ergo

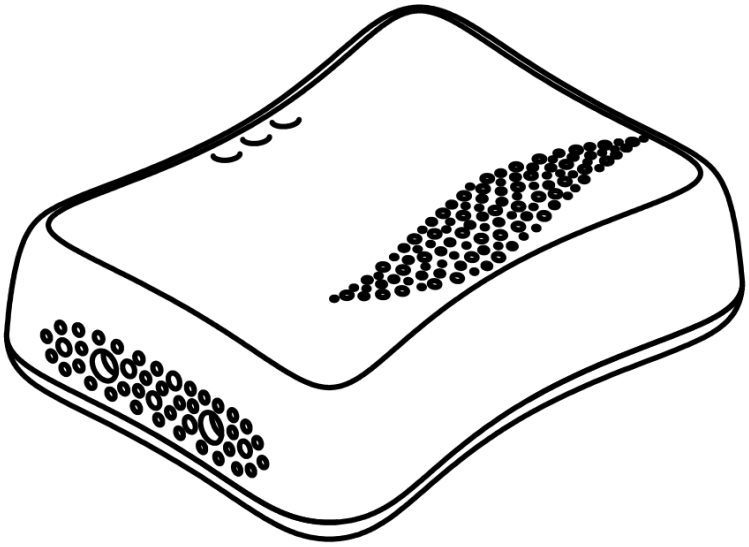
Methane Gas Detector

Data sheet

v1.0

content

General presentation



Ergo Detector is a **methane gas detector (CH4)** intended to be mounted in apartments, houses, and other indoor locations in order to detect methane gas leaks and consequently to trigger a solenoid valve that will shut off the gas supply to the monitored area or gas column. The detector is equipped with a trigger relay that **allows the gas supply to be switched off** locally (next to the apartment) using a wired solution, respectively **also transmits the alarm via 868-870Mhz radio to an Ergo Floor Module,** which can then trigger an entire solenoid valve

column. In the variant **Lite** of the equipment, there is no possibility of local triggering, so only radio triggering can be used. The relay is connected directly to terminals V1 and V2 as well
loads can be connected to both direct current and alternating current, normally open. When triggered, the relay will give 3 pulses of 1 second at 1 second intervals. The alarm alert is made by both a **visual as well as auditory indicator.** Visually, 3 status LEDs are used, which are on the surface of the case in 3 different colors. If there are no alarms and the device is operating in normal parameters, the green LED is lit continuously. In case of preheating of the gas sensor, the yellow LED will flash, and in case of any detected internal fault, the yellow LED will illuminate continuously. **In case of alarm, the red LED will illuminate continuously, as well as an 85dB acoustic signal will be heard.**

The detector is configurable on different detection levels using a **Ergo Programming App,** and a programmer connected via USB to it. Also through this programmer it will be configured to which equipment will transmit the signal, respectively other parameters such as the trigger level and the identification data of the equipment in the radio communication network. Through a Test button, **the device can be triggered manually** by the installer to be able to test the correct operation after installation.

The equipment comes in a white plastic box (ABS) with the possibility of **wall mounting** by means of one or two screws, and has a **protection level IP22D.**

Power supply to the equipment can be done in **voltage range 100-240 V AC (alternating current), 50-60Hz, with a maximum current consumption of 0.1 A.** The detector does not require grounding, and is equipped with interchangeable fuse protection. The installation will be done **only by specialized personnel, gas installers or fi rma of installations accredited by the manufacturer,** EDGE Software Solutions SRL. The validation of the accreditation will be done by a certificate of installer issued by the manufacturer, verifiable on the Ergo website (www.ergo-tech.ro). If the installation is carried out by an unauthorized installer, the product automatically loses its warranty to the manufacturer, who will not be able to guarantee the proper operation of the equipment in any way.

