

ERGO TTY Operating Manual

Connecting the Machine to a PC (for the archiving of process data and graphics)



Examples of recorded values and graphics

| 1 | Shot | Zyklus | Spritz | Dosier | SC | Masse | p-spr | PN | Dos | PN | Zeit | Datum |
|----|------|--------|--------|--------|-------|-------|-------|-------|-------|-------|----------|------------|
| 2 | zeit | Zeit | Zeit | Stop | poist | max | | Druck | stop | Pos | | |
| 3 | 1 | 26.58 | 0.79 | 4.88 | 83.03 | 7.88 | 1653 | 889 | 78.01 | 16.79 | 10.19.00 | 30.11.2005 |
| 4 | 2 | 26.59 | 0.79 | 4.88 | 83.03 | 7.78 | 1774 | 892 | 78.01 | 16.79 | 10.19.28 | 30.11.2005 |
| 5 | 3 | 26.57 | 0.79 | 4.89 | 83.03 | 7.83 | | | | | | |
| 6 | 4 | 26.45 | 0.79 | 4.84 | 83.03 | 7.79 | | | | | | |
| 7 | 5 | 26.41 | 0.79 | 4.83 | 83.03 | 7.72 | | | | | | |
| 8 | 6 | 26.44 | 0.79 | 4.89 | 83.04 | 7.82 | | | | | | |
| 9 | 7 | 26.44 | 0.79 | 4.87 | 83.03 | 7.77 | | | | | | |
| 10 | 8 | 26.45 | 0.79 | 4.87 | 83.03 | 7.70 | | | | | | |
| 11 | 9 | 26.43 | 0.79 | 4.91 | 83.03 | 7.74 | | | | | | |
| 12 | 10 | 26.42 | 0.80 | 4.90 | 83.03 | 7.83 | | | | | | |
| 13 | 11 | 26.43 | 0.79 | 4.89 | 83.03 | 7.75 | | | | | | |
| 14 | 12 | 26.43 | 0.79 | 4.92 | 83.03 | 7.86 | | | | | | |
| 15 | 13 | 26.39 | 0.79 | 4.86 | 83.04 | 7.91 | | | | | | |
| 16 | 14 | 26.43 | 0.79 | 4.86 | 83.03 | 7.94 | | | | | | |
| 17 | 15 | 26.43 | 0.79 | 4.87 | 83.04 | 7.81 | | | | | | |
| 18 | 16 | 26.41 | 0.79 | 4.86 | 83.03 | 7.86 | | | | | | |
| 19 | 17 | 26.41 | 0.79 | 4.90 | 83.03 | 7.77 | | | | | | |
| 20 | 18 | 26.44 | 0.79 | 4.87 | 83.03 | 7.81 | | | | | | |
| 21 | 19 | 26.44 | 0.79 | 4.90 | 83.03 | 7.73 | | | | | | |
| 22 | 20 | 26.45 | 0.79 | 4.94 | 83.03 | 7.73 | | | | | | |
| 23 | 21 | 26.40 | 0.79 | 4.95 | 83.03 | 7.72 | | | | | | |
| 24 | 22 | 26.45 | 0.79 | 4.86 | 83.03 | 7.83 | | | | | | |
| 25 | 23 | 26.44 | 0.79 | 4.92 | 83.03 | 7.88 | | | | | | |

STATISTIC-CONFIG

| | | | | | |
|--|------|---------------------------------------|-----|---------------------------------------|------|
| <input type="checkbox"/> Cycle time | 0.00 | <input type="checkbox"/> Cav.pr 1 int | 0 | <input type="checkbox"/> Feed z.temp | 704 |
| <input type="checkbox"/> Inject time | 0.00 | <input type="checkbox"/> Cav.pr 1 max | 0 | <input type="checkbox"/> Cyl. zone 1 | 704 |
| <input type="checkbox"/> Dosing time | 0.00 | <input type="checkbox"/> p-inj. max | 0 | <input type="checkbox"/> Cyl. zone 2 | 704 |
| <input type="checkbox"/> Melt cush. | 0.00 | <input type="checkbox"/> p-inj. int | 0 | <input type="checkbox"/> Cyl. zone 3 | 704 |
| <input type="checkbox"/> Dosing stop | 0.00 | <input type="checkbox"/> p-hold max | 0 | <input type="checkbox"/> Nozzle zone1 | 704 |
| <input type="checkbox"/> Screw stop | 0.00 | <input type="checkbox"/> v-inj. max | 0.0 | <input type="checkbox"/> Nozzle zone2 | 704 |
| <input type="checkbox"/> PN posit. | 0.00 | <input type="checkbox"/> Mould Zone1 | 0 | <input type="checkbox"/> Oil- temp. | 704 |
| <input type="checkbox"/> PN press. | 0 | <input type="checkbox"/> Mould Zone2 | 0 | <input type="checkbox"/> M.close time | 0.00 |
| <input type="checkbox"/> PNcav.press.1 | 0 | | | <input type="checkbox"/> M.open time | 0.00 |
| | | | | <input type="checkbox"/> Mould open | 0.0 |
| | | | | <input type="checkbox"/> Mould1 temp. | 704 |
| | | | | <input type="checkbox"/> Mould2 temp. | 704 |

