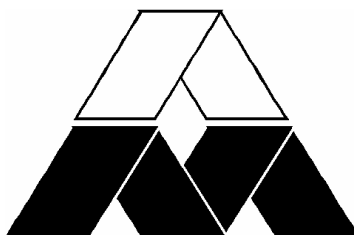


EXTOX-UNI xTM ***EXTOX-UNI 1T, 1T/S***

***STATIONARY GAS CONCENTRATION MEASURING
DEVICES***

MANUAL
(ATEX version)



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1. PURPOSE OF DEVICES

The devices types EXTOX-UNI, EXTOX-UNI 1T and EXTOX-UNI 1T/S are stationary -type gas concentration measuring devices of transmitter systems for industrial use Their denomination refer to universal measurement devices of explosive and toxic chemicals. Their purpose is the measurement of concentration of inflammable, toxic and other dangerous gases and vapours.

Their task is to signal in advance in emergency situations with respect of life property and environmental protection by automatic control of actuation.

In case of explosive materials at the concentration of lower explosive limit in the case of toxic materials before reaching the health safety limit they give signal. The signals are suitable for the appropriate control in the form of potential-free contacts to avoid possible accidents.

2. CONSTRUCTION

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

If necessary the cable junction boxes, which meet the requirements of process control may be attached to the central units.

3. TYPES AND APPLICATIONS

The EXTOX-UNI gas concentration measuring instruments can be manufactured in large number of varieties. The transmitters and central units of the device can be selected according to the specified application.

The type of transmitters are determined by the concentration of chemicals, the measuring range and the danger rate existing in the area.

The type of central unit is determined by the necessary quantity of transmitters and type of application.

The name of complete device mounted with transmitters is the same as that of the central unit, not depending on the type of transmitter to be used.

3.1. CENTRAL UNITS

The types of central units can be as follows:

EXTOX-UNI xTM

General purpose instrument in rack system in complete design, it is built of modules that are actuating 4, 6, 9, or 12 pcs of transmitters. In the name of it the figure standing in place of x means the number of modules (i.e. number of operating modules), the letters of TM refer to stationary modular design.

For example EXTOX-UNI 9 TM.

If the rack should not be filled completely the number of built in modules are also specified at the end of the denomination. For example EXTOX-UNI 6TM/5.

If more than 12pcs of transmitters are to be operated, we have to apply more racks.

EXTOX-UNI 1T

General purpose instrument for operating only one single transmitter. In denomination 1T refers to single channel stationary construction.

EXTOX-UNI 1T/S

The device is specifically designed for gas boiler houses and suitable for operation of one transmitter. In denomination 1T/S refers to one channel stationary construction and used for gas boiler houses.

3.2. TRANSMITTERS

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 és 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.

4. DESCRIPTION OF OPERATION

4.1. OPERATION OF CENTRAL UNITS

The task of central unit type EXTOX-UNI 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. Their design is as follows: each transmitter is handled by independent electronics beginning from mains supply until potential-free intervention of the controlling contacts. In the case of one channel design {1T és 1T/S} each central unit has separate casing. In spite the channels of modular multichannel gas sensitive devices work independently they are placed in one casing. In this case upon request of the user it is possible to use the controlling contacts separately or jointly.

The performance of EXTOX-UNI central units conform to the type and technical features of transmitters and measuring range. Its universal structure makes it possible to measure different electrical quantities with the help of same or similar method of intervention control. They have two signalling levels with relevant potential free relay output contacts each and an additional potential free relay output contact. The latter is of optional use. It is suitable for either muteable sound signalling, which appears parallel with the state of alarm or self-error. Using self-error signal we can decide whether in state of alarm the alarm signals were generated either by gas concentration or failure.

At prealarm level the relevant relay shows closed contact. At alarm level the alarm relay interrupts the closed contact.

In case of muteable sound signal, in state of sound signal, the third relay outputs short circuit, in case of acknowledgement it produces interruption.

In case of self-error signal the closed contact, which is valid at normal operational conditions will change to interruption but the acknowledgement button is not effective on it.

It is important that, because of the characteristics of the sensor heads, the instruments always start with state of alarm after switching on and later after a timing period they get into normal state of operation, if it is allowed by gas concentration.

The signal levels of central units can be adjusted in increasing or decreasing concentration values as well, depending on properties of measured materials or requirements of application. The comparison levels can be set in different values according to the customer's request taking the relevant standards into consideration. The status of intervention control can be concluded from the light of LED-s which are on the front panel of the device.

The actual concentration may be traced permanently on 2,5 or 3-digit display with the exception of instrument type 1T/S. The displays show the values according to the measurement ranges as follows:

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

The appliances also may include recorder output allowing of tracing or processing the gas concentration in the range of 4-20 mA or 0,2-2 V in analog format.

