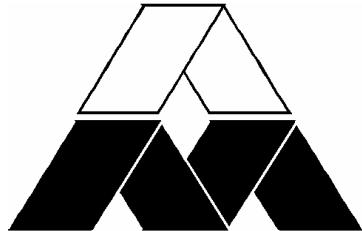


EXTOX-UNI i-1

***INTELLIGENT STATIONARY GAS CONCENTRATION
MEASURING DEVICES***

MANUAL



www.gazerzekelo.hu

Manufacturer

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1. PURPOSE OF DEVICES

Az EXTUX-UNI i-1 is general purpose gas and solvent vapour sensing apparatus which meets the requirements of industrial users in the first place according to the latest directives and standards of European Union. Its purpose is the supervision of zones and places, the measurement of concentration of dangerous contaminating materials which mixed into the air for some reason(i.e.risk of explosion and toxic danger) and to avert dangers by automatic actuation control.

2. MAIN FAITURES

- Stationary system with transmitters
- Measurement of concentration of explosive, toxic and other materials by means of different type transmitters
- Processor controlled intelligent central unit suitable for operation of single transmitter
- Continuous concentration and status display
- Programmable 4 detection levels +acknowledging acoustic signal + self error
- Acoustic signal control adapted to any signal level
- Distinguished control according to signal levels on the acoustic relay output
- Potential-free or voltage controlled acoustic relay output
- Built-in service key switch, detection and displaying of switching to service status
- Recorder output
- Indication of power supply failure in uninterrupted service
- Event recording

3. CONSTRUCTION

The EXTOX-UNI i-1 gas concentration measuring devices are built of transmitters and central units . The transmitters and central units can be connected together by transmitter cables. The transmitter includes measuring transducer which transforms gas concentration into electric signals, while the central units operate the transmitters and elaborate the electric signals of them which depend on gas concentration.

The device can operate with many types of transmitters. The types of transmitters are determined by the concentration of chemicals the measuring range and the danger rate existing in the area.

The internal constructions of central units are partly different because of the different parameters of various transmitters.

4. DESCRIPTION OF OPERATION

4.1. OPERATION OF CENTRAL UNITS

The task of central unit type EXTOX-UNI i-1 is to operate the connected transmitters, processing the incoming electric signals which are coming from transmitters depending on gas concentration, information transfer, output of alarm signals ,control of actuation as well as event recording.

Its performance conform to the type and technical features of transmitters and measuring range. They have four signalling levels ,in addition self error and acoustic signal, with relevant potential-free relay output contacts.The signal levels, the values between the switching on and off of the signal levels, (hysteresis) signalling for increasing or decreasing concentration, blocking of the signals (switching off either by manual cancellation or automatically)and the operation of relay outputs (to close or brake in active state) are programmable.The individual signal levels can be used for any actuation control functions upon request, but the basic signal level settings No 1 ,2, and 3 are of advance signal types i.e. they are resetted automatically and their relay outputs close, if the signal is active. The 4th signal level is of alarm type and cannot be switched off automatically, the relay output brakes in the case of active signal. The changing of its basic setting is not recommended. For safety reason the application of 4th signal level is recommended for emergency stop, disconnection of the current,closing of gasmagnetic valve etc.

Switching out of the signal levels is possible by the reset button, if it has block setting and the concentration allows it anyway.The relay output of self- error brakes in the event of failure.This signal is not blockable one, the reset button is ineffective on it. The acoustic signal may be assigned to any signal level, its relay output gives out shortcircuit or mains voltage in active state, depending on the application of jumpers inside the apparatus. The device controls the acoustic alarm in such a way that it can be decided which signal level is active by means of the sound as well. The acoustic alarm gives out successive sound pulses repeated at regular intervals, the number of which corresponds to the highest number of active signal levels. Switching the acoustic alarm off is possible bay means of the reset button. For acoustic alarms, we have to use the ones with continuous and identical sound for the above indicated operation.

