Computer Integrated Documentation – PRO 5

User Manual

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1 Contents

1 Contents ... 3

2 Installation and system requirements ... 7
2.1 Note regarding licensing ... 7
2.2 System requirements ... 7
2.3 Permissions ... 7
2.4 Installation ... 8
2.4.1 CID-Pro 5 ... 9
2.4.2 Test program for the ASCII protocol ... 10
2.4.2.1 ASCII protocol for the serial interface ... 10
2.4.2.2 ASCII protocol for the Ethernet interface ... 11
2.4.3 Manuals and Adobe Acrobat Reader ... 11
2.5 Uninstallation ... 12

3 General ... 13

4 Program launch ... 14
4.1 Software ... 14
4.2 Cabinets ... 14

5 Status overview ... 15
5.1 General ... 15
5.2 Toolbar and menu bar ... 16
5.3 Test cabinets ... 17
5.4 Cabinet information ... 18
5.5 Operational status ... 19
5.6 Error status ... 21
5.7 Program status ... 22
5.8 Trend and auto graphs ... 23
5.9 Messages (change, error, warning and operational messages) ... 25
5.10 Digital channels ... 26
5.11 Analogue channels ... 27
5.12 Locking the control panel ... 28
5.13 Error list ... 29
5.14 Size adaptation ... 30
5.15 Service data ... 31
5.16 Search for updates ... 31

6 Configuration ... 32
6.1 Settings ... 32
6.2 Communication ... 32
6.2.1 Help integrating a test cabinet into the software ... 38
6.3 Program mode (temporary display) ... 39
6.4 Directories ... 41
6.5 Options ... 41
6.6 Modules ... 45
6.6.1 Editor module ... 45
6.6.2 Graphic module ... 45
6.6.3 Report module ... 45
6.7 Notification ... 46

6.8 Access rights 49
6.8.1 Simple password 49
6.8.2 Access configuration settings 51
6.8.3 Access configuration – during operation 53
6.9 PDF settings 54

7 Cabinet information 55
7.1 Error list 55
7.2 Power failure list 56
7.3 Error limits (test specimen protection) 57
7.4 Tolerance bands 58
7.5 Measurement buffer 59
7.6 Cabinet programs 60

8 Status overview for all test cabinets 61

9 Program editor (editor module) 62
9.1 General 62
9.2 Functionality since V5 64
9.3 Buttons 66
9.4 Creating a program (test cycle) 67
9.4.1 Important remarks on program creation 67
9.4.2 Program components (test cycle) 67
9.4.3 Editing a line (insert, change, cut and copy) via the keyboard/menu functions 69
9.4.4 Inserting and changing a line in the graph using the mouse 75
9.5 New program 79
9.6 Opening a program 79
9.7 Saving a program (as) 80
9.8 Deleting a program 80
9.9 Setting up the printer/page and printing … 81
9.10 Printing a PDF... 82
9.11 File information of a loaded program 83
9.12 Copying/inserting/deleting a block 84
9.13 Loop (beginning and end) 85
9.14 Calling a subroutine 86
9.15 Conditional jump 87
9.16 Inserting a program 88
9.17 Difference between “Call” and “Insert” 89
9.18 Templates 90
9.19 Options 91
9.20 Defining the gradient 94
9.21 Saving a file in a data pool 97
9.22 Saving a file as a library 97
9.23 Comment 98
9.24 Zoom functions (editor) 99

10 Measurement data analysis graph (graphic module) 101
10.1 General 101
10.2 Functionality since V5 103
10.3 Buttons 104
10.4 Open and load measurement 105
10.5 Deleting a measurement 106
10.6 Printing a measurement 107
10.7 Printing a measurement as a PDF 107
10.8 File information of a loaded measurement 108

10.9 Zoom functions 109
10.10 Display 110
10.11 Graphic Settings 111
10.11.1 Cursor information 112
10.11.2 Table of analog channels 113
10.11.3 Table of digital channels 114
10.11.4 Options 115
10.12 Options 117
10.13 Excel conversion program 118
10.14 Display measured values 122
10.15 Copy to clipboard 122
10.16 Merging measurement files 123
10.17 Cutting the current measurement file (cursor) 123
10.18 Settings 124
10.19 Comment 126

11 Starting programs (automatic mode) 127
11.1 Selecting a program 127
11.2 Recording a program 128
11.3 Start options 129
11.4 Automatic mode 130

12 Manual measurement recording 131
12.1 Start a manual measurement recording 131
12.2 Stopping a manual measurement recording 135

13 Operating hours and event counter 136

14 Event logs (report module) 137
14.1 General 137
14.2 Buttons 139
14.3 Loading a report 139
14.4 Deleting a report 139
14.5 Printing a report … 140
14.6 Exporting a report … 140
14.7 Options 141

15 Visualisation 142
15.1 General 142
15.2 Buttons 142
15.3 Visualisation display 143
15.4 Configuring a setting 144
15.5 Saving a setting 146
15.6 Loading a setting 146
15.7 Resetting a setting 146
15.8 Displaying a test cabinet 146

16 Special menus for specific cabinet types 147
16.1 Temperature shock test cabinets 147
16.1.1 Overview menu 147
16.1.2 Pre-temperature / pre-heating 148
16.1.3 Starting a program 150
16.1.4 Creating a program 151
16.1.5 Manual/program mode 153

17 Cabinet networking 155
17.1 Serial interface (RS 232) 156
17.2 Serial interface (RS 485) 158
17.3 Network (TCP/IP) 161
17.4 Cabinets from other manufacturers 162

18 CID-Pro 5 software buttons 163
18.1 Status overview 163
18.2 Editor module 164
18.3 Graphic module 165
18.4 Report module 166
18.5 Visualisation 166

19 Software updates 167
19.1 Software information 167
19.2 Support area on the internet 168

20 End-user license agreement 169
20.1 Copyright 169
20.2 License agreement 169
20.3 Warranty 170
20.4 Place of performance, place of jurisdiction, applicable law 170

21 Index 171

22 Technical support 175

2 Installation and system requirements

2.1 Note regarding licensing

From the CID-Pro software version 5 onwards there is no longer any difference between the network version and the full version. There is only one CID-Pro 5 software version, with the full range of functions (comparable to the former full version).

Notice

- ➔ **A Sentinel hardware key (dongle) is no longer required: all communication channels are open.**
- ➔ **Licensing the test cabinet interfaces: per test cabinet (activate "CID-Pro use" via an activation code on the test cabinet).**

2.2 System requirements

- PC with a Pentium processor of 1 GHz or higher
- Microsoft Windows 7/8/10 (32 and 64 bit), Windows Vista/XP or Windows 2000 Service Pack 3 or higher
- VGA (256 colours, 1280 x 1024 pixels or higher)
- min. 512 MB RAM, 1 GB recommended (RAM depends on the operating system)
- 200 MB available hard disk space, 1 GB recommended
- Microsoft-compatible mouse
- CD-ROM drive
- available serial interface or Ethernet interface

2.3 Permissions

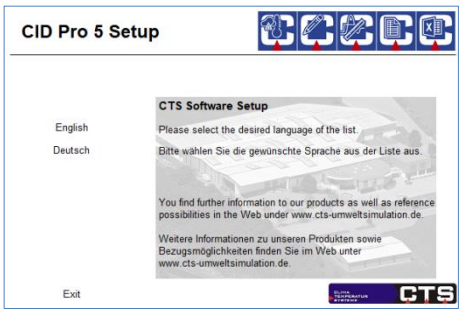
The Windows user must be a member of the local administrator group or have similar rights to be allowed to install CID-Pro 5. If he/she is the domain administrator, he/she normally possesses the corresponding rights.

To modify and update the various files (programs, measurement records or report files) users must have read and write access to the CID-Pro 5 installation folder while operating the software. If the file directory paths lead to a network drive, the user needs read and write access to it.

2.4 Installation

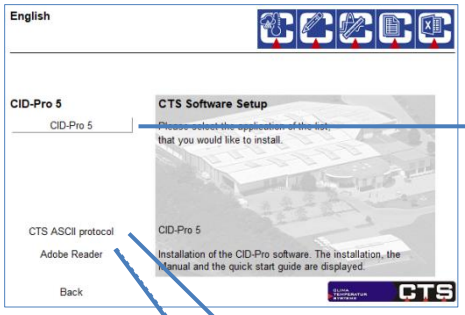
It is very easy to install CID-Pro 5. The following steps are necessary:

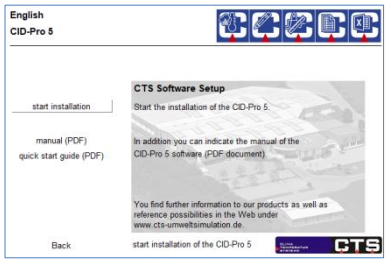
- Start up the computer on which CID-Pro 5 is to be installed.
- Log in as a user with administrative rights.
- We recommend ending all running Windows programs before the installation.
- Insert the CD-ROM into a computer drive or insert the USB stick into the computer.
- If the CID-Pro 5 installation file does not start automatically, it should be started on the data medium (e.g.: D:**CD_Start.exe**).



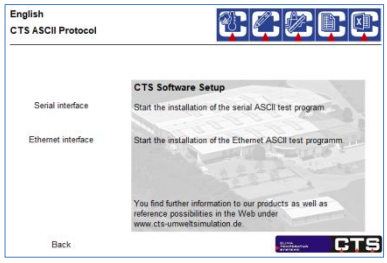
- Select the desired language:
  - English
  - German

- The following possibilities are available:
  - **CID-Pro 5 software installation**
    Click on the "CID-Pro 5" button to display the installation, the manual and the quick start guide (see Chapter 2.4.1 - CID-Pro 5, page 9).





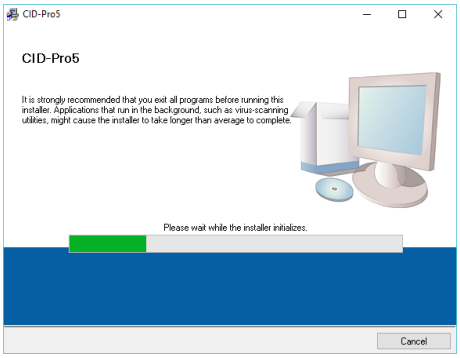
  - **CTS test program for the ASCII protocol**
    The test program for the ASCII protocol installs an application allowing it to analyse the transmitted data. This can be helpful if the test cabinets are to be controlled via their own software and the necessary commands and data are to be tested. The test program is available for both the serial and the Ethernet interfaces (see Chapter 2.4.2 - Test program for the ASCII protocol, page 10).



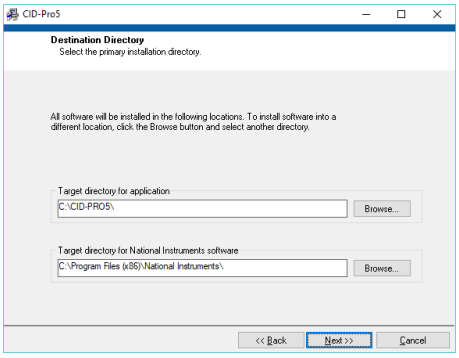
  - **Adobe PDF Reader link**
    Adobe Reader is required to display the documentation on the data medium in electronic form. The link connects to the Adobe website from which the latest version of the PDF Reader can be downloaded and installed.

Notice
In the event that neither a CD-ROM drive is available nor a USB stick can be inserted, the installation package can be downloaded from the CTS website (see Chapter 19.2 - Support area on the internet, page 168).

2.4.1 CID-Pro 5



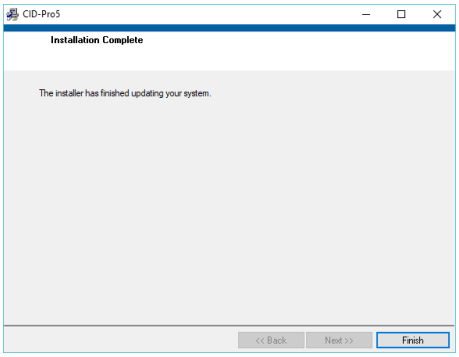
After the installation has been started, follow the software assistant's instructions.



During the installation, select the destination folder into which the CID-Pro 5 software is to be installed. The following is present:

C:\CID-PRO5

This directory can be changed. However, we recommend installing the software on the computer's local hard disk.



After a successful installation, the following is displayed:
"The installer has finished updating your system."

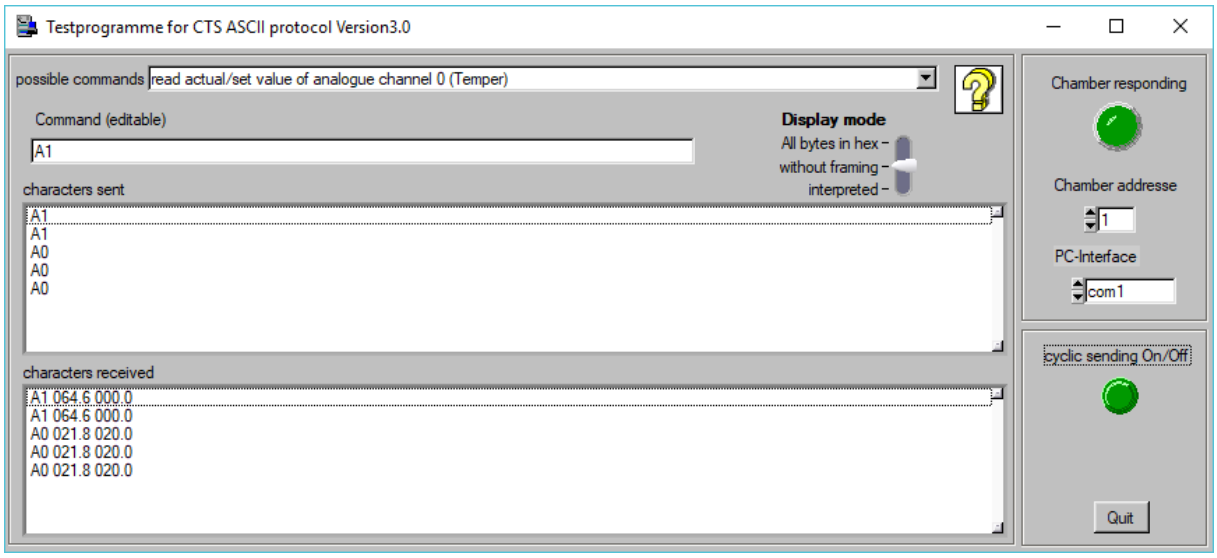
Close the start-up window and start the software.

Notice
The Sentinel hardware key (dongle) is no longer required.

2.4.2 Test program for the ASCII protocol

2.4.2.1 ASCII protocol for the serial interface

This test program enables communication between the serial port and the test cabinet to be checked with a couple of mouse clicks.



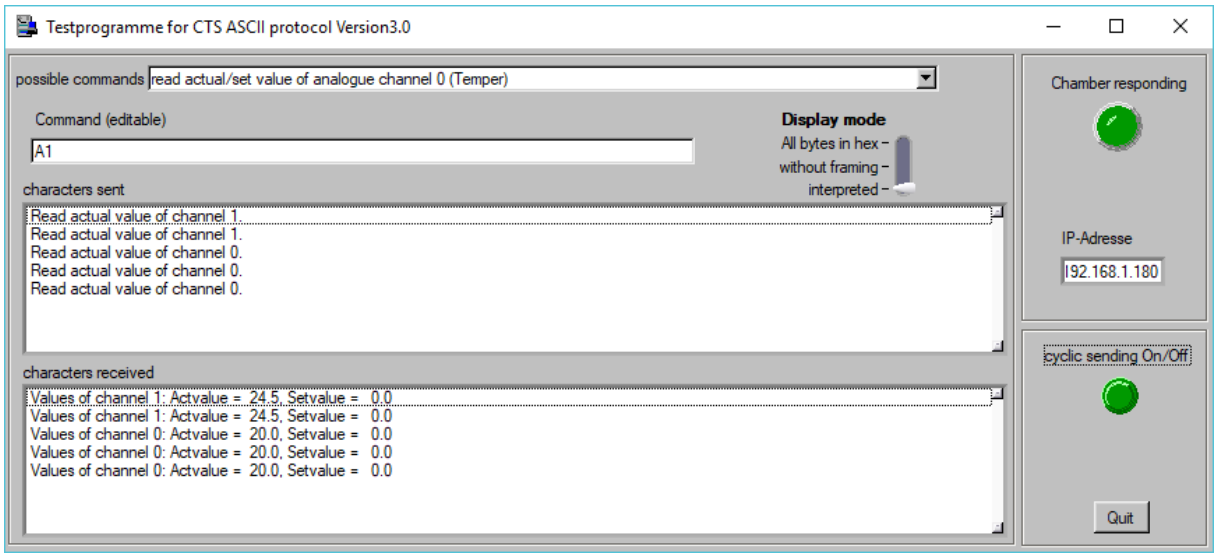
- Chamber address: This must correspond to the test cabinet address set.
- PC interface: Serial COM port which is connected to the test cabinet.

- Chamber responding: red - no communication
  green - communication ok
- Left side: Status selection, characters sent and received.

- Possible commands: Select all commands which can be sent to the test cabinet.
- Display mode: Displays the characters
  - in bytes actually transmitted
    sent: 0x02 0x81 0xC1 0xB0 0xF0 0x03
    received: 0x02 0x81 0xC1 0xB0 0xA0 0xB0 0xB2 0xB1 0xAE…
  - human-readable without framing
    sent: A0
    received: A0 021.8 020.0
  - interpreted into human-readable data
    sent: reading the actual/set values of channel 0
    received: values of channel 0: actual value = 21.8, set value = 20.0

2.4.2.2 ASCII protocol for the Ethernet interface

This test program enables communication between the Ethernet interface and the test cabinet to be checked with a couple of mouse clicks.



- IP address: this must correspond to the test cabinet's IP address.
- Chamber responding: red - no communication
  green - communication ok
- Left side: Status selection, characters sent and received.
- Possible commands: Select of all commands which can be sent to the test cabinet.
- Display mode: Displays the characters
  - in bytes actually transmitted
    sent: 0x41 0x30
    received: 0x41 0x30 0x20 0x30 0x32 0x31 0x2E 0x38 0x20…
  - Human-readable without framing
    sent: A0
    received: A0 021.8 020.0
  - interpreted into human-readable data
    sent: reading the actual/set values of channel 0
    received: values of channel 0: actual value = 21.8, set value = 20.0

Notice

Set **IP-Port: 1080** on the test cabinet.

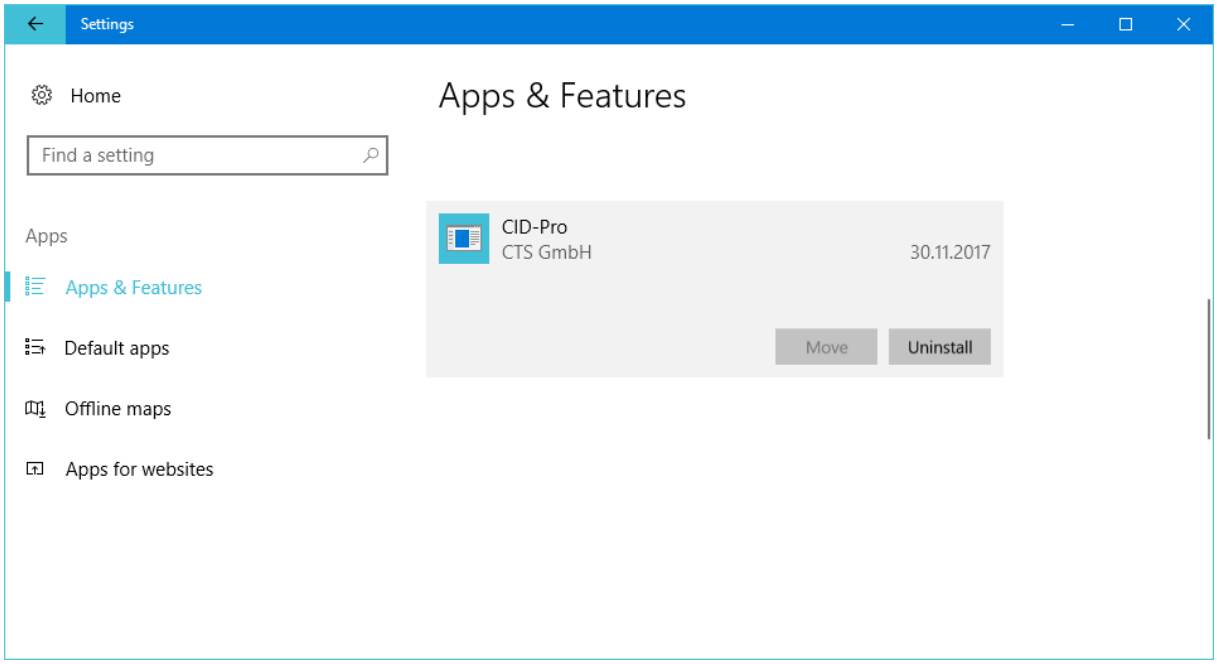
2.4.3 Manuals and Adobe Acrobat Reader

The PDF software manuals are displayed if Adobe Acrobat Reader is installed. If the reader has not yet been installed, the link connects to the Adobe website, from which the latest version of the PDF Reader can be downloaded and installed.

2.5 Uninstallation

CID-Pro 5 can be removed/uninstalled via the **Control Panel** or **Settings** under **Apps** or **Software** or **Programs and Features**.

Select CID-Pro from the list of installed software products and select **Remove** or **Uninstall**.



Confirm the CID-Pro 5 uninstallation.
CID-Pro 5 is now removed from the system.

If the program is uninstalled, all files which have been created when working with CID-Pro 5 such as programs, measurements, report files, initialization files and personal settings remain unchanged and can further be used if the program is reinstalled in the same installation folder.
If no data are required after the uninstallation, all files in the CID-Pro 5 directory and the directory itself can be deleted.

3 General

The **internal configuration structure** of the CID-Pro 5 software has been **expanded**. Up to now, the names of the analogue and digital channels have been abbreviated due to a lack of available storage space. Now, longer information strings are transmitted from the cabinet control to the software.
These are the names (19 instead of 9 characters), short names (7 instead of 5 characters) and units (7 instead of 3 characters) of the **analogue channels**, **digital channels** and **counter elements**. Besides this, the counters' Limit2/Comment2 can be displayed as on the cabinet control panel (see Chapter 5.11 - Analogue channels, page 27, Chapter 5.10 - Digital channels, page 26 and Chapter 13 - Operating hours and event counter, page 136).

Notice

If the **latest version** of the integrated control system is used, this expanded information is automatically read out during the cabinet configuration, stored in the KONFIGExt.K** file and displayed in the CID-Pro software.
In general, the following data is read out during the configuration:

- KONFIG.K** for the standard configuration
- ErrorKonf.K** for the additional message information
- KONFIGExt.K** for the expanded configuration

*** – Cabinet number, e.g. K01 for cabinet 1*

If one of the files is not available, the information contained in it cannot be displayed.

There are no changes for older cabinets.
With new cabinets, the expanded information must also be entered into the PLC.

The longer channel names of the expanded configuration structure are also stored in the **measurement recordings** (measurement recording file header). The file header's memory is split up so that the measurement recordings are **compatible with all CID-Pro versions,** as usual.
In older CID-Pro versions, long channel names from the Version 5 measurement recordings are simply cut.
Measurement recordings from older versions can be displayed in Version 5 without problems (see Chapter 10 - Measurement data analysis graph (graphic module), page 101).

4 Program launch

4.1 Software

Launch software via:

Start ➔ **CID-PRO5** ➔ **CID-Pro5**

or

the "**CID-Pro5**" link on the desktop

When the program is launched for the **FIRST** time, the software program settings are displayed (see Chapter 6 - Configuration, page 32).
Before you can work with the software, the settings have to be entered, e.g. how many test cabinets are present, how the test cabinets are connected to the software and at what intervals the information is to be retrieved.

Whenever the software is launched subsequently, the software automatically searches for test cabinets on the basis of these settings and, if the test cabinets are switched on, retrieves the current cabinet configurations.
If the test cabinet configuration is not available, it is read in by the CID-PRO software. If no communication can be established, the test cabinet cannot be integrated.
If the test cabinet configurations are available, they are loaded and displayed, even without an active connection to the cabinet.

After the program is launched, the status overview is displayed (see Chapter 5 - Status overview, page 15).

4.2 Cabinets

If one of the test cabinets is not connected, the protocol set and the cabinet address must be checked directly on the test cabinet.