Selected channel:

Saving data to diskette
 Statistic 1 2

Channel 1
Channel 2
Channel 3
Channel 4
Channel 5
next page
Clear channel

| | | |
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1 Introduction

1.1 General

The ERGO TTY program enables the reading of process data from ERGOtech NC4 machines using a serial cable to the IBED's printer port. These data can also be saved as ASCII files. The saved data format (tabulated values) can be easily used with a standard spreadsheet such as Microsoft Excel.

Moreover it is possible to display and to save the actual IBED or Ergocontrol Screen Page on the computer.

The software runs in Windows 95/98/Me/2000/XP and also in NT.

Attention:

By installing the software you are accepting the displayed Terms and Conditions.

No responsibility is accepted for indirect damage or consequential loss, in particular damage from loss of profits, loss of production, loss of commercial information or of data or for any other financial loss arising from the use of ERGO TTY software or the inability to use this software, even if we have been advised of the possibility of damage.

Attention:

Please ensure that the machinery is properly earthed, as under certain circumstances potential differences may arise which can destroy the control or the computer.

Attention:

Please back-up the recorded data at regular intervals.

Attention:

Energy saving mode must be deactivated, especially with laptops, or data will only be displayed for a short period.

1.2 Requirements for ERGOtech NC4 machines

Two options are needed in order to run this program:

1. ZE 420 PDE + 100% Control + Statistics (Standard for all System machines)
(ZE for Compact und Pro 'B')
2. And also
ZE 460 Printer program or
ZE 790 Integrated printer with printer program.

If the options are not present please ask for a quotation for the ZE's. Without these ZE options no data recording is possible, although the current screen page can be displayed.

This is not because the ERGO TTY program can not record the data, but that no data are sent from the IBED or Ergocontrol.

Attention: This program has not been developed for the ERGOtech range with terminal.

1.3 Requirements for the computer

1.3.1 Hardware

- Pentium or equivalent CPU
- 128 MB RAM
- Mouse
- 1 free serial interface COM1 – COM 2 (interface should have a 16550 chip; this is standard on later computers)

1.3.2 Software

- Function tested in Windows 98/Me
- Function tested in Windows NT4
- Function tested in Windows XP
- Function tested in Windows 2000

The program has been tested for data recording via a serial cable for the following controls:

- DEMAG ERGOtech NC4 control
- DEMAG ERGOtech NC4 with Ergocontrol

2 Program description

Once the program has started, the following menu items appear: “File”, “Settings”, “Window” and “Help” and “Language”.

2.1 “File” menu in the ERGO TTY program

2.1.1 Online

When the menu item “Online” is selected, the program attempts to establish connection with the IBED/Ergocontrol. If the interface is correct, the word “Online” will appear in the bottom line. Once the machine has finished the cycle and started the next, values should appear on the PC screen.

2.1.2 Offline

When as this menu item is selected, the connection to the IBED/Ergocontrol is interrupted and a name for the file is requested. If the “Enter” key is pressed in confirmation, the file name “DATA.TXT” is used. Generally another file name should be entered.

2.1.3 Save as

If IBED/Ergocontrol graphics have been recorded, they can be saved singly.

2.1.4 Send to ->E-mail recipient ->pictures

If this item is selected, the graphics indicated in the program are transferred into an e-mail program. For example Microsoft® Outlook® is started and the graphics attached as <.gif> files. If there are no pictures in the program, an error message will appear.

