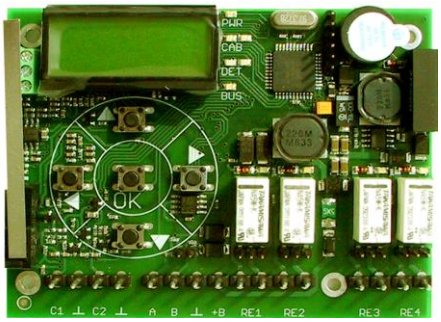
The system consists of several autonomous parts and can be used entirely independently as a whole. The basic element is a sensor cable that is placed on the protected zone (fencing, a roof, or a structure) and senses vibrations from the environment that are processed as an impulse in a **GE-FORCE-II** TWO-ZONE evaluation unit. This unit is fitted with relay outputs for direct information transmission and also with a communication line that will transmit information to the **STATION ONE** control centre. Both the units, the **GE-FORCE-II** and **STATION ONE**, can be interconnected with another system. The STATION ONE is a centre that has an IP – Ethernet interface for the complete remote management of the whole **MaximGUARD** system by means of the **IDT-Viever** software. The integrated GSM module, which can be interconnected with an electronic security system centre via a **T-Line** telephone communicator, is intended to be a GSM gate for communication with the PCO. 60 shock zones, 60 secured zones (a PIR, a magnet, etc.), a **MeteoGuard** meteorological station, and extension **LG-8R** relay modules can be integrated into the system.

!WARNING!

- the installation must be carried out by a qualified worker only!
- do not expose the proper equipment (printed circuits) to rain and a humid environment!
- respect always the advice and instructions of this installation manual!
- handle the equipment particularly carefully!
- avoid any mechanical damage to and stress on a sensor cable!
- **in no case expose a stripped sensor cable to a humid environment and insulate the cable ends against leaking in with care each time!**
- in case of any doubt, contact the technical support!
- in case of strong interference along power supply or fencing and then along the sensor cable, connecting a capacitor directly to the unit input may be used. The values of the capacitor from 1 to 100 nF.

BASIC SYSTEM ARCHITECTURE

1) *senzor cable*	***Key-Tech***
2) *evaluation unit*	***GE-FORCE II.***
3) *control unit*	***STATION ONE***
4) *meteorological station*	***Meteo GUARD***
5) *relay expander*	***LG-8R***
6) *telephone line*	***T-Line***
7) *software*	***IDT Viever***



GE-FORCE II.

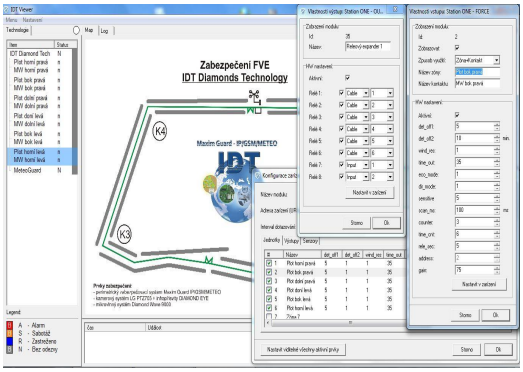
STATION ONE

MAXIM GUARD

LG-8R

T-Line

Meteo-Guard/MeteoBUS- inteli



IDT Viewer

DESCRIPTION OF THE GE-Tech SENZOR CABLE

1) the maximum length of the zone of a system fastened to a common fence made of common netting 1.8 meter high is up to 800 meters. We recommend shorter installed zones, which may be desirable for determining the nature and place of an intrusion and for eliminating disturbing influences and unwanted alarm events. **The recommended length of a zone is up to 350 meter.**

2) a sensor cable has to be fastened to the fence as near as possible so that the maximum amount of signals is generated by the cable. Strap the cable with UV stable straps approx.

every 20cm to the guide wire in the middle of the fencing. If atypical or other applications are concerned, use the HOTLINE telephone service.

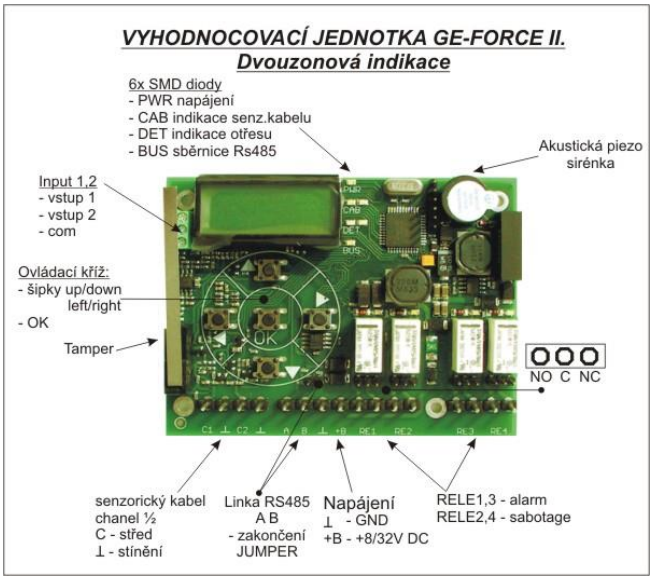
3) the termination of a 1MΩ sensor cable. Use a shrinking insulating sleeve with adhesive to insulate the termination.