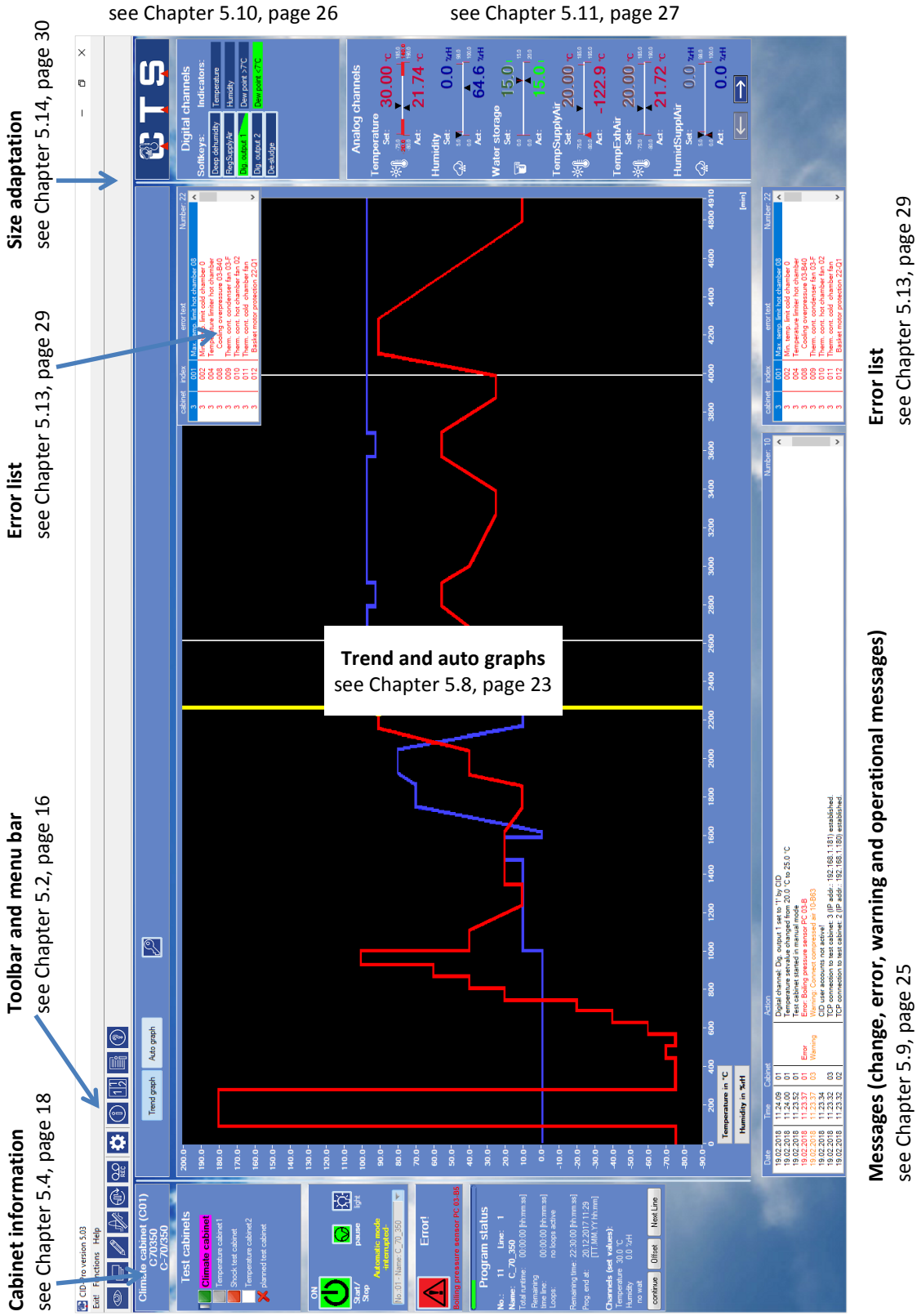
If communication is carried out via a network, the network parameters such as the IP address, IP port, subnet mask and standard gateway must be set correctly. The network administrator allocates this data.

The test cabinet's operating instructions describe how the parameters must be entered into the test cabinet.

Notice
The test cabinets do not support the DHCP!

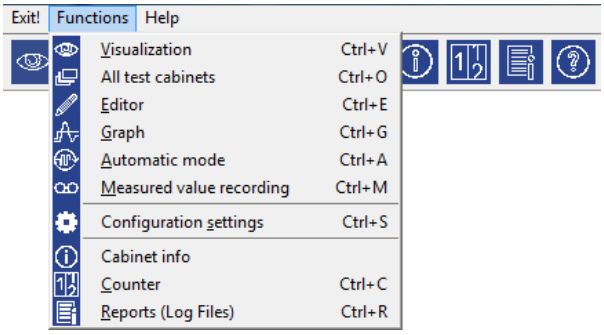
5 Status overview

5.1 General



5.2 Toolbar and menu bar

The main functions of the toolbar and menu bar are listed in the following:

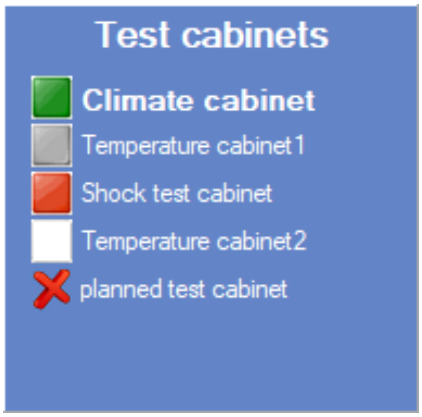


	Exit the software		Exit!
	Visualisation (Chapter 15, page 142) Visually displays all cabinets in a self-created environment	**Ctrl+V**	Functions
	Status overview for all test cabinets (Chapter 8, page 61) Overview of all connected test cabinets at a glance	**Ctrl+O**	Functions
	Program editor (editor module) (Chapter 9, page 62) Create, edit, modify and delete programs	**Ctrl+E**	Functions
	Measurement data analysis graph (graphic module) (Chapter 10, page 101) Evaluate all measured data in a diagram	**Ctrl+G**	Functions
	Starting programs (automatic mode) (Chapter 11, page 127) Start a program in automatic mode	**Ctrl+A**	Functions
REC	**Manual measurement recording** (Chapter 12, page 131) Document the history of analogue and digital channels by recording measurements	**Ctrl+M**	Functions
	Configuration (Chapter 6, page 32) Software configuration	**Ctrl+S**	Functions
	Cabinet information (Chapter 7, page 55) Display all cabinet information		Functions
	Operating hours and event counter (Chapter 13, page 136) Display the operating hours and events	**Ctrl+C**	Functions
	Event logs (report module) (Chapter 14, page 137) Display all modifications, warnings and errors and leave comments	**Ctrl+R**	Functions
	Help	**F1**	Help
	Service data … (Chapter 5.15, page 31)		Help
	Information **Software information** (Chapter 19.1, page 167)	**Ctrl+I**	Help
	Search for updates … (Chapter 5.16, page 31)		Help

5.3 Test cabinets

The icons provide an overview of the current status of all test cabinets set in the configuration. The colours and icons mean the following:

Icon	*Colour*	*Configuration*	*Test cabinet*
	Red X	**not configured**	**not available**
	White	**configured**	**does not respond** Main switch OFF or no connection
	Grey	**configured**	**connected** not started
	Green	**configured**	**connected** in operation
	Orange	**configured**	**connected** in operation **Pause**
	Yellow	**configured**	**connected** Warning
	Red	**configured**	**connected** error

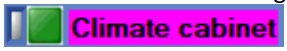


Click on an icon and the status overview screen displays the selected test cabinet and shows the current values.

The selected or current test cabinet currently displayed is represented in bold in the list of all test cabinets, here “climate cabinet”.

Each time another test cabinet is added, the test cabinet area is expanded downwards.

When more than 16 test cabinets have been entered in the configuration, the test cabinet area only expands up to the 16th cabinet. Now, two arrow icons (🡐 and 🡒) are displayed which swap between the first page cabinets 1–16) and the second one (cabinets 17–32):

As from CID-PRO software Version 4, characteristic names can be assigned to the integrated test cabinets. An informative name can be selected to reflect the cabinet’s place of installation, the person in charge of it or the tests carried out.
This cabinet name can be entered and changed as you wish in the configuration dialogue (see Chapter 6.2 - Configuration: Communication, page 32). If no name is entered, the standard designation “**test cabinet *xx***” is displayed, where ***xx*** is the cabinet number.
If measurement recording is active, the cabinet name is displayed on a background that is **pink** 

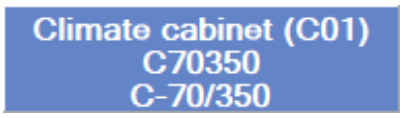
(automatic recording) or **yellow**

(manual measurement recording). When you double-click on the test cabinet icon, the active measurement recording is immediately opened in the graphics module.

5.4 Cabinet information

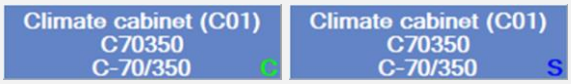
The following information on the current test cabinet selected is displayed in the cabinet information area:

Field	*Meaning*	*Example*
Name	**Cabinet name + standard designation** Name can be changed under Configuration - Communication (see Chapter 6.2, page 32)	**Climate cabinet (C01)**
Commission number	**Cabinet commission** A fixed value which can be read from the cabinet control panel	**C70350**
Type	**Cabinet type** A fixed value which can be read from the cabinet control panel	**C-70/350**



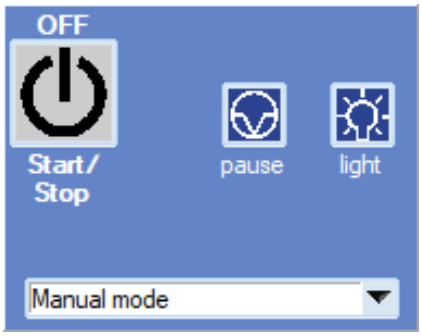
Notice

- Information in this area cannot be changed!
- If a device is declared as client or server, this mode is displayed with “C” for client or “S” for server:



5.5 Operational status

The start / stop key starts and stops the manual mode and displays the cabinet's operational status.



OFF / Stop:

The function key flashes in grey.
The cabinet is not running.
'OFF' is displayed above the icon.
All cabinet components are switched off.

ON / Start:

The function key lights up in green.
The cabinet is operating in manual mode or a test program is active.
'ON' is displayed above the icon.

> **Notice**
> The **Start/Stop** function key flashes between grey and green:
> - when the function key is hit and until the PLC control system starts the cabinet
> - when an error message is output

Besides the operational status, the upcoming **operating messages** are displayed in this area; in operational status these are blue.

Pause:

The function key does not flash.
This has no effect on the cabinet or the control system. If a program is active or if the cabinet is being operated in manual mode, the 'Pause' function is deactivated.

The function key lights up in green.
The cabinet is in pause mode.
All cabinet components are set to standby. This allows the cabinet to be restarted immediately.

> **Notice**
> Activate the ***PAUSE*** function key before the test space door is opened.
> Thus, the test space circulation fan is switched off, which means that neither extremely cold nor hot air is blown in the operator's face.

Test space lighting:

The function key does not flash.
The test space lighting is deactivated, i.e. the test space of the cabinet is not illuminated. When this key is hit, the illumination is activated/switched on.

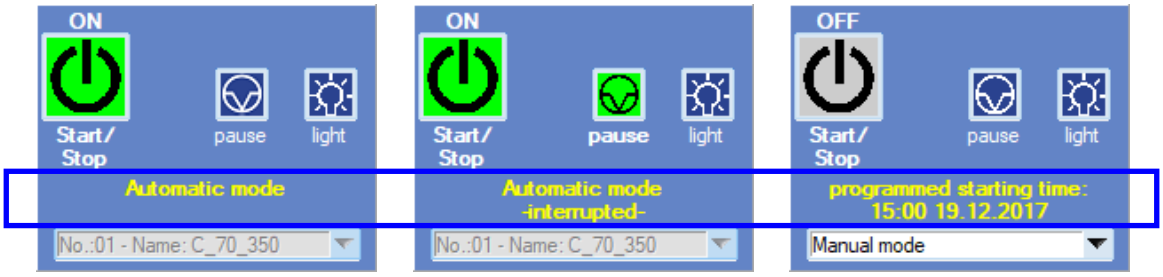
The function key lights up in green.
The test space lighting is activated, i.e. the test space of the cabinet is illuminated. When this key is hit, the illumination is deactivated/switched off.

> **Notice**
> The button for the test space lighting is dimmed if the light on the cabinet cannot be activated by the software.

> **Notice**
> The function keys correspond to those of the control panel:

Automatic mode (yellow message – text output on the automatic mode status):

Automatic mode	Automatic mode -interrupted-	programmed starting time: 15:00 19.12.2017



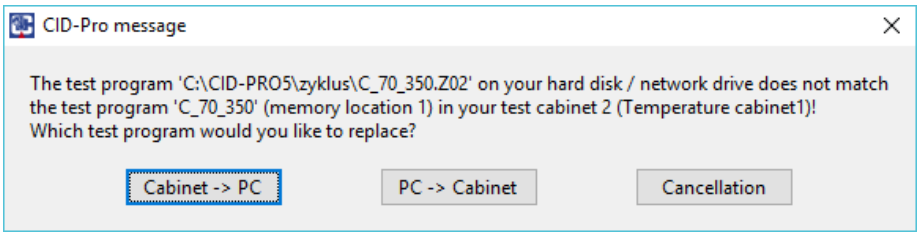
Selection field (manual mode):
Selecting automatic quick start

When the cabinet is stopped, clicking on the selection field opens a list of all programs which are stored in this cabinet control.
If a program is selected and the start button hit, this program is started in automatic mode with no need to open the “Automatic" menu.

> **Notice**
> The automatic quick start function sets up the automatic menu functions in one step. It is, however, not possible to start automatic measurement recording.

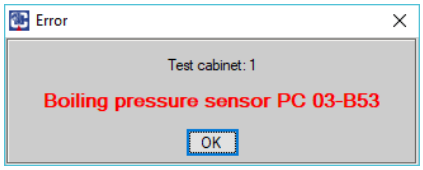
If this program is to be changed, e.g. in the CID-Pro 5 editor on the PC or in the cabinet editor, the PC program and the control system program of the same name now no longer match.
If quick start is selected, both programs (PC and cabinet program) are completely evaluated and compared:

- **identical programs** ➔ start the cabinet program
- **different programs** ➔ ask user which is the current program and which is to be overwritten.



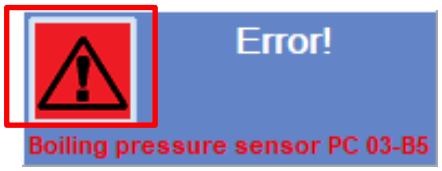
- **Cabinet ➔ PC:** Cabinet progr. overwrites PC progr. ➔ cabinet starts
- **PC ➔ Cabinet:** PC prog. is resent to the cabinet ➔ cabinet starts
- **Cancellation:** Interrupt to check which program is newer, if required.

5.6 Error status



If a cabinet has an **error**, an error message indicating the cabinet number and the error is displayed.

The error window is closed by clicking on the OK button.

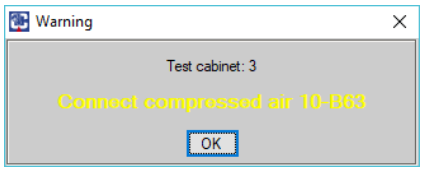


At the same time, the cabinet is stopped and the cabinet status set to error (red display).

If the error button in the cabinet status area is clicked, the error is confirmed.
If the button is no longer displayed after the error has been confirmed, it no longer exists and the cabinet will continue to run without error. If, however, the button remains visible, the error still exists.
The button on this cabinet remains red until **all** errors have been eliminated and confirmed.

> **Notice**
> The cause of the error must be checked and eliminated before the error is confirmed.

In this example, the cabinet only continues to run if the “Boiling pressure sensor PC 03-B5” error has been eliminated. The cabinet only continues to run if the error has been eliminated and confirmed.



If there is a **warning** on a cabinet, a warning message indicating the cabinet number and the warning is displayed.

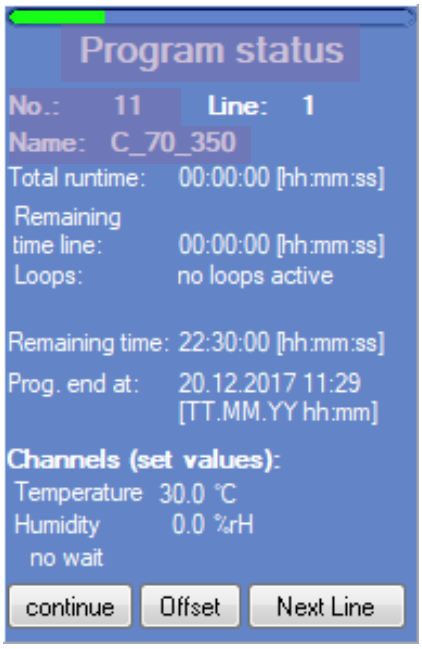
The error window is closed by clicking on the OK button.

At the same time, the cabinet status is set to “warning” (yellow display).

> **Notice**
> If the cause of the warning is eliminated the warning automatically disappears.

> **Notice**
> **System error messages are now also displayed in plain text and no longer just as an error index or number!**

5.7 Program status



In the program status, all relevant information on the current program is displayed:

Program information:

(Program) **No.:**	Program number in the control system.
(Program) **Name:**	Program name in the control system.
Line (seq. no.)**:**	The line number which the program has reached.
Total runtime:	Entire program runtime since launch.
Remaining time line:	Time which the line still has to go
Loops:	Are any loops still active? In the case of active loops, the number and processed loops are displayed.
Remaining time:	How long does the program still have to run?
Prog. end at:	Calculated time at which the program will end.
Channels (set values):	Set values with any Wait functions:

With a left mouse double click on the text “Program status”, the program no. or its label or the program name or its label, the current program is opened in the editor module.

> **Notice**
> If a program with a Wait function is started (the set value waits for the actual value of a channel) the program end cannot be calculated exactly.
> The indicated time is calculated without the Wait function and constantly updated:

Set values of the channels:

This shows the set values for the analogue control channels on the current line. Besides this, the Wait function tolerance is displayed behind each control channel if the analogue control channels are waiting for a certain value. In the “no Wait” field, the upcoming Wait function is also displayed.

> **Notice**
> For Wait functions which are not on an analogue control channel, this output is particularly important, e.g. a Wait function can even be activated for the basket sensor which is not set up directly in the editor.

The progress bar shows whether **automatic mode** is running. If the bar does not progress, the program has been interrupted (for example by a pause or an error).

Button to **pause** or **continue** the program. In the case of an error the test cabinet is set to **Interrupt** (display: “continue”). The program can only be restarted when the error is eliminated. Before this, clicking the button has no effect.

If a **Comment** was entered when the program was created, it can be displayed. The comment is read-only and cannot be changed.

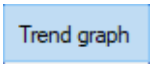
If the program **Offset** button is hit, the number of minutes which are to be skipped in the running program can be entered via the numeric keypad.

> **Notice**
> If advance times are entered, the program can also skip lines.
> When a negative value is input (rewind time), the program jumps to the start of the current line at most. It is not possible to return to already processed lines of code. This function is not available before the ITC control system V3.17.

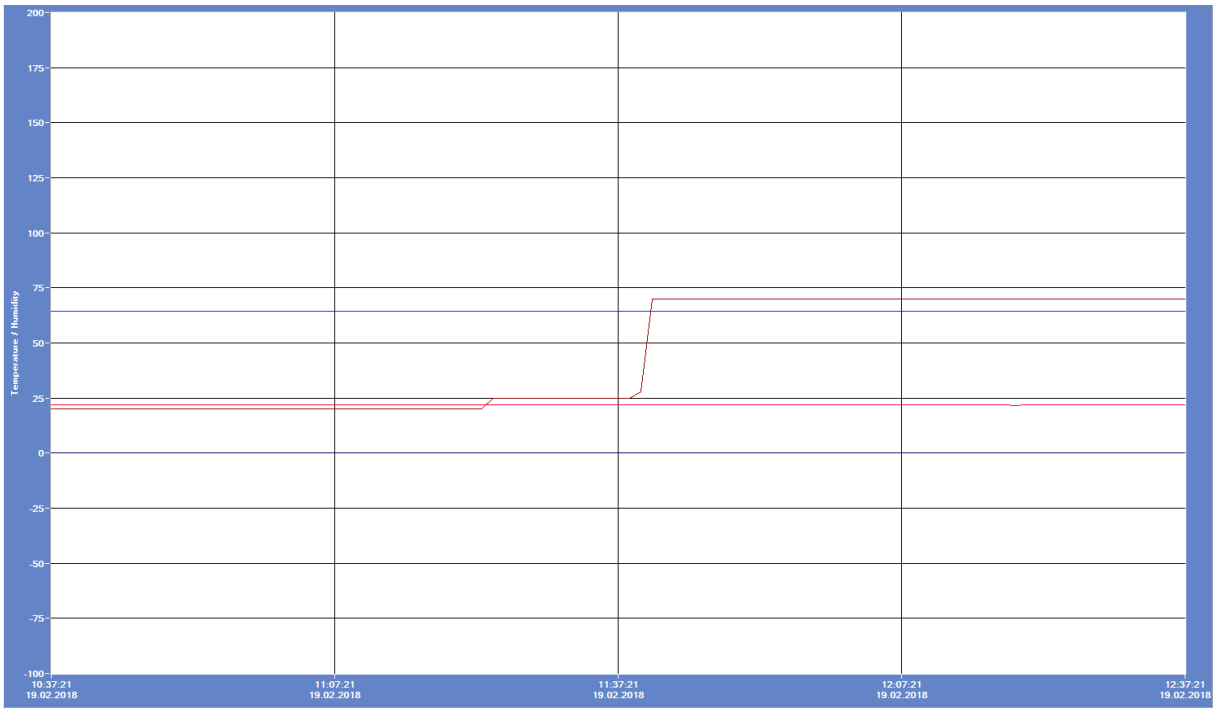
With the **Next Line** button, the program jumps to the next line.

5.8 Trend and auto graphs

In the central upper screen area, a toolbar offers various displays. Depending on the cabinet type and the operating status, not all icons are displayed.

If the 

button is active, the trend graph is displayed in the status overview window. This graph always shows the temperature graph (and, if present, the humidity graph) with the set and actual values in each case.

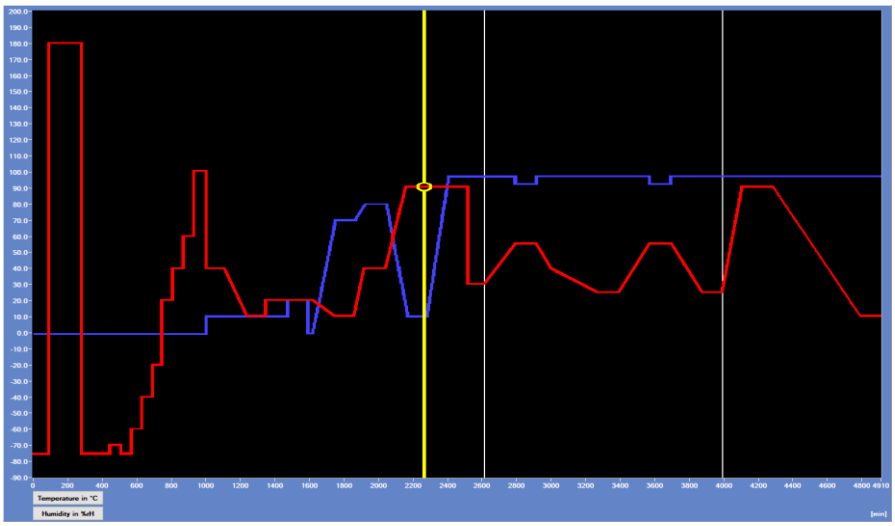


The trend graph always shows a fixed time slot up to the current time. For the special configuration of this time slot see Chapter 6.2 - Configuration: Communication, page 32. The scale is, however, valid for both channels (temperature and humidity, when applicable).
The channel colours are assigned as follows:

Temperature -	actual value	light red
Temperature -	set value	dark red
Humidity -	actual value	light blue
Humidity -	set value	dark blue

Notice
The trend graph's measured values are only displayed temporarily and **cannot** be stored. They **cannot** replace a measurement recording!

If a program is running in the current test cabinet and the Auto graph automatic button is hit, the automatic display appears, showing more details about the program. These are shown both graphically and in the form of the program status area (see Chapter 5.7 - Program status, page 22).



The yellow bar shows the current position in the program. It moves along the temperature set value. If the program contains loops (repetitions), it is indicated by means of white, vertical markings in the graph. At the end of the loop, the yellow position bar jumps back to the starting point of the loop.

The Y axis scale – Y Min and Y Max – is determined by the smallest and greatest Y values of all analogue channels displayed. Y Min and Y Max are then rounded off or up and adapted with ±10.
The Y axis scale is moved to the area of the selected channel using the temperature and, if applicable, humidity button (or up to seven other analogue channels).

The program limits and tolerance information can be displayed in the auto graph. This requires the **Show all error limits in the Auto graph?** (see Chapter 7.3 - Error limits (test specimen protection), page 57) or **Show all tolerance bands in the Auto graph?** (see Chapter 7.4 - Tolerance bands, page 58) options to be set.

5.9 Messages (change, error, warning and operational messages)

This 6-line extract from the Event logs (report module) serves as an overview of the last messages which are displayed **independently of the cabinet**. Besides this, the red error display, the orange warning display and the blue display for operating messages are very helpful.