The apparatus starts operation with 1 minute delay after switching on because of the features of the sensors. During timing the relays are not active, the signal levels are not activated. This is self-error, while with reference to the 4th signal level it means state of danger warning. After timing period the relays and the status indicator LED-s are adjusted to operational state, determined by the actual concentration.

The actual concentration may be traced permanently on 3-digit 7 segment LED display. The display shows the values according to the measurement ranges as follows:

- * *in LEL %,*
- * *in volume %*
- * *in ppm.*

In case of significant excess of measuring range the device becomes overdriven. Inscription of „OVL” will appear on the display, the signals programmed for increasing concentrations remain switched on, not depending on the further changes of concentration.

In such cases the reason of overdrive should be checked and it must be terminated. The state of overdrive is allowed to be cancelled only afterwards, either by pushing the inner pushbutton, or the continuous pushing of reset button for more than 15 seconds. Caution! The state of overdrive is allowed to be cancelled after making sure evidently, that no dangerous concentration is available.

The signal levels ,the self-error signal and the state of acoustic signals are displayed by the LED-s located on the front panel. Red colored LED-s belong to the singal levels and the acoustic signal, which illuminate in active state of the signals. The color of LED-s indicating the operation/self-error, and network/uninterrupted is green. The LED of operation/self-error illuminate during the operation, it is switched off in case of failure.

The LED of network/uninterrupted operation illuminate permanently in network operation, in the event of power failure it is flashing. The apparatus recognizes the power failure on the basis of information, coming from the UPS.

The apparatus includes recorder output as well, which makes it possible to further analyse the gas concentration in analogue format, in range of 4-20 mA or 0.4-2V. In case of self-error the output current decreases significantly below 4 mA, and the output voltage below 0.4 V.

The apparatus operates from supply voltage of 230V 50 Hz or from 24 V direct voltage. Making its operation uninterrupted is proposed by means of purpose-made UPS of 24 V . The apparatus also has built-in service switch, which is capable in service status to shortcircuit the contact, belonging to the 4th signal level.

In service position the apparatus displays alternately the inscription of „SER” and the actual concentration ,and furthermore makes logging on time of switching on and off of service status.

4.2. OPERATION OF TRANSMITTERS ACCORDING TO APPLIED SENSORS

The EXTOX-UNI i-1 gas sensitive devices are working basically on four measurement principles. Depending on type of materials and measuring range they are available with the following sensors:

- * *semiconductor,*
- * *catalytic,*
- * *infrared and*
- * *electrochemical.*

In the case of semiconductor based sensors the sensitive element is directly connected to the central unit without processing electronics. The measuring transducer makes use of the characteristics of special purpose semiconductor i.e. the electrically heated semiconductor layer can change its conductivity i.e. resistance considerably. The performance of sensors is typically nonlinear as a function of concentration.

In the case of use of catalytic sensors a platinum filament is heated by electric current in the measuring transducer. The platinum filament is surrounded by catalyst material. The catalyst is capable of oxidizing the flammable materials even below normal combustion temperature in presence of oxygen of air. This oxidation goes with temperature increase depending on the concentration of inflammable material, which increases the resistance of heated platinum filament. This can be detected as an electric signal in a bridge circuit. In this case the sensor also coupled directly to the central unit.

In the case of application of infrared sensors the measurement of concentration is based on the light absorption properties of the material to be measured in infrared spectrum. The change of absorption as a function of concentration is detected and transformed into electric signal by the sensor. This electric signal is converted into output current of range of 4-20 mA by the transmitter's electronic circuits, which are interconnected to the sensor. This output current is in direct proportion to the concentration.

In the case of application of electrochemical sensors the detecting elements generate electric current by means of chemical reactions as a function of measured material concentration. The signal processing electronics amplify the output current of the sensor and convert it into the range of 4-20 mA current consumption. The properties of electrochemical transmitter conform to the properties of applied electrochemical sensors.

The apparatus enables the application of other transmitter types of 4-20 mA as well.

EXTOX-UNI E-TD-S1

It is designed for measurement of concentration of numerous inflammable and explosive materials and operates with semiconductor transducers, stationary, diffusion type, explosion proof transmitter.

