

# UFO-Multisensor 1.0



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For active Ufo research we have developed a device that takes UFO field research a big step further. The UFO multi-sensor is very simple in its construction and usage. So even not so technically skilled Ufo researchers have no problem in understanding it after a short training period, and very easily become familiar with operating it.

The primary application is in active monitoring of UFO hot spots. The UFO multi-sensor is also very well suited to temporary field work, on a laptop as a mobile station.

The UFO-1.0 multi-sensor can monitor 8 sensors and send the data to a PC.

In the UFO-1.0 multi-sensor, three fluxgate magnetic sensors for the spatial directions X, Y, Z have been integrated. Furthermore, a triple gravity monitoring of the smoke directions X, Y, Z is built in. Any two additional sensors may be connected via the cable.

In addition to the PC connection, an alarm is fed out on two floating relay contacts. To this, an external Alarm tube and a VCR or other devices may be connected.

In general, the device is also fully functional without a PC and software, with the restriction that the data are lost.

### **Technical data:**

<b>Dimensions:</b>	200mm x 120mm x 60mm plastic housing color gray
<b>Voltage:</b>	10V to 18V DC / DC External power supply on, battery or converter USB-5V/12V
<b>Power consumption:</b>	50mA at rest, 80mA in alarm mode.
<b>Connections:</b>	2x cables with 8 wires (Ethernet cables)
<b>Operating function:</b>	4 switches and 3 sensitivity control
<b>Display:</b>	4 LED display
<b>Alarm:</b>	Buzzer and 2 relays
<b>Alarm contacts:</b>	Usable with max: 24V and 100mA
<b>Magnetic field sensor:</b>	3 fluxgate magnetic sensor units 50µT / V
<b>Gravity Sensor:</b>	3-axis accelerometer, 2.7 G / V
<b>External sensors:</b>	two units possible at analog input 7 and 8 with 0-5V
<b>Data Interface:</b>	RS 232, 9600 baud, 8 bits, 1 stop bit, no parity

## Operating and display elements.

### 1 - toggle switch, On / Off.

Function: Turn the unit on and off

### 2 - toggle switch, buzzer off / functional test/ continuous operation and speed control.

function: to turn off the activated alarm buzzer.

Function to adjust the sensitivity.

Continuous operation for active local or area surveillance.

### 3 - toggle switch, display off

Function: The device has no buzzer signal and no LED display.

In case of an alarm, only a faint "Tak, Tak" is to be heard.

Data transfer to the PC and the relay outputs are

not impaired by this function .

### 4 - toggle switch, LED on

Function: All four display LEDs are continuously turned on, regardless of the

Possibility of an alarm message. Data transfer to the PC and the

Relay Outputs / Buzzers are not affected by this feature.

### 5 - Knob, Ext

Function: Set the sensitivity of the additional external sensors.

### 6 – wheel switch, magnetic field

Function: Set the sensitivity of magnetic sensors.

### 7 - wheel switch, gravity

Function: Set the sensitivity of the gravitational sensors.

### 8 - Power LED

Function: Steady light when the device is working, flashing light during the functional test

### 9 - LED External / Speed 001

Function: steady light during alarm output. Lighting up during a functional test when the set alarm threshold is exceeded.

In continuous flashing rhythm according to the data output (speed).

### 10 - LED Magnetic field / Speed 002

Function: steady light during alarm output. Lighting up during a functional test when the set alarm threshold is exceeded.

In continuous flashing rhythm according to the data output (speed).

### 11 - LED-gravity / speed 003

Function: steady light during alarm output. Lighting up during a functional test when the set alarm threshold is exceeded.

In continuous flashing rhythm according to the data output (speed).

## Description of Function

The UFO-1.0 multi-sensor sends its data via an RS 232 - interface to a PC, whereupon this data is displayed and archived with the program "Doku 1.0".

In addition, the relay contacts allow a video recording to be started. These contacts are not designed so that the power of the video system may be switched on by them. These potential-free contacts switch a VCR on, via the terminals provided for this on the VCR. This varies from VCR to VCR.

The reason for such weak relay contacts in the UFO-1.0 multi-sensor is the low Magnetic field strength of reed relays. Thereby a potential influence of the magnetic field measurement is prevented.

The power supply of the device can take various forms.

- 1 - Plug Power Supply 12V / 100mA
- 2 - External battery 12V
- 3 - USB port on your PC or laptop, power consumption max. 200mA at 5V.

### The device has three different working areas.

\*\* The functional test to adjust the sensitivity of the alarm thresholds.

This is always necessary in advance, because the interference fields are at different levels from place to place.

\*\* The alarm mode, which secures data when the alarm threshold is exceeded and switches on external devices such as a VCR.

\*\* Continuous operation, which is intended for area or object measurement.

This results only in the recording of data.