The messages are:

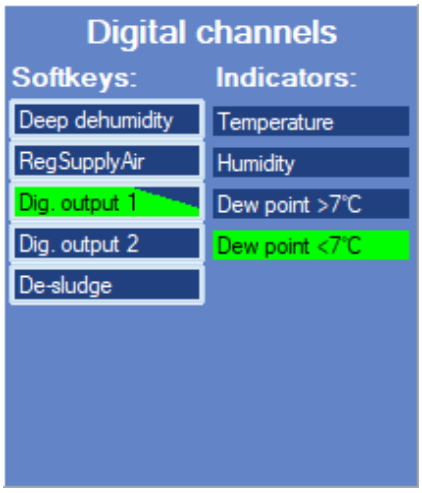
- all system **changes**:
  - software changes (e.g. CID-Pro launch)
  - changes in the configuration (e.g. number of cabinets changed)
- all cabinet **changes**:
  - changes in the cabinet status (e.g. test cabinet started manually)
  - changes in the digital or analogue channels (e.g. temperature changed)
  - connection messages (e.g. no connection to Test Cabinet 2)
- all cabinet **errors** (**red** entries)
- all cabinet **warnings** (**orange** entries)
- all **operating messages** of a cabinet (**blue** entries)

Date	Time	Cabinet		Action	Number: 10
19.02.2018	11.24.09	01		Digital channel: Dig. output 1 set to '1' by CID	
19.02.2018	11.24.00	01		Temperature setvalue changed from 20.0 °C to 25.0 °C	
19.02.2018	11.23.52	01		Test cabinet started in manual mode	
19.02.2018	11.23.37	01	Error	Error: Boiling pressure sensor PC 03-B	
19.02.2018	11.23.37	03	Warning	Warning: Connect compressed air 10-B63	
19.02.2018	11.23.34			CID user accounts not active!	
19.02.2018	11.23.32	03		TCP connection to test cabinet: 3 (IP addr.: 192.168.1.181) established.	
19.02.2018	11.23.32	02		TCP connection to test cabinet: 2 (IP addr.: 192.168.1.180) established.	

The columns have the following significance:

- Date: date on which the message was created
- Time: time at which the message was created
- Cabinet: indication of the cabinet number, only in the case of a cabinet-specific message
- *(empty):* indication of warning or error
- Action: message
- Number: number of messages in the list

5.10 Digital channels



The digital channels display relates to the test cabinet currently displayed. Depending on the cabinet configuration (how many digital channels this cabinet has), the softkeys and indicators are displayed dynamically. In this area, only those digital channels are displayed which are actually present in the control system and released for display. There are two types of digital channels:

Softkeys:
Softkeys are digital channels which can be activated or deactivated. They are displayed and can be changed via program or manual mode. Hit the softkey to activate it. When the softkey is active it flashes green. In program mode, the respective softkey is set (1) or reset (0) in the program created.

> **Notice**
> If only one side of the softkey flashes green after it has been clicked, the preconditions to activate this softkey are missing. The softkey is selected and will be activated when it is possible.
> ***Deep dehumidity***, for example, can only be activated if the ***Dew point <7°C*** indicator is active.

Indicators:
Indicators are only displayed and **cannot** be changed. When an indicator is active it flashes green.

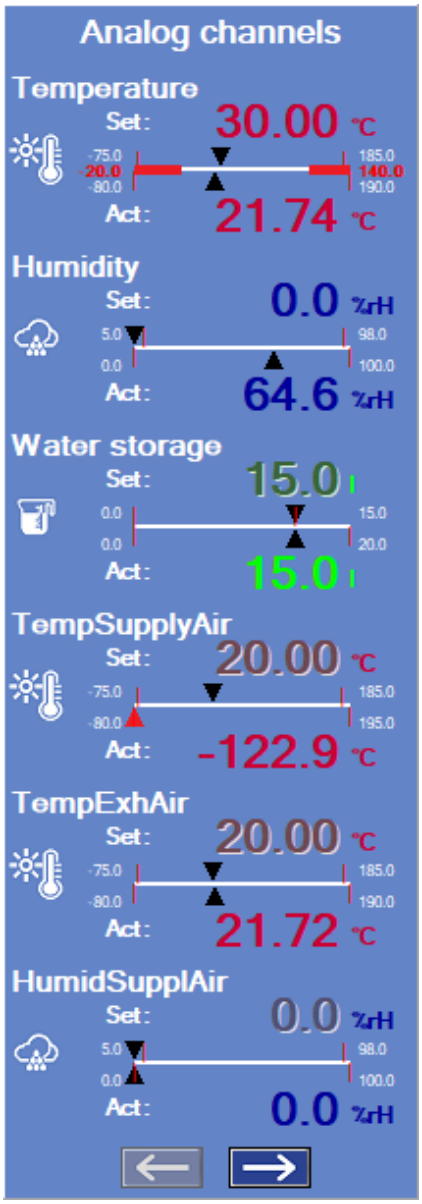
> **Notice**
> If only one side of an indicator flashes green, the preconditions to activate it are missing.
> ***Humidity***, for example, can only be activated if the temperature is < 95 °C.

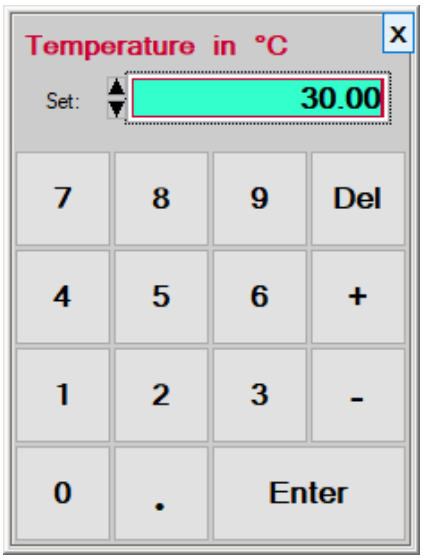
If the cabinet configuration contains more than 8 softkeys or indicators, the area of the digital channels expands by two arrow icons (🡐 and 🡒) which serve to scroll through the digital channels.

> **Notice**
> In program mode, the digital channels can only be changed temporarily. When the program reaches the next line of code, the softkeys are again overwritten with the program's default settings.

> **Notice**
> Because of the new internal configuration structure (see Chapter 3 - General, page 13) it is possible to display longer channel names as from CID-Pro 5.

5.11 Analogue channels





The analogue channels display relates to the respective test cabinet currently displayed. Depending on the cabinet configuration the channels are displayed dynamically. Therefore, only those analogue channels are displayed which are actually present in the control system and released for display.
The entered set values are regulated as base values. The set values can be changed during operation. When the cabinet is started it first moves to the current set values. The set values are maintained until the cabinet is stopped or the set values are changed.
The various analogue channels are displayed as follows:

Display	*Symbol*	*Channel*	*Unit*
Red		Temperature channels	°C
Blue		Humidity channels	%rH
Blue		Temperature channels for the cold chamber	°C
Green		Channels with water indications	l (litres)
		Channels with light indications	
		Channels with pressure indications	
		Channels with volume flow rate indications	
		Channels with fan indications	
Green	-	Other channels	*any*

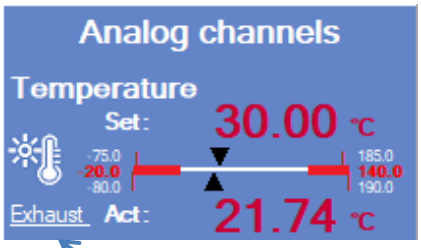
In contrast to the actual values, the set values can be changed at will in manual mode. This kind of change is not possible in program mode, because the program predefines the values.

Changing/entering the set value:

1. Click on the channel which is to be changed.
2. Enter the set value by means of the numeric keypad.
   The new value can be entered with the mouse via the numeric keypad, using the touch screen or via a connected keyboard.
3. Confirm the value by hitting the Enter key.

Notice
A dot must be used as a decimal separator.

Depending on the CID-PRO window height, up to 6 analogue channels are displayed. If the window height is very low, at least 3 analogue channels are displayed.
If the cabinet configuration contains more than 6 analogue channels, the area of the analogue channels expands by two arrow icons (🡐 and 🡒) which serve to scroll through the analogue channels.



For every analogue channel, a scale of the range of values is displayed. The upper numbers on the number line represent the permitted input area, in this example, from -75.0 °C to 185.0 °C.

The lower numbers on the number line represent the maximum error limits, in this example, from -80.0 °C to 190.0 °C.

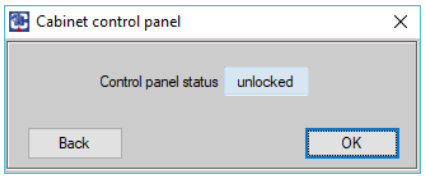
The red numbers in the middle of the number line with the red bar represent the current error limits if they differ from the maximum values. In this example, from -20.0 °C to 140.0 °C
(see Chapter 7.3 - Error limits (test specimen protection), page 57)
options to be set.

The black arrows ▼▲ along the number line mark the current set and actual values.

As with the cabinet control panel, a short channel description is displayed if that function is supported.

> **Notice**
> Because of the new internal configuration structure (see Chapter 3 - General, page 13) it is possible to display longer channel names, short names and units as from CID-PRO version 5.

5.12 Locking the control panel

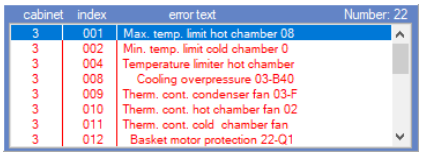


The key button opens a window which shows if the control panel of the active test cabinet is released or locked.

This status can be changed by left-clicking on the desired switch position. If the OK key is hit, the new setting is transmitted to the cabinet. If the keyboard is then locked, all keystrokes on the cabinet control panel are ignored.

> **Notice**
> The key button is only displayed if the “Enable cabinet control panel locking” option is set in the configuration (see Chapter 6.5 - Configuration: Options - Lock cabinet control panel, page 41).
> The keyboard lock is cancelled in the case of a power failure or by hitting the main OFF/ON switch on the cabinet.
> If the software version of the connected test cabinet does not permit the keyboard to be locked, the “key” button is invisible for this cabinet.

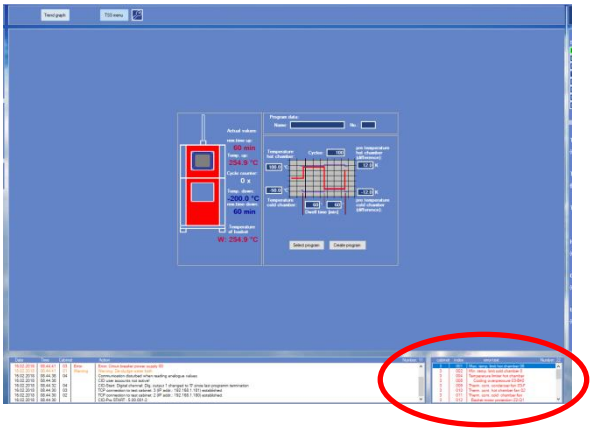
5.13 Error list



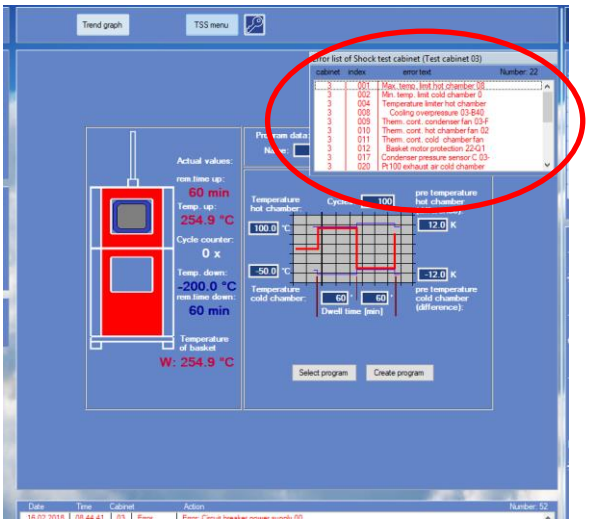
cabinet	index	error text	Number: 22
3	001	Max. temp. limit hot chamber 08	
3	002	Min. temp. limit cold chamber 0	
3	004	Temperature limiter hot chamber	
3	008	Cooling overpressure 03-B40	
3	009	Therm. cont. condenser fan 03-F	
3	010	Therm. cont. hot chamber fan 02	
3	011	Therm. cont. cold chamber fan	
3	012	Basket motor protection 22-Q1	

In the Operational status (see Chapter 5.5, page 19) the current error / warning is displayed. This display does not show whether further errors/warnings are upcoming.
The **error list** displays **all upcoming errors, warnings and operating messages** for the currently selected test cabinet.

Embedded error list:



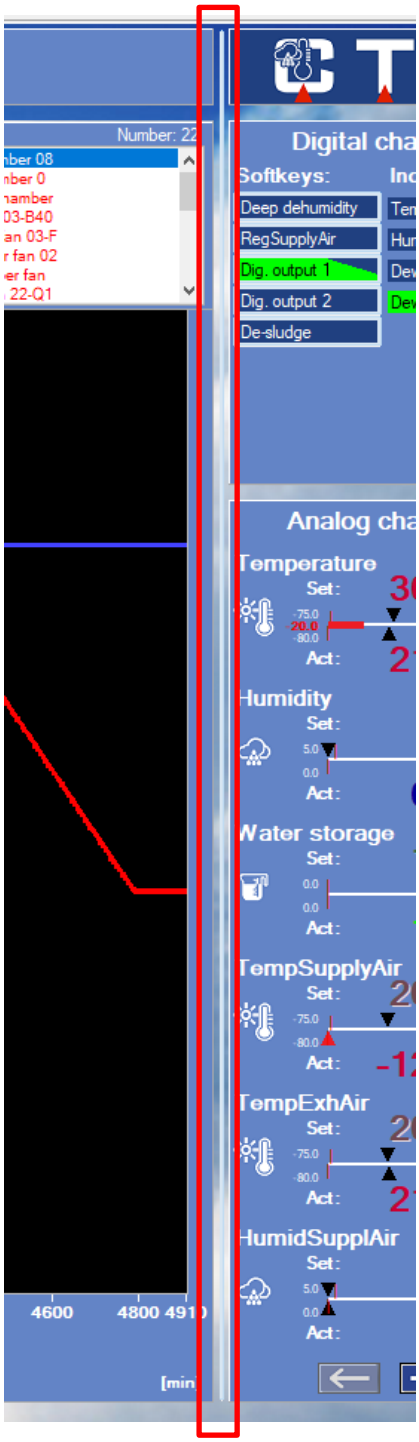
Error list displayed in a small window:



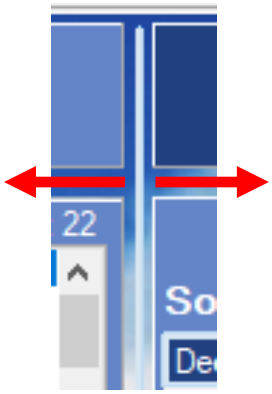
Error list properties:

- The embedded error list is always displayed if the window is big enough (with or without message).
- The separate error list (small window) is only displayed if an error / a warning is upcoming. If the test cabinet is running without errors/warnings the error list is hidden.
- The separate error list (small window) is displayed as standard in the case of an error / a warning. If you do not want it to be displayed, the “Display error list” option must be deactivated in the configuration (see Chapter 6.5 - Configuration: Options - Display error list, page 41).
- The error list is periodically updated.
- Unlike the error list from the event log (see Chapter 14, page 137) these entries cannot be confirmed, but serve only as an overview of all upcoming errors/warnings/operating messages.
- The blue operating messages are only displayed in the separate error list (small window) if an error or a warning is upcoming. The error list is not opened if there is only an upcoming operating message.

5.14 Size adaptation



The area for the analogue and digital channels can be enlarged/reduced. Because of the expanded configuration, the channel names are longer and therefore need more space when displayed in the software. Thus, the names of the analogue and digital channels do not fit in their old position in the status overview.
Therefore, a splitter is now located left of the CTS logo, dividing the areas to its left and right:



If this splitter is moved, the areas on the left (trend graph/auto graph/TSS menu and report messages) and those on the right (CTS logo, analogue and digital channels) are enlarged or reduced.
Defined area:

min: same as before (width of the CTS logo)
max. 1.5 x min.

INI settings mean the values and the display remain unchanged.

Notice
The area between cabinet information/test cabinets/ operational status/error status/program status and the trend and auto graph can also be moved (reduced/ enlarged).

5.15 Service data …

The following functions allow a service mail or a service directory to be created (accessible via the status overview main menu):

- **Help ➔ Service data … ➔ … send (e-mail via MS® Outlook)**

  An MS Outlook e-mail is thus created which contains the following data:
  - current report file
  - current or selected measurement recording
  - current configuration
  - current error configuration (if available)
  - current expanded configuration (if available)
  - general text with all available and important cabinet data (name, type, PLC no., version, CID-Pro version)

  Notice
  The e-mail is opened, but not sent immediately – the user can now change it.
  The e-mail address of the recipient must still be entered (depending on the contact country).
  This function can only be carried out if Microsoft® Outlook is installed.

- **Help ➔ Service data … ➔ … compile**

  Here, the user can select a directory into which the following data are copied:
  - current report file
  - current or selected measurement recording
  - current configuration
  - current error configuration (if available)
  - current expanded configuration (if available)
  - Test file with all available and important cabinet data (name, type, PLC no., version, CID-Pro version)

  The content of this folder can be attached to an e-mail, burnt onto a CD, copied onto a USB stick or stored. Thus, all current and important information is stored in one place.

5.16 Search for updates …

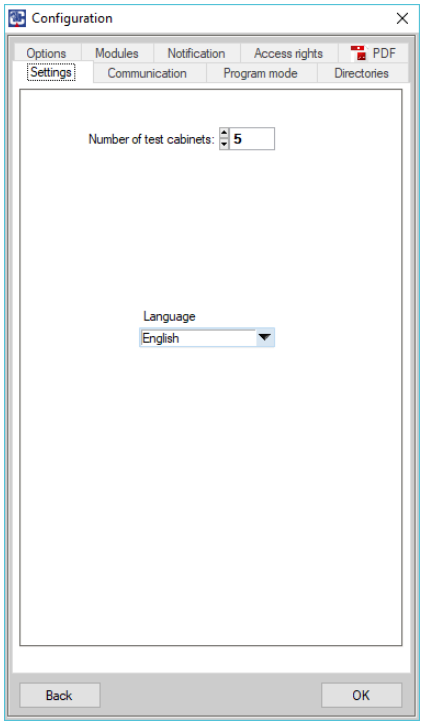
Follow the path “Help” ➔ “Search for updates …” from the status overview’s main menu to check on a CTS server if a newer software version is available. In this case, a description is displayed which shows the necessary steps for an update (see Chapter 19.2 - Support area on the internet, page 168).

Note
The update is not installed automatically.

6 Configuration

In the configuration menu, basic CID-Pro 5 settings can be selected.

6.1 Settings

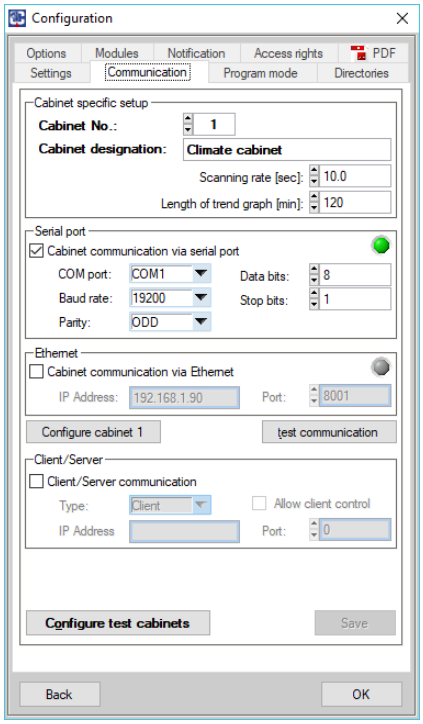


The **number of cabinets** defines how many test cabinets are to be connected and administered by CID-Pro 5.
This number indicates the maximum number of cabinets which can be processed in the communication settings.

> **Notice**
> **No more than 32 cabinets can be connected.**

The **language setting** adjusts all CID Pro 5 texts and messages to the selected language during the runtime.

6.2 Communication



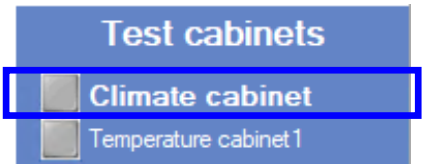
In the **cabinet specific setup**, set the **cabinet number** which is to be edited. Only cabinet numbers between 1 and the maximum cabinet number can be selected.
This number of cabinets is determined in the Settings (see Chapter 6.1).

All other communication parameter settings apply only to this selected test cabinet.

The following parameters can be set for the selected test cabinet:

- **Cabinet designation**
- **Scanning rate**
- **Length of trend graph**
- **Serial port / Ethernet**
- **Client/server setting**

- **Test communication**
- **Configure cabinet x**
- **Configure (all) test cabinets**



Cabinet designation:

Freely editable name for the selected test cabinet.

Scanning rate:

The scanning rate in seconds is the interval at which the selected test cabinet is queried periodically. If this value is too low, this causes unnecessary data traffic; if it is too high, this makes the CID-Pro 5 reaction times unpleasantly long. In most cases **10 seconds** is a good value.
This scanning rate is also the smallest interval for the measurement data recording. **The measured values should always be recorded as a multiple of the scanning rate.**

Length of trend graph:

Here, the length of the time axis on the trend graph in the status overview can be changed by entering the number of minutes. The optimal value lies between 60 and 120 min. and can be adjusted depending on the task carried out by the test cabinet.

Serial port / Ethernet:

Selecting the corresponding selection field activates the parameters for the serial interface or the Ethernet-TCP/IP connection:

Serial interface:

A serial interface is a digital input and output point on a computer or peripheral cabinet. During serial data transmission, the bits are transmitted one by one via a single line. The following parameters must be set for the serial port:

		Standard values:
COM port:	PC port	**1**
Baud rate:	Modulation rate	**19200 baud**
Parity:	Detection of incorrectly transmitted information	**Odd**
Data bits:	Transmission in words (word ➔ from 5 to 9 bits)	**8 data bits**
Stop bits:	up to two stop bits are used for synchronisation	**1 stop bit**

Ethernet:

Ethernet is a wired data networking technology for local area networks (LANs). It permits data to be exchanged in the form of frames between all cabinets connected within a local network (computers, printers, CTS cabinets, etc.).
The addresses which are assigned must be **unambiguous**, i.e. a selected IP address may not be assigned a second time within the same network.
To communicate via Ethernet you will need the IP address and an IP port number for the cabinet you wish to contact.
(Entry on the test cabinet via: **Main menu 2/3 ➔ settings ➔ Network** **V2** or
Main menu 2/2 ➔ Settings ➔ Network **V3**).

> **Notice**
> IP addresses, the subnet mask and the standard gateway in a network are assigned by the network administrator.
>
> **The test cabinets do not support DHCP!**

IP address:	Unambiguous test cabinet address	**192.168.1.90**
IP port:	Port number within the recommended range **from 8000 to 8050**	**8001**

> **Notice**
> Useful numeration:
> IP port 8001 for test cabinet 1, IP port 8002 for test cabinet 2, etc.

Client/server setting:

Client/server communication allows data to be called up from a server (e.g. a PC which is directly connected to a test cabinet via the serial interface) and displayed on one or more clients (e.g. a PC which is in an office or a control centre and cannot/is not authorised to communicate with the test cabinet).
The PC which communicates with the test cabinet must be set up as a **server**. The other PCs wishing to access its data are **clients**.
The server's IP address and an identical port number for the client and server must be set on the clients (recommended range **between 2000 and 2050**).
The server can also be set up to allow the connected clients to change the values in the test cabinet via the server software.