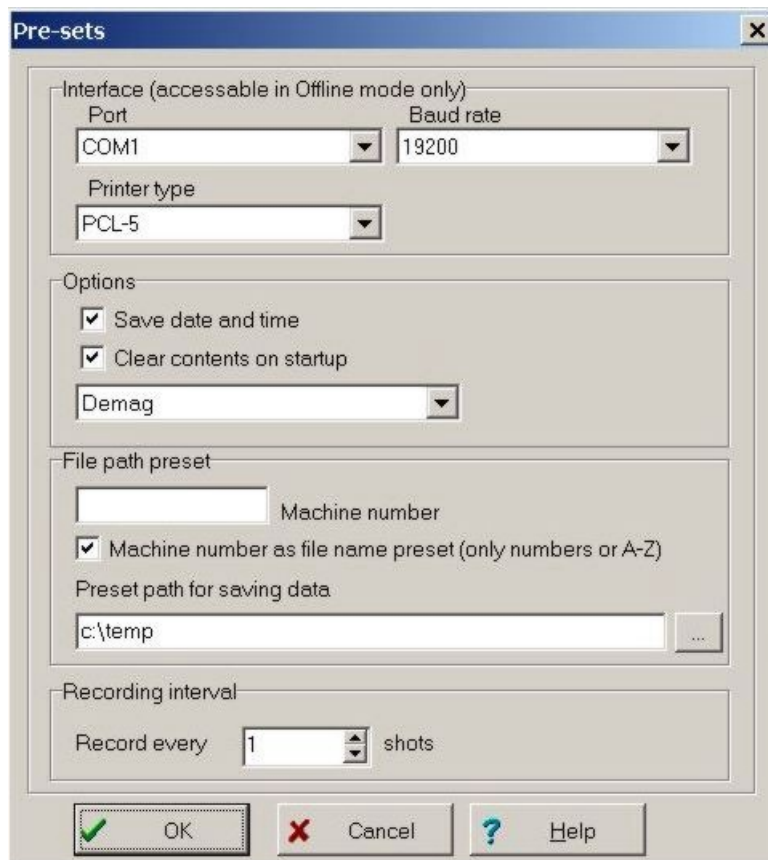
2.1.5 Close

This selection closes the current page. If it has not already been saved, the user is prompted to do so.

2.1.6 Exit

This selection ends the program.

2.2 “Settings” menu in the ERGO TTY program



2.2.1 Pre-sets

2.2.1.1 Port

Select the port to which the computer cable is connected. Make sure that the cable is properly connected to the port, otherwise data transfer will not be possible. With Windows NT or 2000 the interfaces may have to be installed first. Please ask your system administrator.

2.2.1.2 Baud rate

Select the same baud rate as selected on Screen Page 83 of the IBED/Ergocontrol. The baud rate should be as high as possible (19 200 is the highest) if graphics are also to be transmitted, otherwise a baud rate of 4 800 is sufficient. Xon/Xoff is automatically selected by the program as a flow control.

2.2.1.3 Printer type

Select the same printer type here as on the IBED/Ergocontrol, otherwise the screen will just display gobbledygook. The “Epson FX” is the preferred choice for recording production data. Monochrome graphics can also be read with it. If colour pictures are to be saved printer type “PCL5” must be supported by the Ergocontrol. This is not always available. The HP-Laserjet protocol is not supported, as it offers no advantage over the “Epson FX” protocol. If this is still wanted, please ask for a quotation.

2.2.1.4 Options

In the “Options” selection it can be decided whether the date and time should be stored together with the recorded data. Note that these values are taken from the PC, so it should be ensured that the date and time on the PC and IBED/Ergocontrol agree. It can also be decided in “Clear contents on startup” whether the displayed data should be erased each time the “Online” function is used. This only affects the display: the process data are not affected.

2.2.1.5 File path preset

The machine number can be entered in the machine number field. This then appears as a the first element of the file name if the “Machine number as file name preset” box is checked. This can, of course, be modified afterwards.

The path used last time the data were saved is shown in the “Preset path for saving data” field. This path is saved and used every time the program is started as preset path. This can be changed by choosing an new path when saving, or if it is changed in the path preset field.

2.2.1.6 Recording interval

If data are to be recorded for every shot, enter “1” as the Recording Interval. The saved file may be quite large if the recording runs for a long period. Otherwise enter a larger number so that data for every second, third... etc shot are saved.

Note:

All shots are displayed on the screen, but only those selected , as described above, are saved.

Note:

Only change the sampling interval on the machine or in the program, otherwise vary little data may be actually recorded. If for example the machine sends data only every 10 shots and the program only records every tenth one, then only data for every hundredth shot are saved.

