

Metrology



INSTRUCTION MANUAL

IBREXDLL Software for MS Excel

Document No. : D2MF710 001
Revision : February 2021
© Copyright : IBR



Messtechnik GmbH & Co. KG



Contents

1. Introduction	3
2. Features	3
3. Installation of IBREXDLL	4
4. Starting IBREXDLL	5
5. Setup-settings	7
5.1 PC- and instrument-connections	9
5.2 Optional functions	12
6. Reading in measurement values to an Excel workbook	
6.1 Requesting measurement values by PC-keyboard	14
6.2 Requesting measurement values by foot switch	14
6.3 Triggering transmission of measurement values by a gauge	14
6.4 Recording a curve	14
6.5 Overview of the function keys during measuring operation	15
6.6 Formatting of measurement values	15
6.7 Note for the use of MS-Excel	15
6.8 Adjustment and calibration functions for metrology	16
6.8.1 Zero adjustment and gauge calibration of measuring inputs	16
6.8.2 Mechanical adjustment of inductive probes	17
7. Examples of recording measurement values	18
8. Statistical analysis (SPC) of collected measurement data	20
9. Uninstalling of IBREXDLL	21
10. Saving the settings of IBREXDLL	21
11. Important conditions concerning the use of IBREXDLL	22

We reserve the right to change the design and technical data contained in our documentation without notifying our customers. IBR is not obliged to notify buyers of product changes.

IBRit is a registered trademark of IBR.

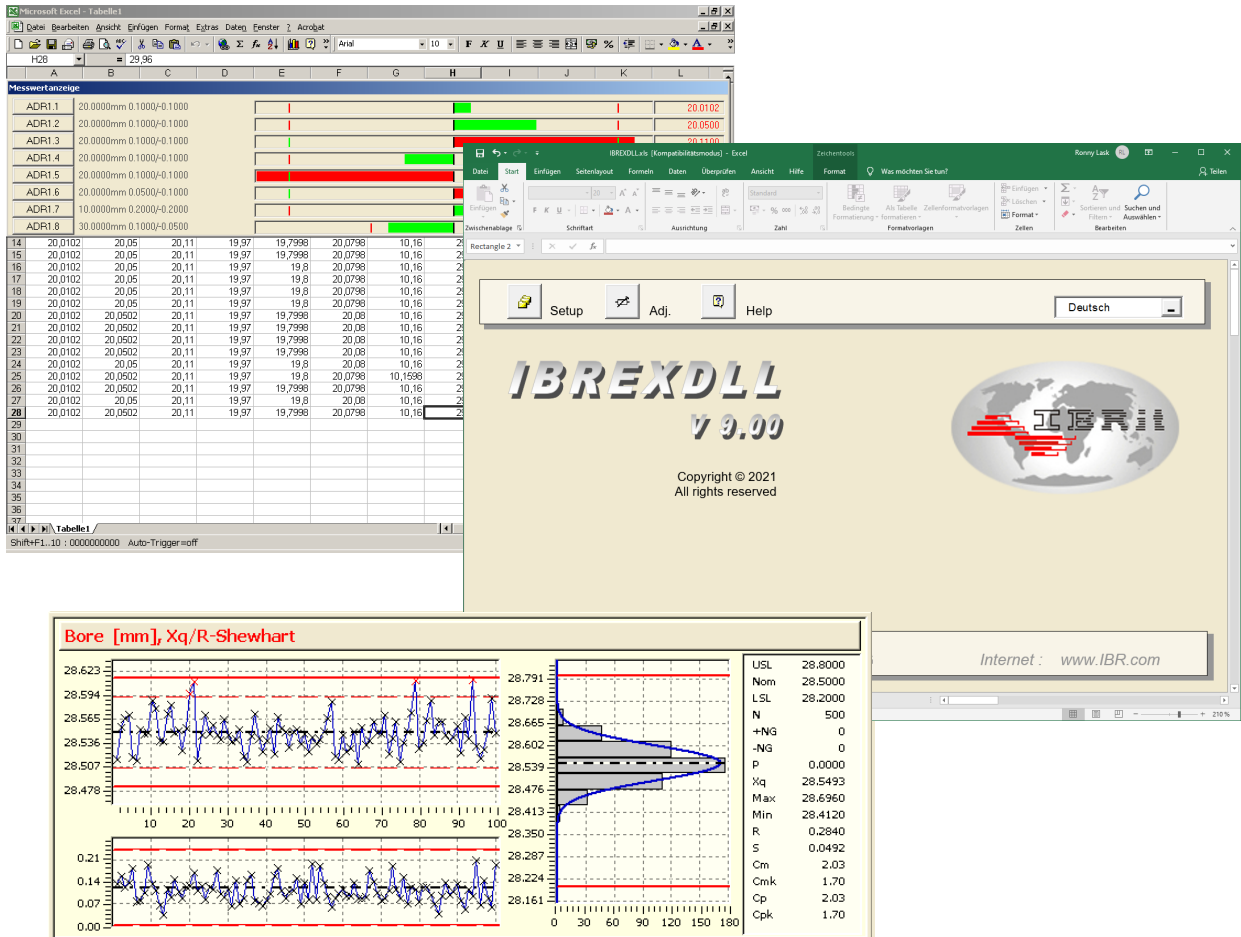
Windows and **EXCEL** are registered trademarks of Microsoft Corporation.

This document must not be reproduced, in part or in its entirety, without the prior written consent from IBR.



1. Introduction

The IBREXDLL software allows reading in measurement data from all IBR interface- and measuring-instruments to MS-Excel. The data can be assigned freely to the cells of any Excel workbook. Afterwards the collected measurement data can be statistically analysed by control charts, histograms, statistical data,



2. Features

- Simple and clear handling
- Characteristics- or component-based measurement data collection (including time and date)
- Collection of measurement values can be triggered by pressing either the key on the gauge, the function keys of the PC or the foot switch connected to the interface
- Automatic assignment of measuring inputs to table columns or cursor controlled data collection to Excel table
- Display of up to 20 measuring inputs on numeric and column displays with programmable tolerance limits
- SPC-elements (control chart, histogram, statistical data, ...)
- Time controlled recording of measurement values
- Zero adjustment and calibration of measuring inputs
- No negative effect on standard Excel functions (such as calculation of collected measurement values, ...)
- European and Asian languages available (ger, eng, fra, ita, spa, jap, chine, ...)





3. Installation of IBREXDLL

Hardware requirements :

Pentium 1000 MHz
≥ 1 GB Ram
≥ 10 MB Hard disk

Software requirements :

Windows XP ... Windows 10
MS-Excel 2010 / ... / 2019 / 365

Installation via CD :

1.) Insert the CD **IBR Software for Metrology and SPC** into your CD-drive.

2.) Go to **Start / Run** and enter
<Letter of CD-Drive>: \IBREXDLL \IBREXDLL_INST.
Start the installation by clicking the **OK** - button.

The installation programme then requests the installation parameters in a few windows.

3.) The first window asks you to accept the license agreement.
Confirm by clicking the choice box and then the **Next >** button.

4.) The second window requests the destination location for the IBREXDLL software.
Confirm the standard folder or enter the desired installation folder and acknowledge by clicking the **Next >** button.

5.) The third window allows you to select optional creation of a desktop shortcut or a Quick Launch shortcut.
Click the **Next >** button to confirm.

Installation is now executed !!!

6.) After the installation procedure, a message is displayed that the installation was completed successfully. Please confirm by clicking the **Finish** button.

Installation via internet :

1. Download the file **IBREXDLL.zip** from the Homepage **www.IBR.com**.
Go to **Downloads \ Software** in order to do so or download it directly from <http://www.ibr.com/download/IBREXDLL.zip>. Then unzip the file.
2. Start the unzipped installation file **IBREXDLL_Inst.exe**.
3. Execute the above-described steps 3. to 6. for Installation.

Attention : *The installation has to be carried out with administrator rights.*



4. Starting IBREXDLL

First of all, please connect the delivered dongle (security key) to one of the USB-ports of your PC (USB dongle) or put it into your IMBus (IMBus dongle).

To be able to use a USB dongle, please follow the included instructions for installing the required USB driver.