Technical specifications

Gas detected	Methane (CH4)
Detection beach	Min. 3% LEL, Max. 20% LEL
Alarm trigger level	Con fi gurabil. Default 10,000 ppm
Sensor life	5 years
Accidental release protection (sprays and other gases)	Yes
Visual status indicators	3 color LEDs (red, yellow, green)
Emergency alert	Yes, by LED indicators
Acoustic alert in alarm time	Yes, sound level 85 db
Possibility of triggering local valve	Yes, wired (*)
Manual alarm triggering	Yes, via an internal button
Radio communication frequency	867,999-869,999 Mhz, depending on the channel
Number of radio channels available	11 channels
Radio transmission distance	300m in open field, and 50-100m in buildings (depending on the structure of the building)
Automatic equipment configuration	Yes, using the Ergo Programmer and the Ergo Programming App and the Ergo Online platform
Programming mode	Bluetooth, only through the "Ergo Programmer" programmer
Electrical protection	Yes, by fusible safety
feeding	100-240 V NEEDLE, 50-60 Hz
Wall mounting	1 or 2 screws
Housing material	ABS, white
Safety rating	IP22D
Dimension	120 x 95 x 35 mm
Weight	~ 200 g
Country of origin	Romania

* Not available on the Lite version of the product.

Electrical characteristics

In the operation of the equipment, it is necessary **make sure that the limits of the species below are strictly observed** in order to guarantee the proper operation of the detector. If needed **a higher current on the trigger outputs of the solenoid valves**
(or any other application), a high-power external contactor can be used, which is actuated by the internal relay in the detector. The power requirement of the contactor must not exceed the capacity of the internal tripping relay!

	Connector type	Min / max requirements
feeding	Screw-in terminal, 2 fi re (phase and zero), max. 3 mm thick, recommended thickness 1.5 mm	Voltage: 100-240 V NEEDLE Frequency: 50-60 Hz Maximum current (I MAX): 0.1 A
Trigger relay	Screw-on terminal, 2 fi re, max. 3 mm thick, recommended thickness 1.5 mm	Max AC: 800W at 250V Max DC: 2.5A at 30V Normal open

For **fuse replacement** remove the protective cover of the safety bracket from the equipment, then replace the defective fuse with a fast-burning cylindrical glass fuse with a rated voltage of 250V NEEDLE, rated current of 1A, and a size of 5x20mm.

Operating conditions

Characteristic	Min / max value
Moisture	10% to 80% (without condensation)
Operating Temperature	0 C and +40 C
Storage temperature	- 10 C and +50 C

The equipment must be protected from direct contact with water, or areas of high humidity where there is a possibility of condensation.

The gas installation and the shut-off device, if any, must comply with the national regulations in force in the country where they are installed, see EN 1775.

Emergency actions in case of alarm

It is recommended that the following information be provided in case an alarm sounds or gas is smelled, even without an alarm.

Keep calm and perform the following actions, without the order of their development being mandatory:

- extinguish all open fires, including all smoke-emitting materials
- unplug all appliances
- do not switch on or off any electrical equipment, including gas detectors

- to close the gas supply from the main gas control and / or (for an LPG supply) the gas tank