EXTOX-UNI E-TD-P1

It is designed for measurement of concentration of several inflammable and explosive materials and operates with catalytic measuring transducers, stationary, diffusion type, explosion proof transmitter.

EXTOX-UNI IRTA-1 and IRTA-2

It is designed for measurement of concentration of carbon dioxide with infrared measuring transducer, stationary, diffusion type, not explosion proof transmitters.

MWG-100NE

It is designed for measurement of concentration of several toxic materials and oxygen and operates with electrochemical measuring transducers, stationary, diffusion type, not explosion proof transmitter.

5. INSTALLATION AND PUTTING INTO OPERATION OF DEVICE

5.1. CONDITIONS OF INSTALLATION OF DEVICE

The EXTOX-UNI gas concentration measuring devices can be installed only in such places, the requirements of which are satisfied by the technical parameters of the instruments. Furthermore the installation site should be selected in a way, that the possibility of usual maintenance works and the proper and safe operation can be ensured.

Since the two parts of the apparatus, the central unit and the transmitter have completely different electrical characteristics, we have to take different rules into account.

The central units and the cable junction boxes are of non-explosion proof ones therefore using them in explosion dangerous rooms or sectors is forbidden.

The transmitters may be installed according to the prescriptions of manuals only.

In the event the installation is stipulated by the authorities, the installation should be based on a project plan. The regulations of that should be complied with and the content of project plan should not contradict the installation rules hereby mentioned.

If no detailed project plan of installation is available or the procedure of it is uncertain, please contact the company service or the experts of manufacturer to clarify the questions.

5.2. PLACEMENT OF TRANSMITTER AND CENTRAL UNIT

The placement of transmitter and central unit is determined by project plan.

In lack of it, its placement can be decided only with care. The placement of transmitters can be determined according to the informations indicated in the manuals.

In the case of the central units we have to choose such places outside the sector limits but within the range of maximum possible installation distance where the environmental circumstances are suitable for operation and the easy handling and rational cabling can be ensured. The central unit should be protected against the effect of heat radiation and can be operated only in allowed temperature range.

If cable junction box is applied to the apparatus, it should be placed close to the central unit considering space and trace requirements of applied cables.

The EXTOX-UNI i-1 type central unit should be mounted on even surfaced vertical wall.

When placing the transmitters (sensors) the shape of free air-space, the location of hazardous points, the occasional air flows and the density of occurring gases are to be taken account.

For gases lighter than air {H₂, CH₄, CO, NH₃} the sensors shall be placed in the upper part of air space, for heavier gases they must be put into lower locations. The solvent vapours are heavier than air.

5.3. CABLING OF TRANSMITTER AND CENTRAL UNIT

The transmitter of gas concentration measuring devices type EXTOX-UNI i-1 should be connected by separate cable to the appropriate central unit of relevant manufacturing number.

All the cables, but in particular the cables connecting the central unit and the transmitters shall be definitely identifiable. Into the transmitters we can couple only such cables, the diameter and core cross section of which meet the requirements of the technical data of the transmitters .

When cabling the transmitter, to be installed into explosion dangerous zone the prescriptions of MSZ EN 60079-14 should be taken account.

The loop resistance of transmitter cable shall not exceed the highest allowed value. The transmitter cable should be affixed within distance of 40 cm from the transmitter. We have to strive for minimization of the the line section within the sector limits when designing the trace of transmitter cables without having definite project plan. Lapping in transmitter cables should be avoided if possible. Nevertheless if this is unavoidable, in explosion dangerous space lapping is allowed only in certified explosion-proof connectionbox. For cabling we can use the offered cables or technically suitable replacement types. If there are electric circuits of different voltage levels towards the actuating units, the wires of them shall not be placed in the same cable bundle.

When cabling the necessary cables (of transmitter ,actuating, supplying acoustic signal etc.) should be installed on the designed cable traces. When determining the cable lengths we have to reckon with connectability (allowances). The connecting of cables is not the job of the cable mounting experts, but this process is part of installation.

5.4. CONDITIONS OF INSTALLATION, INSTALLATION

The preconditions of putting into operation are the existence of properly installed gas sensitive apparatus alongwith cabling and power supply.