Then connect the IBR interface(s) or measuring device(s) according to the instructions given in the instruction manual(s) of the device(s). Afterwards switch on the device(s).

Now, start the IBREXDLL software.

You can start it by clicking on the icon **IBREXDLL V9.0** in the menu **Start / Programs / IBREXDLL**.

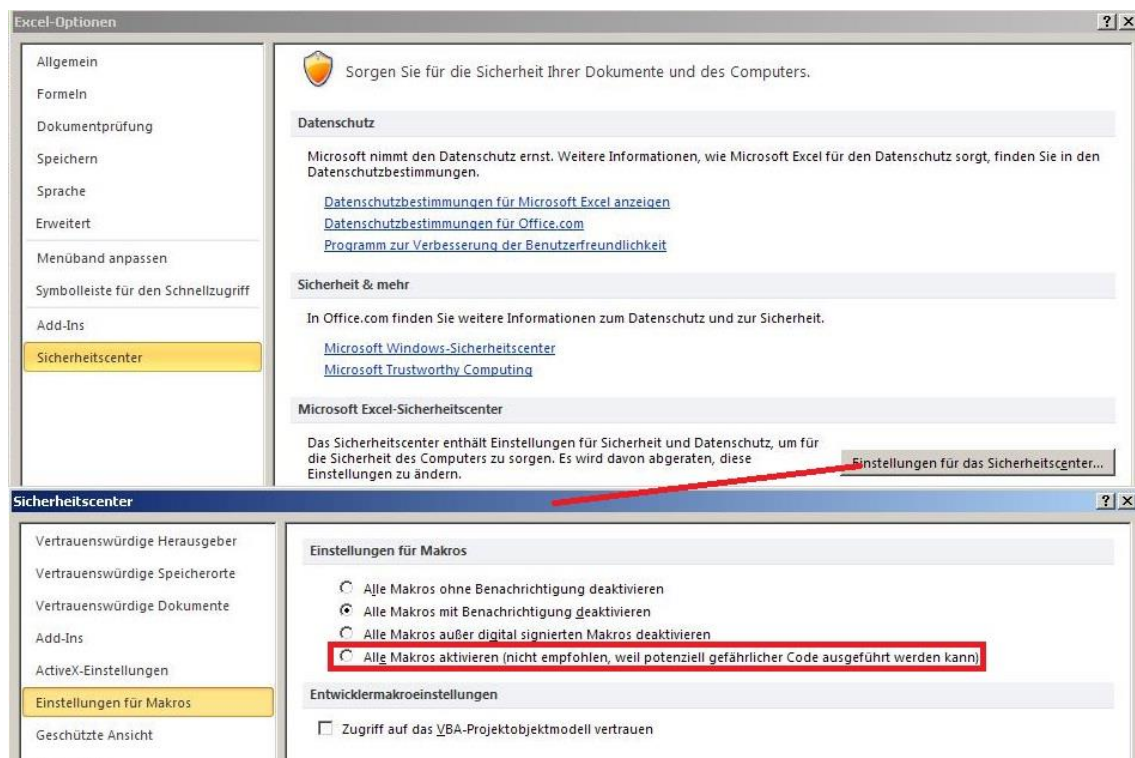
The software can also be started by double clicking its desktop symbol (icon) named **IBREXDLL V9.0**.

As an alternative you can start MS-Excel and then load IBREXDLL by choosing the Excel menu **File / Open file**.

Macros must be activated during start-up of IBREXDLL.

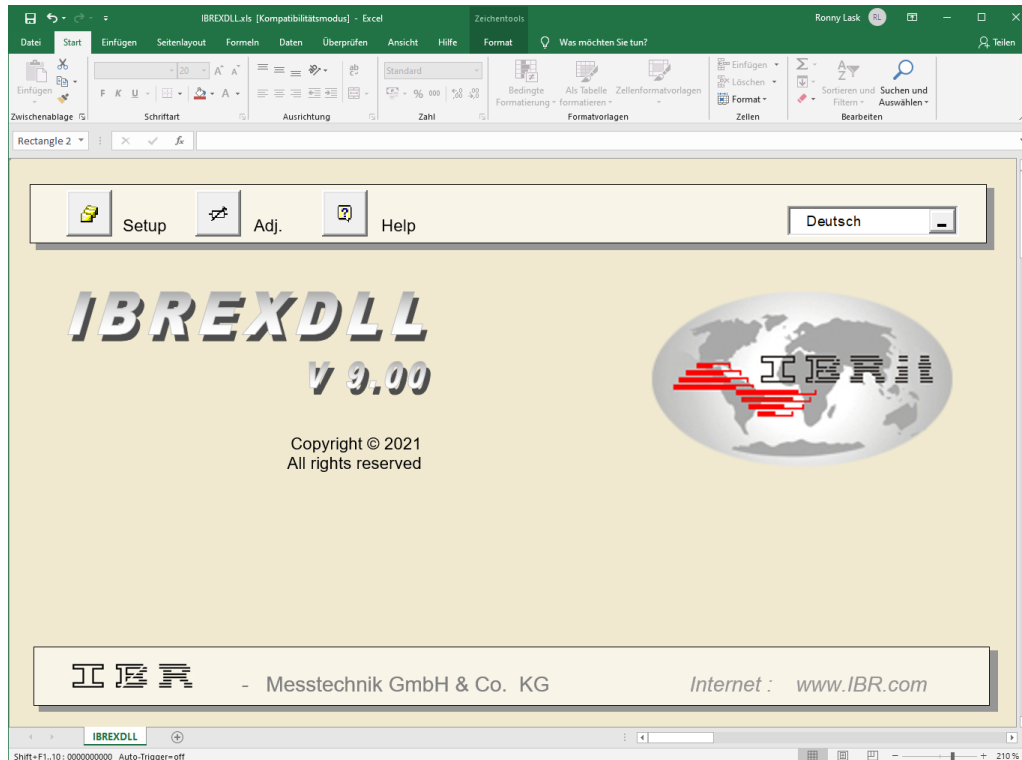
Inside MS-Excel you must observe the following settings :

Choose the “File / options” menu in order to open the corresponding window. Then click on the “Security centre” / “Trust Centre” in order to open the next window. Now, click on “Security centre settings” and select the setting “Activate all macros” :





Afterwards, the main window of IBREXDLL is displayed :



At first, IBREXDLL checks whether the dongle is connected.

Afterwards, IBREXDLL tries to establish a connection to the interface(s) or measuring device(s) selected by the setup-settings. If a display for measurement values is activated by the setup-settings, the corresponding display window is opened automatically.

The language can be selected by using the drop-down list in the upper right-hand window corner.

By clicking the **Setup**-button or pressing the **F12**-key you can enter the IBREXDLL setup menu. There you can make the software settings suitable for your application (see chapter 5).

By clicking the **Adj.**-button you can open the zero adjustment / gauge calibration window (see chapter 6.7.1).

By clicking the **Help**-button you can get an overview of the function keys and their assignments in IBREXDLL.

Note : *The setup menu is automatically opened on initial operation of the software, so that the basic settings can be made.*



5. Setup-settings

On initial operation as well as by clicking the **Setup**-button or pressing the **F12**-key the **System-Setup** window of IBREXDLL is displayed. Here, the configuration of the software can be changed.