4) when working, always observe the following basic safety regulations:
- in no case expose a stripped sensor cable to a humid environment and insulate with care the cable ends against leaking in!
- avoid any mechanical damage to and stress on a sensor cable!
- when working, proceed with care and cautiously to avoid any damage to the insulation!
- insulate the cable ends each time; they are highly moisture-absorbing and moisture may affect very negatively the function of the cable!
- the maximum rating capacity is 1,200 V.

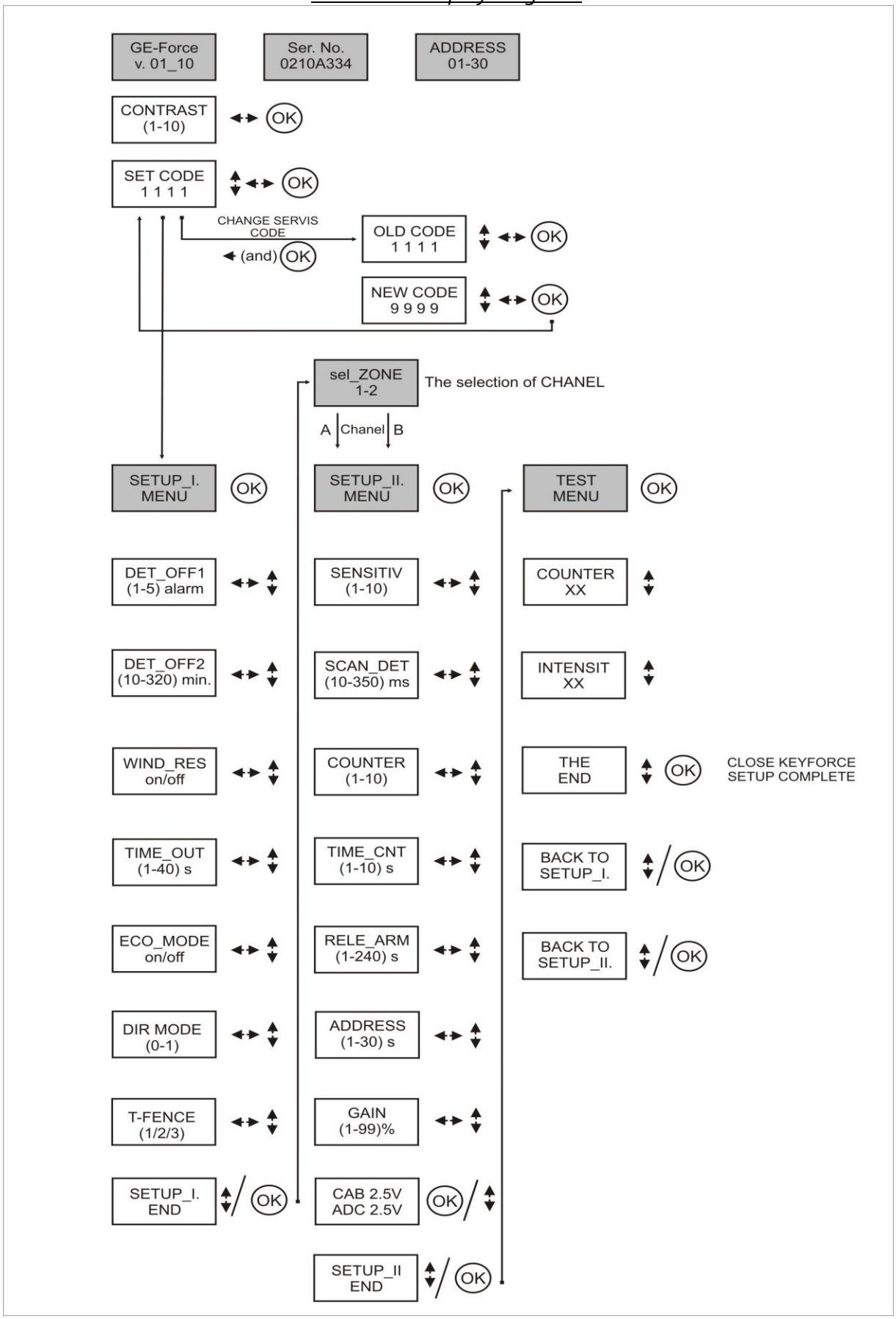
DESCRIPTION OF THE GE-FORCE II UNIT

- this is a two-zone evaluation unit to which sensor cables are led and impulses from these cables are evaluated by means of algorithms programmed in the CPU processor.
- the unit has four relay contacts, 2x ALARM / 2x SABOTAGE (N.C./N.O.) and is equipped with an RS485 serial communication line.
- the unit may be used **autonomously** or in combination with the STATION ONE using a bus bar (for indication on this device, remote setting, and connecting to an internet network, a GSM network and the meteorological station).