2.2.2 Registration

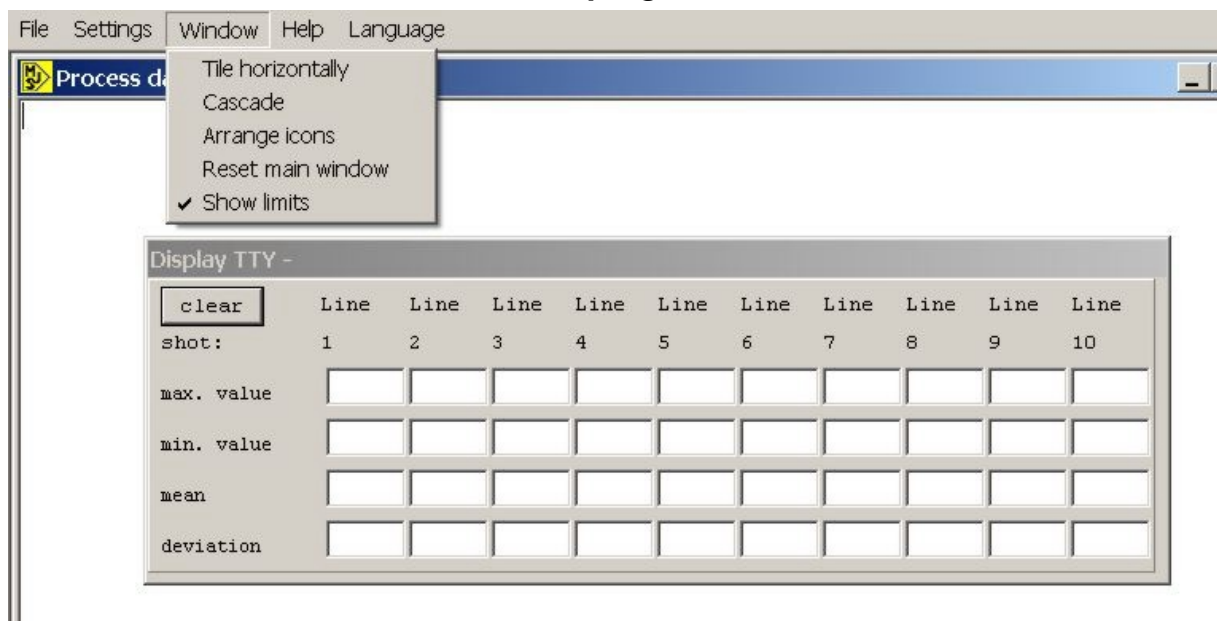
The screenshot shows a dialog box titled "Register of program". It has a close button (X) in the top right corner. The dialog is divided into several sections:

- Customer data:** A group box containing two text input fields: "Customer name" and "Customer address".
- Machine identifier (automatically calculated):** A text input field with a blurred value.
- Enter serial number (please request):** A text input field.
- Enter access code (please request):** A text input field.

At the bottom of the dialog, there are two buttons: "Save" and "Cancel".

To enable long term use of the software, it must be purchased. If further use is desired after expiry of the evaluation phase, send us the "Machine identifier" together with the order. When the invoice is settled, you will receive the appropriate serial number and the necessary access code.

2.3 "Window" menu in the ERGO TTY program



2.3.1 Tile horizontally, Cascade, Arrange icons

These are Windows functions for organising the various windows.

2.3.2 Reset main window

The contents of the main window can be erased here.

2.3.3 Show limits

When this is clicked on another window appears. Here the min/max. values, the mean and the absolute deviation are calculated, which yield information about the stability of process.

2.4 “Help” menu in the ERGO TTY program

This window indicates the version of the program. It also shows how the cable must be connected and how the settings on the IBED are to be made. The IBED/Ergocontrol settings are described again below.