System-Setup ✕

PC- and Measurement Instrument-Connections

ADR	Measuring input	Table structure	Measuring value request		Additional data		Gauge Triggering
			Function key	Foot switch	Date	Time	
1.1	Radio module (IBR-ISM) with Addr. 1 on	Column 3	F1	<input checked="" type="checkbox"/> Shift+F1 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.2	Radio module (IBR-ISM) with Addr. 2 on	Column 6	F2	<input checked="" type="checkbox"/> Shift+F2 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3	Radio module (IBR-ISM) with Addr. 3 on	Column 9	F3	<input checked="" type="checkbox"/> Shift+F3 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.4	Radio module (IBR-ISM) with Addr. 4 on	Column 12	F4	<input checked="" type="checkbox"/> Shift+F4 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.5	Radio module (IBR-ISM) with Addr. 5 on	Column 15	F5	<input checked="" type="checkbox"/> Shift+F5 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.6	Radio module (IBR-ISM) with Addr. 6 on	Column 18	F6	<input checked="" type="checkbox"/> Shift+F6 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.7	Radio module (IBR-ISM) with Addr. 7 on	Column 21	F7	<input checked="" type="checkbox"/> Shift+F7 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.8	Radio module (IBR-ISM) with Addr. 8 on	Column 24	F8	<input checked="" type="checkbox"/> Shift+F8 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.9	Radio module (IBR-ISM) with Addr. 9 on	Column 27	F9	<input checked="" type="checkbox"/> Shift+F9 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.10	Radio module (IBR-ISM) with Addr. 10 on	Column 30	F10	<input checked="" type="checkbox"/> Shift+F10 -> on/off	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Optional functions OK Cancel

Note : *If you point at a dialog element with the mouse cursor, a short help text concerning that particular element is displayed.*

Description of the window elements :

- a) **ADR :** Indicates the connection addresses of the particular measuring inputs
- b) **Measuring input :** Displays the measuring inputs (= connected gauges / sensors)
You can scroll through the list of measuring inputs by using the scrollbar on the left-hand side of the window.



- c) Table structure :** You can assign either a column in which the measurement values of the measuring input are stored, or an end-character to each measuring input. In order to assign an end-character to a measuring input, you must scroll upwards in the table structure selection list. The end-character moves the cursor to another cell, after a measurement value has been written to the Excel table.

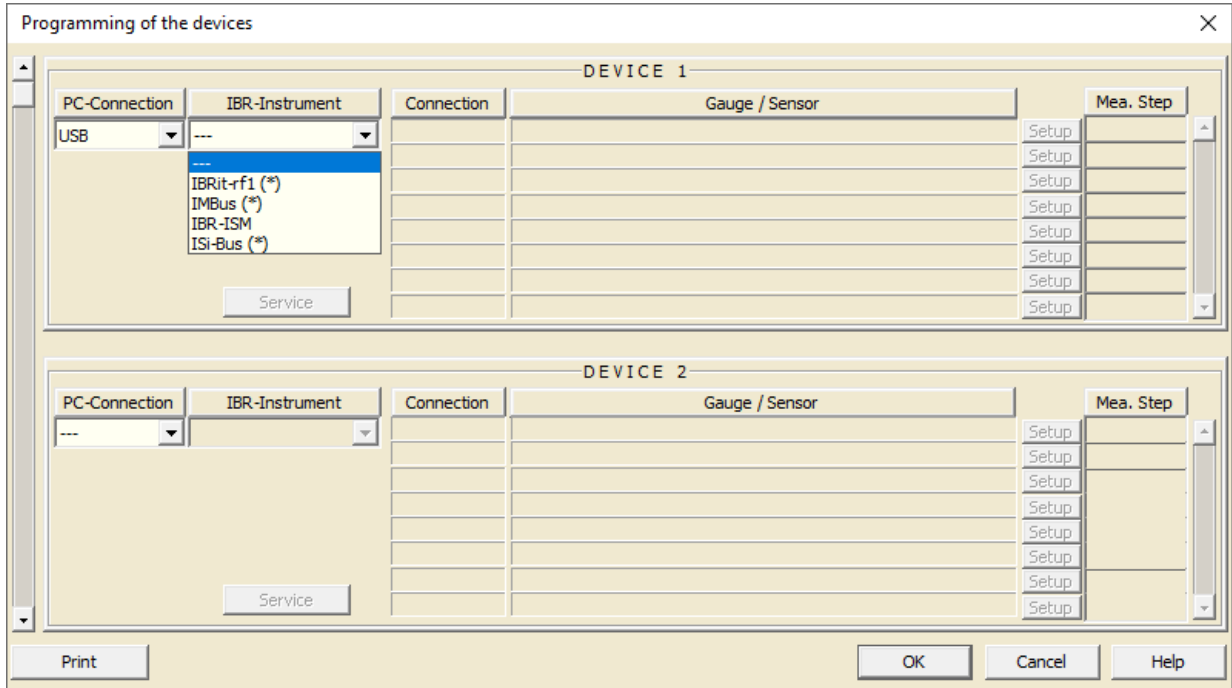
End-character	Moves the cursor ...
no character	to nowhere (no move)
line feed	to the next lower cell, column-wise from top to bottom if cells in several columns are marked (locked cells are skipped, see examples in chapter 7)
tab	to the next right cell, row-wise from left to right if cells in several rows are marked (locked cells are skipped, see examples in chapter 7)
tab + lf	to the next right lower cell
backspace	to the next left cell
bs + lf	to the next left lower cell
cr	to the 1.column of the current line
cr + lf	to the 1.column of the next lower line

- d) Function key :** One of the function keys **F1** to **F10** can be assigned to each measuring input for requesting measurement values. It is possible to assign the same function key to several measuring inputs.
- e) Foot switch :** The measurement value request by foot switch can be generally activated or deactivated for each measuring input. You can also assign one of the function keys **Shift-F1** to **Shift-F10** to each measuring input for enabling / disabling measurement value request by foot switch in measuring mode. It is possible to assign the same key combination to several measuring inputs. If the foot switch is activated for a measuring input without selecting function keys, the foot switch is always activated. During measuring operation the status line indicates, which measuring inputs are enabled / disabled for measurement value request by foot switch.
- f) Date :** With this option activated, the date of measurement is written into the Excel cell located left of the measurement value cell. The date format used is : **DD.MM.YYYY**. If the **Time** option is also activated, then the **Date** information is written into the Excel cell located two columns left of the measurement value cell.
- g) Time :** With this option activated, the time of measurement is written into the Excel cell located left of the measurement value cell. The time format used is : **HH.MM.SS AM** or **HH.MM.SS PM**.
- h) Gauge Triggering :** Here can be selected, if a value can be entered in the Excel table via a transmission that was triggered by a gauge or a radio module. This option should be activated if ISM radio modules are used in ISM Permanent Mode (automatic transmission on value change).



5.1 PC- and instrument-connections

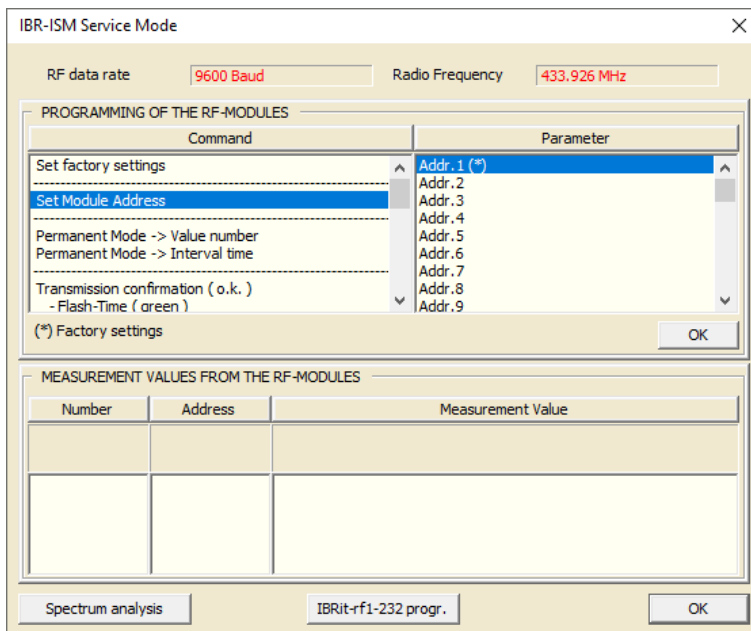
The **PC- and Measurement Instrument Connections** button opens the **Programming of the devices** window and enables selection and configuration (if necessary) of the connected interfaces and instruments.



At first select the **PC-Connection** and then the connected **IBR-Instrument**.

