Visual display of the detected field strength by means of light-emitting diodes; range of measurement determined by guideline values for sleeping areas recommended by the Institute for Building Biology, Germany

	Green unnoticeable	**Green/Amber** slightly noticeable	**Amber** noticeable	**Amber/Red** very noticeable	**Red** extremely noticeable
Alternating Magnetic Field * 16Hz-30kHz in nT	< 20	20 … 90	90 … 150	150 … 350	> 350
Alternating Electric Field * 16Hz-30kHz in V/m	< 10	10 … 25	25 … 35	35 … 50	> 50
HF- Field Strength * 50MHz- 3GHz in µW/m²	< 3	3 … 10	10 … 100	100 … 1000	> 1000

***** The values for individual devices can slightly vary from the values specified in the table as a result of differences in individual electronic components

The warranty for the esi 23 Detector is 1 year for companies, 2 years for private individuals (see General Terms and Conditions)

The **esi** 23 Detector leaves our production department in perfect safety related condition

Imprint

These operating instructions are published by
TZM Technology
Thomas Zimmermann
Johann-von-Werth Straße 1
80639 Munich
Telephone and Fax: +49 (0)89 28858227
info@tzm-technology.de
www.esmogtec.com

These operating instructions correspond to the technical standard of the esi 23 Detector at the time of publication. Subject to changes in technology and equipment.

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esi 23 Electro-Smog Detector:
The detector for electro-magnetic radiation

Electro-Smog Detectors

The esi 23, esi 12 and esi 23-data range of detection devices have a very sensitive antenna system that makes alternating electric and magnetic fields and high-frequency radiation visible using the LED traffic light principle.

Different field strengths are represented by the individual traffic light colours and this is supported by a loudspeaker that gives an audible indication of field strengths.
The display shows 5 different levels in this way, ranging from no abnormality (i.e. no significant radiation exposure) to extreme abnormality (strong exposure to radiation).
Locations exposed to high levels of radiation should generally be avoided and as little time as possible should be spent there.
For all models, the levels set for the LED displays are determined by the guideline values for sleeping areas recommended by the Institute for Building Biology, Germany

If you are concerned by very abnormal values, you should consult an experienced specialist for Building Biology. We will be happy to supply you with addresses in your area.

Contents

- **esi 23** Detector
- 9V 6LR61 battery
- operating instructions

Operating Instructions

Before using the **esi 23** Detector for the first time, please ensure that you read through the operating instructions carefully. They provide important information about safety, maintenance and how to use the device.

Safety Instructions

The very sensitive sensors in the device operate by producing a pulse in response to even slight vibrations, which is shown on the display. Impacts and vibrations must therefore be avoided when taking measurements.

- When locating an electro-magnetic field, the device must not come into direct contact with the source of radiation or with cables that are not insulated
- Protect the device from moisture and water
- Do not expose the device to temperatures above 40° (in the boot of a car, on a radiator, etc.)
- The electronic components of the device are very sensitive. Avoid jolting or dropping it.
- Remove the battery if the device is to be stored for long periods
- Only use a moist, soft cloth to clean the device
- Always keep the device out of reach of young children
- Do not attempt to open the device. If it is not used properly, the device can be damaged and claims under warranty will be invalidated.
- In the event of damage caused by failure to observe these operating instructions, the warranty is not valid.
- We do not accept any liability for consequential damages and material and personal damages that result from improper use or failure to observe the safety instructions.

Technical Specifications:

• **Simultaneous detection:**

- **LF alternating magnetic field** – Low frequency: 16Hz – 30kHz in nT
- **LF alternating electric field** – Low frequency: 16Hz – 30kHz in V/m
- **HF electro-magnetic waves** – High frequency: 50MHz – 3GHz in µW/ m²