GE-Force II. diagram:



GE-Force II Display Diagram:

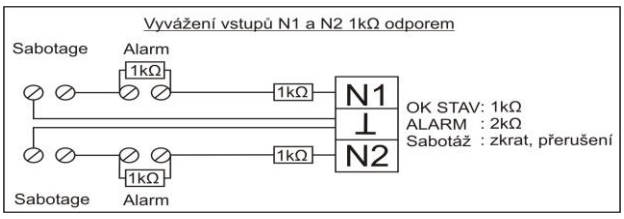


Description of Individual Functions:

- on powering on, the unit name and version information and address will appear on the screen first; then the display **CONTRAST** may be set and after that entering the service code **SET CODE** (1111 – factory) follows.
- changing the code: Press at once and hold the **LEFT ARROW** (and) **OK**.
  OLD CODE Enter the original code, confirm.
  NEW CODE Enter the new code, confirm.
  SET CODE Enter the changed code; then you enter the **SETUP_I. MENU**.

SETUP_I. MENU

DET_OFF1: Turning off the detection of the unit after a certain number of preceding alarms.
DET_OFF2: Turning of the detection of the unit for a defined time when DET_OFF1 is achieved.
WIND_RES: The unit cooperates with setting instructions by means of the meteorological station.
TIME_OUT: The time for exiting the unit (countdown) in seconds and for sabotage to become quiet.
ECO_MODE: In state 1, the relays are permanently supplied; in the event of an interruption of power supply, the relays invert the state. In case that a bus bar is used, this mode can be turned off, which reduces the consumption of the unit.
DIR_MODE: The responses of Inputs N1 a N2 can be used to connect a MG, MW or PIR, etc. (the bus bar beside the display). When DIR_MODE is turned on, Input N1 switches Relay ALARM1 and N2 switches Relay ALARM2 on the GeForce II unit board.



T_Fence: **(Type of Fence)** Setting the gain of the processor for various types of structures and fencing.

1) Low – Used for very reactive areas. The processor is attenuated.
2) Standard – The setting that can be used for 90 % of fencing.
3) High – This can be used for very firm surfaces without visible vibrations, e.g. for photovoltaic structures, welded fencing, roofs, etc.

Selecting the Channel (Zone) We Are Going to Set 1 / 2

SETUP_II. MENU

SENSITIV: Sensor cable sensitivity.
SCAN_DET: The velocity of shock propagation from the fencing to the sensor cable – in milliseconds.
COUNTER: The pulse counter (for a shock from the fencing) in the time window.
TIME_CNT: The time window in which the number of shocks is counted by the COUNTER in order to raise an Alarm state. (If a smaller number of shocks arrives in the time window, than the alarm is not raised.)
RELE_ARM: The relay closed/open time (n.c./n.o.).

ADDRESS : Setting the address of the zone of the cable on the fencing being just programmed (an *RS485* bus bar*).* ***Set a different address for each Zone 1 and 2 each time.***
GAIN: Cable gain: 1-99 %.
CAB: The automatic calibration of cable balance. Values: 2.5 V – OK, 0 V – cut-up cable, and 5 V – short circuit; other values are defined as cable leaking in or a defective resistor.
SETUP II. END: On confirming, entering TEST MENU.

TEST_MENU

COUNTER: The shock counter in the given time window.
INTENSIT: Fencing shock intensity.
THE END: The end of setting the unit; when confirmed, the TIME_OUT countdown runs. Exiting the unit.
BACK TO SETUP I.: Return to SETUP_I.
BACK TO SETUP II.: Return to SETUP_II.

Description of the LED Functions:
PWR Green: Power indication – lights: OK; flashes when zone 2 is being programmed.
2xCAB Yellow: Sensor cable indication – lights: OK; flashes: the cable not calibrated.
2xDET Red: Shock indication – lights up for 1 sec.
BUS Blue: Bus bar communication indication – flashes: OK.
4x SMD Red RELAY – Close/open indication.

Setting the Unit:

- **go through the whole menu to the test mode first** and find out there what the sensor cable response to the fencing is.
  Focus on these values: Sensitivity – low or too high sensitivity.
  The number of shocks on banging strongly and gently the fencing.
  How many shocks are accumulated in which time window.

1) **Setting SETUP II. MENU**
   SENSITIV – Set the sensitivity according to the test that has run (increase/reduce) and then set the number of shocks in a time window (e.g. 7 shocks per 5 seconds). – If this condition occurs, Relay ALARM switches on.
   SCAN – Set according to the type of the fencing; e.g., the range of 50-100 ms is ideal for standard rubberized netting. Generally, it applies that the more rigid fence, the longer response.
   GAIN – The gain may be set to e.g.: 7-8 sensitive and 20-80 % gain, as necessary.
   CAB_2.5V and ADC_2.5V is the calibration of the cable that is carried out each time when values are changed. (On confirming OK, the automatic calibration and check of the sensor cable takes place.)
2) Go to **TEST MENU** – The system responses may be tested here.
   Repeat the procedure, if need be.
3) **THE END** – On confirming, the TIME_OUT countdown runs in seconds for exiting the unit. The last 3 seconds of the countdown are signalized audibly. In case you do not manage to exit the unit within the time interval, the system returns automatically to the beginning and will prompt you to enter the SET_CODE installation code.