3 Machine settings

3.1 IBED settings

3.1.1 IBED Screen Page 83

Enter the values into Screen Page 83 as described below.

| | | |
|--|------------------|-----------------------------------|
| 0-9 | 83 SETUP IBED | 0.00 |
| Printer: | | Type: |
| COM4 XON/XOFF <input type="checkbox"/> | | EPSON FX <input type="checkbox"/> |
| | | HP-LASER <input type="checkbox"/> |
| Page length | | 72 Line |
| 0 ARC-ID <input type="checkbox"/> | COM2 | COM3 |
| | 19200 | <input type="checkbox"/> |
| | 9600 | <input type="checkbox"/> |
| | 4800 | <input type="checkbox"/> |
| | 2400 | <input type="checkbox"/> |
| | 1200 | <input type="checkbox"/> |
| Units | Stop bits: | 1 <input type="checkbox"/> |
| | Parity: NO | <input type="checkbox"/> |
| | ODD | <input type="checkbox"/> |
| | EVEN | <input type="checkbox"/> |
| Change reason | | |
| page back | General Data 1 | Print |
| | Password | Service |
| | Amendment Report | |

- Call up Page 83 “Setup IBED” and select COM 4 XON/XOFF in the “Printer” column
- Select the baud rate as in the Program description in Para. 2.2.1.2 under COM4
- Further down the COM 4 column enter Stopbits 1 and Parity “NO” .

Note: Check these settings carefully or recording may be impossible or give nonsense values.

3.1.2 IBED Screen Page 84

Enter the values in Screen Page 84 as described below.

| | | | |
|--|--------------------|---|-------------|
| Q=9 | 84 PRINTING | .. | 0.00 |
| Autom. Report <input checked="" type="checkbox"/> Report by -Shots <input checked="" type="checkbox"/> 1 Process Statistic <input checked="" type="checkbox"/> Spot check count 1 Shots | | Pages selected : Page length : 72 Line Head : | |
| page back | Printer Function | Print Lists | Page Select |
| Manual Report | Reset Report | Print Everyth. | Reset Print |

- Select “Autom. report”
- Set “Report after - shots” switch and enter set value “1”.
- Set “Process statistics” switch
- Enter “1” for “Spot check count” (Sample interval)

3.1.3 IBED Screen Page 53

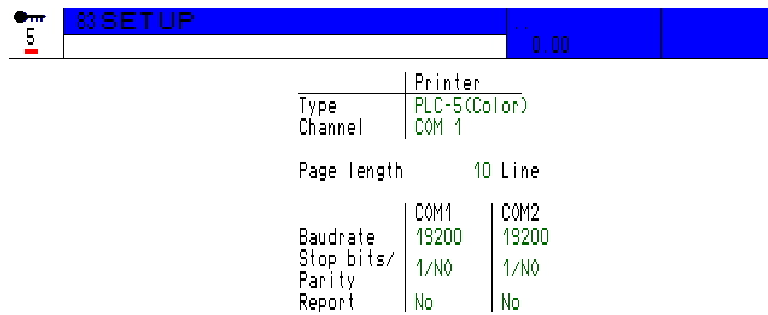
| | | | |
|---|-----------------------------|--|---------------|
| Q=9 | 53 STATISTIC-CONFIG. | .. | 0.00 |
| <input type="checkbox"/> Cycle time 0.0 <input type="checkbox"/> Inject time 2.00 <input type="checkbox"/> Dosing time 0.61 <input type="checkbox"/> Melt cush. 10.7 <input type="checkbox"/> Dosing stop 10.8 <input type="checkbox"/> Screw stop 10.8 <input type="checkbox"/> PN posit. 10.8 <input type="checkbox"/> PN press. 545 <input type="checkbox"/> <input type="checkbox"/> | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> p-inj. max 546 <input type="checkbox"/> p-inj. int 0 <input type="checkbox"/> Feed z.temp 3 <input type="checkbox"/> Cyl. zone 1 4 <input type="checkbox"/> Cyl. zone 2 4 <input type="checkbox"/> Cyl. zone 3 4 <input type="checkbox"/> <input type="checkbox"/> Nozzle zone 4 <input type="checkbox"/> Oil- temper. 37 <input type="checkbox"/> <input type="checkbox"/> M.close Time 0.38 <input type="checkbox"/> M.open Time 21.45 <input type="checkbox"/> Mould open 75.1 | |
| Selected channel: | | | |
| page back | Channel 1 | Channel 2 | Channel 3 |
| Channel 4 | Channel 5 | next page | Clear Channel |

Enter the values in Screen Page 53 as described below.
 Screen Page 53 is used to select up to 10 parameters which can be recorded.

3.2 Ergocontrol settings

3.2.1 Ergocontrol Screen Page 83

Enter the values in Screen Page 83 as described below.