The device is operated by 230V 50Hz power supply and/or 24 V direct current. The central unit can operate from UPS of 24 V enabling continuous performance of the instrument in the event of power-cut.

The connection to the connecting points of modular rack system devices can be made through the connection panel on the back of the rack by means of serial terminals. The connection panel is also suitable for commoning of independent output contacts of the channels (separately by functions) according to the requirements of application.

4.2. OPERATION OF TRANSMITTERS ACCORDING TO APPLIED SENSORS

The EXTOX-UNI 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 catalyzer material. The catalyzer 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.

4.3. OPERATION OF CABLE JUNCTION BOXES CONNECTED TO CENTRAL UNITS

The cable junction box is an additional connection surface of the devices that can operate at most 12 transmitters and applied on request, where the cables of central unit, transmitters, the actuating instruments controlled by gas sensors and the power supply units may be connected. In case of built-in instruments of higher transmitters quantities, the cable junction boxes are replaced by a suitably built bigger cabinet.

The relay contacts of central units are not suitable directly for switching of electric circuits of network voltage level. Therefore into the cable junction boxes extra low voltage power supply and repeating relays can be placed as well. In this case the repeating relays are controlled by the relay contacts of central unit. The number and loadability of built-in relays meet the requirements of actuating instruments (i.e. ventilators, gas magnetic valves ,illuminators, e.t.c.) as well.

The cable junction box is also used to uninterrupt the gas sensitive device i.e. to receive the suitably developed UPS of 24 Volts with batteries .

In the case of single channel devices (EXTOX-UNI 1T, 1T/S) the armoured cable of transmitter can be connected directly to the central unit as well therefore, if the quantities and loadability of relay contacts are sufficient there is no need for cable junction box.

In any case for modular devices (EXTOX-UNI xTM) a suitably designed junction box is absolutely necessary.

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 such 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 prescribed by authorities, the installation should be based on a project plan. The prescriptions of that should be met 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 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 multichannel stationary modular gas sensitive devices up to 12 pcs of moduls should be mounted by the help of support, the single channel EXTOX-UNI IT, and IT/S should be mounted on even surface vertical wall.

*The **reset** pushbutton should be mounted near the apparatus.*

The devices with more than 12 modules assembled in big boxes shall be mounted on the wall or on flat horizontal surface depending on dimensions of the instrument box. The devices should be placed in such a way that the free air circulation be ensured in the ambient space of air-outlets (if they are available). Furthermore in the case of modular devices the IP protection allows the installation in dry places only.

When placing the transmitters (sensors) the form of free air-space, the location of hazard 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

Each transmitter of gas concentration measuring devices types EXTOX-UNI xTM, 1T and 1T/S 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 them, in the case of explosion proof transmitters they are suitable for installation within the zone boundary.

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, it is allowed only in certified explosion-proof connection box. 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 , accoustic 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 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 the device can be energized and afterwards total operational inspection should be performed by the help of calibration material. 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 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 circumstancies 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 circumstancies are not suitable in the predetermined period and prompt 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.

6. HANDLING AND OPERATIONAL INSTRUCTIONS

6.1. HANDLING UNITS, STATUS SIGNALS

on central unit the following handling units are available:

- * *three- digit seven segment LED, (except type IT/S),*
- * *reset button, (except types of IT and IT/S)*
- * *alarm LED (red),*
- * *self error (yellow), or sound LED (red),*
- * *pre-signal LED (red),*
- * *operation LED (green),*
- * *heating current adjusting trimmer potentiometer,*
- * *comparison levels adjusting trimmer potentiometer,*
- * *amplification adjusting trimmer potentiometer,*
- * *zero adjuster trimmer potentiometer,*
- * *reset button of overdrive comparator (placed under decoration front panels only in case of application of certain sensors).*

6.2. CONNECTION POINTS

<i>230V AC</i>	<i>power supply point</i>
<i>230V AC</i>	<i>power supply point</i>
<i>OH/H</i>	<i>self error, or sound signal relay contact</i>
<i>OH/H</i>	<i>self error, or sound signal relay contact</i>
<i>R</i>	<i>alarm relay contact</i>
<i>R</i>	<i>alarm relay contact</i>
<i>E</i>	<i>presignal relay contact</i>
<i>E</i>	<i>presignal relay contact</i>
<i>AK+</i>	<i>positive terminal of supply of 24 V (for UPS)</i>
<i>AK-</i>	<i>negative terminal of supply of 24V (for UPS)</i>
<i>RK+</i>	<i>recorder output positive terminal</i>
<i>RK-</i>	<i>recorder output negative terminal</i>
<i>TR+</i>	<i>connection point of outer cancellation button</i>
<i>TR-</i>	<i>connection point of outer cancellation button</i>
<i>A+</i>	<i>transmitter connection point</i>
<i>A-</i>	<i>transmitter connection point</i>
<i>F/X</i>	<i>transmitter connection point</i>
<i>K/Y</i>	<i>transmitter connection point</i>

