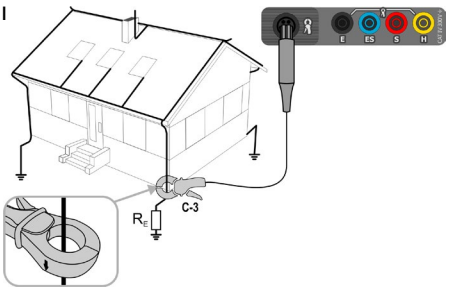
Using button **F1** enable **AUTOZERO** mode.
Separate the test leads.

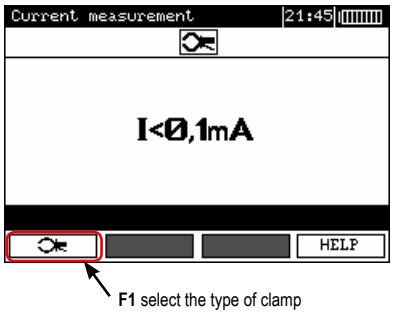
Press **START**.

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

Connect the meter to the measured object using clamp.

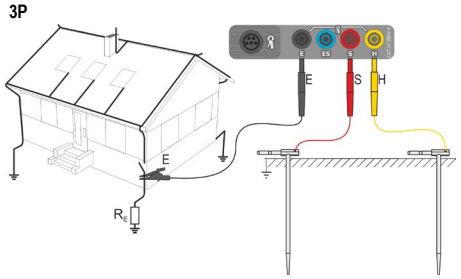




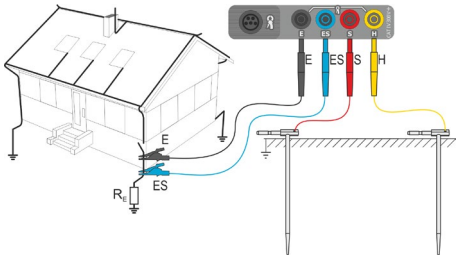
Using **START** button run the measurement.

