UNITEST ®

BEHA A Fluke Company

GB

Instruction Manual
Software

es control 0100 Best-Nr. 1251
es control 0100 professional Best-Nr. 1312

es control

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Remarks marked in the instruction manual:

⚠ Attention, Observe instruction manual.

☞ Reference. Please imperatively observe.

⚠ This instruction manual contains information and references required for correct software operation and use. Before installation and application, thoroughly read the instruction manual and comply with all points.

- E-CHECK is a protected term of the Landesinnungsverbandes [German: county association of craft guilds] of Bavaria
- ZVEH means "Zentralverband der deutschen Elektro- und Informationstechnischen Handwerke" and is the German professional association for the electricians and information technology engineering. The European equivalent is the "AIE" [Association internationale des entreprises d'équipement électrique – international association for the electrical equipment companies].
- Adobe Acrobat is a registered trademark of Adobe Systems Incorporated.
- Access 2000 is a registered trademark of Adobe Systems Incorporated.
- MS-DOS is a registered trademark of Microsoft Corporation.
- IBM is a registered trademark of International Business Machines Inc.
- Windows is a registered trademark of Microsoft Corporation.

1.0 Introduction

The UNITEST es control 0100 professional is an efficient software developed by the company Ch. BEHA GmbH allowing you to Edit and administrate tests on electrical systems.
The UNITEST es control 0100 professional software is used for administration and control of tests and the recording of measurement values or from test instruments equipped with a measurement data memory (e.g. UNITEST 0100-Expert, 0100-EUROtest, 0100-INSTALLtest). It is also possible to create tests manually.
CH. BEHA GmbH is a member of the worldwide operating BEHA Group. The headquarters are located in Glottertal/BlackForrest. The technological centre is also situated in Glottertal. The BEHA-Group is one of the leading companies for test and measurement instruments.

1.1 Product Description, Function of the Software

- Comfortable, extendible software for administration and recording of tests on electrical systems in compliance with DIN VDE 0100 and DIN VDE 0105
- Structured database with clear and logic hierarchy for customer, system, test, distribution and current circuit. All components of the data tree are always visible
- Assignment of tests with distribution and current circuits to the respective system and customer
- Simple data administration with functions: add, duplicate, cut, paste, and delete Edit
- Clear presentation of tests, distributions, and current circuits
- Automatic assignment of measurement data when reading in measurement values via object, division, and current circuit code
- Easy establishment and printing of test reports. Printing Handing-Over reports and test reports.
- Edit the test and measurement protocols as printout or as file in snapshot** format (SNP), text format (TXT), richtext format (RTF), or excel format (XLS).
- Access rights/user administration for four different user groups
- Comparison and up-dating of different es control database
- Automatic creation of new UUTs if they are not yet available within the database
- Measurement data evaluation for 0100 tests with the objective of a fast evaluation of the global test.
- Ideal software for all service companies of repetition tests according to BGV A2 or within the facility management domain.

☞ It is highly recommended to work through one of the examples in section 5 or 6.

☞ What is Snapshot? Snapshot is a program of Microsoft, establishing reports in Snapshot Format (SNP). A report snapshot is a file with the data name extension .SNP, representing an exact copy of each page of a Microsoft® Access Report – including all graphs as well as other embedded objects. It is possible to display, print or send a snapshot file as e-mail. However, the established snapshot file cannot be modified.

1.2 Scope of Supply

- Software UNITEST es control professional 0100 on CD-ROM
- Instruction manual / PDF-Format on CD ROM
- Instruction Manual

2.0 System Requirements

Minimum Configuration

System:	Win 95; 98; Windows® ME; Windows XP NT® Workstation 4.0 withService Pack 3 or higher; Windows 2000® Workstation with Service Pack 1 or higher (Microsoft Internet Explorer 3.0 or higher must be installed)
Processor:	Pentium II 200 or similar processors
RAM:	128 MB for Windows 95, 98 or ME 128 MB for Windows NT Workstation Version 4.0 with Service Pack 3 256 MB for Windows XP
Display:	VGA-display or display or higher resolution; Super VGA recommended: Resolution 800 x 600 or more
Memory on Disk:	200 MB for standard-installation
Drive:	CD-ROM
Interface:	RS232; 9-polig

Recommended:

System:	Win 95; 98; Windows ME; NT 4.0; Windows 2000; Windows XP
Processor:	Pentium II 266 MHz or similar processors
RAM:	128 MB or more
Display:	VGA-display or display or higher resolution; Super VGA recommended: : Resolution 800 x 600 or more
Memory on Disk:	400 MB
Drive:	CD-ROM
Interface:	RS232; 9-polig

2.1 References


The manufacturer guarantees that the Software operates essentially in compliance with the written documentation. Due to current technological limitations and the rapid new or further developments of operating systems, it cannot be guaranteed that the program runs on all systems. The Company CH. BEHA GmbH cannot be held liable towards the user for any particular, accidental or consequential damages resulting in any way from the usage of the software.


Viruses! Due to current technological limitations we cannot 100 % guarantee that the data carrier enclosed is free of viruses. In spite of a thorough virus check using the latest anti-virus programs, we cannot be held liable for damages caused by viruses.


Under certain unfavourable circumstances, any electronic memory can lose or modify data. The company CH. BEHA GmbH cannot be held liable for any financial or other losses caused by a data loss, wrong handling, or any other reason.


Data backup! It is indispensable to make a data backup in regular intervals. In case of a computer system failure (e.g. hard disk failure or any other hardware error), data may be lost or damaged. Please refer to section for data backup.

3.0 Installation

For software installation, copy the required files to the hard disk.

☞ Prior to installing the UNITEST es control 0100professional software, please start Windows again or exit all running application programs.

☞ For the operation of UNITEST es control 0100 professional both programs “Adobe Acrobat Reader*” and “Access 2000 ** Runtime Module” are required. If these programs are not installed on your computer you must proceed with their installation together with es control 0100 professional. Installation is made of Adobe Acrobat Reader * (Version 5.0). The missing "Access 2000 ***) Runtime Module" is automatically installed in the background together with es control 0100 professional.

☞ Without “Adobe Acrobat Reader *” the help function of UNITEST es control 0100 cannot be used. Without “Access 2000 **” the functions print, view page, and data export will not work.

☞ The Microsoft Internet Explorer as from version 3.0 must be installed on your computer in order to be able to open the functions print, view page, and data export. If otherwise, you may install the Microsoft Internet Explorer 5.0 from the CD-ROM. It is located in the following directory:
“\AccessRTde\Ie5\de\Ie5setup.exe”.

- Insert the data carrier (e.g. CD-ROM) into the respective disk drive in your computer.

- The program autorun.exe is automatically started when inserting the CD-ROM. If otherwise, please start the Windows Explorer and select the appropriate disk drive.

- Select the "SETUP.EXE" file via the explorer and start the installation with a double click. If desired, you may also start the installation via the "EXECUTE" menu, with ??"AUSFÜHREN/EXECUTE", and entering e.g. "D:\SETUP.EXE". The "SETUP" program installs the UNITEST es control professional program on your hard disk.

- **Now, the installation is started. The** "SETUP" program guides you through the further installation procedure. Please follow the installation instructions displayed on the screen.

☞ The “Setup.EXE” program checks during the installation procedure if “Access 2000”, the “Access 2000 Runtime-Module”, and “Acrobat Reader 5.0” are already available on your computer. The respective buttons for installation will then not be activated. Please refer to Figure 1.0:

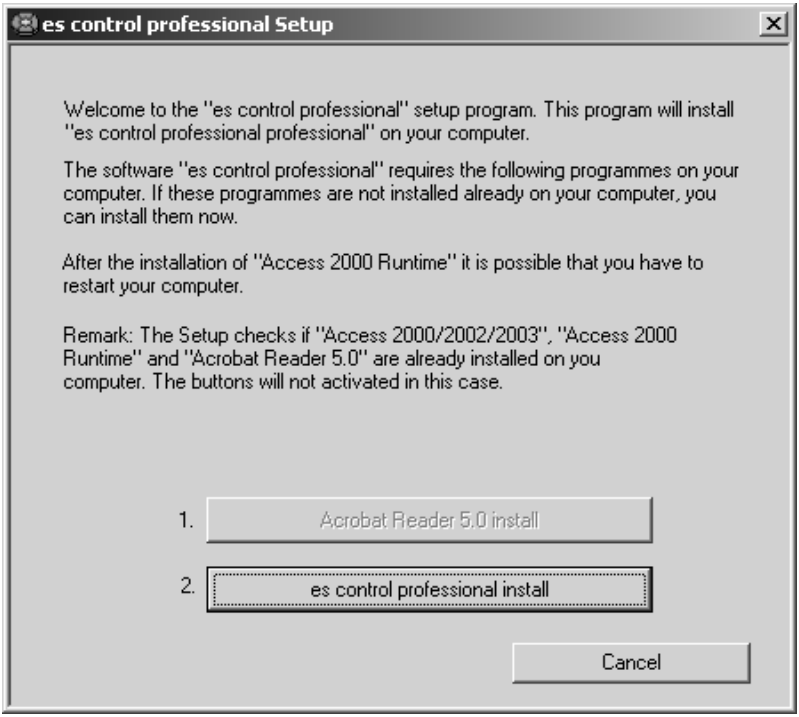


Figure 1.0: Window for the installation of UNITEST es control 0100 professional

The "SETUP.EXE" program indicates which module has been purchased.

- Follow the installation instructions displayed on the screen.

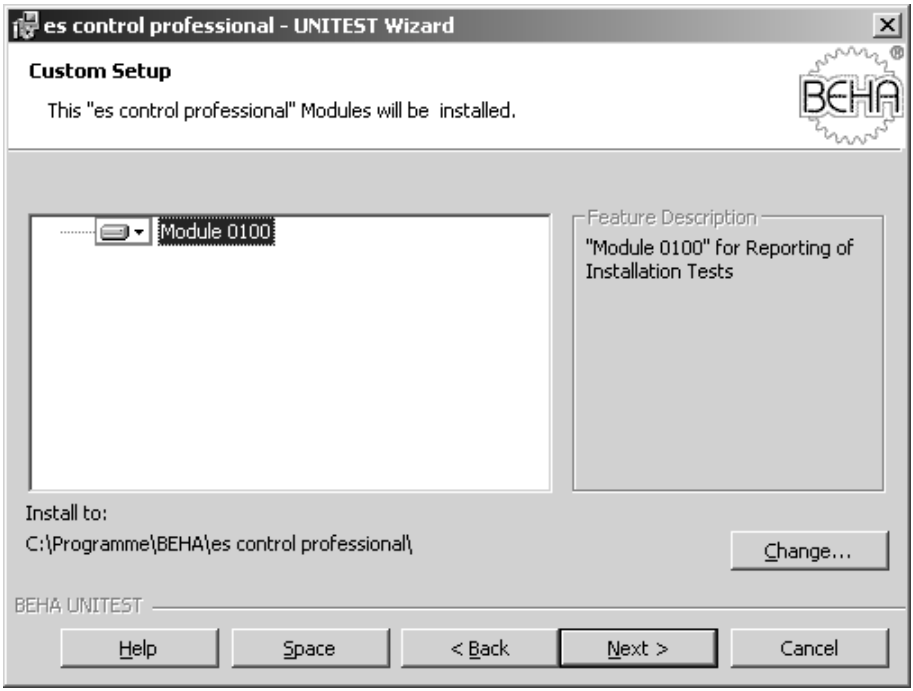


Figure 1.1 Available modules

- Select the module 0100 and click the "Next" button.

☞ When purchasing an additional module, it can be installed at a later date.



Figure 1.2: Installation of an additional module

1. Insert the CD with the new module, start the "SETUP.EXE" program. The program recognises a module of "es control professional" if already installed.
2. Open "Change program" and perform the installation.
3. The module is appended to the existing "es control professional" and, additionally, all modules are updated to the present program version.

☞ Language selection is made during the installation process.

4.0 Program Start

Now, start the UNITEST es control professional program. When starting the program for the first time, the following entries will be requested:

- Interface
- Company name / Company logo

The respective windows appear subsequently. Confirm the entries in compliance with your requirements. You may change all settings for interface, language, company name, and company logo later within the 'Setup' menu (please refer to section 7.6.3).

Thereafter, you are in the main program window.

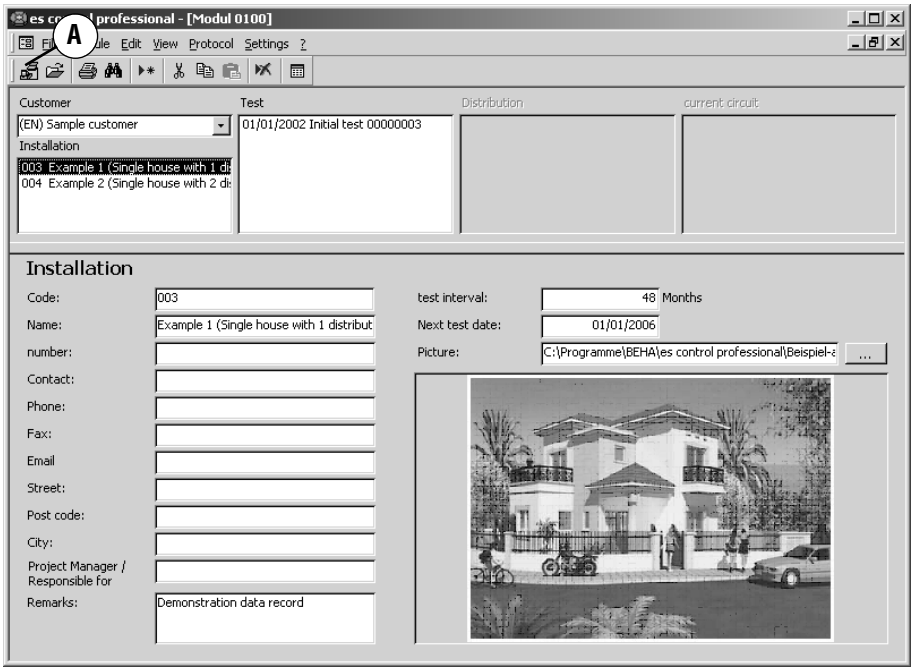


Figure 4.1: Main window after starting UNITEST es control 0100 professiona

4.1 Program Operation

4.1.1 Main Menue

The menu bar with the main menu is located on the top border (please refer to A, Figure 4.1). All program functions are accessed via the main menu bar. The main menu comprises the following functions: “File | Module | Edit | View | Protocol | Setup | ?”. Please refer to section 7.0 for a detailed description of the menu functions.

4.1.2 Viewing Data Records

List fields are located below the menu bar (please refer to B, Figure 4.3) including the Edits for the available customers, locations, departments, UUTs, and tests.

The UUTs are assigned to customers, location, and department. The individual tests are then assigned to the respective UUTs.
The windows correspond to the respective hierarchical level. The hierarchy may also be shown as a tree structure. For an example, please refer to Figure 4.2.

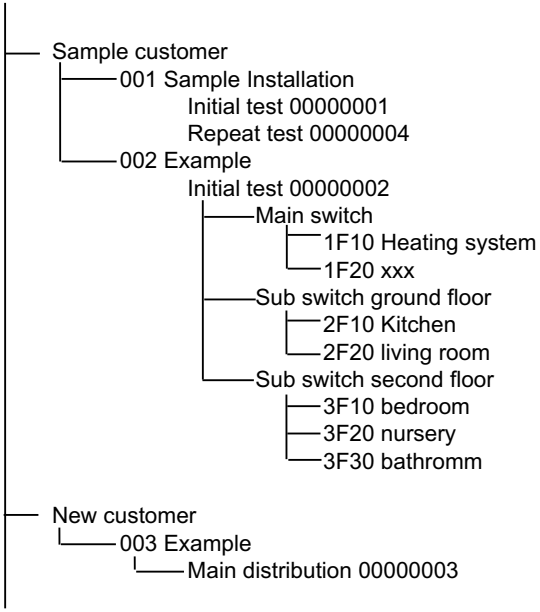


Figure 4.2: Database structural hierarchy of UNITEST es control professional (Example)

In every window selection is made from a list of data records. For example, if all tests for "example 2" are required for display, subsequent selection is made of sample customer and example two. After successful selection the following is displayed:

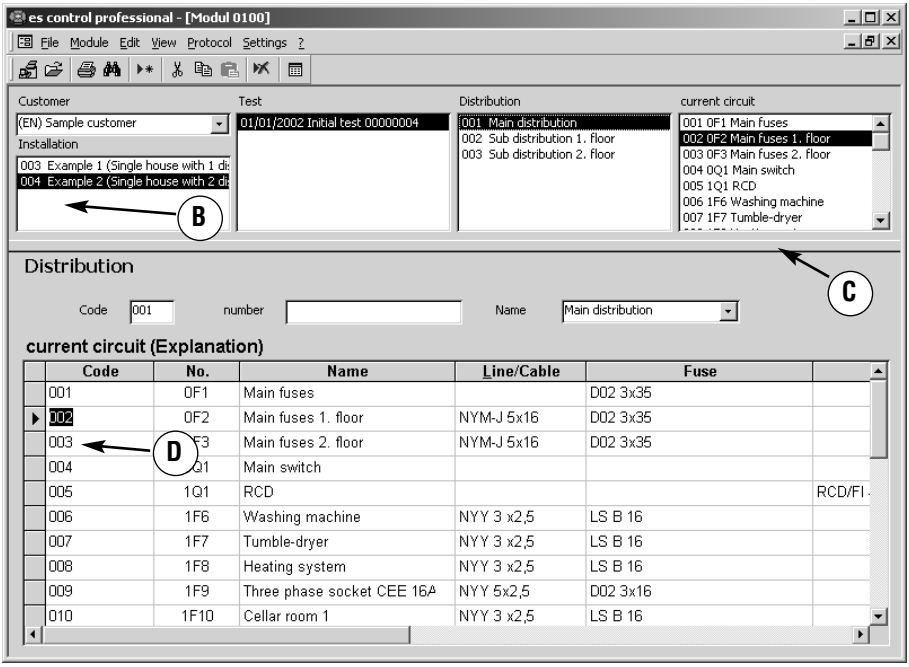


Figure 4.3: Main window containing selected data records

The view of the current data record is below the windows. To change the view or the selection of "customer", "installation", "distribution", and "circuit" only click the desired window. You may recognise the current view via the header above the data records.

☞ The size of the window can be modified by shifting the bar (C) if the screen resolution is larger than 800 x 600. The bar can be shifted by clicking and holding the left mouse key.

☞ After every program start the last selected view is displayed.

4.1.3 Context Menu, Open via Right Mouse Button

The right mouse button can be used to open an additional function menu, depending on the current window. Please find hereafter an extract of the most important functions.

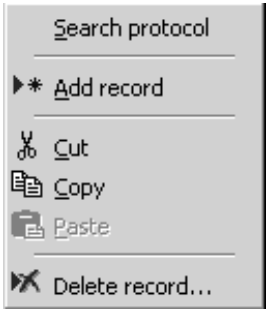


Figure 4.4: Context menu within the “Customer”, “Installation”, “Test”, “Distribution”, “Current Circuit” data record windows

☞ The "copy” function is used to process data records and texts using the "copy" and "insert" command. The handling is the same as for the Microsoft Software.

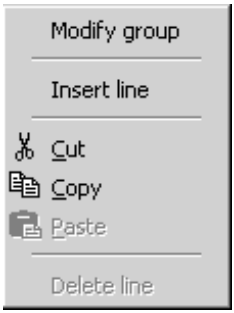


Figure 4.5: Context menu within the "Distribution Current Circuit” (Explanation) window

To process one or several data records they have to be marked. Mark the desired data records with the mouse by clicking in the left empty column on the left of the "Code” column (see figure 4.3).

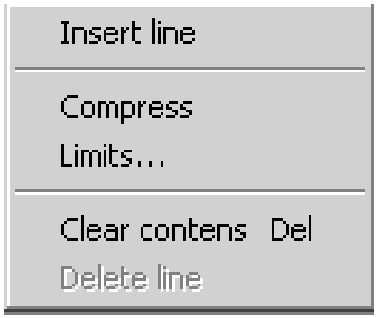


Figure 4.6: Context menu within the “Current Circuit Measurements” window



Figure 4.7: Context menu within the “Equipment Test” window

4.1.4 Entry Correction

The es control software writes the texts into the database which have been entered into the entry fields. The current entries are saved within the database as soon as the operator exits the current entry field.

If an entry field is deleted by mistake, the last entry can be undone by using the key combination ‘Strg+Z’. This is valid for any entry field as long as the current data record is not modified.

Example: If subsequent modifications are made within two different entry fields, it is possible to reverse the second entry or modification by typing 'Strg+Z'. This is valid for every entry field as long as the current data record is not modified.

5.0 Example 1

In example 1, the structure for the installation to be tested is created in es control 0100 professional BEFORE THE MEASUREMENT. Thus, measurement assignments to distribution and current circuits are made easier in known installations.
The installation structure is entered in compliance with the diagram. Then, a current circuit list can be printed as default for the controller, including designations, numbers, and codes for distributions and current circuits.

☞ **It is highly recommended to work through one of the two examples in sections 5 or 6.**

Here, the following is displayed:

- Basic settings of company address, interface, test instrument, controller
- Create data records for customers, installations, test
- Complete the data of the window for a test
- Create data records for distribution and current circuit
- Search data records for a test
- Edit, duplicate, delete data records
- Cut and paste data records
- Performing tests and measurements in compliance with an example
- Printing current circuit list and explanation
- Transfer or reading-in of measurement data
- Assignment of the measurements to distributions and current circuits
- Printing test reports

5.1 Basic Setup

Only the basic setups required for the following example are mentioned here. The detailed explanation of all setups can be read in section 7.0.

5.1.1 Serial Interface Setup

- Select in the “Setup” menu the “Serial Interface” sub-menu. The following window is displayed:

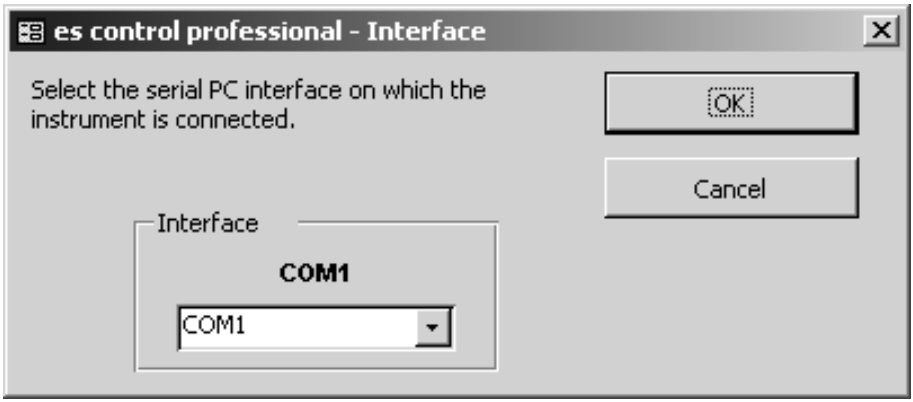


Figure 5.1: Interface setup

☞ The es control 0100 professional software is equipped with an automatic interface recognition facility. I.e. only available and activated interfaces are displayed.

- Select the serial interface used for data transfer from the test instrument (COM 1 is frequently used).
- Confirm by clicking on “OK” .

5.1.2 Company Address Setup

- Select in the “Setup” menu the “Company” sub-menu. The following window is displayed:

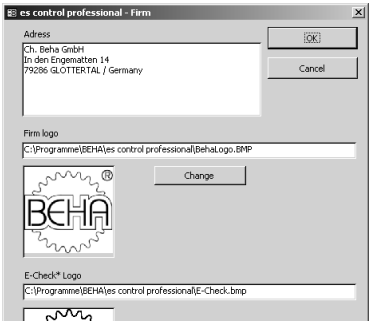


Figure 5.2: Company address and company logo setup

- Enter your company address into the address field.
- If desired, enter the directory and the file name of your company logo into the logo field. The Beha logo is given as standard setting. The company logo must be available in Bitmap Format (*.bmp). Both appear on the printout of the single test reports.
- Confirm by clicking on “OK” .
- If available, you may integrate your E-Check* logo. For this, click the "Change” button and select the respective directory and the file name of your E-Check* logo. The default setting is the Beha logo. The E-Check* logo must be available in Bitmap Format (*.bmp) or as Windows Metafile. The E -Check* logo appears on the printout of the ZVEH test reports
- Confirm by clicking on “OK” .

☞ On the printout, the company logo is scaled to the size of approx. 24 * 24 mm. We recommend you to edit your company logo at the size indicated above with a resolution of 150 to maximum 300 dpi. When using larger dimensions and higher resolutions, the file containing the company logo becomes very large. This can lead to considerable delays when printing the reports.

5.1.3 Instrument Setup

- Select the “Test Instrument” sub-menu from the “View” menu. The following window is displayed:

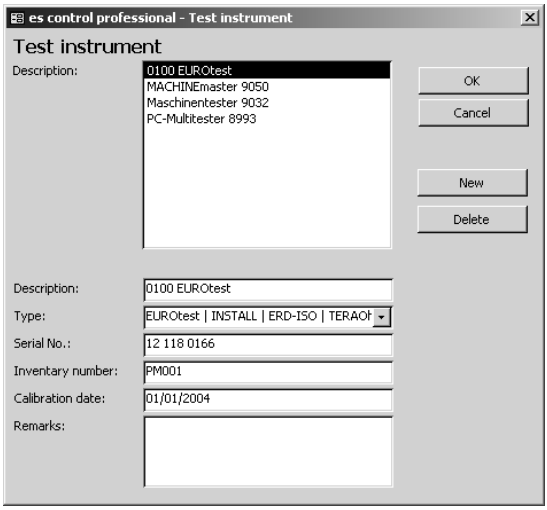


Figure 5.3: Test instrument setup

- Now create a new data record using the “Data record I Add” menu command, or use the context menu which can be accessed by clicking the right mouse key. A new data record bearing the description “xxx” is created.
- Modify the indications in compliance with your requirements, respectively enter the fields “Designation”, “Serial Number”, “Calibration Data”, and “Remarks”.
- Confirm by clicking on “OK” .

☞ If a test instrument is not yet available within the instrument list, it is automatically created during the data transfer. The data may then be completed via the "View I Test Instrument" menu.

☞ The communication parameters and the mode of data transfer are set by making the respective selection in the “Type” field. For the instruments “0100-EUROtest, 0100-INSTALLtest, and ERD-ISOtest, or TERAOhm” selection of the “EURO/Install/Erd-Isotest/TERAohm must be made. The type “0100-Expert/0100 Multitester” must be selected for the 0100 Expert or 0100 Expert plus. The module es control 0100 professional does not use all instrument types.

5.1.4 Controller Setup

- Select the “Controller” sub-menu from the “View” menu. The following window is displayed:

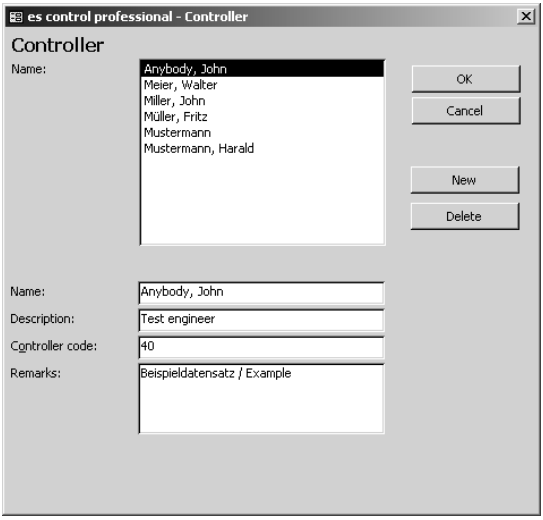


Figure 5.4: Controller setup

- Now create a new data record using the “Data record | Add” menu command, or use the context menu which can be accessed by clicking the right mouse key. A new data record with the description “xxx” is created.
- Modify the indications in compliance with your requirements. Respectively enter the fields “Name”, “Description”, and “Remarks”.
- Confirm by clicking on “OK”.

☞ The “Controller Code” field does not have any function within the es control 0100 professional software. Here, the staff register number can be entered, for example.

☞ However, this field is used within the es control 0113 or the es control 0701/0702 software. Here, the controller code can be entered. The tests are consequently assigned to certain controllers. The es control 0113 or the es control 0701/0702 software is a further part of the es control 0100 professional full version, which can be used for the administration of machines or portable instruments.

5.2 Create Data Records

This section describes the creation of new records.

☞ When receiving the UNITEST es control 0100 professional software, sample records containing examples are already available within the database. If required, they can be modified or deleted.

☞ The data is written into the database as soon as the current entry window is closed or another record is selected.

5.2.1 Create a Data Record for Customers

- Select the data record for the customers either using the “View I Customer” menu or directly click on the “Customer” list field.
- Now create a new data record using the “Data record I Add” menu command, or use the context menu which can be accessed by clicking the right mouse key. The new data record for the customer is displayed as shown in Figure 5.5.

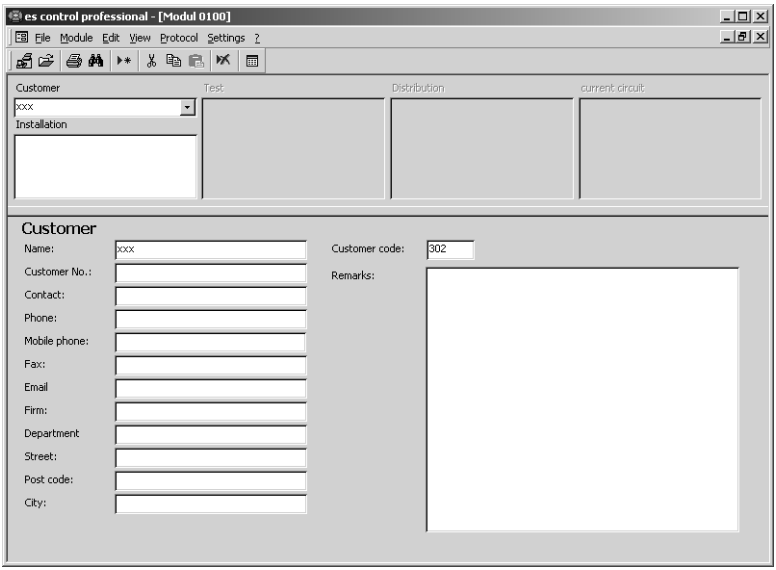


Figure 5.5 Add data record for customer

- Modify the customer name to “Customer A” and now enter your data for the new data record.
- Complete the remaining fields as required. After the entry, the window should look as follows:

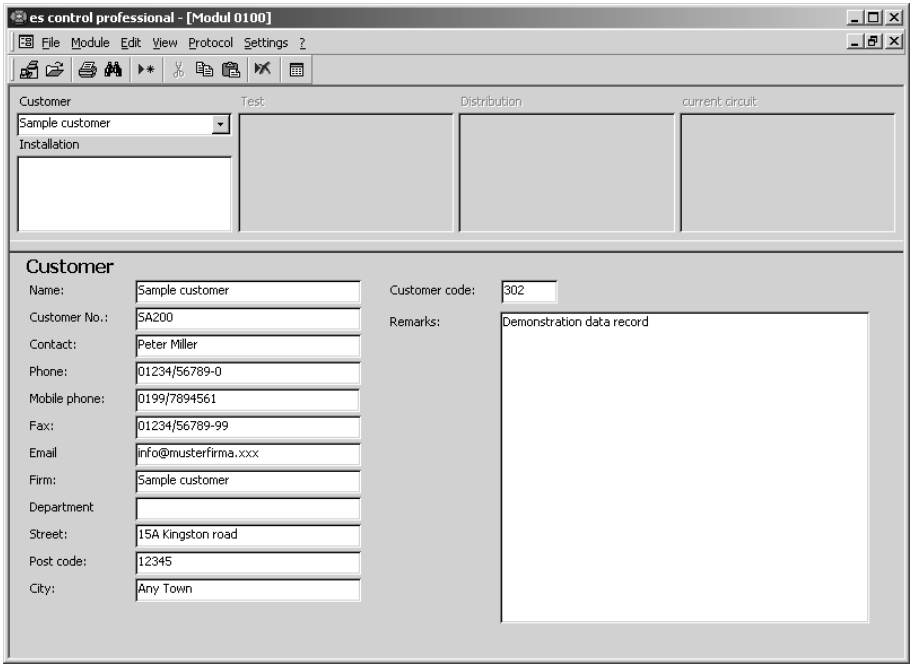


Figure 5.6: New data record for customers after data entry

5.2.2 Create Data Record for an Installation

☞ Various models for installations with the respective structure of distributions and current circuits can be created (e.g. detached family house, multiple dwelling, building site main cabinet). These can then be copied or modified as required.

- Change to the “Installation” window selecting either the “View | Installation” menu or directly click in the “Installation” list field. The previously created customer “Customer A” must still be displayed in the “Customer “ window.

- Now create a new data record. Use either the “Data record | Add” menu command or use the context menu which may be accessed by clicking the right mouse key. A new installation for “Customer A” customer is created. The new data record for the installation is displayed as shown in Figure 5.7.

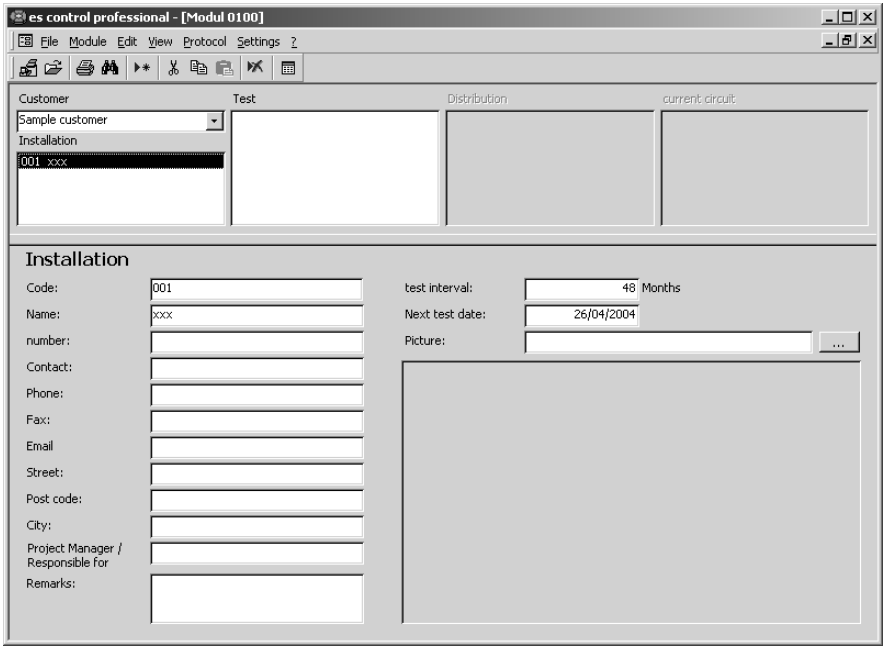


Figure 5.7 Add data record for installation

- Modify the name of the installation to “Installation 1” and enter now the data for the new data record.
- Complete the remaining fields as required.

☞ The installation **code** is automatically assigned when creating a new installation. If desired, this code can be modified. The code must be composed by a 3-digit number between 1 and 999.

☞ The installation code is used to save the measurements within the test instrument to ensure that they are automatically assigned to the pertaining installation, the distributions, and the current circuits when reading in the data. The installation code is the number entered for the on the test instrument for the unit during saving (only supported for 0100- EUROtest). Measurement data is saved under this number within the test instrument.

☞ A picture to every installation may be saved in the background. This picture is printed on the “Protocol | Test | Current Circuit List” report. To save an installation picture in the background, click on the “...” button to the right of the entry field. The window “Select picture file” appears. Now open the respective picture file. You can turn the picture display on or off by clicking on the “View” (or “Close”) button.

☞ The picture should be available as Bitmap Format (*.bmp) or as Windows Metafile (*.wmf). By entering “*.*” (confirm with the “Enter” key) in the “File Name” window, it is possible to insert pictures with the suffixes “jpg”, “gif”, “ico”, “cur”, “enf”, and “rle”. These picture formats are only displayed within the page views for Windows NT and Windows 2000. However, the printout within the report is also possible.

☞ The installation picture is scaled to the size of approx. 78 x 61 mm (W x H). We recommend you to edit your installation picture at the sized indicated above with a resolution of 150 to maximum 300 dpi. When using larger dimensions and higher resolutions, the file containing the picture becomes very large. This can lead to considerable delays when printing the reports.

5.2.3 Create Data Records for Test

- Change to the “Test” window and select either the “View I Test “ menu or directly click in the “Test” list field. The previously created data records for “Customer A” and “Installation 1” must still be displayed in the respective windows.
- Now create a new data record using the “Data record I Add” menu command, or use the context menu which may be accessed by clicking the right mouse key. A test for the “Installation 1” installation at “Customer A” customer is created. The new data record for the test is displayed as shown in Figure 5.8.

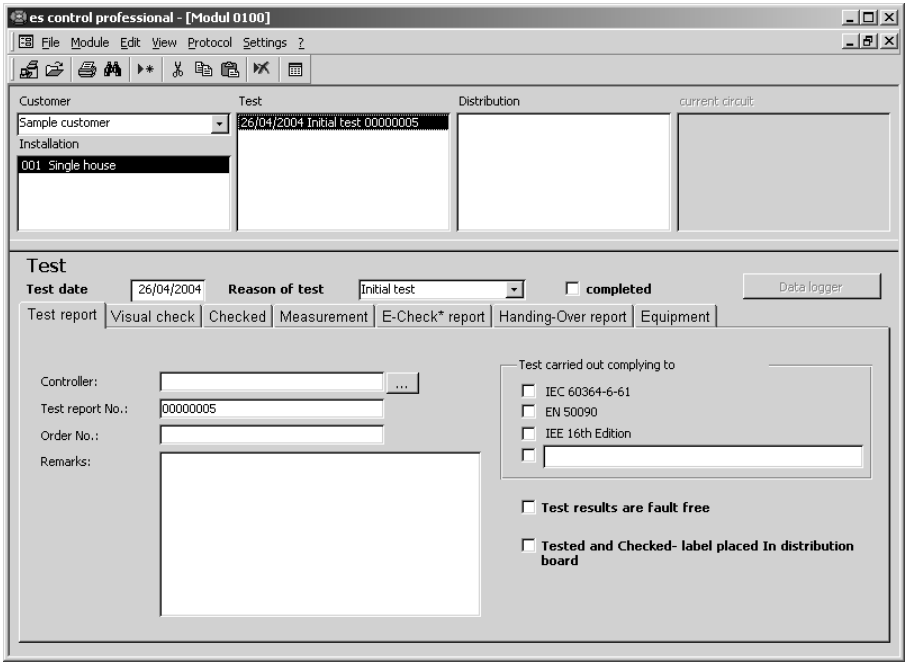


Figure 5.8: Add data record for test

☞ All fields and entries available within the register windows are printed on the “Handing-Over Report, Test report, and E-CHECK* Report” ZVEH protocols.

Completing the "Test report" Register Window

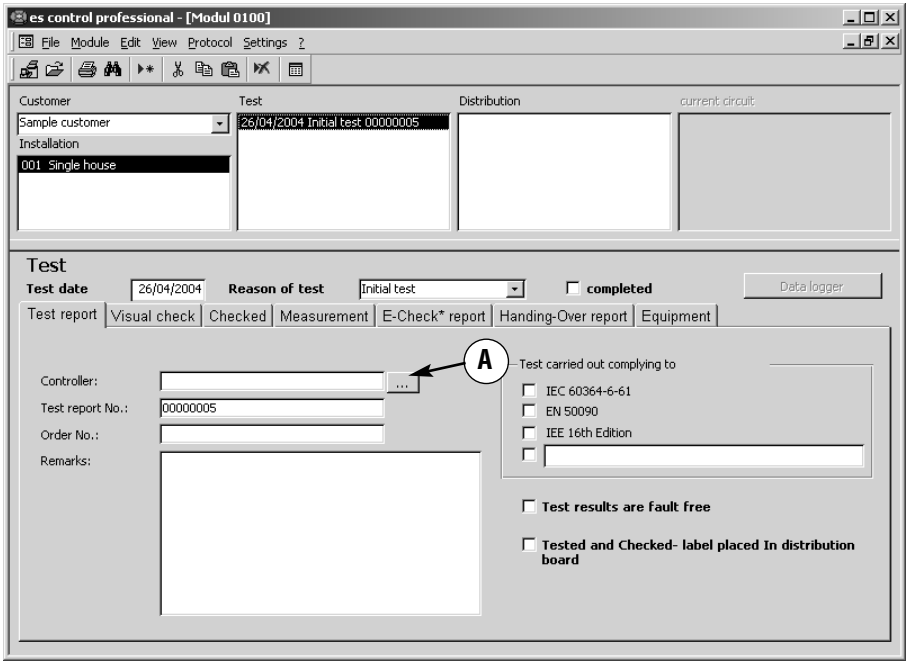


Figure 5.9: "Test report" Register Window

- Select the name of the controller by clicking on the "..." (A) button on the right of the entry field.

- Then, the "Controller" window below is displayed. Select one entry by clicking on the respective controller (e.g. Controller Anybody, John) and confirm by clicking on "OK".

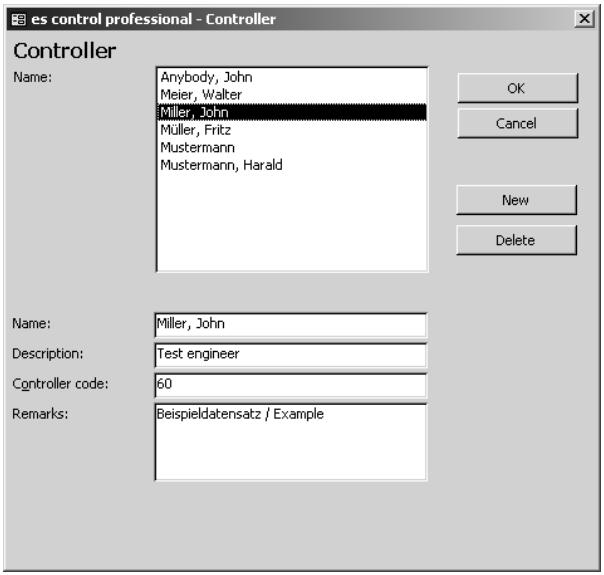


Figure 5.10: “Controller” window

- Complete the fields “Order No.” (e.g. by indicating 2004-05) and “Remarks” as required.
- All further marked windows or entry windows can be marked or completed as required.

☞ A test report number is automatically entered into the “Test report No.” field. For this, es control 0100 professional searches all customers for the last assigned number and enters the next free number into this field. This suggested test report number can, however, be modified at any time.

Completing the “Visual Check, Checked, E-CHECK* report” register window

- In compliance with the performed tests, the marked windows and entry windows can be marked and completed in these register windows, as required.

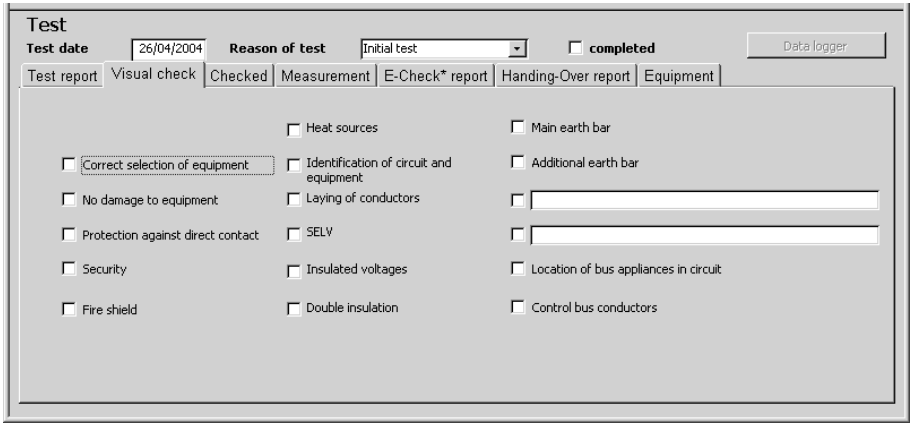


Figure 5.11: “Visual check” register window

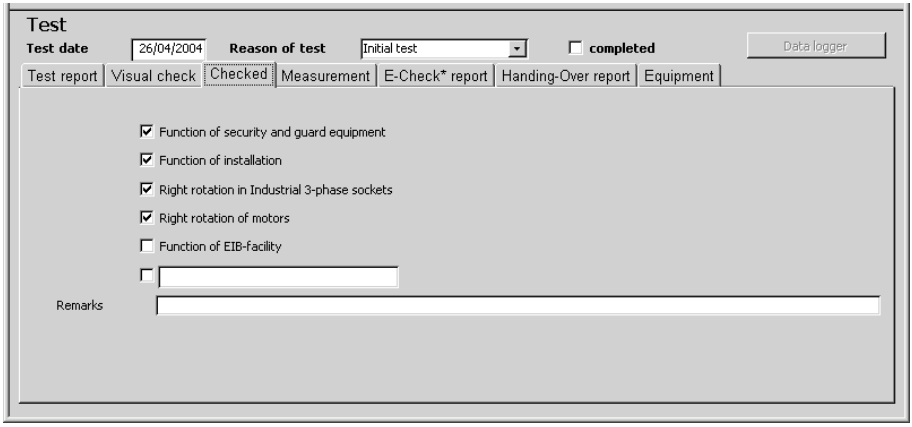


Figure 5.12: “Checked” register window

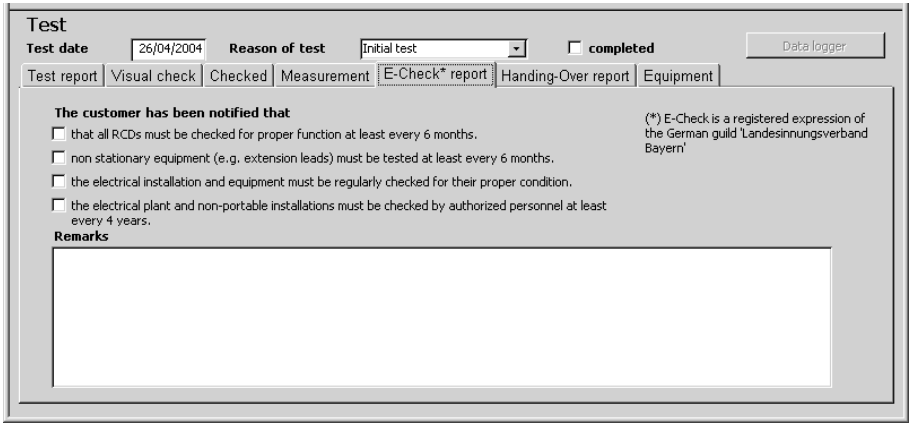


Figure 5.13: “E-CHECK* Report” register window

Completing the “Measurement” Register Window

- Within this register window, both marked fields and the “Insulation Resistance of Bus Conductor” entry field can be used as proof of the described tests.