6.3. OPERATION , HANDLING, INTERPRETATION OF STATUS SIGNALS

The operation of EXTOX-UNI gas concentration measuring apparatus can be traced by means of the signals of central units. The status of operation is displayed by the light of green LED as „operation”. The devices are not capable for operation at the very instant of switching on because of the characteristics of sensors. Therefore the devices start operation after timing of 1 minute approximately. During timing the relay contacts of alarm and self-error are in state of danger signal. After timing period, if the measured concentration makes it possible, they change over in dangerfree state automatically.

The actual gas concentration can be read continuously on 3-digit 7-segment display. The light of red coloured „prealarm” LED displays the state of prealarm. The function of other red coloured LED of „alarm” is to read the state of alarm which can be cancelled by the cancellation button after stopping of the state causing the alarm. If the third one among the actuation controlling relay contacts is made for acoustic function, the light of red coloured LED of „acoustic” displays the active state of acoustic relay. This active status always activated alongwith the state of alarm, but it can be cancelled by the cancellation button before ceasing of state, which induced the alarm in order to switch off the audible warning device, operated from the apparatus. After ceasing of the state, which induced the alarm by pushing the cancellation button repeatedly the alarm state can be cancelled. In case the third actuation controlling contact of the apparatus is designed for self-error function, the yellow LED of self-error calls the attention on failure of the device.

The failure of device also induces alarm signal, not depending on the function of third actuation controlling contact. By means of self error signal in the event of alarm it can be decided whether the alarm is originated either from failure or concentration.

In case of self error signal the apparatus cannot be considered as suitable for operation.

The trimmer potentiometers located behind the front panel are designed for adjustment of the apparatus.

If the concentration significantly exceeds the measurement range of the apparatus at several detector types the overdrive comparator will be activated. In this case the display will signal overflow and the alarm cannot be cancelled. The cause of this state must be checked up and eliminated imperatively. The overdrive comparator can be set back to normal operation by cancellation button afterwards.

In the case of types of EXTOX-UNI xTM the cancellation of alarm and acoustic signals is possible by means of the cancellation buttons located on the apparatus and by the additional outer cancellation button. Nevertheless the outer cancellation button cancels the alarm or acoustic signals not only on the actual module but on all the modules simultaneously.

In the case of types of EXTOX-UNI 1T and 1T/S the cancellation of alarm and acoustic signal is possible only by means of the outer cancellation button.

6.4. **CLEANING**

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

The removal of such dirt 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 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 operated by mains supply voltage of 230 V. Opening of their casing 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 constructional design of the central unit is such that the transmitters are not to be connected to the earthing wire, but for example the mounting of transmitters onto earth-connected iron framing is allowed.

The class of protection of against indirect contact of modular device type (EXTOX-UNI xTM) is I.

Earth conductor must be connected to the apparatus !

The devices, types EXTOX-UNI IT and IT/S are of plastic armoured ones with reinforced insulation and they are in protection class II. These devices shall not be connected to earth conductor wire.

If the user supplies separate break switch protected cable for the power supply of 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 i.e. when servicing them it is practical to indicate the inscription of „Switching off prohibited” 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>CANCEL</i>	<i>Cancellation of alarm and acoustic signal</i>
<i>ALARM</i>	<i>Signal of state of alarm</i>
<i>SELF FAILURE</i>	<i>Display of state of self failure</i>
<i>PREALARM</i>	<i>Signal of state of prealarm</i>
<i>OPERATION</i>	<i>State of being switched on</i>
<i>HEATING</i>	<i>Potentiometer setting the heating current of detecting heads</i>
<i>E/R LEVEL</i>	<i>Potentiometer setting levels of prealarm and alarm</i>
<i>AMPLIFICATION</i>	<i>Potentiometer setting the sensitivity of device</i>
<i>CONNECTING TO NEUTRAL</i>	<i>Potentiometer setting the neutral point of device</i>
<i>B1, B2</i>	<i>Mains fuses</i>
<i>B3</i>	<i>Fuses of optional 24V supply</i>



Device protected by double or reinforced insulation



Caution ! (Reference to the documentation!)