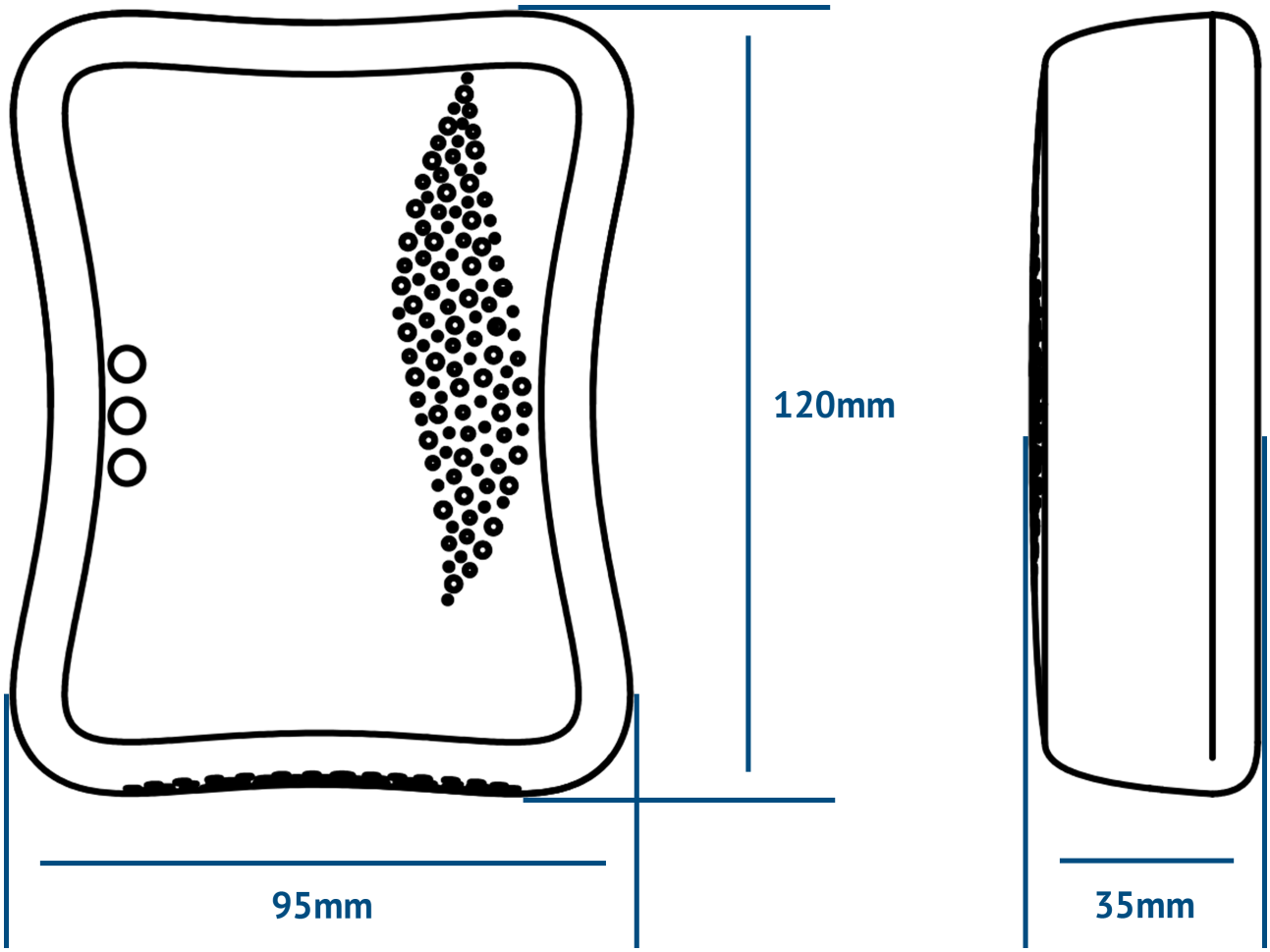
- to open doors and windows to increase ventilation
- do not use the telephone in the building where the presence of gas is suspected. If the alarm continues to operate, even if the alarm is reset where appropriate, and the cause of the leak is not obvious and / or may be remedied, **the building is evacuated and the gas supplier and / or the 24-hour emergency service are IMMEDIATELY ANNOUNCED so that the installation can be fi tested** and to ensure its security, and to make the necessary repairs. If the alarm is stopped or a locked alarm is reset according to the manufacturer's instructions and it is identified fi that the reason for activating the alarm, (eg a gas tap open without fi the burner is lit), after stopping the gas leak and ensuring that all appliances are closed, the main gas supply can be restored. For wireless mode, **it can be a delay of up to two minutes between the audible alarm and the triggering of the output signal.** However, even if the apparatus is equipped with a tripping device, for example for closing a solenoid valve on the gas inlet pipe, the same procedure as described above must be followed.

Variant available

There are two product variants, namely the Standard, which has all the functionalities of the detector, respectively the variant Lite, which does not have the possibility to trigger the local solenoid valve (by cable). Otherwise, all the features of the two models are identical.

Exterior dimensions

The external size of the equipment is as shown in the sketches below:



Cleaning and maintenance

The equipment can be cleaned using a dry or slightly damp cloth. When cleaning the equipment, it must be removed from the power supply, and if it is wiped with a damp cloth, it must be left disconnected until it is completely dry. Do not use solvents or other cleaning substances!

Troubleshooting instructions

The following information may be used in the troubleshooting of an installed piece of equipment, or in the verifying process of an installed system.