The installation of the apparatus can be performed by an authorized expert who attended courses of operators ,technical head of repairment service of damp-proof and explosion-proof electrical equipments and having proficiency of proper installation of EXTOX-UNI i-1 type gas detectors.

During installation the cables of apparatus should be connected.The actuating electrical circuits which are connected to relay contacts should be checked according to loadability, the power supply according to its parameters and the complete apparatus in respect of explosion-proof requirements. After getting favourable results a computer should be connected to the device in which a diagnostic program, suitable for the commissioning and maintenance of EXTOX-UNI i-1, is running.

The apparatus can be energized and afterwards total operational inspection should be performed by means of calibration material.The data of installation are stored in the computer. On the basis of stored data, an installation protocol is made on successful installation, duly signed by the insallation person and the customer or his/her representative, accepting the works.

The total operation inspection includes the inspection of the apparatus only, the check of operation of actuating circuits of relay contacts is not included.

This way for example if the actuating circuits are not built up by the time of the installation, the gas sensitive devices can be installed anyway. It is worth carrying out the installation in such a predetermined period so that the complete system can be tested alongwith emergency ventilation, gas magnetic valve, acoustic and light signals in order to avoid later possible malfunctions.

The installation can be performed upon order. The planned date and circumstances of installation should be checked with our service 3-4 days in advance at the following address:

Address: 2040 Budaörs, Baross u. 77.

Telephone/fax: +36 23 416 761

If the conditions of installation are not ensured or the technical circumstances are not suitable in the predetermined period and promt solution is not possible ,the installation fails by mistake of customer.This fact is to be written in the duly signed protocol as well.

In this case the failed installation is at the cost of the customer's.

6. *HANDLING AND OPERATIONAL INSTRUCTIONS,*

6.1. *HANDLING UNITS, STATUS SIGNALS*

On central units the following handling units are available:

- * *three digit seven segment LED,*
- * *acoustic signal LED (red),*
- * *4th signal level (red),*
- * *3rd signal level (red),*
- * *2nd signal level (red),*
- * *1st signal level (red),*
- * *network / uninterrupted operation LED (green),*
- * *operation / self error LED (green),*
- * *reset (acknowledging) button,*
- * *service switch with key,*
- * *overdrive comparator cancellation button (accessible only after removing cover),*
- * *computer communication connection point (accessible only after removing cover),*

6.2. CONNECTION POINTS

<i>230V L</i>	<i>mains supply phase conductor</i>
<i>230V N</i>	<i>mains supply neutral conductor</i>
<i>HANG N</i>	<i>acoustic signal relay contact, under potential it is neutral conductor</i>
<i>HANG L</i>	<i>acoustic signal relay contact, under potential it is phase conductor</i>
<i>JSZ4</i>	<i>4th signal level relay contact</i>
<i>JSZ4</i>	<i>4th signal level relay contact</i>
<i>JSZ3</i>	<i>3th signal level relay contact</i>
<i>JSZ3</i>	<i>3th signal level relay contact</i>
<i>JSZ2</i>	<i>2nd signal level relay contact</i>
<i>JSZ2</i>	<i>2nd signal level relay contact</i>
<i>JSZ1</i>	<i>1st signal level relay contact</i>
<i>JSZ1</i>	<i>1st signal level relay contact</i>
<i>OH</i>	<i>self error relay contact</i>
<i>OH</i>	<i>self error relay contact</i>
<i>RK+</i>	<i>recorder output positive pole</i>
<i>GND</i>	<i>recorder output negative pole</i>
<i>SZM+</i>	<i>supply of 24V positive pole (for UPS)</i>
<i>SZML</i>	<i>uninterrupted operation sensing point (for UPS)</i>
<i>SZM-</i>	<i>supply of 24V negative pole (for UPS)</i>
<i>F+</i>	<i>E-TD-S1 transmitter connection point</i>
<i>X</i>	<i>E-TD-S1 transmitter connection point</i>
<i>Y</i>	<i>E-TD-S1 transmitter connection point</i>
<i>GND</i>	<i>E-TD-S1 transmitter connection point</i>
<i>F+</i>	<i>E-TD-P1 transmitter connection point</i>
<i>FK</i>	<i>E-TD-P1 transmitter connection point</i>
<i>GND</i>	<i>E-TD-P1 transmitter connection point</i>
<i>+</i>	<i>4...20mA transmitter connection point</i>
<i>Iki</i>	<i>4...20mA transmitter connection point</i>
<i>Ibe</i>	<i>4...20mA transmitter connection point</i>
<i>GND</i>	<i>4...20mA transmitter connection point</i>