IBRit-rf1 / ISM :

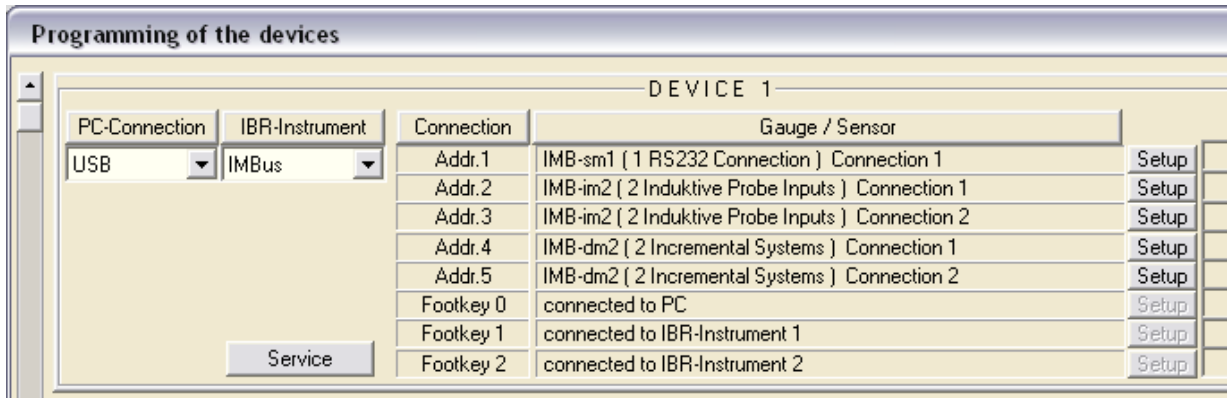
In case of IBRit-rf1 / ISM radio modules you can access the menu for module configuration (e.g. setting module address) by clicking the **Service** button. → Please refer to the *IBRit-rf1 / ISM manual*.



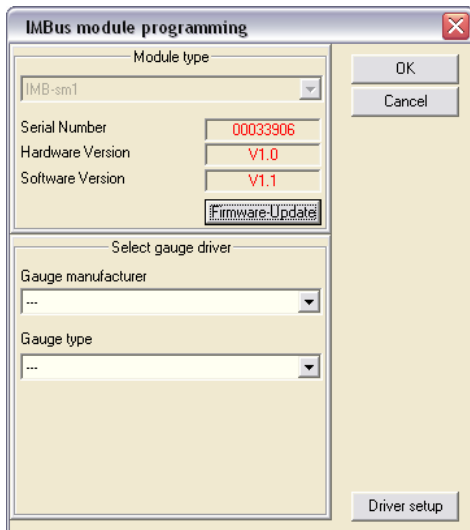


IMBus :

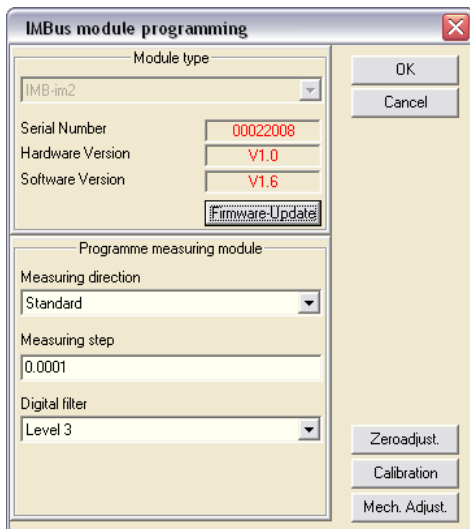
After selecting **IMBus** as setting for the **IBR-Instrument**, the measuring bus is analysed and all connected IMBus modules are displayed.



By means of the **Setup**-buttons for the individual measuring inputs you can select e.g. the gauges connected to IMBus interface modules (IMB-sm1...4, IMB-pm1, ...) :



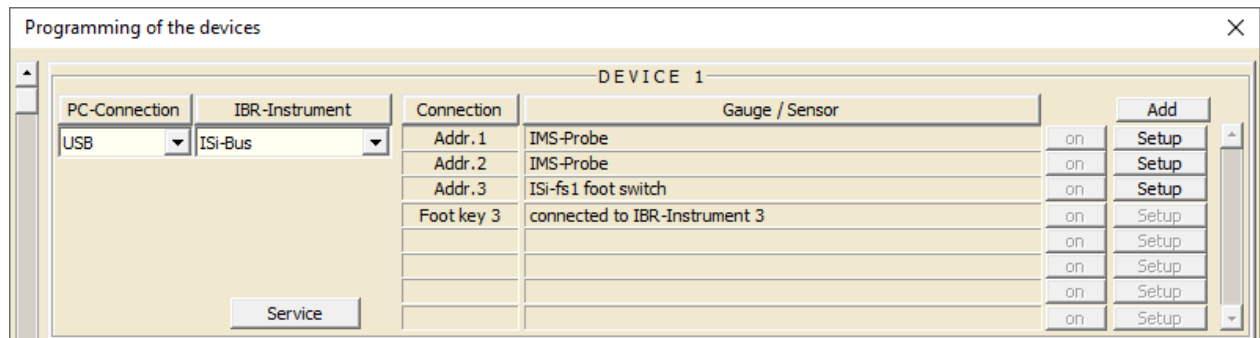
In case of IMBus measuring modules (IMB-im1...8, IMB-dm1...4, IMB-tc1...4, IMB-ai1...8, IMB-ae1, ...) you can select the resolution, measuring direction and more :



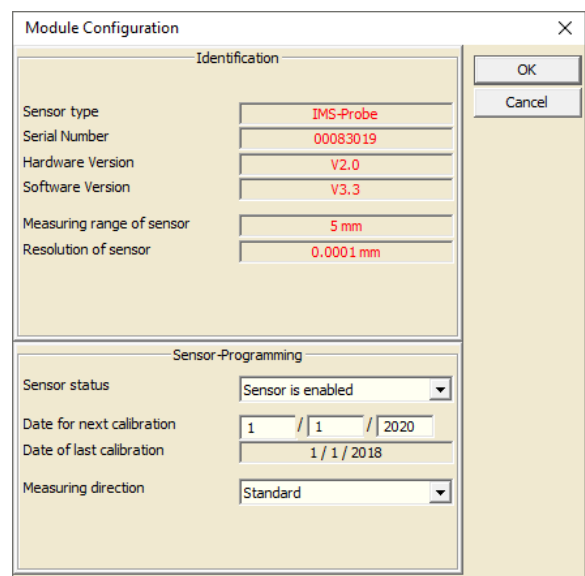


ISi-Bus

After selecting **ISi-Bus** as **IBR-Instrument** the sensor bus is analysed and all connected sensors and control elements are displayed :



Via the **Setup** buttons of the measuring inputs you can for example select the sensor status and measuring direction of the IMS probes or enter the date for the next calibration :



In case of the devices IBRit-md1 / md2 / mc4 / mc1 / di8 / de8 / da8 / ... you can select the following parameters :