RS485 Communication Line:

- the length of a bus bar is limited by the number of successive units. The maximum length between two units is 1,000 m.
- to terminate the bus bar – the last unit in a branch – use a jumper to terminate the bus bar.

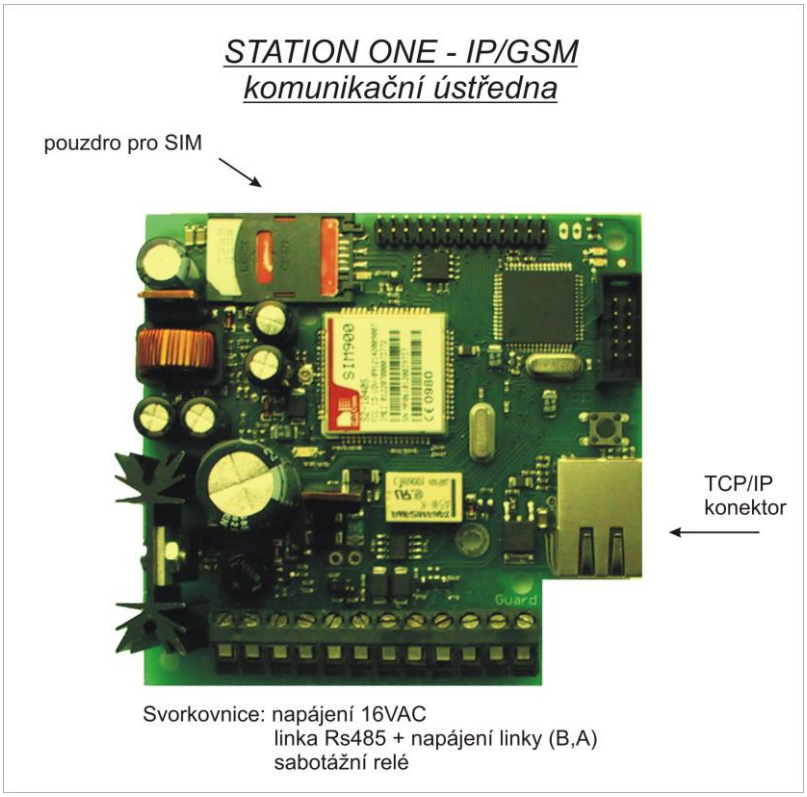
SPECIFICATION:

Unit Supply Voltage:	*13 V DC, range 8-32 V, (polarity reversal protection)*
Supply Current:	*80 mA / 150 mA (closed/open unit)*
Protection:	*0.5A returnable fuse*
Outputs:	*4x 0.4A potential-free contacts*
Temperature range:	*-40 +70 degrees C*
IP protection:	*IP65*

DESCRIPTION OF THE STATION ONE UNIT

- it provides monitoring, controlling and setting GE-Force II evaluation units via an RS485 bus bar.
- the maximum number of GE-Force II units that it can indicate is 30.
- a backed up AKU 1.5Ah – 18Ah power source (4.5 Ah recommended).
- a communication interface for external TCP/IP communication and a GSM module.

Description of Individual Functions:



Description of Individual Functions:

1) SABOTAGE RELAY: – a potential free sabotage contact. The relay switches in the event of an evaluation unit tamper response or STATION ONE sabotage, in the event that the

cable is cut, or in the event of lost communication. At the same time it switches the relays of the given zone.

2) PC-aided programming and monitoring the system – by connecting to the TCP/IP connector. Set the network settings in the PC to 192.168.0.253. Log on to the Station One at the default address http://192.168.0.18 where the basic values (LAN, Upgrade Firmware, Password and Name; and Telephone Line) can be set using Mozilla Firefox;
3) the default password and name is "q" / "q.

Logon

Menu

LAN

4) Then proceed by means of the **IDT Viever** software supplied **(the description is below).**
5) The integrated GSM Module can be used as the GSM gate.
6) Wind resistance – Meteo–Guard hardware weather resistance. See the description of the Meteo-Guard unit.
7) LAN reset button – Quick **RESTART** is made by holding the button above the LAN connector for 6 sec. **RESET** to factory settings is made by disconnecting the Station One power supply and then, while holding the button, connecting to the power supply – on connecting the power supply, continue to hold the button for approx. 6 sec.
8) GSM MODULE AND SETTING:

SPECIFICATION:

Unit Supply Voltage:	*16 V AC, range 16-32 V*
Supply Current:	*150 mA /350 mA (closed/open unit)*
Protection:	*2A returnable fuse*
Outputs:	*GSM, TCP/IP*
Temperature range:	*-40 +70 degrees C*
IP protection:	*IP44*

DESCRIPTION OF the MeteoGuard/MeteoBUS-intelli UNIT

- the meteorological station is designed to measure wind velocity and direction and outdoor temperatures.
- it transfers information to the STATION ONE via a serial line to be connected by means of two wires between the devices. It can also be used autonomously in combination with evaluation units only without using the STATION ONE.
- it is an intelligent extension. When it connected by a communication cable to an RS485 line, it can also be integrated in a simple way into a system already installed.