• **Optical display:** using LEDs – light-emitting diodes: green, green and amber, amber, amber and red, red (see table of values below). Range of measurement is determined by guideline values for sleeping areas (SBM-2008) recommended by the Institute for Building Biology, Germany
• **Audible indicator:** Sound frequency changes with increasing field strengths
• **Location mode** for electric cables: 220/230 V - 50/60 Hz
Optical display with two light-emitting diodes (green and red) at the top of the display unit
Please note: the location mode only shows the presence of electric fields – information about their strength is not provided
• **"Freeze" mode:** the measurement is stored for hidden locations where the display is not directly visible
• **Measurement processing:** by means of 8-Bit micro-controller
• **Power supply:** 9 V battery pack
• **Operating time:** 10 to 15 hours in permanent operation (depending on type of operation)
• **Weight:** 140 g
• **Dimensions:** 140 x 63 x 30 mm
• **Dimensions of packaging:** 160 x 90 x 42 mm
• **Design**: TZM Technology, Germany
• **Manufacture:** Poland
• **CE compliance**

Initial Operation:

• **Insert/change battery:**
Open the battery compartment, connect the battery to the terminal and place it in the compartment. Please ensure that the battery cable is not underneath the battery but runs to the side, between the battery and the compartment.

• **Switching on/off**:
To switch the device on, **press and release the "on/off" button once**.
- All the LEDs will briefly light up to test their operation. The sound will be activated.

When it is switched on, the **esi 23** Detector will be in standard operating mode.
To switch the sound on/off, **press and hold the "on/off" button once**
To switch the device off, **press and release the "on/off" button once**

• **Operating mode:**
In standard operating mode, the LF alternating field strength and the HF wave field strength can be located and measured simultaneously.

- **Alternating magnetic and electric fields:** electrical equipment, computers, lighting, radio alarm clocks, network components …
- **Radio waves (high frequency):** mobile radio stations, mobile phones, DECT wireless telephones, WLAN, baby monitors,
- **Radiation leakage from microwave ovens**

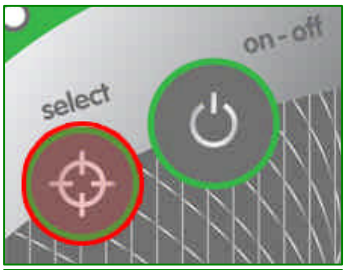
The radiance and strength of the radiation increases and decreases as a result of:

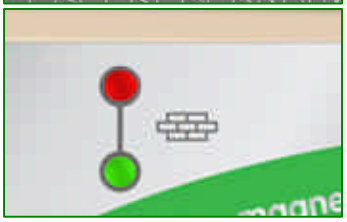
- the distance from the source
- the power of the source/transmitter
- the type, structure and alignment of the transmitter
- reflection of the radiation in the vicinity
- environmental, geographical and weather conditions
- the type, structure and shielding properties of the building concerned

For optimal detection of Electro-Smog, hold the esi 23 Detector with your arm extended away from your body

• **Optical display:**
The light-emitting diodes – green, green and amber, amber, amber and red, red - show you the field strength concerned – see the table of values below.
The range of measurement is determined by the guide values for sleeping areas recommended by the Institute for Building Biology, Germany

• **Audible indicator**:
Sound frequency changes with increasing field strengths.





• **Location mode:**
To change to **location mode**, press and release the **mode button "select" once**.
The optical display at the top of the display unit is activated. The lower green LED is permanently illuminated, the upper red LED comes on when an electric field is present.
In location mode, concealed electric cables, junction boxes and similar can be located.

To return to standard operating mode, **press and release the "select" button once**

• **"Freeze" mode:**
To **switch to "freeze" mode, press and hold the mode button** "**select" once**.
The most recent reading flashes and is frozen.
"Freeze" mode is useful for measurements where the display is difficult to read or cannot be seen at all, such as under a bed or desk or behind a piece of furniture
Please note: Freeze mode is not available in location mode.

To **switch off** the device, press the **"on/off"** button **once**
The device can be switched off in any mode.

• **Checking the battery:**
The esi 23 Electro-Smog Detector automatically checks the battery level.
If battery power is low, the red location mode LED flashes several times and the device switches off automatically. Reliable indication of field strengths cannot be provided until the battery is replaced.
Do not throw the flat battery away; it may be possible to use it in other devices (e.g. remote controls or similar).