The equipment is connected to power, but does not turn on

- Check that there is power in the socket used.
- Check that the cables are connected to the equipment (there is adequate contact at the terminals).
- Check that the power indicator lights up on the equipment.
  - If it does not illuminate, remove the equipment from the power supply.
  - Check that the fuse is faulty, and if it is defective, it is replaced.
  - Reinsert the equipment into the power supply.
  - If it persists, the equipment is considered defective and sent to the diagnostic service.
- Check that the operation indicator pulses slowly.
  - If it does not illuminate properly, the equipment is reset by removing it and then reinserting it.
  - If it persists, the equipment is considered defective and sent to the diagnostic service.
- Check that the status indicators light correctly.
  - If it does not illuminate, the equipment is considered defective and sent to the diagnostic service.

The detector does not communicate with the floor module after configuration

- Check that the operation indicator pulses slowly
  - If it turns on and off at 0.5-1 s intervals, then the equipment is reset by removing it and then reintroducing it to the power supply.
  - If it persists, the equipment is considered defective and sent to the diagnostic service.
- Move the equipment closer to the floor module to which it must transmit the information, and check that if the connection is established.
  - If it does not start, check that the configuration of the equipment is correct (and the floor module to which it must transmit is set correctly), and reschedule the configuration with the programmer.
  - If it persists, the equipment is considered defective and sent to the diagnostic service.
- After the approach, if the communication starts, it means that the signal is shielded by something (building structure, walls, etc.), and the solution is to introduce an additional floor module, which is closer to the equipment, or change the position.

When the Test button is pressed, it is found that:

- The red indicator does not light
  - The equipment is considered defective and sent to the diagnostic service.
- The auditory indicator is not heard
  - The equipment is considered defective and sent to the diagnostic service.
- The alarm does not reach the floor module
  - Verify that the communication is in accordance with the above procedure

When alarming, the local valve (the one connected directly to the equipment) is not triggered - only in the case of the Standard detector:

- Check that the wiring is done correctly according to the diagram
- Check that if there is a power supply on the cable to the valve (depending on the technical characteristics of the valve)
- Check with a multimeter, if there is continuity between terminals V1 and V2 (of the trip relay) when the alarm is running.

- If there is no continuity, the equipment is considered defective and sent to the diagnostic service.

The programmer does not connect to the equipment

- Check that the programmer is properly connected to the mini-USB port on the device, and check that the red LED flashes on the programmer.
  - If the red LED does not flash, check that the programmer has other equipment, and if the programmer is OK then the detector is considered defective and sent to the diagnostic service.
  - If the programmer does not work on other equipment, it is considered defective and sent to the diagnostic service.
- The programmer is associated with the phone. That is, the programmer is deleted from the list of Bluetooth-connected accessories in the mobile phone settings, then searched and paired again.
  - If after repeated tests the programmer does not want to associate, it is considered defective and sent to the diagnostic service.
- After pairing, an attempt is made to program the equipment, but an error message is received.
  - Check that if the programmer is working with other equipment, if so, then the detector is considered defective and sent to the diagnostic service.
  - If the programmer gives the same error with other equipment, then the programmer is considered defective and sent to the diagnostic service.

The detector trips too easily

- Verify that the equipment is positioned according to the relevant chapter of this documentation.
- Set a higher alert threshold in the detector settings using the timer. This procedure can only be done within the limits of the law allowed for the maximum alert level.
- If the problem persists and the behavior is considered abnormal, the equipment is considered defective and sent to the diagnostic service.

Regulatory opinions

Please note that this equipment complies with the following standards:

EC - COMPLIANCE WITH THE EUROPEAN UNION (EU)

2004/108 / EC - Electromagnetic Compatibility Directive

This equipment complies with the rules in the Official Journal of the European Union for the self-governing declaration of the CE marking for the European Union, as specified in the above directives, in accordance with the following standards: IEC / EN 61326 -1 Product standard, IEC / EN 61010-1 Safety standard.

WEEE - EUROPEAN UNION (EU) DIRECTIVE

This equipment and packaging comply with the provisions of waste electrical and electronic equipment (WEEE), in accordance with Directive 2002/96 / EC of the European Union (EU), which regulates the disposal and recycling of electrical and electronic equipment in the European Community.