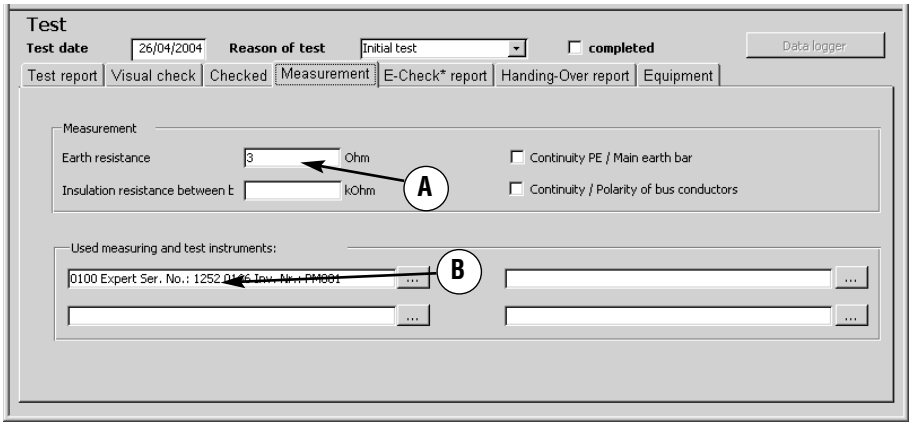


Figure 5.14: “Measurement” register window

This register window comprises two additional windows, “Earth Resistance” (A) and “Used Measurement and Test Instruments” (B). Both of these fields have the following characteristics:

- The highest earth resistance value measured from all pertaining distributions and current circuits is automatically entered into the “Earth Resistance” field (refer to A) when reading in the measurement data. This value can be modified at any time.

☞ This value can be taken from a direct earth measurement or from an RCD contact voltage measurement. If the measurement values in the pertaining tables under ”Distribution-Current Circuit – Measurement Data” are subject to subsequent changes, these values will not be updated.

- When reading in measurement data, the type and the serial number of up to four used measurement instruments are entered into the field “Used measuring and test instruments” (B). However, it is possible to directly enter a measurement instrument. For this purpose, click on the “...” button to the right of the entry field. The “Test Instrument” window appears. Search for the respective entry and confirm by clicking on “OK”.

☞ Both entry fields as well as both marked fields ”Measurement Instrument Type” and ”Serial Number” are printed with the “Test report” ZVEH protocols.

Filling in the “Handing-Over Report” and “Equipment” Register Windows

- Entries relating to electrical supply companies, mains voltage, counter, and system type can be made in the “Handing-Over Report” register window.

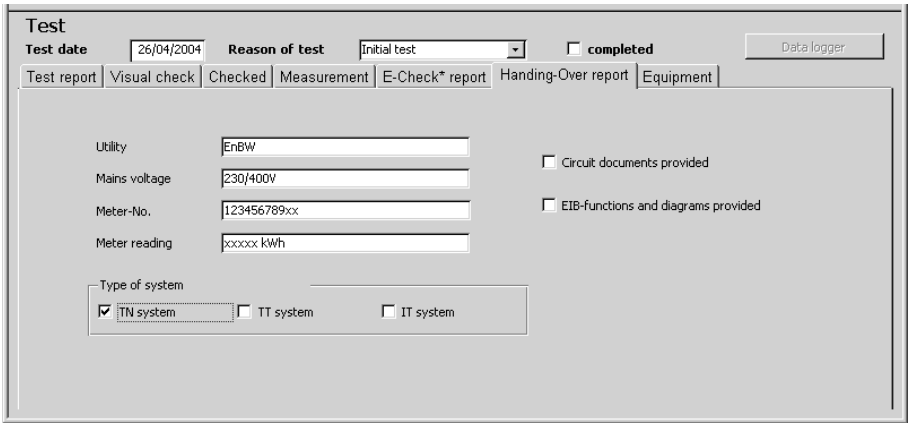
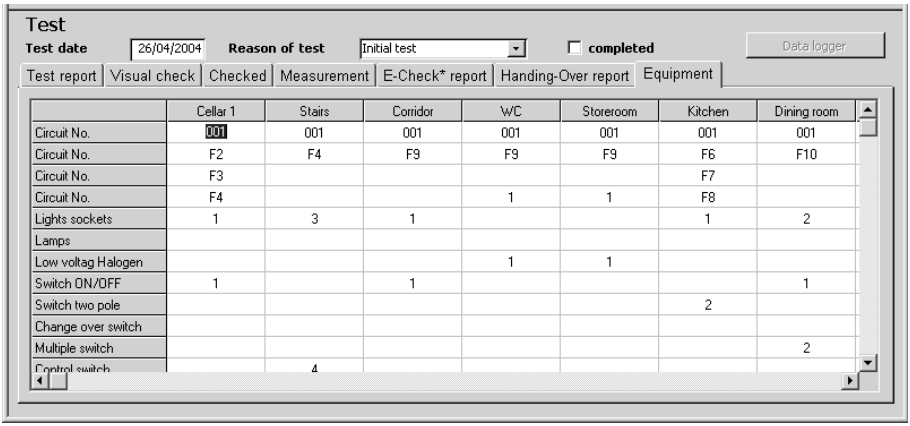


Figure 5.15: “Handing-Over Report” register window

- The assignment of the equipment to the individual rooms and sites as well as distributions and current circuits are entered into the “Equipment” register window.



	Cellar 1	Stairs	Corridor	WC	Storeroom	Kitchen	Dining room
Circuit No.	001	001	001	001	001	001	001
Circuit No.	F2	F4	F9	F9	F9	F6	F10
Circuit No.	F3					F7	
Circuit No.	F4			1	1	F8	
Lights sockets	1	3	1			1	2
Lamps							
Low voltag Halogen				1	1		
Switch ON/OFF	1		1				1
Switch two pole						2	
Change over switch							
Multiple switch							2
Control switch		4					

Figure 5.16: “Equipment” register window

☞ The Entries from both register windows are printed on the Handing-Over report.

☞ The “Equipment” table contains 58 columns and maximum 48 lines. Columns 1-29 are printed on the first page, columns 30-58 are printed on the following page.

5.2.4 Create Data Record for Distribution

☞ In this example distributions and current circuits are created manually. If measurement values are transferred from the Test and Measurement instruments equipped with a data memory (e.g. UNITEST 0100-Expert plus or 0100-EUROtest), distributions and current circuits are automatically created within the database, once you accept measurement data and assign it to Customer/Installation/Test.

☞ The manual entry facility for distributions and current circuits allows the entry of a installation structure prior to testing. A current circuit list can be printed, helping the controller when entering distribution and current circuit codes at the time of saving the measurement values.

☞ Various default settings for installations with the respective structure regarding distributions and current circuits can be created (e.g. detached family house, multiple dwelling, building site main cabinet). If required, they can be copied or modified.

- Change to the “Distribution” window selecting either the “View | Distribution” menu or directly click on the “Distribution” list field. The previously created data records for “Customer A”, “Installation 1”, and “New installation” must still be displayed in the respective windows.

- Create a new data record using the “Data record | Add” menu command or use the context menu, which may be accessed by clicking the right mouse key. A new distribution “xxxxx” is created for the new installation within “Installation 1” for “Customer A”. The new distribution data record is displayed as shown in Figure 5.17.

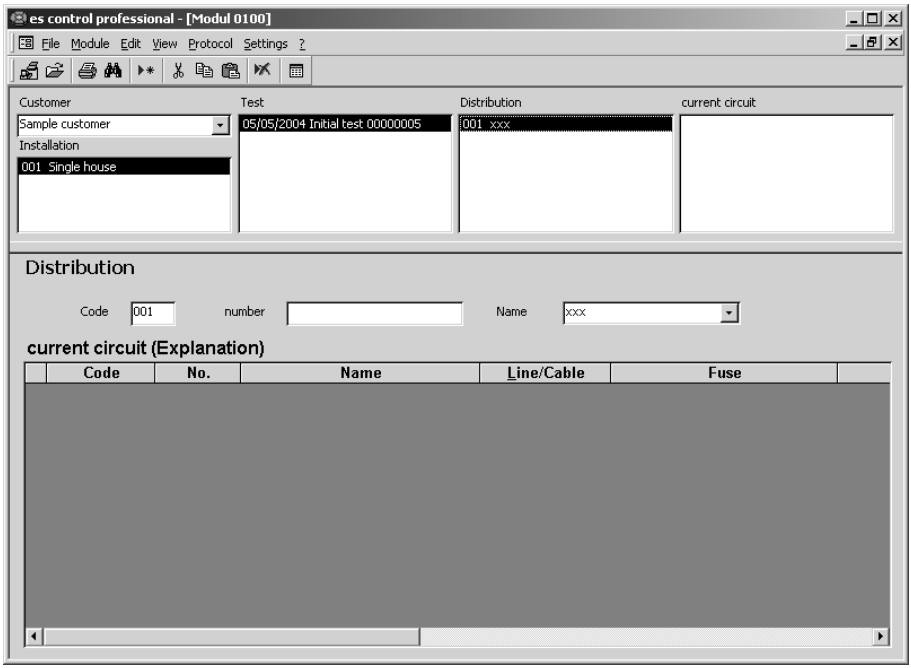


Figure 5.17 Add data record for distribution

- The **distribution code** is automatically assigned when creating the data record. It is advised that this code remains unchanged. However, if desired, it can be modified accordingly. The code must be a three-digit number between 1 and 999.

☞ The distribution code is used to save the measurements within the test instrument to ensure that they are automatically assigned to the pertaining distributions and current circuits when reading in the data. The distribution code is the number having been entered for the distribution when saving at the test instrument. The measurement data is saved under this number within the test instrument.

☞ For the instrument 0100-Expert plus this is memory level “U” (sub distribution).

☞ For the instrument 0100-Expert this is memory level “S”.

- Furthermore, a **number (No.)** can be indicated for the distribution. Consequently, you are kindly asked to leave this field empty. If a value is entered, this value is printed in lieu of the distribution code.

- Select the distribution name “Main distribution (with meter counter)” by clicking on the “▾” field on the right of the entry field. A list is now displayed indicating all distribution designations used. Select the respective entry from the list.

☞ For automatic measurement assignment to distributions and current circuits, the distribution code within one test must be unambiguous and contain no double numbers! The distribution code is automatically assigned when creating the data record. It is advised that this code remains unchanged. However, if desired it can be modified accordingly.

☞ If double distribution codes occur within the same client, reference will be made by the display of a respective message. The codes must be modified accordingly in the distribution window, please refer to section 7.4.4 “View | Distribution” or to section 7.4.5 “View | Current Circuit”.

5.2.5 Create Data Records for New Current Circuits

☞ In this example distributions and current circuits are created manually. If measurement values are transferred from the Test and Measurement instruments equipped with a data memory (e.g. UNITEST 0100-Expert, UNITEST 0100 Expert plus, or 0100-EUROtest), distributions and current circuits are automatically created within the database, once you accept measurement data and assign it to Customer/Installation/Test.

☞ The manual entry facility for distributions and current circuits allows the entry of a installation structure prior to testing. A current circuit list can be printed, helping the controller when entering distribution and current circuit codes at the time of saving the measurement values.

- Change to the “Current Circuit” window selecting either the “View | Current Circuit” menu or directly click on the “Current Circuit” list field. The previously created data records for “Customer A”, “Installation 1”, “New installation”, and “Counter Cabinet with ...” must still be displayed in the respective windows.

- Create a new data record using the “Data record | Add” menu command or use the context menu, which may be accessed by clicking the right mouse key. A new current circuit “001 xxxxx” is created at the “Counter Cabinet with ...” distributor for the new installation within “Installation 1” for “Customer A”. The new distribution data record is displayed as shown in Figure 5.18.

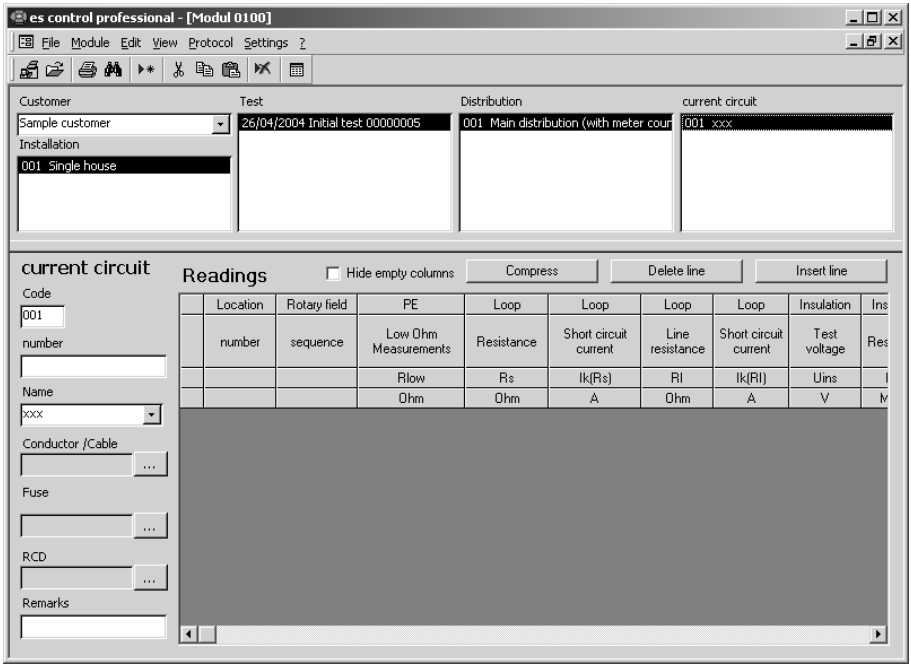


Figure 5.18: Add record for current circuit

- The current **circuit code** is automatically assigned when creating the data record. It is advised that this code remains unchanged. However, if desired, it can be modified accordingly. The code must be a three-digit number between 1 and 999.

☞ The current circuit code is used to save the measurements within the test instrument to ensure that they are automatically assigned to the pertaining distributions and current circuits when reading in the data. The current circuit code is the number having been entered for the current circuit when saving at the test instrument.

☞ For the instrument 0100-Expert plus this is memory level “S” (Current circuit).

☞ For the instrument 0100-Expert this is memory level “P”

- Furthermore, a **number (No.)** can be indicated for the current circuit. Here, the current circuit designation within the distribution can be entered. Enter “1F1”in this field. If a designation is entered here, this entry is printed in line of the current circuit code.

- Select the current circuit **name** “Bathroom” by clicking on the “▾” field on the right of the entry field. A list is now displayed indicating all current circuit designations used. Select the respective entry from the list.

- Select the used **conductor/cable** type by clicking on the “...” button on the right of the entry field. The “Conductor/Cable” window appears. Search for the respective entry (e.g. NYM-J 3x1,5 mm2) and confirm by clicking on “OK”.

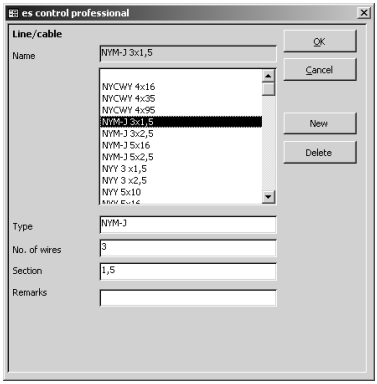


Figure 5.19: Selection of the conductor/cable

- Select the type of used excess current **protection device** (fuse) by clicking on the “...” button on the right of the entry filed. The “Fuse” window is displayed. Search for the respective entry (e.g. LSB 16 A) and confirm by clicking on “OK”.

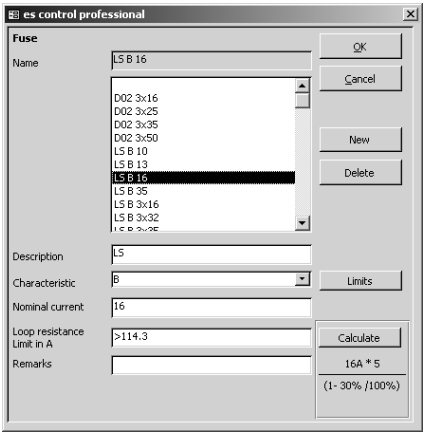


Figure 5.20: Selection of fuse

- Select the type of used RCD by clicking on the "..." button on the right of the entry filed. The "RCD" window is displayed. Search for the respective entry (e.g. RCD 25/0.03 A) and confirm by clicking on "OK".

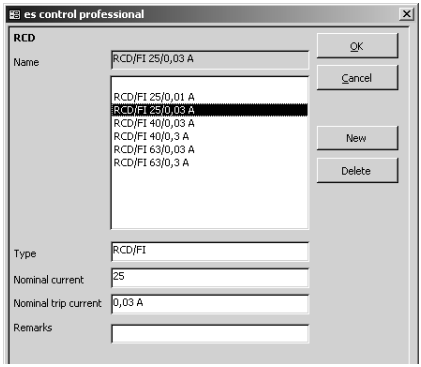


Figure 5.21: Selection of RCD

- Now create two further new data records using the "Data record I Add" menu command or use the context menu, which may be accessed by clicking the right mouse key. Two new current circuits "002 xxxxx" and "003 xxxxx" are created.

- Select the **current circuit names** “Kitchen” and “Bedroom, Children’s Room” for the two new current circuits by clicking on the “ ▾ ” field on the right of the entry field and search for the respective entry in the list.
- Respectively enter “1F2” and “1F3” for the **current circuit number**.
- Select the used **conductor/cable** type by clicking on the “...” button on the right of the entry field. Search for the respective entry (e.g. NYM-J 3x1,5 mm2) and confirm by clicking on “OK”.
- Select the type of used fuse by clicking on the “...” button on the right of the entry field. Select the appropriate entry (e.g. LSB 16 A) and confirm by clicking on “OK”.

☞ For automatic assignment of the measurements to distributions and current circuits, the distribution code within one test must be unambiguous and contain no double numbers! The current circuit code is automatically assigned when creating the data record. It is advised that this code remains unchanged. However, if desired it can be modified accordingly.

☞ If double current circuit codes occur within the same client, reference will be made by the display of a respective message. The codes be modified accordingly in the current circuit window, please refer to section 7.4.4 “View | Distribution” or to section 7.4.5 “View | Current Circuit”.

- Now create measurements for the selected current circuit by clicking twice the “Insert line” button or use the context menu, which may be accessed by clicking the right mouse key. Respectively, one line is created for the entry of measurement data.

- Type the appropriate measurement data into these two lines and into the respective fields. To enter the data, click with the mouse on the respective field and type the measurement data.

After the entry, your window should look as follows:

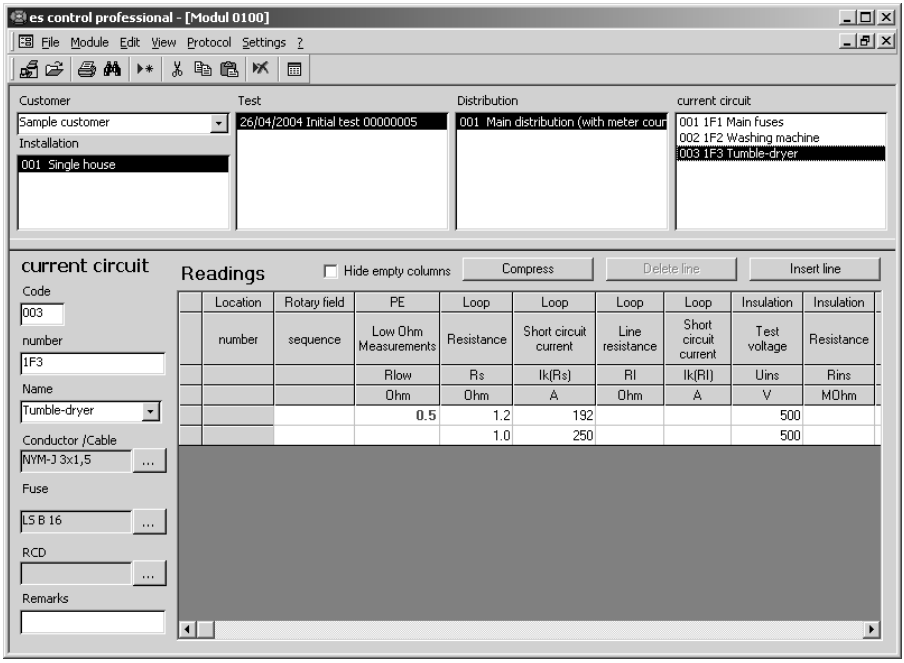


Figure 5.22: Data record for distribution and current circuit including entered data and measurement values (example).

5.3 Search, Edit and Delete Data Records

This section deals with the editing, duplicating (copying), and deleting of data records.

☞ When receiving the UNITEST es control professional software, the data base is already equipped with sample data records including examples. If required, they can be modified or deleted..

☞ The entered or modified data is written into the database as soon as the current entry window is closed or another data record is selected.

5.3.1 Search Data Records

The data record of a test can be searched, found and directly displayed via the “Data record I Search protocol...” function.

Customer:	Installation:	Test:
- Customer name	- Code	- Test report No.
- Customer No.	- Number	- Order No.
	- Name	- Test date

- Select the “Data record I Search protocol...” menu and enter “Order No.” “2004*” in the window, then click on the “OK” button.

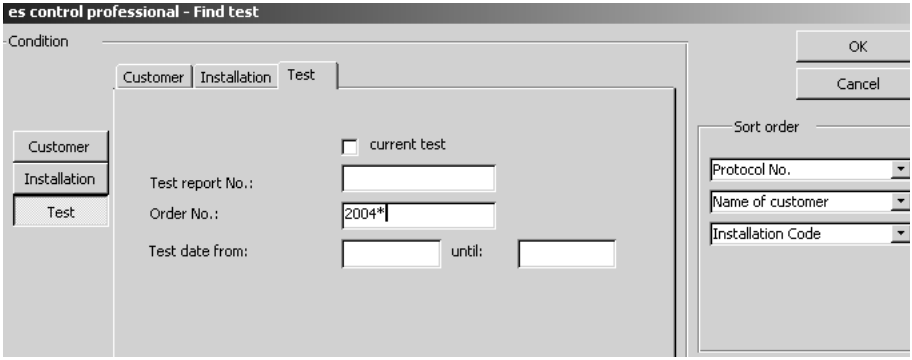


Figure 5.23: Search protocol

☞ Both search fields also function via the substitutes '*' for several characters and '?' for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered all tests are listed in a table as search result.

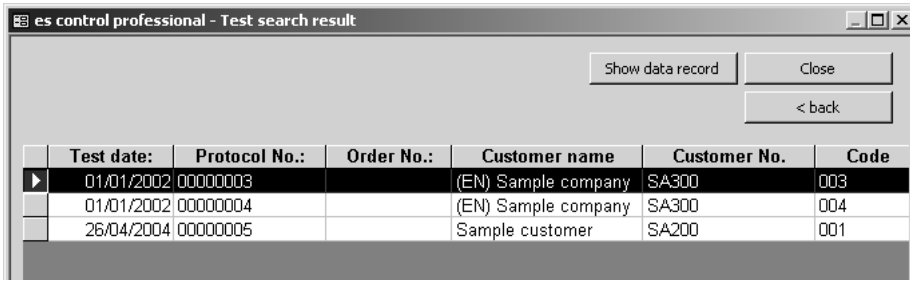


Figure 5.24: Search result

- Select by marking the desired data record using the mouse and click the "Show data record" button. The requested data record is displayed in the "Test" window situated in the background. Click the "Close" button in the search window.

☞ If the desired data record has not been found, you may return to the search mask via the "<back" button

5.3.2 Edit Data Records

The data record now displayed on the screen can be modified accordingly, please refer to the example Figure 5.25.

- Modify the “Controller” field by clicking on the “...” button on right of the entry field and search for the respective entry (e.g. Anybody, John). Confirm by clicking on “OK”.

- Modify the “Order No.” field, e.g. to 2004-10.

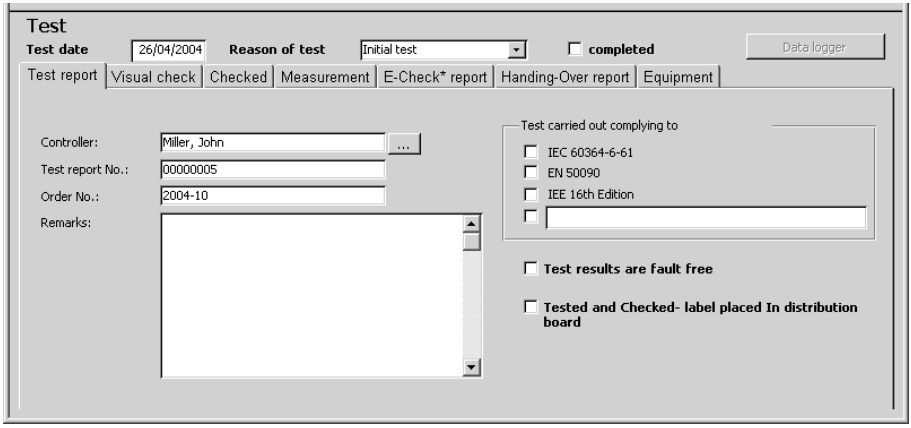


Figure 5.25: Modifying data record for test

5.3.3 Duplicate Data Records (copy)

This function allows the complete duplication of available data records.

- Select the “New installation” data record, example Figure 5.25.
- Select from the “Data record” menu the “Duplicate” function or use the context menu, which may be accessed by clicking the right mouse key. A copy of the previously selected data record is made. In the example below, a new test is created “New installation 00000004 (copy of 00000003)”, please refer to Figure 5.26. All subordinate distributions and current circuits are also copied.

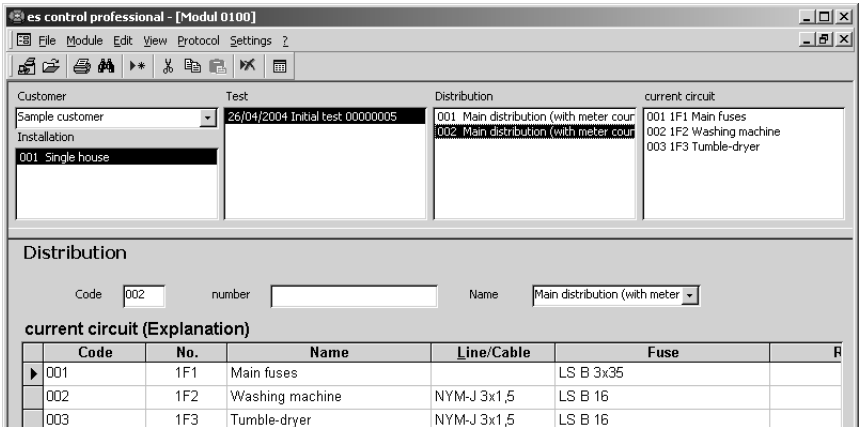


Figure 5.26: Duplicate data record for test

- Hereafter, the new data record can directly be modified by respecting the field modification procedure as follows:
- Modify the field “Reason of Test” into “Repeat Test”.
- Modify the field “Test report No.” into “00000004”.
- Modify the field “Order No.” into “2004-11”.

☞ The measurements are not copied during duplication, they have to be subject to new creation or the data must be read-in from the test instrument (please refer to section 7.1.1), as detectable measurements must be available for every test at any time

- For the repeat test of example Figure 5.26, select the data record “Main distribution (with meter counter)”.

- Select the “Duplicate” function from the “Data record” menu. A copy of the previously selected data record is made. The example below shows the creation of a new distribution “Main distribution (with meter counter) (copy)”. Please refer to Figure 5.27. All subordinate current circuits are also copied.

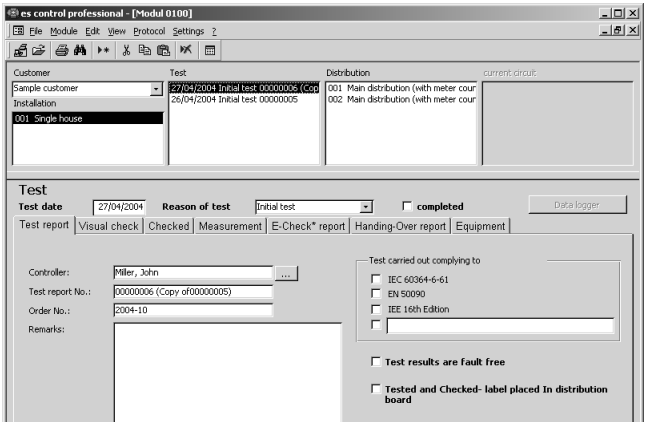


Figure 5.27: Duplicate data record for distribution

- Hereafter, the new data record can directly be changed. Modify the respective fields if requested.

- Modify the name of the distribution to “Sub distribution 1st floor”.

5.3.4 Cut and Paste Data Records

- Select the data record for the “Sub distribution 1st floor” distribution from the repeat test.
- Select the function “Cut” from the “Data record” menu or use the context menu, , which may be accessed by clicking the right mouse key.
- Now enter the “Test” window and select the test “New installation” by directly clicking on the “Test” list field on the respective entry “New installation “.
- Now insert the marked data record into the selected test. For this, use the “Data record | Insert” menu command or the context menu.

The data record for “Subdivision 1st floor” is moved together with all subordinate current circuits and (if available) all measurements from “Repeat test” to “New installation”.

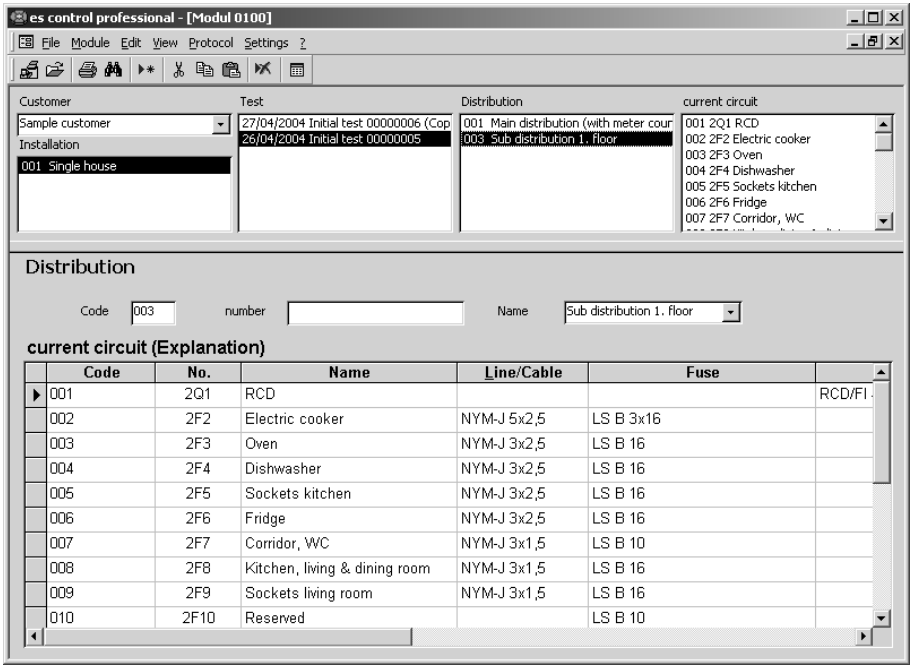


Figure 5.28: Insert data record

5.3.5 Delete Data Records

- Select the data record “Kitchen” from example 5.3.4.
- Now delete the marked data record. For this, use the “Data record | Delete” menu command or the context menu. Confirm the following safety command by clicking on “OK”.



Figure 5.29: Delete data record

- The ”Kitchen” data record is now deleted.

5.4 Performing Tests and Measurements using an Example

This section deals with the performance and recording of tests and measurements on electrical installations. The structure of the installation to be tested should be created in es control 0100 prior to performing the measurements. Thus, assignments of the measurements to distributions and current circuits are simplified.

A current circuit list containing codes, numbers, and names for distributions and current circuits is printed. It is used as model for correct saving of measurements within the test instrument.

Furthermore, an explanation for the distributions is printed, bearing the numbers and designations of the pertaining current circuits.

Then, the measurements are performed and re-transferred into the UNITEST es control database. In addition to the measurements, the tests performed are recorded. Finally, the test reports are printed

☞ The structure for the installation to be tested is already created as demonstration data record for this example. The respective measurement data can be imported from a file.

5.5 Preparing the Test Instrument

- Clear the data memory of your test instrument.

5.6 Printout of a Current Circuit List for Distributions and Current Circuits

The codes, numbers, and names for the distributions and current circuits are printed on the current circuit list.

☞ The current circuit list is used as model for saving the measurements within the test instrument under the correct distribution and current circuit codes.

When working with a UNITEST "0100-Expert":

☞ When saving data with the UNITEST 0100-Expert plus instrument, the distribution code must be entered under 'U' and the current circuit code under 'S'.

☞ When saving data with the UNITEST 0100-Expert instrument, the distribution code must be entered under 'S' and the current circuit code under 'P', in order to ensure correct assignment within the es control 0100! The designation 'S' for current circuit and 'P' for location are no longer valid for the es control 0100 professional!

- Select customer, installation, and test in the UNITEST es control 0100 professional software (sample customer, example 1, new installation), in compliance with Figure 5.30.

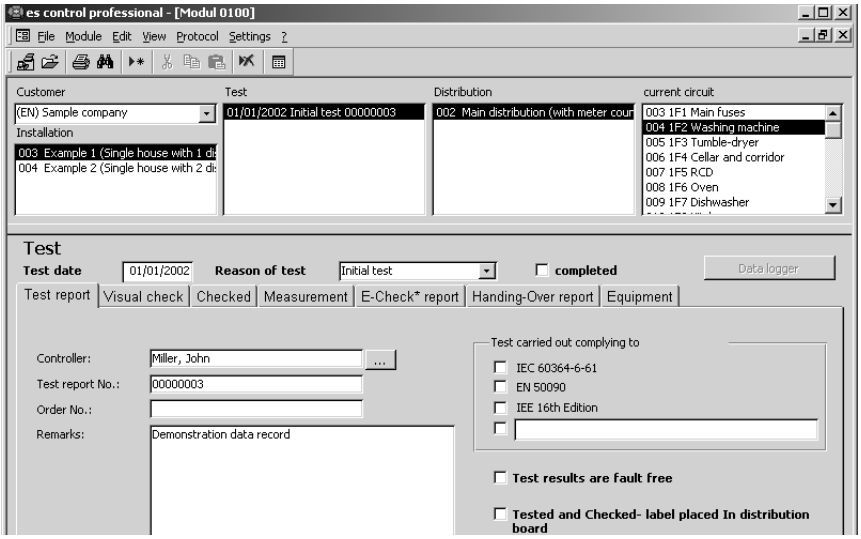


Figure 5.30: “View Test” window

- Select the function “Report | Test | Current Circuit List”. After opening this function, the window below is displayed.

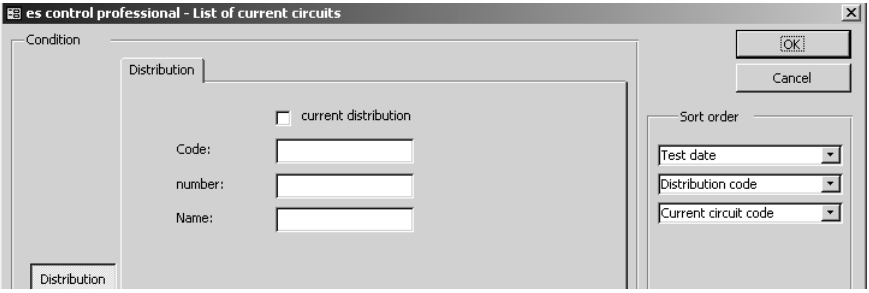


Figure 5.31: "Current circuit list - Search " window

A current circuit list can be limited to individual sections using the search fields. Additionally, the sort order criterion allows the selection between various items to sort the current circuit list.

☞ The search fields also function via the substitutes '*' for several characters and '?' for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all tests are displayed as search results in one table.

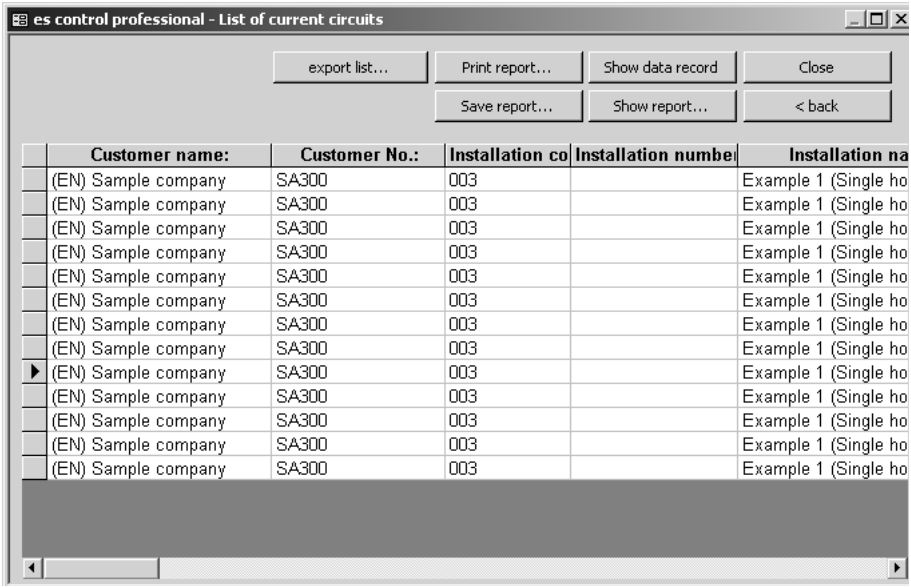


Figure 5.32: „Current Circuit List - Result" window

- To preview the printout and to set the format, please click on the "View page" button to also set the margins for this printout form.

- Now print the current circuit list by clicking on the "Print" button. The list indicated below is printed.

Current circuit list

created at 27/04/2004

Customer

number	SA300
Name	(EN) Sample company

Installation

Code	003
number	
Name	Example 1 (Single house with 1 distribution)
Street	
City	
Contact	
Phone	

Test

Test date	01/01/2002
Test report No.	00000003
Order No.	



C:\Programme\BEHA\es control professional\Beispiel-Kantage.bmp

Distribution code 002 **Distribution No** **Distribution name** Main distribution (with meter counter)

current circuit

Code	No.	Name	Conductor /Cable	Fuse	RCD	Remarks
003	1F1	Main fuses		LS B 3x35		
004	1F2	Washing machine	NYM-J 3x1,5	LS B 16		
005	1F3	Tumble-dryer	NYM-J 3x1,5	LS B 16		
006	1F4	Cellar and corridor	NYM-J 3x1,5	LS B 16		
007	1F5	RCD			RCD/FI 40/0,03 A	
008	1F6	Oven		LS B 3x16		
009	1F7	Dishwasher	NYM-J 3x2,5	LS B 16		
010	1F8	Kitchen	NYM-J 3x2,5	LS B 16		
011	1F9	Corridor, WC	NYM-J 3x2,5	LS B 16		
012	1F10	Dining & living room	NYM-J 3x2,5	LS B 16		
015	1F11	Sleeping room & nursery	NYM-J 3x2,5	LS B 16		
016	1F12	Bath room	NYM-J 3x2,5	LS B 16		
017	1F12	Bath room				

Figure 5.33: “Current Circuit List” printout

5.7 Printout of an Explanation for Current Circuits

The printout of the explanation contains the numbers and designations for the distributions and the pertaining current circuits.

☞ The explanation can be attached to the respective distribution to supply the installation operator with explanations about the assignment of switchboards and fuses to the current circuits.

- Select the Customer, Installation, and Test in the UNITEST es control 0100 software (Sample customer, example 1, new installation) in compliance with Figure 5.30.
- Select the function "Protocol | Test | Explanation". After opening this function, the window "List Explanation" is displayed.

A current circuit list can be limited to individual sections using via the search fields. Additionally, the sort order criterion allows the selection between various items to sort the list.

☞ The search fields also function via the substitutes '*' for several characters and '?' for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all tests are displayed as search results in one table

- To preview the printout and to set the format, please click on the "View page" button to also set the margins for this printout form.

- Now print the explanation by clicking on the "Print" button. The list indicated below is printed.

Explanation created at 27/04/2004

Electrics company (contractor)
Ch. Beha GmbH
In den Engematten 14
79286 GLOTTERTAL / Germany

Project Manager / Responsible for installation:

Installation: 003 **Example 1 (Single house with 1 distribution)**

Distribution: 002 **Main distribution (with meter counter)**

No.	Description	Fuse	RCD
1F1	Main fuses	LS B 3x35	
1F2	Washing machine	LS B 16	
1F3	Tumble-dryer	LS B 16	
1F4	Cellar and corridor	LS B 16	
1F5	RCD		RCD/FI 40/0,03 A
1F6	Oven	LS B 3x16	
1F7	Dishwasher	LS B 16	
1F8	Kitchen	LS B 16	
1F9	Corridor, WC	LS B 16	
1F10	Dining & living room	LS B 16	
1F11	Sleeping room & nursery	LS B 16	
1F12	Bath room	LS B 16	

Figure 5.34: "Explanation" printout

5.8 Performing the Measurement

- Now perform the measurement for the selected electrical installation “Example 1”. Use the printed current circuit list for saving.

When working with a UNITEST ”0100-Expert”:

☞ When saving data with the UNITEST 0100-Expert plus instrument, the distribution code must be entered under ‘U’ and the current circuit code under ‘S’.

☞ When saving data with the UNITEST 0100-Expert plus instrument, the distribution code must be entered under ‘S’ and the current circuit code under ‘P’, in order to ensure correct assignment within the es control 0100 professional! The designation ‘S’ for current circuit and ‘P’ for location is no longer valid for the es control 0100 professional!

☞ If desired, you may read in the measurement results of the performed tests for this example directly from a file without having to perform the measurements. For example 1, measurements for a detached family house are used.

- Use the function “File | Read in data from file”. Read in the measurement data from the file “BEISPIEL1.SER” and continue with section 5.10.

5.9 Transfer of Measurements to UNITEST es control 0100 professional

After having performed the tests, the measurements are transferred from the test instrument to the computer.

- Select the “File | Receive data from instrument” function. After having opened this function, the window indicated below is displayed.

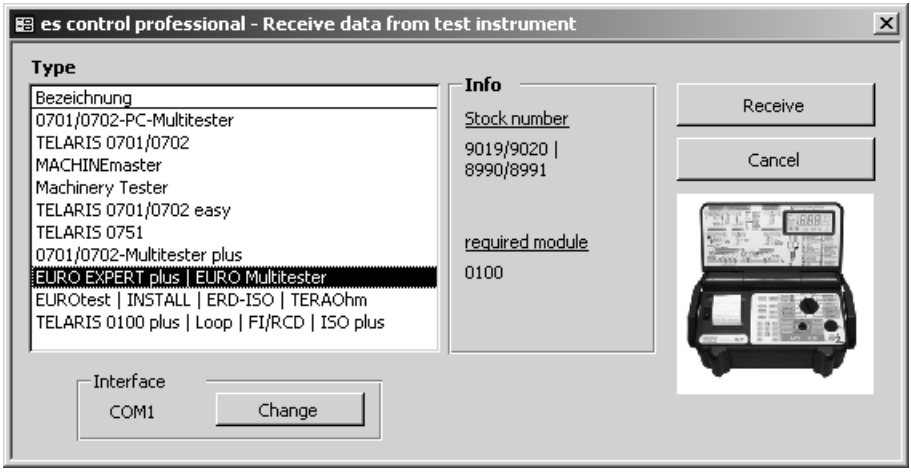


Figure 5.35: “File | Receive data from instrument” window

- Referring to the list, select the test instrument from which you want to read in measurements.

☞ If a test instrument is not yet available within the instrument list, it is automatically created during the data transfer. The data may then be completed via the "View | Test Instrument" menu.

☞ If no serial number is transferred, the serial number field is displayed for a unique serial number entry. If several test instruments of the same type are available without serial number, the respective number must selected from the list before data transfer.

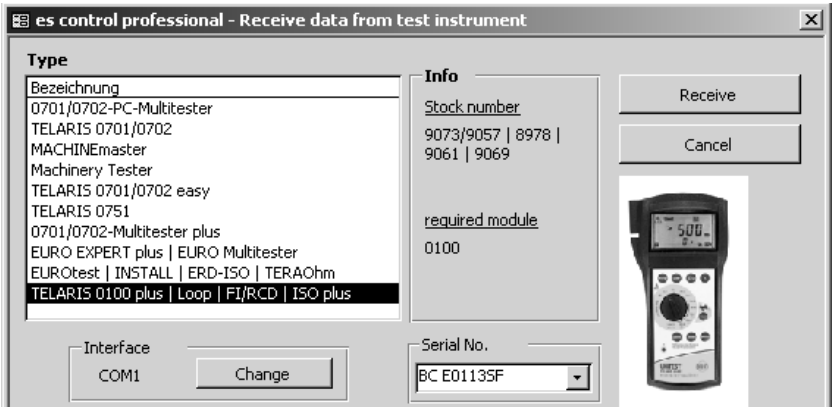


Figure 5.36: “File | Receive data from instrument” window (without serial number)“.

- Click on the “Receive” button and the following window is displayed.



Figure 5.37: “Serial Communication” window

- Now, start the data transfer at the test instrument. You can monitor the transfer of the individual measurement data. The data transfer is started automatically for 0100-EUROtest, TERA-Ohm, 0100-INSTALLtest, and ERD-ISOtest. When working with the instruments 0100-INSTALLtest and ERD-ISOtest, the “RS 232” key must be pressed for data transfer.

☞ Absolutely wait until the data transfer is complete. Upon completion the window closes automatically

☞ When dealing with a large number of measurement values, the data transfer may require a longer time period (up to several minutes).

5.10 Assignment of the Measurements to Customer, Installation and Test

After the reading in of the measurement results from the test instrument or from a file, the read-in data must be assigned to customers, installations, and tests.

- A window indicating the assignment for the read-in measurements is displayed.

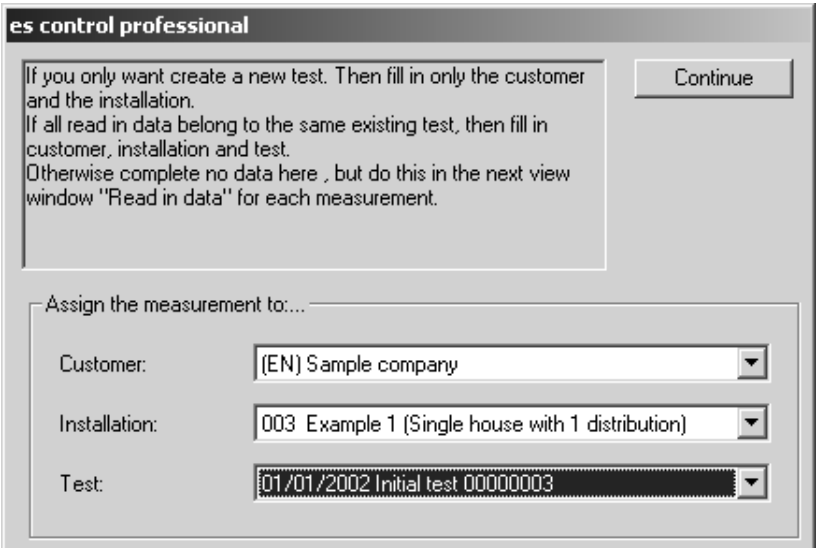


Figure 5.38: “Assign read-in measurements to” window

- Here, indicate the customer, the installation, and the test, to which the read-in measurements should be assigned. Select the sample customer, example 1, and new installation, then confirm with "Next”.