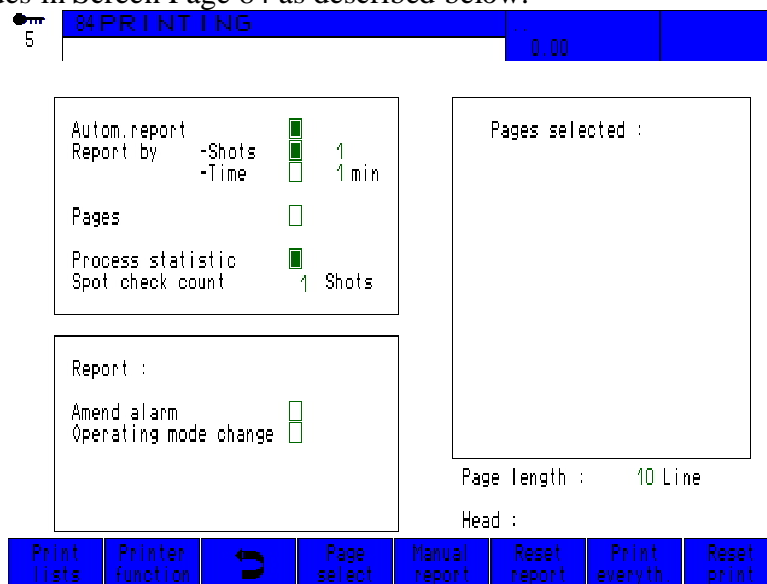


- Call up Screen Page 83 “SETUP” and select Type PCL-5 or Epson-FX and Channel COM1 in the “Printer”
- Under COM1/2 select baud rate as in the Program description in Para. 2.2.1.2 (E.g. 4 800 or 19 200)
- Further down, select “Stop bits” 1 and Parity “NO”
- Select Xon/Xoff protocol.

Note: Check these settings carefully or recording may be impossible or give nonsense values

3.2.2 Ergocontrol Screen Page 84

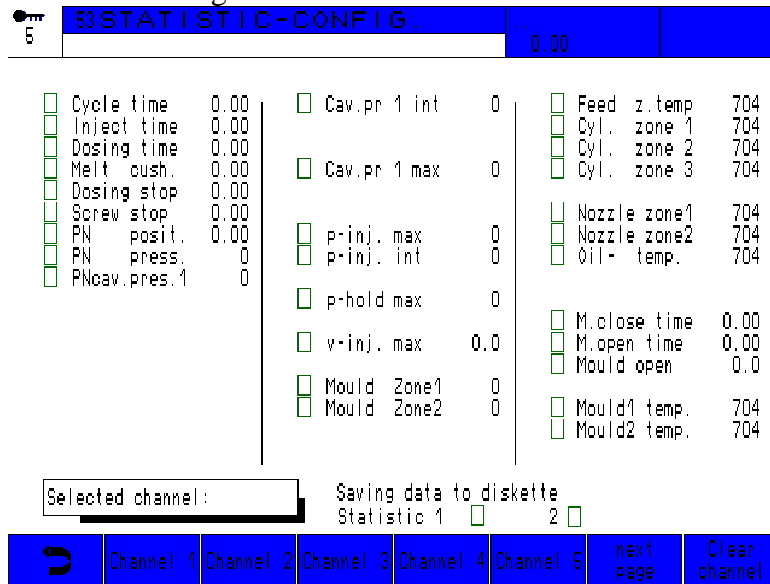
Enter the values in Screen Page 84 as described below.



- Select “Autom. report”
- Set “Report by - Shots” switch and enter set value “1”.
- Set “Process statistics” switch
- Enter “1” for “Spot check count” or on later machines “Sample interval”

3.2.3 Ergocontrol Screen Page 53

Enter the values in Screen Page 53 as described below.

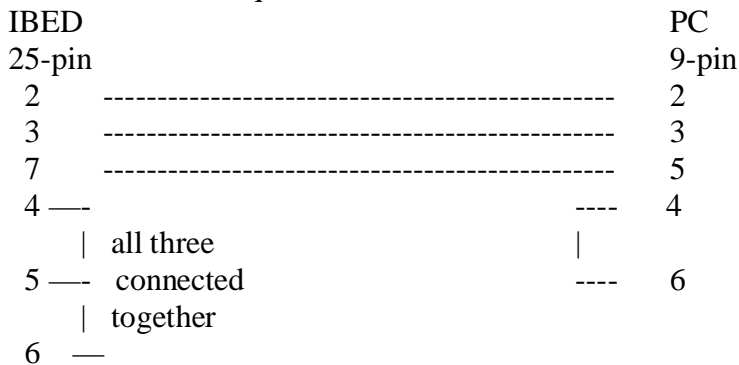


Screen Page 53 is used to select up to 10 parameters which can be recorded.