### First steps in steady-state operation in the alarm mode:

- 1 - Place the device in the desired location.
- 2 - Switch on the power supply and PC
- 3 - Switch on the device, while the toggle switch "functional test" is kept pressed.
- 4 - When the green LED flashes, then let go the tilt button.  
When the buzzer sounds you are already in continuous operation.  
Then start again from step 3.
- 5 - Use the knobs to adjust sensitivity as required.
- 6 - After a minute the device turns on automatically.
- 7 - If one minute is too short for the sensitivity setting,  
then switch the device off and start again at point 3.

### The device works:

The green LED power light is on when the function "display off" is not switched on.

Every minute a data package with the 8 values (8 bit per channel) is sent as a routine report to the PC. This remains so until the occurrence of an alarm.

**An alarm occurs:**

The alarm buzzer in the unit is triggered. This may be switched off via the toggle switch "Buzzer off". If not, the buzzer will switch off automatically after the alarm finishes. The cause which triggered the alarm is indicated by the LED, LED External, LED magnetic or LED gravity.

This LED will remain lit until the end of the alarm and then turns off automatically.

In addition, relay contact 1 remains switched on for the duration of the alarm. Relay contact 2 switches its switching position every five seconds for the duration of the alarm.

Some VCRs expect a short switching-pulse. The final decision on use of the relay contacts always remains with the user.

First, 250 data packets with the 8 values are sent to the PC in rapid succession. Approximately 20 packets per second. This ensures that even short measurement changes are recognizable.

After that, a further 200 measurements are made, with 0.5 seconds spacing. After this, the alarm turns off automatically.

There follows now every minute a routine message, until the next alarm.

**Continuous Mode:**

In contrast to alarm mode, continuous mode is designed to continuously send data to the PC.

In this mode of operation no buzzer or relay is switched on, nor are alarm thresholds displayed or analyzed.

Continuous mode is required, for example when areas or specific locations are investigated for anomalies. For this, an alarm threshold or buzzer is just a hindrance.

It depends only on the readings. Depending on the application, the data delivery can take place gradually in three speeds. The speed of data delivery is determined by the user.

**Continuous Mode process and settings:**

The continuous mode function is arrived at when, while turning on the device, the toggle switch is held at "Buzzer off" (beyond the function test) until the buzzer gives a continuous signal. Now let go of the tilt button. The Extern/Speed001 LED flashes at the speed of data delivery. If you want a different speed, then the toggle switch is turned to the next higher speed. If Speed003 is reached, one can re-connect to Speed001.

It is also possible to come from the function test to continuous mode just by briefly pressing the toggle switch "Buzzer off".

Under certain circumstances, the bright flashing of the LEDs may be disturbing.

With the toggle switch "Display Off", the intensity of the LEDs is reduced significantly.

If the toggle switch is switched back again, then the display goes back to full brightness.

## Ethernet sockets

The UFO-1.0 multi-sensor has two Ethernet - sockets, which are the connection to the outside world. The assignment of the connectors may be seen in the chart.

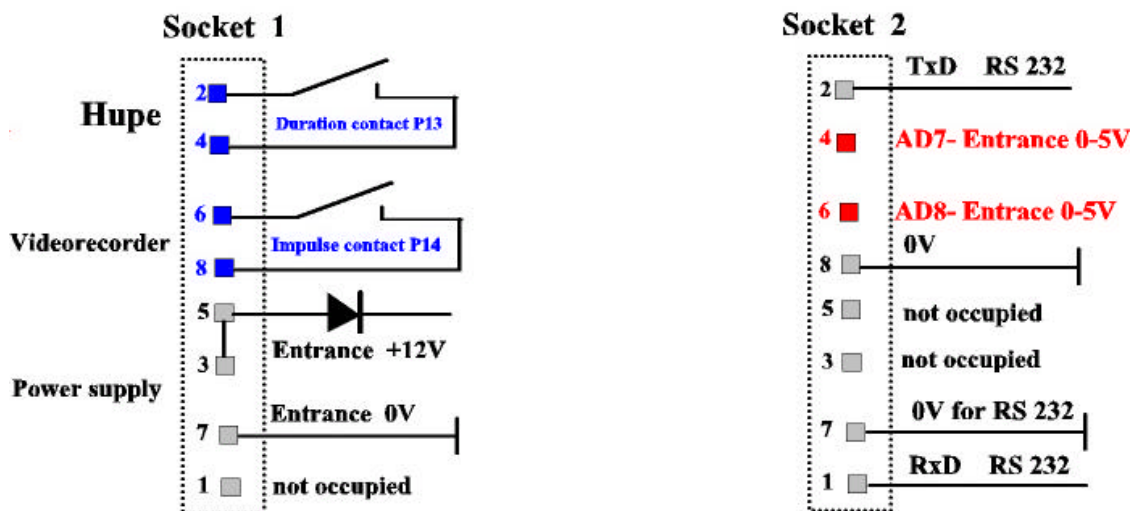
Please note that this connection does not correspond to any standard, as is usual in assignment of Ethernet sockets.

**These sockets are also in no way suitable to make a connection via a switch or router to a computer network.**

**It can destroy or damage the equipment.**

**Why Ethernet - sockets?**

Cable of any length can be bought by the user worldwide for little money, and used when needed.



