

Elektro-stress-meter ESM-2

Electro-stress measuring device



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Operating Manual

ESM-2 Electro-stress measuring device

Many thanks for deciding on the purchase of this device. You will be enabled to measure the body voltage of a person located in an electrical alternating field simply and meaningfully, in order to introduce corresponding measures for its reduction according to the measured value obtained.

With this operating manual, we would like to put you in a position

- to be able to operate the device without problems
- to assess the measured values for their biological effectiveness
- to carry out suitable remedial actions

Application

Persons who are in electrical fields are under voltage. The level of this voltage is a measure of the stress acting on the body.

The ESM-2 electro-stress measuring device measures this a.c. voltage against ground, using a hand-held sensor and displays its value in a digital form which is easy to read off.

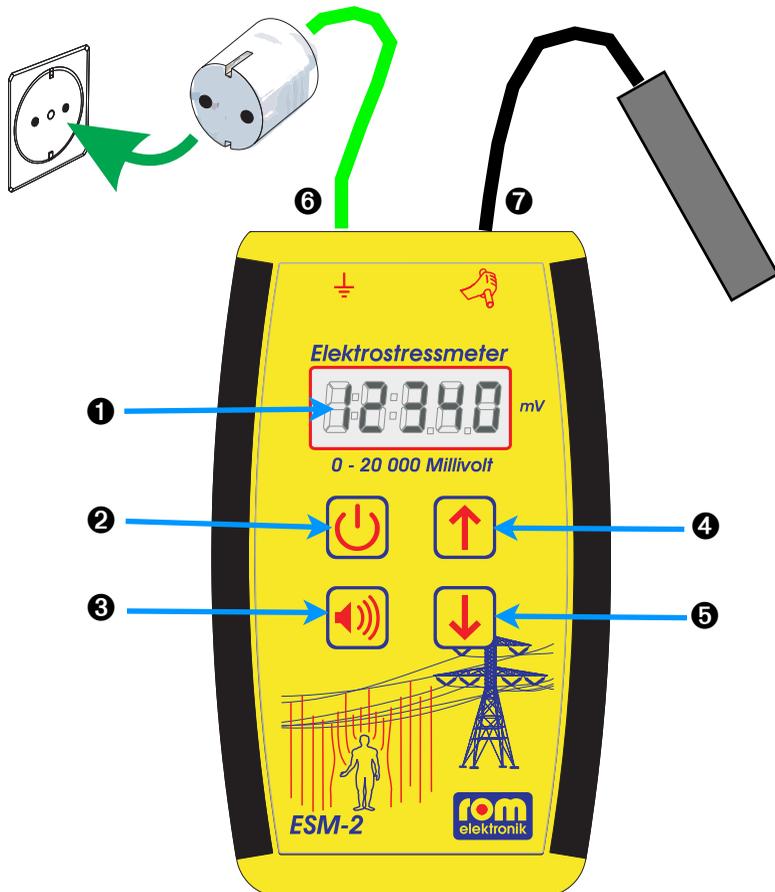
If the measured voltage exceeds certain values defined in the "electro-biological standard", then it can be reduced to uncritical values through targeted measures, which are simple to carry out.

The ESM-2 always indicates the success of the respective measure unambiguously in this case and helps you to undertake the correct steps.

The objective should be to reduce the body voltage to almost zero, especially in sleep and rest areas, so that persons located there are not tense and stressed, rather are relaxed and recovered and capable of dealing with everyday tasks.

CAUTION

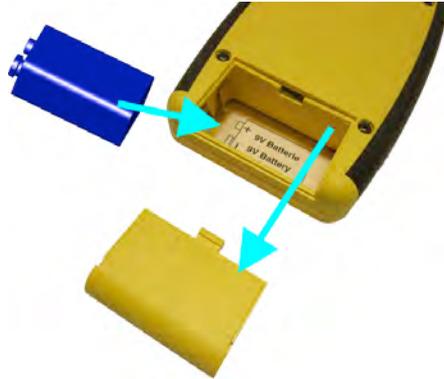
Employ the ESM-2 measuring device only for the measurements described in these directions. Contraventions can result in destruction of the measuring device.