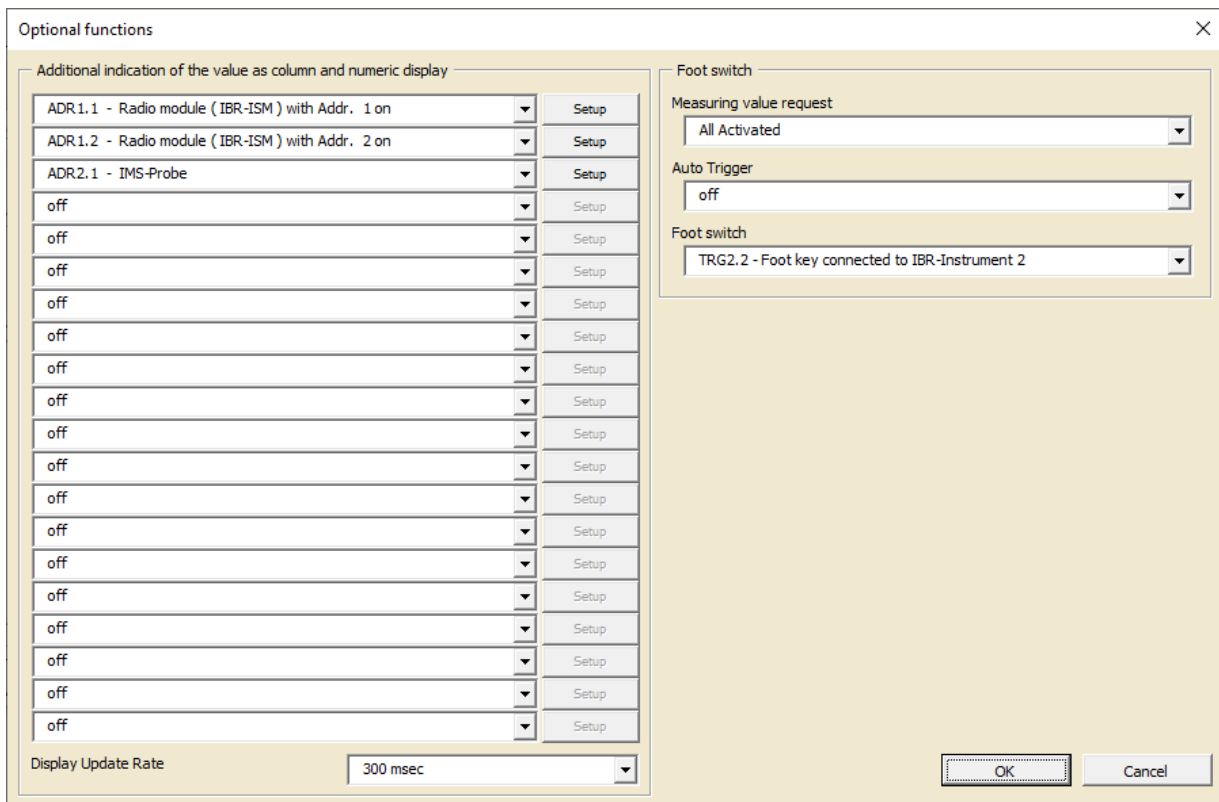
- Setup** : By means of the **Setup**-button you can, in case of the IBRit-mc1, md2 (s) (c) and ma1/2 interfaces, select the gauge or sensor connected to the particular input of your interface from the IBR I/O catalogue.
- Mea. Step** : In case of the IBRit-di8 / de8 / da8 measuring instruments you can programme the measuring steps (resolution) of the measuring inputs.

With the selection of the **PC-connections** and connected **IBR-instruments** done and the configuration of the instruments completed, you can confirm the settings and close the window by clicking the **OK**-button.



5.2 Optional functions

These functions contain column and numeric displays for the measuring inputs, time controlled measurement value collection and more :

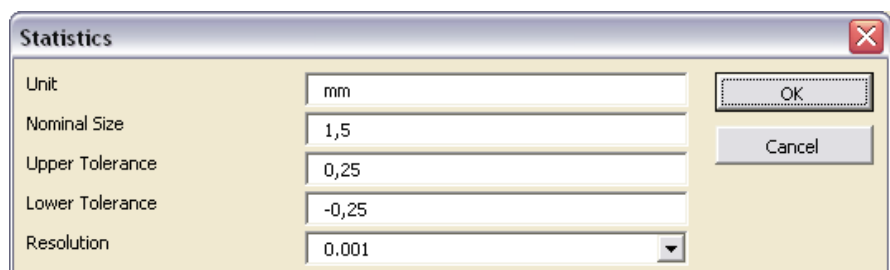


a) Column and numeric displays :

Selection of up to 20 measuring inputs for display on column and numeric displays with programmable tolerance limits.

Measurement value display			
ADR1.2	1.500mm	0.250/-0.250	0.274
ADR1.4	0.000mm	0.100/-0.100	0.093
ADR2.1	5.000mm	0.500/-0.500	4.850

The tolerance data can be programmed for each measuring input by clicking the corresponding **Setup**-button :



b) Display Update Rate :

Here, the interval for refreshing the column and numeric displays can be selected (off / 100 to 2000ms in steps of 100ms).

If "off" is selected, the displays are only refreshed when a value is transmitted via one of the selected triggers (function key / hand or foot switch / gauge triggering).





c) Measuring value request :

This option allows you to choose between different modes for the request of measuring data by foot switch :

All activated : The measurement values of all activated measuring inputs are requested and transmitted by every actuation of the foot switch.

Alternate : Alternate switching between the activated measuring inputs occurs automatically after each measurement value transmission by foot switch. When the foot switch is pressed the first time, the first measuring input is requested and transmitted. The second pressing of the foot switch triggers the request and transmission of the second measuring input (and so on).

For both modes it is prerequisite that measuring value request by foot switch is activated for the measuring inputs. This is done by the setup-settings (refer to chapter 5 of this manual, subject e) "foot switch"). If selected in the setup-settings, the measuring inputs can be individually activated / deactivated by the function keys **SHIFT-F1 ... F10**.

d) Auto Trigger :

This option allows you to programme a time interval (resolution 0.05 sec) for simulating the foot switch. You must press the foot switch or the function key **SHIFT-F12** in order to start / stop the foot switch simulation. With the foot switch simulation started, all measuring inputs which are activated for request by foot switch are requested and transmitted continuously. The time gap between two requests is defined by this time interval.

Note : *If the programmed interval is smaller than 0.3 sec, then secured cells are not skipped by the TAB end-character (see Example 2 in Chapter 7). Otherwise such small timer intervals would not be possible.*

e) Foot switch :

If more than one hand / foot switch is connected, one of them has to be selected as trigger.



6. Reading in measurement values to an Excel workbook

Choose the **File / New File** menu to create a new workbook or the **File / Open File** menu to open an existing workbook.

The cursor (frame around cell) for storing the measurement data automatically points at the first cell. If necessary, choose an other cell by clicking on it. If the setup-settings have already been made according to the description in chapter 5, you can now start the collection of measurement data.

Measurement data transmission can be triggered by pressing one of the function keys **F1...F10**, a foot switch or the data key on the gauge.

6.1 Requesting measurement values by PC-keyboard

You can request the measurement values from the individual measuring inputs by means of the function keys **F1...F10**. The function keys are assigned to the measuring inputs in the Setup menu.

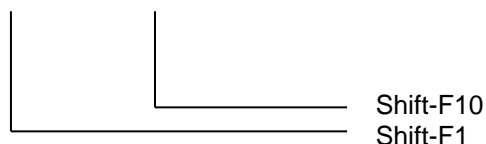
6.2 Requesting measurement values by foot switch

Measurement values are automatically requested from all activated measuring inputs or alternately from the activated measuring inputs by pressing the foot switch. The mode for requesting measurement values is selected in the "Optional functions" menu.

The measuring inputs can be activated / deactivated by means of the function keys **Shift-F1 to Shift-F10**. The function keys are assigned to the measuring inputs in the Setup menu.

The state of the active / inactive function key assignments is shown in the lower left corner of the screen :

Shift-F1...10 : 0000000000 (0 = inactive / 1 = active)



Note : *At the beginning of measurement value recording all measuring inputs are deactivated.*

6.3 Triggering transmission of measurement values by a gauge

The IBREXDLL software automatically observes all measuring inputs (with activated gauge triggering) as soon as an Excel workbook is opened. Measurement values, which are transmitted automatically by a gauge that has completed a measurement, or measurement values that are transmitted by pressing the data button on the gauge, are stored automatically in the particular Excel cell by the IBREXDLL software.

6.4 Recording a curve

The Setup menu of the IBREXDLL software allows you to programme a time interval (resolution 0.05 sec) for simulating the foot switch. You must press the foot switch or the function key **SHIFT-F12** in order to start / stop the foot switch simulation. After the foot switch simulation started, all measuring inputs which are activated for request by foot switch are requested and transmitted continuously. The time gap between two requests is defined by this time interval.

This option allows easy recording of curves or diagrams.