Example for a server setting:

- **Type:**	Type determination	**server**
- **IP address:**	IP address of the server PC e.g. 192.168.1.100	**---**
- **Port:**	common port number	**2010**
- **Client may change values:**		☑

Example for a client setting:

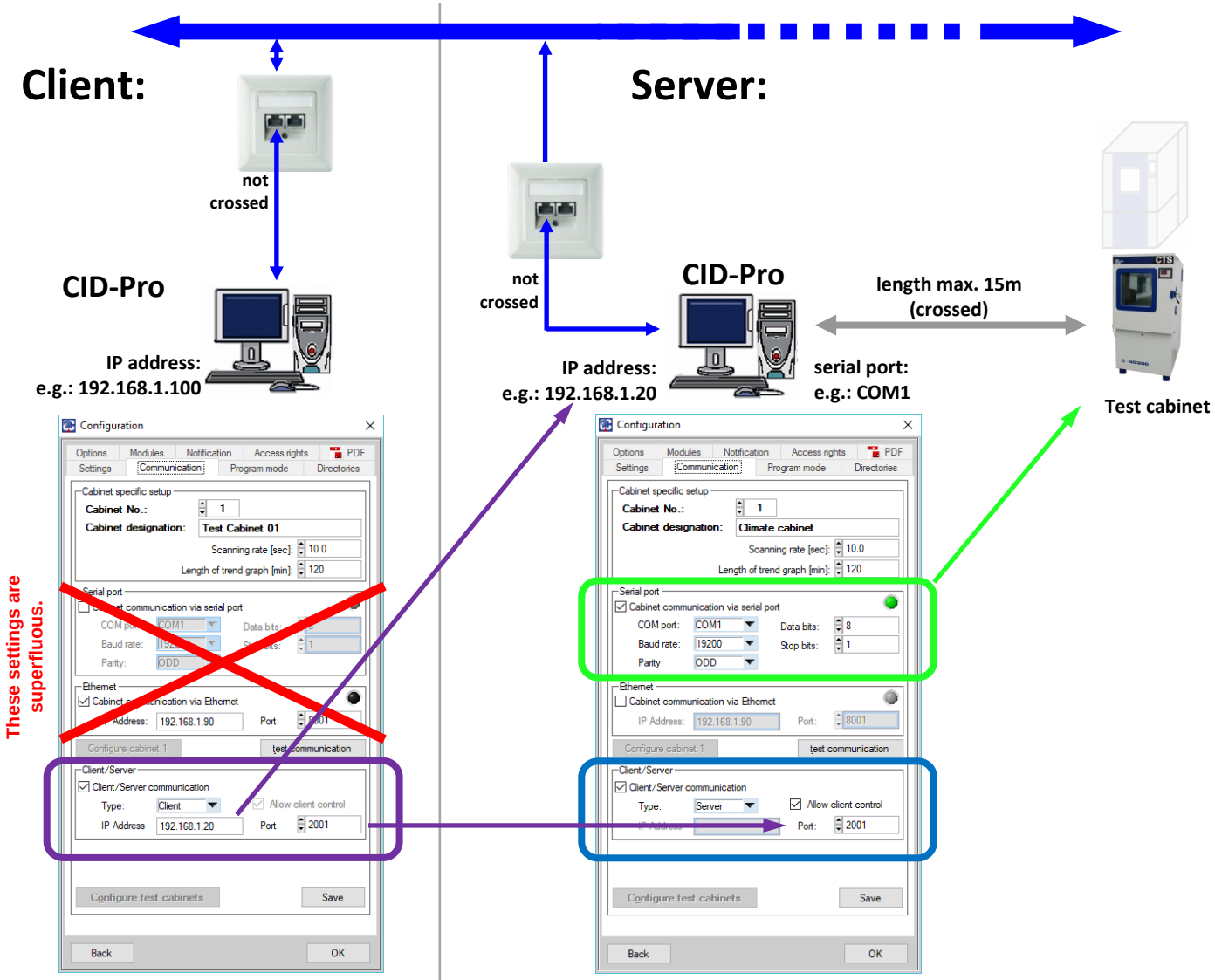
- **Type:**	Type determination	**client**
- **IP address:**	IP address of the server PC	**192.168.1.100**
- **Port:**	common port number	**2010**

To make optimal use of the connection, the paths also need to be adjusted to where the files will be saved. We recommend creating directories on a file server to which all connected PCs have access. These directories could be named as follows:

Configuration files:	**\\CID_Net\config**
Measurement files:	**\\CID_Net\measurement**
Programs:	**\\CID_Net\cycle**

When these directories have been created in the network by the network administrator, the directory paths in the configuration of all connected PCs must be changed (see Chapter 6 - Configuration: Directories, page 41).
Access to the configuration data on the network ensures that all PCs have the same cabinet settings. If no network directory is predefined, the correct configuration file (e.g. KONFIG.K01) from the server must be copied into the client's CID-Pro 5 installation directory.
Without the current configuration file, the software cannot display the cabinet settings – the test cabinet is then considered as not connected, even though communication works in practice.
Thus, the client also has access to completed measurement recordings. Besides this, it is possible to create programs on all PCs. If a program is already running on a test cabinet, the graphic program preview can also be activated on the client.
From version CID-Pro 4.02.008 onwards, it is possible to start measurement recordings on the server via the client. This means that the recording created or activated on the client runs on the server. For the coloured measurement recording display see page 36.

In the following, the server/client communication is once again graphically displayed:



The **client** connects to the server with the predefined settings:

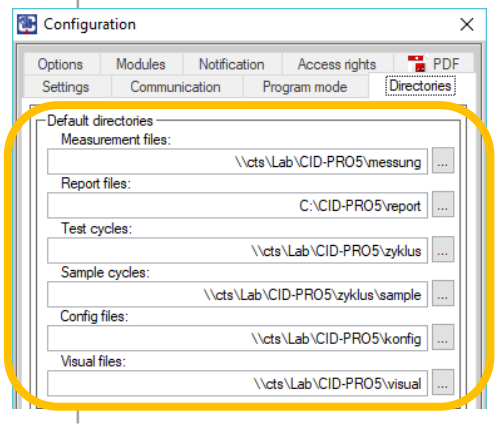
- **Type:** client
- **IP address:** 192.168.1.20
- **Port:** 2001
- **Allow client control:** ---

The **server** defines the following system settings:

- **Type:** server
- **IP address:** ---
- **Port:** 2001
- **Allow client control:** ☑

Client:

4) Set the **standard directories** to network drive.
   ➔ Access to the server configuration files.
5) **Set the client/server setting** of the test cabinet (client) as described above.
6) **Restart** the client software.



Server:

1) Set the **standard directories** to network drive.
   In the "Config files" the files are stored with the cabinet information which is required in client-server mode.
   (002001.cfg and 002001.prg for test cabinet 1 with port 2001)
2) **Adjust the client/server setting** of the test cabinet (server) as described above.
   The test cabinet must be reconfigured.
3) **Restart** the server software.

The "Measurement files", "Test cycles", "Sample cycles" and "Config files" directories must be integrated as a network drive with read and write access to client and server.

Active measurement recordings are displayed as follows:

Client:
Measurement recordings displayed in the client's CID-Pro:

Server:
Standard display of the measurement recordings in the server CID-Pro:

Automatic measurement recording:

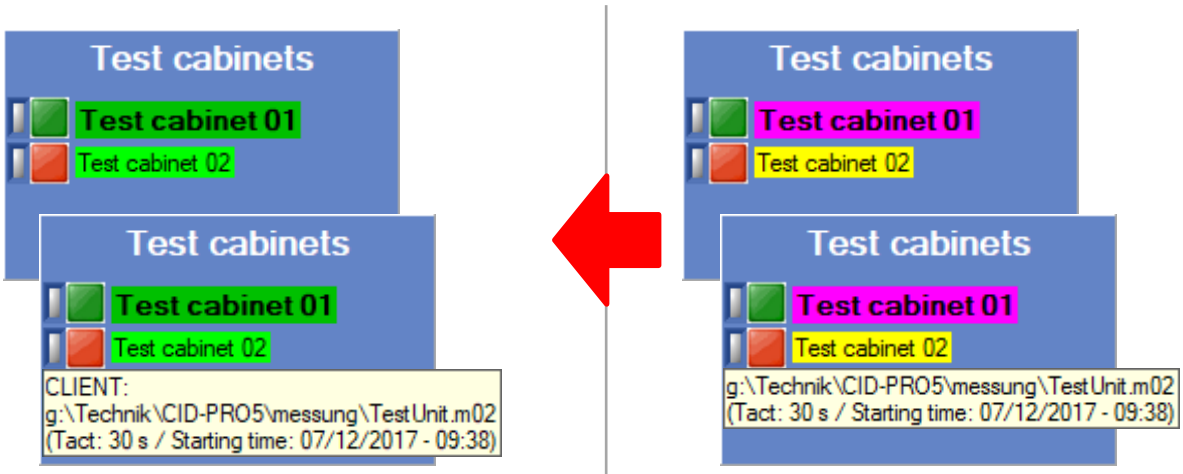
Dark green background

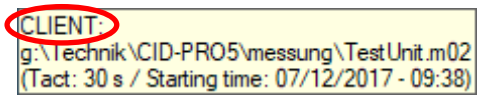
Pink background

Manual measurement recording:

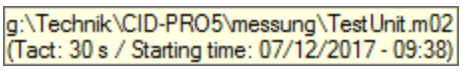
Light green background

Yellow background



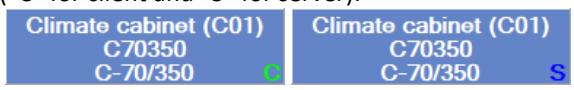


complete path scanning / start time



Notes:

- The cabinet status, recording path, recording cycle and recording start time are transmitted from the server to the client.
- All cabinet names (e.g.: test cabinet 01) are freely selectable in the server and in the client.
- Double-clicking on a server cabinet (pink or yellow) opens measurement recording for that cabinet in the graphic module – both in automatic modes (i.e. they are updated).
- Double-clicking on a client cabinet (dark or light green) opens measurement recording for that cabinet in the graphic module – dark and light green in manual mode only (i.e. they are only loaded), because the files are only updated from the server.
  The client's background colour – dark green or light green – only indicates the server recording type.
- It is possible to start additional manual recordings on the client. They are, however, not displayed as a coloured background, because the display of the server recordings prevails.
- If a cabinet is declared as a client or server, this mode is also displayed in the status overview ("C" for client and "S" for server):



Selecting the **ASCII server** you to query the current value of the selected test cabinet using separate software. Call the CTS hotline for a description of the data sets for this particular application.

Test communication:

To ensure that the displayed communication parameters for the selected test cabinet have been entered correctly, the connection is tested with exactly those parameters.
If the connection can be established, the respective LED lights up in **green;** if not, it lights up in **red**.

Configure cabinet x:

The configuration of a cabinet includes all the information displayed in the CID-Pro 5 software. This includes analogue and digital channels (e.g. number, type, name, limits, etc.), counters (e.g. name, limits, etc.), operating hours, control cabinet, etc.
This configuration **must** be read in if:

- a new test cabinet is to be integrated,
- a test cabinet is to be replaced or
- for example a new address is to be assigned to a test cabinet

In general:

- If the system settings on the test cabinet change (e.g. addition of a new sensor) or
- If the system settings on the software change (e.g. another cabinet number)

Configure cabinet x enables the configuration of test cabinet 1, for example, to be read in again. Depending on the cabinet selected, the x stands for this cabinet number. When this function has been hit and the confirmation message appears (Replace present configuration of test cabinet x?) the new configuration for the selected test cabinet is required.

> **Notice**
> To this end, the selected test cabinet must be switched on!
> It can take several minutes to read in a new configuration.

Configure (all) test cabinets:

Configure test cabinets allows the configuration of all cabinets to be read in again. When this function has been hit and the confirmation message appears (Replace present configuration of test cabinet x?) the new configurations of all test cabinets are required, see Section “Configure test cabinet x”.

> **Notice**
> To this end, all test cabinets must be switched on!
> It can take several minutes to read in all new configurations.

It is only if the “**Save**” button is hit that all changed parameters are saved and the configuration of the changed cabinets can be requested.

> **Notice**
> Changing the cabinet numbers does not cause the settings to be saved. The changes are only adopted if the “**Save**” button is hit.

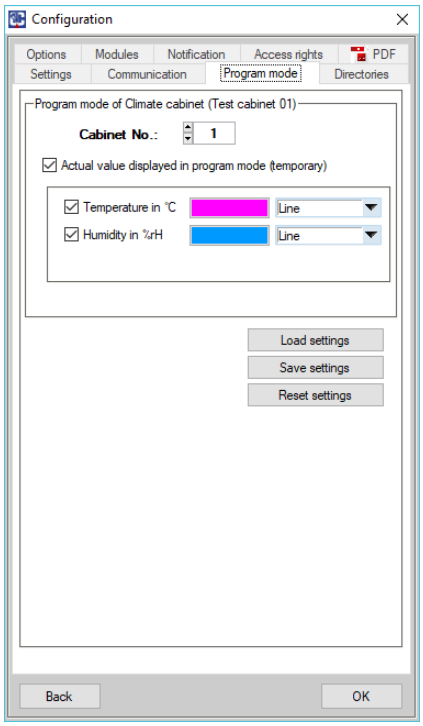
6.2.1 Help integrating a test cabinet into the software

The following steps are necessary to integrate a new test cabinet in the CID-Pro 5 software:

1. Extend the **number of cabinets** in the settings
2. Select the **new cabinet number**
3. Enter the **cabinet designation**
4. Enter the **scanning rate** in seconds
5. Select the communication type:
   a. **Serial parameters**:
      - COM port
      - Baud rate
      - Parity
      - Data bits
      - Stop bits

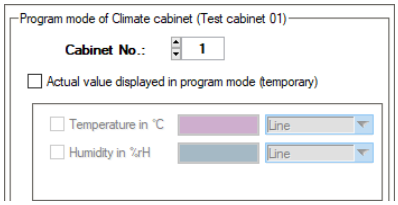
   b. **Ethernet parameters**:
      - IP address
      - IP port
6. **Test communication**
7. **Save** the entries
8. Read the **cabinet configuration** out of the control system

6.3 Program mode (temporary display)

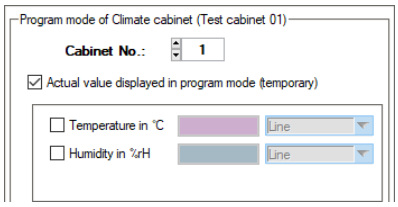


With this function, the actual values of the selected channel on the current cabinet are temporarily displayed in the auto graph.

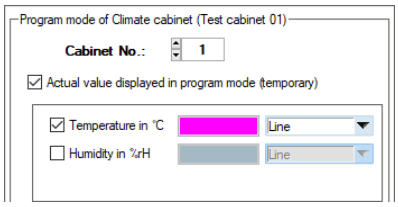
Select the desired cabinet by entering the **cabinet number**
➔ the channels which can be displayed in program mode are displayed (dimmed), here *Temperature in °C* and *Humidity in %rH*:



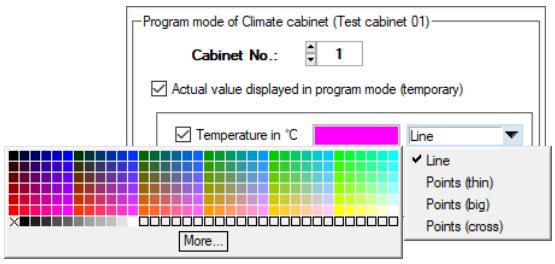
The function with the **Actual value displayed in program mode (temporary)** checkbox is activated.
➔ the channel names are activated and can be selected individually:



When a channel has been activated, here Temperature in °C, this channel's settings is also activated:



These are the settings for the curve colour and the display:



Colour:

As standard, the same colour is displayed as the actual value colour in the status overview, but a shade brighter (e.g. pink instead of light red and turquoise instead of light blue), see Chapter 5.11 - Analogue channels, page 27.
The colour of the actual value curve can be changed at will by clicking on the colour field and selecting the corresponding colour.

Display:

The display refers to the form of the actual value curve. The following possibilities are available:

- Line — solid line
- Dots (small) — each measurement one small dot
- Dots (thick) — each measurement one thick dot
- Dots (cross) — each measurement one cross

Notice

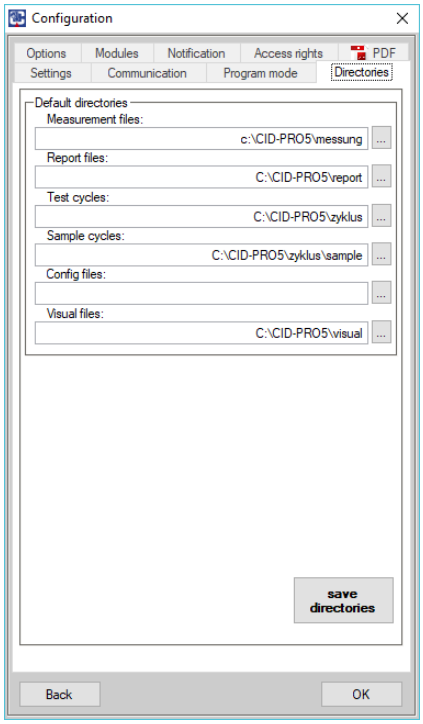
The defined actual value curves are displayed temporarily in program mode, i.e. they are not intermediately stored in the CID-Pro 5 software or saved in a file, but only displayed in the auto graph.
The temporary actual value curves are only displayed in program mode.
Because only one test cabinet is active in the status overview, only the temporary actual value curves of the current cabinet are displayed, if desired.

Changes are adopted without the OK button being hit.

Load settings	The settings are loaded from a saved *ptc file
Save settings	Current settings are saved in a *ptc file
Reset settings	The settings are reset to the standard settings

*ptc = **p**rogram **t**emporary **c**onfiguration

6.4 Directories



The paths for the measuring and report files, the test and sample programs and the configuration and visualisation files are the default **directories**.

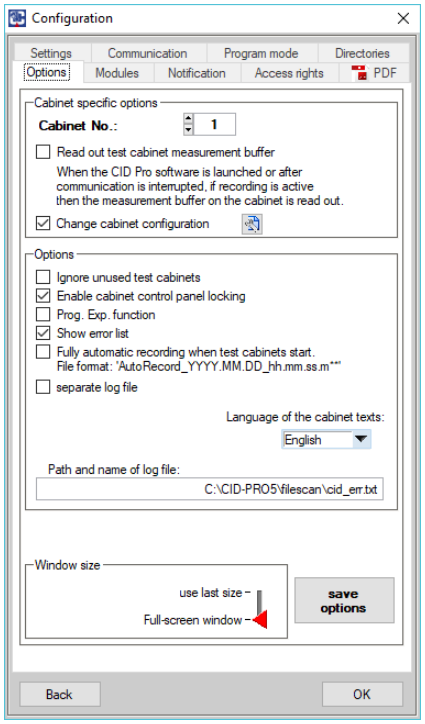
The path for the configuration files is only required to exchange configuration files via the network (CID-Pro 5 in the server/client mode). Otherwise, the configuration files are always listed in the installation directory.

In the case of the measured data especially, it is useful to convert this path to a network path to allow the data to be stored via a backup.

To change the path, click on the respective adjacent button, which opens a selection field. After confirmation, the new path is written into the field.

> **Notice**
> The directories are only taken over and stored if the "**save directories**" button is pushed.

6.5 Options



In this menu the global **options** of the CID-Pro 5 software (general or specific to the cabinet) can be adjusted.

> **Notice**
> The options are only taken over and stored if the "**Save options**" button is pushed.

Cabinet specific options
(Options which can be set separately for every integrated cabinet)**:**

- **Read out test cabinet measurement buffer**

If this option is activated for a certain cabinet, the measurement buffer of that cabinet is read out if the following events take place:
- a measurement recording is active for the respective test cabinet **and**
- the software is started (having previously been closed) **or** communication has been interrupted.

In this combination, the values of the **first two analogue channels** and **all digital channels** are read out from the test cabinet during the time missing from the measurement recording and embedded in the recording. When the measurement buffer is being read out, a status bar is displayed.

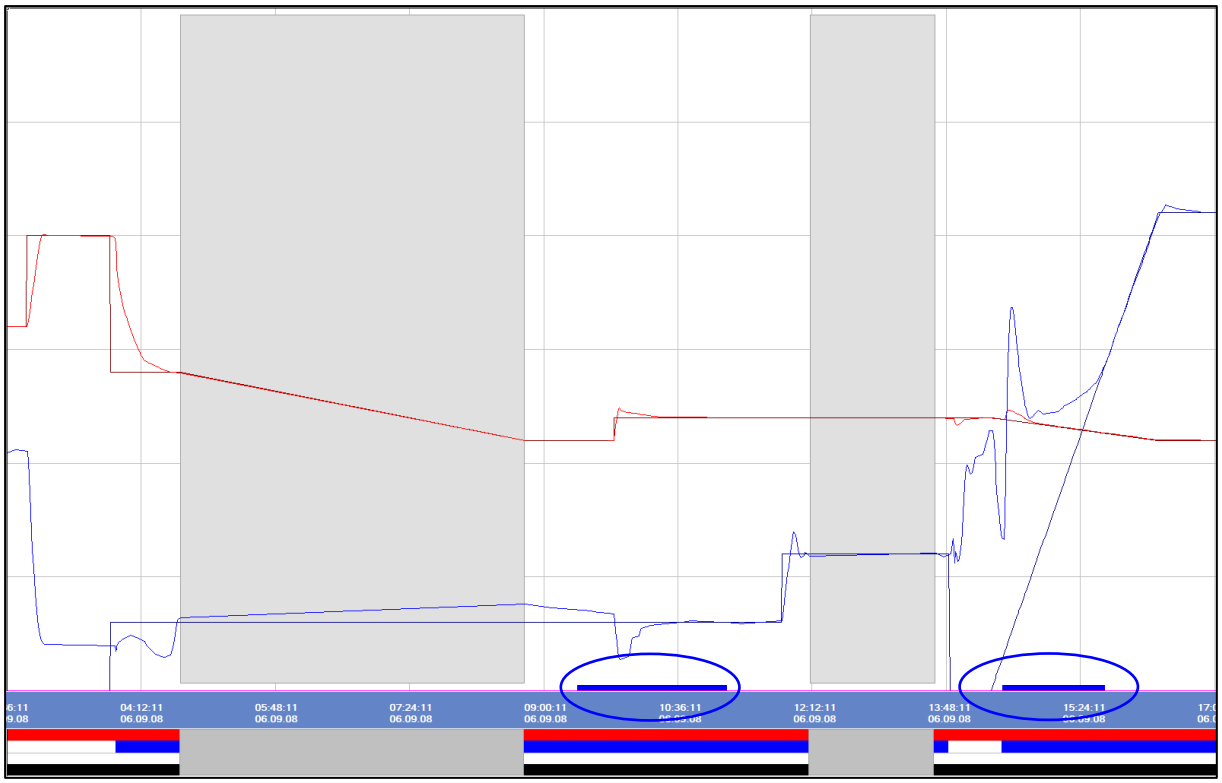
Notice

This option makes sense for test cabinets which are linked via a rapid Ethernet interface. The slow serial interface can cause long delays. In this case the option must be deactivated.
If this option is to be used for older cabinets, a message is displayed if the version of the control system is too old and the function cannot be carried out.

Water storage		TempSupplyAir	
Set	Act	Set	Act
l	l	°C	°C
-9999.9004	-9999.9004	-9999.9004	-9999.9004
-9999.9004	-9999.9004	-9999.9004	-9999.9004
-9999.9004	-9999.9004	-9999.9004	-9999.9004
-9999.9004	-9999.9004	-9999.9004	-9999.9004
-9999.9004	-9999.9004	-9999.9004	-9999.9004
-9999.9004	-9999.9004	-9999.9004	-9999.9004
-9999.9004	-9999.9004	-9999.9004	-9999.9004
-9999.9004	-9999.9004	-9999.9004	-9999.9004

Because only the first two analogue channels are read out, the remaining channels are given characteristic numbers (-9999.9004). These show the range of the measurement buffer data read out in the graph.

When a measurement recording is opened, a check is carried out as to whether there are data ranges which have been read out via the measurement buffer. Thus, ranges are marked in which interruptions in communication have taken place (no communication or CID-Pro software was closed).

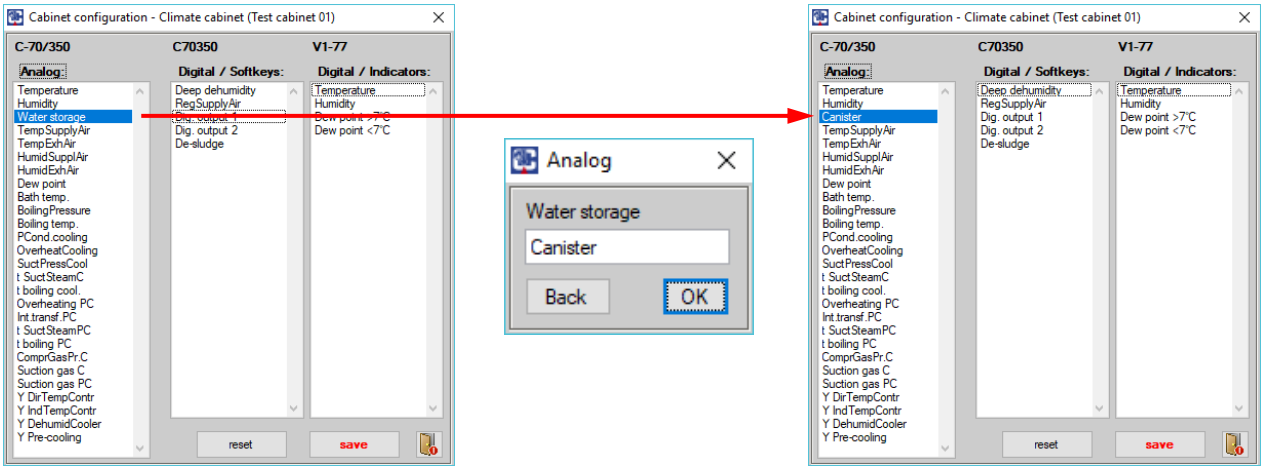


These ranges are displayed with a thin blue bar at the lower edge of the graph.