**Very important:**

The inputs AD7 and AD8 may only be used by an expert. These inputs go directly to the controller and may not be exposed to any voltage over 5V .

The relay contacts may only be loaded with max. 100mA at 24V.

The relay contact P13 is always closed for the duration of an alarm.

The relay contact P14 switches every 5 seconds from closed to open for the duration of an alarm. If no alarm is present, all contacts are open.

## Ethernet cable assignment socket 1

Pin	Wire color	assigned with
5	White / blue	12V
4	blue	Contact P13-continuous
3	White /green	12V
6	green	Contact P14-Pulsed
7	White / brown	0V
8	brown	Contact P14-Pulsed
1	White / orange	free
2	orange	Contact P13- continuous

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## Ethernet cable assignment socket 2

Pin	Wire color	assigned with
5	White / blue	free
4	blue	AD7 measurement input
3	White /green	free
6	green	AD8 measurement input
7	White / brown	0V
8	brown	0V
1	White / orange	RxD (RS232)
2	orange	TxD (RS232)

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---3

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## The serial interface (RS 232, V24) to the computer

The UFO-1.0 multi-sensor transmits its data via a standard V24 interface to the Computer. If your computer does not have a V24 interface , then insert a RS 232 / USB converter in between.

**If you use our program Ufosensor ", all data is displayed and stored automatically. Then the following data declaration is superfluous to you.**

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You can also use a separate display program or program one yourself.

Then you need the following information on the data packets.

The data is transmitted to the computer as follows.

The data is transmitted at 9600 baud, 8 bits, 1 stop bit, no parity.

Channels 1-8 reproduce the 8-Bit Resolution of the ADC with the values 0-255. No leading zeros are produced. The individual values are separated by a comma. After the measurements the function is also transferred in plain text format.

The transmission in plain text also follows an Information flag. This is written on the computer in a \*.TXT file. This file contains either L or H, according to the following message examples. The purpose of the flag is to pass the alarm status on to any program in real time.

With it, it would be possible to start a video recording on the PC via a connected video camera, and to stop again.

Examples of the different messages.

111,222,333,444,555,666,777,888, Funktion, L	every 0.5 seconds with functional test
111,222,333,444,555,666,777,888, Standard, L	1x per minute
111,222,333,444,555,666,777,888, Alarm-EX, H	250 in 12 seconds, Ext trigger sensor
111,222,333,444,555,666,777,888, Alarm MF, H	250 in 12 seconds, Magnetic trigger
111,222,333,444,555,666,777,888, Alarm-GV, H	250 in 12 seconds, Gravitational trigger
111,222,333,444,555,666,777,888, Enderung, H	250 in 30 seconds, < > 8% of MF/GV
111,222,333,444,555,666,777,888, Enderung, H	200 in 2 minutes
111,222,333,444,555,666,777,888, Speed001, H	continuous data speed 001
111,222,333,444,555,666,777,888, Speed002, H	continuous data speed 002
111,222,333,444,555,666,777,888, Speed003, H	continuous data speed 003

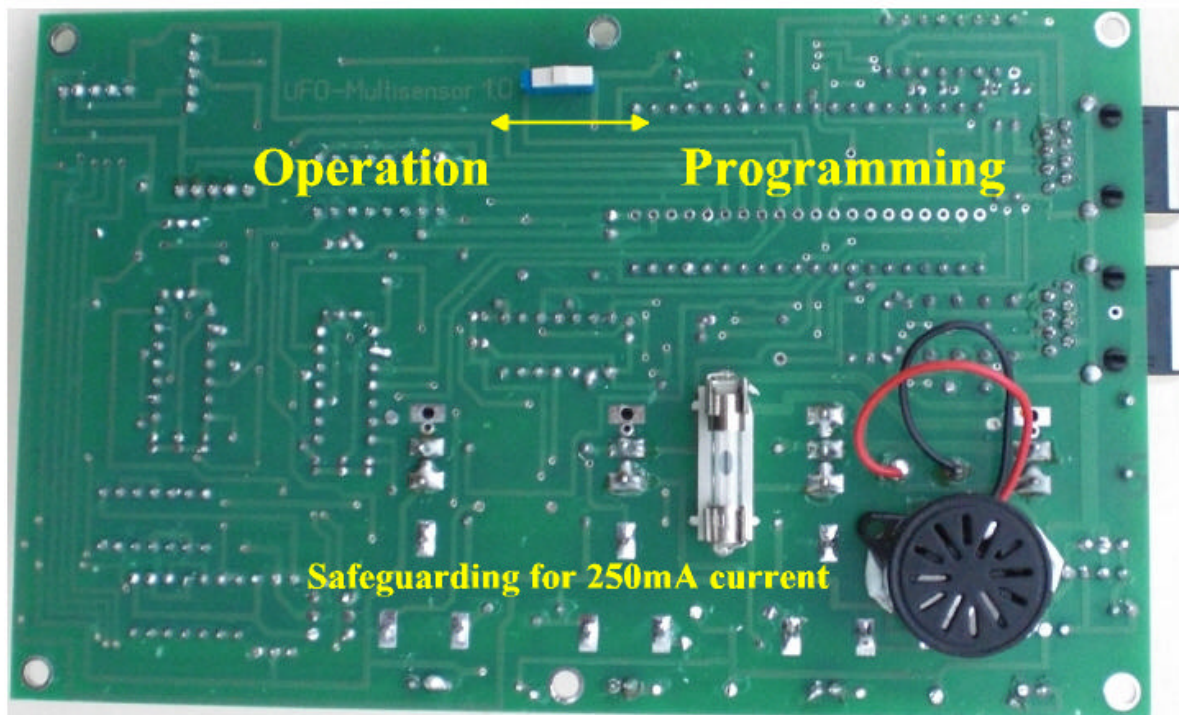
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## Technology internal