☞ The automatic assignment of measurement results to distributions and current circuits can only be performed if the distribution and current circuit codes have been correctly entered, in compliance with the current circuit list.

- When working with the EUROtest, a installation can be selected at this point, as the installation code is also transferred from the instrument. An assignment to the created test can be performed within the “Read in data” window (please refer to Figure 5.37).

5.11 Assignment of Measurements to Distributions and Current Circuits

Now, a list with the imported data is displayed (34 lines).

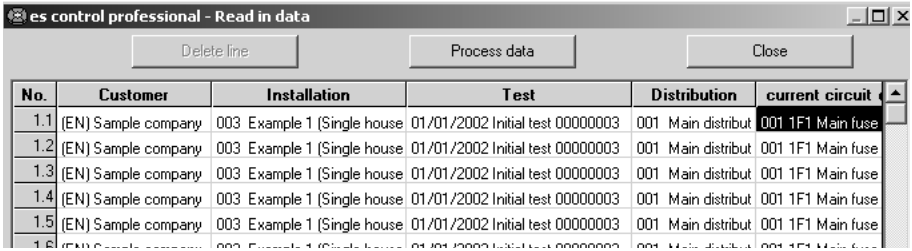


Figure 5.39: “Read in data” window

- Click on the “Process data” button. The read-in data is accepted into the UNITEST es control database.
- Then click the “Close” button to close the window.
- Check the assignment of the measurement data to distribution and the individual current circuits within the database by selecting sample customer, Example 1, New installation, ‘001 Main distribution (with meter counter)’ and ‘001 1F1 Main fuses’.
- To hide empty columns click on the marked field ‘Hide empty columns’ (A). The read-in measurement results are represented as shown in Figure 5.40.

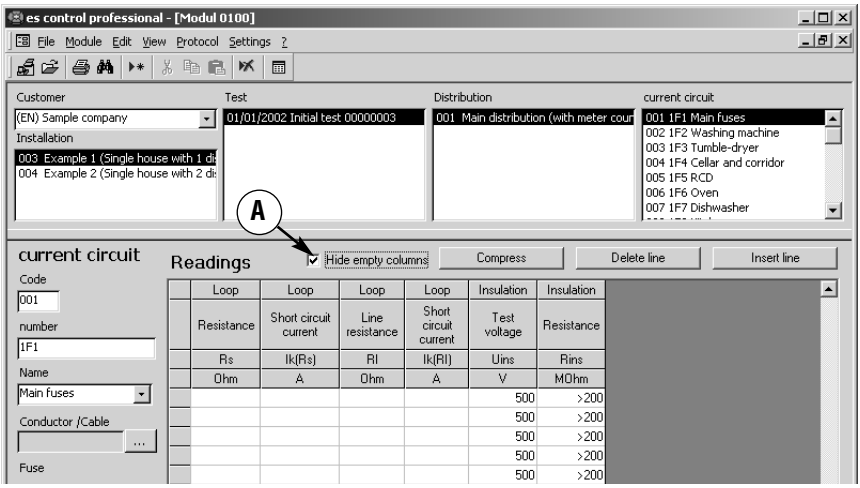


Figure 5.40: “Measurements” window

5.12 Printing Test reports

Finally, the test reports are printed. UNITEST es control 0100 professional allows the following possibilities to print test reports:

☞ Printing the reports in accordance with the ZVEH protocols (Handing-Over report, Test report, E-CHECK Report*) as printout or snapshot file

☞ Printing the test and measurement protocols as printout or as file in snapshot format (SNP), test format (TXT), richtext format (RTF), or excel format (XLS).

5.12.1 Printing the ZVEH Test Protocol

- Leave the selected customer, the installation, and the test on the display.
- Select the function “Protocol | Test | ZVEH protocol”. The following window is displayed:

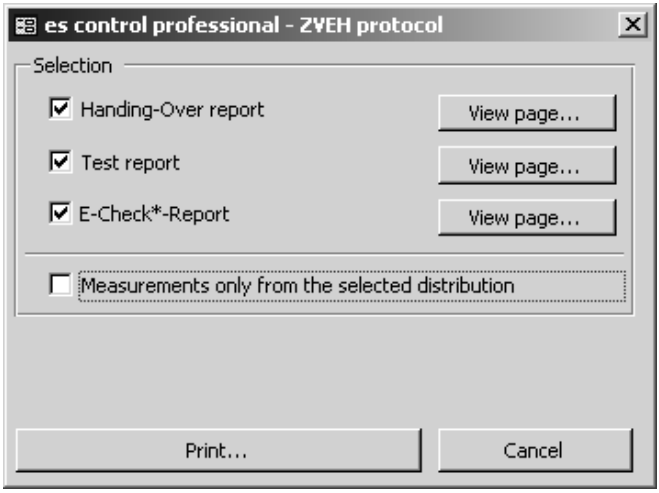


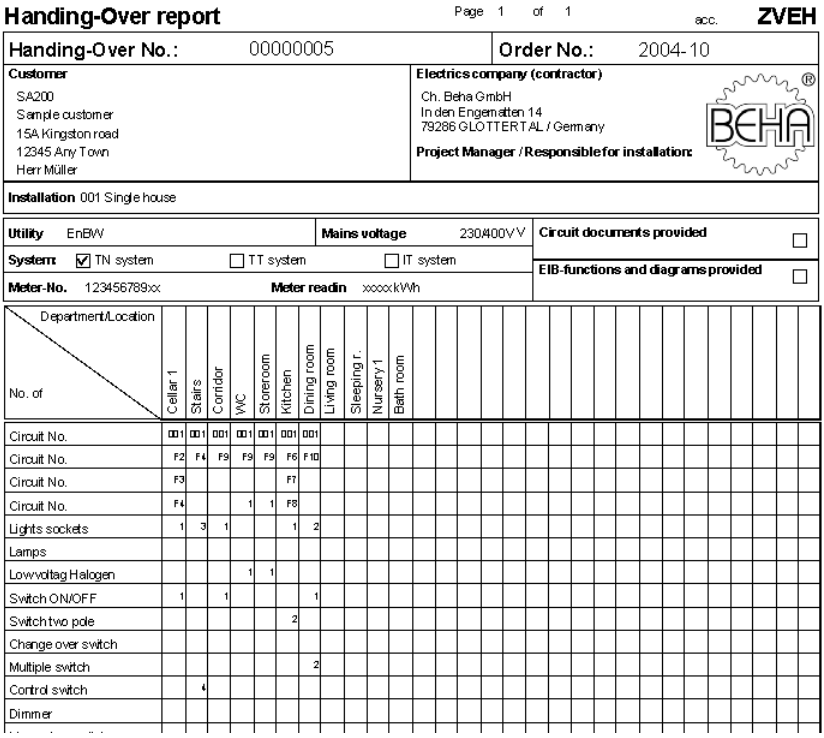
Figure 5.41: “ZVEH protocol” window

☞ The protocol can be reduced to printout the selected distribution using the "Measurements only..." field.

- Click on the “Preview” directly on the right of the desired marked field (e.g. ‘Handing-Over report’), to view the respective report prior to printing and to set up the page prior to printout.

The following functions are available in addition to the "Page setup" function:

- When clicking on the “Export as snapshot” button, the marked reports in the respective marked fields can be exported into a snapshot file.
- Click on the “Print” button to print the reports marked in the respective marked fields
- Click on the “Cancel” button to close this window again.



Handing-Over report Page 1 of 1 acc. **ZVEH**

Handing-Over No.:	00000005	**Order No.:**	2004-10

Customer
SA200
Sample customer
15A Kingston road
12345 Any Town
Herr Müller

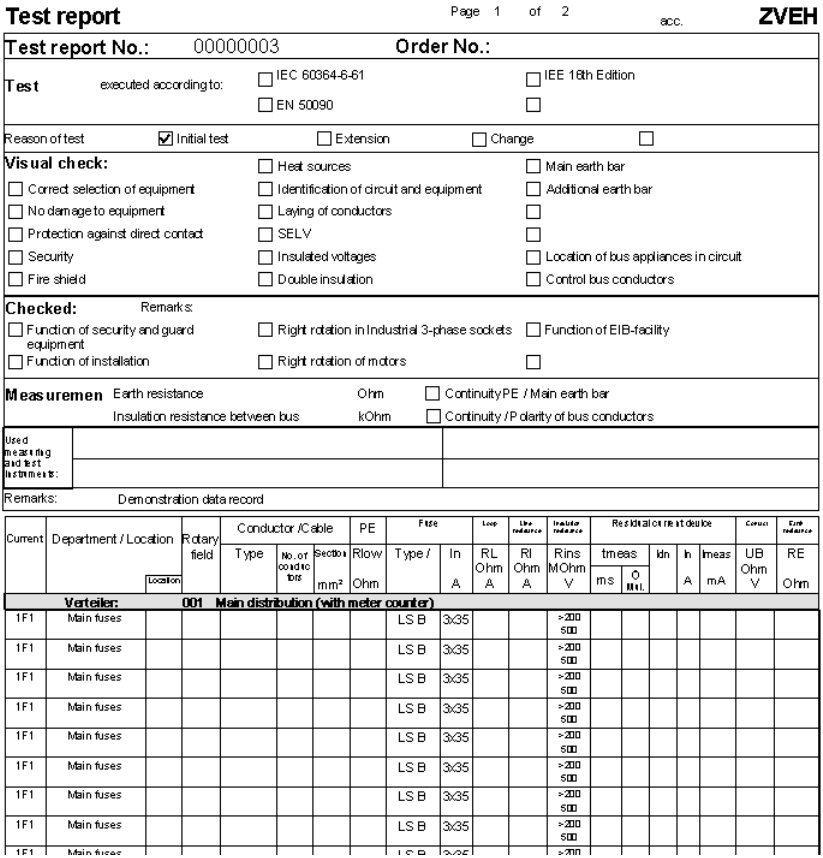
Electrics company (contractor)
Ch. Beha GmbH
In den Engematten 14
79286 GLOTTERTAL / Germany
Project Manager / Responsible for installation:

Installation 001 Single house

Utility EnBW | **Mains voltage** 230/400V V | **Circuit documents provided** ☐
System: ☑ TN system ☐ TT system ☐ IT system | **EIB-functions and diagrams provided** ☐
Meter-No. 123456789xx | **Meter readin** xxxxxkWh

Department/Location / No. of	Cellar 1	Stairs	Corridor	WC	Storeroom	Kitchen	Dining room	Living room	Sleeping r.	Nursery 1	Bath room
Circuit No.	001	001	001	001	001	001	001				
Circuit No.	F2	F4	F9	F9	F9	F6	F10				
Circuit No.	F3					F7					
Circuit No.	F4			1	1	F8					
Lights sockets	1	3	1			1	2				
Lamps											
Lowvoltag Halogen				1	1						
Switch ON/OFF	1		1				1				
Switch two pole						2					
Change over switch											
Multiple switch							2				
Control switch		4									
Dimmer											

Figure 5.42: “Handing-Over report” example printout



Test report Page 1 of 2 acc. **ZVEH**

Test report No.: 00000003 **Order No.:**

Test executed according to: ☐ IEC 60364-6-61 ☐ IEE 18th Edition ☐ EN 50090 ☐

Reason of test ☑ Initial test ☐ Extension ☐ Change ☐

Visual check:

☐ Correct selection of equipment	☐ Heat sources	☐ Main earth bar
☐ No damage to equipment	☐ Identification of circuit and equipment	☐ Additional earth bar
☐ Protection against direct contact	☐ Laying of conductors	☐
☐ Security	☐ SELV	☐
☐ Fire shield	☐ Insulated voltages	☐ Location of bus appliances in circuit
	☐ Double insulation	☐ Control bus conductors

Checked: Remarks:

☐ Function of security and guard equipment	☐ Right rotation in Industrial 3-phase sockets	☐ Function of EIB-facility
☐ Function of installation	☐ Right rotation of motors	☐

Measuremen Earth resistance Ohm ☐ Continuity PE / Main earth bar

Insulation resistance between bus kOhm ☐ Continuity / Polarity of bus conductors

Used measuring and test instruments:

Remarks: Demonstration data record

Current	Department / Location	Location	Rotary field	Conductor /Cable Type	No. of conductors	Section mm²	PE Rlow Ohm	Fuse Type /	In A	Loop RL Ohm A	Line reactance RI Ohm A	Insulation resistance Rins MOhm V	Residual current device tmeas ms	tmeas Ω limit.	Idn A	In A	Imeas mA	Contact UB Ohm V	Earth resistance RE Ohm
	Verteiler:		**001**	**Main distribution (with meter counter)**															
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							

Figure 5.43: “Test report” printout example

E - Check*-Report

Page 1 of 1 acc. **ZVEH**

Test report No.:	00000003	**Order No.**

Customer

SA300
(EN) Sample company
12 Oak Park
12345 Any Place
Mr. Miller

Electrics company (contractor)

Ch. Beha GmbH
In den Engematten 14
79286 GLOTTERTAL / Germany

Project Manager / Responsible for installation:

Installation

003
Example 1 (Single house with 1 distribution)

The customer has been notified that

- ☐ that all RCDs must be checked for proper function at least every 6 months.
- ☐ non stationary equipment (e.g. extension leads) must be tested at least every 6 months.
- ☐ the electrical installation and equipment must be regularly checked for their proper condition.
- ☐ the electrical plant and non-portable installations must be checked by authorized personnel at least every 4 years.

Remarks

Geprüft nach DIN VDE
BEHA
mit UNITEST Mess- und Prüfgeräten

Excerpt from German ZVEH REPORT 21/96 (§ 13 Nr. 4 Ziffer 2 VOB/B)

Preventative Maintenance, and included in same inspections and maintenance, is recommended or even required in many regulations. In the German regulation (VOB/B par 13 No. 4 issue July 1996) is in light of the warranty period especially referred to (printdown in short: without maintenance contract 1 year, 2 years warranty with maintenance contract). For Example the respective paragraph in the German accident prevention regulation (UVV) would also be to name for electrical plants and equipment.

Figure 5.44: “E-CHECK* Report” printout example

6.0 Example 2

In example 2, the structure of the installation to be tested is automatically created by the es control software 0100 when READING IN THE MEASUREMENTS. Thus, the structure must not be entered for unknown installations.
Here, only the customer and the installation must be created prior to the reading-in process. During reading in, a new test and the distributions and current circuits pertaining to the entered measurements are created by the es control 0100 software.
After reading in, the indications regarding the tests including the designations and numbers for distributions and current circuits must be entered.

☞ **It is highly recommended to work through one of the two examples detailed in section 5 or 6.**

The following is displayed:

- Basic settings of company address, interface, test instrument, controller
- Create data records for customers and installation
- Transfer or reading in measurement data
- Process data records for distributions and current circuits
- Process data record for test
- Printing an explanation
- Printing test reports

6.1 Basic Settings

Here, mention is only made about the basic settings, being of importance for the following example. The complete explanation regarding all settings is detailed in section 7.0

6.1.1 Setting the Serial Interface

- Select the “Interface” sub-menu from the “Settings” menu. The following window is displayed:

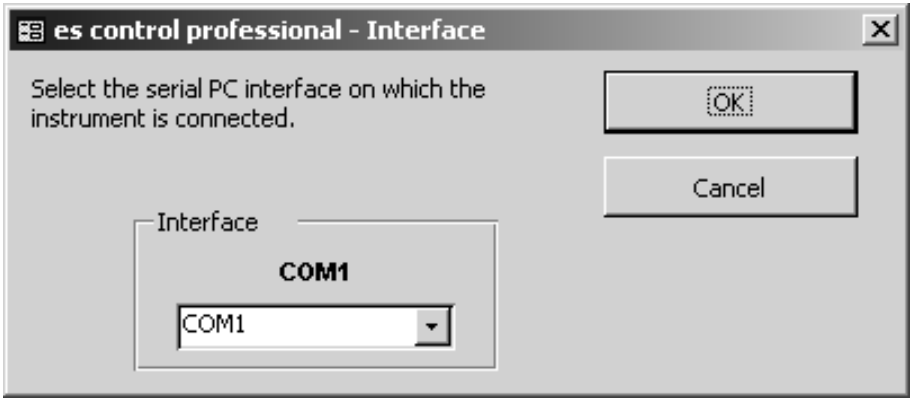


Figure 6.1: Interface setting

☞ The es control 0100 professional software is equipped with an automatic interface recognition. I.e. only available and activated interfaces are displayed.

- Select the serial interface used for the data transfer from the test instrument (usually COM 1 is used).

- Confirm by clicking on “OK” .

6.1.2 Setting the Company Address

- Select the “Company” sub-menu from the “Settings” menu. The following window is displayed:

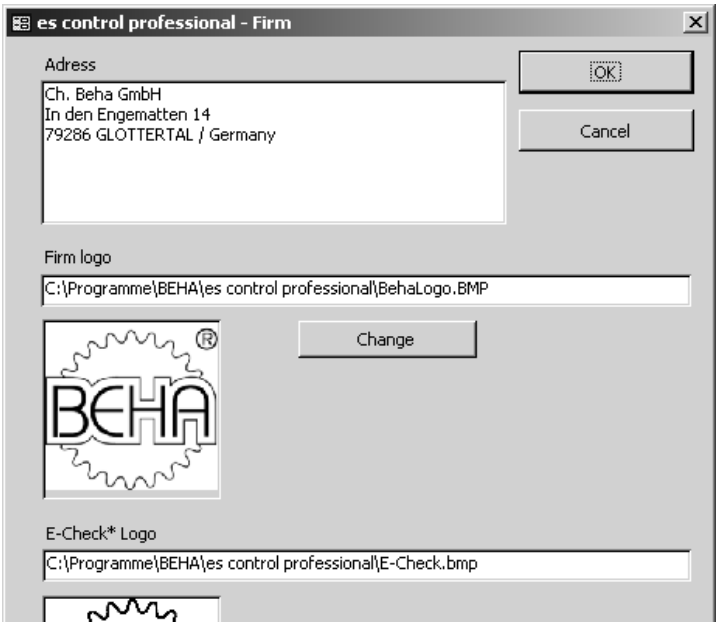


Figure 6.2: Setting the company address and the company logo

- Type your company address into the entry fields.

- If desired, you may integrate your company logo. Click on the “change” button and select the respective directory and the file name of your company logo. The default setting is the Beha logo. The company logo must be available either as Bitmap Format (*.bmp) or as Windows Metafile (*.wmf). Both appear on the printed test reports.

- Confirm by clicking on “OK” .

- If available, you may integrate your E-Check* logo. For this, click the "Change" box and select the respective directory and the file name of your E-Check* logo. The default setting is the Beha logo. The E-Check* logo must be available in Bitmap Format (*.bmp) or as Windows Metafile. The E -Check* logo appears on the printout of the ZVEH test reports.

- Confirm by clicking "OK" .

☞ On the printout, the company logo is scaled to the size of approx. 24 * 24 mm. We recommend you to edit your company logo at the size indicated above with a resolution of 150 to maximum 300 dpi. When using larger dimensions and higher resolutions, the file containing the company logo becomes very large. This can lead to considerable delays when printing the reports.

6.1.3 Setting the Test Instrument

- Select the “Test Instrument” sub-menu from the “View” menu. The following window is displayed:

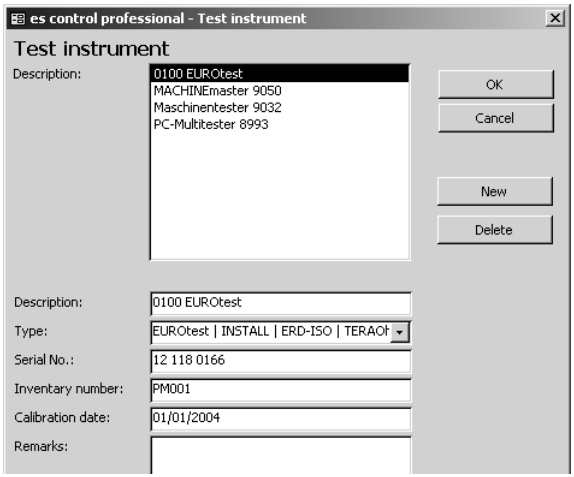


Figure 6.3: Setting the test Instrument

- Now, create a new data record using the “Data record | Add” menu command. A new data record with the description “xxx” is created.
- Modify any entries in compliance with your requirements. Appropriately enter the fields “Description”, “Serial No.”, “Calibration data”, and “Remarks”.
- Confirm by clicking on “OK”.

☞ If there is no test instrument available within the instrument list, it is automatically created during the data transfer. The data may then be completed via the "View | Test Instrument" menu.

☞ The communication parameter and the type of data transfer are set by selection in the "Type” field. For the test instruments 0100-EUROtest, 0100-INSTALLtest, and ERD-ISOtest, or TERAOhm the type "EURO-/ Install/Erd-Isotest/TERAohm must be set. For 0100-Expert, or 0100 Expert plus the type "0100-Expert/0100 Multitester” must be set.

☞ The module es control 0100 professional does not use all instrument types.

6.1.4 Setting the Controller

- Select the “Controller” sub-menu from the “View” menu. The following window is displayed:

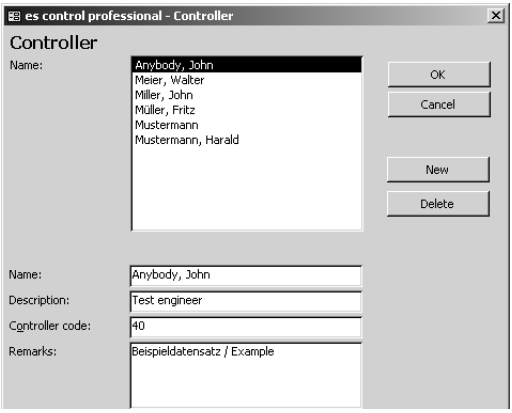


Figure 6.4: Controller setting

- Now create a new data record using the “Data record | Add” menu command, or use the context menu which can be accessed by clicking the right mouse key. A new data record with the description “xxx” is created.
- Modify any entries in compliance with your requirements. Appropriately enter the fields “Name”, “Description”, and “Remarks”.
- Confirm by clicking on “OK” .

☞ The “Controller Code” field does not have any function within the es control 0100 professional software. Here, the staff register number can be entered, for example.

☞ However, this field is used within the es control 0113 professional or the es control 0701/0702 professional software. Here, a controller code can be entered. The tests are consequently assigned to certain controllers. The es control 0113 professional or the es control 0701/0702 professional software is a further part of the es control 0100 professional, which can be used for the administration of machines or portable instruments.

6.2 Create Data Records

This section describes the creation of new data records for customers and installation.

☞ The data is written into the database as soon as the current entry window is closed or another data record is selected.

6.2.1 Create a Data Record for Customers

- Select the data records for the customers. Here either use the “View | Customer” menu or directly click on the “Customer” list field.
- Now create a new data record using the “Data record | Add” menu command, or use the context menu which can be accessed by clicking the right mouse key. The new data record for the customer is displayed as shown in Figure 6.5.

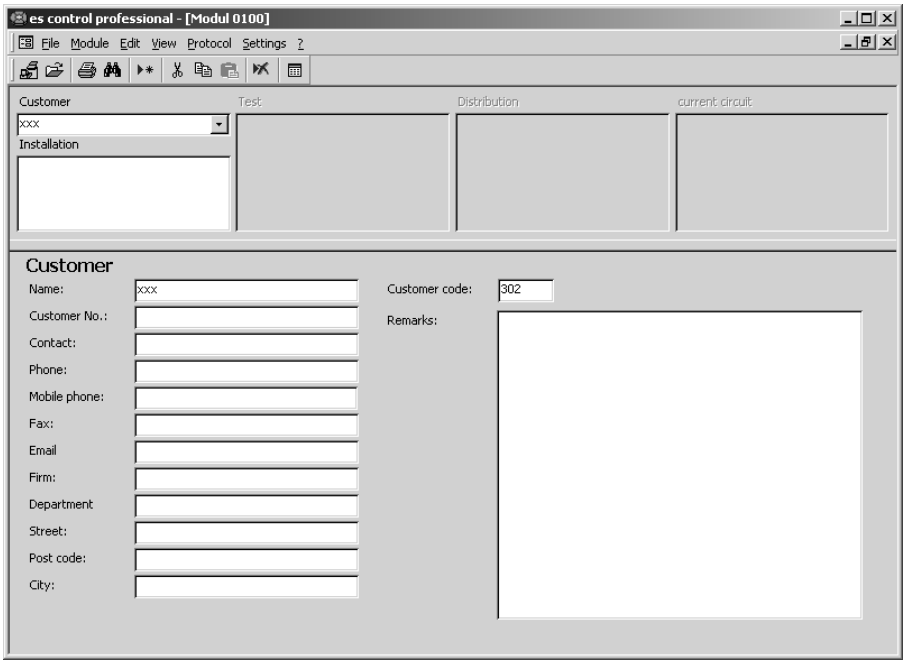


Figure 6.5 Add data record for customer

- Modify the customer name in “Customer A” and enter your data for the new data record.
- Fill in the remaining fields as appropriate.

After the entry, the window should look as follows:

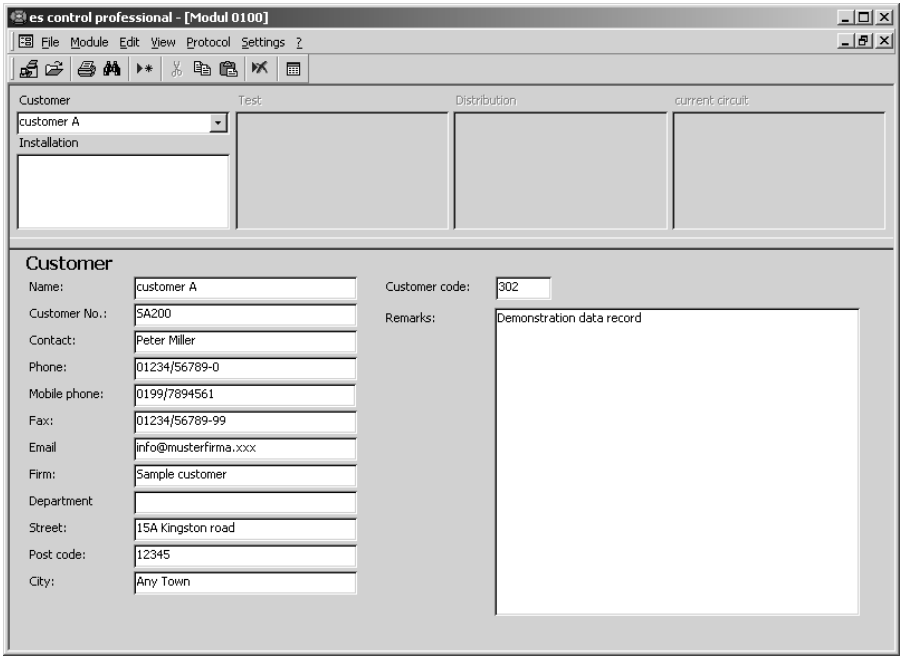


Figure 6.6: New data record for customers with complete data

6.2.2 Create a Data Record for Installation

- Now enter the “Installation” window. For this, either select the “View | Installation” menu or directly click into the “Installation” list field. The previously created customer “Customer A” must still be displayed in the “Customer” window.

- Now create a new data record. Use either the “Data record | Add” menu command or use the context menu which can be accessed by clicking the right mouse key. A new installation for “Customer A” customer is created. The new data record for the installation is displayed as shown in Figure 6.7.

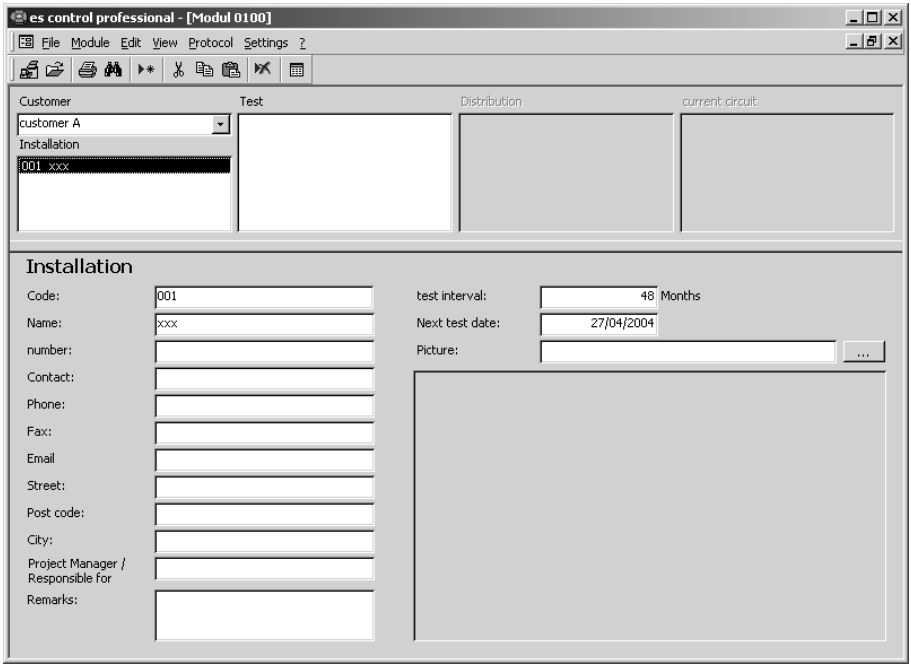


Figure 6.7 Add data record for installation

- Modify the name of the installation to “Installation 1” and now enter your data for the new data record.
- Fill in the remaining fields as required.

☞ The installation code is automatically assigned when creating a new installation. It is advised not to change this code. However, if desired, modification can be made. The code must be a three-digit number between 1 and 999.

☞ A picture can be saved in the background for every installation. This picture is printed with the “Report | Test | Current Circuit List” report. To save an installation picture in the background, click on the “...” button to the right of the entry field. The window “Select picture file” appears. Now open the respective picture file. The picture display can be switched to the foreground or the background by clicking on the “View” (or “Close”) button.

☞ The picture should be available as Bitmap Format (*.bmp) or as Windows Metafile (*.wmf). By entering “*.*” (confirm with the “Enter” key) in the “File Name” window, it is possible to insert pictures with the suffixes “jpg”, “gif”, “ico”, “cur”, “enf”, and “rle”. These picture formats are only displayed within the page view for Windows NT and Windows 2000. However, the printout within the report is also possible.

☞ The installation picture is scaled to the size of approx. 78 * 61 mm (W*H). We recommend the creation of your installation picture at the size indicated above with a resolution of 150 to maximum 300 dpi. When using larger dimensions and higher resolutions, the file containing the picture becomes very large. This can lead to considerable delays when printing the reports.

6.3 Performing the Test

For this example, you may carry out some measurements using your test instrument and read in the data..

When working with the instrument UNITEST ”0100-Expert” and 0100-EXPERT plus

☞ When saving data with the UNITEST 0100-Expert plus instrument, the distribution code must be entered under ‘U’ and the current circuit code under ‘S’, to allow correct assignment within the es control 0100 professional!

☞ For the UNITEST 0100-Expert the distribution code must be entered under 'S' and the current circuit code under 'P'. The designation ‘S” for current circuit and ‘P’ for place is no longer valid for es control 0100 professional!

☞ If desired, for this example, you may directly read in the measurement results of the performed tests from a file without necessity to perform the measurements. For “Example 2”, the measurements of a building site main cabinet is used.

- For this purpose, use the function “File | Read in data from File”. Read in the measurement data from the file “BEISPIEL2.SER” and continue with section 6.3.2.

6.3.1 Transferring the Measurements to UNITEST es control 0100 professional

After having performed the tests, the measurements are transferred from the test instrument to the computer.

- Select the function “File | Receive data from Instrument”. After having opened this function, the window indicated below is displayed.

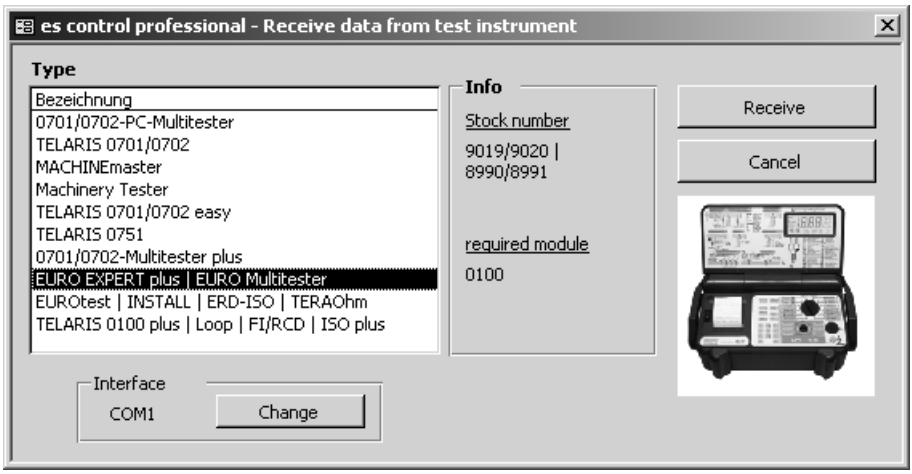


Figure 6.8: “File | Receive data from instrument” window (with serial number)

- Referring to the list, select the test instrument from which you wish to read in measurements.

☞ If a test instrument is not yet available within the instrument list it will be automatically created during the data transfer. The data may then be completed via the "View | Test Instrument" menu.

☞ If no serial number is transferred the serial number field is displayed for a unique serial number entry. If several test instruments of the same type are available without serial number the respective number must be selected from the list before data transfer.

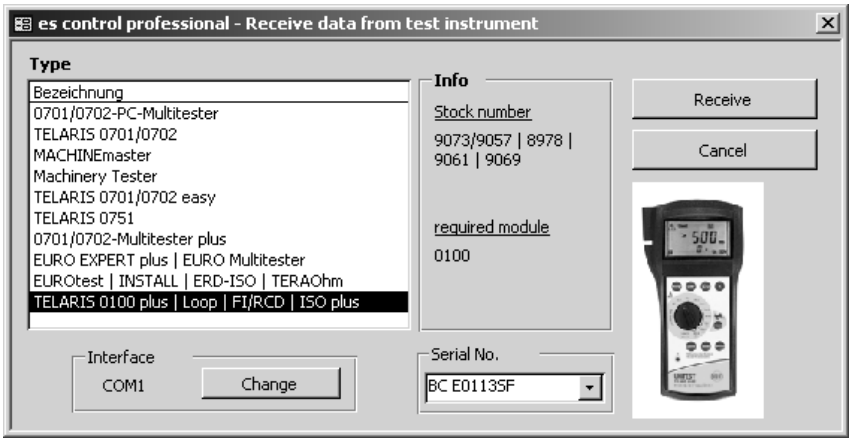


Figure 6.9: “File | Receive data from instrument” window (without serial number)

- Click on the “Receive” button and the following window is displayed.



Figure 6.10: “Serial data communication” window

- Now start the data transfer at the test instrument. You can monitor the transfer of the individual measurement data. The data transfer is started automatically for 0100-EUROtest, and TERAohm. For the 0100-INSTALLtest and ERD-ISOtest, press the “RS232” key for data communication.

☞ Absolutely wait until the data transfer is complete. Upon completion the window closes automatically.

☞ When dealing with a large number of measurement values, the data transfer may require a longer time period (up to several minutes).

6.3.2 Assign the Measurements to Customer, Installation, and Test

After reading in the measurement results from the test instrument or from a file, the read-in data must be assigned to customer, installation, and test.

- A window indicating the assignment for the read-in measurements is displayed.

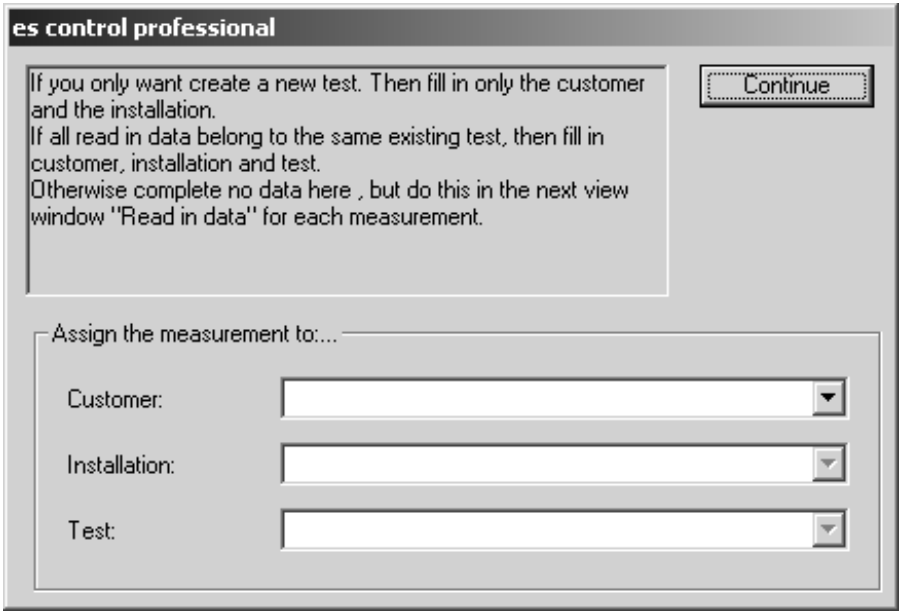


Figure 6.11: “Assign read-in measurements to” window

- Indicate here the customer and the installation to which the read-in measurements should be assigned. Select “Customer A” and “001 Installation 1, then confirm with “Continue”.

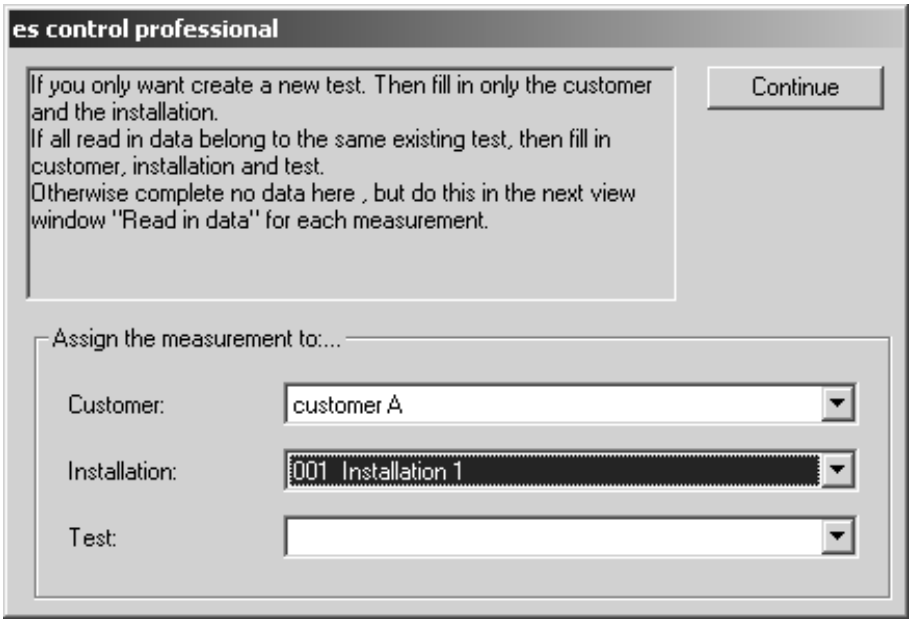
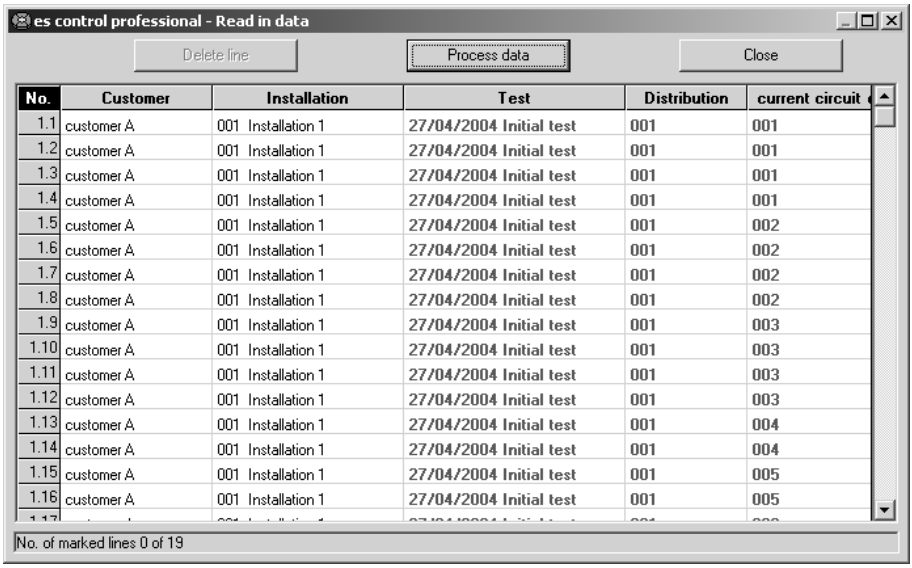


Figure 6.12: “Assign read-in measurements to” window

6.3.3 Assign Measurements to Distributions and Current Circuits

Now, a list with the read-in data is displayed (19 lines).

☞ This window can also be directly opened via the “View | Read in data” menu.



No.	Customer	Installation	Test	Distribution	current circuit
1.1	customer A	001 Installation 1	27/04/2004 Initial test	001	001
1.2	customer A	001 Installation 1	27/04/2004 Initial test	001	001
1.3	customer A	001 Installation 1	27/04/2004 Initial test	001	001
1.4	customer A	001 Installation 1	27/04/2004 Initial test	001	001
1.5	customer A	001 Installation 1	27/04/2004 Initial test	001	002
1.6	customer A	001 Installation 1	27/04/2004 Initial test	001	002
1.7	customer A	001 Installation 1	27/04/2004 Initial test	001	002
1.8	customer A	001 Installation 1	27/04/2004 Initial test	001	002
1.9	customer A	001 Installation 1	27/04/2004 Initial test	001	003
1.10	customer A	001 Installation 1	27/04/2004 Initial test	001	003
1.11	customer A	001 Installation 1	27/04/2004 Initial test	001	003
1.12	customer A	001 Installation 1	27/04/2004 Initial test	001	003
1.13	customer A	001 Installation 1	27/04/2004 Initial test	001	004
1.14	customer A	001 Installation 1	27/04/2004 Initial test	001	004
1.15	customer A	001 Installation 1	27/04/2004 Initial test	001	005
1.16	customer A	001 Installation 1	27/04/2004 Initial test	001	005

Figure 6.13: “Read in data” window

- The read in data of example 2 are generated by a building site main cabinet (distribution code 001) with six current circuits (current circuit codes 001 through 006), as well as measurements at the residual current circuit breaker (current circuit code 100). When processing this data, an initial test is created indicating the current data. The distribution and the individual current circuits are also created by the es control 0100.

☞ All data records being automatically created by the es control 0100 are marked in light green within the “Read in data” table in the respective column.

- Click on the “Process data” button. The read in data is accepted into the UNITEST es control database.
- Then click the “Close” button to close the window.
- Check the assignment of the measurement data to the individual current circuits within the database by selecting distribution “001” and current circuit “001”.
- To hide empty columns click on the marked field ‘Hide empty columns’ (A), the read in measurement results are presented as shown in Figure 6.14.

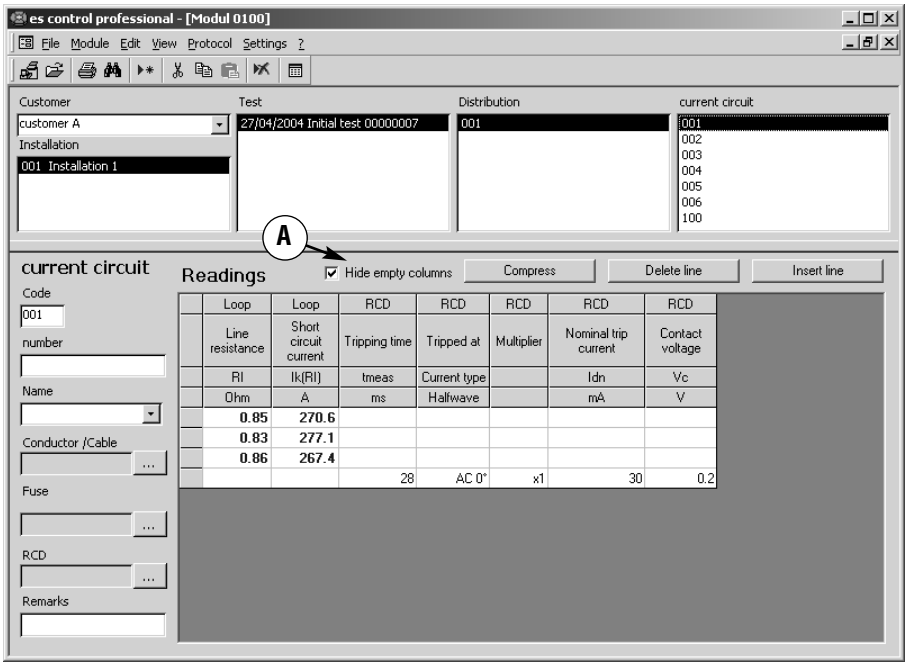


Figure 6.14: “Measurements” window

6.4 Enter Designations for Distributions and Current Circuits

6.4.1 Enter the Distribution Designation

Here, enter the name of the distribution.

- Now enter the name of the individual current circuits by double clicking in the window "Current Circuit (Explanation)" on the empty field in the "Name" (C) column at current circuit 001. An entry field with the symbol "6" appears.