4 Connections from the PC to the IBED/Ergocontrol

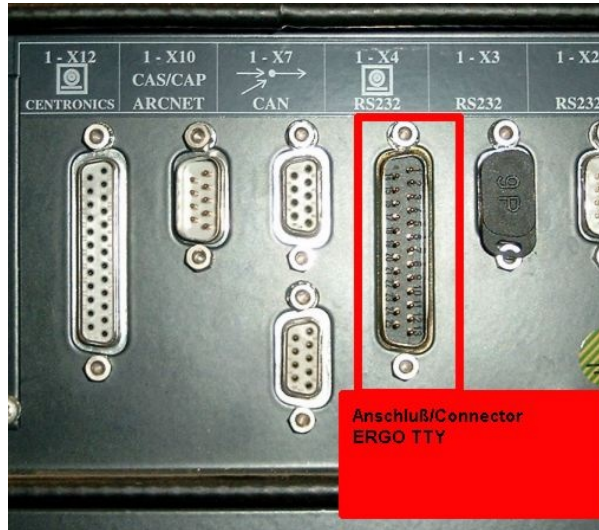
4.1 Connecting cable IBED <--> PC

A special cable is needed for the connection. Refer to the following diagram when purchasing it. A three-core cable is required.



One end (9-pin) is connected to the computer, usually to COM1 or COM2. The other end (25-pin) is connected to the IBED (COM4, serial interface for the printer).

4.2 Connection on IBED

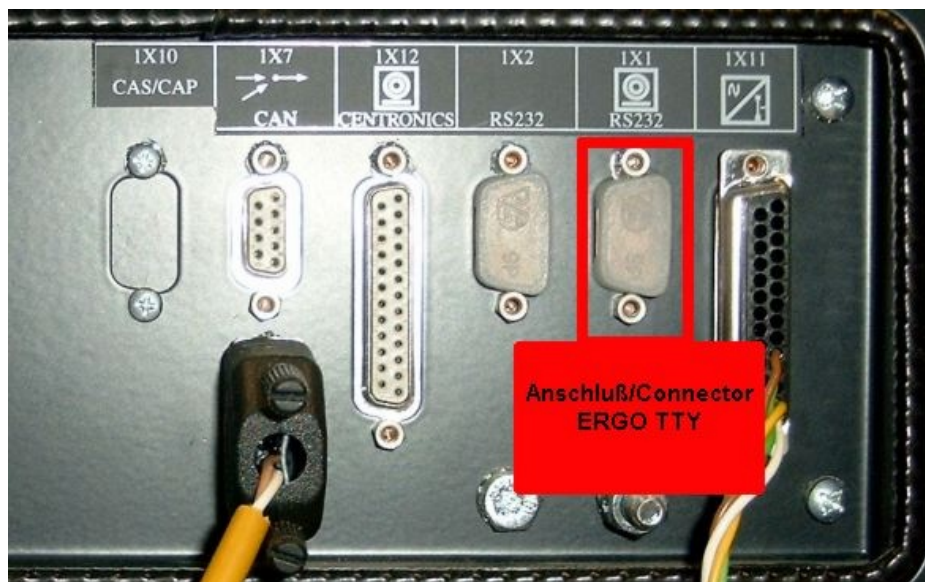


4.3 Connecting cable Ergocontrol < -- > PC

| | | |
|-------------|-------|-------|
| Ergocontrol | | PC |
| 9-pin | | 9-pin |
| 2 | ----- | 3 |
| 3 | ----- | 2 |
| 5 | ----- | 5 |

One end (9-pin) is connected to the computer, usually to COM1 or COM2. The other end (25-pin) is connected to the Ergocontrol (COM1 or COM2, serial interface for the printer).

4.4 Connection on Ergocontrol



5 Information about the data

5.1 Which data can be recorded?

Any parameters which appear on Screen Page 50 can be recorded. There are 10 columns for the various parameters. If some columns are empty, values can be entered as described in Paragraph 3.

Should Screen Page 50 not be present on a machine, then ZE 420 has not been installed in that machine. See under: Requirements for ERGOtech NC4 .

In addition graphics can be recorded simply by pressing the printer key on the IBED/Ergocontrol. A new window will shortly appear, which is gradually filled by the picture.