Quick-operating manual

1. Device preparation

- Insert battery. Watch the correct polarity. Close battery compartment.
- Connect the hand-held electrode with the short cable with a socket of the ESM-2 ⑦
- Insert the green-yellow cable on a grounded plug socket into the ESM-2 other socket ⑥
- Switch device on by pushing ②



2. Person preparation

- Lie down in your bed as usual
- Ensure that the green-yellow ground wire is not on, or directly near, the person to be measured

3. Measurement

- **IMPORTANT:** Measure exclusively in daylight (electrical lamps can influence the measurement!)
- Take the hand-held electrode securely in your hand
- Wait until the digital display displays a stable value and read this off
- This value is somewhere between 0 und 19999
- Note down this value
- In this way, measure all persons in the relevant sleeping locations

Funktion der Tasten

Switch on and off

② a push on this button switches ESM-2 on and off.

Sound

③ a push on this button switches the sound on and off. The tone highth is proportional to the reading value. A lower value generates a low frequency tone and high reading generates a higher frequency.

Ranges

④+⑤ If the reading is smaller than 1999 mV (in measuring range of 20000 mV) or 199,9 mV (in measuring range of 2000 mV) then (**and only then!**), it is possible to change the measuring range to a lower range with push button ⑤. This is useful if a more porecixe measuring is needed.

Through the high input impedance of the ESM-2 a high measuring sensitivity is given. If no cable is insertet it is possible, that it took a longer time until the reading in the display is 0. It is also possible, that the reading of the ESM-2 in the range 200,00 mV not reach zero. This is normal and no failure!

With push butto ④ it is always possible to change the range to a higher state.

Decimal sign and Measuring -Ranges		
200 mV	2000 mV	20000 mV
		

Scope of delivery and technical data

The ESM-2 electro-stress measuring device consists of the following scope of delivery:

- ESM-2 E-stress measuring device
- Carrying case ready for use
- Ground wire with plug incorporating grounding contact; 3 m length
- Hand-held electrode of brass, chrome-plated
- Operating manual

Measuring ranges: 200,00 mV
 2000,0 mV
 20000 mV
 AC Voltage
 (±5% of end value ±6 digit)
 Digital display in rms value
 Audio generator

Frequency range: 10 Hz - 2.kHz (- 3 dB)
 Power supply: 9 volt compound battery
 With too low voltage Doublepoint
 Dimensions and weight: 150 x 85 x 30 mm; ca. 250 g



Measurement preparations

The body voltage caused by electrical alternating fields of the power supply (capacitive body coupling voltage) is basically measured between the person located in the field and ground.

The approx. 3 m long grounding line is therefore provided with a modified grounding type plug, which connects the measuring device with ground, via the protective ground conductor of the power supply, on insertion into a plug socket.

The banana plug of the grounding line is inserted into a socket above on the measuring device ⑥.

The approx. 50 cm long test cable is inserted into the other socket. The other end of the test cable is connected with the hand-held electrode ⑦.

If you carry out measurements in the open air, e.g. near a high-voltage line, you must ensure the grounding contact via a metal strip at least 30 cm long, which is inserted into the ground.

The measuring device is now switched on using the push button ② and is then ready for operation. The sound is switched on an off by pushing ③.

After switch on, the measuring range is „20000 mV“ (=20 Volt). This means that you can measure a max. body voltage of 20 volt in this range.

If a higher body voltage is present, the display ① shows [| 0] In this case, the measurement is far over the recommendations of building biology.

However, the range „20000 mV“ is the correct range for measurements in most cases.

Evaluation of the results of measurement

With the electro-biological evaluation of the results of measurement, a distinction is made between the contamination loading at the seating area or workplace and at the sleeping area. During the rest phase, the body should relax maximally stress-free and be able to regenerate, so that more severe demands are placed on the sleeping area.