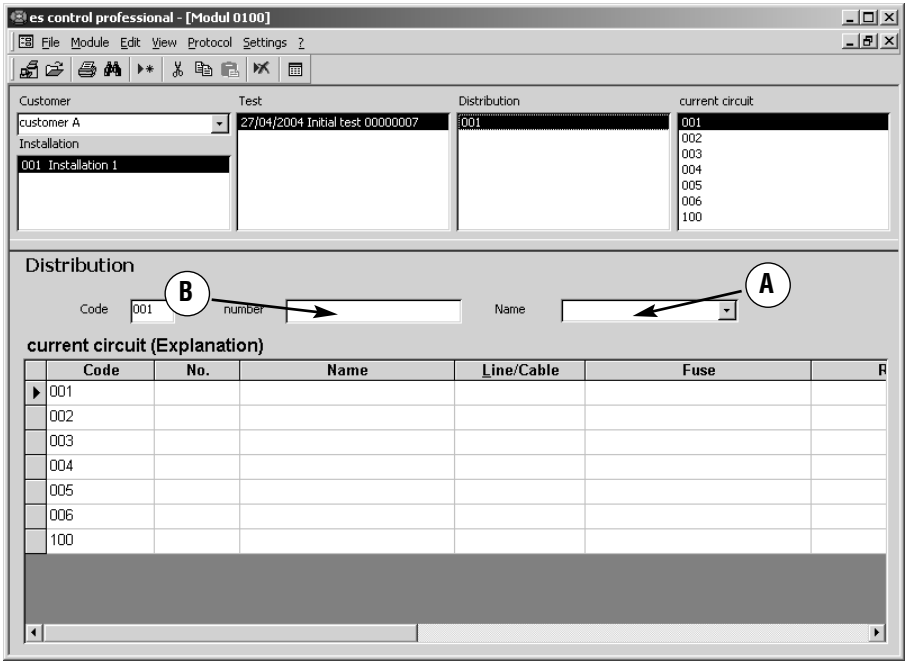


Figure 6.15: “Distribution” window

- Enter the name of the “Building Site Main Cabinet” distribution by clicking on the “Name” (A) entry field and enter the term.

☞ This new name will be taken over into a list containing all distribution designations used, which you might later open by simply clicking on the “▾” field.

- If desired, you may also enter a number for the distribution, e.g. “BS1”, by simply clicking on the entry field “Nr.” (B) and by indicating the respective term.

After the entry, your window should be as follows:

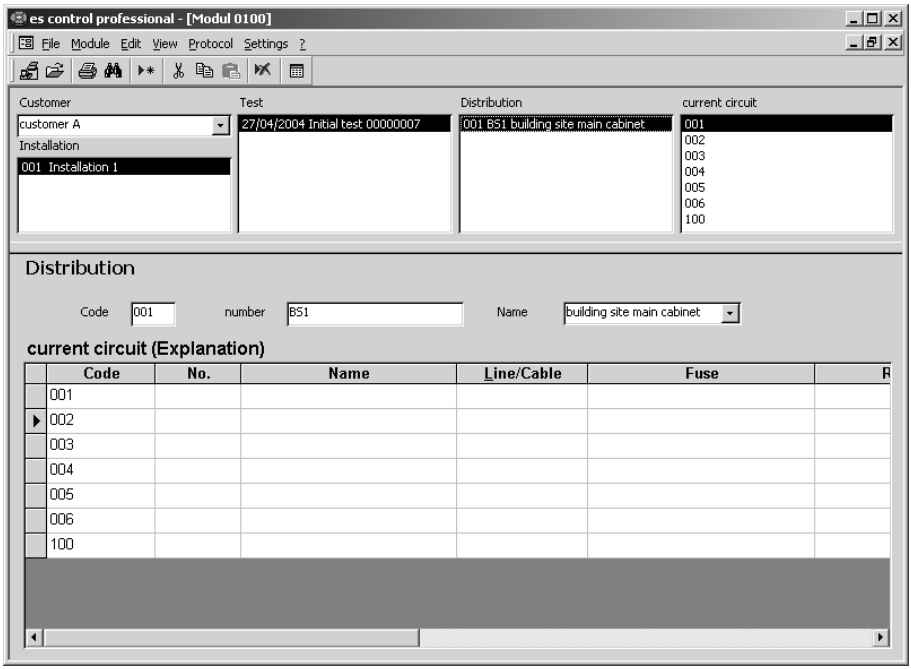


Figure 6.16: “Distribution” window with entered designations

6.4.2 Enter the Current Circuit Designation

Here, enter the name of the current circuits.

- Now enter the name of the individual current circuits by double clicking in the window “Current Circuit (Explanation)” on the empty field in the “Name” (C) column at current circuit 001. An entry field with the symbol “▾” appears.

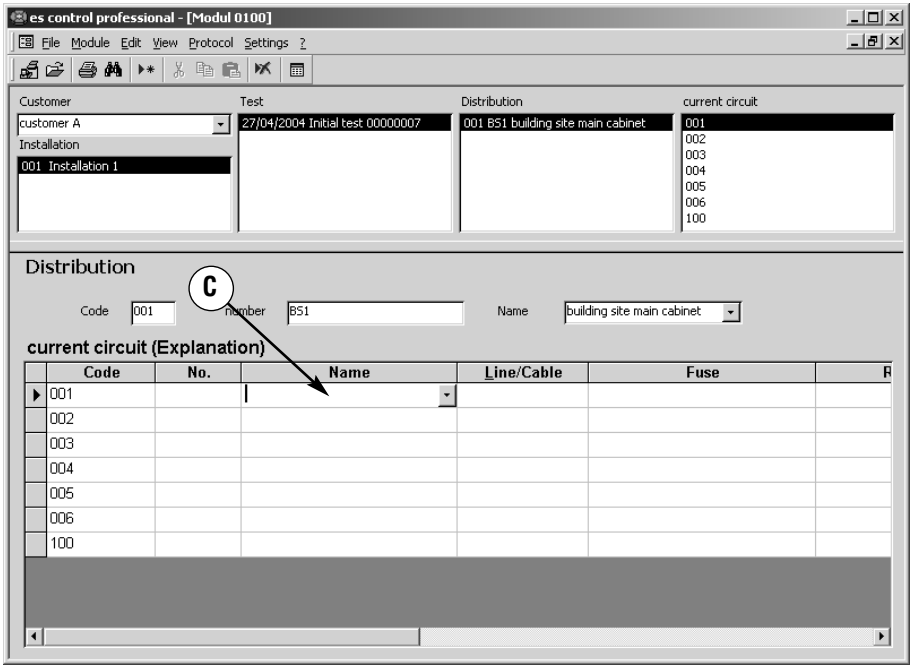


Figure 6.17: “Distribution” window, entry field for current circuit designation

- Click on the arrow. A list field with all available designations is displayed. Select “Three-phase socket CEE 16 A”. The selected designation will be accepted as name for current circuit 001.
- Double click again on the designation and change to "Three-phase socket CEE 32 A”.

- Now mark both empty fields in the "Name" column for current circuit 002 and 003 with the mouse as follows. Move the mouse pointer into the "Name" column at the beginning of line "002" until the mouse pointer changes to a cross. Press the left mouse key and move the mouse to line "003".

Both fields are marked as shown in Figure 6.18.

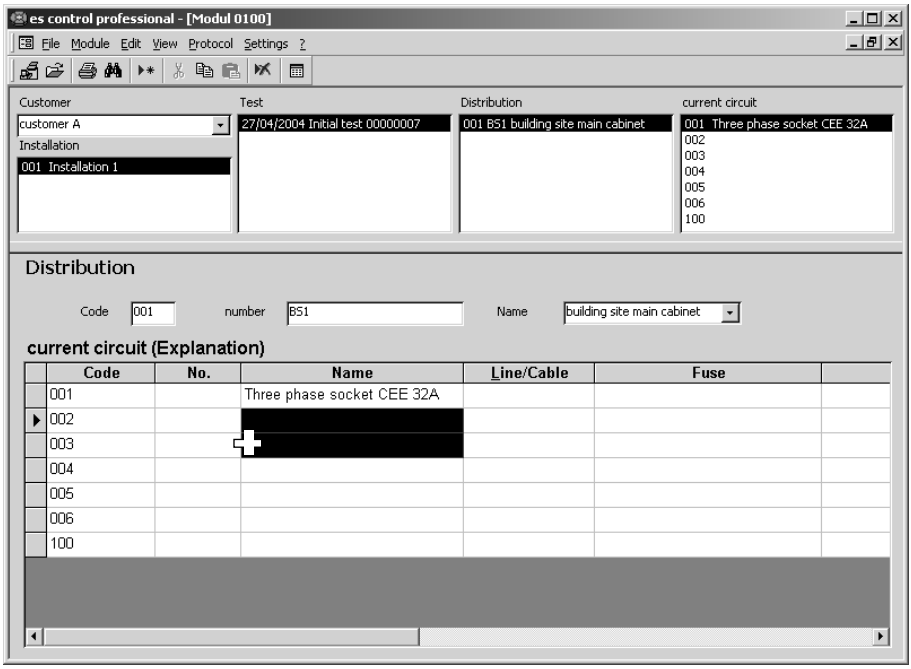


Figure 6.18: “Distribution” window, entry for current circuit designation

- Within the marked fields click the right mouse key to open the context menu and select the "Change group” function.
- A list field with all available designations is displayed. Select “Three-phase socket CEE 16 A”. The selected designation will be accepted as name for both marked current circuits 002 and 003.

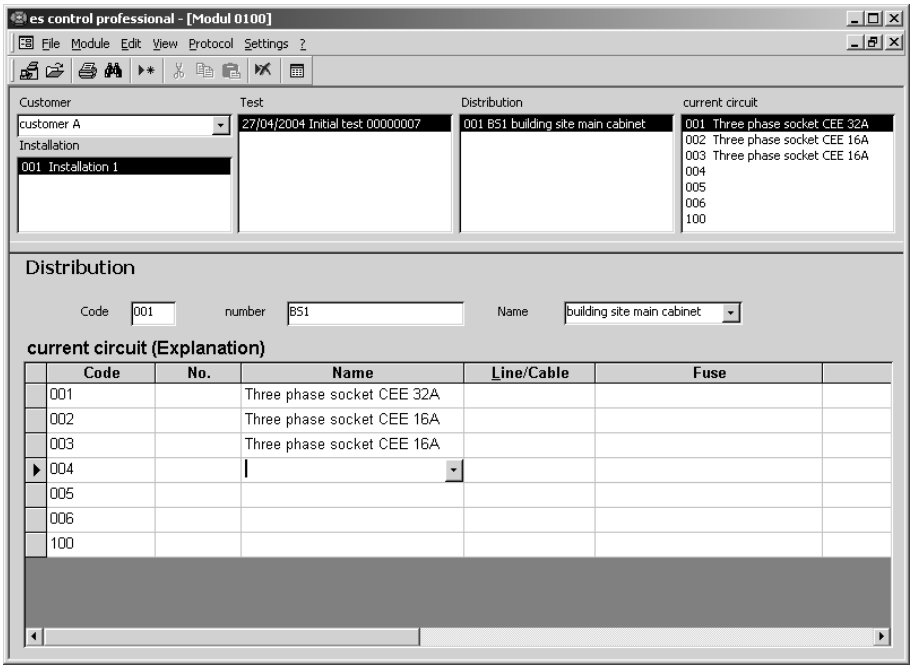


Figure 6.19: “Distribution” window with entered current circuit designations

- Now mark the empty fields in the “Name” column for current circuits 004, 005, and 006 using the mouse.
- Then, enter “Sockets 16 A” as name for the marked current circuits. The selected designation is accepted as name for the marked current circuits 004, 005, and 006, please refer to Figure 6.20.

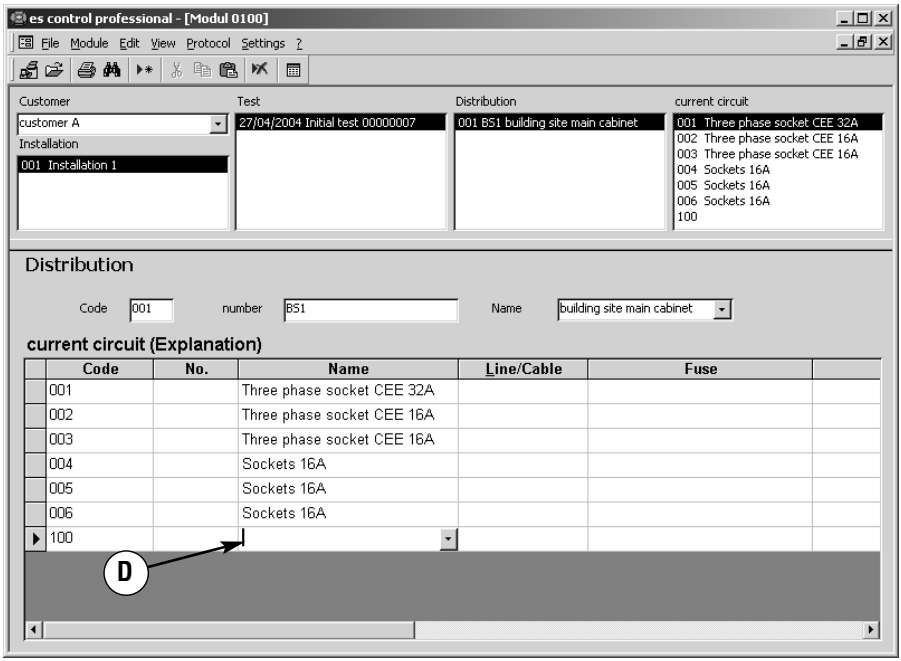


Figure 6.20: “Distribution” window with current circuit designations

- Now enter the name for the current circuit of the residual current circuit breaker by double click in the “Current Circuit (Explanation)” window on the empty field in the “Name” (D) column at current circuit 100. A field with the “▼” symbol appears.

- Click on the arrow. A list field containing all available designations appears. Select “groups RCD”. The selected designation is accepted for current circuit 100.

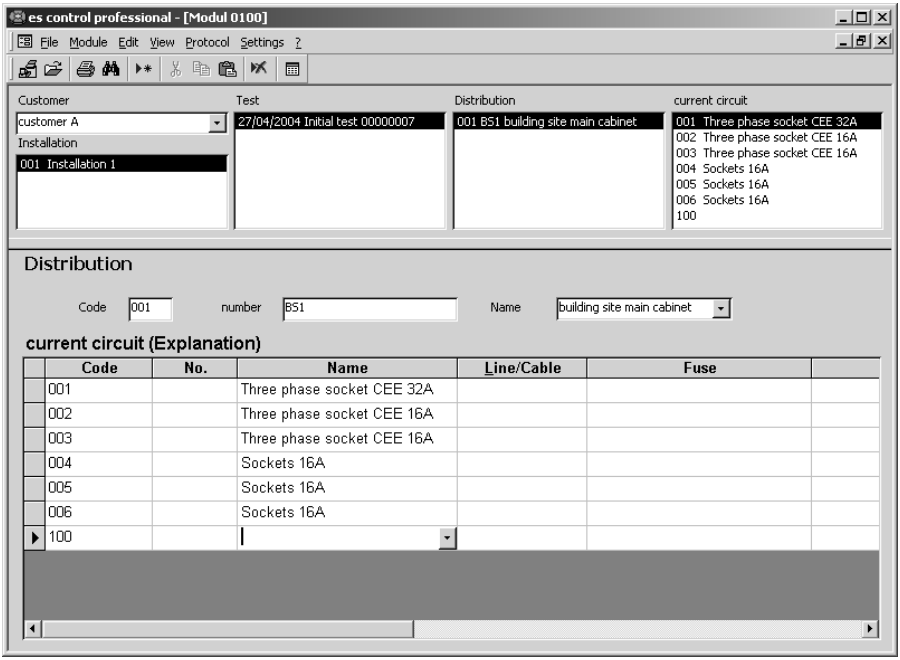
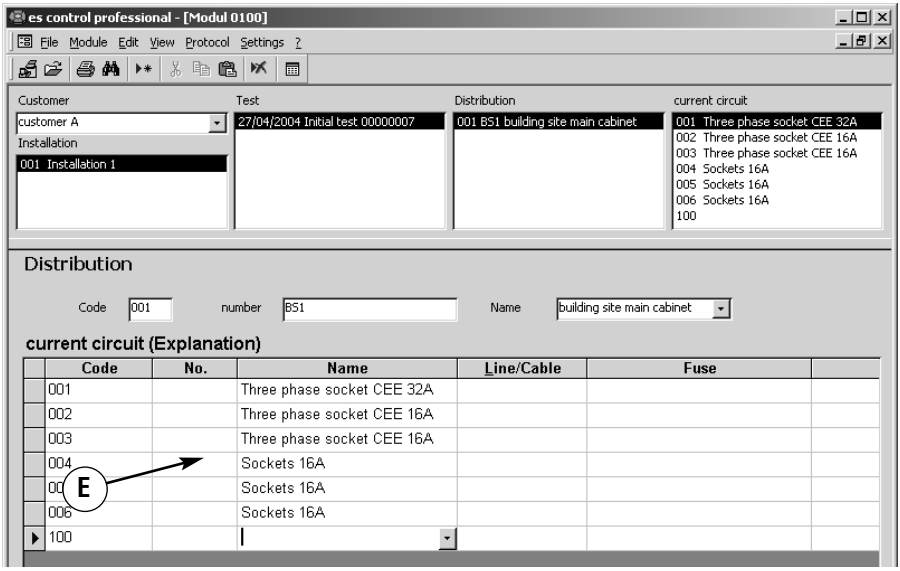


Figure 6.21: “Distribution” window with all current circuit designations

6.4.3 Enter Current Circuit Numbers

Enter the numbers of the current circuits here.

- Enter the numbers of the current circuits by marking column “Nr.” (E)



- Within the marked fields click the right mouse key to open the context menu and select the "Change” function.

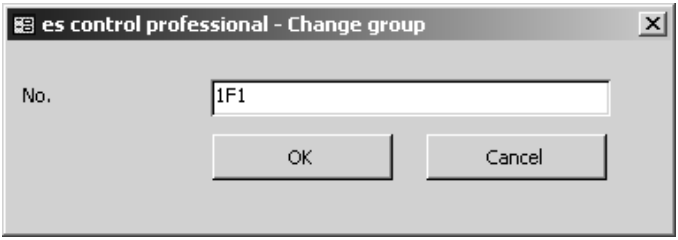


Figure 6.22: "Distribution" window, Change group

- Type e.g. “1F1”, confirm by clicking the “Enter” key. Es control 0100 professional numbers then all current circuits from 1F1 through 1F7 (please refer to Figure 6.22).

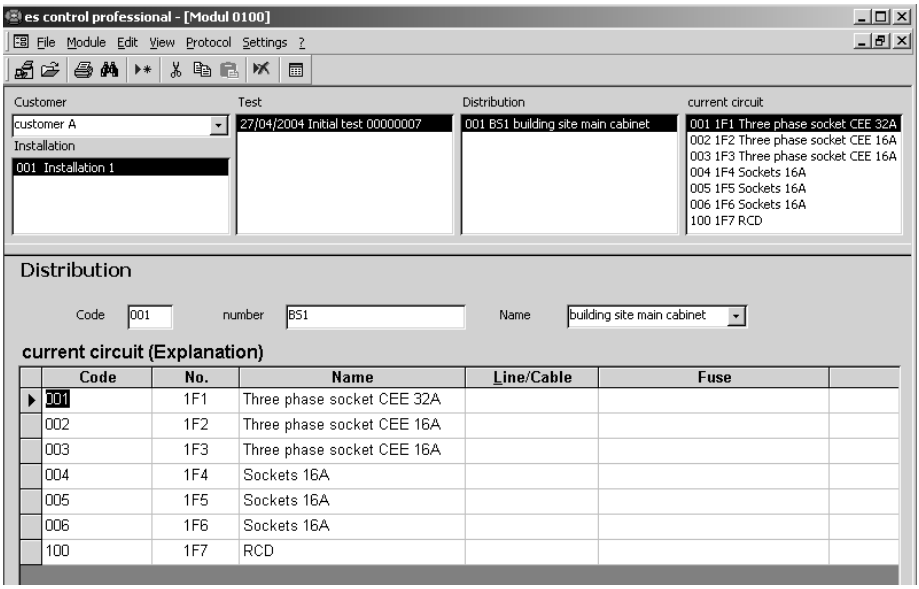


Figure 6.22.1: “Distribution” window, entry of current circuit numbers

6.4.4 Enter Designations for Fuses

Enter the designations for fuses here.

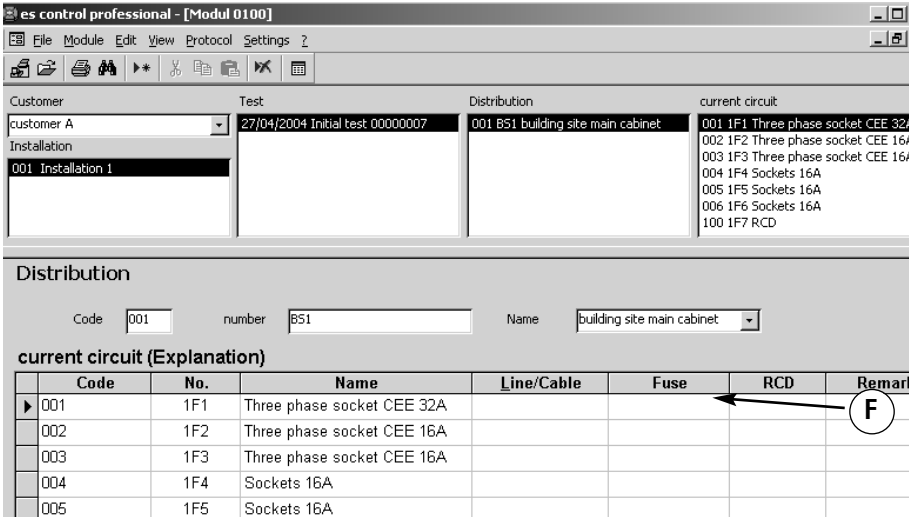


Figure 6.23: Selection of fuse

- Double click in the “Current Circuit (Legend)” window into the empty field in column “Fuse” (F) for current circuit 001. The “Fuse” window appears.

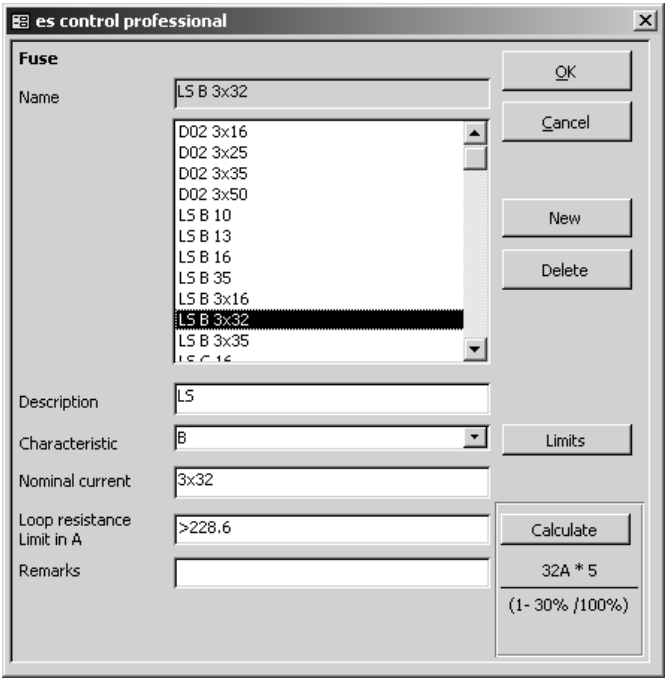


Figure 6.24: Selection of fuse

- Select the respective entry (e.g. LSB 3 x 32 A) and confirm by clicking on “OK”. The selected fuse is accepted for current circuit 001.
- Now mark both of the empty fields in the column “Fuse” for current circuits 002 and 003 using the mouse. Move the mouse pointer to the "Overcurrent protection device” column to the beginning of line "002" until the mouse pointer changes to a cross. Press the left mouse key and move the mouse to line "003”.
- Within the marked fields click the right mouse key to open the context menu and select the "Change group” function. The window "Overcurrent protection device” is displayed again.

- Select the respective entry (e.g. LSB 3 x 16 A) and confirm by clicking on “OK”. The selected fuse is accepted for both marked current circuits 002 and 003.
- Now mark the empty fields in the column "Fuse” for current circuits 004, 005, and 006, and select the Change group function via the context menu.
- Select the respective entry (e.g. LSB 16 A) and confirm by clicking on “OK”. The selected fuse is accepted for the marked current circuits 004, 005, and 006.

After the entry, the window should look as follows:

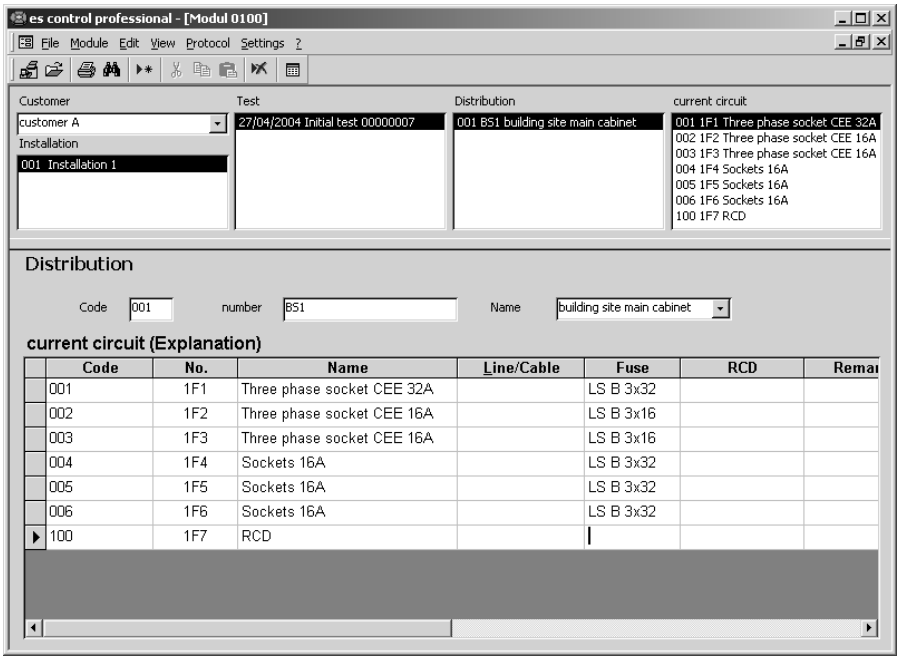


Figure 6.25: “Distribution” window with entered fuses

6.4.5 Enter Designations and Type of Residual Current Device

Enter the designation and type of the RCD here.

- Double click in the “Current Circuit (Explanation)” window into the empty field in column “RCD” at current circuit 100. The “RCD” window appears.

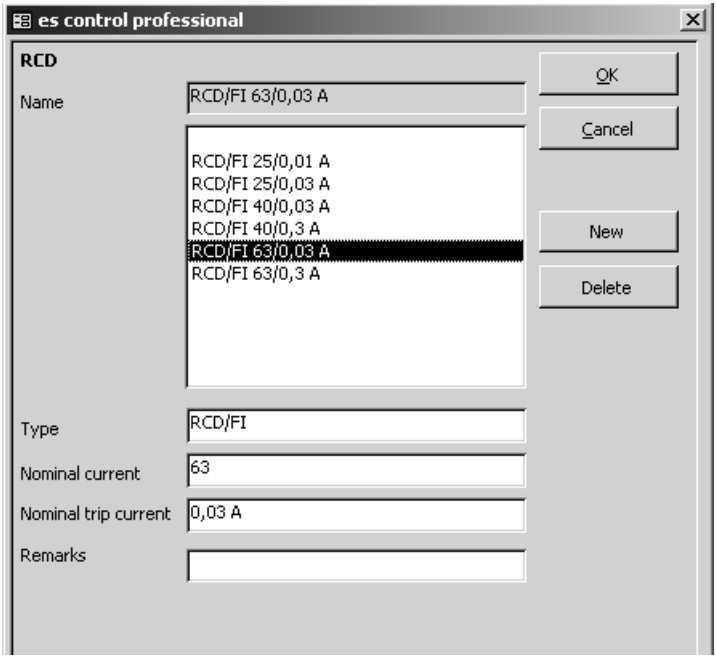


Figure 6.26: Selection of RCD

- Select the respective entry (e.g. RCD/FI 63/0.03 A) and confirm by clicking "OK".

The selected residual current device (RCD) is accepted for current circuit 100.

After the entry, the window should look as follows:

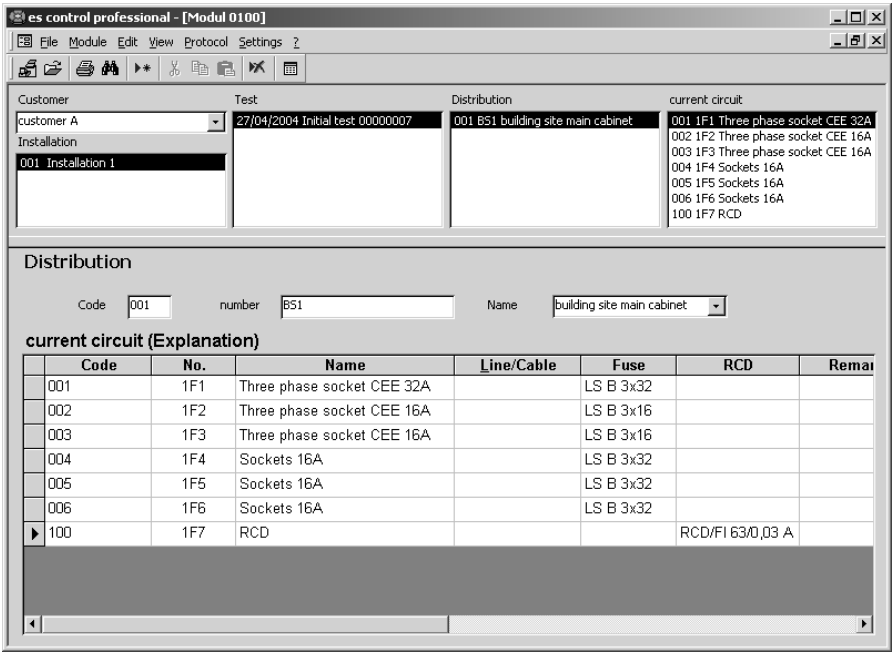


Figure 6.27: “Distribution” window with entered residual current device

6.4.6 Process Data record for Testing

- Now enter the “Test” window by selecting either the “View I Test” menu or by directly clicking on the “Test” list field. The previously created data records for “Customer A” and “Installation 1” must still be displayed in the respective windows.

Completing the Register Window “Test Report”

- Click on the “Test report” register window.

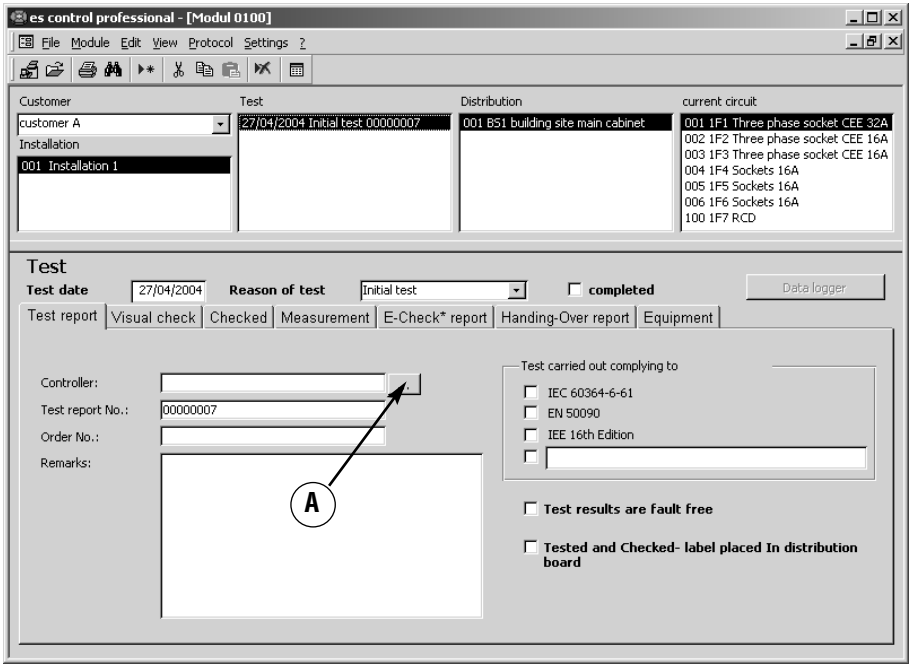


Figure 6.28: “Test report” register window

- Select the name of the controller by clicking on the “...” (A) button to the right of the entry field.
- Then, the “Controller” window shown below is displayed. Select the entry by clicking on the respective controller (e.g. Anybody, John) and confirm by clicking on “OK”.

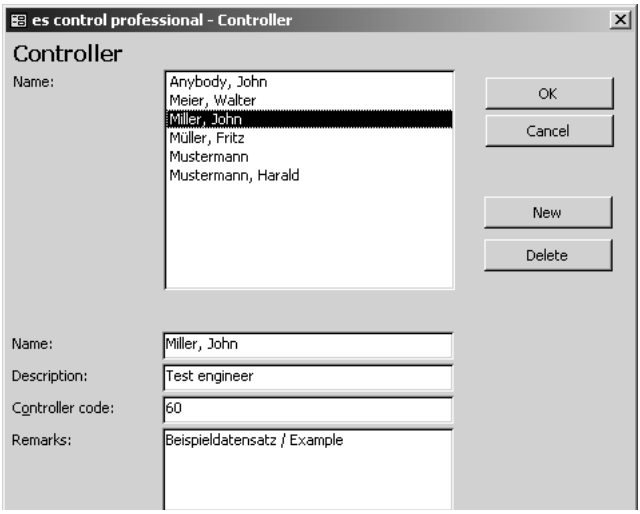


Figure 6.29: “Controller” window

- Complete the fields “Order No.” (e.g. with 2004-03) and “Remarks” as required.
- All further marking and entry windows can be marked and completed as required..

☞ A test report number is automatically entered into the “Test report No.” field. For this, es control 0100 professional searches all customers for the last attributed number and inserts the next free number into this field. This suggested test report number can, however, be modified at any time.

Completing the Register Window “Visual Check, Checked, E-CHECK* Report”

- According to your requirements, you may mark or complete the marking and entry fields in this register windows, in compliance with the performed tests.

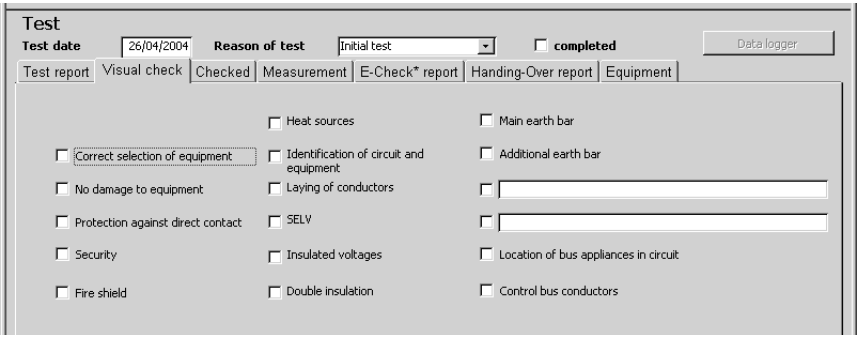


Figure 6.30: Register Window “Visual check”

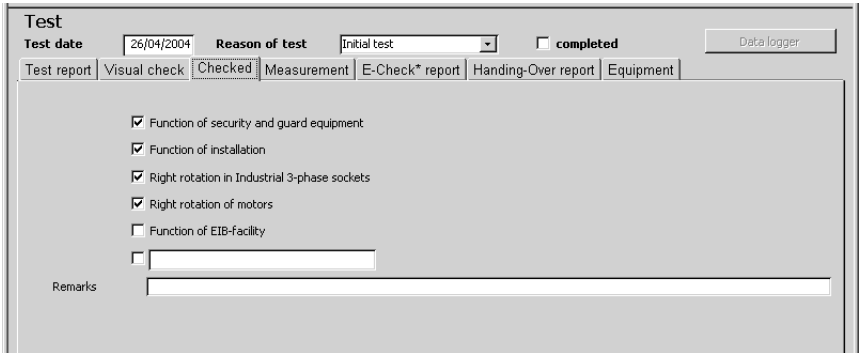


Figure 6.31: Register Window “Checked”

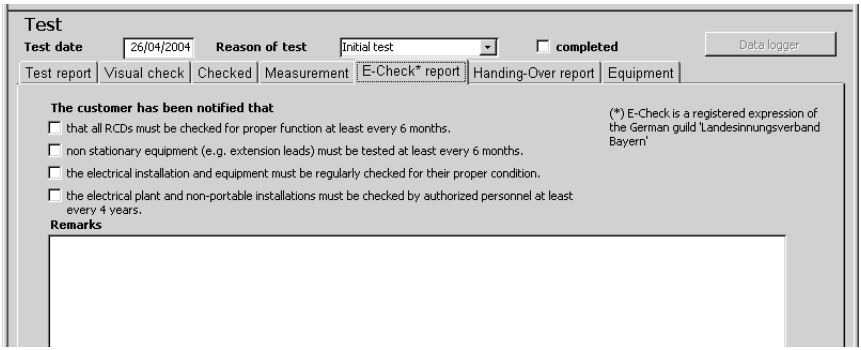


Figure 6.32: Register Window “E-CHECK* Report”

Completing the “Measurement” Register Window

- In this register window, both marked fields and the “Insulation resistance between bus conductors” entry field can be used as proof of the described tests.

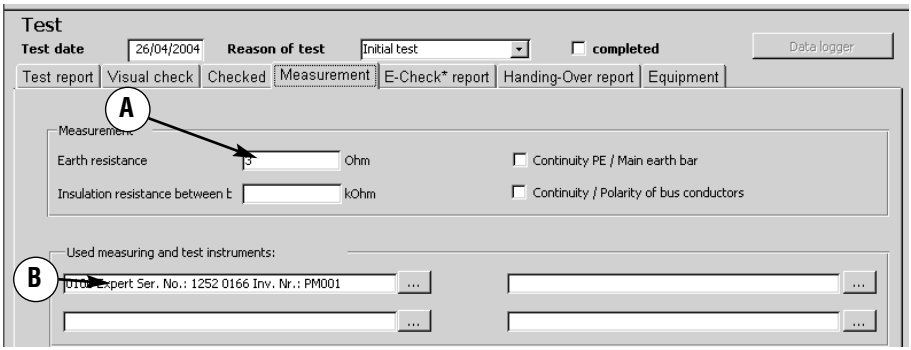


Figure 6.33: “Measurement” register window

This register window contains two additional fields, “Earth Resistance” (A) and “Used measurement and test instruments” (B). Both of these fields have the following characteristics:

- The highest earth resistance value measured within all pertaining distributions and current circuits is automatically entered into the “Earth resistance” field (refer to A) when reading in the measurement data. In this example the earth resistance for the measured current circuit 100 is entered.

☞ This value can be taken from a direct earth measurement or by an RCD contact voltage measurement. If the measurement values are changed later in the pertaining tables under ”Distribution-Current Circuit – Measurement Data”, these values will not be updated.

- When importing measurement data, the type and the serial number of up to four measurement instruments used are entered into the “Used measurement and test instruments” field (please refer to B). However, it is possible to directly enter a measurement instrument. For this purpose, click on the “...” button on the right of the entry field. The “Test instrument” window appears. Search for the respective entry and confirm by clicking on “OK”.

☞ Both entry fields as well as both marked fields ”Measurement Instrument Type” and ”Serial Number” are printed with the “Test report” ZVEH protocols.

Completing the Register Window “Handing-Over Report” and “Equipment”

- Indications relating to electrical supply companies (utility), mains voltage, counter and system type can be made in the “Handover Report” register window.

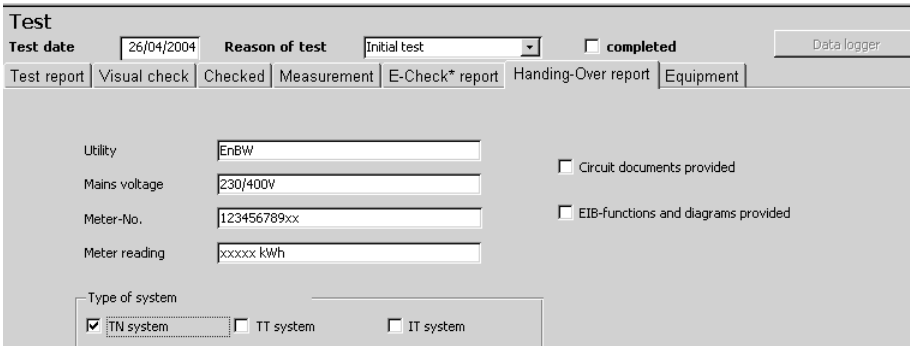


Figure 6.34: “Handing-Over Report” register window

- The assignation of the equipment to the individual distributions and current circuits are entered into the “Equipment” register window.

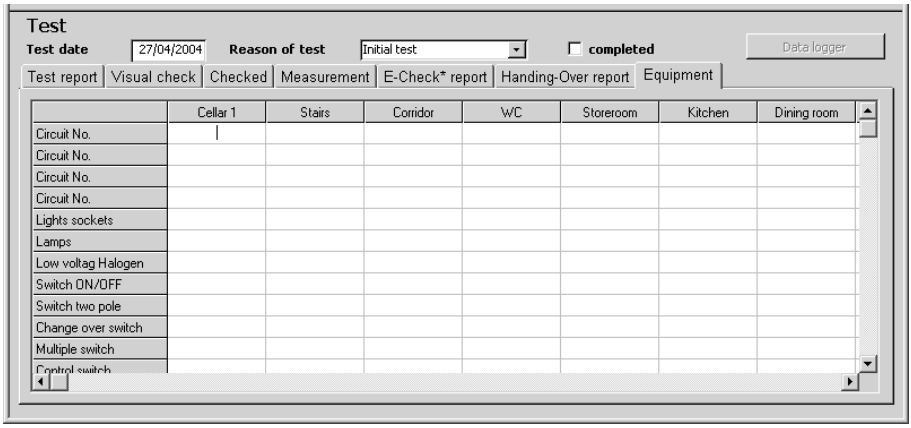


Figure 6.35: “Equipment” register window

☞ Entries from both of these register windows are printed on the Handing-Over report.

☞ The “Equipment” table contains 58 columns and maximum 48 lines. Columns 1-29 are printed on the first page, columns 30-58 are printed on the following page.

6.5 Printouts

6.5.1 Printout of an Explanation for Current Circuits

The printout of the explanation contains the numbers and designations for the distributions and the pertaining current circuits.

☞ The explanation can be attached to the respective distribution to supply the installation operator with explanations about the assignment of switchboards and fuses to the current circuits.

- Select the function Customer, Installation, and Test from the UNITEST es control 0100 professional software (Customer A, Installation 1, initial test) in compliance with Figure 6.27.
- Select the function "Protocol | Test | Explanation". After opening this function, the "List of explanation" window is displayed.

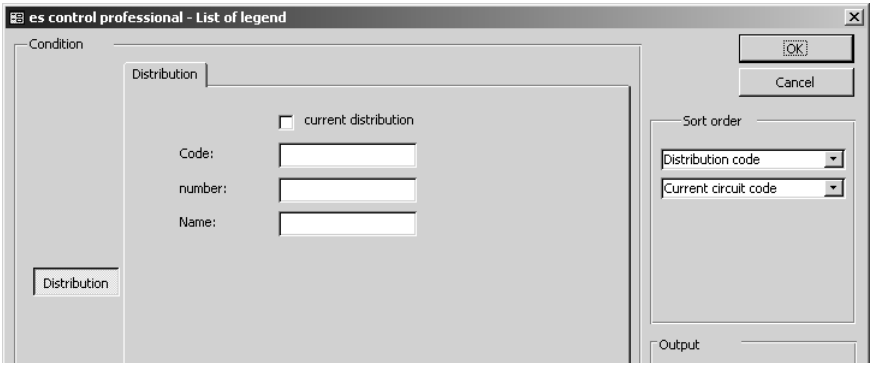
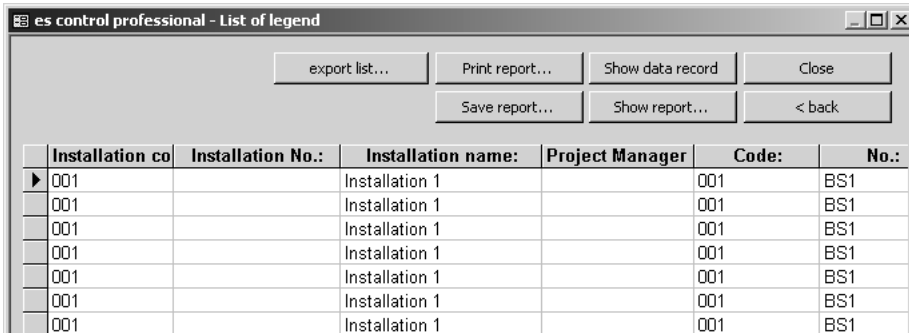


Figure 6.36: "List of explanation"

A list can be limited to individual section by means of the search fields. Additionally, various criteria for sorting the list can be selected using the sort order.

☞ The search fields also function via the substitutes '*' for several characters and '?' for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all tests are displayed as search results in one table.



Installation co	Installation No.:	Installation name:	Project Manager	Code:	No.:
001		Installation 1		001	BS1
001		Installation 1		001	BS1
001		Installation 1		001	BS1
001		Installation 1		001	BS1
001		Installation 1		001	BS1
001		Installation 1		001	BS1
001		Installation 1		001	BS1

Figure 6.37: "List of explanation"

- To preview the printout and to set the format, please click on the “View page” button to also set the margins for this printout form.
- Now print the explanation by clicking on the "Print” button. The list indicated below is printed

Explanation created at 27/04/2004

Electrics company (contractor)
Ch. Beha GmbH
In den Engematten 14
79286 GLOTTERTAL / Germany

Project Manager / Responsible for installation:

Installation: 001 Installation 1
Distribution: BS1 building site main cabinet

No.	Description	Fuse	RCD
1F1	Three phase socket CEE 32A	LS B 3x32	
1F2	Three phase socket CEE 16A	LS B 3x16	
1F3	Three phase socket CEE 16A	LS B 3x16	
1F4	Sockets 16A	LS B 3x32	
1F5	Sockets 16A	LS B 3x32	
1F6	Sockets 16A	LS B 3x32	

Figure 6.38: "Explanation” printout

6.5.2 Print Test reports

Finally, the test reports are printed.

UNITEST es control 0100 professional offers the following facilities for printing test reports:

- Print of reports in compliance with the ZVEH protocols (Handing-Over Report, Test report, E-CHECK*) as printout or as snapshot file
- Printing the test and measurement protocols as printout or as file, either in snapshot format (SNP), text format (TXT), richtext format (RTF), excel format (XLS).