Remark : out of listed transmitter connection points, the apparatus always contains only the relevant connection points of applied transmitter.

To the 4-20mA transmitters belong EXTOX-UNI IRTA-1 and IRTA-2, alongwith types of MWG-100NE as well .

6.3. OPERATION, HANDLING, INTERPRETATION OF STATUS SIGNALS

The operation of EXTOX-UNI i-1 gas concentration measuring apparatus can be traced by means of the signals of central units. The operation of instrument is displayed by the light of the LED-s as follows: „operation/self-error, „network/uninterrupted” and the light of 3-digit indicator. If a UPS is connected properly to the apparatus, the LED of „network/uninterrupted” may not only illuminate continuously but it can flash as well. Even if it is flashing, the apparatus works properly but it indicates only that according to the UPS, no network voltage is available.

When switching on, the device starts operation after timing of 1 minute approximately. During timing period the LED-s of signal levels and acoustic alarm do not light. On the indicator temporarily not the real concentration values will appear and the decimal points illuminate alternately in succession. After timing period the measured concentration value can be read permanently. The signals start operation according to the measured concentration and the preprogrammed signal levels. The LED of a given signal level will illuminate, i.e. the signal is active, if the concentration reaches the preprogrammed value. The activation of signals will activate the acoustic signal as well. The acoustic signals can be cancelled by the reset pushbutton.

The signals, which are not blockable according to the programming, will be reset automatically in the function of concentration. The blockable signals can be cancelled by the reset button only, provided that the concentration allows it.

In the event the concentration exceeded the measuring range significantly inscription of „OVL” appears on the display. In this case the signals, activated by increasing levels, cannot be cancelled. The reason of this state should be checked by all means and it must be terminated. After that the reset button should be pushed continuously for minimum 15 sec, the normal operation will be reset only in this way.

If the „operation/self-error” LED goes out, it means the failure of the apparatus. In case of certain errors it can be observed on the operation of the indicator as well, e.g. non-interpretability of the signal, or on the basis of irregular brightness distribution among the segments. In this case the responsible person is to switch the apparatus into service status by the service button, after realizing that there is no dangerous concentration around, in order to ensure the safe operation of the supervised institution. In service status the instrument shows the inscription of "SER", together with a concentration value alternately, if the type of failure allows it. The displayed concentration figure cannot be considered as realistic. The failed apparatus is not capable to fulfil its duty properly in service state either. The reparation of the apparatus must be arranged.

6.4. CLEANING

The cleaning of devices is only needed, if dirt impedes operation.

The removal of such dirts usually requires disassembling of the apparatus, which is the job of the service.

In other cases cleaning is allowed, but this cannot endanger the safe operation.

Water or other chemicals are not allowed to get into the apparatus. Use of solvents that can damage the cover, are not allowed either.

7. CONDITIONS OF SAFE OPERATION

7.1. OPERATION IN EXPLOSION DANGEROUS ENVIRONMENT

It is prohibited to connect the central unit of EXTOX-UNI i-1 to such electrical appliances, that are not necessary for proper use or the electrical parameters of which exceed the limits, indicated in the technical data of the apparatus!

In the gas sensitive apparatus any modification is prohibited without permission of the manufacturer.

In explosive environment only approved explosion-proof transmitters are allowed to use.

The detailed conditions of safe application of explosion-proof transmitters can be seen in their separate manuals.