Notice

To mark these ranges or the blue bars, the **"Are the areas without the measured value supposed to be marked?**" option must be activated in the graph analysis (see Chapter 10.11.4 - Options, page 115).

- **Change cabinet configuration**
  This option allows the cabinet channel names to be changed via a separate menu. When the button is pushed, the cabinet configuration window opens, in which the channel names can be changed as follows:



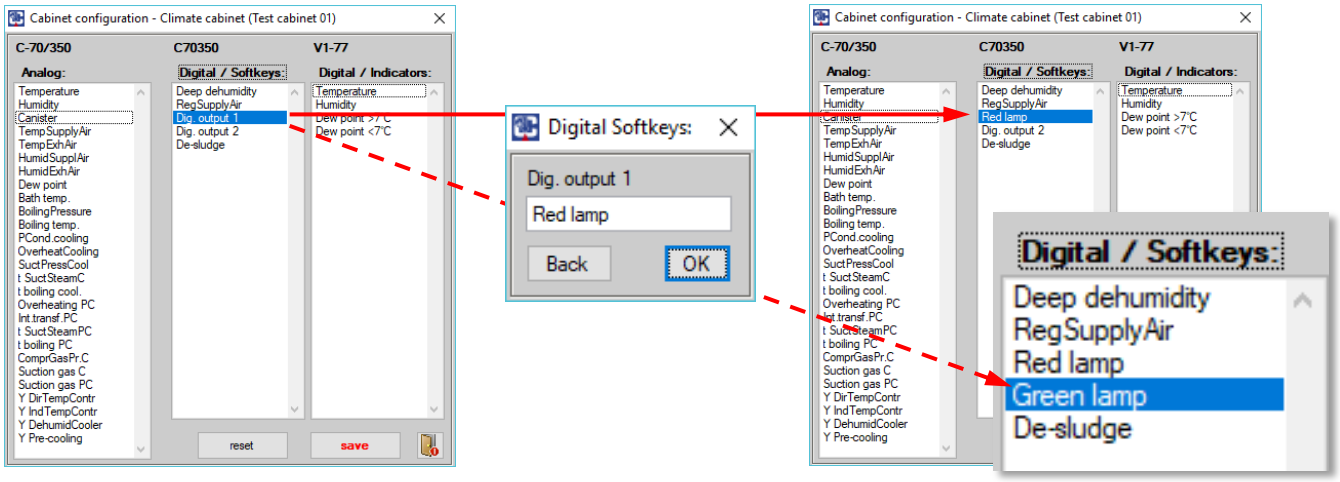
Water storage → ***Canister***

Double-click on the channel which is to be changed

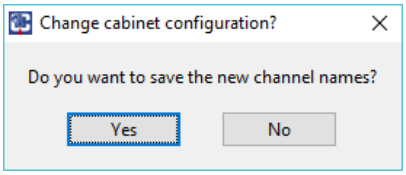
Change channel name and confirm with OK

Channel name is changed

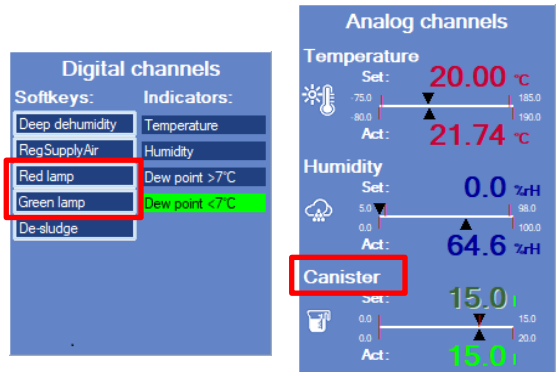
Dig. output 1 → ***Red lamp***



When "**reset**" is pressed all changes are undone.
Pressing "**save**" saves the changed channel names after displaying a confirmation message. If the "**Change cabinet configuration?**" option is set, the changed channel names are used in the software:



→



Notice

- **The original channel names are not overwritten and are immediately displayed again if the "Change cabinet configuration?" option is deactivated.**
- **Changed channel names are also adopted in the editor module.**
- **Changed channel names are also saved in the measurement recordings.**

General options:

Function	*Meaning*
Ignore unused test cabinets:	If this option is set, the cabinets which do not answer three times in a row to a request are no longer contacted. Requests only restart when the corresponding cabinet has been selected in the status overview or the CID-Pro 5 software has been restarted.
Enable cabinet control panel locking:	This option allows the cabinet control panel to be locked via a key button in the status overview. **Notice** If the key button is not displayed after a CID-Pro 5 software restart and when the option is set, this function is not supported by the connected cabinet.
Program e-function:	For special tests, the test cabinet can predefine set value courses in the form of e-functions. For this purpose, some input fields are required in the editor, which are activated with this function.
Show error list:	If the Error list (see Chapter 5.13, page 29) is generally never to be displayed in the status overview in the case of upcoming errors/warnings, this option must be deactivated.
Fully automatic measurement recording:	If this option is set, measurement recording starts automatically if the cabinet is started and ends if the cabinet is stopped. In this case, the cabinet background (display of a running recording) changes to blue and then to yellow. Measurement file format: "**AutoRecord_YYYY.MM.DD_hh.mm.ss.m**"** saved in the standard folder for the measurement files. This option is valid for all integrated test cabinets. When creating a measurement recording, the following device data is also saved: **Commission number, cabinet type and SPS number as well as the exact CID-Pro version** This information can be viewed in the file information of the graphics module (see Chapter 10.8, page 108).
Separate log file:	To give access to message entries in the report file – **only error messages** – on other systems, the CID-Pro 5 software can create an additional file and evaluate it via another software. The file's storage path can be entered under "**Name and path of the message file**".
Language of the cabinet texts:	Select the language of the texts saved in the control system. The channel names can, among other things, be displayed in German or English.

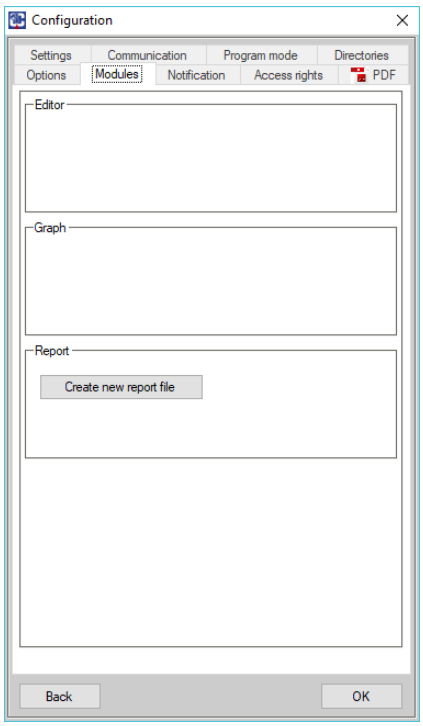
Window size:

Here, the CID-Pro 5 software window size can be set. All windows are designed for a standard size of 1280 x 1024 pixels. The size of some windows can, however, be changed. An enlargement of the windows not only zooms them, but sometimes also changes the arrangement of the window content to display the information in the best way. The setting can be selected by positioning the red marking arrow, and is then valid for the entire CID-Pro 5 software and remains unchanged even after a restart.

Notice

- smallest possible size: 1000 x 700
- The changes are only taken over and stored if the "**Save options**" button is pushed.

6.6 Modules



As from CID-Pro 5 the editor, graph and report program functions are carried out as independent programs (exe files).
In the **Modules** menu, all present and future changes concerning the modules are defined.

6.6.1 Editor module

At the moment, no editor module settings are available.

6.6.2 Graphic module

At the moment, no graphic module settings are available.

6.6.3 Report module

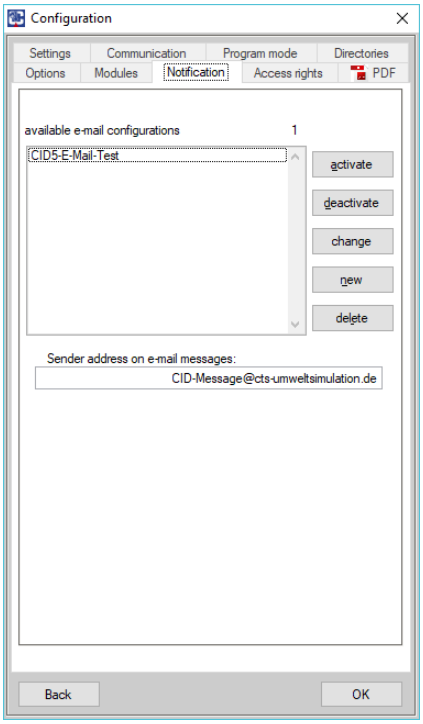
Create a new report file:

Here, a new report file can be created. The file name is determined by CID-Pro 5 and the current date is selected. If a file should already be available, it can be selected as the active one:

- all actions are added or
- the file is created – all former entries are lost.

Notice
All other functions of the Event logs (report module) are listed in Chapter 14, as from page 137.

6.7 Notification



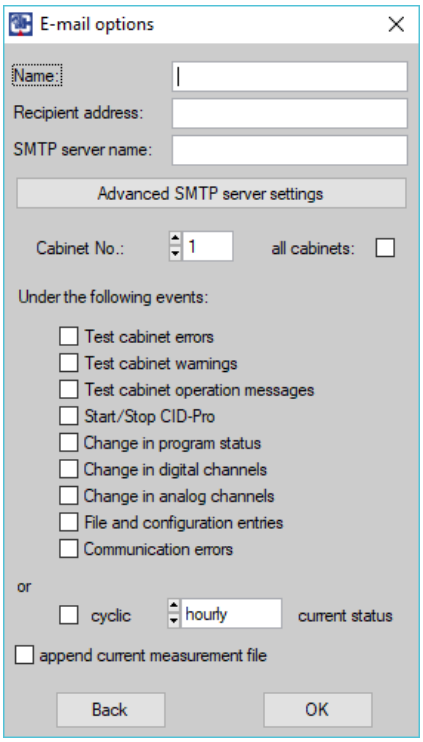
The **Notification** menu item allows e-mail messages which are automatically sent by the CID-Pro 5 software to be set up and activated.
To be able to use this function, Internet access is requires, plus an SMTP server which sends the messages. The e-mail dispatch options strongly depend on the available network.

All entries created (here **CID5-E-Mail-Test**) are displayed in the list of available e-mail configurations:

- the **black** entries are **not activated**
- the **green** entries are **activated** and send e-mails in the case of the corresponding events.

The number of e-mail configurations is displayed on the right side above the list.

Return address for e-mail message:
The desired return address can be entered. A correct sender is a prerequisite on most systems for e-mails to be sent at all.



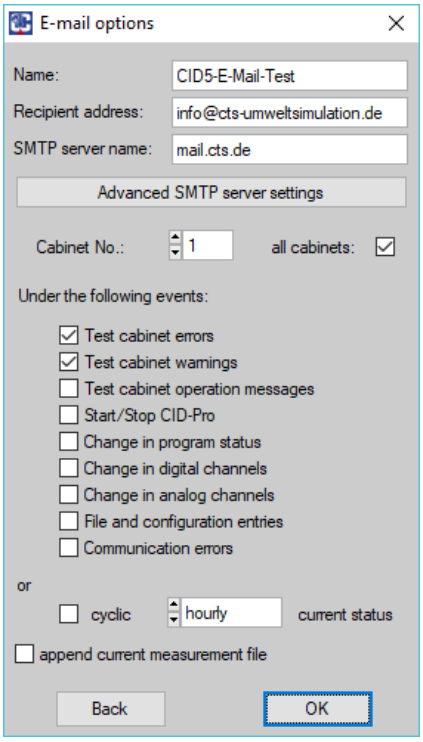
New e-mail configuration:
If **new** is clicked, a new e-mail configuration is created. In this window, all necessary information is entered and the events which cause an e-mail to be sent are defined:

- **Name of the e-mail configuration**
  freely selectable
- **Recipient address**
  e-mail address of the recipient
- **SMTP server name**
  check with the network administrator
- **Cabinet number / all cabinets**
  monitoring of one specific test cabinet or all test cabinets
- **Events**
  events which trigger the e-mail dispatch
- **Cyclic, current status**
  cyclic moments which trigger the e-mail dispatch and send the current test cabinet status:
  - monthly
  - weekly
  - daily
  - hourly

  Optionally, the currently running recording can also be sent.

If **Back** is clicked the settings are ignored.
If **OK** is clicked the settings are adopted.

> **Notice**
> This new e-mail configuration, however, is not yet activated (see Activate / deactivate an e-mail configuration, page 47).



Change an e-mail configuration:

If an e-mail configuration is marked and the **change** button is hit, the selected e-mail configuration can be adjusted.

If **Back** is clicked the settings are ignored.
If **OK** is clicked they are adopted.

Notice
This new e-mail configuration, however, is not yet activated (see Activate / deactivate an e-mail configuration, page 47).

Notice
A correct **sender** is a prerequisite on some systems.

Notice
The relevant SMTP server information is provided by the network administrator.

Delete an e-mail configuration:

If an e-mail configuration is marked and the **delete** button is hit, the selected e-mail configuration can be deleted.

Notice
Deleted e-mail configurations are lost irrevocably!!!

Activate / deactivate an e-mail configuration:

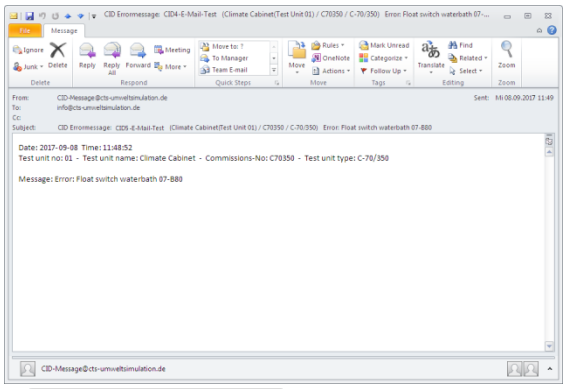
If an e-mail configuration is marked and the **Activate** button is hit, the selected e-mail configuration can be activated – the e-mail configuration is displayed in **green letters**:

CID5-E-Mail-Test

If the **Deactivate** button is hit, the marked e-mail configuration can be deactivated – the e-mail configuration is displayed in **black letters**:

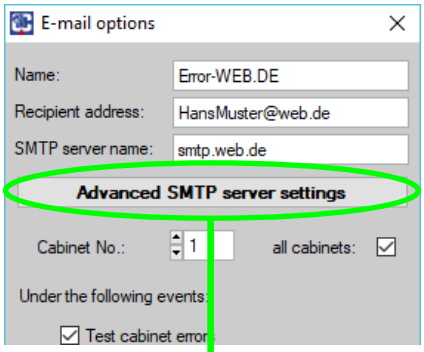
CID5-E-Mail-Test

Notice
Multiple e-mail configurations can be active.
If the corresponding e-mail configurations are selected, a large number of e-mails can be sent.
This information overload could be unpleasant for the recipient.



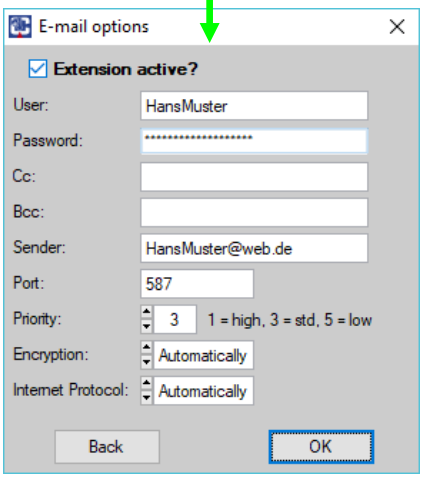
Example of an e-mail message in the case of a cabinet error:

Subject: **CID error message: CID5 E-Mail Test (Climatic test cabinet (test cabinet 01)/ C70350/C-70/350) Error: Float switch waterbath 07-B80**



Advanced SMTP server settings:

With the button **Advanced SMTP server settings**, an external SMTP server that is physically accessible can be selected for sending the notifications. The cabinet and event selection as well as the cyclical status and the attachment of the measurement file remain unchanged. Enter the destination outgoing mail server in the **SMTP server name** field. In this example, this is the WEB.DE SMTP server "smtp.web.de" as specified in the general descriptions.

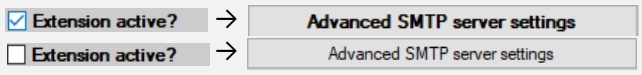


The following options are available in the advanced setting:

- **Extension active?**
  Here the advanced setting is activated,
  separately for each individual email configuration.
- **User**
  The user information of the external access/account.
- **Password**
  The password information of the external access/account
  (is encrypted in the software).
- **Cc**
  The Cc recipient address to which the email should also be sent as a "copy".
- **Bcc**
  The Bcc recipient address to which the email should also be sent as a "blind carbon copy".
- **Sender**
  The sender address associated with the access/account (username and password).
  In the example: User = "**HansMuster**" and Server = "smtp.**web.de**" → Sender = "**HansMuster@web.de**"
- **Port**
  The port information of the external access/account, if required. At Web.de this is port 587.
- **Priority**
  The priority with which the email should be sent. The assignment for MS Outlook is as follows:
  Priority = 1 ≙ Outlook importance = high
  Priority = 3 ≙ Outlook importance = no
  Priority = 5 ≙ Outlook importance = low
  Levels 2 and 4 are not supported here, but maybe in other programs.
- **Encryption**
  There are two options for encryption:
  - Automatically: Default setting, normally saved.
  - SSL/TLS: The secure connection is enforced.
- **Internet Protocol**
  There are three options for Internet Protocol:
  - Automatically: Default setting, typically IPv4.
  - IPv4: The email is sent in IPv4 format.
  - IPv6: The email is sent in IPv6 format. It should be noted here that not all providers support IPv6. Web.de does not support IPv6 at the moment - the e-mail does not arrive with this setting.

Notice

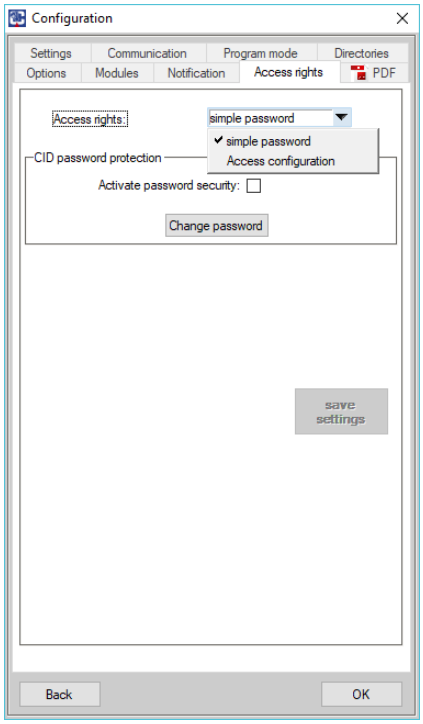
- The e-mails are sent as before via the in-house SMTP server **without** an active extension.
- The e-mails are sent **with** an active extension via the "cmail" utility
  (see Inveigle.net / exe file is in the installation directory).
  If you have concerns about the external tool, please do not use this function!!
- Identification of the active extension:



6.8 Access rights

CID-PRO 5 is equipped with two different types of access rights (the menu changes according to the authorisation selected):

6.8.1 Simple password

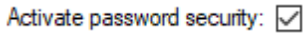


The **simple password** should be used if you want to lock the CID-PRO 5 software lock completely. By this means, the entire interface can be locked. In this mode, all areas can be opened and displayed, but changes are ignored when the message

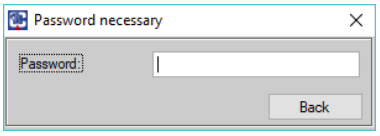
Password protection system is activated.
Action not possible

is displayed.

If you select **Activate password security,** CID-PRO 5 is protected from unauthorised access.



Then, the password prompt opens:



The password at the first program launch is:

cid-pro

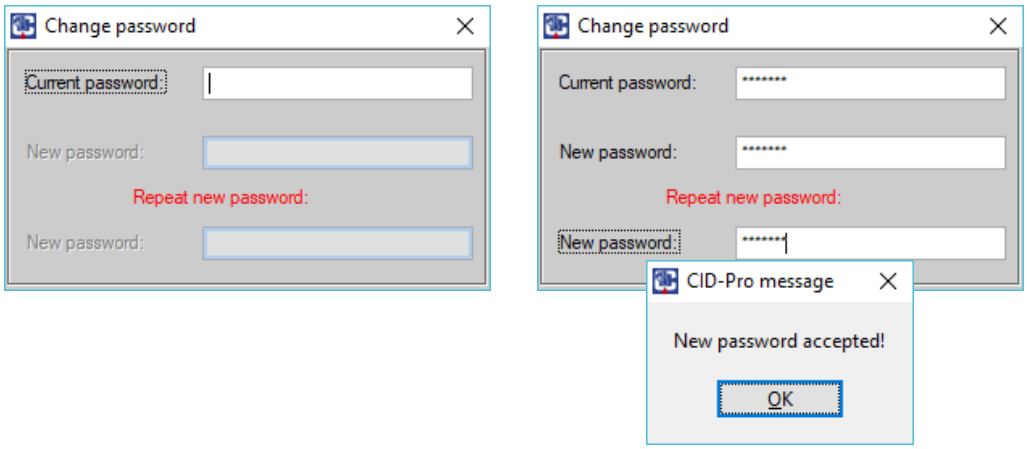
> **Notice**
> Take into account the exact spelling (upper and lower case).

If the password is correct, users no longer have write access to the test cabinet or CID-PRO 5 files.

The following actions are no longer possible:

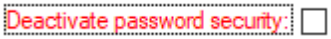
- Changing the analogue channels set values
- Changing the digital channels
- Access to automatic mode
- Access to the recording area
- Termination of recordings
- Storage of created cycles in the editor module
- Changing the comments for measurement recordings
- Configuration of test cabinets
- Exiting CID-PRO 5

If the **Change password** button is hit, the standard password can be changed to a custom one:



The **current password** is entered and checked. Then, a **new password** can be entered. To ensure that the new password is written correctly, it must be entered twice. Only if both entries are identical is the new password adopted.

If the **Deactivate password security** is clicked and the correct password is then entered in the security prompt, simple password protection is deactivated.

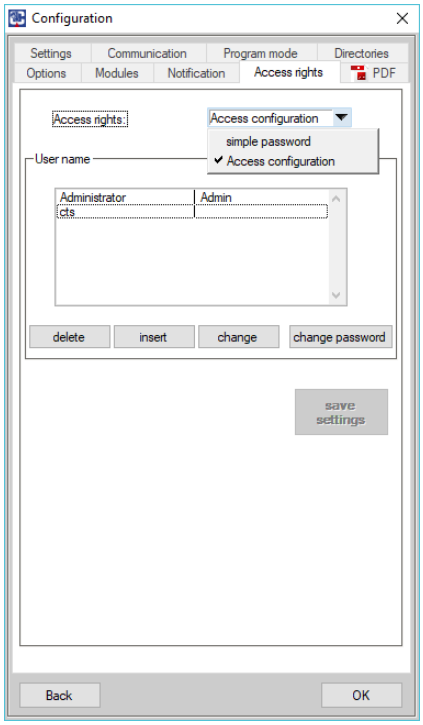


Notice

The activation/deactivation of the **simple password** is adopted immediately and does not need to be saved separately.

To adopt a mode change from **simple password** to **user administration** and vice versa, the setting must be saved by hitting the **Save settings** button and restarting the CID-Pro 5 software.

6.8.2 Access configuration settings



The **access configuration** allows and requires the creation of users, each with rights for certain parts of the program. This always requires a user login.

> **Notice**
> After the user administration service has been selected; the CID-Pro 5 software must be restarted to allow the settings to be adopted.

The displayed user name list shows all users which have been created. The second column shows whether the user possesses administrator rights. Only users with these rights are allowed to create other users and change or delete present users.

Therefore, at least one user must have administrator rights.

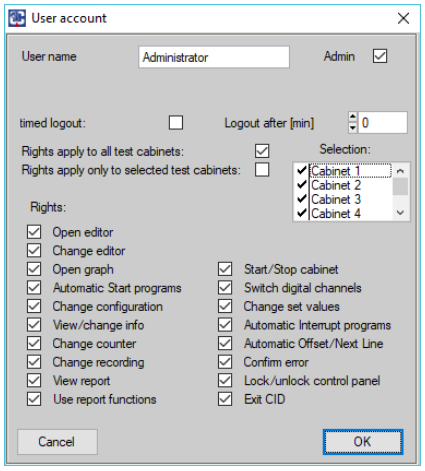
When the software is first installed, there is only one user:

User name: **Administrator**

Password: **cid-pro**

> **Notice**
> Take into account the exact spelling (upper and lower case).