6.5.3 Print ZVEH Test Protocol

- Leave the selected customer, the installation, and the test on the display.
- Select the function “Report I Test I ZVEH protocol”. The following window is displayed:

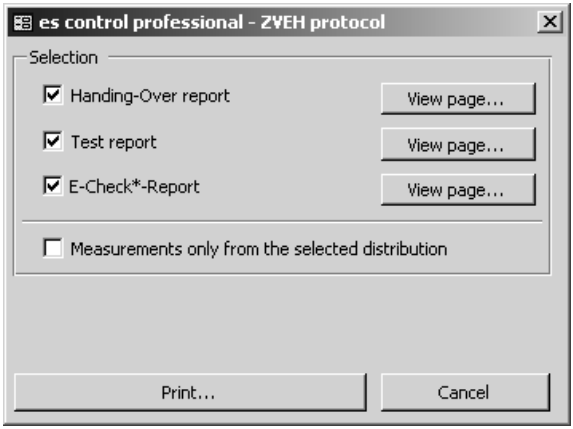


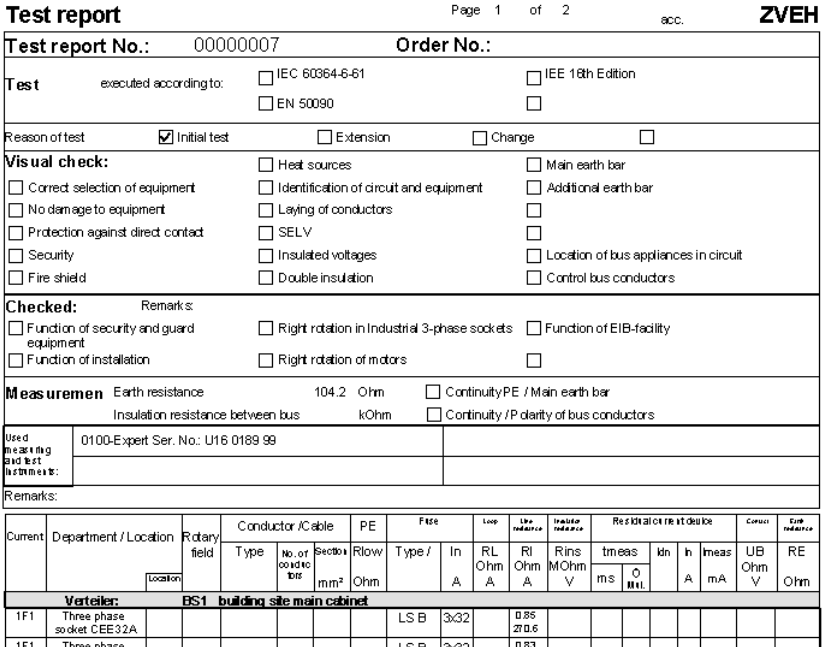
Figure 6.39: “ZVEH protocol” window

☞ The field "Measurements only..." allows to reduce the protocol to the printout of the selected distribution.

- Click on the “Preview Page” directly on the right of the desired marked field (e.g. ‘Handing-Over report’), to view the respective report prior to printing and to set up the page prior to printout.

The following functions are available in addition to the "Page setup":

- When clicking on the “Export as snapshot” button, the marked reports in the respective marked fields can be exported into a snapshot file.
- Click on the “Print” button to print the reports marked in the respective marked fields
- Click on the “Cancel” button to close this window again.



Test report Page 1 of 2 acc. **ZVEH**

Test report No.: 00000007 **Order No.:**

Test executed according to: ☐ IEC 60364-6-61 ☐ IEE 16th Edition ☐ EN 50090 ☐

Reason of test ☑ Initial test ☐ Extension ☐ Change ☐

Visual check:
☐ Correct selection of equipment ☐ No damage to equipment ☐ Protection against direct contact ☐ Security ☐ Fire shield
☐ Heat sources ☐ Identification of circuit and equipment ☐ Laying of conductors ☐ SELV ☐ Insulated voltages ☐ Double insulation
☐ Main earth bar ☐ Additional earth bar ☐ ☐ ☐ Location of bus appliances in circuit ☐ Control bus conductors

Checked: Remarks:
☐ Function of security and guard equipment ☐ Function of installation
☐ Right rotation in Industrial 3-phase sockets ☐ Right rotation of motors
☐ Function of EIB-facility ☐

Measuremen Earth resistance 104.2 Ohm ☐ Continuity PE / Main earth bar
Insulation resistance between bus kOhm ☐ Continuity / Polarity of bus conductors

Used measuring and test instruments: 0100-Expert Ser. No.: U16 0189 99

Remarks:

Current	Department / Location	Rotary field	Conductor /Cable			PE	Fuse		Loop	Line resistance	Insulation resistance	Residual current device				Contact	Earth resistance
	Location		Type	No. of conductors	Section mm²	Rlow Ohm	Type /	In A	RL Ohm A	Rl Ohm A	Rins MOhm V	tmeas ms	tmeas Ω mA	Idn A	In A	Imeas mA	UB Ohm V	RE Ohm
Verteiler:		**BS1**	**building site main cabinet**															
1F1	Three phase socket CEE32A						LS B	3x32		0.85 270.6								
1F1	Three phase						LS B	3x32		0.83								

Figure 6.40: “Test report” printout example

☞ Please refer to Example 1, section 5.12 or Figure 7.44 for the complete view of the printouts.

7.0 Explanation of the Menu Functions

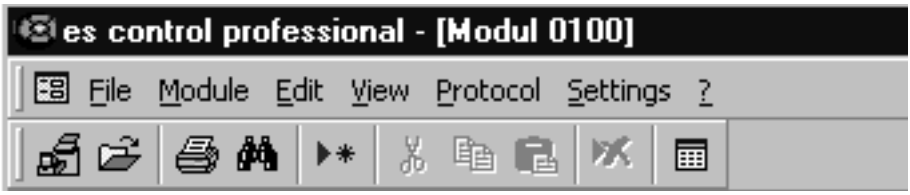


Figure 7.0: Menu functions

The menu line containing the main menu is situated at the top border. This line allows the access to all program functions. Additionally, the buttons below this line allow the direct opening of some program functions.


Receive data from test instrument (refer to menu point File for a description)


Read in data from file (refer to menu point File for a description)


Print (refer to menu point Protocol for a description)


Search for test (refer to menu point Process for a description)


New data record (refer to menu point Process for a description)


Cut (refer to menu point Process for a description)


Copy (refer to menu point Process for a description)


Insert (refer to menu point Process for a description)


Delete data record (refer to menu point Process for a description)


Read-in data (refer to menu point View for a description)

7.1 ”File” Menu

7.1.1 “File | Receive Data from Test Instrument” Menu

This function is used to read in measurements from the test instrument.

- After opening of this function, the "Test instrument” window below is displayed.

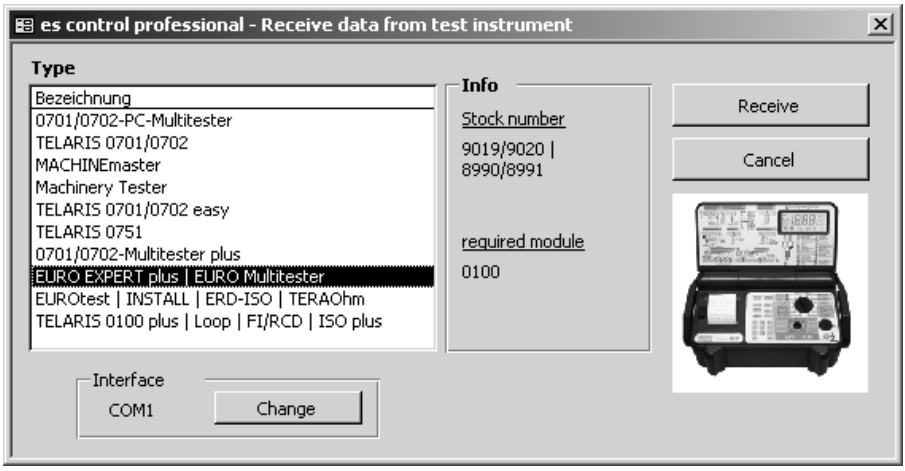


Figure 7.1: “File | Receive data from Test instrument” window

- Select the test instrument from which you wish to read in the data contained in the list.

☞ The es control 0100 professional module does not use all instrument types.

☞ DUp to now, the es control 0100 professional module supports 13 test instruments. They are divided into three 0100 test instrument types on the basis of the same baud rates.

☞ If there are several instruments of the same type, just select a test instrument of the same type. The es control 0100 professional software then automatically selects the appropriate test instrument using the serial number.

☞ When receiving data for the first time with a test instrument and no instrument is available bearing this serial number, a new test instrument is created within the list. Indications like inventory number, next calibration date, and remarks should then still be completed. Creation of test instruments can also be made manually through the menu “Data record | Add”. Please refer to section 7.2.2.

☞ If no serial number is transferred, the serial number field is displayed for a unique serial number entry. If several test instruments of the same type are available without serial number, the respective number must selected from the list before data transfer.

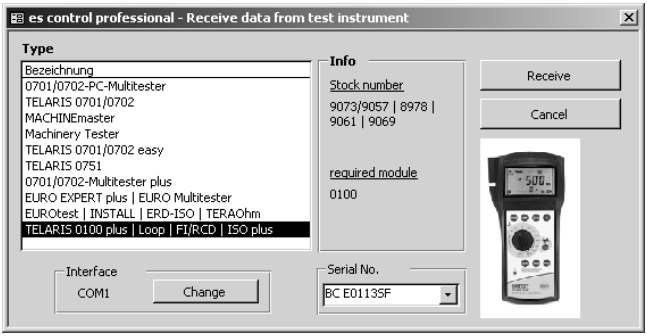


Figure 7.2: “File | Receive data from Test instrument” window (without serial number)

☞ The data received may not be processed If a wrong instrument type has been selected.

- Click the "Receive" button. The following window is displayed:

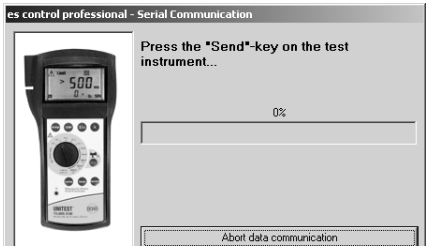


Figure 7.3: ??"Serial data transfer " window

- Now start the data transfer at the test instrument. You may monitor the data transfer of the measurements. The data transfer is started automatically for 0100-EUROtest, and TERAohm. For the 0100-INSTALLtest and ERD-ISOtest, press the “RS232” key for data communication

☞ Absolutely wait until the data transfer is complete. Upon completion the window closes automatically.

☞ The duration for data transfer from the test instrument may take up to several minutes if you are dealing with a large number of measurement data.

- Then, the window ""Assign the measurement to…" is displayed.

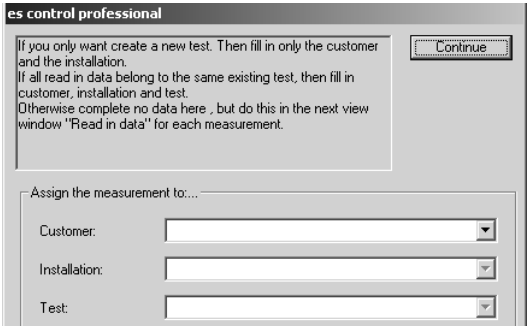


Figure 7.4: "Assign the measurement to…" window

- Here you may define how to assign the read-in measurements. Select the respective customer, the installation, and the test and confirm with "Continue”.

☞ The automatic assignment of measurement results to distributions and current circuits can only be performed if the distribution and current circuit codes have been correctly entered, in compliance with the current circuit list.

- Now the “Read in data “ window is displayed. Here, the final assignment of the measurement to distributions and currents circuits is performed. This window is directly opened when opening the “View I Read in data” function. Please refer to section 7.4.11.

☞ Generally, all read-in measurement data is saved in a backup file (with the extension *.SER) in the subdirectory “BACKUP”. An ascending number is allocated as file name. The data contained within this file can also be read in. Please refer to section 7.1.2.

7.1.2 “Read In Data From File” Menu

This function is used to read in measurement data into the database, having been read in previously.

- After opening this function, the window below is opened. Select one file with the measurements and click on the “Open” button.

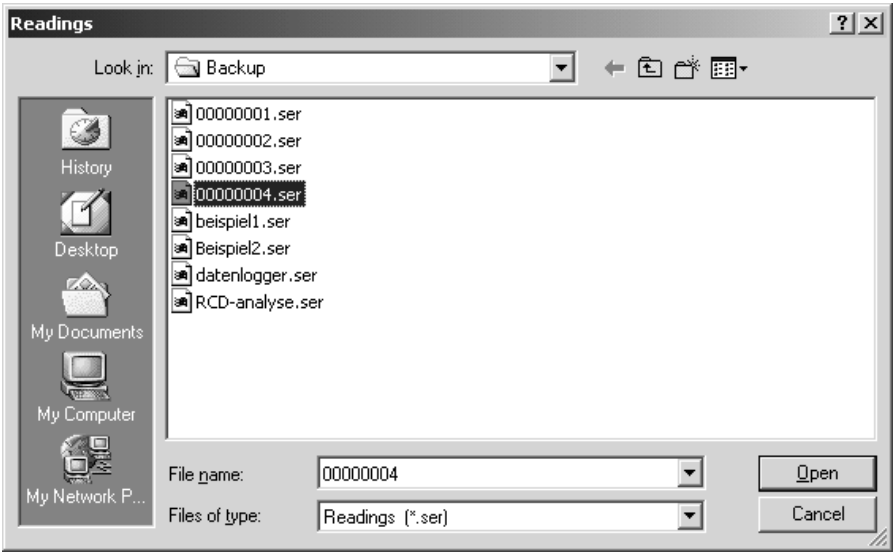


Figure 7.5: “File | Read in data from file “ window

- Then, a window is displayed "Assign the measurement to…”.

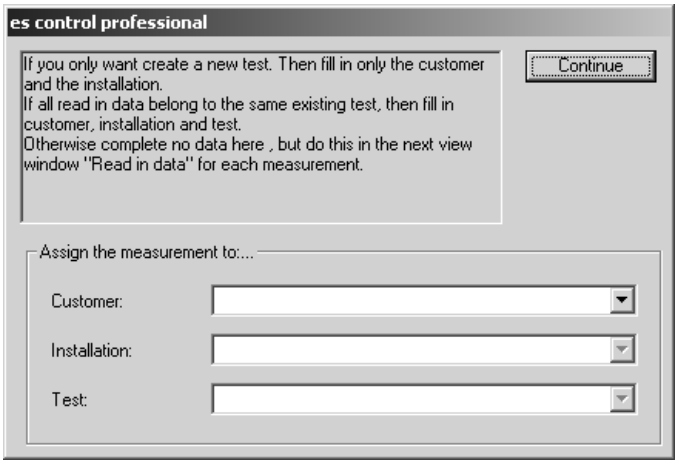


Figure 7.6: “Assign the measurement to” window

- Here you may define where the read-in measurement data is to be assigned to. Select the respective customer, the installation, and the test and confirm by clicking “Continue”.

☞ The automatic assignment of the measurement results to distributions and current circuits can only be carried out, if the distribution and current circuit codes have been correctly entered in compliance with the current circuit list.

- After this, the “Read in data” window is displayed and a final assignment of the measurement results to distributions and current circuits is performed. This window is directly opened when opening the “View | Read in data” window. Please refer to section 7.4.11.

7.1.3 "File | Create database copy" Menu

This function allows to make a copy of the current database.

☞ The creation of a synchronised database copy (replicate of escontrolpro.mdb) is only possible for the master database escontrolpro.mdb (original database) which has been installed from the CD.

A copy can be used e.g. to allow external colleagues travelling with their notebooks to work and use the software at their location. These database copies can then be compared and synchronised with the "Original Database".

☞ It is not recommended to delete data records in database copies. If, however, one or several data records have been deleted within the database copy, the deleted data is "transferred" with the original database when synchronising, i.e. these data records are also deleted within the original database!

☞ The synchronisation of the databases is performed in both directions, i.e. if a certain data record has been processed in both databases, the modification in the original database (master database) is always predominant.

- After opening this function "Data | Database copy | create", the following window is displayed.

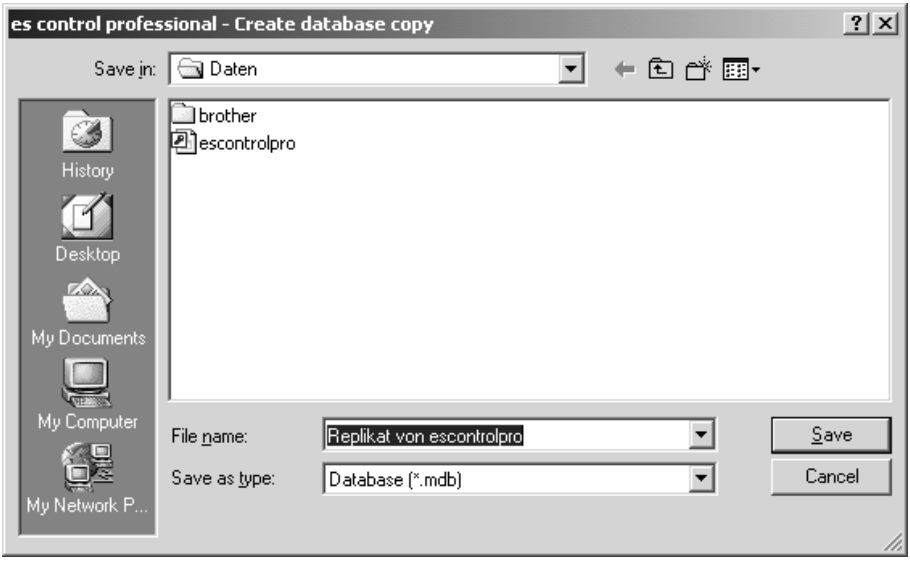


Figure 7.7: Create database copy

- Select a file name and click the "Save" button.

After having created the copy, the following message is displayed:



Figure 7.8: Database copy created

- The synchronisation of databases is performed when opening the "Data | Create database copy | synchronise" function.

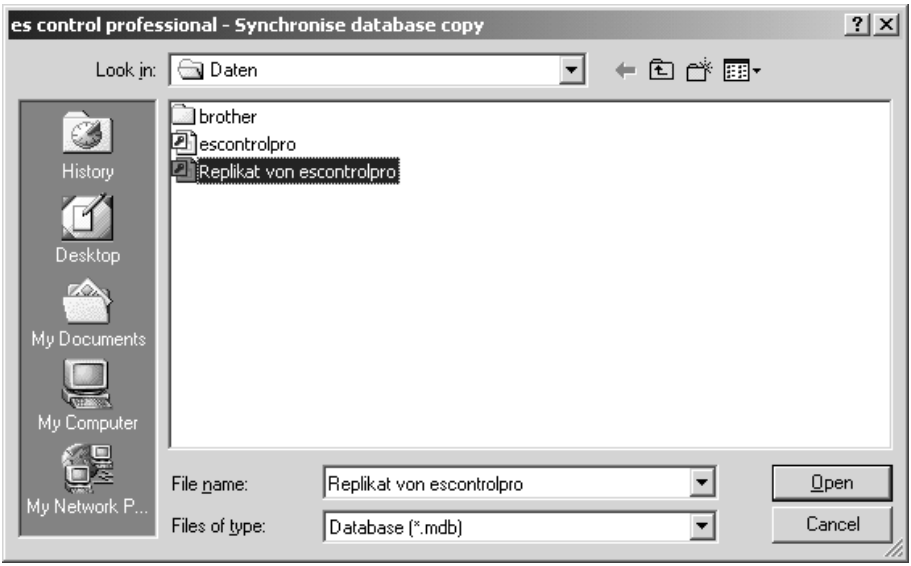


Figure 7.9: Synchronise database copy

- Select the "external database" and click the "Open" button.

☞ Imperatively respect the following reference regarding deleted data!

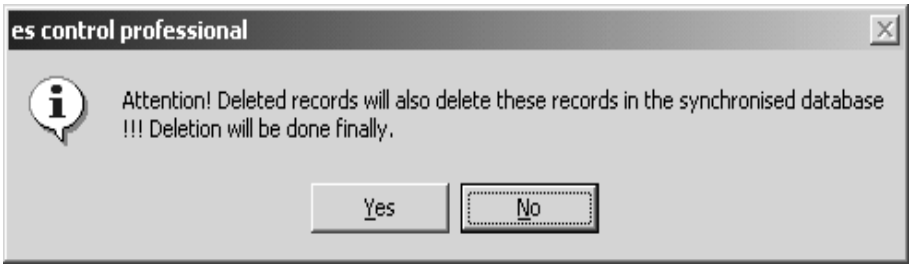


Figure 7.10: Database copy – delete procedures

The following message is displayed after successful synchronisation with the copy:



Figure 7.11: Database copy successfully synchronised

7.1.4 “File | Import Data” Menu

This function is used to import measurements from the UNITEST ”Expert-Manager” program, Order No. 1124, and to read in this data into the database. When importing the data, all customers, installations, tests, distributions, current circuits, and measurement values are accepted from the "Expert-Manager” software into the es control 0100 professional. Company name, controller selection list, data logger measurements, and additional measurements are NOT accepted.

- Fist close the program from which you wish to import data.

Import of control 1.1/1.2 Modul 0100 and 2.1

- The following window is displayed after opening the "File | Import data from es control 1.1/1.2 Modul 0100"

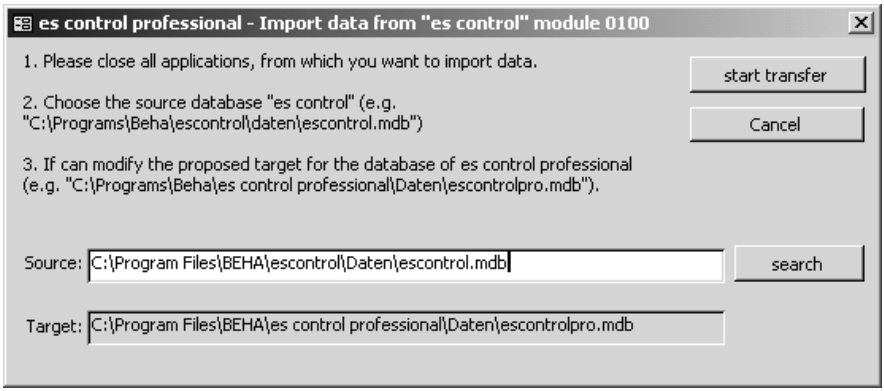


Figure 7.12: "Data import from es control module 0100" window

- Directly indicate within the "Source" field the directory and the database file of the "es control" software of which the import should take place. Optionally, you may click the "Search” button to select the directory and a database file.
- Click the "Start transfer " button to start data import.

Import from 0100 Expert-Manager

- After having opened the "File | Import data from | 0100 Expert-Manager " function, the following window is displayed.

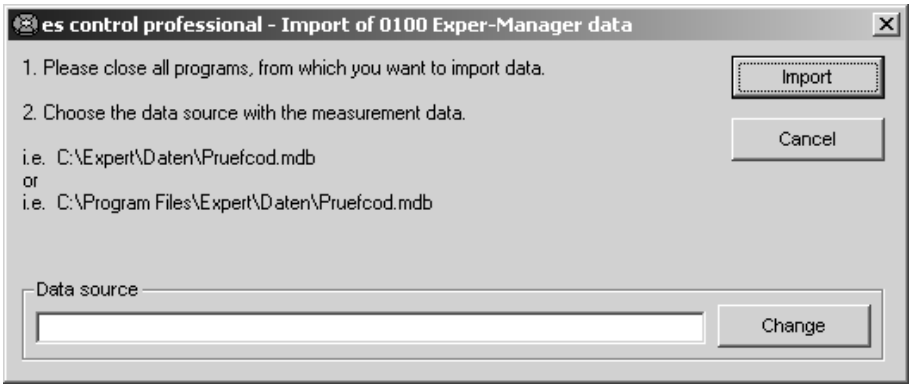


Figure 7.13: "Import from 0100 Expert-Manager" window

- Directly enter into the "Data Source" field the directory and the database file of the "Expert-Manager" software, from which the import shall be performed. If desired, you may click on the "Change" field to select the directory and a database file
- lick on the "Import" button to start the data import

- Now, the data import is started. During data import, indication is made of how many tests and measurements are imported.

☞ The data import may require a longer time period.

☞ You must not cancel the running data import, otherwise the UNITEST es control 0100 professional database might be damaged. Then, it is indispensable to manually delete partly imported data records from the UNITEST es control 0100 database and es control 0100 must be started again!

- After successful data import, a respective message is displayed.

☞ Only carry out the data import once. If carrying out the data import several times, the same tests are created again.

☞ In the “Conductor/Cable”, “Fuses”, and “RCD” selection lists, only the appropriate types, needed for the printout of the protocols, are created.

7.1.5 “File | Exit” Menu (and Restoration of a damaged Database)

This function is used to close the database and to exit the program. Hereby, UNITEST es control 0100 professional reorganises and compresses the database, then the program is terminated.

☞ Depending on the size of the database, the process to reorganize and compress may require a longer time period.

☞ To temporarily perform a data backup, the UNITEST es control database can be saved into a backup file in the “BACKUP” subdirectory, using the name “ESCONTROL.BAK” when closing the program. The following window is displayed:

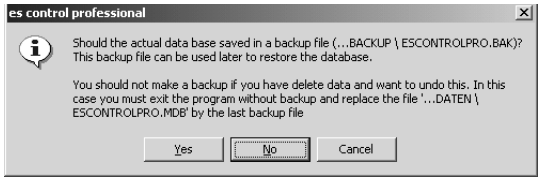


Figure 7.14: “Data backup” window

- Confirm by clicking on Yes if a copy of the database should be made. The database is saved as “...BACKUP \ ESCONTROL.BAK” at the current status. The saving procedure may require a longer time period, depending on the processor speed and the size of the database.

☞ If after the next program start your data is damaged or deleted by mistake, this copy can be used later for data restoration.

- For data restoration, rename first the invalid or damaged database “ESCONTROL.MDB” within the ”DATA” directory to e.g. ”ESCONTROLPRO.OLD”.

- Then copy the backup file “…\BACKUP \ ESCONTROL.BAK” into the ”DATA” director

- Now rename the file of “ESCONTROLPRO.BAK” into “ESCONTROLPRO.MDB” and start the es control 0100 program again and

7.2 “Module” Menu

If the other es control modules “0113” or “0701/0702” have been installed, you may enter these modules. Only the UUTs and tests of the selected module are displayed. If the modules are not available, the respective menu points are shaded in grey.

☞ The areas DIN VDE 0701/0702, 0751, and 0113 are combined and automatically detected when reading in data.

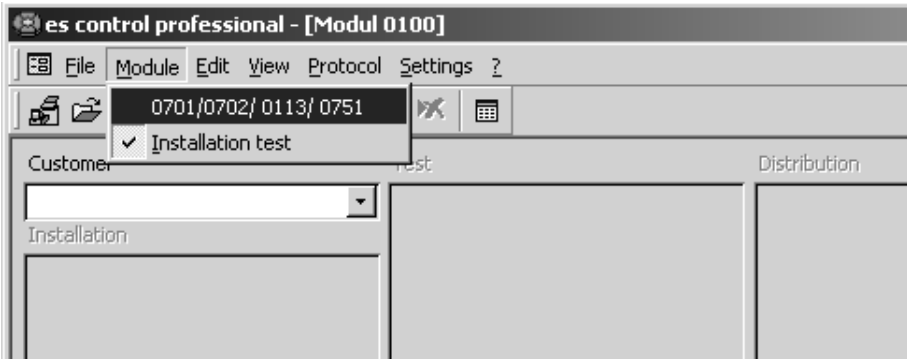


Figure 7.15: “Module” menu

7.3 "Edit" Menu

The main menu combines commands which can be applied to the data records for customers, installations, test, distribution, and current circuit.

7.3.1 "Edit I Find test" Menu

This function is used to search and directly display a protocol.
Search can be made for:

Customer:	Installation:	Test:
- Customer name	- Code	- Test report No.
- Customer No.	- Numbe	- Order No.
	- Name	- Test date

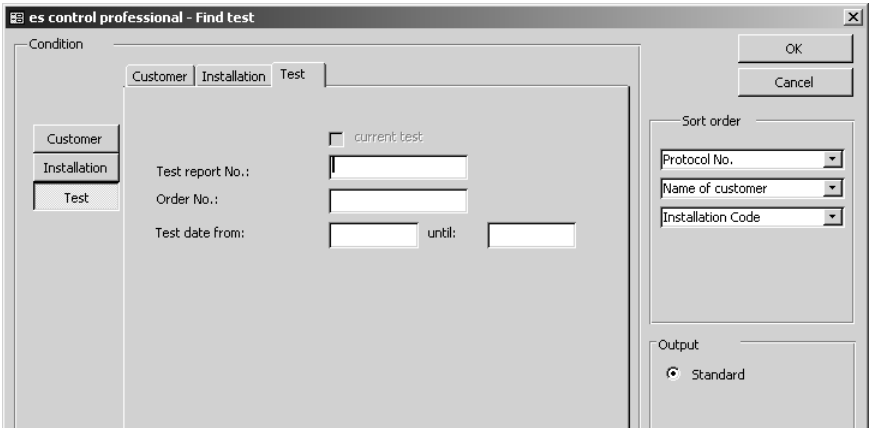


Figure 7.16: Search Protocol

Different criteria for the sorting of the result list can be selected within the sort order.

☞ Both search fields also function via the substitutes '*' for several characters and '?' for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all tests are displayed as search results in one table.

7.3.2 “Edit I Add record” Menu

This function is used to create a new data record for the respectively selected database field (valid for customer, installation, test, distribution, current circuit data records).

- First select the respective database field. For this, use the "View” menu function or directly click on the database field.
- Now create the new data record by using the “Add I Record” menu command or via the context menu which can be accessed by clicking the right mouse key.

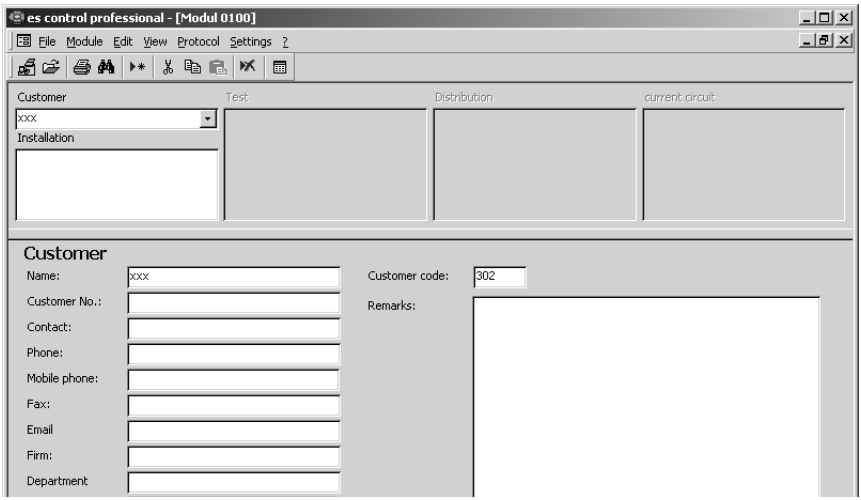


Figure 7.17: “Add I Data record” window

- The standard default setting for a new data record name for customers, installations, distributions, and current circuit is “xxxxx”.
- The standard default setting for the code of a new data record for installations, distributions, and current circuit is the ascending number, starting with “001”.
- The standard default setting for a new test is “Initial Test”. Standard default setting for a new test date is the current date.
- Change the name of the data record and enter your data for the new data record. Complete the remaining fields as appropriate.

☞ The data is written into the database as soon as you exit the current entry window or select another data record.

7.3.3 “Edit I Cut” Menu

This function is used to cut an available database field. This selected data record can be shifted within the UNTEST es control database using the "Data record I Paste” function (please refer to section 7.3.5)..

- First select the respective database field using the “View” menu function or by directly clicking on the database field
- Select the “Cut” function from the “Data record” menu or use the context menu which can be accessed by clicking the right mouse key. The data record is now marked and can be shifted within the database.

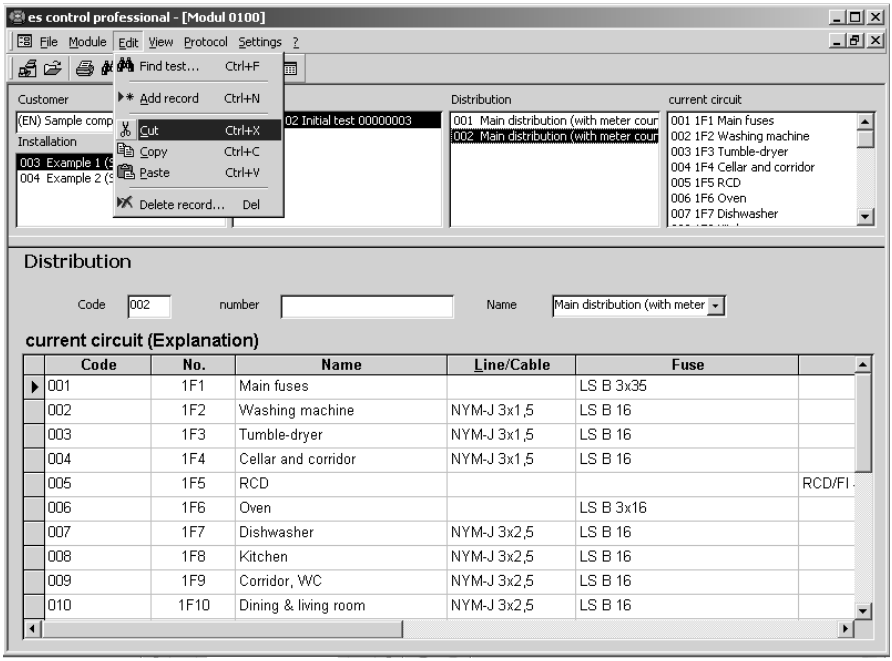


Figure 7.18: “Data record I Cut” window

☞ Customers cannot be cut as they cannot be assigned to a superior data base level. Selection of this function is not possible or is ignored.

7.3.4 Menu “Data Record I Duplicate“

This function is used to copy an available data record for the respective selected database field, including all entries (valid for data records of customer, installation, test, distribution).

- First select the respective database field using the “View” menu function or by directly clicking on the database field.
- Select from the "Edit” menu the "Copy” function or use the context menu which can be accessed by clicking the right mouse key. A copy of the previously selected data record is made. In the example below, a new distribution "002 Main distribution (copy)”.

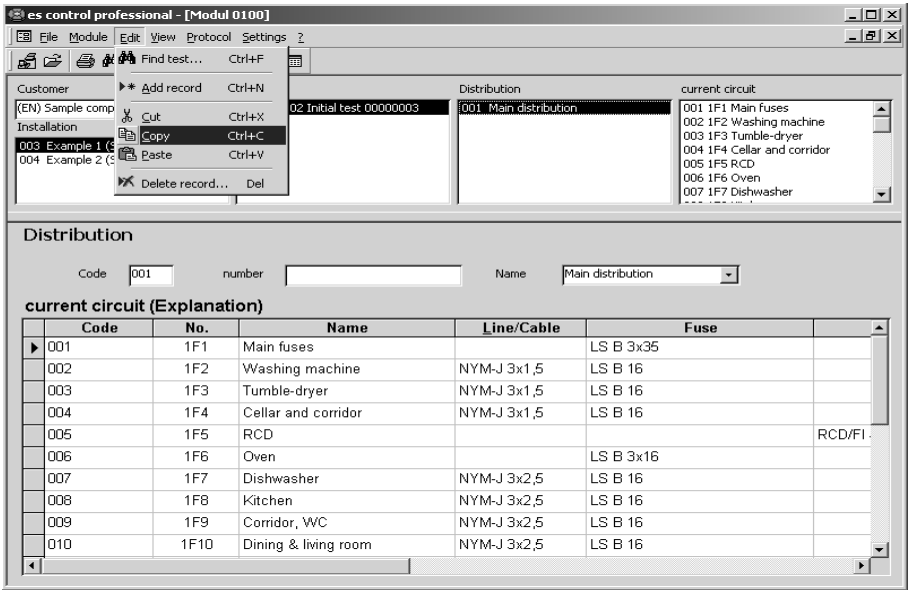


Figure 7.19: "Edit I Copy” window

7.3.5 “Edit | Paste” Menu

This function is used to assign a previously cut data record to another data record within the UNITEST es control database.
To paste the data record, a database field of the respectively superior database level must be selected. To paste distributions, a test has to be selected, for example.

- First select the respective database field using the “View” menu function or by directly clicking on the data base field.
- Now paste the marked data record into the selected test (the data record is shifted) by selecting the “Edit | Paste” menu command or use the context menu which may be accessed by clicking the right mouse key.

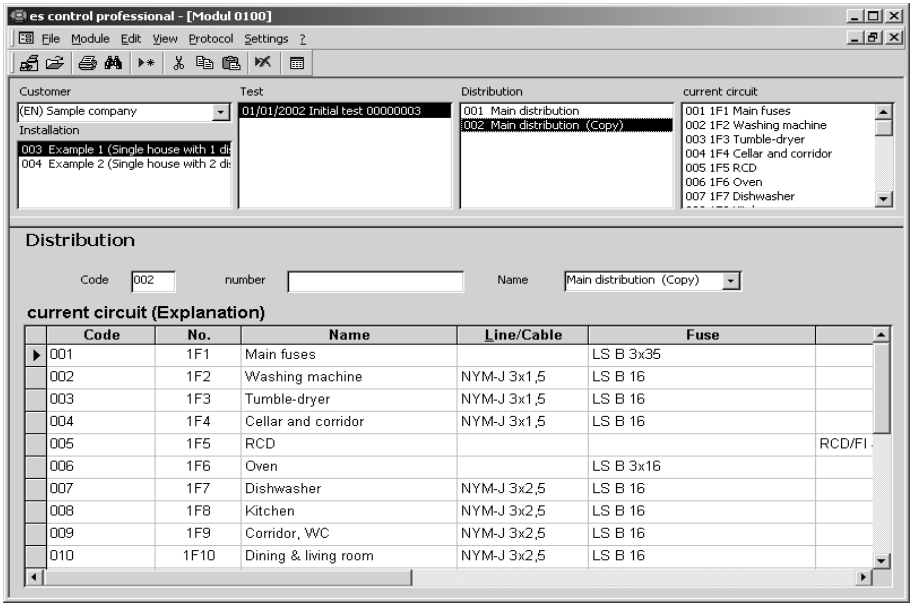


Figure 7.20: “Edit | Paste” window

In the example, a copy of the previously selected data record (001 counter cabinet with distribution panel) has been made: 002 counter cabinet with distribution panel (copy).

- Imperatively change the data record name. Change also the remaining fields as requested.

☞ The installation code within one customer must be unambiguous, the code for distribution and current circuit within one test must be unambiguous, and contain no double numbers! This code should be checked after every duplication procedure and modified, if required!

☞ The code for installation, distribution, and current circuit is automatically assigned by incrementing the last code used by 1.

☞ The suffix “(Copy)” is attached to the name of a duplicated (copied) data record.

☞ The data is written into the database as soon as you exit current entry field or select another database.

☞ During duplication, the measurements are not duplicated. New creation of the measurements must be made or read-in from the test instrument (please refer to section 7.1.1), as every test must show evidence of proven measurements.

7.3.6 "Edit | Delete record" Menu

This function is used to delete the selected data record.

- First select the respective database field using the "View" menu function or by directly clicking on the database field.
- Now delete the marked data record using the "Edit | Delete record" menu command or use the context menu which may be accessed by clicking the right mouse key.
- Confirm the following safety command with "OK", the data record is deleted.

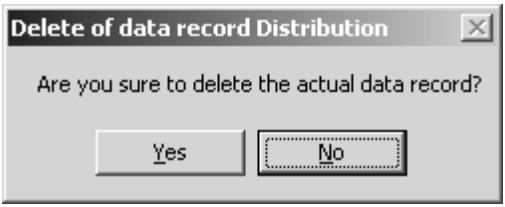


Figure 7.22: "Edit | Delete record" window

☞ When deleting customers, installations, or tests, an additional safety command is displayed as all pertaining subordinate data records will also be deleted

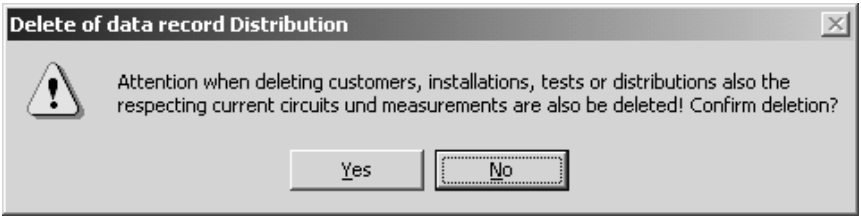


Figure 7.22: "Edit | Delete record" window

☞ If additional UUTs are contained within another module, the following safety request appears, displaying the number of UUTs, broken down according to the individual modules. This must be respected as all data records will also be deleted within the other modules.

7.4 "View" Menu

The following menu functions are used to change to the various database fields. For the actual selection of a data record, an entry in the database field must be selected, in addition. The data records themselves are directly displayed by clicking on the respective button below the list fields.

In general, if not mentioned otherwise, all database fields can accept up to 50 characters. This does not signify, however, that the use of the full length in reports and lists will lead to meaningful results.

The "Remarks" fields are text fields and do not have a pre-defined length (however, maximum 64,000 characters). No returns may be inserted into the filed. The returns are automatically integrated, if they become necessary. The line length on the screen does not necessarily match the printed text.

7.4.1 “View | Customer” Menu

In this menu, the data record for the customer is displayed. All fields may be modified. Every installation must be assigned to a customer, the customers form the highest database level, consisting in installation, test, distribution, and current circuit.

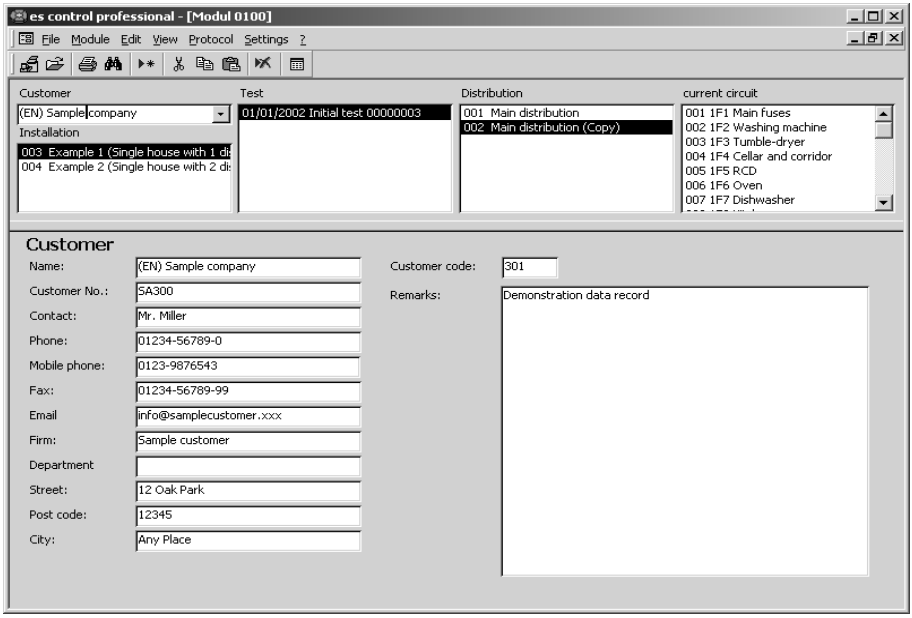


Figure 7.23: “View | Customer” window

- The "Name" and "Customer number" fields are used as short designations for the customer. These fields are not printed on the test protocol.
- An unambiguous code must be entered into the "Customer code" field. This code allows the direct assignment of measurements via user code.

  Leading zeros are removed from the customer code. The customer code may only be assigned one and, consequently, must be unambiguous for each customer.

- The "Contact", "Firm", "Department", "Street", "Post Code", and "City" fields form the customer address which will be printed on the test protocol as client.

☞ The "Remarks" field is a memo field ready to receive further customer data.

Then, a list is given, indicating which database fields from the “Customer” window are printed in which protocols.

	Customer brief	Customer detailed	Installation brief	Installation detailed	ZVEH Handing-Over report	ZVEH Test protocol	ZVEH-E-Check*	BEHA Test protocol	BEHA Measurement protocol	Current circuit list	Legend
Name	J	J	J	J	J	N	J	J	N	J	N
No.	J	J	J	J	J	N	J	J	N	J	N
Contact	N	J	N	N	J	N	J	J	N	N	N
Phone	N	J	N	N	N	N	N	N	N	N	N
Mobile phone	N	J	N	N	N	N	N	N	N	N	N
Fax	N	J	N	N	N	N	N	N	N	N	N
E-mail	N	J	N	N	N	N	N	N	N	N	N
Company	J	J	N	N	N	N	N	N	N	N	N
Department	N	J	N	N	N	N	N	N	N	N	N
Street	N	J	N	N	J	N	J	J	N	N	N
Postal code	N	J	N	N	J	N	J	J	N	N	N
Town	J	J	N	N	J	N	J	J	N	N	N
Remarks	N	J	N	N	N	N	N	N	N	N	N

7.4.2 “View | Installation” Menu

In this menu, the data record for the installation is displayed. All fields may be modified. Every customer can possess several installations (e.g. buildings or installations) containing tests, distributions, and current circuits with respective measurement data

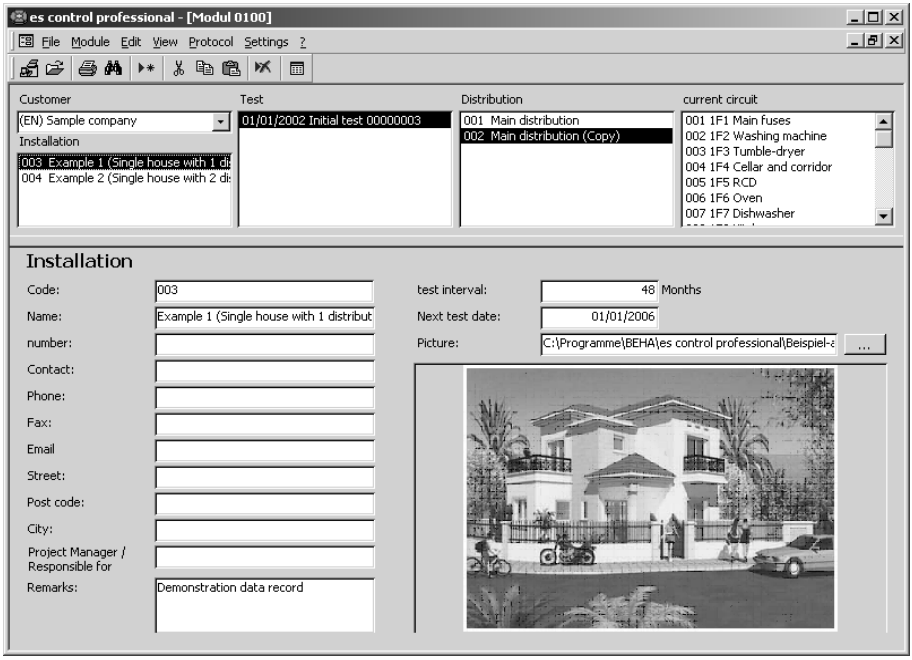


Figure 7.24: “View | Installation” window

- The installation code is automatically assigned at the time of creation, however, can be modified if required. The code must contain a three-digit number between 1 and 999.