6.5 Overview of the function keys during measuring operation

- F1...F10 - Request measurement values
- Shift-F1...F10 - Enable / disable measurement value request by foot switch

- F11 - Zero adjustment / Gauge calibration
- Shift-F11 - Mechanical adjustment of probes

- F12 - Setup

- Shift-F12 - Simulation of foot switch

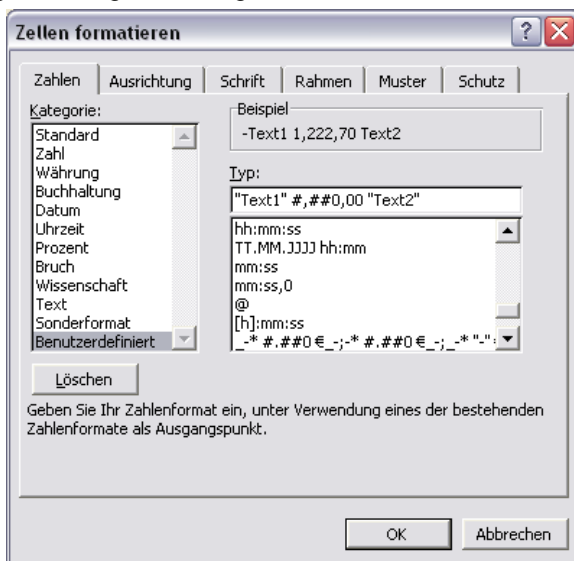
- (Shift) + Ctrl + Alt + S - Statistical analysis of collected measurement values

6.6 Formatting of measurement values

MS-Excel offers additional possibilities for formatting the collected measurement values. In order to do so, you must select (mark) the particular cells you want to format and then open the menu for **formatting cells** by pressing the right mouse key. As an alternative you can open the menu for **formatting cells** by choosing the menu **Format / Cells** of the Excel menu bar.

In this menu you can programme for example :

→ Adding a leading / following text for the measurement values :



- Changing the background colour
- Adjustment of the resolution of the collected measurement values
- ...

6.7 Note for the use of MS-Excel

You cannot use a new table sheet in the "IBREXDLL" Excel workbook :



Instead, you have to create a new workbook or open another existing workbook for the measurement data :





6.8 Adjustment and calibration functions for metrology

6.8.1 Zero adjustment and gauge calibration of measuring inputs

By pressing the function key **F11** the window for the zero adjustment or gauge calibration of measuring inputs is opened.

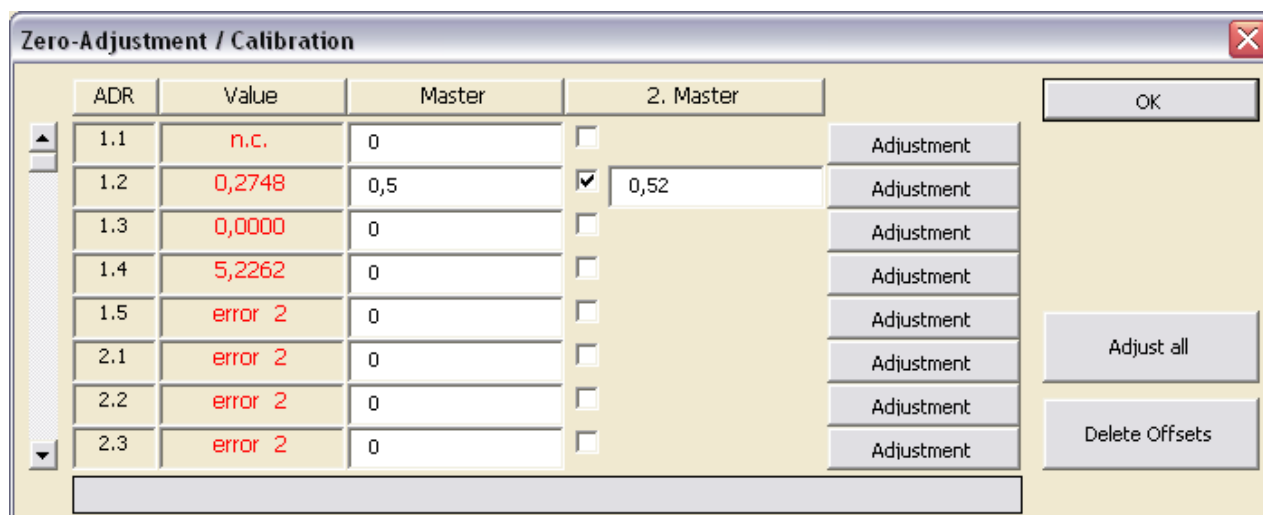
After entering ...

- a) ... the 1. master value (preset) the software is ready for the zero adjustment of the measuring input.
- b) ... the two master values and activating the gauge calibration the software is ready for the gauge calibration of the measuring input.

By clicking the **Adjustment**-buttons the individual measuring inputs are adjusted. By clicking the **Adjust all**-button all measuring inputs are adjusted simultaneously.

On zero adjustment the measurement value is set to the 1. master value.

On gauge calibration you must collect two measurement values with two different masters ("CAL" is displayed to inform you that the software is waiting for the 2. Master). With both measurement values the gain and offset is calculated automatically.



Description of the window elements :

- ADR** - Indication of the address of the individual measuring inputs
- Value** - Display of the current measurement values, request for 2. Master (CAL) and other information concerning the particular measuring input (e.g. state)
- Master** - Entered master values
- 2. Master** - Activation of the gauge calibration and entered values for the 2. Master (prerequisite for calibration of measuring input)
- Adjustment** - Executes the zero adjustment / gauge calibration of the individual measuring inputs
- Adjust all** - Simultaneous zero adjustment / gauge calibration of all measuring inputs
- Delete Offsets** - Deletes all offsets values and gain factors of the zero adjustment / gauge calibration for displaying the non-calibrated measurement values

Notes :

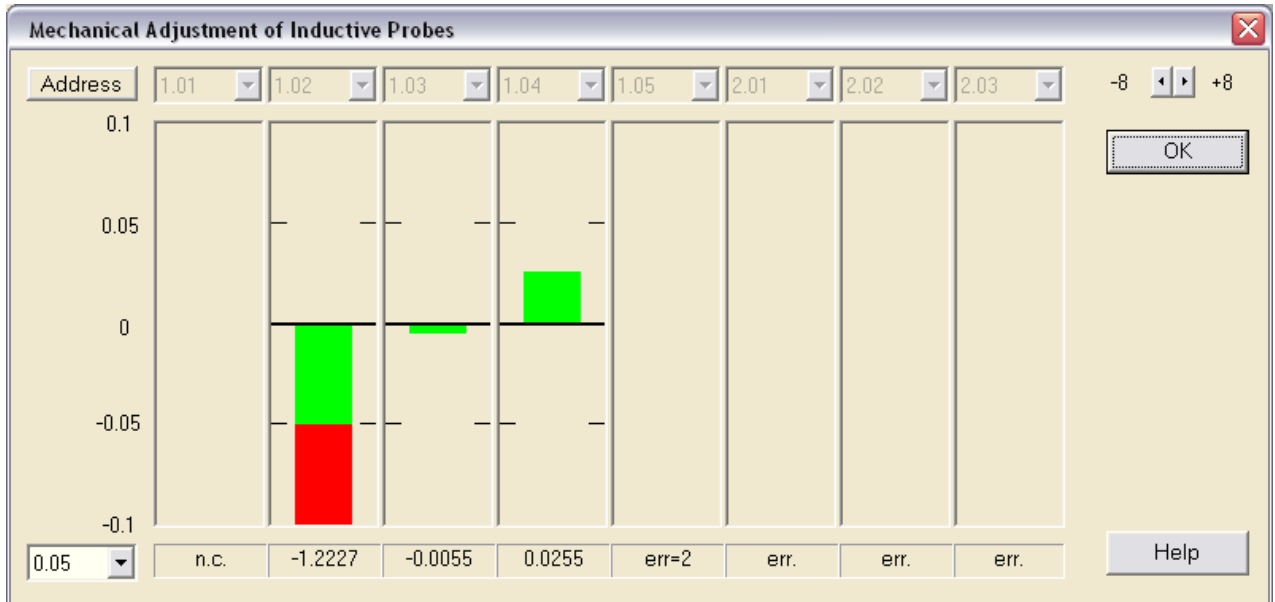
- The master values are stored in the IBREXDLL software and therefore must be entered only once.
- The adjustments are preserved even after the software is terminated.



6.8.2 Mechanical adjustment of inductive probes

By pressing the key combination **Shift-F11** the window for the mechanical adjustment of inductive probes is opened.