Meteo Guard / MeteoBUS-intelli

The distance between the meteorological station and the convertor must not be longer than 10 m, the distance between the convertor and the STATION ONE must not be longer than 300 m. Do not place the station in the vicinity of strong interference!

The principle of the Intelligent Extension Function:

The meteorological station transfers information on the ambient temperature and wind direction and velocity to the Station ONE control centre. On the basis of this information, the centre influences the settings of the Ge-FORCE II and Ge-FORCE I evaluation units into which a shock cable is led and which evaluate shocks on the fencing.
The initial settings of the units remain unalterable upwards. The sensitivity and gain settings change in case that unwanted raising an alarm might occur due to the weather and the values set by the installation technician would no more guarantee the stability of the system. The setting returns automatically to be within the original limits after the weather effects have subsided. This return process takes place by steps on a fast time axis.

!WARNING! Valid only for MeteoBUS-inteli !

Never use meteoBUS-inteli with a device other than GeFORCE. MeteoBUS-inteli can only be used with GeFORCE. Do not connect other modules to the bus, never!

!WARNING! Valid only for Meteo GUARD!

Must be in the system to be used with the control unit Station One! Always!

Description of the LEDs on the Converter

- Green: Power supply.
- Red: Error, communication error.
- Blue: It flashes; RS485 communication.
- Yellow: It flashes; propeller-convertor communication.

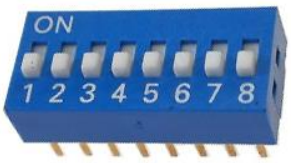
SPECIFICATION:

Unit Supply Voltage: *12V DC, range 10-32 V*
Temperature range: *-40 +70 degrees C*
IP protection: *IP30*

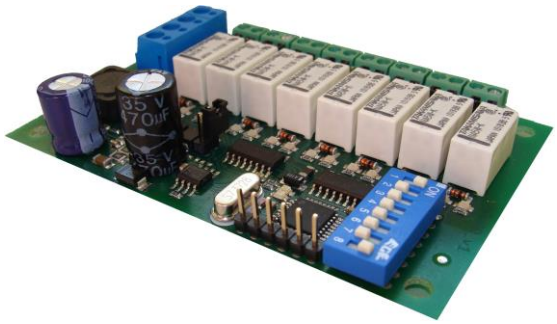
DESCRIPTION OF THE LG-8R RELAY EXPANDER

- It serves to connect with the electronic security system centre by means of relays on which states of the system are signalized (alarms from the shock zones and inputs of the evaluation units).
- It is programmed using IDT Viewer.
- It is necessary to set the expander address on each expander by means of the DIP switch (binary).

1 - up 1
2 - up 2
3- up 4
4 - up 8



5 - up 16
6 - up 32
7 - up 64
8 - up 128



- The relay modules are at the address **31 – 40**. (The address 35 is set as follows: to ON: 1/2/6.)
- It is connected to the RS485 A/B bus bar; 12V DC power supply.

Events Transmitted from the Station to a Relay Expander:

- Alarms from individual shock zones and inputs IN ½
- Sabotages of individual addressed zones
- SMS commands for 1-4 Relays K1, K2, K3, and K4

SPECIFICATION:

Unit Supply Voltage: *12 V DC, range 8-32 V, (polarity reversal protection)*
Supply Current: *50mA /160 mA (closed/open unit)*
Outputs: *8x 0,4A potential-free contacts*
Temperature range: *-40 +70 degrees C*
IP protection: *IP30*

DESCRIPTION OF the T-Line Telephone Line

- It serves to interconnect the Station One and the electronic security system centre (the RING/TIP output).
- According to the electronic security system centre telephone communicator setting, the GSM module transfers information on PCO to the Station One. It is connected by direct sliding on the Station One plug.

SPECIFICATION:

Unit Supply Voltage: *5 V DC*
Intputs: *RING/TIP*
Temperature range: *-40 +70 degrees C*

IP protection: *IP30*

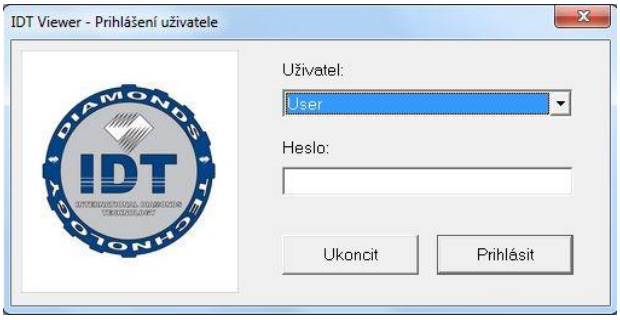
IDT Viewer

- This is unique software developed for a perimetric security system.