The following standard values of body voltage are recommended for sleeping areas:

Electro-biological Standard Values		
Body voltage in Millivolt (mV)		Display in the 20000 mV measurement range
No anomaly	below 10 mV	less than 00010
Weak anomaly	10 -100 mV	00010 - 00100
Strong anomaly	100 - 1000 mV	00100 - 01000
Extreme anomaly	more than 1000 mV	more than 01000

As far as possible, the value at seating and work areas should not be above 500 mV

Discovering the causes of increased body voltages

In order to trace the causes of a too-high body voltage through electrical alternating fields, the following procedure e.g. in the sleep area has proved itself. In case of measurements in other rooms, you can proceed correspondingly:

- ✓ Firstly switch on all electrical appliances and lamps in the bedroom and also in the adjacent rooms (if possible also above and below). Then measure the body voltage of the person concerned as described. Note down the measured value.
- ✓ If the value should be high according to the electro-biological recommendations, proceed as follows:

- ✓ Switch off all electrical appliances and lamps in the bedroom and in the adjacent rooms one after another and pull out the plugs from plug sockets in addition, where possible. Observe the changes of the electro-stress measured value on the measuring device following every step and note down this value.

In this way you can find out the lines and devices which are mainly responsible for the high values. Pay attention as well to extension cables under or on the bed, and lay these out so that a maximum decrease of the measured value of the body voltage is achieved. Whenever possible, dispense completely with electrical devices and cables near your bed.

If you reach values through this procedure under 100 mV, corresponding to 0.10 V, you can be already quite satisfied.

- ✓ Frequently this value cannot be obtained through the switching off devices and lamps and relaying extension cables. There is a high probability that the cause of the increased body voltage is then the power cables under voltage in the walls.

This can also be easily checked if you switch off one fuse after another in the fuse box and note down the resulting values of the body voltage in turn following every switch-off.

In the electric circuit, which on disconnection allowed the measured values to drop below 100 mV, you can now have installed by an electrician a so-called mains network or field-free switch which, after the shutdown of the last consumer, e.g. the lighting, switches this circuit automatically free of voltage.

- ✓ You can still find further references in the enclosed "10 tips for protection against electronic smog".

In addition, it is recommended to read the two books by Wulf-Dietrich Rose

"Electrical smog - electro-stress"

"I am under current"

Both have appeared as paperbacks from the publisher Kiepenheuer & Witsch, as well as

"Stress through current and radiation" from Wolfgang Maes.

Still an important reference:

The ESM-2 electro-stress measuring device measures the body voltages resulting from electrical alternating fields.

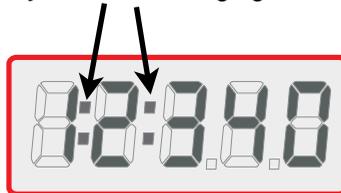
Except for this loading through electrical alternating fields, increased values of magnetic alternating fields can also have an effect on the body as stress e.g. through high-voltage lines, transformer stations, roof current lines and different appliances, as well as through electrified bus routes and, on a long-term basis, can also lead to serious conditional disturbances and illnesses.

The Teslameter TriMag and DualField-2 has been developed for the measurement of these magnetic alternating fields, about which ROM Elektronik GmbH would also be glad to inform you.

Maintenance of the device and battery change

For cleaning the device please use a slightly moistened cloth only. Never treat the casing and the display with strong cleaning agents!

Symbols for changing Battery



A necessary battery change is signaled through the symbols "Doublepoint" in the display. Switch off the device then remove the battery compartment cover on the reverse side, and take out the used battery. As a new battery, install a standard 9 volt battery (9 block volt) and close the battery compartment with the cover. The device is now ready for operation again.

Employ the ESM-2 measuring device only for the measurements described in these directions. Contraventions can result in destruction of the measuring device.

Liability and guarantee

Every liability which arises from application of the device is excluded.

The guarantee period is 24 months from delivery date. Within this time, all deficiencies which cannot be attributed to inappropriate handling, will be repaired immediately and clear of all charges. In the case where a repair is required, please send the device to us with the proof of purchase.

Assistance and support

Should you require assistance in the application of the device, then you can reach us under the Fax No.: 08282-7305 or on Tel.: 08282-7385 with operational questions about the device.

We wish you a lot of success with the ESM-2 electro-stress measuring device, so that you and your family can again relax and live free of electro-stress.

Measurements of the electromagnetic contamination of apartments, offices and building sites etc. are carried out according to the construction-biological standard by ROM Elektronik and construction biologists, who possess the necessary technical measurement equipment.

More Informations under <http://bundesverband-elektrosmog.de> or www.rom-electronic.com

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