7.2. ASPECTS OF PROTECTION AGAINST INDIRECT CONTACT

The central units are electrical devices that are operated by supply voltage of 230 V. Opening of their enclosure under voltage by unauthorized persons is forbidden and dangerous to life. The cabling of central unit and cable junction box (if any) to be made in a way that the reinforced insulations are not to be damaged among the electric circuits of different voltage levels. The connection of devices are to be made according to the allotment of connecting points or description of handbook of connections.

The transmitter is not to be connected to the earthing wire, but for example the mounting onto earth-connected iron framing is allowed.

The device type EXTOX-UNI i-1 is of plastic armoured one with reinforced insulation and belongs to protection class II. This device shall not be connected to earth conductor wire.

If the user supplies separate break switch protected cable for the power supply of the gas detection devices, the break switch (or mains switch if any) should be located close to the gas detection apparatus and it should be indicated, which device is operated by them.

Remark : since the gas detection instruments are safety devices of continuous operation and switching them off is possible only in justified situation, e.g. when servicing them, it is practical, that the inscription of „Switching off prohibited” to be indicated close to the main switch or break switch.

7.3. MEANINGS OF ABBREVIATIONS AND SIGNALS

<i>LEL%</i>	<i>Lower Explosion Limit in percentage</i>
<i>Volume %</i>	<i>Volume percentage</i>
<i>ppm</i>	<i>parts per million</i> <i>(parts per million of given volume)</i>
<i>F3</i>	<i>Mains fuse</i>
<i>F4</i>	<i>Fuse for acoustic relay contact (It has role only in cases under potential)</i>



Device protected by double or reinforced insulation



Caution ! (Reference to the documentation !)



The apparatus meets the relevant requirements of European Union standards

8. TECHNICAL DATA

EXTOX-UNI E-TD-S1 SEMICONDUCTOR TRANSMITTER;

Detailed technical data and prescriptions of application are in its separate manual .

EXTOX-UNI E-TD-P1 CATALYTIC TRANSMITTER;

Detailed technical data and prescriptions of application are in its separate manual .

EXTOX-UNI INFRARED TRANSMITTER;

<i>Type :</i>	<i>EXTOX-UNI IRTA-1 and IRTA-2</i>
<i>Measured material:</i>	<i>carbon dioxide</i>
<i>Response time, (t₉₀):</i>	<i>22s</i>
<i>Precision of repetition:</i>	<i>±0.2%</i>
<i>Supply :</i>	<i>19...28V DC, max 180mA</i>
<i>Output signal :</i>	<i>4...20mA (linear) current consumption</i>
<i>Sensitive element :</i>	<i>two-beam infrared</i>
<i>Explosion-proof protection :</i>	<i>no</i>
<i>Protection {MSZ IEC 529} :</i>	<i>IP 54</i>
<i>Outside temperature :</i>	<i>-20...+40 °C</i>
<i>Diameter of cables:</i>	<i>7...9mm</i>
<i>Cable core cross section:</i>	<i>0.5...1.5mm²</i>
<i>Allowed loop resistance:</i>	<i>10Ω max.</i>
<i>Dimensions (with stand):</i>	<i>135 x 126 x 95 mm</i>
<i>Weight (with stand):</i>	<i>approx. 0.55 kg</i>

MWG100NE ELEKTROCHEMICAL TRANSMITTER;

<i>Type:</i>	<i>MWG100NE</i>
<i>Response time:</i>	<i>depending on measured materials and the sensor</i>
<i>Precision:</i>	<i>depending on measured materials and the sensor</i>
<i>Supply:</i>	<i>14...28V Direct Voltage</i>
<i>Current drain:</i>	<i>4...20mA (depending on concentration)</i>
<i>Explosion- proof protection:</i>	<i>No</i>
<i>Cable core cross section:</i>	<i>0.5...1.5mm²</i>
<i>Diameter of cables:</i>	<i>9...11mm</i>
<i>Dimensions:</i>	<i>width:102mm height:170mm depth: 58mm weight: kb. 850g</i>
<i>Allowed outside temperature:</i>	<i>0-40°C</i>
<i>Protection (MSZ IEC529):</i>	<i>IP32</i>