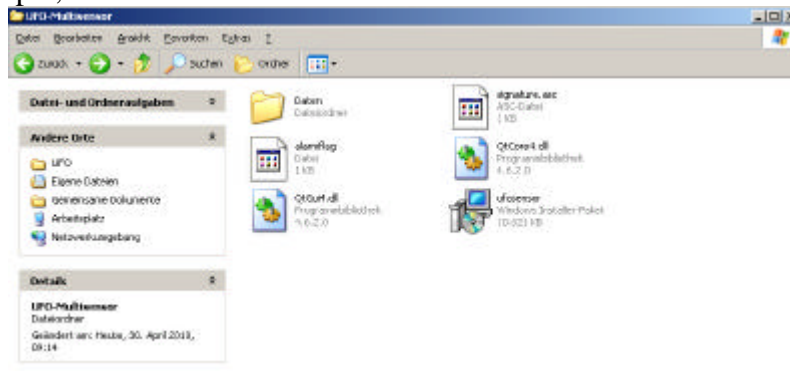
This one can with the wiper switch between programming  
Operating state is chosen controller and this.

**This function is only for specialists**

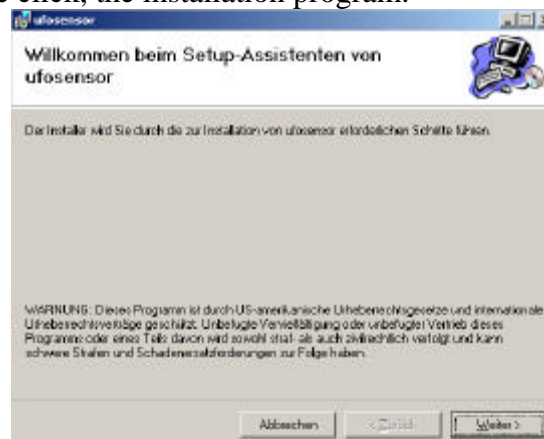


The Ufomultisensor consists of two parts, the hardware as described and the software. The software "Ufosensor" was written exclusively for the hardware developed by us. The program runs under WINDOWS XP and WINDOWS 7.

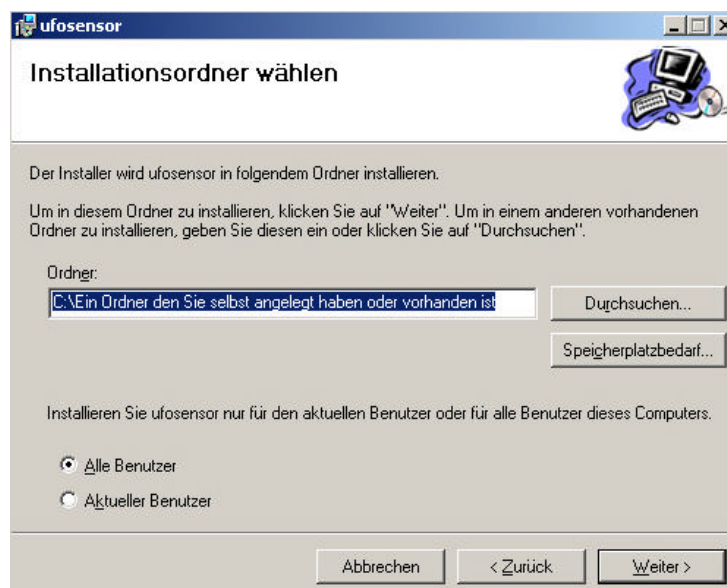
The latest information and the program files for installation are on the CD under 'lismich.txt' (readme.txt). You can create a folder on your PC into which you may copy the contents of the CD. In our example, the name is Ufomultisensor.



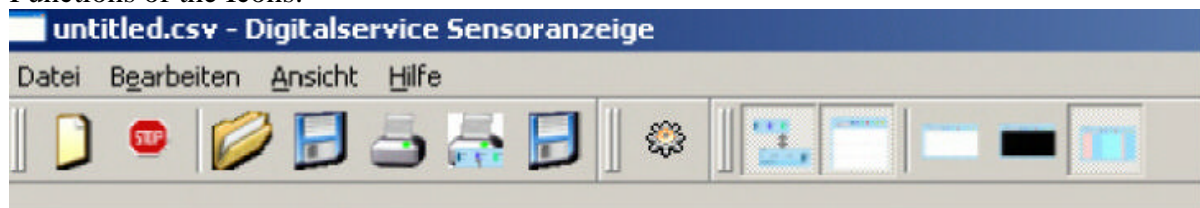
Now open, with a double click, the installation program.
