Earth resistance measurement R_E

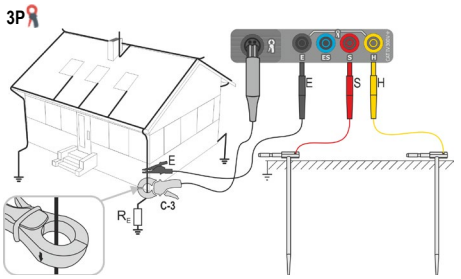
3P



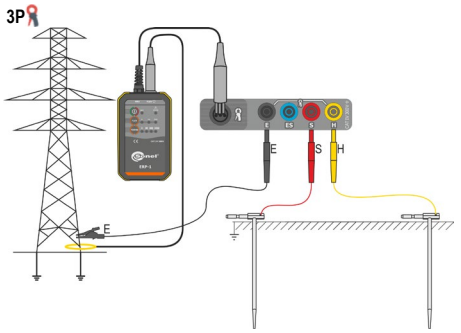
4P

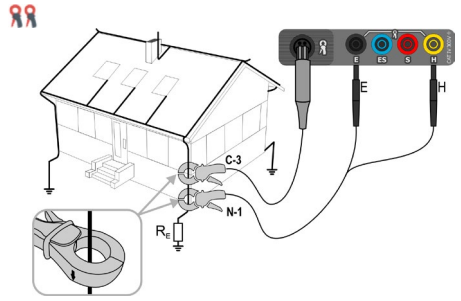


3P

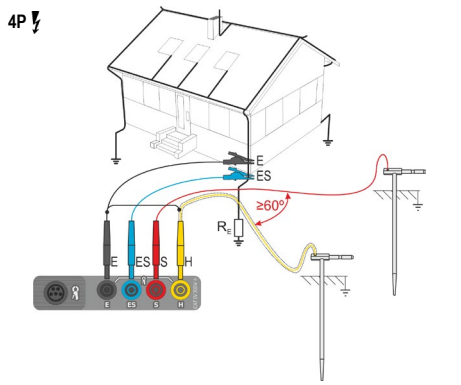


3P

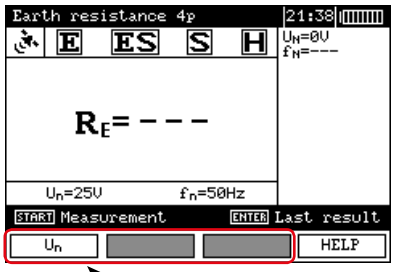




4P



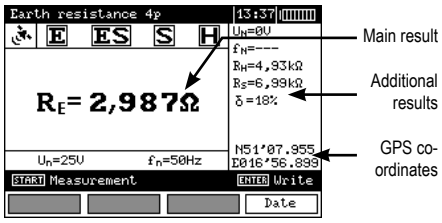
Configuration and R_E measurement



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)

Jsing button **START** run the measurement.

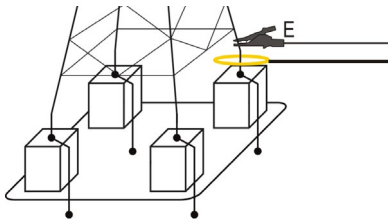
Using button **F4** display coordinates of the measured point.



U_N .....voltage on the measurement points
f_N.....interference frequency
I_L .....interfering current
R_H .....resistance of current electrode
R_S.....resistance of voltage electrode
δ .....additional uncertainty caused by the resistance of the electrodes
R_1...R_4..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

Using **FLEX** button select the type of flexible clamps connected to the device.

Using **TURNS** button select the number of flexible clamp wraps around the pole leg.

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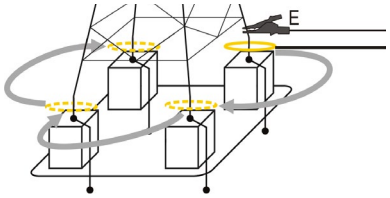
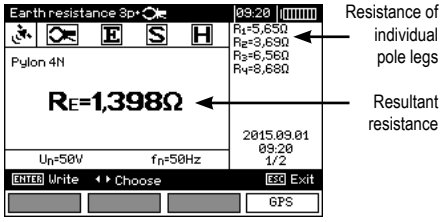
Press **F2** and select ERP-1 adapter.

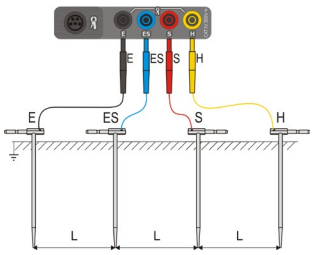
Using **START** button run the measurement.
Wrap the clamps around next legs according to instructions on the display. Keep one direction of connecting to pole legs (clockwise or counter-clockwise).

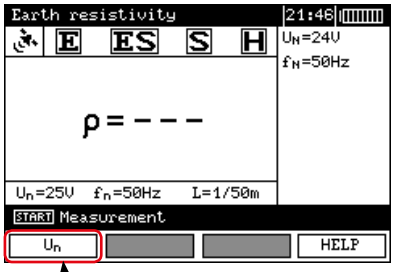




Earth resistivity measurement

Connect the meter to the measured earth.

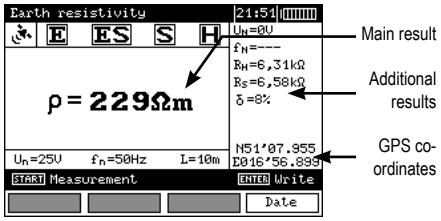




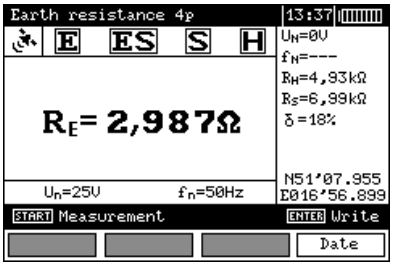
Enter settings
- **F1** measuring voltage

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

Using button **ENTER** run the measurement.

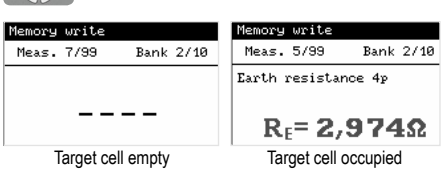


Saving a result to the memory



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.

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