(Inductive probes achieve their greatest degree of accuracy within a comparatively small measuring range only. It is therefore extremely important to carefully set up the probes at the electric zero point.)



Process of adjustment :

1. Select the probes that shall be adjusted (**Address**).
2. Place your master or a component in the measuring device.
3. Probe adjustment : All probes are to be adjusted so that the corresponding columns are within the green area ($\pm 50 \mu\text{m}$).

Note : The IBR IMS-5S probes are linearised over the complete measuring range, so the mechanical adjustment is not necessary for IMS-5S probes as it is for standard inductive probes.



7. Examples of recording measurement values

Example 1 : (Assignment of measuring inputs to columns)

A force / path diagram is to be recorded using measuring input 1 and measuring input 2. Column 1 stores the data of measuring input 1 and column 2 stores the data of measuring input 2 to the Excel worksheet. A pair of measurement values must be transferred simultaneously by a foot switch and afterwards the cursor must be automatically set to the next line.

Programming :

- Measuring input 1 = column 1 and foot switch = on
- Measuring input 2 = column 2 and foot switch = on

Example 2 : (for the usage of end-characters)

Application :

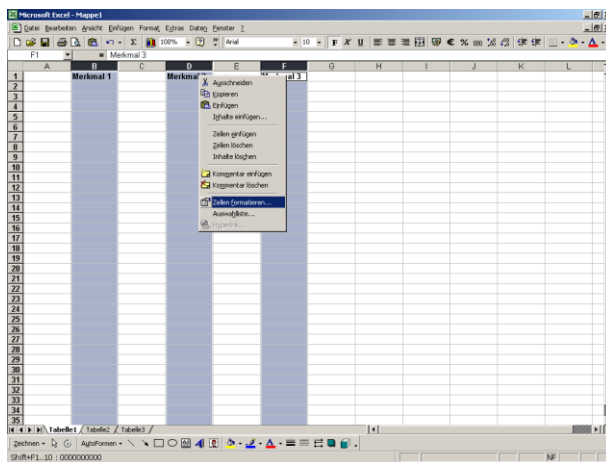
3 Characteristics are to be collected using one calliper. The first characteristic shall be stored in column 2, the second in column 4 and the third in column 6.

Settings in IBREXDLL :

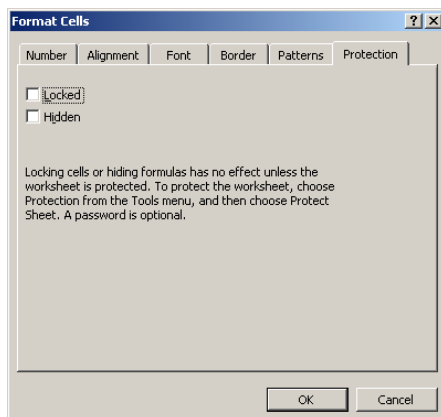
Please select **tab** as end-character (**Table structure** setting in the Setup menu) for the measuring input.

Settings of the Excel workbook for collecting the measurement data :

- a) Please select the 3 columns and call the menu **Format cells ...** by pressing the right mouse key.



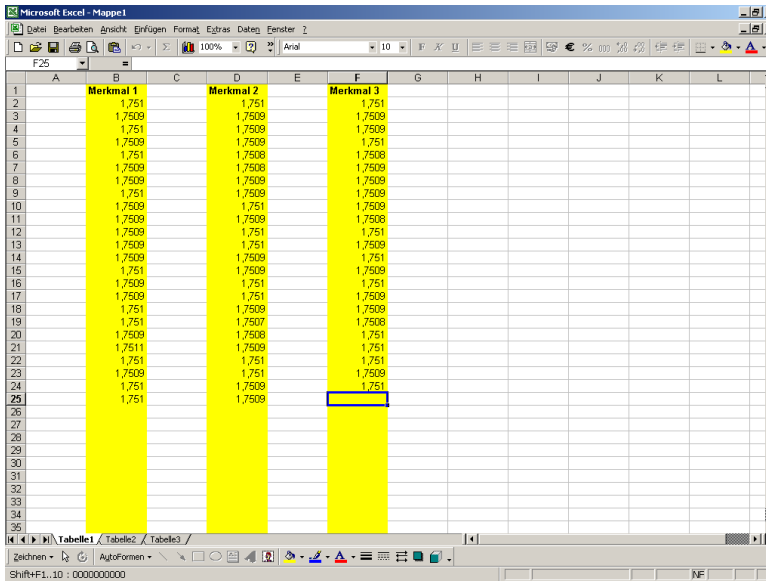
- b) Deactivate the setting **Locked** in the sub-menu **Protection**



- c) Please activate sheet protection in the menu **Tools / Protection / Protect Sheet ...**



- d) The measurement values are now stored in the 3 columns and the cursor jumps from column to column after each measurement value reception :



Note : If the measurement values are to be written in lines one below the other, there must be a character written in the last line of one of the selected columns. Otherwise the measurement values are stored only in the first line and are constantly overwritten.

Example 3 : (for the usage of end-characters)

Application :

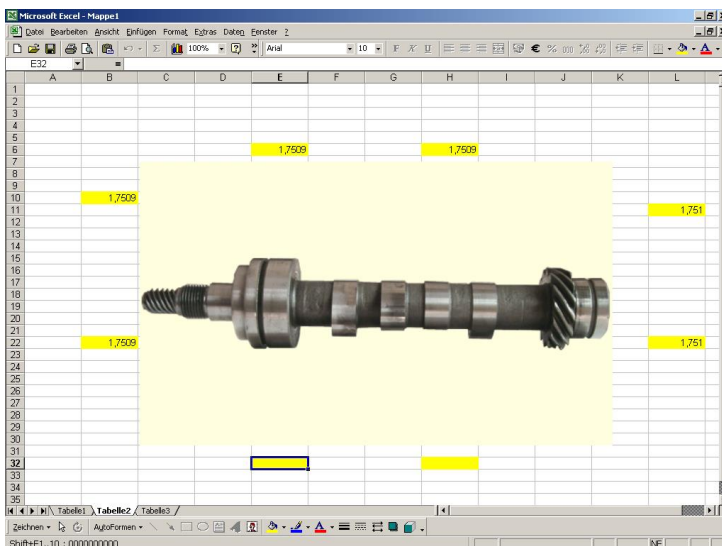
The measurement values of 8 measuring inputs are to be collected with one foot switch one after the other. They shall then be stored in particular cells.

Settings in IBREXDLL :

Please select **tab** as end-character (**Table structure** setting in the Setup menu) for the measuring inputs and **Measuring Value Request = Alternate** (**Optional functions** setting in the Setup menu).

Settings of the Excel workbook for collecting the measurement data :

- Please select the 8 cells and call the menu **Format cells ...** by pressing the right mouse key.
- Deactivate the setting **Locked** in the sub-menu **Protection**.
- Please activate sheet protection in the menu **Tools / Protection / Protect Sheet ...**
- The 8 values are now stored by pressing the foot switch, value by value in their particular cells :





8. Statistical analysis (SPC) of collected measurement data

In the current Excel-table, please mark the measurement data that is to be analysed and press the key combination **Ctrl + Alt + S** or **Shift + Ctrl + Alt + S** for creating the statistics of the marked measurement data.

A setup window is displayed :

Description of the window elements :

- Characteristic Name** - Name of characteristic (serves to label the statistics).
- Unit** - Unit of characteristic (serves to label the statistics).
- Nominal Size** - Nominal size of characteristic.
- Upper Tolerance** - Upper tolerance of characteristic (is stated relatively to the nominal size and can be switched off in case of one-sided characteristics).
- Lower Tolerance** - Lower tolerance of characteristic (is stated relatively to the nominal size and can be switched off in case of one-sided characteristics).
- Sample Size** - Sample size for calculation of Cp / Cpk and control chart respectively.
- Chart type** - Chart type to be used.
(Note : Xq = Average chart, Xm = Median chart, X = Raw value chart, S = Standard deviation chart, R = Range chart)
- SPC-Norm** - SPC-Norm to be used for calculation of Cp / Cpk and control chart respectively.