☞ The installation code is used to save measurements within the test instrument in such a way, allowing the automatic assignment to the pertaining installation as well as to the distributions and current circuits during read in. The installation code is the number being entered for the object at the test instrument (only possible for 0100- EUROtest) when saving. The measurement data is saved under this installation code within the test instrument.

☞ The "Remarks" field is a memo field ready to receive further data.

- Then a list is given, indicating which data base fields from the “Installation” window are printed in which protocols.

	Installation brief	ZVEH Handing-Over report	ZVEH Test protocol	ZVEH-E-Check**	ZVEH-E-Check**	BEHA Test protocol	BEHA Measurement protocol	Current circuit list	Legend
Code	J*	J*	J*	N	J*	J*	N	J	J*
Name	J	J	J	N	J	J	N	J	J
No	J	J	J	N	J	J	N	J	J
Contact	N	J	N	N	N	N	N	J	N
Phone	N	J	N	N	N	N	N	J	N
Fax	N	J	N	N	N	N	N	N	N
E-mail	N	J	N	N	N	N	N	N	N
Street	N	J	N	N	J	J	N	J	N
Postal code	N	J	N	N	J	J	N	J	N
Town	J	J	N	N	J	J	N	J	N
Installation planner	N	J	J	N	J	J	N	N	N
Remarks	N	J	N	N	N	N	N	N	N
Test interval	N	J	N	N	N	N	N	N	N
Next test date	J	J	J	N	J	J	N	N	N
Installation diagram	N	N	N	N	N	N	N	J	N

*The code is printed into the “No.” field, if no number has been indicated.

☞ A picture can be stored in the background for every installation. This figure is printed with the “Report | Test | Current Circuit List” report. To store an installation figure in the background, click on the “...” button to the right of the entry field. The window “Select Picture File” appears. Now open the respective picture file. The picture display can be switched to the foreground or the background by clicking on the “View” (or “Close”) button.

☞ The picture should be available as Bitmap Format (*.bmp) or as Windows Metafile (*.wmf). By entering “*.*” (confirm with the “Enter” key) in the “File Name” window, it is possible to insert pictures with the suffixes “jpg”, “gif”, “ico”, “cur”, “enf”, and “rle”. These picture formats are only displayed within the page view for Windows NT and Windows 2000. However, the printout within the report is also possible.

☞ The installation picture is scaled to the size of approx. 78 * 61 mm (W*H). We recommend the creation of your installation picture at the size indicated above with a resolution of 150 to maximum 300 dpi. When using larger dimensions and higher resolutions, the file containing the picture becomes very large. This can lead to considerable delays when printing the reports.

7.4.3 “View | Test” Menu

Here, the data record for the test is displayed. The ”Test” window contains the following register windows:

- Test report
- Visual check
- Checked
- Measurement
- E-CHECK* report
- Handing-Over report
- Equipment

☞ All fields and entries available within the register windows are printed on the ZVEH protocols “Handing-Over Report, Test report, and E-CHECK* Report”.

“Test Report” Register Window

Here, you can make indications regarding Test data, Reason of test, Controller, Test report No., Order no., Test carried out complying to DIN VDE etc.

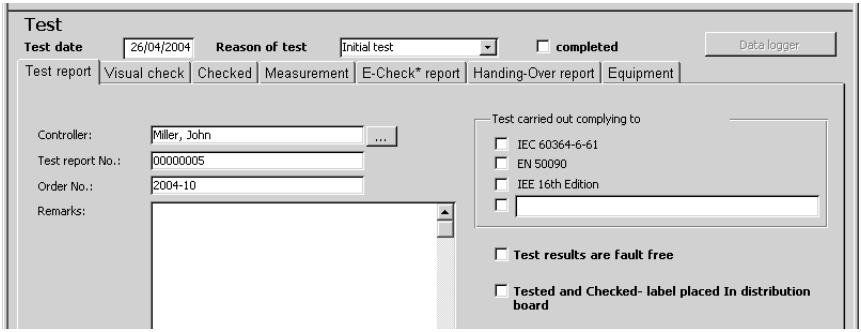


Figure 7.24.1: “View | Test” window, test report register window

☞ The "Remarks" field is a memo field ready to receive further data.

▸ To select the controller click the "..." button (to the right of the controller entry field).

- The following "Controller" window is displayed to select an entry from the available list.

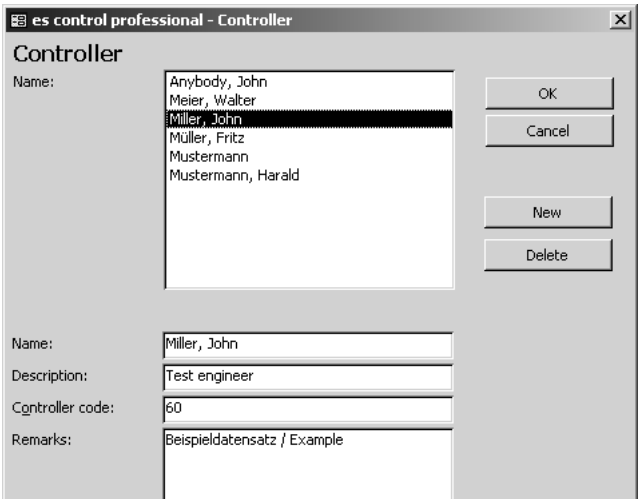


Figure 7.25: "Controller" window

☞ Within the “Test Protocol No.” field, a test protocol number is automatically entered when creating a customer. For this, es control 0100 searches all customers for the last assigned number and enters the next free number into this field. The suggested test report number can, however, be modified at any time.

- Enter the order number into the "Order Nr." field in compliance with a self-defined system (consisting in year, consecutive number, e.g. 2004-05 or any other system defined).

- All further marking fields and entry windows can be marked or completed according to the demand.

“Visual check” Register Window

In this register window, you may mark the marked fields and complete both entry fields, as required, in compliance with the visual checks performed.

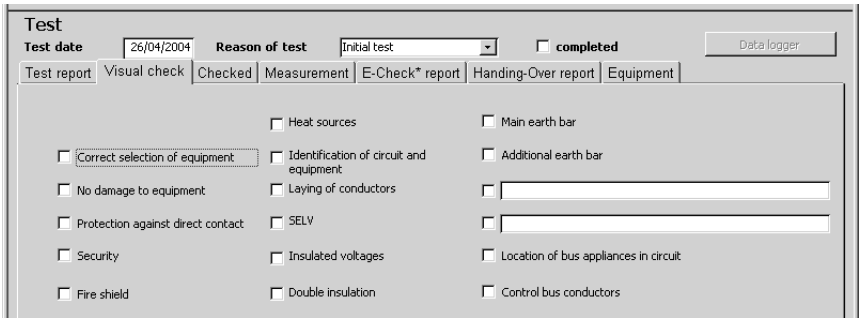


Figure 7.26: “Visual check” register window"

“Checked” Register Window

In this register window, you may mark the marked fields and complete both entry fields, as required, in compliance with the “checked” tests.

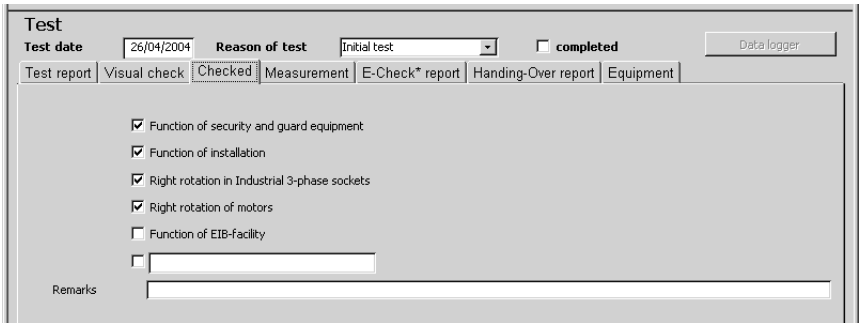


Figure 7.27: “Checked” register window

☞ The "Remarks" field is a memo field ready to receive further data.

"Measurement" Register Window

In this register window, both marking fields and the "Insulation Resistance between bus conductors" entry field may be used as proof for the described tests.

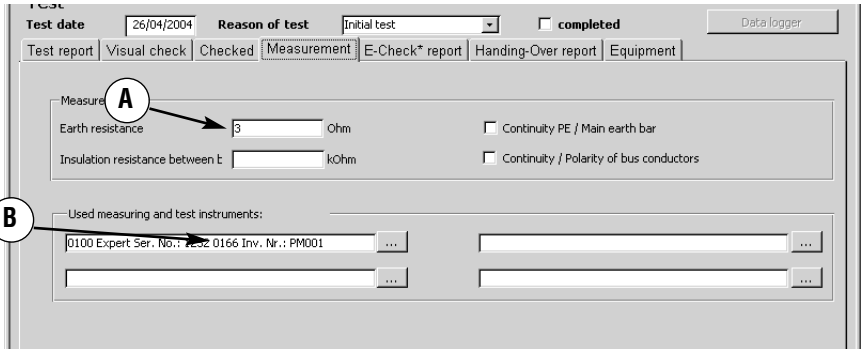


Figure 7.28: "Measurement" register window

This register window contains two additional fields "Earth Resistance" (A) and "Used measuring and test instruments" (B). These two fields have the following characteristics:

- In the "Earth Resistance" field (please refer to A), the highest measured earth resistance from all pertaining distributions and current circuits will be entered when reading in the measurement data. This value may be modified at any time.

☞ This value can be directly taken from an earth measurement or from an RCD contact voltage measurement. If the measurements are modified within the pertaining tables under distribution-current circuit measurement data at a later stage, this value will not be updated.

- When reading in measurement data, the type and the serial number of up to four used measurement instruments is entered into the "Used measuring and test instruments" (B) field.
- It is also possible to directly enter a measurement instrument. For this, click on the "..." button to the right of the entry field. The "Test Instrument" window is displayed. Search for the respective entry and confirm with "OK".

☞ Both entry fields as well as both marked fields, the measurement instrument type, and the serial number are printed on the “Test Report” ZVEH protocols.

“E-CHECK* Report” Register Window

In this register window, you may shade marked windows as required and complete the remarks field.

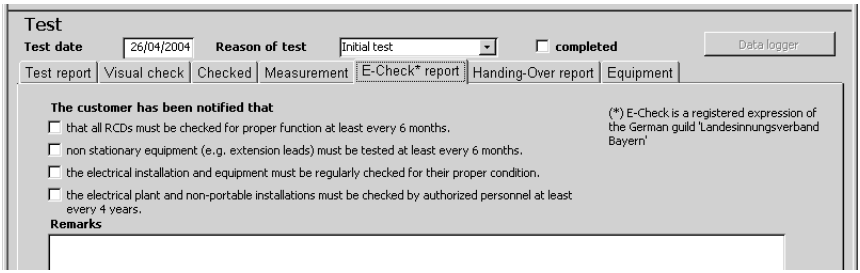


Figure 7.29: “E-Check* Report” register window

☞ The "Remarks" field is a memo field ready to receive further data.

“Handing-Over Report” Register Window

In this register window, you may enter indications regarding electrical supply companies (utility), mains voltage, counter, and system type. Complete the entry fields and shade mark the marked fields as required.

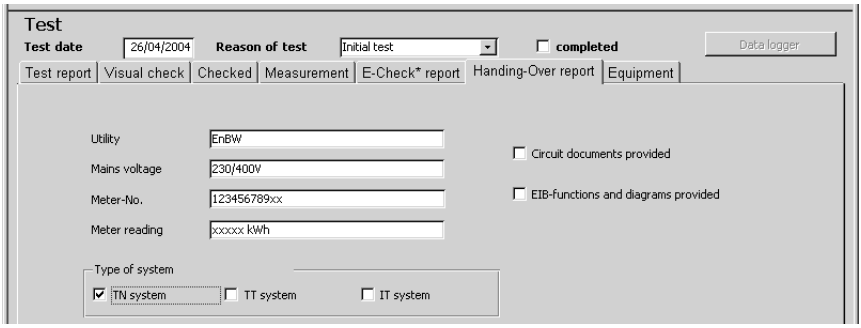
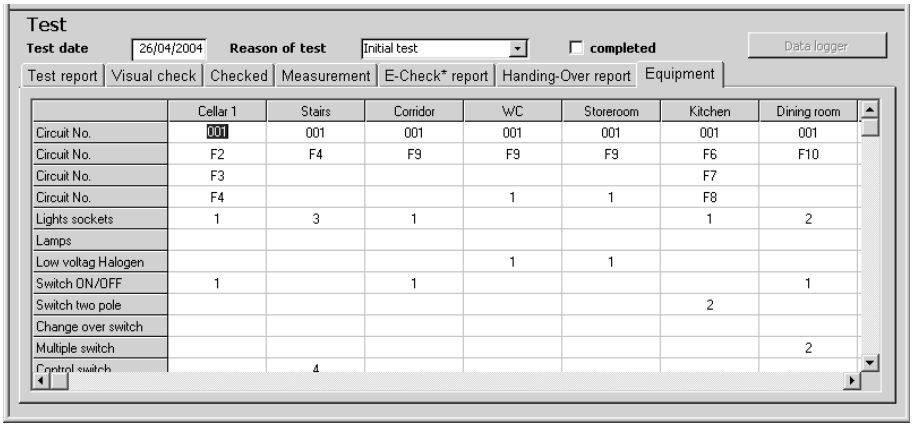


Figure 7.30: “Handing-Over Report” register window

“Equipment “ Register Window

In this register window, entry is made regarding the assignment of equipment to the individual rooms and sites, as well as distributions and current circuits.



	Cellar 1	Stairs	Corridor	WC	Storeroom	Kitchen	Dining room
Circuit No.	001	001	001	001	001	001	001
Circuit No.	F2	F4	F9	F9	F9	F6	F10
Circuit No.	F3					F7	
Circuit No.	F4			1	1	F8	
Lights sockets	1	3	1			1	2
Lamps							
Low voltag Halogen				1	1		
Switch ON/OFF	1		1				1
Switch two pole						2	
Change over switch							
Multiple switch							2
Control switch		4					

Figure 7.31: “Equipment” register window

☞ Entries from both of the register windows “Handing-Over Report” and “Equipment” are printed on the ZVEH Handing-Over report.

☞ The “Equipment” table contains 58 columns and maximum 48 lines. Columns 1-29 are printed on the first page, columns 30-58 are printed on the following page.

7.4.4 "View | Distribution" Menu

Here, the data record for the distribution is displayed. All fields may be modified. Several tests may be assigned to one installation equipped with distributions and currents circuits with measurement data.

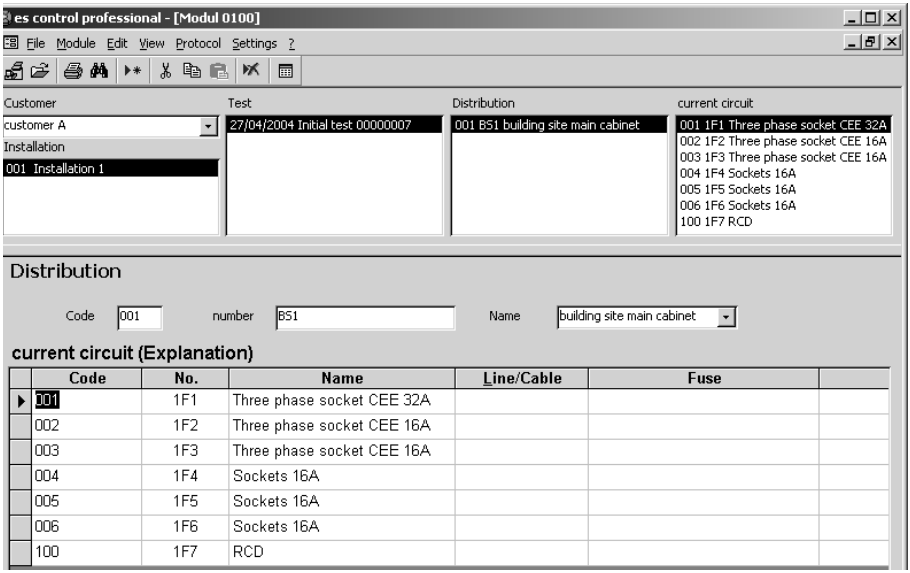


Figure 7.32: "View | Distribution" window

- The **distribution code** is automatically assigned at the time of creation, however, may be modified if required. The code must contain a three-digit number between 1 and 999.

☞ The distribution code is used to save the measurements within the test instrument in such a way, allowing the automatic assignment to the pertaining distributions and current circuits during read in. The distribution code is the number being entered for the distribution when saving at the test instrument. The measurement data in the test instrument is saved under this code.

☞ For the instrument 0100-Expert this is memory level “S”, for example, for the 0100 EXPERT plus this is memory level “U” (sub-division).

- The number (No.) for the distribution may be indicated. Enter for example “BS1”. If a value is entered, this value is printed in lieu of the distribution code.
- A name for the distribution may be entered by clicking the “▾” field on the right of the entry field. A list is now displayed indicating all used distribution designations. Select the respective entry from the list.
- The "Current Circuit (Explanation)” table includes an overview of the current circuits contained within the selected distribution with designations for Code, Number, Name, Conductor/Cable, Excessive Current Protection Devices, RCD

☞ It is possible to enter these designations into the “Current Circuit window. However, the process is faster and clearer when directly entering these designations into the table.

- The fields in the “**Code**” column are automatically assigned when creating current circuits, however, may be modified by double click.
- The fields in the “**No.**” column may be modified by double click.
- The fields in the “**Name**” column can be modified by double click. After double clicking, click on the field “▾” to the right of the entry field. Then, a list containing all used current circuit names appears. Select the respective entry from this list.
- The fields in the “**Conductor/Cable**”, “Excessive Current Protection Device”, and “RCD” column can also be modified by double click. After the double click, a respective window is displayed. Select the respective entry from this list.
- The fields in the "Remarks" column may be modified after clicking.

☞ To facilitate data entry, es control 0100 professional offers the possibility to mark columns of several current circuits using the mouse.

- To mark several fields, move the mouse pointer to the desired column (e.g. "Nr.") to the beginning of the first line of the first field (e.g. "003") until the mouse pointer changes to a cross. Press the left mouse key and move the mouse to the line of the last field (e.g. "008").

The fields are now marked as follows.

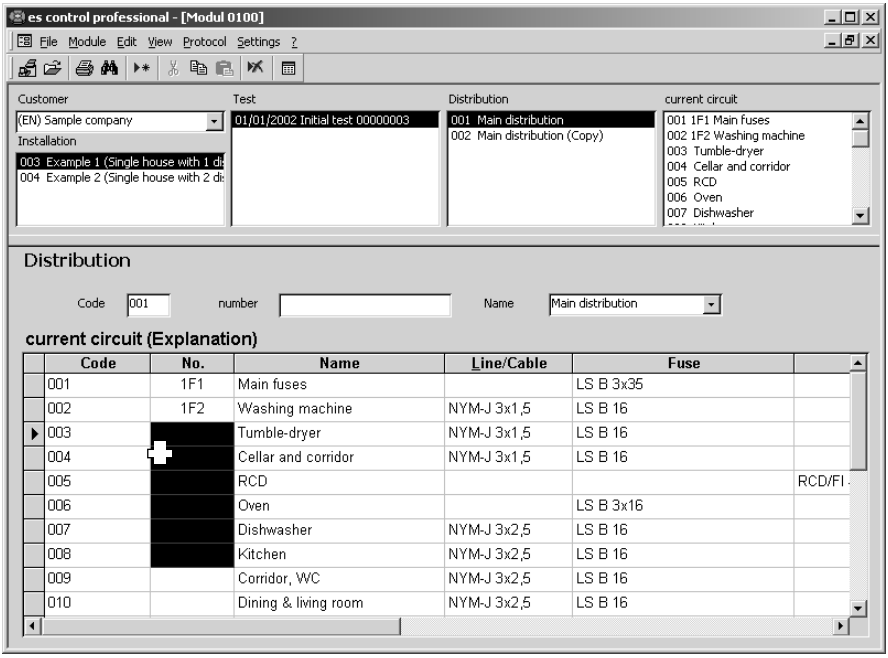


Figure 7.33: Marking several fields

- Move the mouse pointer into the marked area and click the right mouse key to open the context menu. Select the "Modify group" function. A window is displayed to enter the desired designation or modification. The selected designation is then accepted for all marked fields.

Thus, the same assignments for “Line/Cable”, “Fuse”, or “RCD” may be entered very easily.

☞ Furthermore, es control 0100 professional allows an AUTOMATIC numbering when assigning current circuit codes and the numbering of current circuits. For this, mark the respective column (e.g. Current Circuit Number) and then enter e.g. “1F1”. Confirm with the “OK” key.

Es control 0100 professional then numbers all current circuits from 1F1 through 1F13 (refer to the example in Figure 7.25).

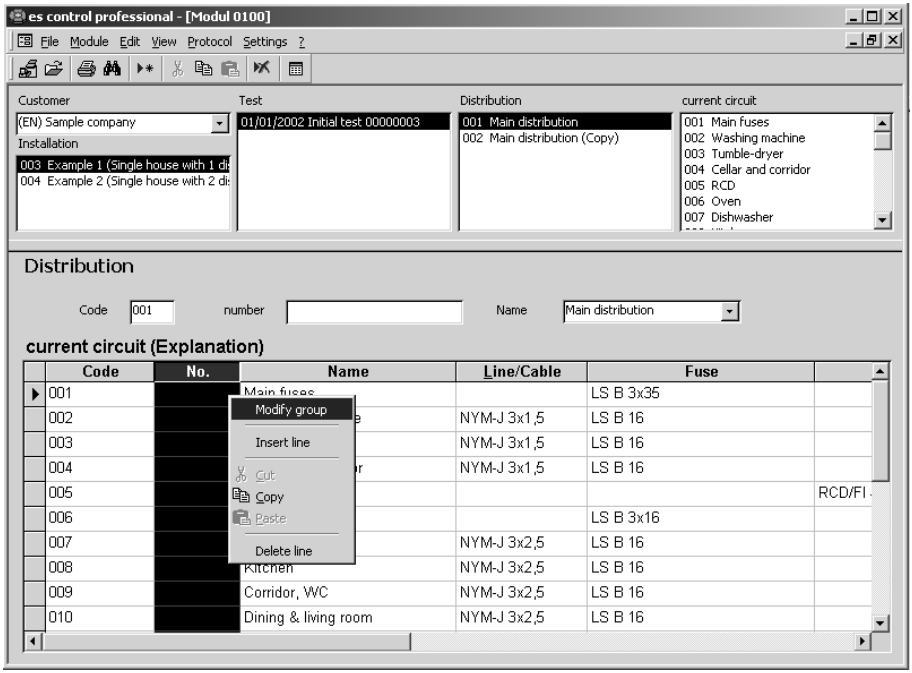
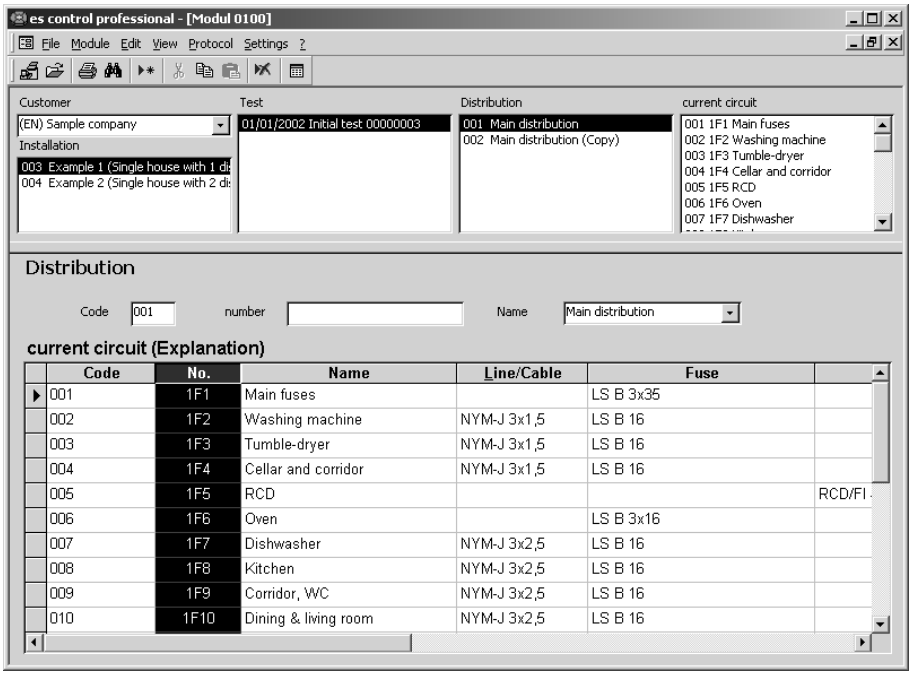


Figure 7.34: Entry of current circuit numbers



Code	No.	Name	Line/Cable	Fuse	
001	1F1	Main fuses		LS B 3x35	
002	1F2	Washing machine	NYM-J 3x1,5	LS B 16	
003	1F3	Tumble-dryer	NYM-J 3x1,5	LS B 16	
004	1F4	Cellar and corridor	NYM-J 3x1,5	LS B 16	
005	1F5	RCD			RCD/FI
006	1F6	Oven		LS B 3x16	
007	1F7	Dishwasher	NYM-J 3x2,5	LS B 16	
008	1F8	Kitchen	NYM-J 3x2,5	LS B 16	
009	1F9	Corridor, WC	NYM-J 3x2,5	LS B 16	
010	1F10	Dining & living room	NYM-J 3x2,5	LS B 16	

Figure 7.35: Automatic numbering of current circuit numbers

☞ The designation entered must end with a number to allow automatic assignment. If only "1F" is entered into the example, the designation "1F" will be taken for all fields.

☞ For automatic assignment of the measurements to distributions and current circuits, the distribution code within one test must be unambiguous and contain no double numbers! The distribution code is automatically assigned when creating the data record. It is advised to leave this code unchanged. However, if desired it may be modified as required.

☞ If double distribution codes occur within the same client, reference will be made by a respective message. They must be modified accordingly in the "Distribution or Current Circuit – Explanation" window.

☞ The manual entry facility of distributions and current circuits allows entering the structure of an installation prior to testing. A current circuit list can be printed representing a support for the controller when entering distributions and current circuit codes during measurement data saving.

☞ Various models for installations with the respective structure of distributions and current circuits can be created (e.g. detached family house, multiple dwelling, building site main cabinet). These can then be copied or modified as required.

7.4.5 “View | Current Circuit” Menu

Here, a data record is displayed for the current circuit. All fields may be modified. Several tests can be assigned to an installation being equipped with distribution and currents circuits containing measurement data.

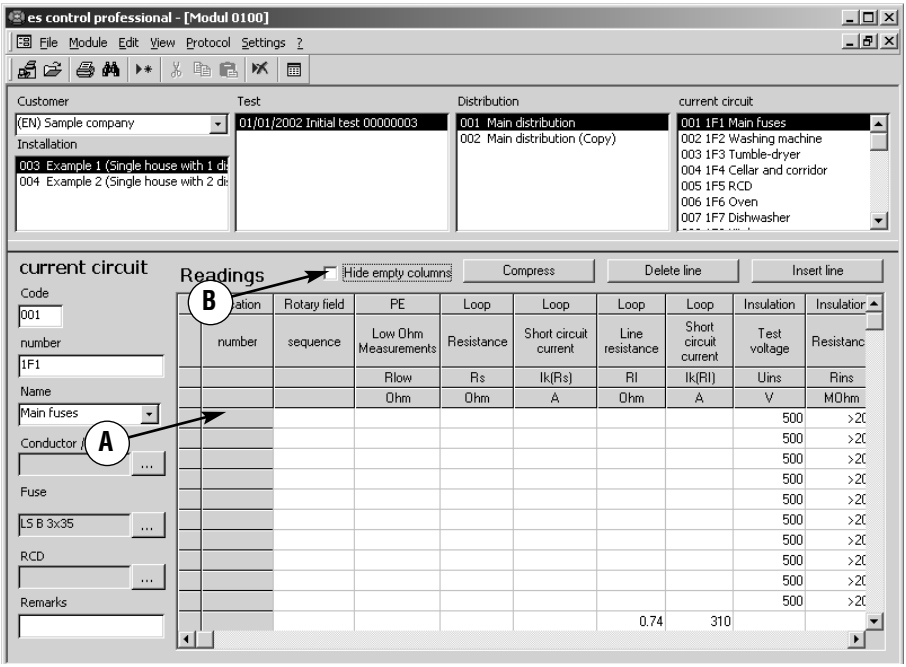


Figure 7.36: “View | Current Circuit”

- The current circuit code is automatically assigned at the time of creation, however, may be modified if required. The code must contain a three-digit number between 1 and 999.

☞ The current circuit code is used to save the measurements within the test instrument in such a way, allowing the automatic assignment to the pertaining distributions and current circuits during read in. The current circuit code is the number being entered for the current circuit when saving at the test instrument.

For the instrument 0100-Expert this is memory level “P”, for example, for the 0100 EXPERT PLUS this is memory level “S” (current circuit)

- The **number (No.**) for the current circuit may be indicated, enter for example “1F2”. If a value is entered, this value is printed in lieu of the current circuit code.

- A **name** for the current circuit may be entered by clicking the “ ▾ ” field on the right of the entry field. A list is now displayed indicating all used current circuit designations. Select the respective entry from the list.

- The fields “**Line/Cable**”, “**Fuse**”, and “RCD” may also be modified here by clicking on the “...” button on the right of the entry field. A respective window is displayed allowing the selection of the appropriate entry.

- By double clicking the fields in the “**Location**” (A) column an additional designation for a location number (e.g. socket number) can be indicated for each measurement value.

- To hide empty columns click on the marking field ‘Hide empty columns’ (B). The read-in measurement results are presented as shown in Figure 7.37.

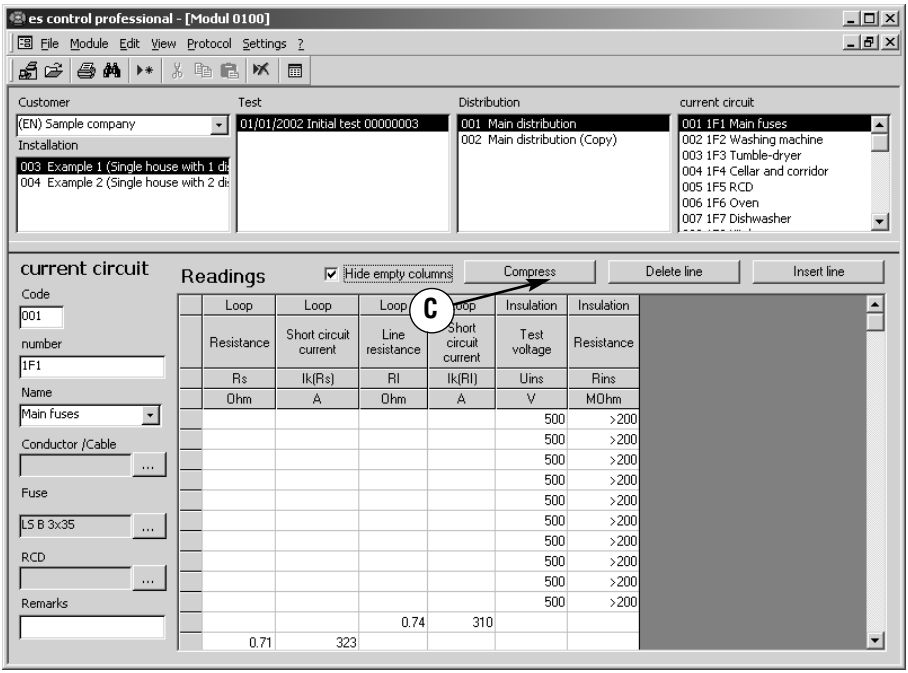


Figure 7.37: "View | Current circuit " window with compressed measurements

- The procedure to compress data can be carried out to get a better overview for the printout and to reduce the number of required pages. For this, click on the “Compress” (C) button. The procedure to compress summarises the lines indicating measurement values within various columns. Measurement values are summarised to groups of measurement data, then the ascending sorting process according to location numbers is carried out, whereby empty lines are immediately deleted.

☞ Important! Prior to compressing or to hiding empty columns, the location numbers should have been assigned. Otherwise, the column indicating the location numbers will not be displayed or measurement data that do not belong together are written into the same line.

☞ For automatic assignment of the measurements to distributions and current circuits, the current circuit code within one test must be unambiguous and contain no double numbers! The current circuit code is automatically assigned when creating the data record. It is advised to leave this code unchanged. However, if desired it may be modified as required.

☞ If double current circuit codes occur within the same client, reference will be made by a respective message. They must be modified accordingly in the "Current Circuit or Distribution-Current Circuit Explanation" window.

☞ If the line content is to be deleted, the respective block must be marked, then delete with “Del” or via the context menu.

☞ If complete lines are to be deleted, mark the field at the very left side of the respective line, then delete with “Del. “ or via the context menu.

Monitoring the Limit Value

The es control 0100 professional program can perform a measurement value evaluation of ZVEH measurement functions. When working with the EUROtest, the limit values are taken over by the test instrument. If the test instrument does not deliver any limit values, those values are loaded from a table having been entered in the menu point "Setting | Limits..." menu point.

Depending on the values measured, different active limit values may be displayed. In case a limit value is not respected, the measurement value is marked in red. If no limit value is available, the measurement value is marked in blue. Processing limit values is performed via the right mouse key within the context menu using the "Limit values" function. After opening the function, the following window is displayed:

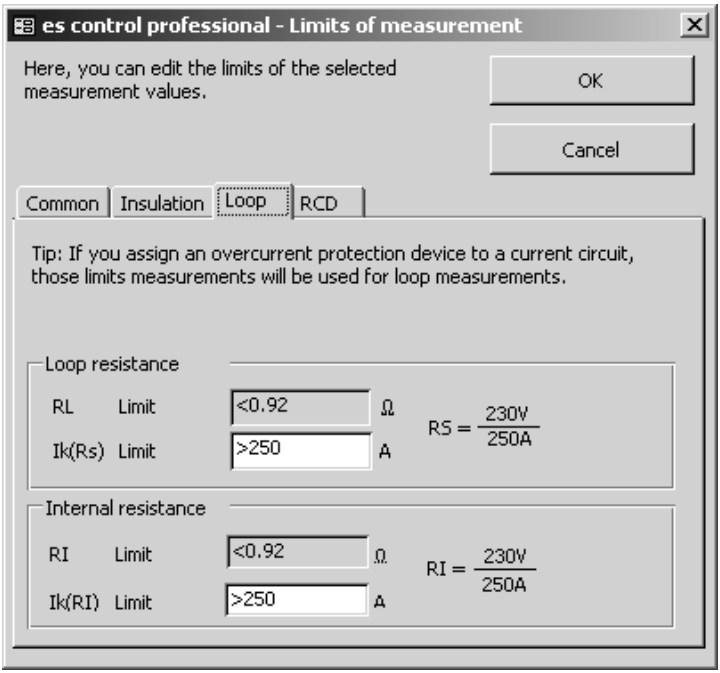


Figure 7.38: "Limits of measurements" window

☞ For further information regarding the limit value monitoring, please refer to the "Setting/Limits" menu (chapter 7.6.7).

7.4.6 “View I Test Instrument “ Menu

Here, the data records for all created test instruments are displayed. All test instruments used for the tests are listed here. If a new test instrument is used for data read in, it is automatically added to this list. Data records may be modified, added, or deleted. For this, use the respective "New” or "Delete” menu functions

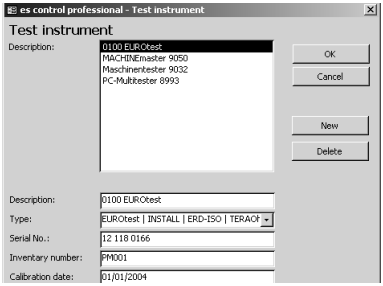


Figure 7.39: “View I Test Instrument” window

- The “**Description**” field contains the test instrument descriptions and is displayed or printed for the respective tests and test protocols.
- The “**Type**” field contains the test instrument type, this could be e.g. “0100-Expert/0100 Multitester or 0100-EUROtest, INSTALLtest, and ERD-ISOtest, TERAOhm”. This is important for the data format and the data transfer from the test instrument.
- The “**Serial Number**” field contains the serial number or the factory number of the test instrument. It is saved within the test instrument memory and is also transferred during data transmission.
- The “**Inventory Numbe**r” field contains an identification number for the test instrument (e.g. inventory or test equipment number).
- The “**Calibration Date**” field is a text field into which the calibration data of the test instrument may be entered.
- The “**Remarks**” field is a text field into which further data to the test instrument (e.g. supplier, repairs, calibration equipment,…) may be entered.
- The designation, the serial number and inventory number fields are used on the test protocols.
- The communication parameter and the type of data transfer are set by selection in the “Type” field. For the test instruments 0100-EUROtest, 0100-INSTALLtest, and ERD-ISOtest, or TERAOhm the type “EURO-/ Install/Erd-Isotest/TERAohm must be set. For 0100-Expert, or 0100 Expert plus the type “0100-Expert/0100 Multitester” must be set. The module es control 0100 professional does not use all instrument types.

7.4.7 "View | Controller" Menu

Here, the data records for the created controllers are displayed. All persons carrying out tests are entered here. Data records can be modified, added, or deleted. For this purpose, use the respective menu functions "New" or "Delete".

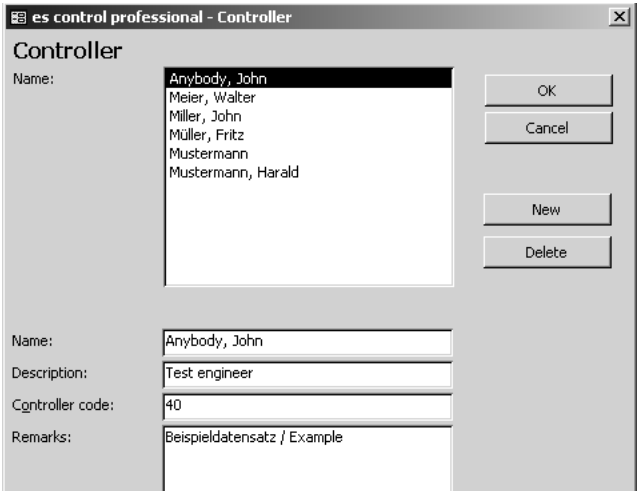


Figure 7.40: "View | Controller" window

- The "**Name**" field contains the controller name and is displayed or printed for the respective tests and test reports.
- The "**Description**" field contains additional controller descriptions.
- The "**Remarks**" field is a text field. In this field, further controller data can be entered.n.

☞ However, this field is used within the es control 0113 professional or the es control 0701/0702 professional software. Here, a controller code may be entered, the tests are consequently assigned to defined controllers. The es control 0113 professional or the es control 0701/0702 professional software are a further part of the es control 0100 professional which can be used for administration of machines and portable instruments.

7.4.8 "View | Line/Cable" Menu

This menu contains the display of the data records for the used line and cable types. Data records with examples have been created which may be modified or deleted as appropriate. Furthermore, new data records can be added. For this purpose, use the respective "New" or "Delete" menu functions.

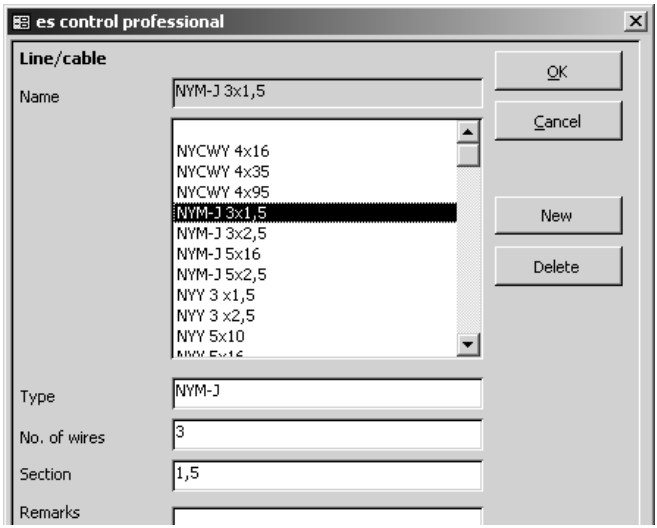


Figure 7.41: " View | Line/Cable" window"

- The "**Type**" field contains the designation (design abbreviation) of Line/cables.
- The "**No. of wires**" field contains the number of conductors or wires available.
- The "**Section**" field contains the cross section of conductors or wires.
- The "**Remarks**" field can be used for own indications, however, is not visible on the printouts.

☞ If line and cable types are modified, these modifications are also changed for all tests, distributions, and current circuits in which this type is used.

7.4.9 "View | Fuse" Menu

In this menu the data records for the used fuses are used. We are dealing with data records created using examples, which may be modified or deleted, as requested. Furthermore, new data records can be added. For this purpose, use the respective "New" or "Delete" menu functions.

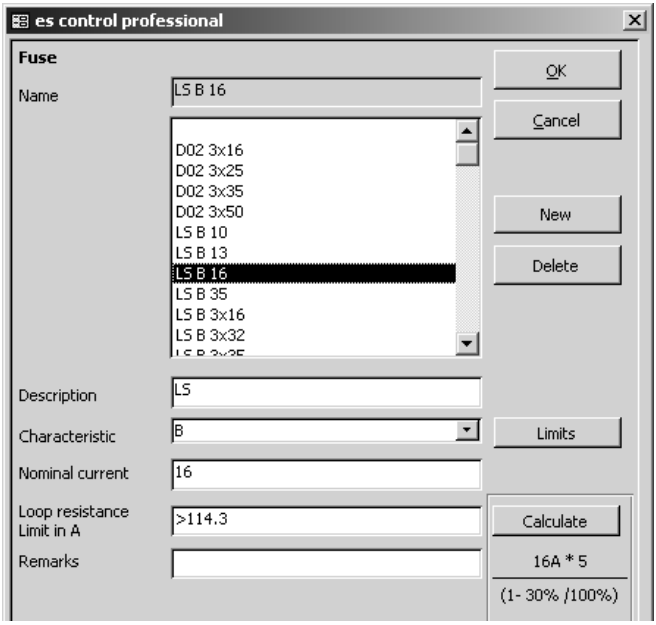


Figure 7.42: "View | Fuse" window

- The **"Description" field** contains the designation of type (type abbreviation).
- The "Characteristic" field contains the type designation and the characteristics of the fuse.
- The **"Nominal current" field** contains the nominal current of the fuse.
- The **"Remarks" field** can be used for own entries, but is not visible on the printouts.

☞ If fuse types are modified, these modifications are also changed for all tests, distributions, and current circuits in which this type is used.

☞ A newly created overcurrent protection device of limit values for loop impedance may be calculated using the "Calculate" button.

☞ Limit values can be controlled and processed using the "Limits" button.

After opening the function, the following window is displayed:

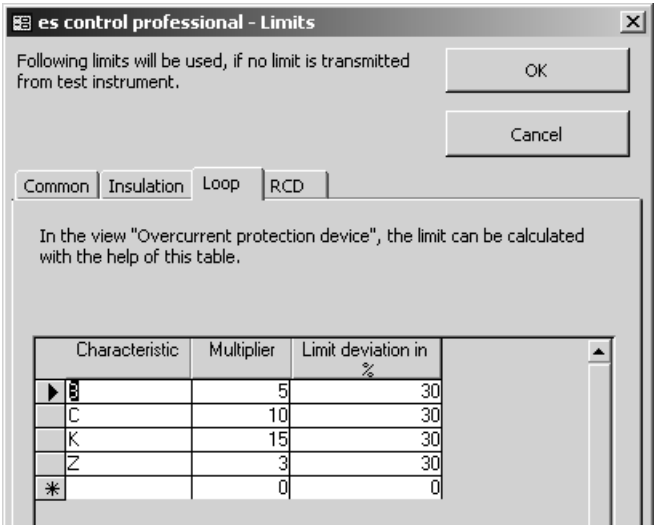


Figure 7.43: "Limits"" window

☞ If no limit values are transferred from the test instrument, the available limits are used.

☞ For further information regarding the limit value monitoring, please refer to the "Setting/Limits" menu (chapter 7.6.7).

7.4.10 “View | RCD” Menu

In this menu the data records for the used residual current devices (RCD) are used. We are dealing with data records created using examples, which can be modified or deleted, as appropriate. Furthermore, new data records can be added. For this purpose, use the respective “New” or “Delete” menu functions.

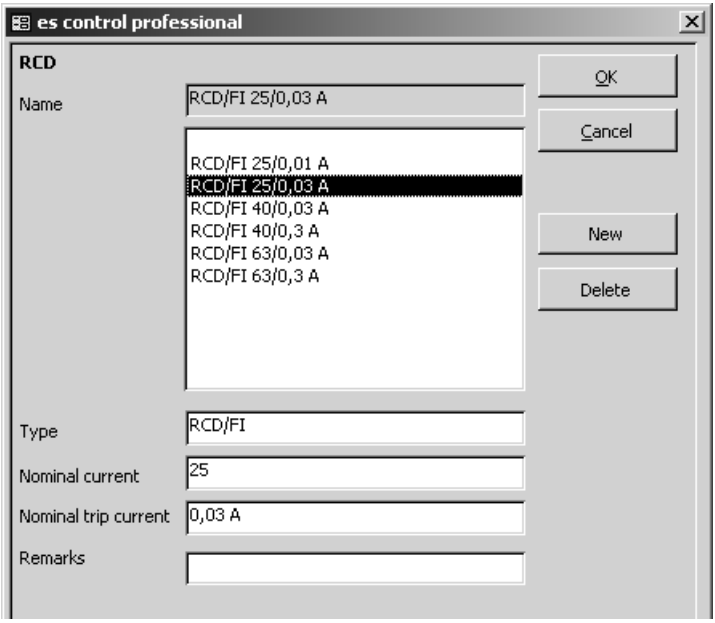


Figure 7.44: “View | Residual Current Device” window

- The **“Type” field** contains the type designation of the residual current device (RCD).
- The **“Nominal current” field** contains nominal current.
- The **“Nominal trip current “ field** contains the nominal trip current.
- The **“Remarks” field** can be used for own entries, but is not visible on the printouts.

☞ If residual current device types are modified, these modifications are also changed for all tests, distributions, and current circuits in which this type is used.

7.4.11 “View | Read in data” Menu

In this menu, the data records not having yet been transferred to the database are indicated in a list. All measurements having been carried out with one test instrument and having been transferred to the UNITEST es control 0100 are listed in the table “Read in data”, before they are finally assigned to the tests within the database.

This allows to assign the transferred measurements at a later stage to the various customers and installations or even to delete them. Modification of distribution and current circuit codes is also possible and thus the assignment of measurements to distributions and current circuits can be adapted again.