Before final installation, you will be asked in which folder the program should be run. This can be the folder "My Documents" or a folder of your choice that you have created for Ufo research.



## Functions of the Icons.



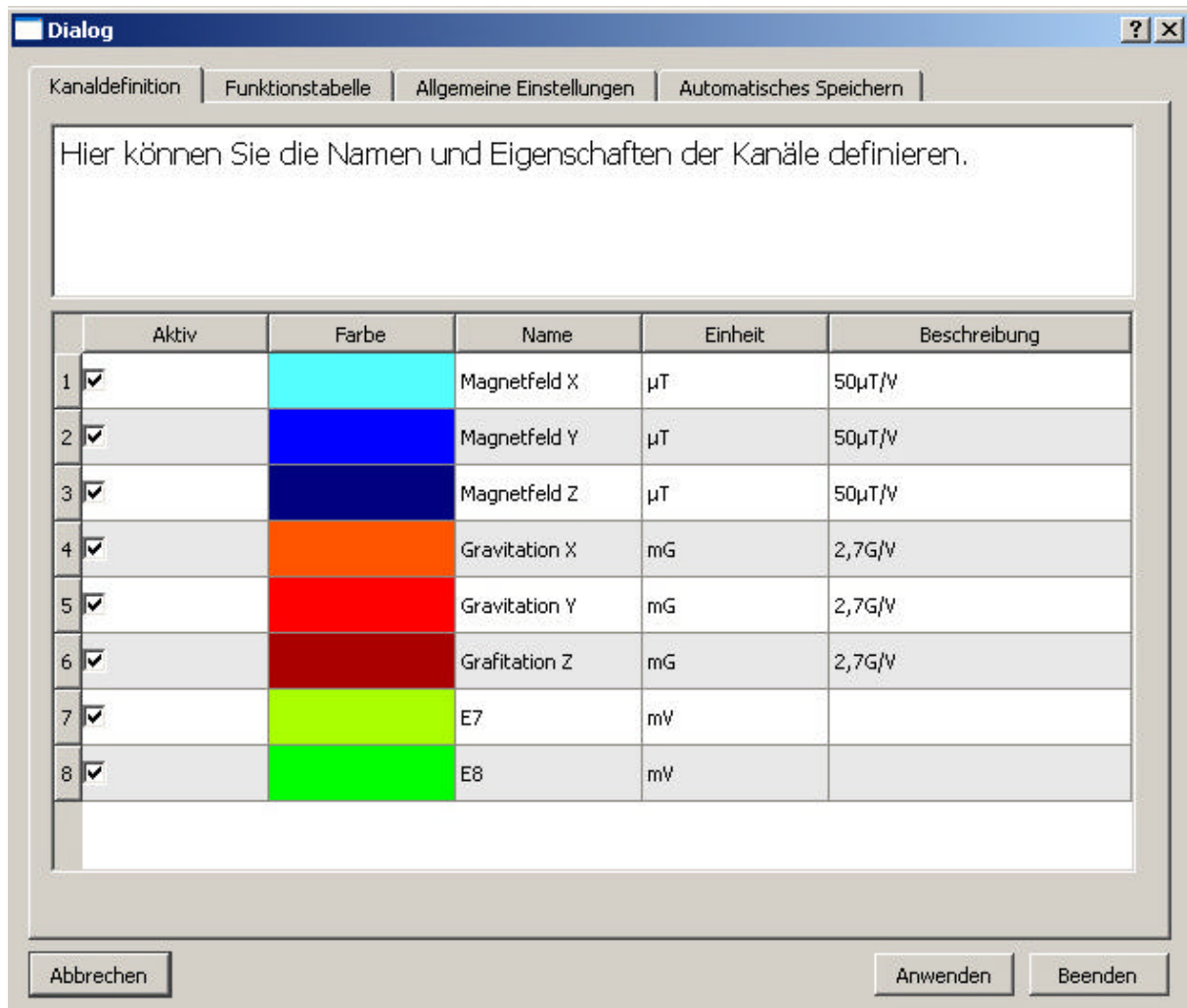
	<b>read new data</b>	<b>start taking up of new data</b>
	<b>data read end</b>	<b>stopping taking up of new data</b>
	<b>Importing</b>	<b>available Exeldatei load up</b>
	<b>Exporting</b>	<b>data as Exeldatei store</b>
	<b>print</b>	<b>print Exeldatei</b>
	<b>Screenshot</b>	<b>print view</b>
	<b>Screenshot store</b>	<b>store the view as a PNG file</b>
	<b>Adjustings</b>	<b>programme adjustings determine</b>
	<b>Detail information</b>	<b>switching graphics display greatly/smally</b>
	<b>Legend</b>	<b>putting add-ons/switch off</b>
	<b>with</b>	<b>the background colour with</b>
	<b>black</b>	<b>the background colour black</b>
	<b>colour after function</b>	<b>background in the colours of the data information</b>



Before you start the program you need to make sure about the settings and change them if necessary, as you require. This is especially true if you connect your own sensors to channels 7 and 8.