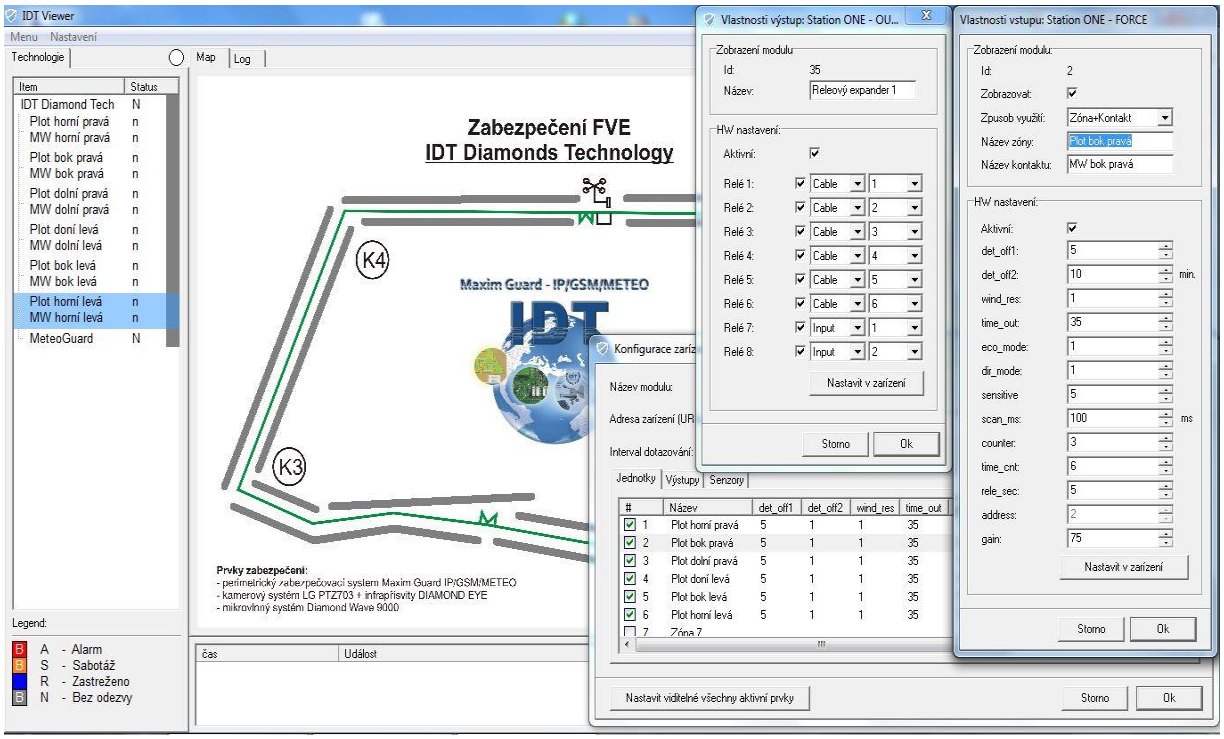
The most modern systems and equipment are specially developed according to the specific needs of customers and systems; they are thereby substantially limited as to their financial requirements. Basically, IDT Viever makes it possible to unite its own elements with foreign security elements and monitor and change remotely their states through the TCI/IP interface.

The whole system can be managed remotely and represented graphically for better orientation.

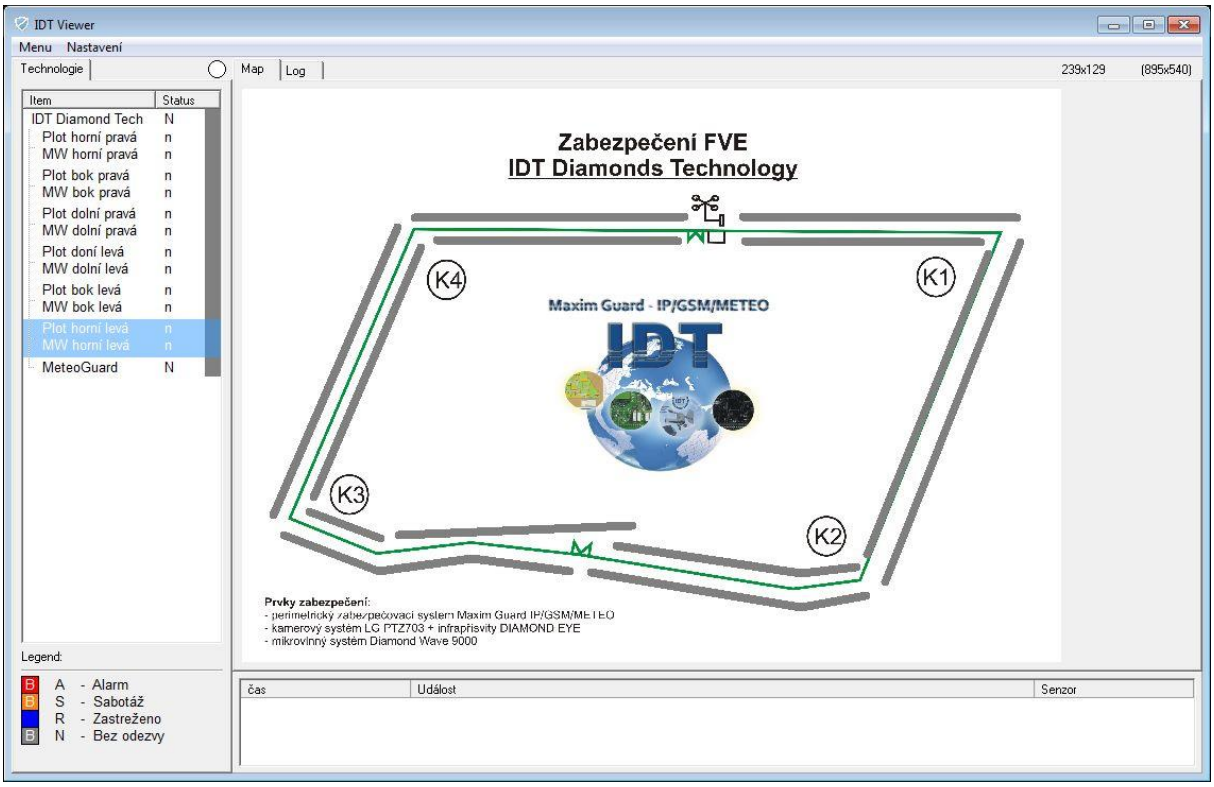
The visualisation option is a comfort basis of IDT Viewer that can be used not only for permanent surveillance by security agencies, but also for installation companies and end users who can inquire about the state of their protected building from anywhere and at any time. Installation companies can set the whole system as necessary.