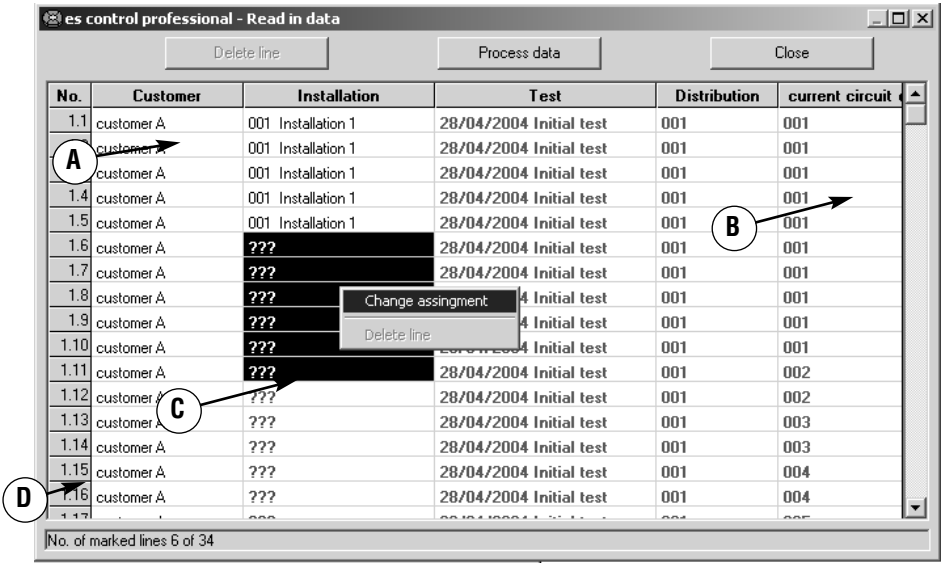


Figure 7.45: “View | Read in data” window

- In the “No.” column, several measurements can be marked using the mouse. The modifications are then accepted for all marked data records.
- The “Customer” column contains the customer assignment of the respective measurement.
- The “Installation” column contains the installation assignment.
- The “Test” column contains the test assignment.
- The “Distribution” column contains the distribution assignment.
- The “current circuit” column contains the current circuit assignment.
- The “Delete line” button deletes all marked measurements.
- The “Process data” button accepts all measurement values marked either in light green or black within the fields. They are assigned to the es control database and simultaneously deleted from the list of transfer data.

☞ Measurement values marked in red are not processed during date transfer!

- The “Close” button closes the window.

☞ When modifying the assignment for the individual measurements, the following order must be observed: “Customer” - “Installation” - “Test” - “Distribution” - “Current Circuit”

☞ First mark the data that require modification. A list of all available database entries is displayed when clicking with the right mouse button or by pressing the enter key. You may select one entry from this list.

Explanation of the Colouring within the Table:

Marking (A),"Sample Customer" (black):
Lines with that type of marking are assigned to already available data records during data transfer. This data has already been modified by the user or recognised by means of the transferred distribution and current circuit indications.

Marking (B), "001" (light green):
Lines with that type of marking are automatically subject to new creation during the data transfer.

Marking (C), "???" (red):
Lines with that type of marking are not accepted during data transfer. These measurement values must be modified by the user, or the respective indications for customer, installation, and test must be created (please refer to section 7.4).).

When working with a UNITEST "0100 Expert":

☞ For the instrument 0100-Expert plus the distribution code is saved under "U" and the current circuit code under "S".

☞ When saving with the UNITEST "0100 Expert", the distribution code must be entered under "S" and the current circuit code under "P" The description "S" for current circuit and "P" for location is no longer valid for the es control 0100!

Transfer data from several test instruments:
After the measurement data transfer, you may close the "Read in data" window and start new data transfer from another test instrument. The measurement data is then added to the list within the "Read in data" window. This measurement data is characterised as follows. The "No." (D) column may then indicate the following:

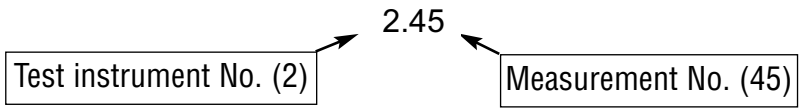


Figure 7.46: Measurement data display of several test instruments

For owner of the instrument series UNITEST Telaris:
Test instruments of the Telaris series are able to save a current circuit code for the measurement. The measurements are saved under a consecutive memory address number.

For this reason, it is recommended to create the installation within the es control 0100 professional with pertaining distributions and current circuits in a test before performing the measurements. Afterwards, the current circuit list can be printed and the measurements can be performed on the installation using the list.

Current circuit list created at 27/04/2004

Customer
number SA300
Name (EN) Sample company

Installation
Code number 003
Name Example 1 (Single house with 1 distribution)
Street
City
Contact
Phone

Test
Test date 01/01/2002
Test report No. 00000003
Order No.



C:\Programme\BEHA\es control professional\Beispiel-Fantage.bmp

Distribution code 002 **Distribution No** **Distribution name** Main distribution (with meter counter)

current circuit Code	No.	Name	Conductor /Cable	Fuse	RCD	Remarks
003	1F1	Main fuses		LS B 3x35		
004	1F2	Washing machine	NYM-J 3x1,5	LS B 16		
005	1F3	Tumble-dryer	NYM-J 3x1,5	LS B 16		
006	1F4	Cellar and corridor	NYM-J 3x1,5	LS B 16		
007	1F5	RCD			RCD/FI 40/0,03 A	
008	1F6	Oven		LS B 3x16		
009	1F7	Dishwasher	NYM-J 3x2,5	LS B 16		
010	1F8	Kitchen	NYM-J 3x2,5	LS B 16		
011	1F9	Corridor, WC	NYM-J 3x2,5	LS B 16		
012	1F10	Dining & living room	NYM-J 3x2,5	LS B 16		
015	1F11	Sleeping room & nursery	NYM-J 3x2,5	LS B 16		

Figure 7.47: Telaris test instruments – Current circuit list

The present memory location number can be entered into the "Remarks" column after having tested a current circuit.
After the assignment of the measurements to the test created the measurements are displayed in the read-in data window

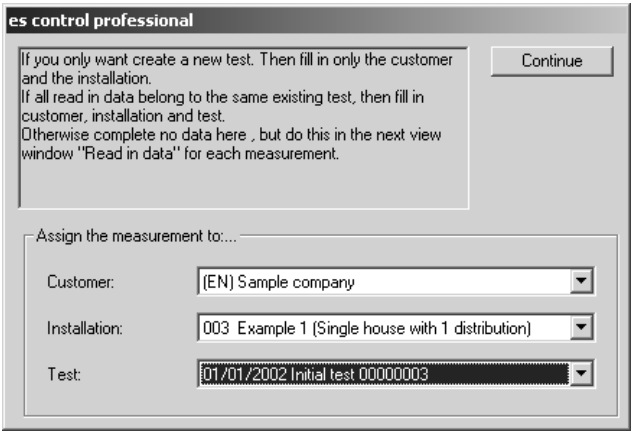
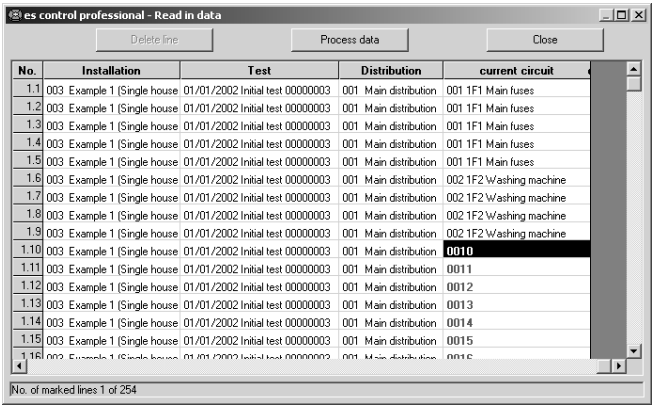


Figure 7.48: Telaris test instruments – assign read in measurements



No.	Installation	Test	Distribution	current circuit
1.1	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	001 1F1 Main fuses
1.2	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	001 1F1 Main fuses
1.3	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	001 1F1 Main fuses
1.4	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	001 1F1 Main fuses
1.5	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	001 1F1 Main fuses
1.6	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	002 1F2 Washing machine
1.7	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	002 1F2 Washing machine
1.8	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	002 1F2 Washing machine
1.9	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	002 1F2 Washing machine
1.10	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	0010
1.11	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	0011
1.12	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	0012
1.13	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	0013
1.14	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	0014
1.15	003 Example 1 (Single house	01/01/2002 Initial test 00000003	001 Main distribution	0015

Figure 7.49: Telaris test instruments – read in data

Measurements of instruments belonging to the Telaris series may be recognised at the 4-digit current circuit code (0001, 0002, etc.) These current circuit codes (memory address number) recognisable at the colour coding light green cannot be automatically assigned to an available current circuit. The assignment of these measurement has to be performed manually.

After the assignment the measurements are taken over clicking the "Process data" button.

7.5 “Protocol” Menu

The following menu functions are used to create, export, or print protocols and lists. Furthermore, you are able to create lists of all database entries, e.g. for customers, installations, test instruments, controllers, etc.

UNITEST es control professional provides the following facilities to output test protocols:

- Output of protocols in compliance with ZVEH protocols (Handing-Over report, test report, E-CHECK*) as printout or as snapshot file
- Output of test and measurement reports as printout or as file in snapshot format (SNP), text format (TXT), richtext format (RTF), or excel format (XLS).

☞ If you select the function “Export as snapshot” in the respective window, you are able to export the displayed list into a snapshot file.

☞ What is a snapshot? Snapshot is a program of Microsoft, which is used to create a report in snapshot format (SNP) and to subsequently display and print the report. The created snapshot file cannot be modified.

7.5.1 “Protocol I Customer” Menu

After having opened this function, the window below is displayed.

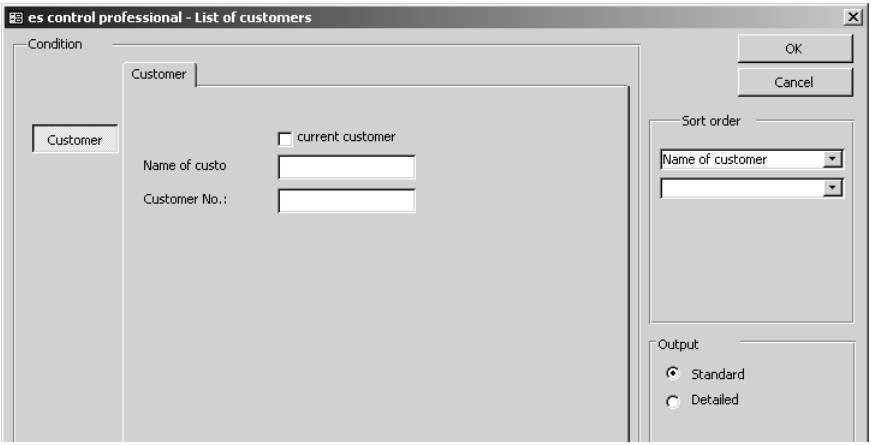


Figure 7.50: “List of Customer” window

- Using the "current customer" field selection can be made whether the list should be used for the current customer or for several customers.
- The search fields also function via the substitutes ‘*’ for several characters and ‘?’ for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all customers are displayed as search results in one table.

- Select between a brief report or a detailed report..
- Select the desired grouping (sorted according to customer name or customer number)..
- Confirm with “OK”. Now a list with the data base entries is displayed

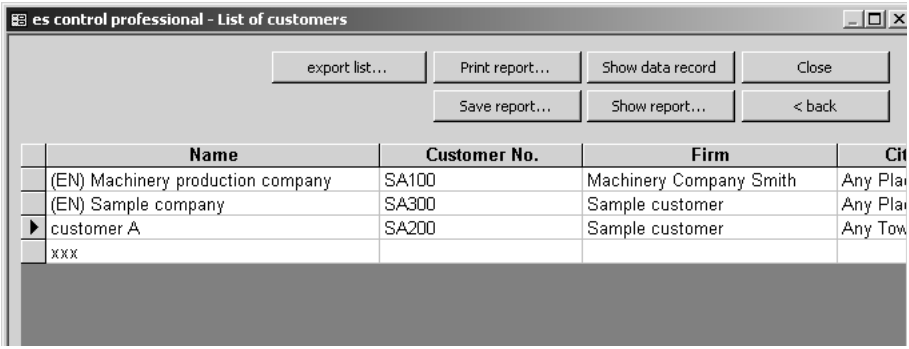


Figure 7.51: “List of customers” window

The following buttons are available:

- "export list " button to export the displayed list in different formats.

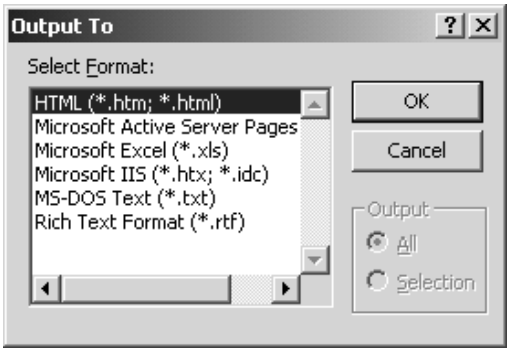


Figure 7.52: "Output To" window

- Print report " button to print the list.
- "Save report " button to memorise into a Snapshot file.

- Show data record " button

This button allows to search and display a data record which has been marked with the mouse. The searched for data record is shown in the window displayed in the background. To jump to the window close the current window by clicking the "Close" button.

- "Show report" button to change to page view.

This button allows to change to the window displaying the printout preview.

It is possible to save, print, or layout a page in the page view window via the menu line.

- "< Back" button to switch to the search mask.
- Click on the “Close” button to close this window.

List of customers created at

Name of customer	Customer No.	Firm	City
(EN) Machinery production company	SA100	Machinery Company Smith	Any Place
(EN) Sample company	SA300	Sample customer	Any Place
customer A	SA200	Sample customer	Any Town
xxx			

Figure 7.53: “Customer List” printout Example

7.5.2 " Protocol | Create list of plants" menu

After opening this function the following window is displayed.

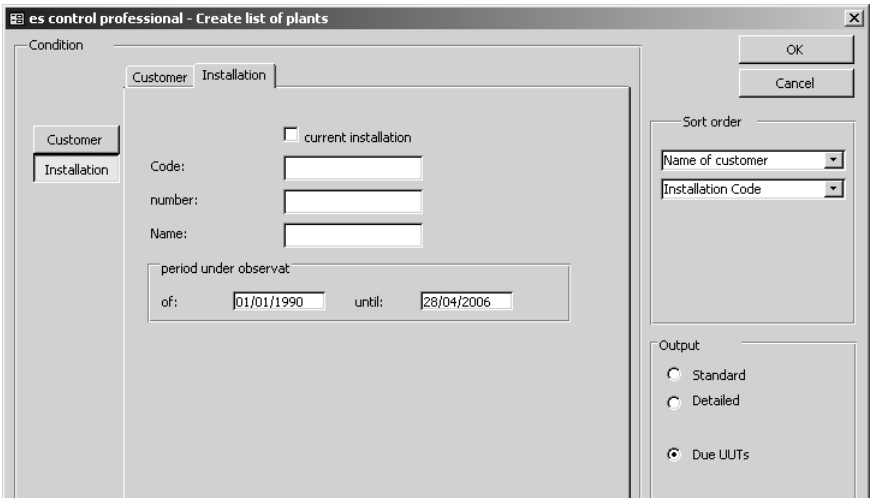


Figure 7.54: "Protocol | Create list of plants" window

- Select via the "current installation" field whether the list should only be established for the current or for several installations.

- The search fields also function via the substitutes '*' for several characters and '?' for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all installations are displayed as search results in one table.

- Select between standard report, detailed report, or due UUTs.

When selecting "due UUTs", only those installations are printed which have exceeded the next test date. Furthermore, it is possible to enter the period for the due UUTs into both entry fields ??"period under observation of….until…"..

- Select the desired sort order.
- Confirm by clicking "OK". A list with database entries is displayed.

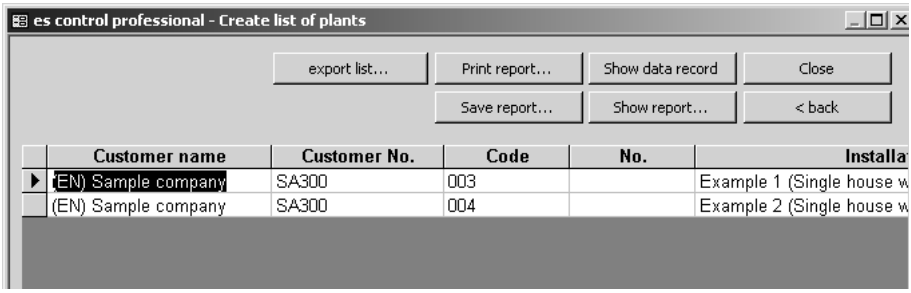


Figure 7.55: "Create list of plants" window

The following buttons are available:

- "export list " button to export the displayed list into different formats.

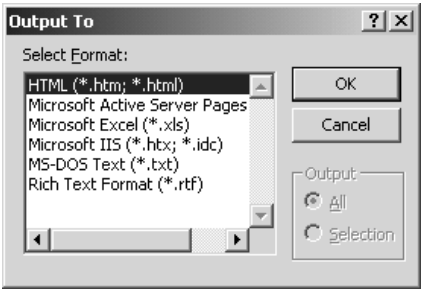


Figure 7.56: "Output To" window

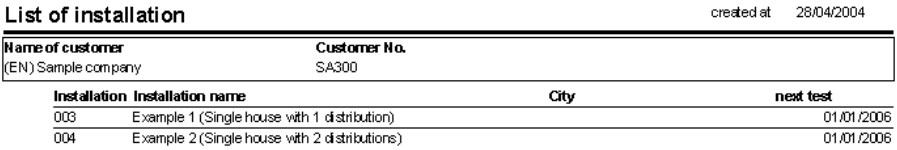
- "Print report " button to print the list.
- "Save report " button to save the report into a Snapshot file.
- "Show data record " button.

This button allows to search and display a data record which has been marked with the mouse. The searched for data record is shown in the window displayed in the background. To jump to the window close the current window by clicking the "Close" button.

- "Show report" button to change to page view. This button allows to change to the window displaying the printout preview.

It is possible to save, print, or layout the list in the page view window via the menu line.

- "< Back" button to switch to the search mask.
- "Close" button to exit the window.



List of installation created at 28/04/2004

Name of customer	Customer No.
(EN) Sample company	SA300

Installation	Installation name	City	next test
003	Example 1 (Single house with 1 distribution)		01/01/2006
004	Example 2 (Single house with 2 distributions)		01/01/2006

Figure 7.57: "List of installation" printout example

7.5.3 " Protocol | List of test instruments" Menu

After opening this function the following window is displayed.

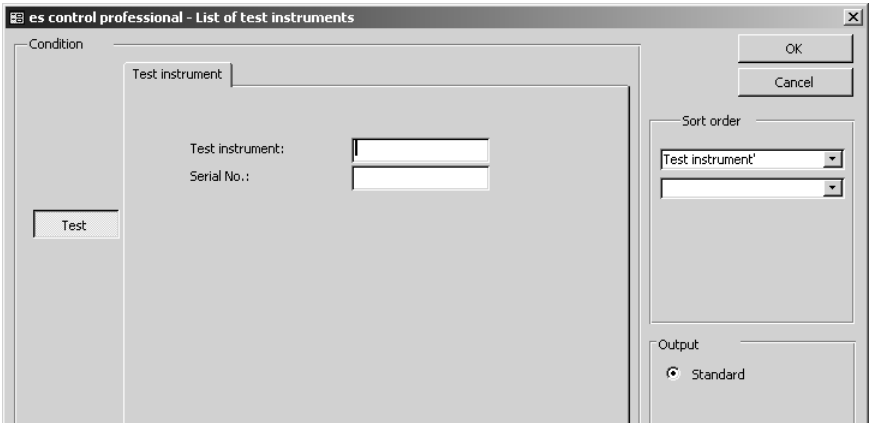


Figure 7.58 "List of test instruments" window

☞ The search fields also function via the substitutes '*' for several characters and '?' for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all test instruments are displayed as search results in one table.

- Confirm with "OK" and a list with database entries is displayed.

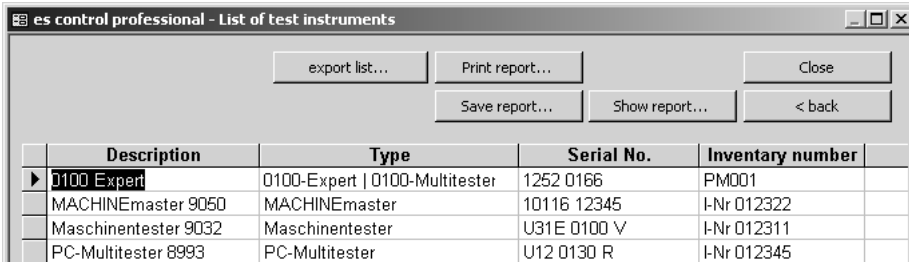


Figure 7.59 "List of test instruments" window

The following buttons are available

- "export list" button to export the displayed list in various formats.

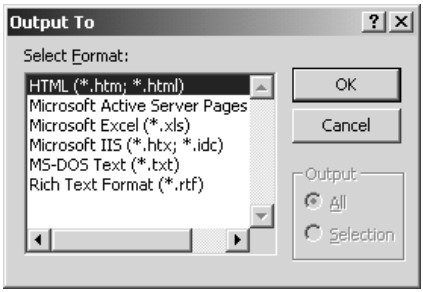


Figure 7.60: "Output To" window

- "Print report" button to print the list.
- "Save report" button to save into a Snapshot file.
- "Show report" button to switch to page view.

This button allows to change to the window displaying the printout preview.
It is possible to save, print, or layout a page in the page view window via the menu line.

- "< Back" button to change to the search mask.
- "Close " button to exit the window.

List of test instruments created at 28/04/2004

Description	Serial No.	Inventary number	Next calibration date
0100 Expert	1252 0166	PM001	
MACHINEmaster 9050 Beispieldatensatz / Example Hersteller/Manufacterer: Ch.BEHA GmbH D-79286 Glottertal	10116 12345	I-Nr 012322	01/01/2002
Maschinentester 9032 Beispieldatensatz / Example Hersteller/Manufacterer: Ch.BEHA GmbH D-79286 Glottertal	U31E 0100 V	I-Nr 012311	01/01/2002
PC-Multitester 8993 Beispieldatensatz / Example Hersteller/Manufacterer:	U12 0130 R	I-Nr 012345	01/01/2002

Figure 7.61: "List of test instruments" printout example

7.5.4 "Protocol | List of controllers" Menu

After opening this function the following window is displayed.

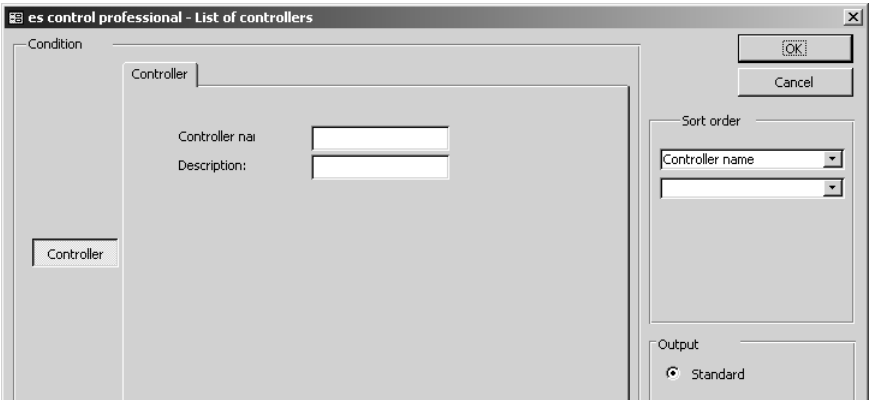
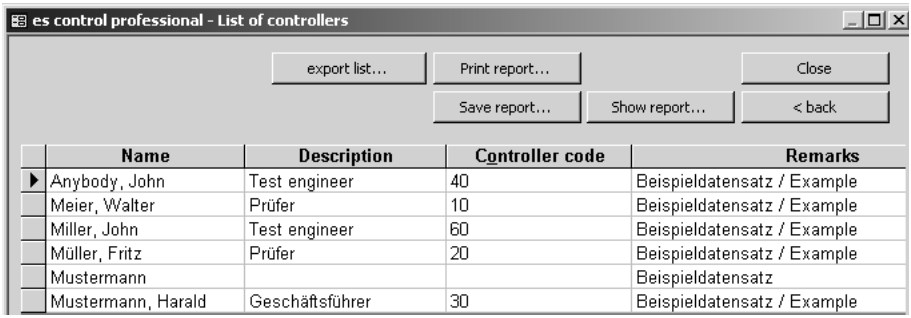


Figure 7.62 "List of controllers" window

☞ The search fields also function via the substitutes '*' for several characters and '?' for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all controllers are displayed as search results in one table.

- Confirm with "OK" and a list with database entries is displayed.



Name	Description	Controller code	Remarks
Anybody, John	Test engineer	40	Beispieldatensatz / Example
Meier, Walter	Prüfer	10	Beispieldatensatz / Example
Miller, John	Test engineer	60	Beispieldatensatz / Example
Müller, Fritz	Prüfer	20	Beispieldatensatz / Example
Mustermann			Beispieldatensatz
Mustermann, Harald	Geschäftsführer	30	Beispieldatensatz / Example

Figure 7.63 "List of controllers" window

The following buttons are available:

- "export list " button to export the displayed list into different formats.

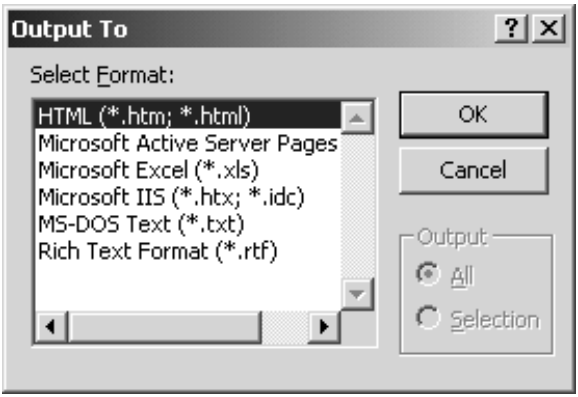


Figure 7.64: "Output To" window

- "Print report " button to print the list.
- "Save report " button to save the report into a Snapshot file.
- "Show report" button to change to page view.

This button allows to change to the window displaying the printout preview.
It is possible to save, print, or layout the list in the page view window via the menu line.

- "< Back" button to switch to the search mask.
- "Close" button to exit the window.

7.5.5 “Report I Test” Menu

After having opened this function, the window below is displayed.

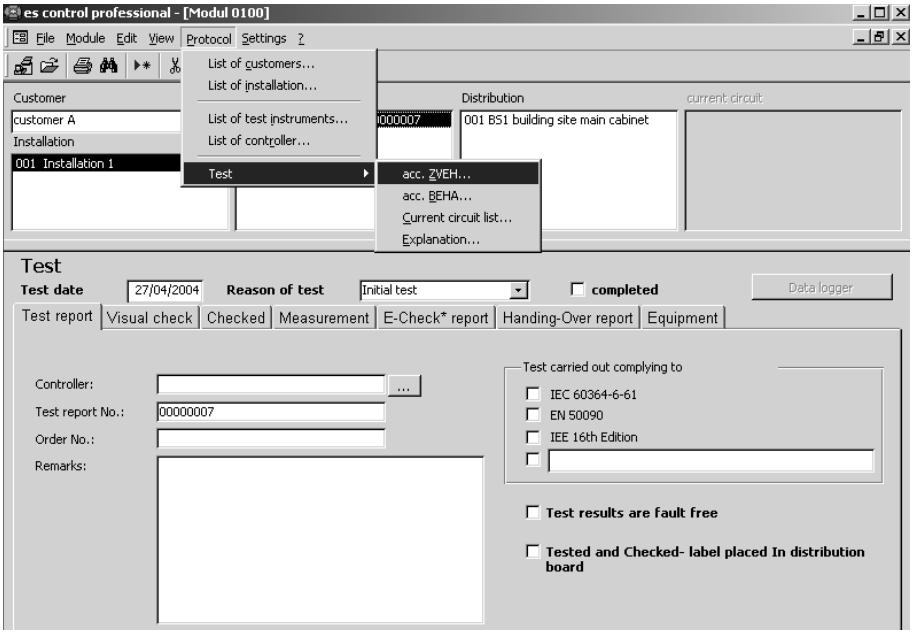


Figure 7.65: “Report I Test” window

☞ To print or output reports always select first a customer, installation, and test. Otherwise a respective error message is displayed.

7.5.4.1 “Report I Test I ZVEH protocol” Menu

- Select “ZVEH protocol”, the following window is displayed:

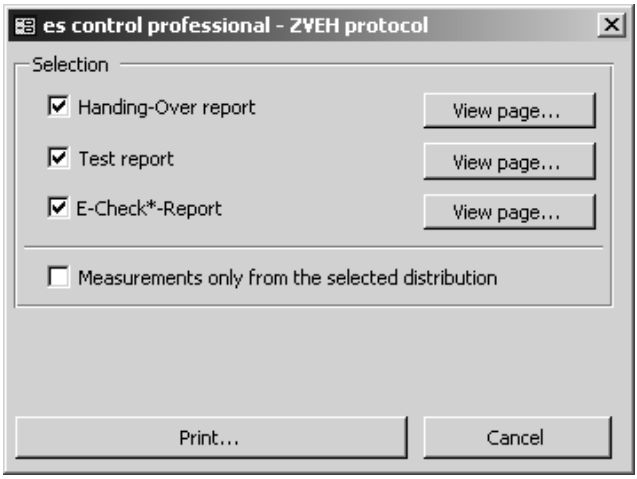


Figure 7.66: “Report I Test I ZVEH Protocol” window

☞ The "Measurements only ..." field can be used to reduce the protocol to the printout of the selected distribution.

- Click on the “Print” button, to print the protocols marked within the respective marking fields.

- Click the "View page" button to the right of the desired marking field (e.g. Handing-Over report) to view the respective protocol before printing, and to set up the pagebefore printout.

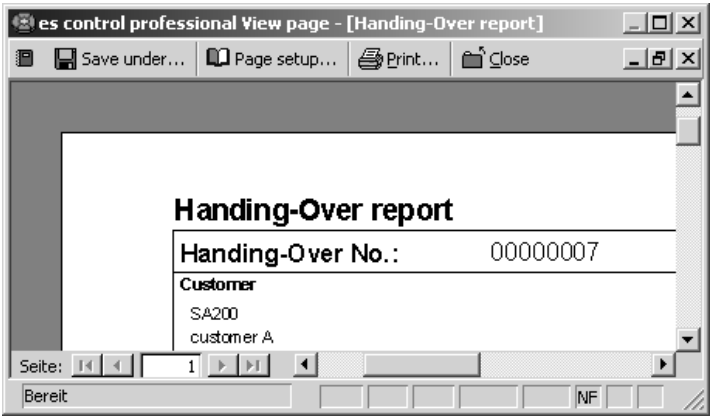


Figure 7.67: Page view

Besides the "Page setup" function, the following functions are available:

- Click the "Save as" button to export the protocol into a Snapshot file.
- Click the "Print" button to print the protocol.
- Click on the “Cancel” button, to close this window again.

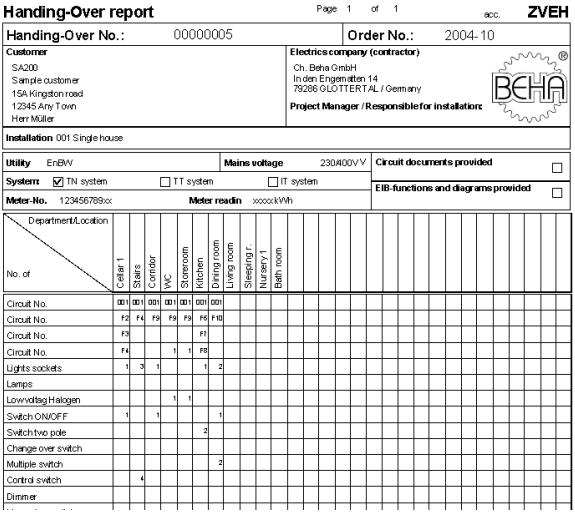
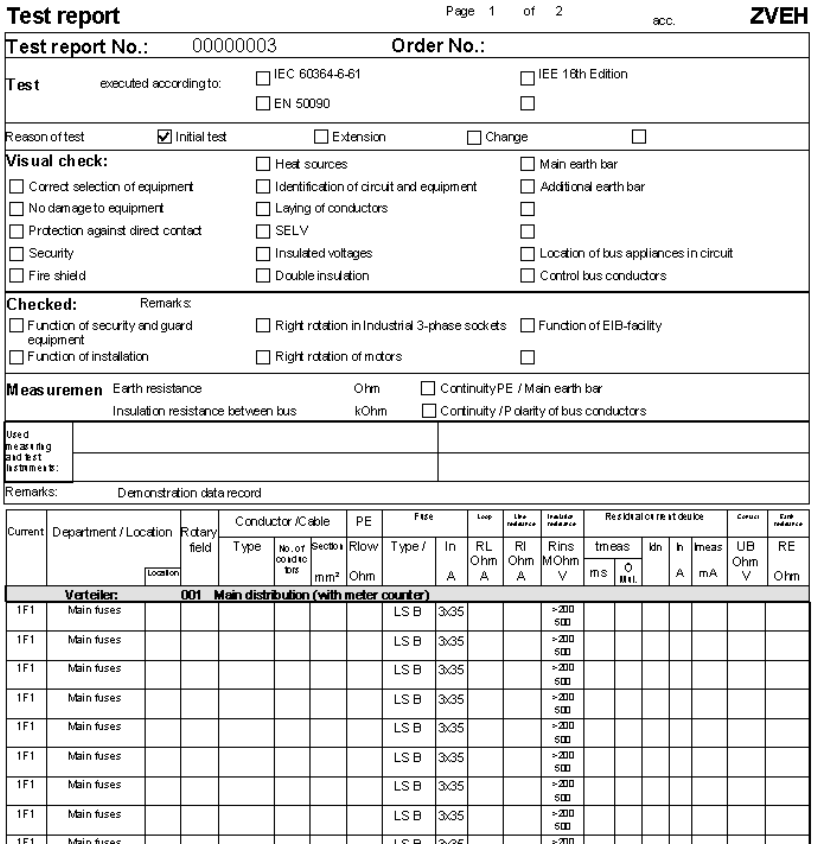


Figure 7.68: “Handing-Over report” printout example



Test report Page 1 of 2 acc. **ZVEH**

Test report No.: 00000003 **Order No.:**

Test executed according to: ☐ IEC 60364-6-61 ☐ IEE 18th Edition ☐ EN 50090 ☐

Reason of test ☑ Initial test ☐ Extension ☐ Change ☐

Visual check:

☐ Correct selection of equipment	☐ Heat sources	☐ Main earth bar
☐ No damage to equipment	☐ Identification of circuit and equipment	☐ Additional earth bar
☐ Protection against direct contact	☐ Laying of conductors	☐
☐ Security	☐ SELV	☐
☐ Fire shield	☐ Insulated voltages	☐ Location of bus appliances in circuit
	☐ Double insulation	☐ Control bus conductors

Checked: Remarks:

☐ Function of security and guard equipment	☐ Right rotation in Industrial 3-phase sockets	☐ Function of EIB-facility
☐ Function of installation	☐ Right rotation of motors	☐

Measuremen Earth resistance Ohm ☐ Continuity PE / Main earth bar

Insulation resistance between bus kOhm ☐ Continuity / Polarity of bus conductors

Used measuring and test instruments:

Remarks: Demonstration data record

Current	Department / Location	Location	Rotary field	Conductor /Cable Type	No. of conductors	Section mm²	PE Rlow Ohm	Fuse Type /	In A	Loop RL Ohm A	Line resistance RI Ohm A	Insulation resistance Rins MOhm V	Residual current device tmeas ms	tmeas Ω Mul.	Idn A	In A	Imeas mA	Contact UB Ohm V	Earth resistance RE Ohm
	Verteiler:		**001**	**Main distribution (with meter counter)**															
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							
1F1	Main fuses							LS B	3x35			>200 500							

Figure 7.69: “Test report” printout example

E - Check*-Report Page 1 of 1 acc. **ZVEH**

Test report No.: 00000003	**Order No.**

Customer

SA300
(EN) Sample company
12 Oak Park
12345 Any Place
Mr. Miller

Electrics company (contractor)

Ch. Beha GmbH
In den Engematten 14
79286 GLOTTERTAL / Germany

Project Manager / Responsible for installation:

Installation

003
Example 1 (Single house with 1 distribution)

The customer has been notified that

- ☐ that all RCDs must be checked for proper function at least every 6 months.
- ☐ non stationary equipment (e.g. extension leads) must be tested at least every 6 months.
- ☐ the electrical installation and equipment must be regularly checked for their proper condition.
- ☐ the electrical plant and non-portable installations must be checked by authorized personnel at least every 4 years.

Remarks

Geprüft nach DIN VDE
BEHA
mit UNITEST Mod- und Prüfgeräten

Excerpt from German ZVEH REPORT 21/96 (§ 13 Nr. 4 Ziffer 2 VOB/B)

Preventative Maintenance, and included in same inspections and maintenance, is recommended or even required in many regulations. In the German regulation (VOB/B par 13 No. 4 issue July 1996) is in light of the warranty period especially referred to (put down in short: without ort maintenance contract 1 year, 2 years warranty with maintenance contract). For Example the respective paragraph in the German accident prevention regulation (UVV) would also be to name for electrical plants and equipment.

Figure 7.70: “E-CHECK*” printout example

7.5.4.2 “Report I Test I BEHA protocol”

- Select “BEHA protocol”, the following window is displayed:

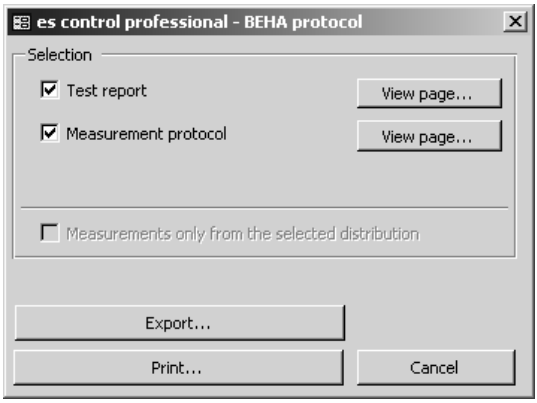


Figure 7.71: “Report I Test I BEHA Protocol” window

☞ The "Measurements only ..." field can be used to reduce the protocol to the printout of the selected distribution.

- If you click on the “Export as Text/Excel file” button, you may export the respective reports marked within the respective marking lists into file in text format (TXT), richtext format (RTF), or excel format (XLS). Please refer to Figure 7.50. Only measurement data and no test protocol is exported as a table.

- Click on the “Print” button, to print the reports marked within the respective marking fields..

- Click on the “View page“ button directly on the right of the respective marking field (e.g. “Test report), to view the respective report and to set up the page prior to printing.

Test report Page 1 of 1 acc. **BEHA**

Test report No.: 00000007 **Order No.:**

Customer
SA200
customer A
15A Kingston road
12345 Any Town
Herr Müller

Electrics company (contractor)
Ch. Beha GmbH
In den Engematten 14
79286 GLOTTERTAL / Germany
Project Manager / Responsible for installation:

Installation
001
Installation 1

Test executed according to:
- ☐ IEC 60364-6-61
- ☐ EN 50090
- ☐ IEE 16th Edition
- ☐

Reason of test: ☑ Initial test ☐ Extension ☐ Change ☐

Visual check:

☐ Correct selection of equipment	☐ Heat sources	☐ Main earth bar
☐ No damage to equipment	☐ Identification of circuit and equipment	☐ Additional earth bar
☐ Protection against direct contact	☐ Laying of conductors	☐
☐ Security	☐ SELV	☐
☐ Fire shield	☐ Insulated voltages	☐ Location of bus appliances in circuit
	☐ Double insulation	☐ Control bus conductors

Checked: Remarks:

☐ Function of security and guard equipment	☐ Right rotation in Industrial 3-phase sockets	☐ Function of EIB-facility
☐ Function of installation	☐ Right rotation of motors	☐

Measuremen Earth resistance 104.2 Ohm ☐ Continuity PE / Main earth bar

Figure 7.72: “Test Report” example printout

Measurement protocol Page 1 of 1 acc. **BEHA**

Prüfprotokoll Nr.: 00000007 **Auftrag Nr.:**

		Loop	Loop	RCD	RCD	RCD	RCD	RCD	RCD	Earth
		Line resistance	Short circuit current	Tripping time	Tripped at	Multiplier	Nominal trip current	Contact voltage	Earth resistance	Earth resistance
		Rl	Ik(Rl)	tmeas	Current type		Idn	Vc	RE	RE
Stromkreis		Ohm	A	ms	Halfwave		mA	V	Ohm	Ohm
Distribution: BS1 building site main cabinet										
1F1	Three phase socket CEE 32A	0.85	270.6							
1F1	Three phase socket CEE 32A	0.83	277.1							
1F1	Three phase socket CEE 32A	0.86	267.4							
1F1	Three phase socket CEE 32A			28	AC 0°	x1	30	0.2		
1F2	Three phase socket CEE 16A	1.17	196.6							
1F2	Three phase socket CEE 16A	1.19	193.3							
1F2	Three phase socket CEE 16A	1.16	198.3							
1F2	Three phase socket CEE 16A			28	AC 0°	x1	30	0.2		
1F3	Three phase socket CEE 16A	1.27	181.1							
1F3	Three phase socket CEE 16A	1.31	175.6							
1F3	Three phase socket CEE 16A	1.29	178.3							
1F3	Three phase socket CEE 16A			28	AC 0°	x1	30	0.3		
1F4	Sockets 16A						30	0.2	7	

Figure 7.73: “Measurement protocol” example printout

If the button ”Export“ is clicked on, the following window is displayed:

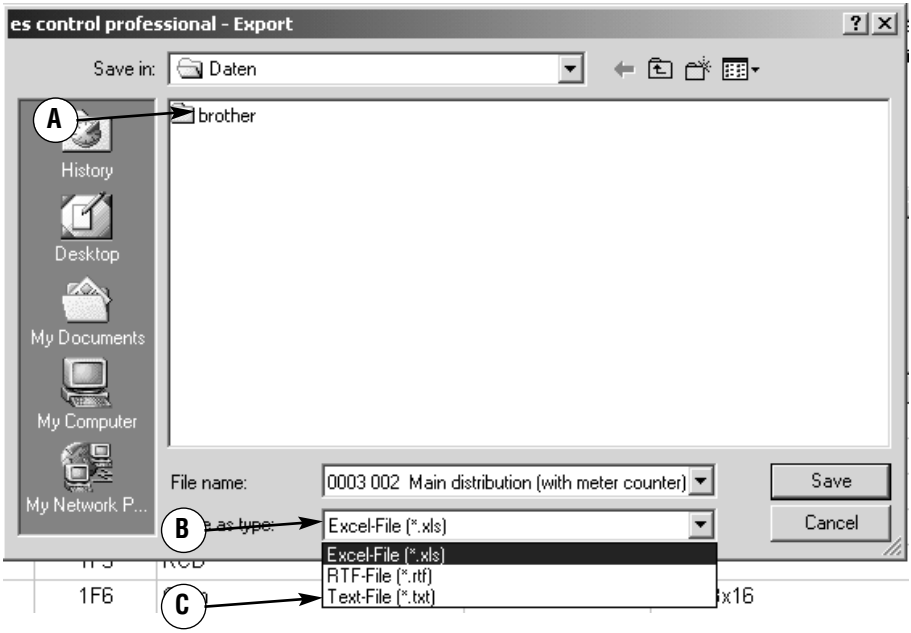


Figure 7.74: window for “Export as Text/ Excel file”

The directory of the output file may be indicated in **field (A**).
The file name of the output file may be indicated in **field (B**).
The file type may be indicated in **field (C)**, Here, either text format (TXT), richtext format (RTF), or excel format (XLS), or snapshot format (SNP) can be selected.

☞ The default setting for file names is generated by the installation code, the installation name as well as the test date, the reason for the test, and the test report number.

In the following, there is an example for an installation with code “001”, Name “Installation 1”, test date “01.01.02”, initial test and test protocol number “00000003”.
File name: 001 Installation 1 01.01.04 Initial Test 00000003.TXT

7.5.4.3 “Report | Test | Current Circuit List” Menu

The codes, numbers, and names of distributions and current circuits are printed on the current circuit list.

☞ The current circuit list is used as a model how to save the measurements within the test instruments under the correct distribution and current circuit codes.

- Select the „Current Circuit List“, the following window is displayed:

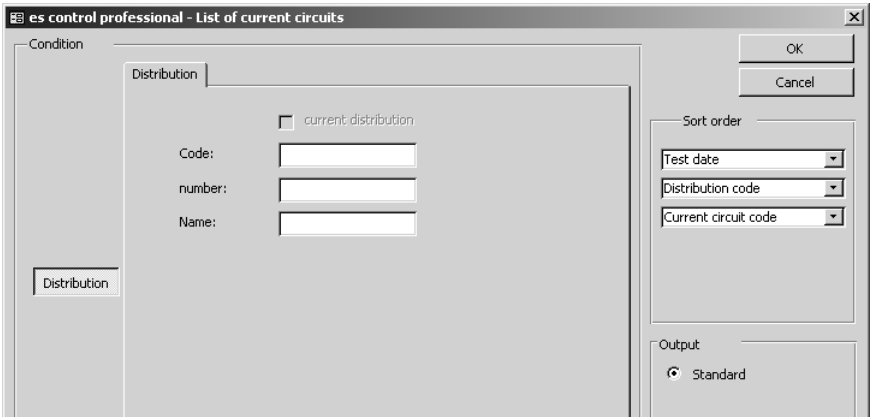


Figure 7.75: “Current Circuit List” window

A current circuit list can be limited to individual sections using the search fields.

☞ The search fields also function via the substitutes ‘*’ for several characters and ‘?’ for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all tests are displayed as search results in one table.

- Select the desired sort order.
- Confirm with "OK" and a list with the database entries is displayed.