You come to the Settings menu via the Function setting.

We have pre-set the colors and measurement units and the conversion rules for channels 1-6, corresponding to the built-in sensors.



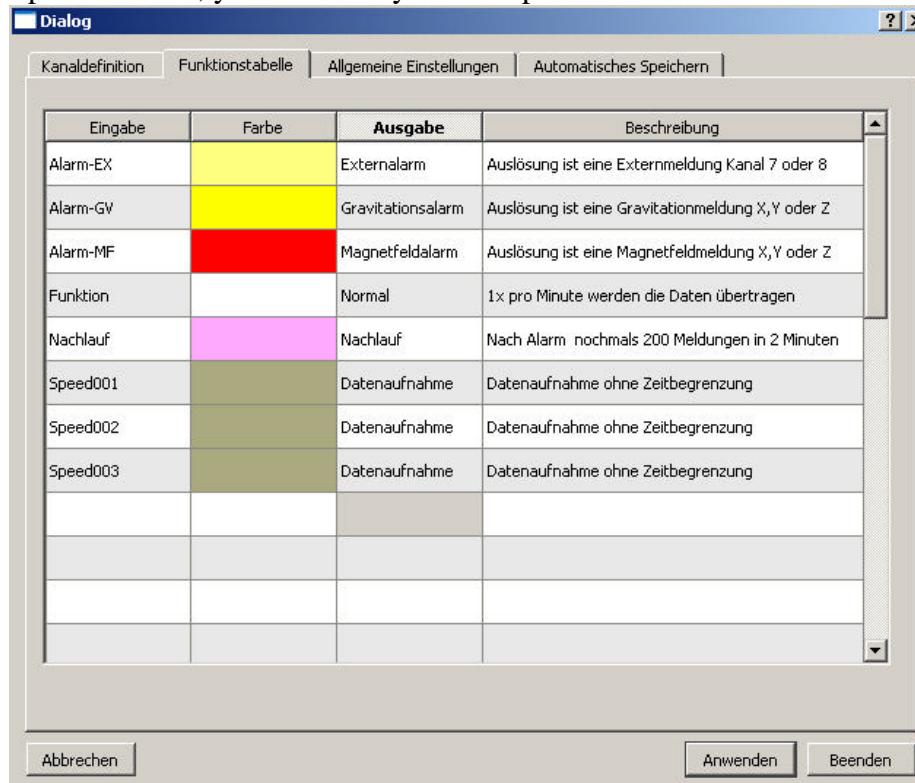
With a double click on the color of a channel, you get a choice of colors displayed on the color chart. With a double click on a name entry, you can enter a new name. By double-clicking an entry in the column unit, you can choose among the already-defined units. By double-clicking an entry in the description column, you can change that.

Here you have the possibility to change a background color for each message type by double-clicking on a color column.

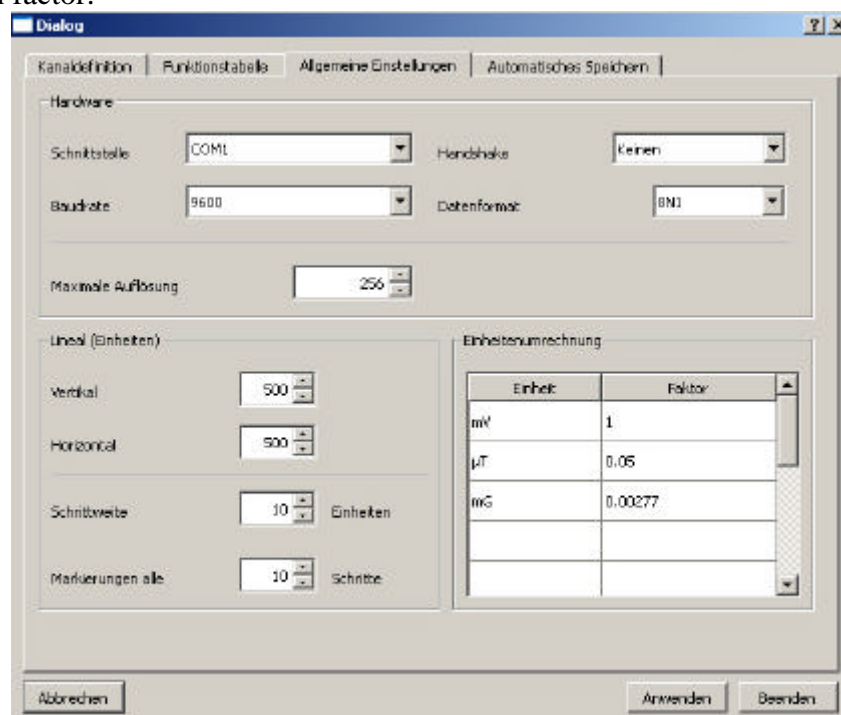
The input columns should be left as they are.