Protection connector

8. TECHNICAL DATA

EXTOX-UNI E-TD-S1 SEMICONDUCTOR TRANSMITTER;

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

EXTOX-UNI E-TD-PI CATALYTIC TRANSMITTER;

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

EXTOX-UNI INFRARED TRANSMITTER;

Type :	EXTOX-UNI IRTA-1 and IRTA-2
Measured material:	carbon dioxide
Response time, (t_{90}):	22s
Precision of repetition:	$\pm 0.2\%$
Supply :	19...28V DC, max 180mA
Output signal :	4...20mA (linear) current consumption
Sensitive element :	two beam infrared
Explosion- proof protection :	no
Protection {MSZ IEC 529} :	IP 54
Outside temperature :	-20...+40 °C
Diameter of cables:	7...9mm
Cable core cross section:	0.5...1.5mm ²
Allowed loop resistance:	10 Ω max.
Dimensions (with stand):	135 x 126 x 95 mm
Weight (with stand):	approx. 0.55 kg

MWG100NE ELEKTROCHEMICAL TRANSMITTER;

Type:	MWG100NE
Response time:	depending on measured materials and sensor
Precision:	depending on measured materials and sensor
Supply:	14...28V Direct Voltage
Current drain:	4...20mA (depending on concentration)
Explosion proof protection:	No
Cable core cross section:	0.5...1.5mm ²
Diameter of cables:	9...11mm
Dimensions:	width: 102mm height: 170mm depth: 58mm weight: kb. 850g
Allowed outside temperature:	0-40°C
Protection (MSZ IEC529):	IP32

EXTOX-UNI CENTRAL UNIT MODULES;

Supply:	230 V \pm 10% 50 Hz max. 14 VA Mains and/or 22V...28V direct voltage max. 400 mA <u>Attention!</u> Supply of 24V can be insulated from mains of 230V by reinforced insulation only.
Protection (MSZ IEC 529):	IP 00 (only the modul) ill. IP 20 (mounted in rack box)
Outside temperature:	0...40 °C
Outputs	
Recorder output:	4...20mA output current $R_{ki}=1M\Omega$, $R_{max}=800\ \Omega$ or 0,4V...2V output voltage $R_{ki}<1,5\ \Omega$, $R_{min}=300\ \Omega$ <u>Attention !</u> Recorder output can be connected only to insulated receiving circuits which are separated from other circuits by reinforced insulation.
Loadability of voltage-free relay contacts:	max. 50V 2A
Display of measured value:	3 digit LED

EXTOX-UNI 1T, 1T/S CENTRAL UNITS;

Supply :	230 V \pm 10% 50 Hz max. 14 VA Mains and/or 22V...28V direct voltage max. 400mA <u>Attention!</u> Supply of 24V can be insulated from mains of 230V with reinforced insulation only.
Protection (MSZ IEC 529):	IP 65
Outside temperature:	0... 40°C
Outputs	
Recorder output:	4...20mA-es output current $R_{ki}=1\ M\Omega$, $R_{max}=800\ \Omega$ or 0,4V...2V output voltage $R_{ki}<1,5\ \Omega$, $R_{min}=300\ \Omega$ <u>Attention !</u> Recorder output can be connected only to insulated receiving circuits which are separated from other circuits by reinforced insulation.
Loadability of voltage- free relay contacts:	max. 50V 2A
Display of measured value:	3 digit LED display except EXTOX-UNI 1T/S

BASIC CABLE JUNCTION BOX;

<i>Power supply:</i>	230V \pm 10% 50Hz
<i>Individual power consumption:</i>	20VA (added to power consumption of central unit)
<i>Protection (MSZ EN 60529):</i>	IP54
<i>Voltagefree relay contacts and loadability:</i>	* sound; 1 pce of closing 250V 5A 50Hz} * prealarm; 2 pcs of closing 250V 5A {50Hz} * alarm; 2 pcs of dropping 250V 5A {50Hz}
<i>Um (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 , (t_{50}, t_{90}):</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 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, and safe operation. Other condition of guarantee is a completely filled installation protocol, duly signed and dated by Service of Műszer Automatika Ltd or its contractual partner and furthermore the instruments are actually serviced by Műszer Automatika Ltd or its contractual partner.

10. **SERVICE, MAINTENANCE**

The EXTOX-UNI gas concentration devices need regular servicing so that they can operate perfectly in long term. If the devices work with explosion-proof transmitters maintenance works cover not only the checking up of the usual operation alongwith necessary adjustments of settings and error corrections but the checking of technical solutions, ensuring explosion-proof protection.

The service staff of Műszer Automatika Ltd performs maintenance works on ad hoc assignment or on the basis of permanent maintenance contract. By maintenance contract the professional regular maintenance can be ensured for a predetermined period.

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

- * *type of instrument, place of installation,*
- * *date of failure,*
- * *type of failure,*
- * *circumstances of failure occurrence*