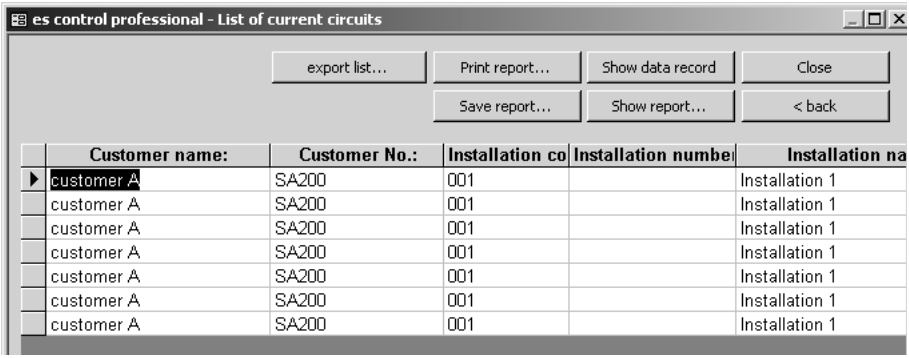


Figure 7.76: "List of current circuits" window

The following buttons are available:

- "export list " button to export the displayed list into different formats.

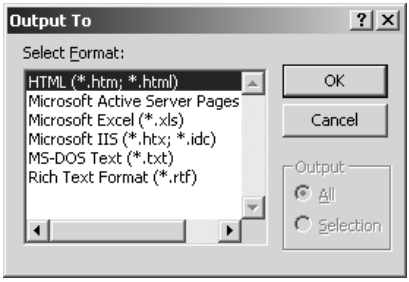


Figure 7.77: "Output To" window

- Print report " button to print the list.
- "Save report " button to save the report into a Snapshot file.
- "Show data record" button.

This button allows to search and display a data record which has been marked with the mouse. The searched for data record is shown in the window displayed in the background. To jump to the window close the current window by clicking the "Close" button.

- "Show report" button to change to page view.

This button allows to change to the window displaying the printout preview and the format setup. It is possible to save, print, or layout the list in the page view window via the menu line.

- "< Back" button to switch to the search mask.
- "Close" button to exit the window.

Current circuit list created at 27/04/2004

Customer
number SA300
Name (EN) Sample company

Installation
Code number 003
Name Example 1 (Single house with 1 distribution)
Street
City
Contact
Phone

Test
Test date 01/01/2002
Test report No. 00000003
Order No.



C:\Programme\BEHA\es control professional\Beispielanlage.bmp

Distribution code 002 **Distribution No** **Distribution name** Main distribution (with meter counter)

current circuit Code	No.	Name	Conductor /Cable	Fuse	RCD	Remarks
003	1F1	Main fuses		LS B 3x35		
004	1F2	Washing machine	NYM-J 3x1,5	LS B 16		
005	1F3	Tumble-dryer	NYM-J 3x1,5	LS B 16		
006	1F4	Cellar and corridor	NYM-J 3x1,5	LS B 16		
007	1F5	RCD			RCD/FI 40/0,03 A	
008	1F6	Oven		LS B 3x16		
009	1F7	Dishwasher	NYM-J 3x2,5	LS B 16		
010	1F8	Kitchen	NYM-J 3x2,5	LS B 16		
011	1F9	Corridor, WC	NYM-J 3x2,5	LS B 16		
012	1F10	Dining & living room	NYM-J 3x2,5	LS B 16		
015	1F11	Sleeping room & nursery	NYM-J 3x2,5	LS B 16		

Figure 7.78: "List of current circuits" printout example

When working with a UNITEST ”0100-Expert”:

☞ For the instrument 0100-Expert plus the distribution code is saved under “U” and the current circuit code under “S”.

☞ When saving data with the UNITEST 0100-Expert instrument, the distribution code must be entered under ‘S’ and the current circuit code under ‘P’, in order to ensure correct assignment within the “es control”! The designation ‘S’ for current circuit and ‘P’ for location is no longer valid for the “es control”!

7.5.4.4 "Protocol | Test | Legend" Menu“

The numbers and designations for the distributions and the pertaining current circuits are printed on the legend.

☞ The legend may be fixed to the respective distribution, to explain the system user the assignment of control devices and overcurrent protections to the current circuits.

- Select the "Protocol | Test | Legend" function, the following window is displayed:

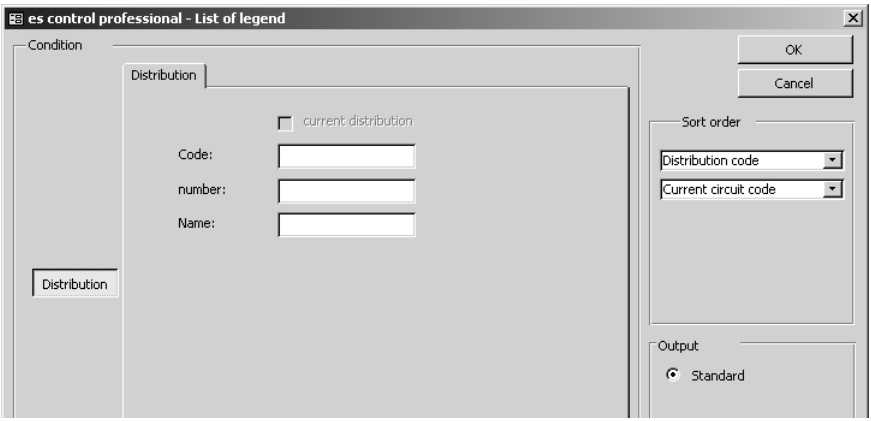


Figure 7.79: "List of legend" window

A list can be limited to individual sections by means of the search fields.

☞ The search fields also function via the substitutes ‘*’ for several characters and ‘?’ for individual characters. These can be used within, before, or after the searched for character string (e.g. *02*).

☞ If no search criterion is entered, all tests are displayed as search results in one table.

- Select the desired sort order.
- Confirm with "OK" and a list with the database entries is displayed.

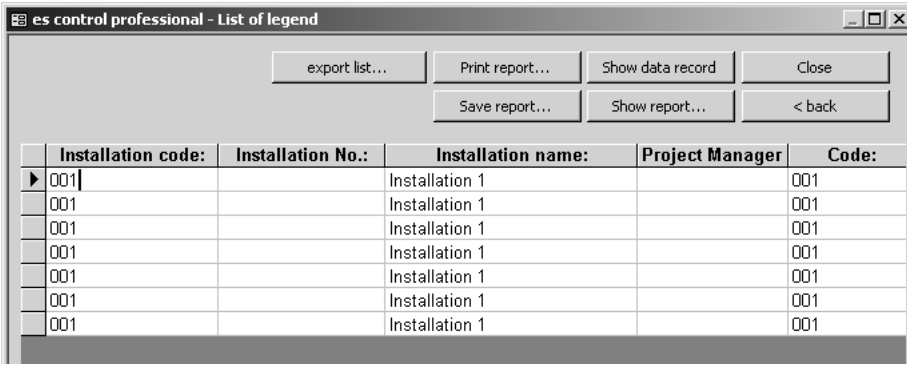


Figure 7.80: "List of Legend" window

The following buttons are available:

- "export list " button to export the displayed list into different formats.

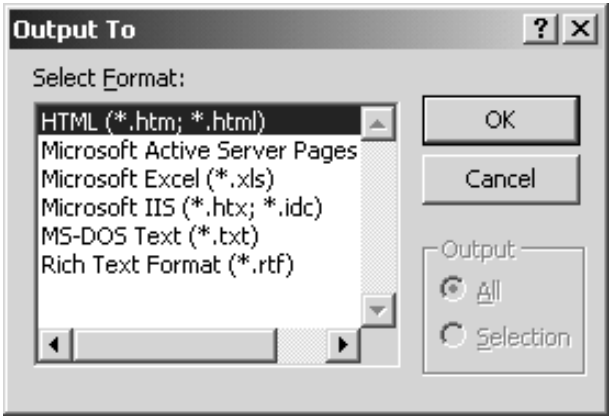


Figure 7.81: "Output To" window

- "Print report " button to print the list.
- "Save report " button to save the report into a Snapshot file.
- "Show data record" button.

This button allows to search and display a data record which has been marked with the mouse. The searched for data record is shown in the window displayed in the background. To jump to the window close the current window by clicking the "Close" button.

- "Show report" button to change to page view.

This button allows to change to the window displaying the printout preview and the format setup. It is possible to save, print, or layout the list in the page view window via the menu line.

- "< Back" button to switch to the search mask.
- "Close" button to exit the window.

Explanation created at 27/04/2004

Electrics company (contractor)
Ch. Beha GmbH
In den Engematten 14
79286 GLOTTERTAL / Germany

Project Manager / Responsible for installation:

Installation: 001 **Installation 1**
Distribution: BS1 **building site main cabinet**

No.	Description	Fuse	RCD
1F1	Three phase socket CEE 32A	LS B 3x32	
1F2	Three phase socket CEE 16A	LS B 3x16	
1F3	Three phase socket CEE 16A	LS B 3x16	
1F4	Sockets 16A	LS B 3x32	
1F5	Sockets 16A	LS B 3x32	
1F6	Sockets 16A	LS B 3x32	
1F7	RCD		RCD/FI 63/0.03 A

Figure 7.82: “Legend” printout example

7.6 “Settings” Menu

7.6.1 “Settings I Serial Interface” Menu

This menu is used to set the serial interface of the PC which is required for data transfer between the test instrument and the PC. After opening this function, the following window is displayed.

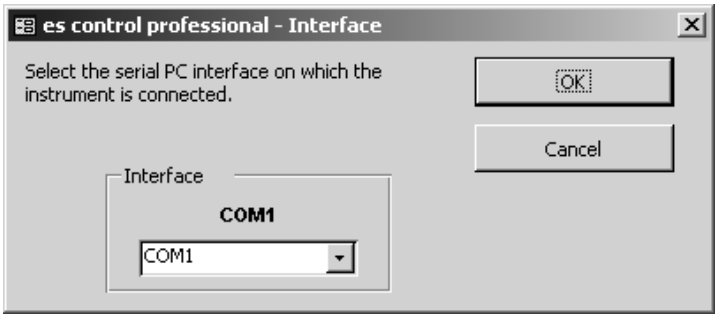


Figure 7.83: “Setup I Interface” window

☞ The es control 0100 professional software is equipped with an automatic interface recognition facility. I.e. only available and activated interfaces are displayed.

- Select the serial interface used for data transfer (usually COM 1).
- Confirm by clicking on “OK”.

7.6.2 “Setings | Directory for Data Files”

This menu will contain the directories for the filing of buffered measurement data and the read-in measurement data.
After opening this function, the window below is displayed.

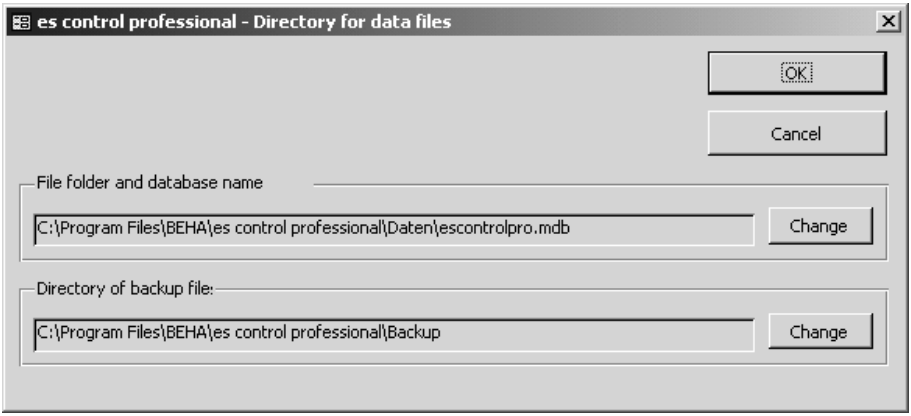


Figure 7.84: “Directory for data files” window

- Type into the “Directory for data files” the location where the buffered measurement data is to be stored (with the file endings *.esco or *.esca).
- Type into the “Directory of backup files” the location, where the backup of the database and the backup files (with the file ending *.bak) of the read-in measurement data are to be stored.

☞ If no indications are made, the subdirectories DATA and BACKUP of the user directory are used.

☞ When creating subdirectories, measurement data and read in data may be saved within different directories. This results in a clear data structure and an easier data backup. Creating subdirectories and copying the files must be carried out manually (Windows Explorer).

☞ If the es control module 0701/0702/0113/0751 is available on your computer, you may go here to the database (escontrolpro.db) of the other module. This database is then used as common database. All data is stored into the common database.

☞ In case of a common database, the creation of customers, test instruments, and controllers is only required once and may be used in all 0100 modules.

☞ If you wish to use a common database, you are advised to make your decision from the start, before you save data within the database. If you decide to use a common database at a later stage, the data from the es control 0100 professional database cannot be transferred into the common database.

7.6.3 “Settings | Language” Menu

This menu is used to set the es control 0100 professional program language. After opening this function, the window below is displayed.

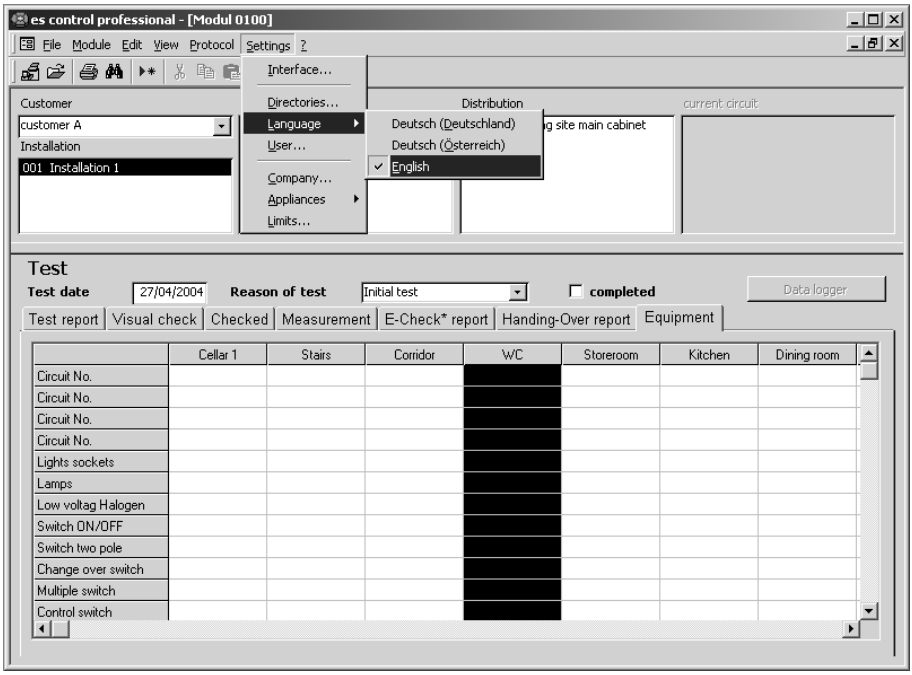


Figure 7.85: “Setup | Language” window

☞ The language selection can be extended, depending on the version.

7.6.4 "Settings | User" Menu

Access rights/User rights

Within the es control 0100 professional software, different access rights can be assigned to different users.

☞ When starting the software, a user registrations is only required if 1) the administrator has saved a password or 2) if several users operate the system.

After opening this function, the following window is displayed.

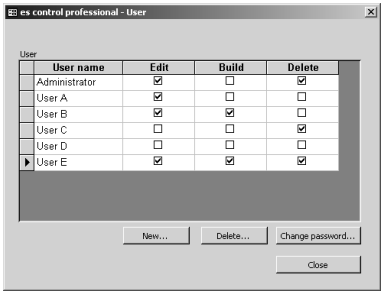


Figure 7.86: "Setting | User" window

The "New" button is used to create a further user type.

☞ The right to create, change, or delete is reserved to the administrator. Furthermore, it is possible to delete the "Administrator" or to change the name.

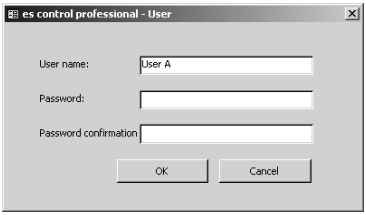


Figure 7.87: "Setting | Create user " window

Here, a name is defined and, if desired, a password is saved.
Distinction can be made among 6 different user types (please also refer to Figure 5.6.).

Administrator	possesses all rights (change, create, delete and changing of user rights)
User A	can only further process existing data records.
User B	can further process existing data records and create new records.
User C	can view the existing data records and may delete them.
User D	rights limited to read only and printout protocols
User E	Process all rights (change, create, delete) except changeing user rights

☞ The menu functions which are not available for the user are shaded in grey.

7.6.5 "Setings I Company I Firm"

This menu is used to enter your company and the directory with your company logo. Both entries appear on the printed test report. After opening this function, the window below is displayed.

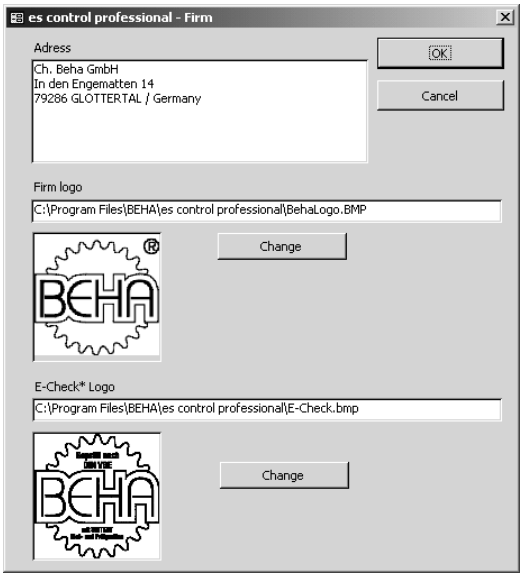


Figure 7.88: "Settings I Company I Firm" window

- Type your company address into the entry fields.

- If you click on the “modify” button you may integrate your company logo. A window “Select Picture File” appars. Select the respective directory and the file name of your company logo. The default setting is the Beha logo. The company logo must be available either as Bitmap Format (*.bmp) or as Windows Metafile (*.wmf). Both appear on the printed test protocols.

- If available, you may integrate your E-Check* logo. For this, click the "Change” button and select the respective directory and the file name of your E-Check* logo. The default setting is the Beha logo. The E-Check* logo must be available in Bitmap Format (*.bmp) or as Windows Metafile. The E -Check* logo appears on the printout of the ZVEH test reports

☞ On the printout, the company logo is scaled to the size of approx. 24 * 24 mm. We recommend the creation of your company logo at the above indicated size with a resolution of 150 to maximum 300 dpi. For larger dimensions and higher resolutions, the file containing the company logo becomes very large and can lead to considerable delays when printing the reports.

7.6.6 Menü “Settings | Appliances”

This function is used to save as standard the default settings for table headlines. The table headlines of the currently selected test is saved. If a new test is performed, these saved texts are written as default setting into the equipment table.

7.6.7 "Settings | Limits" Menu – Limit Value Monitoring

The es control 0100 professional program can perform a measurement value evaluation of ZVEH measurement function. When working with the EUROtest the limit values are taken over by the test instrument. If the test instrument does not deliver any limit values, those values are loaded from a table having been entered into this menu point.

Depending on the values measured, different active limit values may be displayed. In case a limit value is not respected, the measurement value is marked in red. If no limit value is available, the measurement value is marked in blue. After opening this function, the following window is displayed:

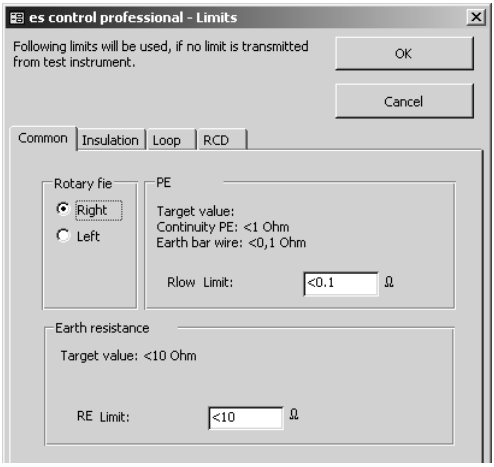


Figure 7.89: "Limits common” window

Limit value entries may be made into this window and the subsequent three windows.

PE (Rlow): Limit value for low ohm measurement

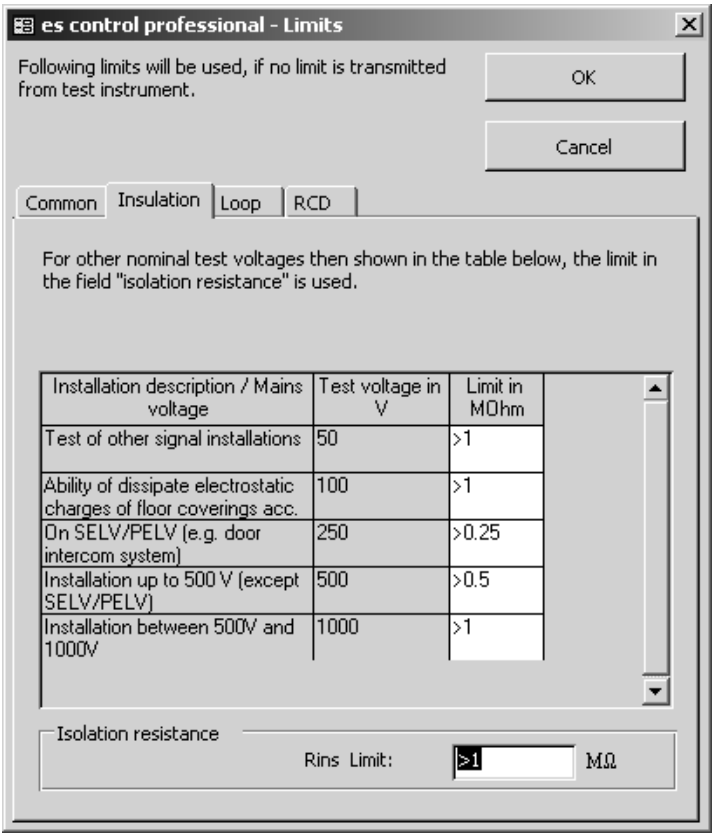


Figure 7.90: "Limits Insulation" window

☞ **Insulation (Rins):** If the nominal test voltage amounts to 50, 100, 250, 500, or 1000 Volt the limit value will be taken from this table when accepting the measurement values. For any other test voltage, the limit value available in the insulation resistance field will taken into this table.

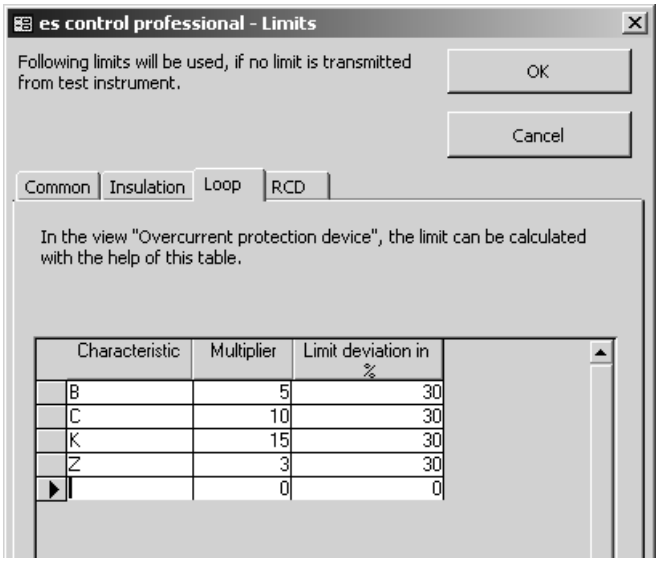


Figure 7.91: "Limits Loop" window

The limit value can be calculated using the data of this table within the overcurrent protection device window.

☞ The "Characteristics" column may not contain double or empty entries.

Delete data record: The data record marked with the symbol " ▸ " can be deleted using the Del. key.

New data record: A new data record is created by entering a text into the last line with the symbol "*".

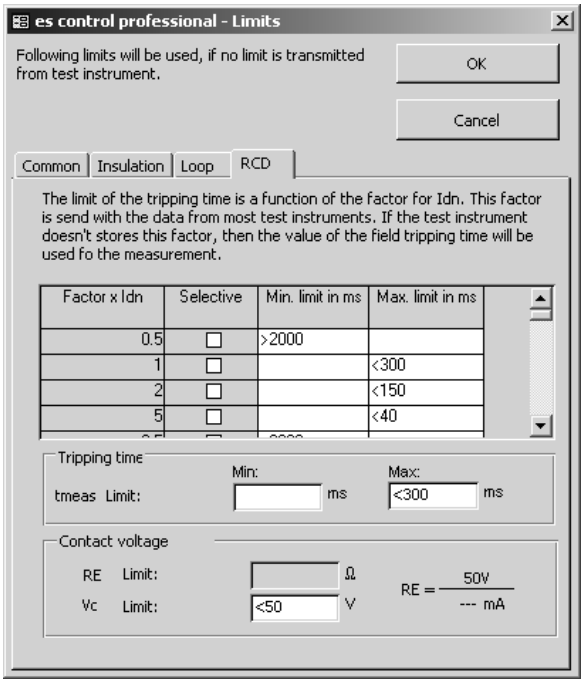


Figure 7.92: "Limits RCD" window

The value for Idn is always taken over by the test instrument. When transmitting a factor for Idn the limit value for the trip time is taken over from the table. If no factor is available, the limit value from the trip time field available below this table is taken over.

☞ The limit value for UB is taken over from the test instrument or the limit value table, depending on the type of test instrument.

7.7 “?” Menu

7.7.1 “Help” Menu

In this menu, the help function for the UNITEST es control software is opened. After opening this function, ”Adobe Acrobat Reader”* is opened and, simultaneously, the help file is loaded. The help text regarding UNITEST es control is written into the “PTEB13120000.pdf” file which can be read by means of Adobe Acrobat Reader as from version 4.0.

7.7.2 “Info” Menu

In this menu, you receive information regarding the program version.
After opening this function, the window below is displayed.



Figure 7.93: “Info” window

8.0 Data Logger

Some BEHA test instruments, e.g. ”0100 Expert”, “0100 EXPERT plus”, and ”0100 INSTALLtest” allow the recording of voltage values with the “RECORDING“ measurement function, and this over an extended time period. This function is also called data logger. When reading in data, es control 0100 professional automatically recognises that it is dealing with measurements of the data logger function.

☞ Before you start the menu functions “Receive data from test instrument” or “Read in data from file”, a customer and an installation must be selected.

A window is displayed into which start date and start time have to be entered. Thus, the es control 0100 obtains a time reference of the individual measurement values and can generate a graph containing time and voltage axes.

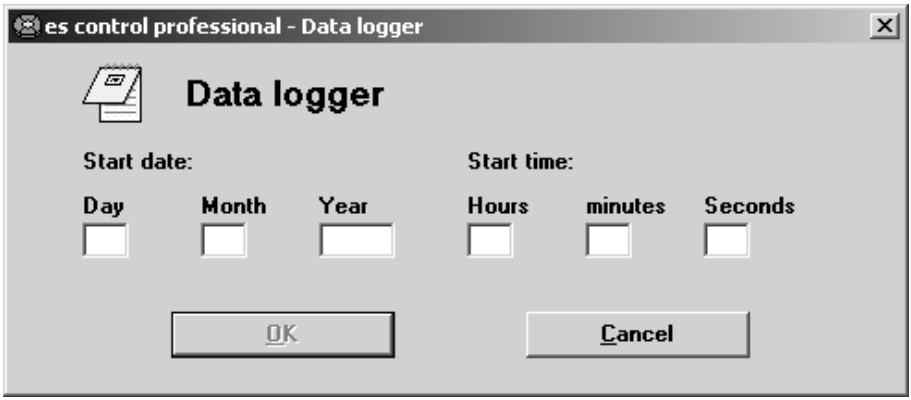


Figure 8.1: “Data Logger” window

☞ Enter a valid date, otherwise the start date calculation will be faulty.

Then, a window appears, displaying an overview on all received measurement data.

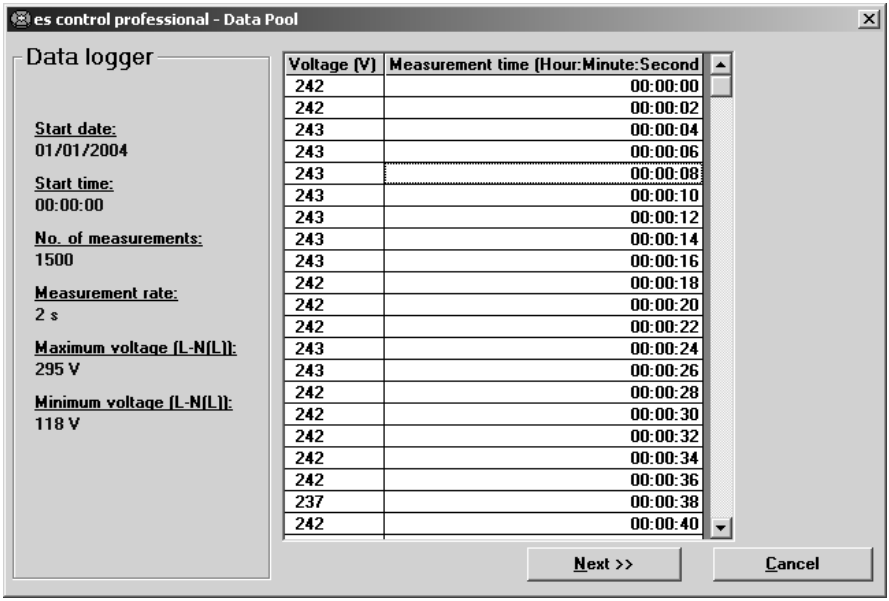


Figure 8.2: “Data Logger– Measurement Data” (Example) window

☞ If you click the “Next >>” button, a new test is created and the measurements coming from the data logger function are assigned accordingly.

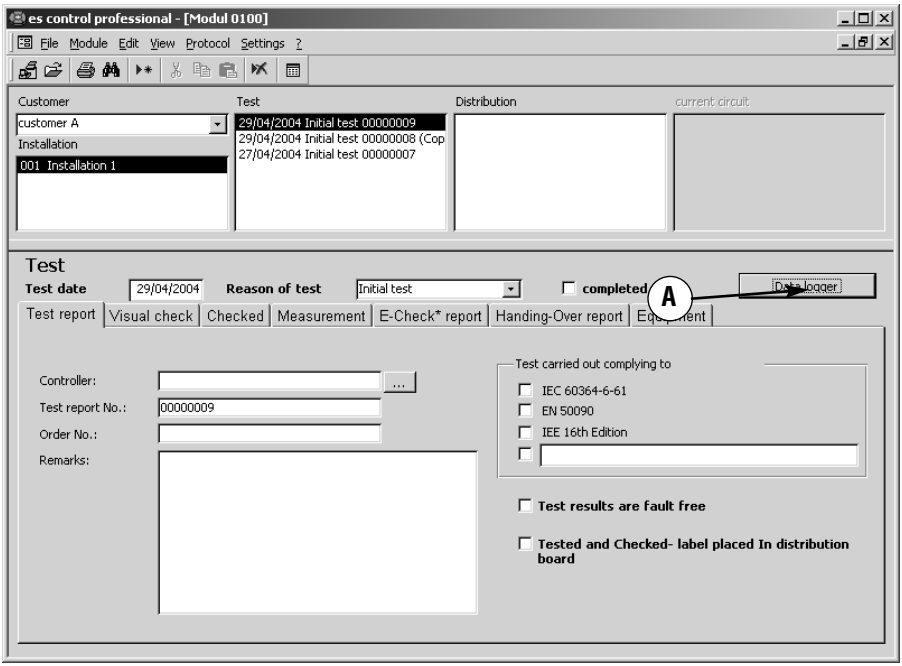


Figure 8.3: “Test – Data Logger” window

The “Data Logger“ (A) button is activated in the “Test” window” (A). By clicking on this button, a window appears, in which the data logger measurements can be viewed and printed. Please refer to Figure 8.4.

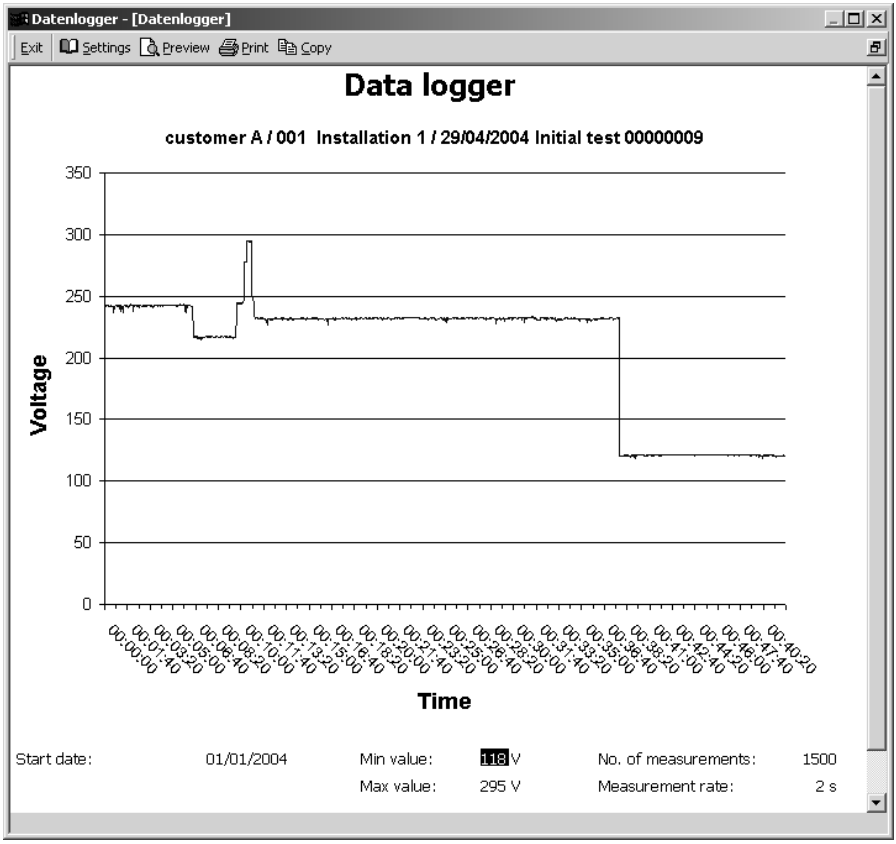


Figure 8.4: “Data Logger” window, graph presentation

- The window is closed when clicking on the “Exit” button.
- The margins for the printout can be set by clicking on the “Settings” button.
- A window with the print preview is displayed by clicking on the “Preview” button.
- When clicking on the “Print“ button, the graph is printed.
- The graph is copied into the buffer by clicking on the “Copy” button and can then be inserted into further user programs, e.g. word, excel, etc.

☞ By double clicking on the graph in further user programs (e.g. word, excel), the graph may be modified or measurement values can be copied and further processed.

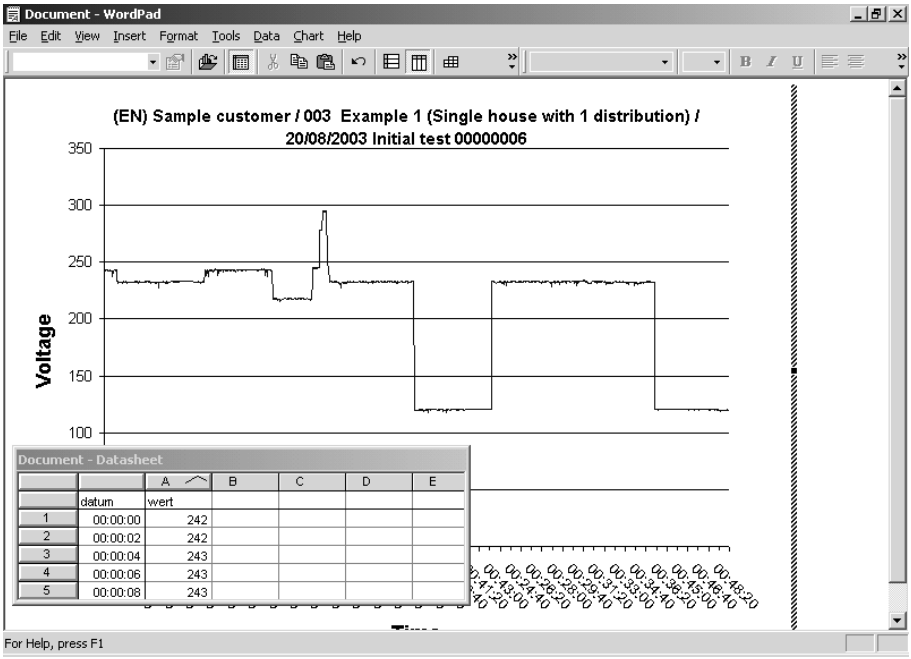


Figure 8.5: "Data logger" window, further graph processing

9.0 Data Import

This function is used to import measurements from the UNITEST “Expert Manager” program, order no. 1124 and to read them into the database. When importing data, all customers, installations, tests, distributions, current-circuits, and measurement values are transferred from the “Expert Manager” software into the es control 0100. Company name, controller selection list, data logger measurements, and additional measurements are NOT transferred.

- First close the program from which you desire to import data.

Import data from es control Version 1.1/1.2 Modul 0100

- After opening of the "File | Import data | es control Version 1.1/1.2 module 0100" function, the following window is displayed.

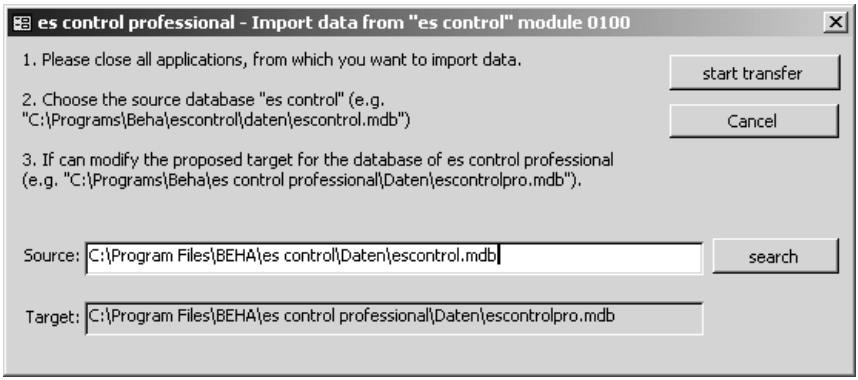


Figure 9.0: "Import data from es control module 0100" window

- Directly enter into the "Source” field the directory and the database file of the "es control" software from which the data is to be imported. Alternatively, you may also click the "Search” button to select the directory and a database file.

- Click the "Start transfer" button to start the data import.

Import of 0100 Expert-Manager

- After opening the "File | Import data | 0100 Expert-Manager" function, the following window is displayed.

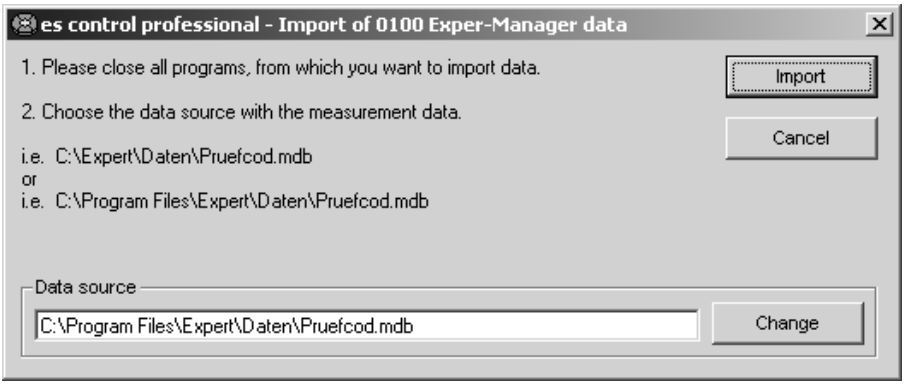


Figure 9.1: "Import of 0100 Expert-Manager" window

- Directly enter into the "Source" field the directory and the database file of the "Export-Manager" software from which the data is to be imported. Alternatively, you may also click the "search" button to select the directory and a database file.
- Click the "Start transfer" button to start the data import.
- Now, the data import is started. During data import the number of tests and measurements imported is displayed

☞ The data import may require a certain time period.

☞ Under no circumstances should the running data import be interrupted, otherwise the UNITEST es control 0100 professional database may be damaged. In this case, the partially imported records must absolutely be manually deleted from the UNITEST es control 0100 professional database, and the es control must be started again!

- After the successful data import procedure, a respective message is displayed.

☞ Only import the data once. If it is carried out several times, the same tests are created again.

☞ Within the selection lists “Conductor/Cable”, “Fuses“, and RCD” the only types used are those required when printing the protocols.

10.0 Data Backup

It is indispensable to periodically save your data. In case of a computer system failure (e.g. defective hard disk or other hardware failure), data may be lost or damaged.

For data backup, copy the following files on a respective external data carrier (e.g. disk, ZIP disk, tape drive, CD-ROM, or network drive):

- The UNITEST es control database (ESCONTROLPRO.MDB) into the “DATEN” directory
- Your read-in measurement data (all files with the file endings *.SER) into the “BACKUP” directory

10.1 Temporary Backup

For temporary backup, the UNTIEST es control database can be saved into a backup file within the subdirectory “BACKUP” with the name “ESCONTROLPROO.BAK” upon closing the program. The following window is displayed:

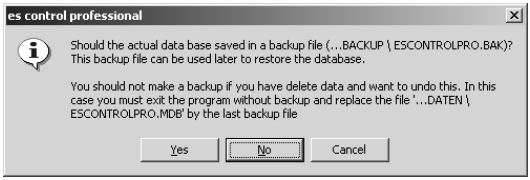


Figure 10.0: “Data Backup” window

- Confirm with Yes if you want to create a copy of the database. The database is saved in its current condition as “…BACKUP\ESCONTROLPRO.BAK”. Depending on the processor speed and the size of the database, the saving procedure may require a significant time period.

☞ If your data is destroyed or deleted by mistake after the next program start, this copy can be used later for data restoration.

10.2 Restoring Data

- For data restoration, first rename the invalid or destroyed database “ESCONTROL.MDB” in the “DATA” directory into e.g. “ESCONTROLPRO.OLD”.

- Then copy the “BACKUP\ESCONTROLPRO.BAK” backup file into the “DATA” directory.

- Now rename the file “ESCONTROLPRO.BAK” into ESCONTROLPRO.MDB” and restart the es control 0100 program and

10.3 Repairing the Software or the Data

If the software es control 0100 professional shows dysfunctions e.g. after a system shutdown, it is possible to repair the software.

- Start the Windows function "Settings/System control/Software"

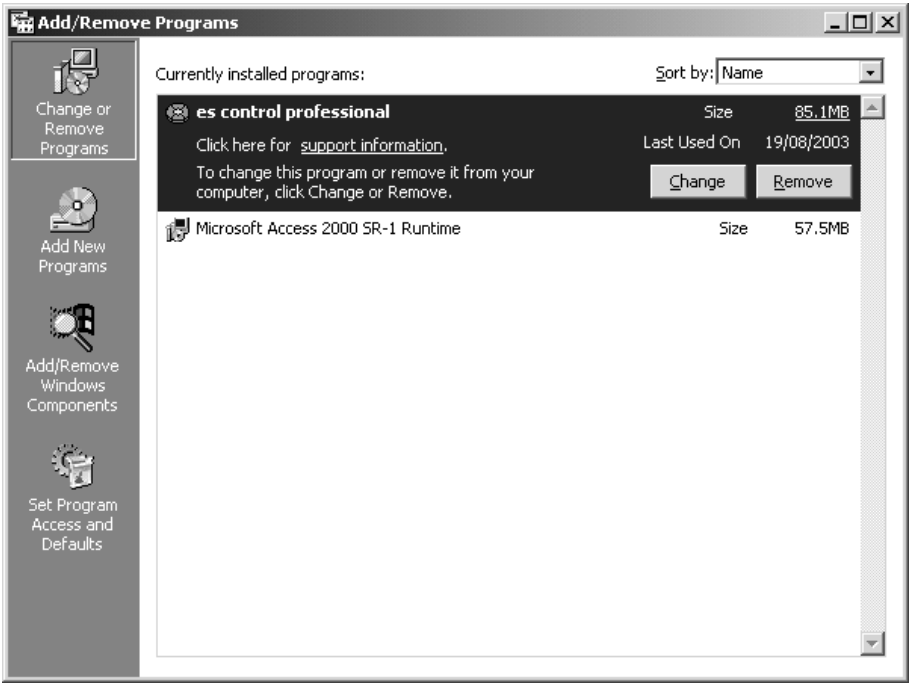


Figure 10.1: „Add/Remove Programs" window

- Mark the entry es control professional and click the "Changge…" button

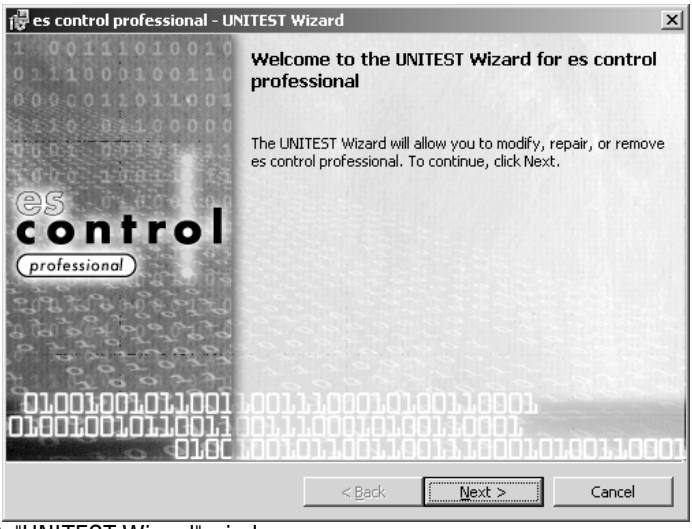


Figure 10.2: "UNITEST Wizard" window

- Click the "Next" button



Figure 10.3: "Program Maintenance" window

- Mark "Repair" and click the "Next" button.

The software repair is started. For control purposes, the following window is displayed indicating the current status:



Figure 10.4: "Installing es control profesional" window



Figure 10.5: "UNITEST Wizard completed" window

- After successful repair click the "Finish" button and clos the Windows window "Software characteristics".
- Now, start again the es control professional program.

11.0 Licensing Conditions

The Software UNITEST es control 0100 professional, Order. No.. 1312 , is protected by a copyright and may neither be modified nor be debugged or resold.

The manufacturer guarantees that the Software operates essentially in compliance with the written manual supplied. Due to current technological limitations, it cannot be guaranteed that the program runs on all appliances.

The company CH. BEHA GmbH cannot be held liable towards the user for any or particular arising or follow-up damages, resulting from the usage of the Software.

11.1 Registration

☞ Only when returning the registration card will you receive the most recent information and low-cost updates. After software installation, please kindly return the duly filled in registration card with the appropriate postage.

11.2 Hotline

Should you have any further questions or application difficulties regarding our products, our technical hotline will remain at your entire disposal under the following phone number xx49 7684 80 09 429

For any questions regarding the software, please indicate the version (A), and the serial number (B) of the respective software. This information is given in the "? (Help) / Info" menu, please refer to the window below:



Figure 11.0: "? I Info" window



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