The output columns should be left as they are.

In the Description column, you can store your own personal comments.



In the general settings you should determine, if necessary, the Com port for your computer. If you connect a separate sensor to channel 7 or 8, then you still have to enter the unit and the multiplication factor.



The setting for automatic saving should be meaningful, i.e. in accordance with the definition of the directory and file names.

But you have the opportunity to change any setting according to your requirements.

In the directory, write the path of the folder you created for your backup. You may also freely choose the file name; the project name is appropriate.

Now, whenever the display page is full with 500 measurement values, the current page content is automatically saved as an Excel file and also as a PNG file.

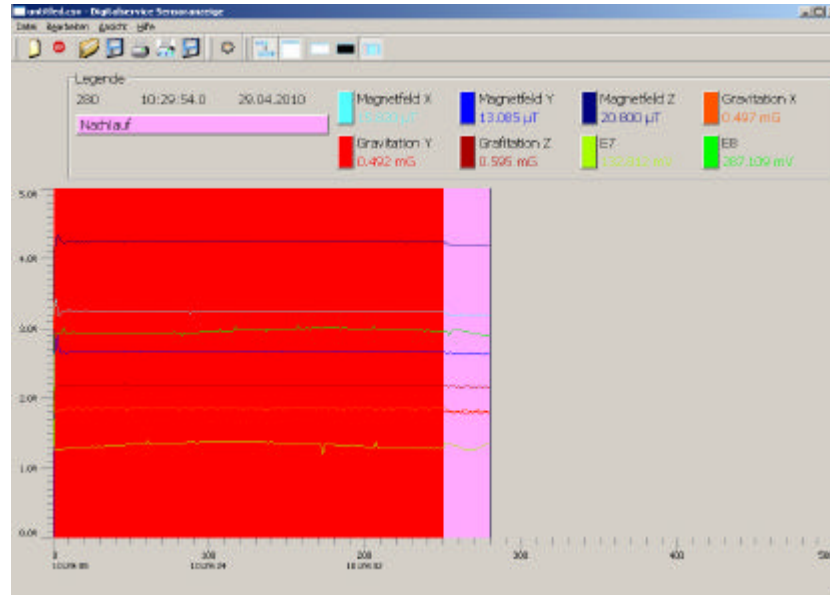
Your file names are each followed by date and exact time of the automatic storage. Thus it is possible to perform a quick file search, even with very many files.

The screenshot shows a Windows-style dialog box titled "Dialog". It has four tabs: "Kanaldefinition", "Funktionstabelle", "Allgemeine Einstellungen", and "Automatisches Speichern". The "Automatisches Speichern" tab is selected. The dialog is divided into three main sections:

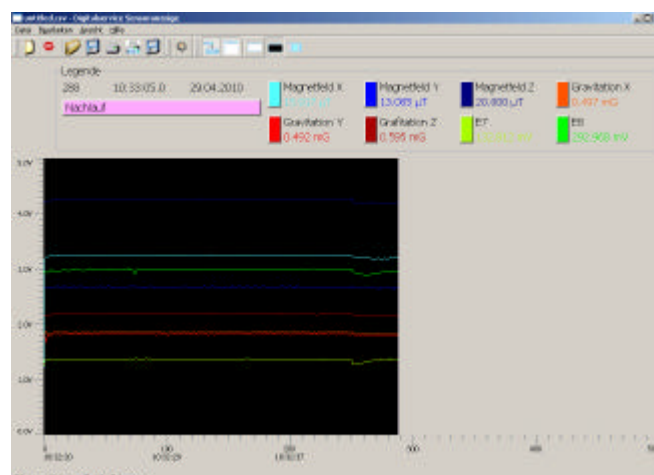
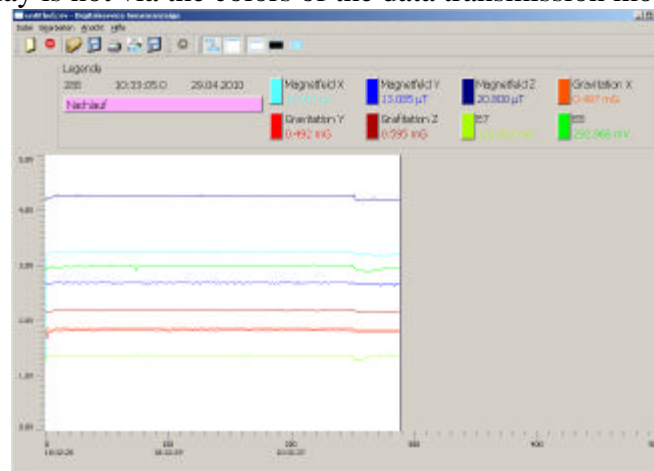
- Speichern nach:** Contains three radio buttons: "ausschalten", "Messpunkten" (selected), and "Minuten". Next to "Messpunkten" is a numeric input field with the value "500". Next to "Minuten" is a numeric input field with the value "3600".
- Speichern als:** Contains two checked checkboxes: "PNG Bild" and "CSV Datei (Excel Import)".
- Speichern unter:** Contains three input fields:
  - Verzeichnis:** A text field containing the path "d Einstellungen\gehteuchnichtsan\Desktop\Büro\UFO\UFO-Multisensor\Daten" followed by a browse button "...".
  - Dateiname:** A text field containing "Funktionstest".
  - Namenszusätze:** Three dropdown menus with the following values: "yyyy-MM-dd", "hh-mm-ss", and "hh-mm-ss".