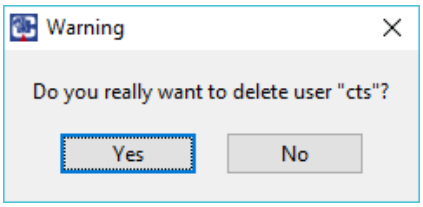
If a user with administrator rights is logged in, he/she can define user rights by hitting the **Insert** and **Change** buttons or delete a user via the **Delete** button.



Administrator settings:

The administrator has full access. All administrator rights are ticked; thus, he/she is not restricted regarding the individual functions and the different test cabinets.

Besides this, he/she can process the data of other users by hitting **Admin**.

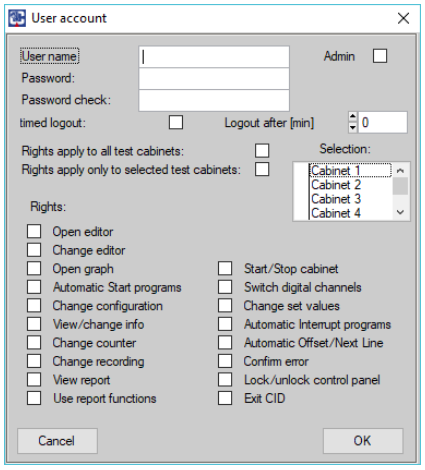


Delete user:

To delete a user, mark him/her in the user name list and hit the **delete** button. Then, your entry is checked with the security prompt shown here. The user to be cancelled is displayed; here, "**cts**".

If **Yes** is hit the user is deleted definitively, if **No** is hit the deletion is cancelled.

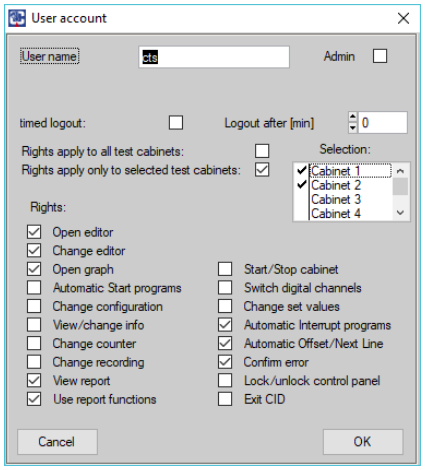
> **Notice**
> Users which have been deleted are cancelled irrevocably!



Insert user:

If **insert** is hit, new users can be created. Then, a window opens into which the user name, password, timed logout, cabinet allocation and rights can be entered.

If **OK** is hit, the settings and thus the new user are saved.
If **Cancel** is hit, the creation of a new user is ignored.

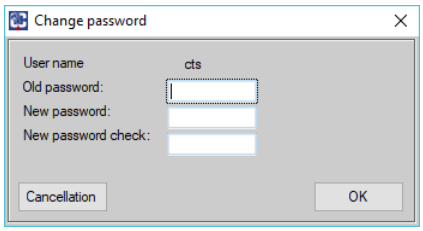


Change user:

To subsequently assign other rights to a newly created user, mark this user in the user list and click on **change**. Then, the features of the user to be changed are displayed.

The user name, timed logout, cabinet allocation or user rights can be changed.

If **OK** is clicked, the changed settings are adopted.
If **Cancel** is clicked, the user changes are ignored.



Change password:

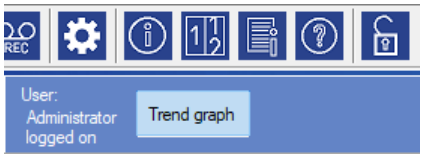
To subsequently change a user password, mark the user whose password is to be changed in the user list. Click on **change password**. The **old password** is entered and checked. Then, a **new password** can be entered. To ensure that the new password is written correctly, it must be entered twice. Only if both entries are identical, the new password is adopted by clicking on **OK**.

Notice

The changes in the **access configuration** are adopted immediately and do not need to be saved separately.

To adopt a mode change from **simple password** to **access configuration** and vice versa, the setting must be saved by hitting the **Save settings** button and restarting the CID-Pro 5 software.

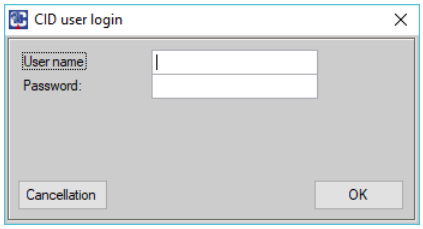
6.8.3 Access configuration – during operation



If the user administration service is active, the status of the logged-in users is displayed in the status overview:

The "**Lock**" symbols and the user texts mean the following:

	User administration			
	inactive	**active**		
Symbol	**inactive**	**open / logged in**		**locked / logged out**
Entry in menu bar	---	User: **Administrator** logged in	User: **cts** logged in	User: **no user** logged in
Explanation	No entries.	In this mode the "Administrator" is **logged in** and thus has full access to all software functions.	In this mode "cts" is **logged in** and has the rights which have been defined in the user administration service.	In this mode no user is logged in, i.e. no actions for which rights are necessary can be carried out.



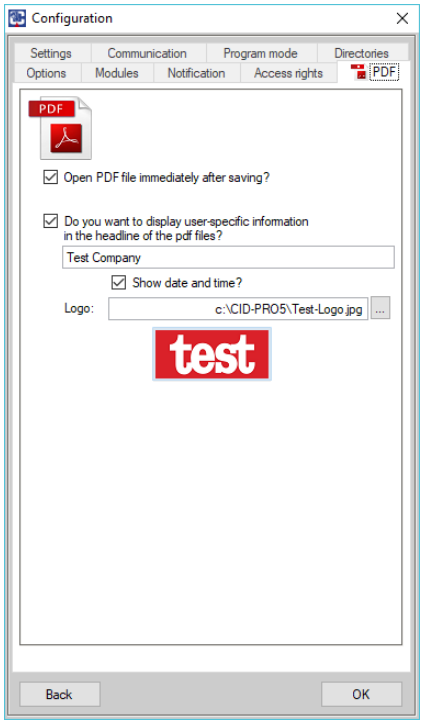
User login:

To log in with the user name and the password, click on the closed lock symbol.

User logout:

If you click on the open lock symbol, the user logged in is automatically logged out and the software is locked.

6.9 PDF settings



In the **PDF settings** the following options may be selected:

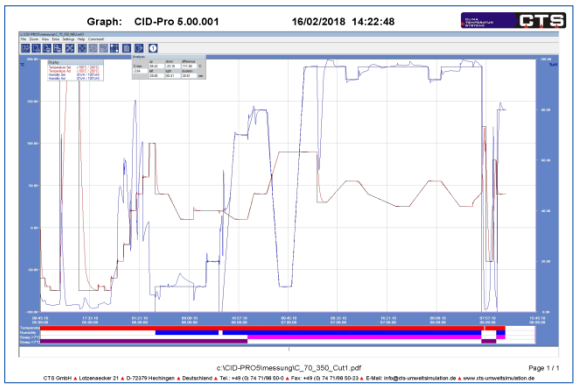
Open PDF file immediately after saving?

Check this box to select whether the PDF files created and saved in the various CID-Pro menus are to be opened immediately.

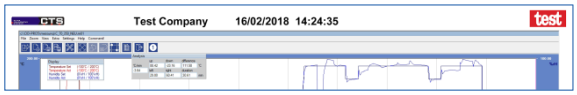
User-specific information?

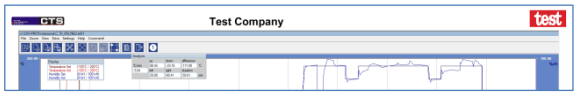
Here, a text (customer specific information) and a certain customer logo can be selected which are then displayed when a PDF file is created. In this case, a slightly smaller version of the CTS logo is displayed on the left. The display of the date and time can also be selected.

> **Notice**
> The customer logo can only be uploaded from the CID-Pro 5 installation folder.



For this measurement recording PDF printout, the option **User-specific information** is not active.
The printout contains the standard information ("Graph", CID-Pro version, creation date and CTS logo).



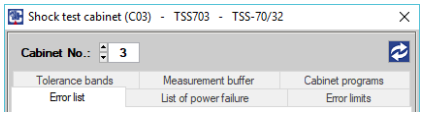


The option **User-specific information** is active – a slightly smaller version of the CTS logo is located on the left. The test company's text and the date are printed in the centre.

The option **User-specific information** is also active – the date/time is, however, not displayed.

7 Cabinet information

The **cabinet information** contains the most important information regarding the connected test cabinets.
The **error list** and **power failures** come from the report module (event logs) (see Chapter 14, page 137); the **limits** from the Configuration menu (see Chapter 6, page 32).
The **tolerance bands** menu is new. The **measurement buffer** comes from the graphic module (see Chapter 10, page 101) and the **cabinet programs** from the editor module's options menu (see Chapter 9.19, page 91).

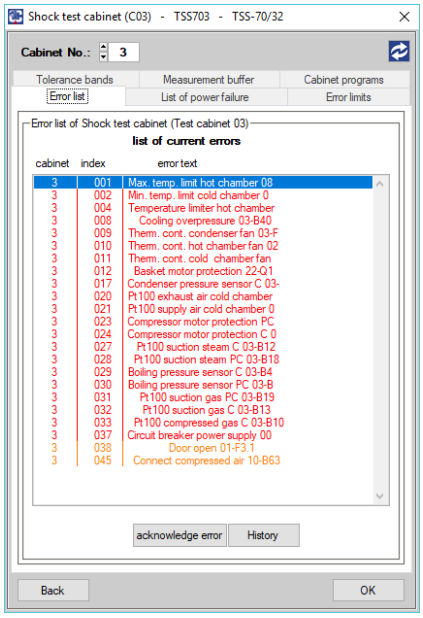


If the **cabinet number** is entered, all information for the selected cabinet is displayed.
The submenus are updated if the tabs are changed.

If the information is not new, all cabinet information can be updated by pressing this button.

> **Notice**
> If there is no communication with the desired test cabinet, "**No replay from this test cabinet!**" is displayed.

7.1 Error list



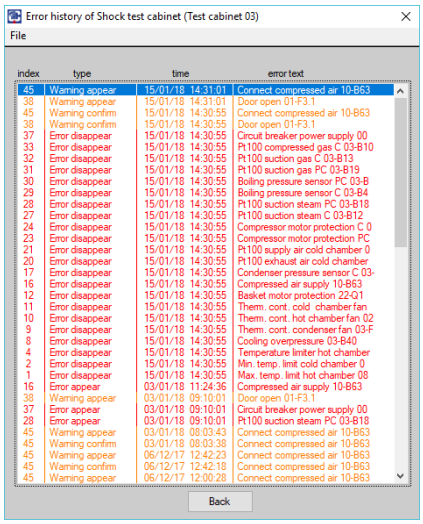
The **error list** menu item shows a list of all upcoming error and warning messages in the selected test cabinet.

If individual errors in the list are selected they can be **acknowledged**. This means that, if the error is no longer upcoming in the cabinet, it is also deleted in the software, and the cabinet (sub-) function is again enabled. This list helps to get an overview of the errors in the control system of the different test cabinets and is necessary if, under certain circumstances, it is not possible to eliminate all cabinet errors but certain cabinet sub-functions need to be operated.

Error message
The entire cabinet or parts of it are switched off. Confirm the error message once the fault has been eliminated.

Warning message
The cabinet continues to run. Once the fault has been eliminated the warning message is deleted automatically and does not need to be confirmed.

Operating message
The cabinet continues to run. Operating messages only serve as functional notes.



If **history** is hit, an **error history** is read out of the test cabinet.

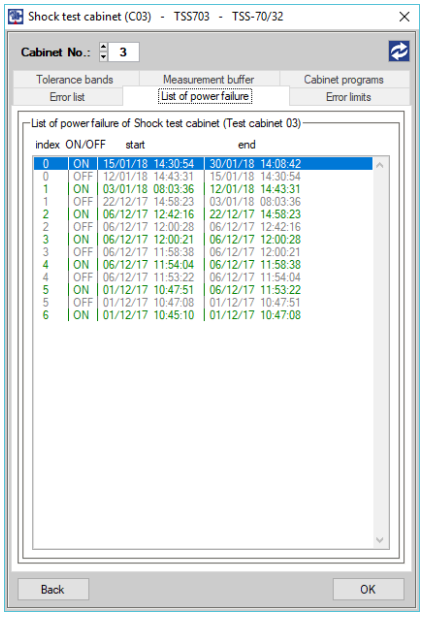
The occurrence, elimination and confirmation (deletion) of individual errors/warnings are listed chronologically.

The function **File ➔ Print as PDF** can be used to save the entire error history as a PDF file.
After you select the respective PDF function, a dialogue is opened in which the name and the path of the saved PDF file must be indicated. The storage path is the standard directory for report files. The standard name is 'Error history' followed by the cabinet number, e.g.:
PDF file: Error Cabinet01.pdf

If **Back** is hit, the error history window closes again.

Notice
The coloured display of errors (red) and warnings (orange) can be activated or deactivated in the options (see Chapter 14.7 - Options, page 141).

7.2 Power failure list

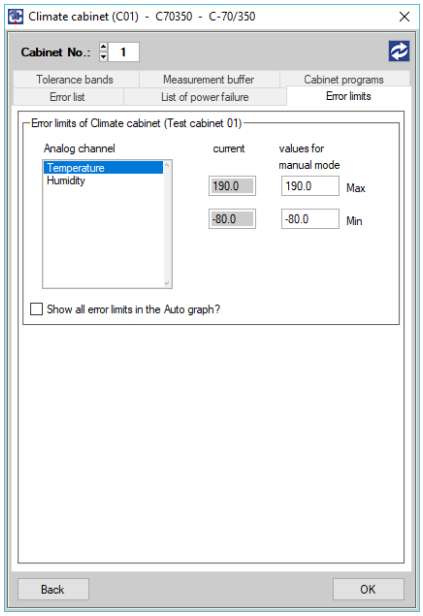


The **Power failure list** menu shows when a cabinet has been switched on or off.

The power failure list begins and ends with an ***On*** line, because the cabinet has to be running to display the power failures.
An ***Off*** line is created as soon as a power failure occurs. This line shows when the power failure occurred.

Notice
A control system **reset** is also displayed as a power failure.

7.3 Error limits (test specimen protection)



In the **error limits** menu, the error limits for the manual mode are defined/displayed and the error limits for the program mode are displayed.

> **Notice**
> The limits for the program mode must be defined in the editor module when a program is created (see Chapter 9.4.3 - Limits, page 72).

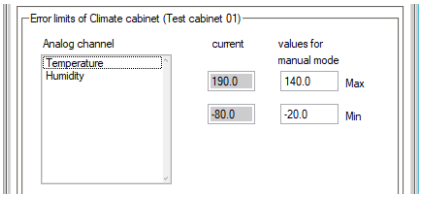
For each analogue channel, a min. and a max. limit can be defined. These error limits are freely selectable within the respective channel configuration.

In the case of a test specimen which never may be heated over 100 °C, the max. limit should be set to 100 °C.

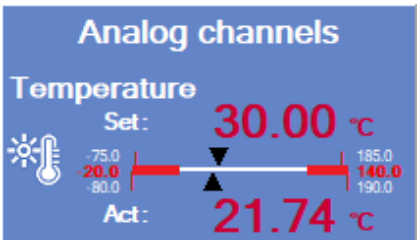
In the right-hand ***Values for manual mode limit column***, the min. and max. limits for an analogue channel in manual mode are defined.
In the left-hand ***current*** limit column, the current min. and max. limits for an analogue channel in manual mode and in program mode are displayed.

> **Notice**
> In manual mode, ***current*** shows the same values as ***Values for manual mode***.

When the **Show all error limits in the Auto graph?** option is selected, the program limits set are also displayed in the black auto graph in the status overview (see Chapter 5.8 – Trend and auto graphs, page 23).



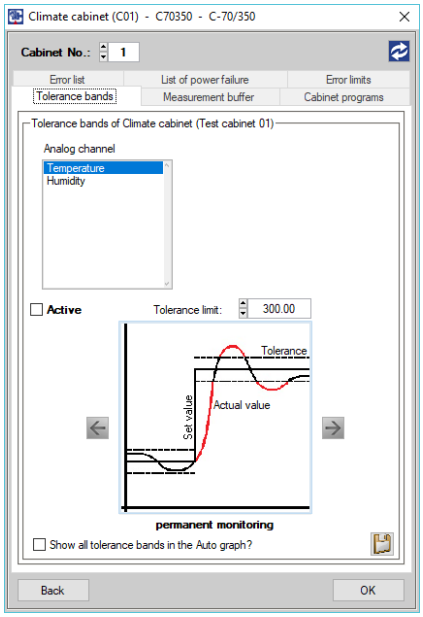
In this limits menu, for example, a temperature limit of min. -20 °C / max. 140 °C has been defined.



In the analogue channels, the error limits are displayed below the number line.
The excluded range on the number line is red.

> **Notice**
> When an error limit value has been exceeded or is not reached, an **error message** is displayed on the control panel and in the software and the cabinet is stopped.

7.4 Tolerance bands



A tolerance band indicates how far the actual value can deviate from the set value of an analogue channel.

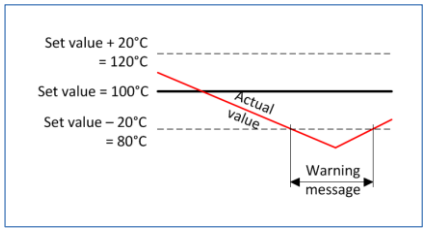
In the **Tolerance bands** menu, the permitted deviations of an analogue channel in manual mode can be defined.

There is always only one analogue channel displayed.
The other channels can be selected from the analogue channel list.

> **Notice**
> The tolerance bands for the program mode must be defined in the editor module when the program is created (see Chapter 9.4.3 - Tolerance bands, page 73).

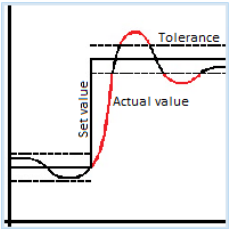
With the **Show all tolerance bands in the Auto graph?** option, the program tolerance bands set are also displayed in the black auto graph in the status overview (see Chapter 5.8 - Trend and auto graphs, page 23).

Active and the **save button** apply all changes.



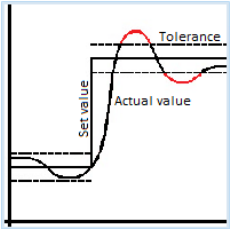
The indicated tolerance value (here 20 °C) always defines a symmetric band around a set value.

The following settings are available for the tolerance band monitoring:



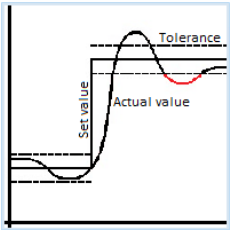
Permanent monitoring:

As soon as the actual value is outside the tolerance, a warning message is displayed.



1st entry into the tolerance band:

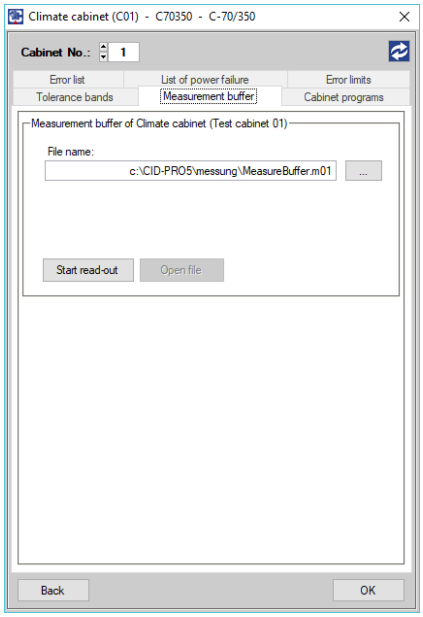
A warning message is only displayed when the actual value is outside the tolerance after the 1st entry into the tolerance band.



2nd entry into the tolerance band:

A warning message is only displayed when the actual value is outside the tolerance after the 2nd entry into the tolerance band.

7.5 Measurement buffer



This function allows the measured values of the selected test cabinet to be read out. The test cabinet's measurement buffer is a ring buffer of a defined length. This buffer is completely read out and written into a measurement recording. If the cabinet is constantly switched on, even when it is not started, the measurement buffer stores the data for approx. 24 hours. If, in the meantime, the cabinet is switched off, the measurement buffer is filled with the existing data (measured values – gap – measured values – gap, etc.) and can last several days.
When the measurement buffer is read out, the values of the **first two analogue channels** and **all digital channels** of the test cabinet are read and stored in a measurement file.

- The number of the **cabinet** whose measurement buffer is to be read out.
- The **directory field** and **selection** can be used to create a measurement file in which the entire measurement buffer is to be stored.
- **Start read-out** starts the process of reading out the measurement buffer of the selected test cabinet into the selected file.
- **Open file** opens the measurement buffer file created. This button is only active when the measurement buffer has been read out.
- Pressing **Back** closes the window.

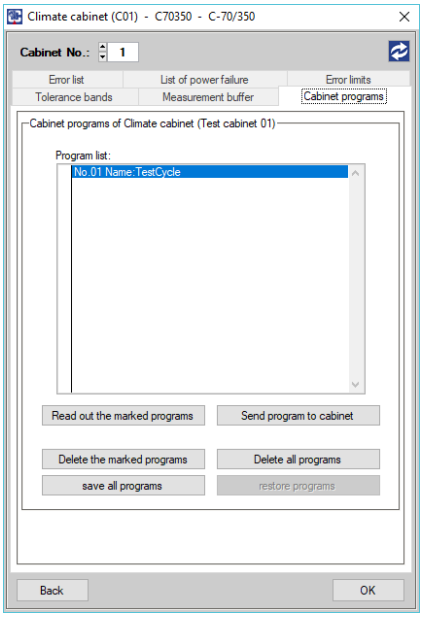
Notice
This function makes sense for test cabinets which are linked via a rapid Ethernet interface. The slow serial interface can cause long delays.

Notice
If this function is used with older cabinets, a message is displayed if the version of the control system is too old and the function cannot be carried out.

Notice
Because only the first two analogue channels are read out, the remaining channels are given characteristic numbers (-9999.9004).

```
Water storage
 Set        Act
 l          l
-9999.9004-9999.9004
-9999.9004-9999.9004
-9999.9004-9999.9004
-9999.9004-9999.9004
-9999.9004-9999.9004
-9999.9004-9999.9004
-9999.9004-9999.9004
-9999.9004-9999.9004
```

7.6 Cabinet programs



Here, it is possible to store programs which are already stored in the control system on the computer or to send single programs selectively to the control system.

When the “Cabinet programs” tab is selected, the stored programs of the selected test cabinet are listed.

If **Read out the marked programs** is clicked, the selected test program can be stored on the PC. At the same time, the path and the program name are queried. Multiple files can be selected by placing a tick next to the file entry.

If **Send program to cabinet** is clicked, a program can be selected on the PC which is then transmitted to the control system. A program number for the control memory must also be specified.

Notice
- The programs stored in the controller are overwritten without a security question.
- This option is only possible with the control system version as from V1-62.
- Double-clicking on a program with the left mouse button temporarily loads it onto the PC and opens it in the editor module.

With **Delete the marked programs** or **Delete all programs** the marked or all programs of the control are deleted.

Notice
Programs (marked or all) can only be deleted from control version V3.24.
If the control version is older, the buttons are hidden.

With **save all programs**, all programs can be read from the controller and thus saved. For this purpose, a sub directory (“_SaveRestorexx” with xx = cabinet number) is automatically created in the standard test program directory, in which all programs are saved. In order not to lose the important program number information, the number is taken into account in the file name:
The program “**TestCycle.Z01**“ at program no **01** is saved under the name “**_01_TestCycle.Z01**“
(Name declaration: “**_yy_name.Zxx**“ with **yy** = program number and **xx** = cabinet number).

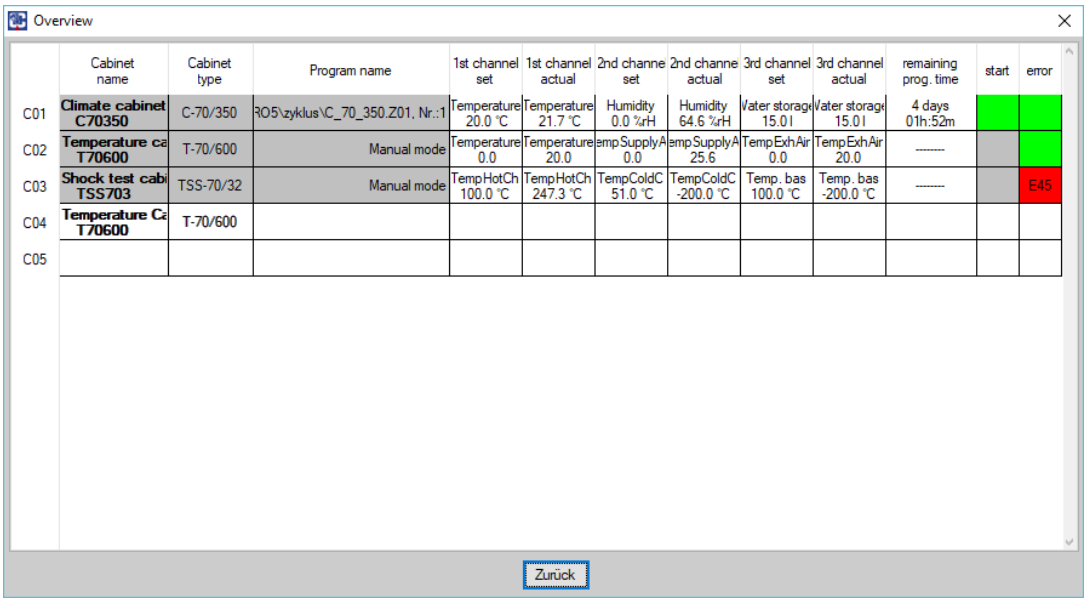
Notice
- If the subdirectory already exists, all files in it will be automatically deleted.
- After a successful backup, a message with the storage location (path) and the number of successfully saved programs is displayed.