EXTOX-UNI i-1 CENTRAL UNIT;

<i>Explosion-proof protection:</i>	No
<i>Power supply:</i>	210...242V 50Hz 14VA, or 22...28V DC 0.3A <i>The occasional supply of 24V may be only with reinforced insulation from 230V network.</i>
<i>Mains fuses:</i>	125mA T 250V
<i>Class of protection against indirect contact:</i>	II.
<i>Measuring range:</i>	<i>Identical with measuring range of transmitter</i>
<i>Operated transmitter:</i>	<i>E-TD-S1 (semiconductor)</i> <i>E-TD-P1 (catalytic)</i> <i>Other ones with 4...20mA output</i>
<i>Max. loop resistance of transmitter cables of transmitter types E-TD-P1 and E-TD-S1:</i>	3Ω (with cable of SZRMK VMJ 4X1.5mm ² this is approx. 150m)
<i>Loadability of controlling relay outputs:</i>	250V AC, or 30V DC 4A. <i>On the acoustic relay output in voltage controlled version the mains voltage will appear, loadability is 1A.</i>
<i>Signal levels:</i>	<i>Programmable within measuring range</i>
<i>Recorder output:</i>	4-20mA, R _{loadmax} =220Ω, or 0.4-2V, R _{loadmin} =100KΩ <i>The electric circuit connected to the recorder output can only be separated with reinforced insulation from the 230V network.</i>
<i>Dimensions:</i>	310 x 165 x 94 mm (Wi., Hei., Dee.)
<i>Protection (MSZ EN 60529):</i>	IP65
<i>Operational temperature:</i>	0°C...40°C

BASIC CABLE JUNCTION BOX;

<i>Power supply:</i>	$230V \pm 10\% 50Hz$
<i>Individual power consumption:</i>	20VA <i>(added to power consumption of central unit)</i>
<i>Protection (MSZ EN 60529):</i>	IP54
<i>Potential-free relay contacts and loadability:</i>	$* \text{sound; 1 pce of closing } 250V 5A 50Hz\}$ $* \text{prealarm; 2 pcs of closing } 250V 5A \{50Hz\}$ $* \text{alarm; 2 pcs of droping } 250V 5A \{50Hz\}$
<i>Um</i> <i>(Inner relay operationg voltage):</i>	24V AC

At different designs the data are subject to change!

MEASUREMENT TECHNIQUE DATA OF THE INSTRUMENTS (TRANSMITTER AND CENTRAL UNIT TOGETHER);

<i>Response time , (t₅₀, t₉₀):</i>	<i>Depending on applied transmitters and measured material, see technical data of transmitters ,in case of E-TD-S1, E-TD-P1 according to MSZ EN 50054:2000 and MSZ EN 50057:2000</i>
<i>Precision:</i>	<i>Depending on applied transmitters and measured material, see technical data of transmitters ,in case of E-TD-S1, E-TD-P1 according to prescriptions of MSZ EN 50054:2000 and MSZ EN 50057:2000</i>

9. GUARANTEE

Műszer Automatika Ltd. undertake guarantee of gas concentration measuring devices types EXTOX-UNI K1/K2 for 1 year after date of installation, if the instruments are properly used.

The guarantee refers to failures, originated from manufacture. The conditions of guarantee subject to full observance of prescriptions of installation, commissioning, handling and safe operation.

10. SERVICE, MAINTENANCE

The gas detection devices need regular servicing, so that they can operate perfectly in long term. The maintenance works cover not only the assessment of general technical conditions but the checking of parts and their mountings which determine the explosion-proof protection , the control of operation and if necessary the error correction and rectification of setting.

The prevention of occasional operational abnormalities is also possible beside the regular maintenance .

In case of failure, for fast error-correction, the following data should be specified:

- * *location of system installation,*
- * *date of failure,*
- *description of failure*
- *circumstances of failure occurrence*

Maintenance contract can be prepared with the service staff of Műszer Automatika Ltd. after the guarantee period of 1 year. By the contract the periodical regular maintenance of the apparatus can be ensured in advance.