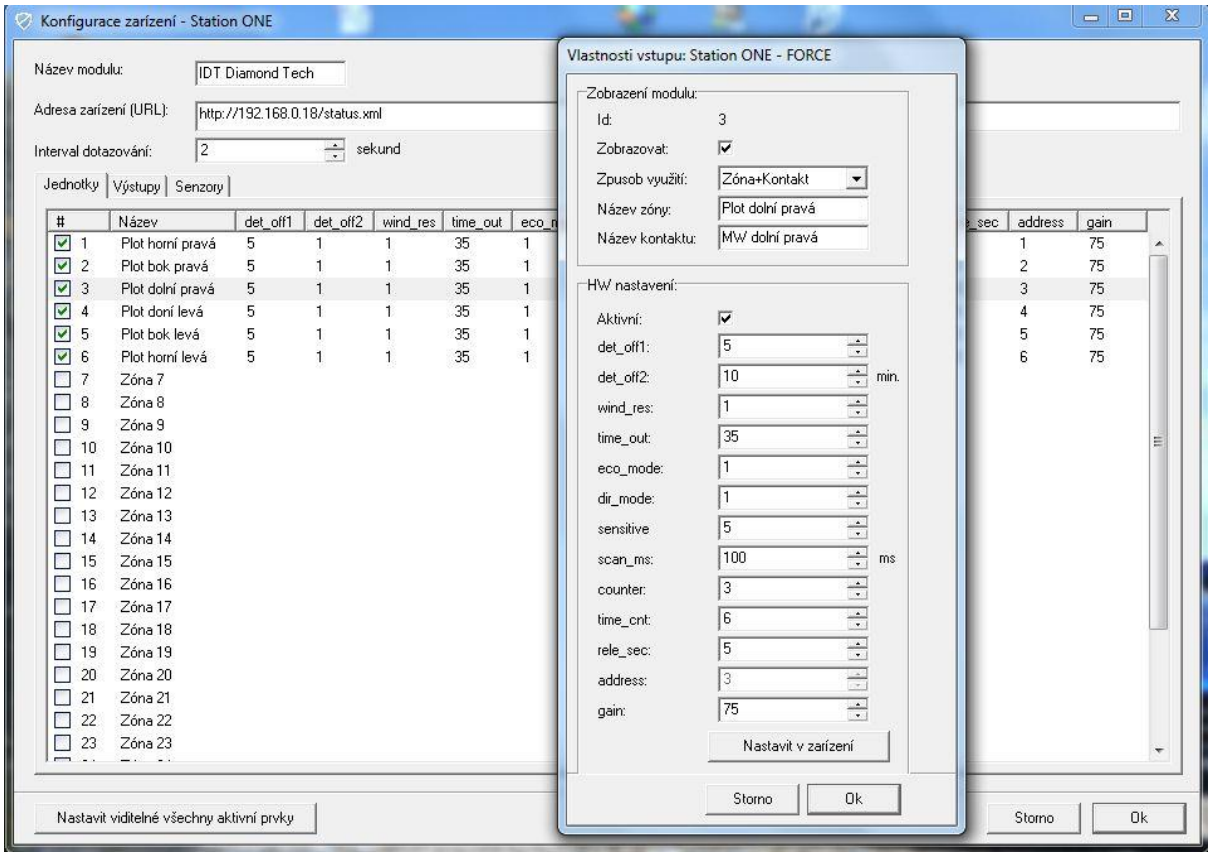
User or Administrator logon (no password by default)