5.2 How are data acquired ?

- First of all the computer must be connected to the IBED. See Para.4.
- To set up the interfaces, the Paragraph: **Fehler! Verweisquelle konnte nicht gefunden werden.** and Para. 3.
- To set up the printer protocol, see Para 3.1.2 for an IBED or Para. 3.2.2 for an Ergocontrol.
- On Screen Page 84 “Print” is a softkey, called “RESET”. Press once.
- After these steps Power down at the machine’s main isolator and after a few moments power up again, to make sure everything is correctly initialised.
- Everything should now be in place to allow data recording..
- The program must now be started. To enable data reading, go online under “File”
- After a short time data will appear on the PC’s screen. If you have an unlimited version, data can be recorded for an indefinite period. The recording capacity is limited only by the space on the PC’s hard disk. Nonetheless, the data should be backed-up regularly, as no guarantee can be given for lost data. To finish data recording, select “Offline” in the “File” menu. After finishing, you will be asked for a file name for the new data. If this is confirmed only by pressing the “Enter” key the provisional file name “DATA.TXT” will be used. If the machine number has been entered, it appears as a preset value, other wise a new file name should be used.
- If you have the limited version, this will be switched off automatically after 30 days. If you wish to continue using the program, a licence must be purchased as described above.

5.3 Structure of data files

After data recording a file is usually produced with the name “DATA.TXT”.

The columns are delimited by a “Tab”. The line end is marked with a carriage return. These files can be read by Microsoft Excel or similar spreadsheets. The following instructions apply when reading with Microsoft Excel.

- Start Excel
- Click on “File”, “Open”
- For “Files of type” select “Text Files”
- Select file (default “data.txt”)
- In the next window (Text Import Wizard) just click on “Finish”
- The data are displayed

- This file can now be saved in the Excel format. It is also now possible to start further evaluation.

Note:

Clicking on the file directly in Explorer does not give the same result. Open Excel first and follow the steps above.

Please also note that Excel can read a maximum of only 64 000 lines. If more shots have been recorded, only the first 64 000 will be displayed.

5.4 Structure of graphics files

Graphics may be stored as <. gif> or <.bmp> files.

6 Installation

The program is installed by following the steps below.

6.1 Software installation

Place the program CD in the drive. The installation software will start automatically.

Alternatively, select the CD-ROM in Windows: Start -> Run -> Browse ->, select the <setup.exe> file and click on OK. The installation routine will then guide you through the installation process. After accepting the Terms and Conditions, the software is installed. The standard installation places it in the directory c:\Programs\MJSoft\ERGO_TTY .

6.2 Starting and using the program

See Para. 2.

6.3 Program registration

After program installation you will be get an information, that the program has not been registered. You have 30 days to register it. Otherwise it starts, but you are not able to record any data or store pictures respectively.

The program can once only be used per licence.

If you need the program on more than one notebook, you will have to acquire additional licenses.

Please make a note of “Machine Identifier” as described at Para 2.2.2. Then please call your service and give them “Machine Identifier”.

The service will inform you of corresponding serial number and access code.

Please enter these data (see Para 2.2.2) After repeated program start you will be able to use it without restrictions.

7 Fault-finding

After the program starts “unreadable” characters appear on the screen.

Check that the settings on the IBED/Ergocontrol are the same as in the program under Settings. Compare the settings on IBED/Ergocontrol Screen Page 83 and in the program under “Settings -> pre-settings”.

No data on the screen, even after a few shots

There are several possible causes for this problem:

- *The interface cable is not connected or is faulty. Check the cable against the description in Para. 4.*
- *Check that the settings on the PC and the IBED/Ergocontrol are the same. See also under Para 2.2.1 and Para 3.*
- *The program is not on line. See Para. 2.1.1.*
- *Check that the Automatic Report is selected. See under 3.1.2 for IBED or 3.2.2 for Ergocontrol.*
- *Check that some parameters have been selected. This can be done by calling up Screen Page 50 of the IBED/Ergocontrol to see if its columns have figures in them. See Para. 3.1.3 for IBED or 3.2.3 for Ergocontrol.*

After a certain time data recording stops working.

In this case you have a trial version, which only lasts for a given number of days. Register the software to obtain a licence.

8 Trade marks

Windows® and Excel® are registered trademarks of the Microsoft Corporation.

The trade names and brand names used in this instruction manual for the software and hardware of various companies are protected by general trademark, brand name and patent legislation.