At the bottom of the dialog are three buttons: "Abbrechen", "Anwenden", and "Beenden".

See a photo of a current data acquisition, which is displayed in the color-function mode. Red is the pre-defined background for magnetic field alarm. Purple is the pre-defined background for the trailing messages. Even during the current operation, you can change the display type.



. See a photo of a current data acquisition, which is shown with black and white background. In this case, the display is not via the colors of the data transmission mode.



Especially useful is the ability to re-import existing Excel files, and so strive for a detailed analysis of the measurements.

For this you have the resources of the ruler. Using the mouse, the ruler is moved within the display window.

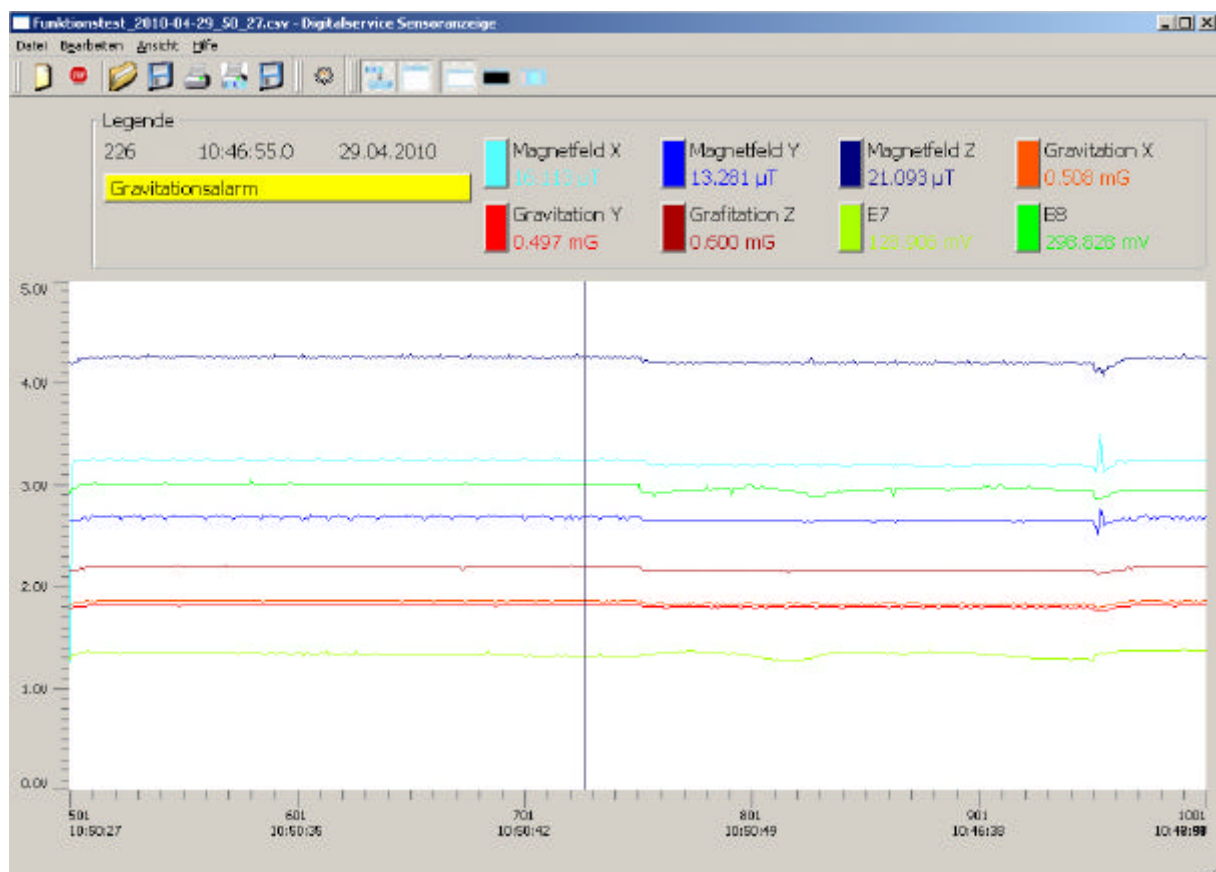


The legend varies with the position of ruler.

To the left is the current measurement data 1-500 on which the ruler is positioned.

The current measurement time will also change according to the position of ruler.

The readings are also tracked according to the position of the ruler.



With the UFO multi-sensor and the program "Ufosensor" You have an excellent aid to approach the Ufo phenomenon in a technical way.

Since the Digital Service GmbH operates its own active Ufo research, our products are always at the cutting edge of the necessary technology.