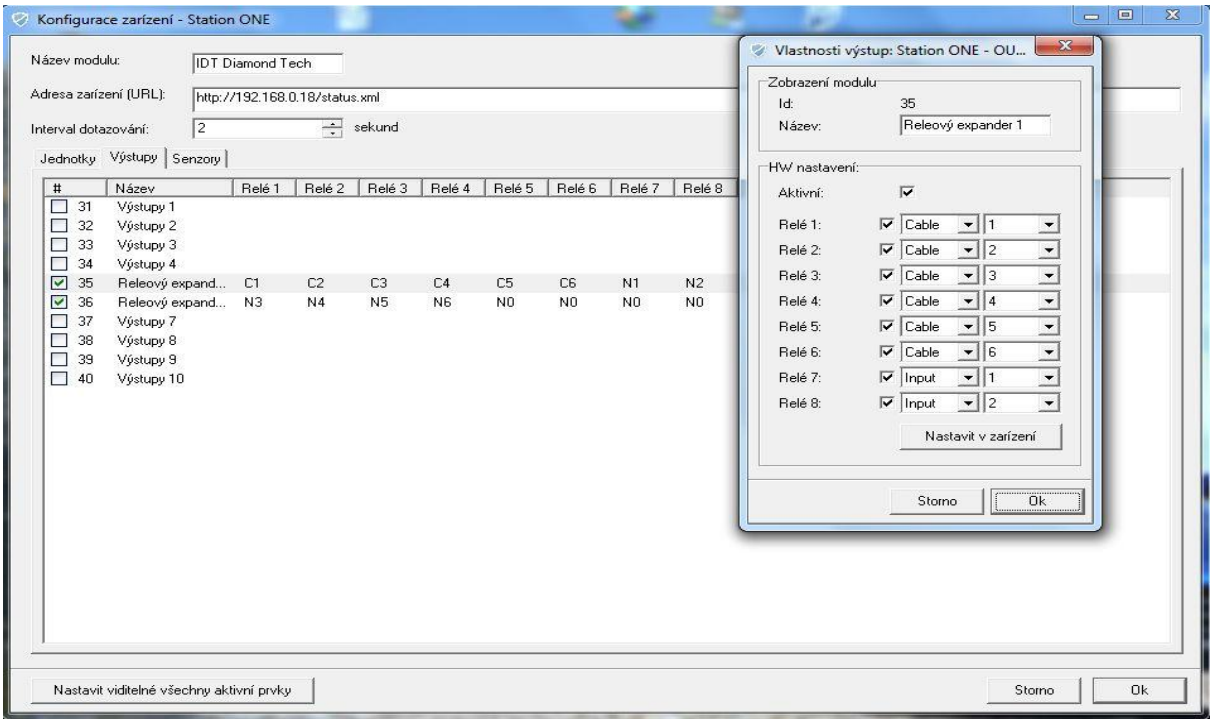
IDT Viewer



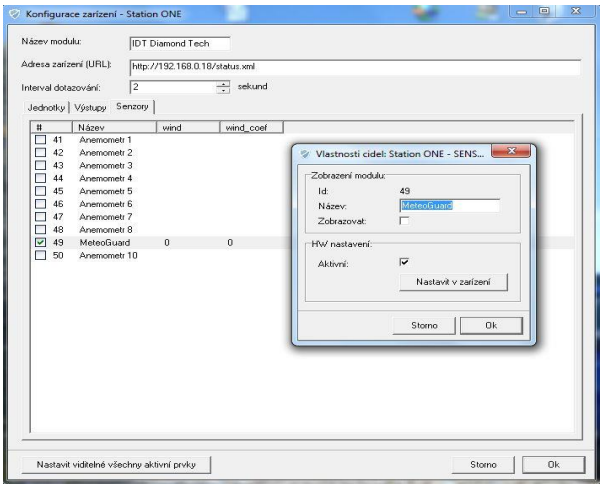
the basic screen



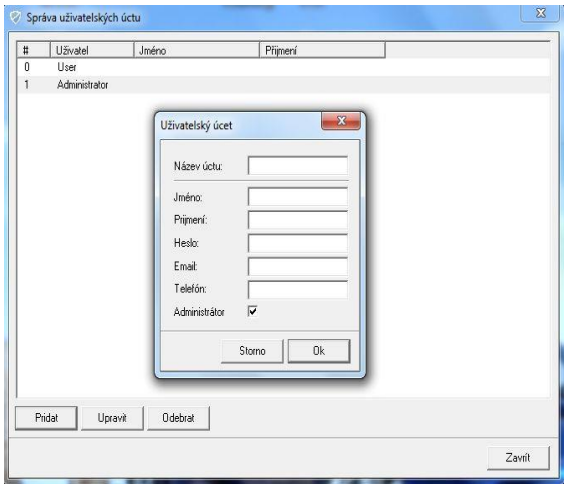
setting the name, URL address, GeFORCE units, activating the zones and inputs



setting the relay expanders



activating the MeteoGuard



user account management