Possible choices :

$$\sigma = s_{ges}$$

$$\sigma = \bar{R} / d_n$$

$$\sigma = \bar{S} / a_n$$

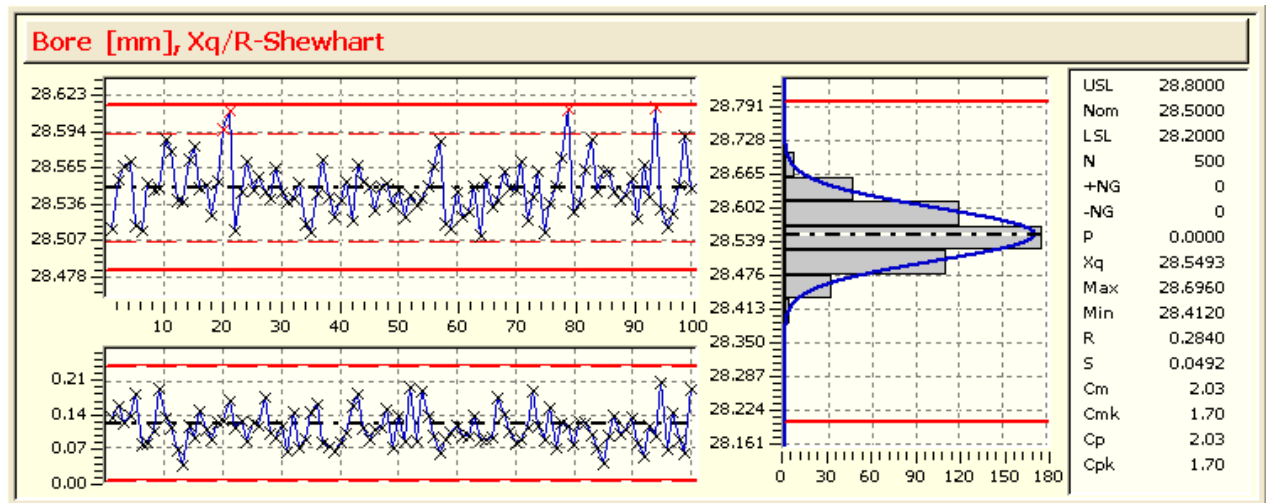
$$\sigma = \sqrt{\sigma^2}$$

- Size of the Diagram** Selection of zoom factor for the statistics.

After pressing the **OK**-button the statistics is calculated and a Bitmap is generated. This Bitmap is then automatically embedded in the current EXCEL sheet.



Example of a SPC-diagram :



- Notes :**
- If a block of measurement values is selected, then IBREXDLL reads the values line by line from left to right.
 - All cells containing no measurement values (i.e. are empty or contain text strings) are not used for analysis.
 - On all calculations the normal distribution is taken as a basis for the distribution type. Other distribution types are not supported.

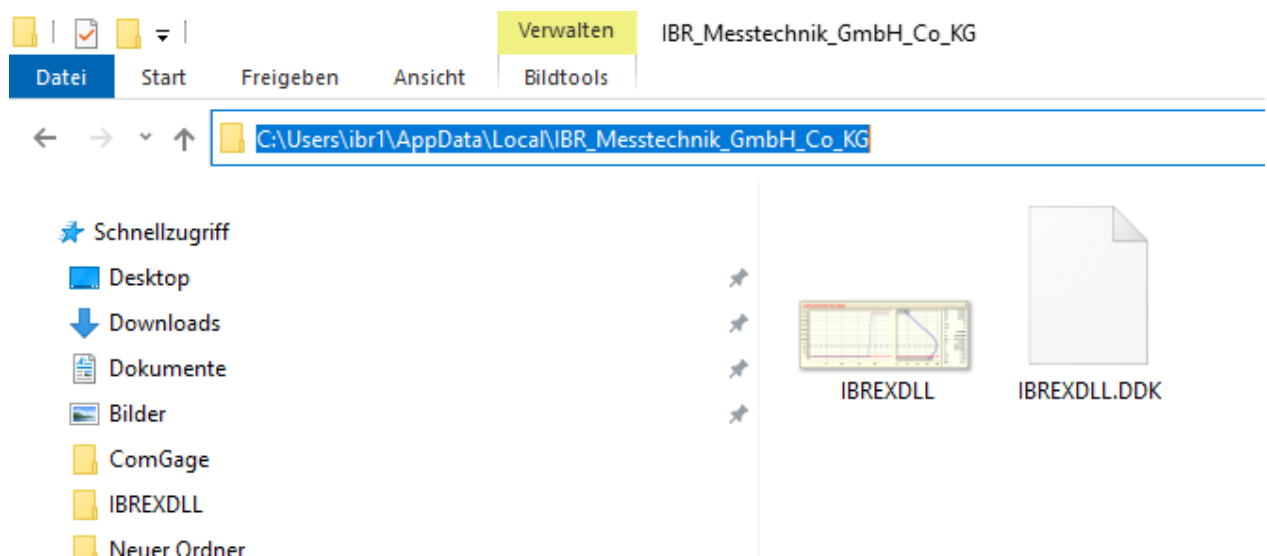
9. Uninstalling of IBREXDLL

IBREXDLL can be uninstalled in the Windows 10 settings via "Apps and Features".

10. Saving the settings of IBREXDLL

A part of the settings is saved in the file IBREXDLL.xls.

Additional settings are saved in the path `%LOCALAPPDATA%\IBR_Messtechnik_GmbH_Co_KG` :





11. Important conditions concerning the use of IBREXDLL

1. IBR software products are not developed and tested for the high demands in the medical field, in combination with applications in the medical field or in critical components of life-saving systems whose malfunctions or failure can lead to personal injury.
2. On absolutely all applications the stability of the software can be influenced by different factors, e.g. fluctuations in the power supply, computer hardware errors, operating system errors, compiler errors, application development software errors, installation errors, software and hardware compatibility problems, malfunctions or errors of electronic supervisory systems and controller units, transmission errors within electronic systems (hardware and/or software), unintended use or misuse as well as errors by the operator or system developer (harmful influences such as the factors mentioned above are in the following referred to as "SYSTEMERRORS").
3. All applications, which contain the risk that SYSTEMERRORS can lead to damages or personal injuries, should not only depend on electronic systems. In order to avoid damages, injuries or death the operator or system developer should create reasonable, suitable precautions against SYSTEMERRORS or their consequences. These precautions can include backup or shutoff mechanisms.
4. Because all computer systems are adapted for the operator the systems are different in comparison with the IBR test systems. Because the IBR products can also be integrated in applications not tested or not intended in this way by IBR the operator or system developer is completely responsible for the test and release of the applications in which IBR products are embedded. This contains the structure, the procedure and the security level of the application.
5. In no event IBR will be liable for any damages including lost profits or any special, indirect, incidental or consequential damages arising out of the use or inability to use the product, whether claimed under the safety instructions or otherwise.
6. Corporate guidelines and safety regulations enforced by the industrial trade associations for the prevention of industrial accidents must be strictly observed. Make sure to consult the safety officer at your company.
7. All rights depend on German law.
8. All rights for the **IBREXDLL** software belong to **IBR Messtechnik GmbH & Co. KG**

We reserve the right to change the design and technical data contained in our documentation without notifying our customers. IBR is not obliged to notify buyers of product changes.

IBRit is a registered trademark of IBR.

Windows and **EXCEL** are registered trademarks of Microsoft Corporation.

This document must not be reproduced, in part or in its entirety, without the prior written consent from IBR.

INNOVATIVE
MEASUREMENT
TECHNOLOGY LTD.



Innovative Measurement Technology Ltd

Unit 3E Vinnetrow Business Park
Vinnetrow Road, Chichester
West Sussex PO20 1QH
United Kingdom

E-mail: sales@imeasure.co.uk
E-mail: support@imeasure.co.uk
Tel: +44 (0) 1243 942010

www.innovative-measurement-technology.co.uk

The contents of this literature are as of January 2023. Innovative Measurement Technology reserves the right to change product specifications without prior notice.

©2023 Innovative Measurement Technology Ltd