All saved programs in the control can be restored with **restore programs**. For this purpose, the programs saved in the subdirectory (“_SaveRestorexx” with xx = cabinet number) are sent to the controller with program location information.

Notice
- The restoration must be confirmed with a security query.
- Programs are overwritten without any further security query.
- After successful recovery, the subfolder will be deleted again.
- If the subfolder exists when the menu is opened, many programs can be sent to the control easily and automatically (observe the program number).

8 Status overview for all test cabinets

The status overview for all test cabinets clearly shows all important information:



Overview

	Cabinet name	Cabinet type	Program name	1st channel set	1st channel actual	2nd channe set	2nd channe actual	3rd channel set	3rd channel actual	remaining prog. time	start	error
C01	Climate cabinet C70350	C-70/350	RO5\zyklus\C_70_350.Z01, Nr.:1	Temperature 20.0 °C	Temperature 21.7 °C	Humidity 0.0 %rH	Humidity 64.6 %rH	Vater storage 15.0 l	Vater storage 15.0 l	4 days 01h:52m		
C02	Temperature ca T70600	T-70/600	Manual mode	Temperature 0.0	Temperature 20.0	emp Supply A 0.0	emp Supply A 25.6	Temp Exh Air 0.0	Temp Exh Air 20.0	--------		
C03	Shock test cabi TSS703	TSS-70/32	Manual mode	Temp HotCh 100.0 °C	Temp HotCh 247.3 °C	Temp ColdC 51.0 °C	Temp ColdC -200.0 °C	Temp. bas 100.0 °C	Temp. bas -200.0 °C	--------		E45
C04	Temperature Ca T70600	T-70/600										
C05												

Zurück

The following information is displayed:

- **Self-defined cabinet name/ cabinet commission number:** For a better distinction of the test cabinets, the self-defined cabinet name (see Configuration - Communication changeable name, Chapter 6.2, page 32) and the unambiguous commission number are displayed.
- **Cabinet type:** Cabinet type, found in the cabinet control
- **Mode/ Program name:**
  Manual mode: shows whether "manual mode" is running
  Program running: shows the program with the complete path.
- **First three analogue channels:** The set and actual values of the first three analogue channels. If there are only two channels, the fields for the set and actual values of the third channel remain empty.
- **Remaining prog. time:**
  Manual mode: ----
  Program mode: Remaining runtime of the current program
- **Start status:**
  green: cabinet started
  orange: cabinet started – pause
  grey: cabinet stopped
  white: no communication with the test cabinet
- **Error status:**
  green: no error
  red: ERROR } with the indication of the
  yellow: Warning } error number
  white: no communication with the test cabinet

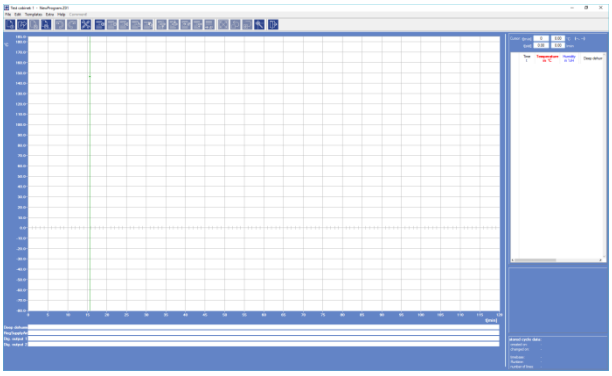
If **Back** is clicked, the test cabinet status overview is closed and the general status overview is displayed.

> **Notice**
> The information displayed here cannot be changed and is read-only.
> As from **12 test cabinets** the window can be expanded downwards.

9 Program editor (editor module)

9.1 General

With the editor module, programs can be created, changed, edited and deleted.

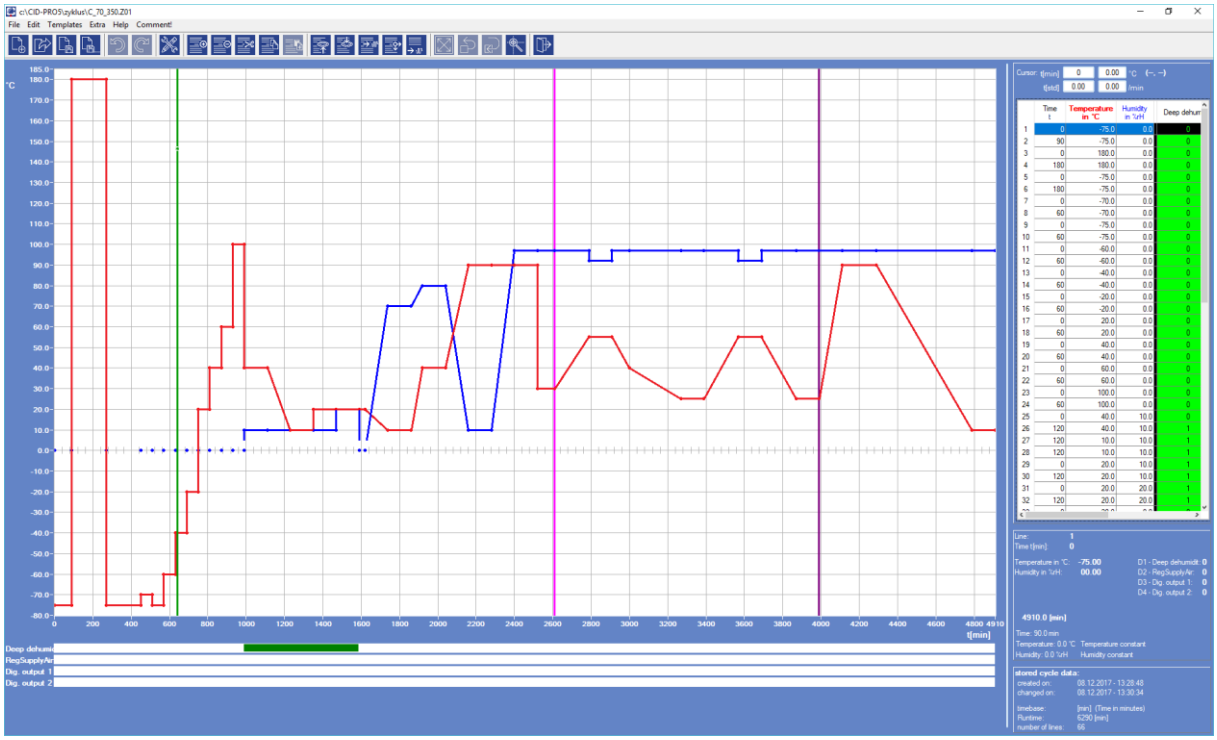


When the editor module is started, a “New program” opens. The displayed analogue and digital channels are the control channels of the selected test cabinet. When creating a program for a standard temperature cabinet, only the analogue temperature channel can be set. With a shock test cabinet, the hot chamber and cold chamber temperatures are available. The configuration that is read in defines which channels are displayed. In general, each test cabinet can display different channels (number and order). They are structured dynamically depending on the selected test cabinet.

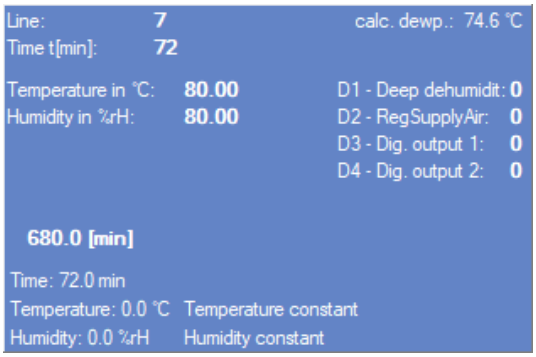
On the right, among other things, there is a table in which the code lines of a program can be entered. This table can contain:

- **Value lines** (lines in which digital and analogue values are defined),
- **Loops** (a line sequence which is repeated),
- **Subroutines** (program parts which have been saved separately and which are called) and
- **Conditional jumps** (jump to a defined line if a certain condition is met).

These individual lines are clearly displayed in the graph (graph area). The upper part is for the analogue values and the lower part for the digital values. The X axis defines the program’s time history.
The analogue lines of values are connected per line (value axis and time axis).
The digital statuses are displayed as bars.
Loops, subroutines and conditional jumps are displayed as coloured, vertical markings.

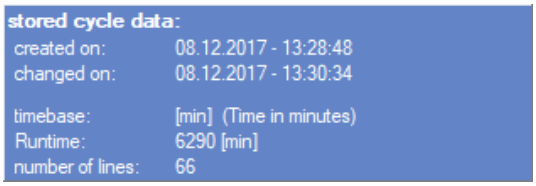


Besides this, the right, lower area displays all important line information at a glance.



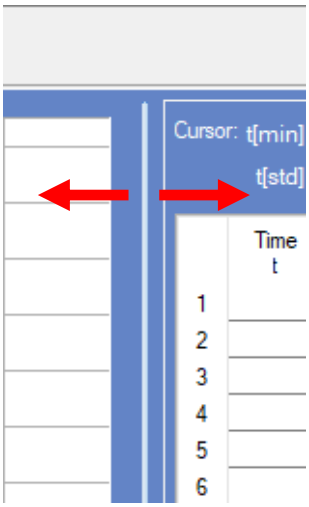
- Line number and time
- Analogue and digital channels with Wait function, if available,
- Behaviour regarding the next line: upward rise, constant course or jump indicating the X and Y intercepts (time and temperature/humidity difference)
- Calculated dew point temperature from temperature and humidity. The information is only displayed if the humidity is present and the option “Show dew point temperature values?” (see Options, Chapter 9.19, page 92) is set. The dew point temperature is also calculated between the points by the green cursor.

Indication of the stored program data:



- Creation date
- Modification date
- Time base
- Runtime
- Number of lines

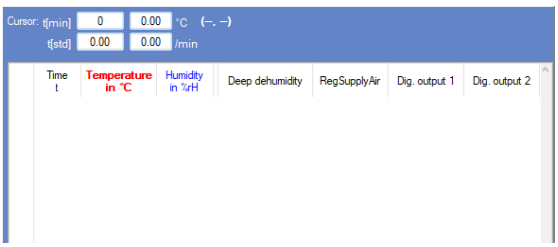
Table size adjustment:

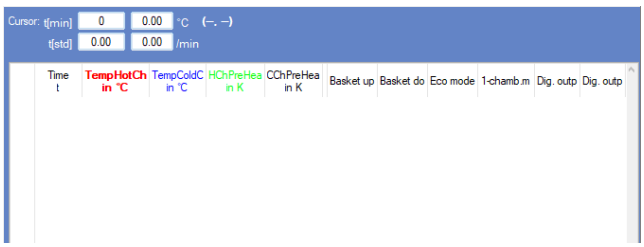


To see all channels even better it is possible to enlarge the table towards the left. To do so, left-click and hold the bar between the graph and the table. Keeping the left mouse button pressed, the size of the graph and table area can be changed.
It is possible to drag the table over the entire screen.
It is possible to drag the graph over the entire screen.

> **Notice**
> The bar can never be moved so far that it can no longer be reached.
> The resizing of the table and the first 20 channel columns of each individual device number are now saved. After opening the editor module again, the settings are retained depending on the device.

Double-clicking on the bar with the left mouse button opens the table in such a way that all channels are displayed at maximum size.





Double-clicking on the bar with the right mouse button resets the table and all channels to the standard values.

9.2 Functionality since V5

As of the CID-Pro software Version 5, the program editor or the **editor module** is an independent program, i.e. a separate exe file (EditorModule.exe). If the editor is called, a CID-Pro internal window is not opened; instead an external call is started. At the same time, system parameters are transmitted which, for example, contain the program file path, and are evaluated and processed by the editor module.
This innovation has the advantage that now multiple editor modules can be opened and compared simultaneously with the same or different programs.

> **Notice**
> Any program lines can be copied, cut out or inserted within one instance of the editor module. Copying, cutting and inserting from one editor module instance to the next editor module instance are also possible!

Because of the separate module, it is now possible to start a program with the editor module by double-clicking in Windows Explorer. The precondition is, however, that the CID-Pro 5 software has been installed.

As of CID-Pro software Version 5, the program structures for the control system and the software are identical. This means that the software programs must have been adjusted. Many functions, such as assigning a limit for various code lines, have not been possible up to now. The same applies to multiple Wait functions in one value line. The following table shows the systematic structure of the former and the new programs:

Programs up to Version 5		Programs as from Version 5		
Old program structure *(up to 4 analogue and 16 digital channels)*	Program header	Old program structure *(up to 4 analogue and 16 digital channels)*	Program header	①
	Program lines		Program lines	
	Program extension		Program extension	
		Program information		②
		Program version		
		Extended program structure *(up to 8 analogue and 24 digital channels)*	Ext. program header	
			Ext. program lines	
			Ext. program extension	
			Program configuration	

In the editor module, the internal data are always processed in the new, extended program structure ②. Here, **8 analogue and 24 digital channels** can be set for each value line. Each analogue control channel can contain different limit and tolerance band information per value line. Also, the Wait function can simultaneously be set for all analogue control channels. In the extended program header, information such as “Created on” or “Modified on” is stored.
In the old program structure it was not possible to save channel information. The first analogue control channel is always a temperature, but the second channel can already be humidity or a cold chamber temperature for a shock test chamber. From now on, this information is stored in the extended program structure under the program configuration. Previously, when a program was opened, the CID-Pro software had to load the configuration separately. As of Version 5, this information is also stored in the program file. Thus, a program can be opened in the editor module without opening the main program and the channel information is displayed correctly.

To maintain compatibility with older versions, the old program structure ① is filled in when the program is saved. To do so, the new program structure with its considerably greater data volume is adapted to the old structure. Limit and tolerance information is lost or only adopted for the first value line. Wait functions are limited to one channel (the first control channel is the most important, the eighth channel is the least important).

Thus, in the new program, the new program structure is always stored with the extended level of information and the old program structure.

> **Notice**
> If an older program file is opened/loaded, the information from the old structure is immediately and automatically converted into the extended program structure and the file is saved in the new format. It causes no problems if this new structure is opened by an old CID-Pro version.

The new program structure is about ten times larger than the old program file. During the transfer to the cabinet control, it thus makes a significant difference how the test cabinets are connected in the software and which interface (serial or Ethernet interface) is used for communication. The following distinction is thus made between the interfaces:

- **Ethernet interface:**
  The quick transfer via the Ethernet interface guarantees the full function range of the new program structure, i.e. all functions are available and can be used.
- **Serial interface:**
  Via the serial interface transferring all of the program data takes too long. Therefore, the program structure is used and the data is sent to the cabinets just as before. Thus, not all functions and extensions are available. The Wait functions, for example, are considered as they have been until now. The 4 extra analogue control channels are not available. Limits and tolerance bands are transmitted as they have been until now.

Programs as from Version 5			
Serial interface		**Ethernet interface**	
Old program structure *(up to 4 analogue and 16 digital channels)*	Program header		
	Program lines		
	Program extension		
		Extended program structure *(up to 8 analogue and 24 digital channels)*	Ext. program header
			Ext. program lines
			Ext. program extension
			Program configuration

Wait functions:	only 1 analogue channel per value line
Limits:	one piece of limit information per value line
Tolerance bands:	not possible

Wait functions:	all up to 8 analogue channels per value line
Limits:	all up to 8 analogue channels per value line
Tolerance bands:	all up to 8 analogue channels per value line

9.3 Buttons

Menus	Symbol	Submenus		Also in the toolbar?	Key combi-nation	Result
File		New...		X	Ctrl+N	New program see Chapter 9.5, p. 79
		Open...		X	Ctrl+O	Opening a program see Chapter 9.6, p. 79
		Save		X	Ctrl+S	Saving a program (as) see Chapter 9.7, p. 80
		Save As		X	Ctrl+A	
	---	Setup printer/page			Ctrl+I	Setting up the printer/page and printing ... see Chapter 9.9, p. 81
		Print...	Print graph		Ctrl+G	
			Print list		Ctrl+L	
			Print both		Ctrl+B	
			Print screen		Ctrl+T	
		Print as PDF...	Print graph as PDF			Printing a PDF... see Chapter 9.10, p. 82
			Print list as PDF			
			Print screen as PDF			
		File information				File information of a loaded program see Chapter 9.11, p. 83
	---	*Last files opened*				*Opening a program (9.6)*
		Exit		X	Ctrl+E	Exit the editor module
Edit		Insert line		X	Ins	Editing a line (insert, change, cut and copy) via the keyboard/menu functions see Chapter 9.4.3, p. 69
		Delete line		X	Del	
		Cut line		X	Ctrl+X	
		Copy line		X	Ctrl+C	
		Paste line		X	Ctrl+V	
		Copy/insert block...			F6	Line block see Chapter 9.12, p. 84
		Delete block...			F7	
		Insert Start of Loop		X	F2	Loop (beginning and end) see Chapter 9.13, p. 85
		Insert End of loop		X	F3	
		Call subprogram		X	F4	Calling a subroutine see Chapter 9.14, p. 86
		Insert conditional jump		X	F5	Conditional jump see Chapter 9.15, p. 87
		Insert program		X	F10	Inserting a program see Chapter 9.16, p. 88
Templates		Templates				Templates see Chapter 9.17, p. 89
Extras		Options			Ctrl+P	Options see Chapter 9.19, p. 91
		Delete program			Ctrl+D	Deleting a program see Chapter 9.8, p. 80
		Gradient...	...with (value calculation)		F8	Defining the gradient see Chapter 9.20, p. 94
			... to (time calculation)		F9	
		Save file in data pool ...			Ctrl+F	Saving a file in a data pool see Chapter 9.21, p. 97
		Save file as library ...				Saving a file as a library see Chapter 9.22, p. 97
Help		Help			F1	
		Info...				
Comment						see Chapter 9.23, p. 98
		Zoom functions				Zoom functions (editor) see Chapter 9.24, p. 99

9.4 Creating a program (test cycle)

9.4.1 Important remarks on program creation

First line of code
The first line of code entered must be a defined start value consisting of temperature / humidity.
In the first line of code, the runtime is always t=0; this cannot be changed.
This ensures that the control system does not adopt the final value of the last testing.

Non-linear temperature / humidity change
If no linear temperature / humidity change is necessary, this can be programmed as a jump (i.e. temperature / humidity change at time t = 0).
When a jump is programmed, the maximum speed of the temperature and/or humidity change is used.
However, because the change cannot take place at any speed, the Wait function (see page 71) should be used in this case. It ensures that the temperature / humidity level remains the same for a certain time.

Linear temperature / humidity change
During programming, check whether the maximum speed of the temperature change is exceeded.
If temperature and humidity are simultaneously programmed with a linear change, only a low rate of change can be reached. Check whether both parameters need to simultaneously be changed linearly.
If you want to regulate the temperature / humidity close to their limits, the program cannot be run in exactly the ideal, programmed way.
The closer a pair of temperature / humidity values is to these limits, the slower the actual course approximates the set course of the curve.
Here again, the Wait function (see page 71) ensures that they remain at the level to be reached for the required time.

Humidity control
The humidity can only be controlled within a specified temperature range. If this temperature range is exceeded during programming, humidity is only regulated until this temperature limit is reached. If a change is to be made from a temperature at which climate control is not possible to another within the climate range, the humidity is controlled from the time the temperature enters the climate range.

Notice
If the set or actual value of the temperature exceeds or falls below the temperature range for climate operation, humidity control is deactivated. Any predefined humidity set value is ignored. However, the actual humidity value will reach uncontrolled values, because humidity is relative at all temperatures.

9.4.2 Program components (test cycle)

Program
A program consists of an optional number (1-200) of sequential lines of code. The program defines the exact workflow of the test cycle.
Up to 99 different programs can be saved on the cabinet control.

Pair of temperature/ humidity values
A pair of temperature/ humidity values consists of a set value for the temperature and a set value for the relative humidity (relative humidity for C cabinets only).
These values are the key elements of the program.

Line of code
A line of code comprises a pair of temperature / humidity values, a specified runtime, an optional Wait function (see page 71) and, also optionally, the switching on/off of additional functions (softkeys).
An active line of code always includes a pair of temperature / humidity values with the corresponding runtime.
A passive line of code includes a beginning/end of a loop or the Wait function. Unlike an active line of code, a passive one does not contain a runtime (t=0).

Runtime
This determines how long a pair of temperature / humidity values remains constant or the time for another pair of temperature / humidity values to be reached.

Loop
A loop is a simplified way to program repetitive program sections. Each beginning / end of a loop requires a whole line of code.

Additional functions
According to the cabinet type and the customer's desires, the cabinet is provided with various additional functions (softkeys).
It is possible to activate/deactivate multiple additional functions (softkeys) in one line of code. If, however, a function is to remain active over multiple lines of code, it must be re-entered in every line.

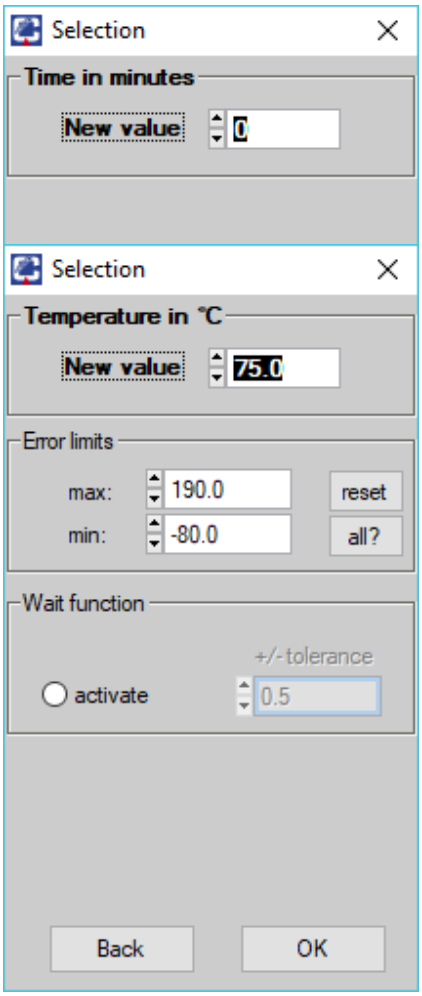
The various code lines can be entered via the table (see Editing a line (insert, change, cut and copy) via the keyboard/menu functions, Chapter 9.4.3, page 69) or via the graph (see Inserting and changing a line in the graph using the mouse, Chapter 9.4.4, page 75).

9.4.3 Editing a line (insert, change, cut and copy) via the keyboard/menu functions

1. Inserting a value line

If the "**Ins**" key, the menu function or the icon is hit, a new value line is entered in the table. This line contains the same analogue and digital values as the previous line, except for the time information – which is 0 after the insertion.
If a new line is inserted in an empty program or after a loop, a subroutine or a conditional jump, all values are 0, because there are no defined values.

2. Changing a line



The **time** and all **analogue** values can be changed by hitting the "**Enter**" key (if the desired field is selected – then, the field is displayed in dark blue) or by double-clicking on the desired field. Now, a window containing the old value is displayed. This value can now be changed or re-defined.
To avoid errors, the desired action is displayed above the new value, e.g. **Time in minutes**.

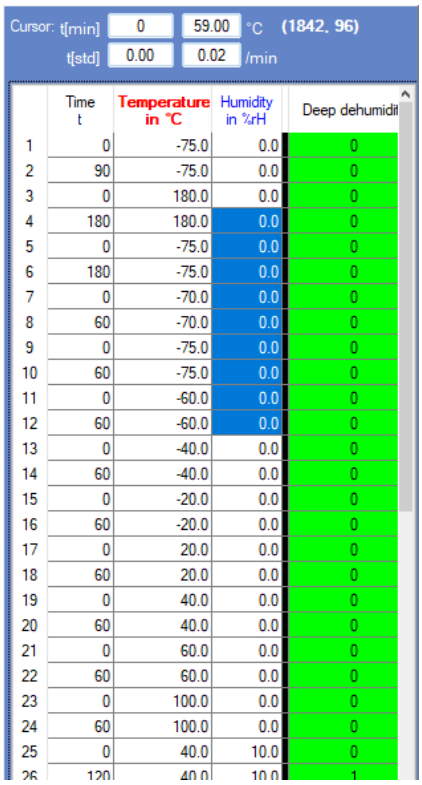
If **OK** is hit, this new value is adopted and the graph and the table are updated, if necessary.
If **Back** is hit, the change is not adopted and the window closes again.

The time changed in the table is always the line's runtime. In the graph, these runtimes are strung together to form a complete test cycle.

If a line of a loop, a subroutine or a conditional jump is changed, the window with the corresponding values opens. These values can then be changed, e.g. by indicating the number of loops from the beginning of the loop.

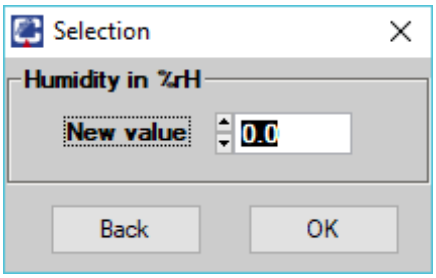
The **digital** values can be changed or negated by hitting the "**Enter**" key (if the desired field is selected) or by double-clicking on the desired field.
When this is done, the graph bar display in the lower area is updated.

3. Changing multiple lines



	Time t	Temperature in °C	Humidity in %rH	Deep dehumidif
1	0	-75.0	0.0	0
2	90	-75.0	0.0	0
3	0	180.0	0.0	0
4	180	180.0	0.0	0
5	0	-75.0	0.0	0
6	180	-75.0	0.0	0
7	0	-70.0	0.0	0
8	60	-70.0	0.0	0
9	0	-75.0	0.0	0
10	60	-75.0	0.0	0
11	0	-60.0	0.0	0
12	60	-60.0	0.0	0
13	0	-40.0	0.0	0
14	60	-40.0	0.0	0
15	0	-20.0	0.0	0
16	60	-20.0	0.0	0
17	0	20.0	0.0	0
18	60	20.0	0.0	0
19	0	40.0	0.0	0
20	60	40.0	0.0	0
21	0	60.0	0.0	0
22	60	60.0	0.0	0
23	0	100.0	0.0	0
24	60	100.0	0.0	0
25	0	40.0	10.0	0
26	120	40.0	10.0	1

To be able to change multiple channel fields, these fields must be marked.
Now hit the "**Enter**" key to open a window.
Here, all marked fields can be changed and set to the same value.



Notice
This only allows multiple value lines to be changed. If another type of line (e.g. a beginning of a loop) is in the marked area, the action is interrupted. This means that if the "**Enter**" key is hit, the window DOES NOT open.

A digital channel can be changed in the same way.

4. Deleting a line

If the "**Del**" key, the menu function or the icon is hit, the currently active line is deleted from the table and thus from the graph. A security prompt must be confirmed.

Notice
Delete line enables not only a marked line but also entire blocks to be deleted. To do so, mark, for example, an optional number of lines in the first column (time) (see Chapter 9.12 - Copying/inserting/deleting a block, page 84).

5. Copying a line

If the "**Ctrl**" + "**C**" key combination, the menu function or the icon is hit, the currently active line is copied from the table. This line is then available to be inserted as a copied line (see point 7 – Inserting a copied line).

Notice
- ***Copy line*** enables not only a marked line but also entire blocks to be copied. To do so, mark, for example, an optional number of lines in the first column (time) (see Chapter 9.12 - Copying/inserting/deleting a block, page 84).
- **Program lines can be copied and pasted into other editor instances. If the devices are the same, the line is simply inserted. If the source and target device differ, a plausibility check is carried out.**

6. Cutting a line

If the "**Ctrl**" + "**X**" key combination, the menu function or the icon is hit, the currently active line is copied from the table **and** deleted from the table and thus from the graph. A security prompt must be confirmed. The cut out line can be inserted (see point 7 – Inserting a copied line).

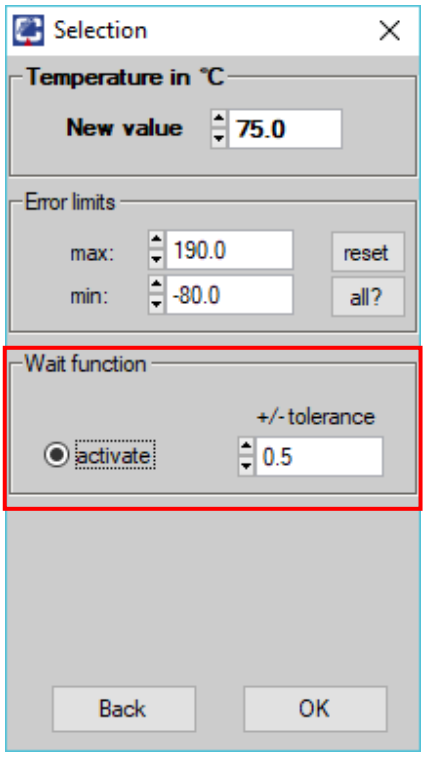
> **Notice**
> - ***Cut out line*** enables not only a marked line but also entire blocks to be cut out. To do so, mark, for example, an optional number of lines in the first column (time). This marked block is then deleted ➔ cut out (see Chapter 9.12 - Copying/inserting a block, page 84).
> - **Program lines can be cut and pasted into other editor instances. If the devices are the same, the line is simply inserted. If the source and target device differ, a plausibility check is carried out.**

7. Inserting a copied line

If the "**Ctrl**" + "**V**" key combination, the menu function or the icon is hit, the copied line (see points 5 and 6 – Copying/cutting out a line) is inserted **after** the currently active line and the table and graph are updated.

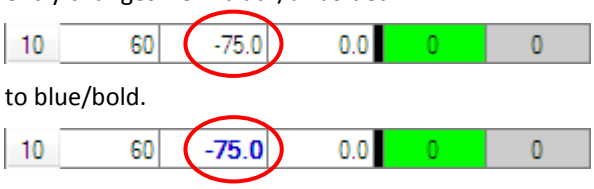
> **Notice**
> - ***Insert copied line*** enables not only a marked line but also entire blocks to be inserted. To do so, first mark and copy/cut out a block. This block is then inserted **after** the currently active line and the table and the graph are updated (see Chapter 9.12 - Copying/inserting a block, page 84).
> - **Program lines can be copied/cut and pasted into other editor instances. If the devices are the same, the line is simply inserted. If the source and target device differ, a plausibility check is carried out.**
> - When inserting a copy of a row, the inserted rows are briefly made visible graphically ➔ the table rows flash and the graphical area flashes.

8. Wait function

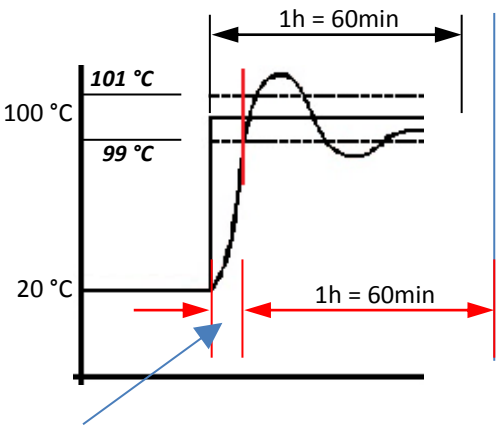


If a wait function is to be assigned to a channel for a certain value, the selection window must be opened (see point 2 – Changing a line):
Hit the "**Enter**" key (if the desired field is selected) or double-click on the desired field.
Now, the field can be **activated** in the Wait function section. If the Wait function is activated, the **tolerance limits** can be set within which the value must be to continue running the program. The interval between the set and the actual values must be below that tolerance if this line is to be seen as processed.
For the temperature channel, a tolerance between 0.5-1K normally makes sense, for humidity a tolerance between 3-5 % rH.

If **OK** is clicked the Wait function is adopted.
If the Wait function is activated, the value display of the table entry changes from black/unbolded



to blue/bold.



Wait range:
The program waits until the value is reached and the program can continue to run.
This time cannot be calculated and is added to the calculated program end.

When the line is processed, the Wait function causes the control system to wait until the actual value has reached the tolerance of the analogue channel. Only then is the next line processed.

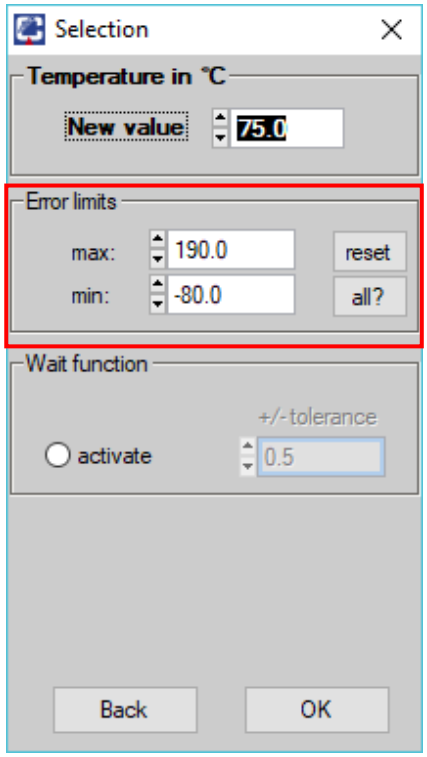
Notice
The tolerance range may not be too small. Otherwise, the required actual value may be reached very late or not at all.

Notice
Communication via Ethernet:
A Wait function can be assigned to **all** channels per line.
Communication via the serial interface:
A Wait function can only be assigned to **one** channel per line.

9. Limits

It is possible to define a software limit for each analogue channel. "Software limit" means that the test cabinet indicates an **error** and shuts down when the actual value of a channel is outside the permitted range.
These limits are transmitted to the control system when the program is started. These limits are valid as long as the program runs. When the program ends, the limits which were valid before the program started are valid again (see Chapter 7.3 - Cabinet information: Error limits (test specimen protection), page 57).

Serial communication:



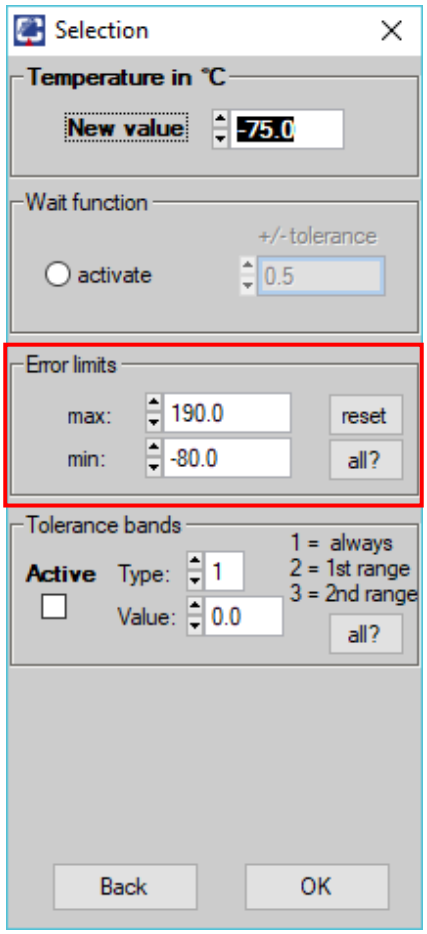
In the case of serial communication, the channel limits are defined for the entire program and can be entered in any line.

If ***reset*** is hit, the entered limits are (re-)set to the cabinet limits.

If ***all?*** is hit, the entered limits are adopted for all program lines.

Notice
Information about the differences between the serial interface and Ethernet interface can be found in Chapter 9.2 - Functionality since V5: Program structures, page 64.

Ethernet communication:



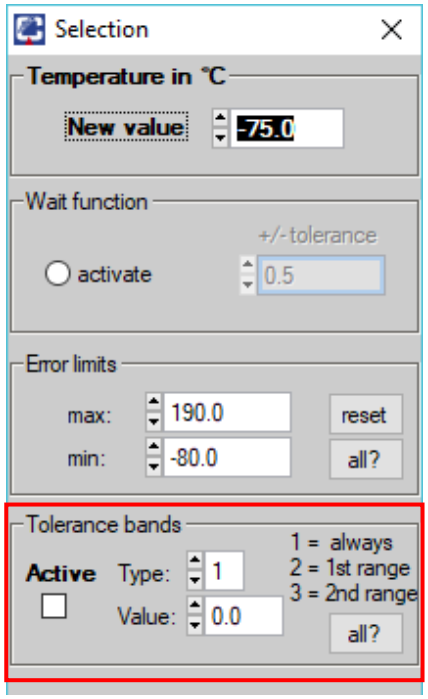
In the case of Ethernet communication, the limits for **each control channel** can be entered in **each line**. This means that a part of the program can be defined in which limits are active, while limit controls are deactivated in the rest of the program.

If ***reset*** is hit, the limits entered in this line are (re-)set to the cabinet limits.

If ***all?*** is hit, the entered limits are adopted for all program lines.

Notice
Information about the differences between the serial interface and Ethernet interface can be found in Chapter 9.2 - Functionality since V5: Program structures, page 64.

10. Tolerance bands (only possible for Ethernet communication)

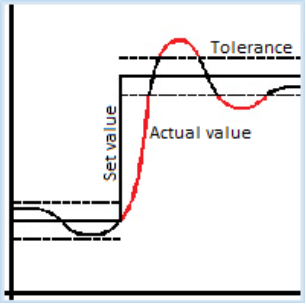


It is possible to define a tolerance band for each analogue channel.
"Tolerance band" means that the cabinet indicates a **warning** when the actual value of a channel is outside the defined range. These tolerance bands are transmitted to the control system when the program is started. These tolerance bands are valid as long as the program runs. When the program ends, the tolerance bands which were valid before the program started are valid again (see Chapter 7.4 - Cabinet information: Tolerance bands, page 58).

During Ethernet communication, the tolerance bands for **each control channel** can be entered in **each line**. This means that a part of the program can be defined in which tolerance bands are active, while tolerance band controls are deactivated in the rest of the program.

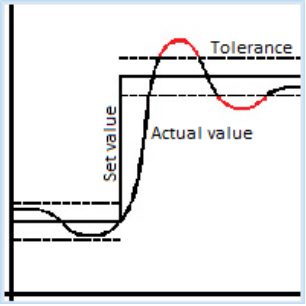
The following settings are available for tolerance band monitoring (selection type):

- always - permanent monitoring
- 1st range - 1st entry into the tolerance band
- 2nd range - 2nd entry into the tolerance band



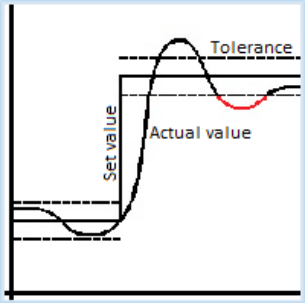
Permanent monitoring:

When the actual value is outside the tolerance, a warning message is displayed.



1st entry into the tolerance band:

A warning message is only displayed if the actual value is outside tolerance after the 1st entry into the tolerance band.



2nd entry into the tolerance band:

A warning message is only displayed if the actual value is outside tolerance after the 2nd entry into the tolerance band.

If ***active*** is set, the respective tolerance band line is activated.

If ***all?*** is hit, the entered tolerance bands are adopted for all program lines.

Notice

Information about the differences between the serial interface and Ethernet interface can be found in Chapter 9.2 - Functionality since V5: Program structures, page 64.

Notice

For points 5-7 (copy/cut out/insert line) **lines and blocks can be saved from one program to another**:
If a line / a block is copied in the first program, this copy can be re-inserted into a new or a second program.
This is, however, only possible within the same loaded editor module.

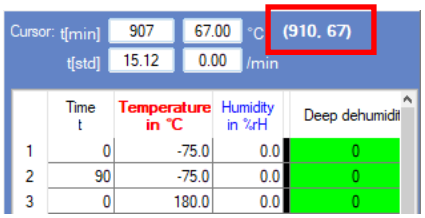
9.4.4 Inserting and changing a line in the graph using the mouse

1. Inserting a value line

An empty program allows a node to be set in the graph by left-clicking. The first click in the graph sets a node on the time 0 and the value where the mouse is (initialization node). All other nodes are set as follows:

- **Time axis (x coordinate):** The coordinate is set in the grid as the next full second, minute or hour (backwards or forwards).
- **Value axis (y coordinate):** The coordinate is set exactly at the full value where the mouse is placed.

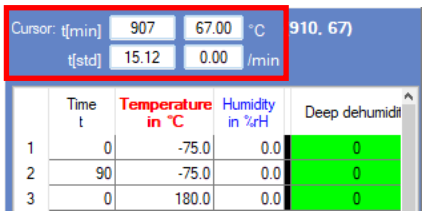
The node is displayed in the channel colour: Temperature ➔ red



The indication at the upper right edge enables a node to be positioned exactly, because it defines the mouse's coordinates in the graph.
In this example:
910 min. and 67 °C
(indications depending on the displayed scale).

If you click on the graph and set a node, a value line using the values of the new node is created in the table.

All nodes necessary for the test cycle can successively be set in the same way, i.e. one node is chronologically set after the other. Because the nodes are connected immediately, nodes can only be set in a free part of the graph (right side). If a node is to be set between two already existing nodes, this node must be inserted subsequently, see point 3 – Insert value line subsequently.



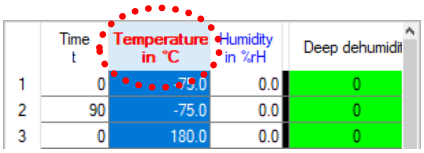
If such nodes are created, a green cursor moves along with them. This cursor indicates where the graph has been clicked last and where a node has been created.

If the cursor changes, the change parameters are displayed in both dimensions:

- time of change in minutes and hours — 907 min. and 15.12 hours
- current channel value — 67.0 °C
- gradient in unit/min. — 0.0 °C / min.

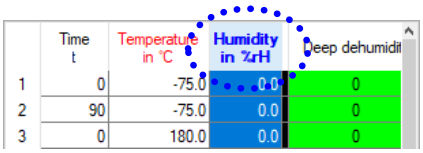
A node in the graph can be set not only in the first analogue channel (temperature), but also in another analogue channel (e.g. humidity). To do so, click on the name (table channel heading):

Creating (red) temperature nodes:



Click on: **Temperature in °C**

Creating (blue) humidity nodes:



Click on: **Humidity in %rH**

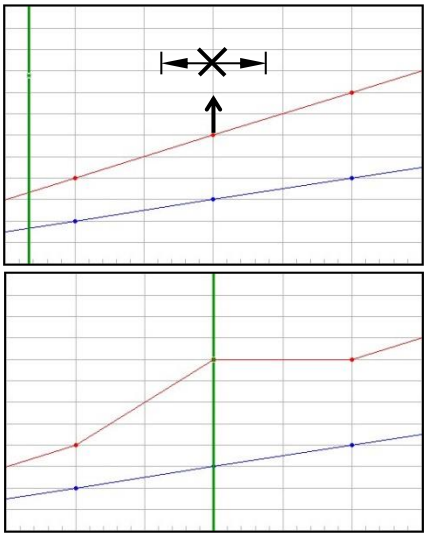
When a humidity node is created, a blue node and a blue line are displayed in the graph and a new value line with the humidity value is created in the table. The temperature adopts the value of the previous line, i.e. the graph displays a temperature constant.

If you try to create a node outside the permitted range of a channel, it is set at the minimum/maximum of the permitted value. If, for example, a humidity node < 0 % rH is set, it is limited to zero.

> **Notice**
> The time in the list is always the relative time between two nodes.

2. Changing a value line

"Changing a value line" means that the temperature, humidity or another value is changed. If the node is to be moved over time, i.e. from right to left, the time in the table must be changed, see Changing a line, Chapter 9.4.3, page 69.



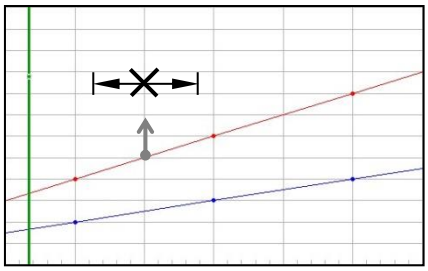
By double-clicking on a new node (x axis (time) remains unchanged, y axis (value) is moved) the present node jumps to the new y value.
The connections are adjusted.
The value of the desired channel is adopted in the table.

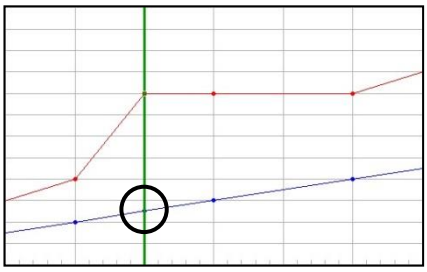
In the graph, the mouse is on the ✕. The node is to be moved upwards by ↑ °C. |←→| is the range to "hit" the node. If you click next to it, the node next to it will also be displaced. Each range goes almost half of the way to the next node.

> **Notice**
> As when inserting a value line using a mouse, when changing a line the correct channel must be selected or an incorrect channel is displaced.

3. Inserting a value line subsequently

"Inserting a value line subsequently" means that a node of a channel is inserted between two other nodes (the value line in the table is inserted between two other value lines).





This new node is created by double-clicking on a new node (x axis (time) optional, y axis (value) optional).
The connections are adjusted.
A new value line is inserted in the table.

In the graph, the mouse is on the ✕. That is where, the new node is to be inserted, ↑ above the red temperature curve. ⟷ is the range to "hit" the node. If you click next to it, the node will be inserted next to it. Each range goes almost half of the way to the next node.

Notice

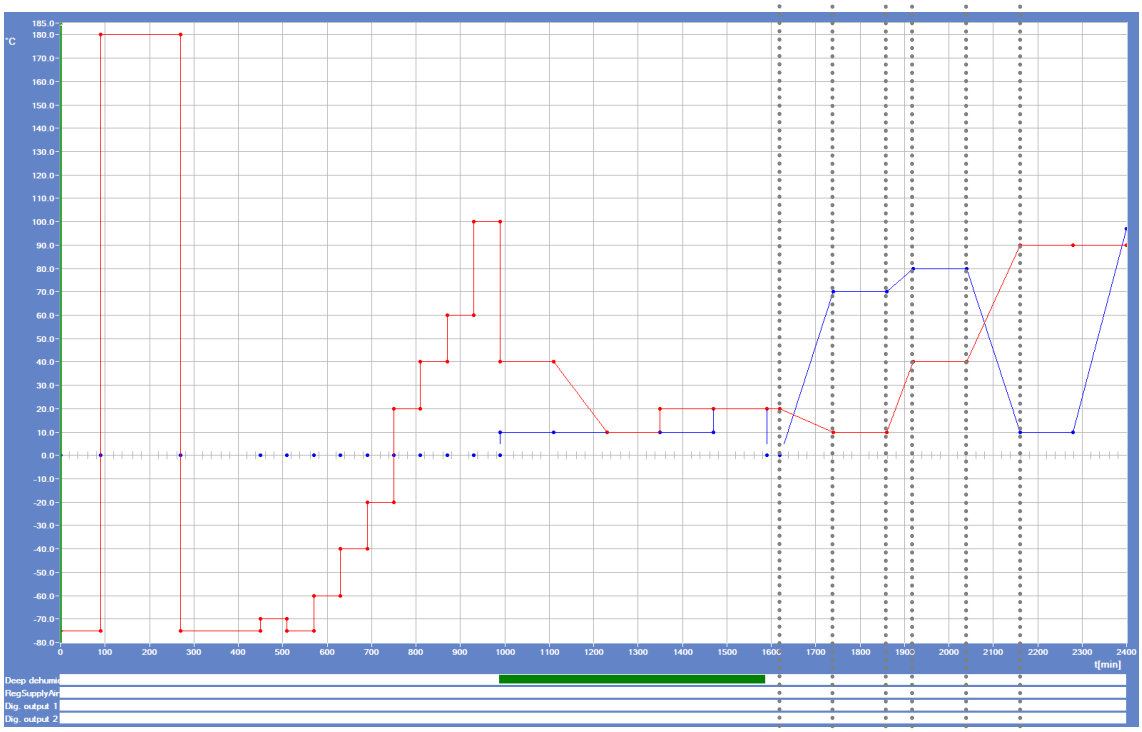
The new humidity node (here: encircled) has been calculated and does not change the rise from the previous to the next humidity node.

If a new temperature node is set, a new humidity node is created, if necessary. In general, all other control channels get a new node (new value line in the list) so that the rise of the other channels does not change.

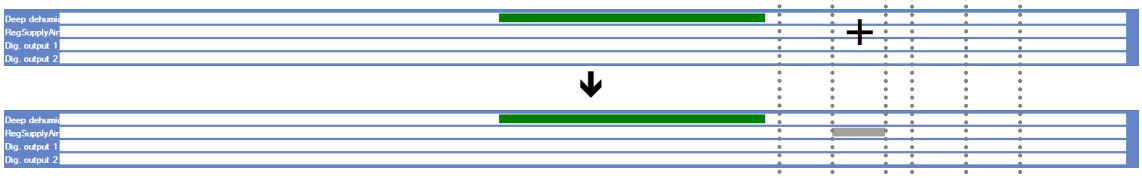
As when inserting a value line using the mouse, when changing the line the correct channel must be selected.

4. Editing digital channels

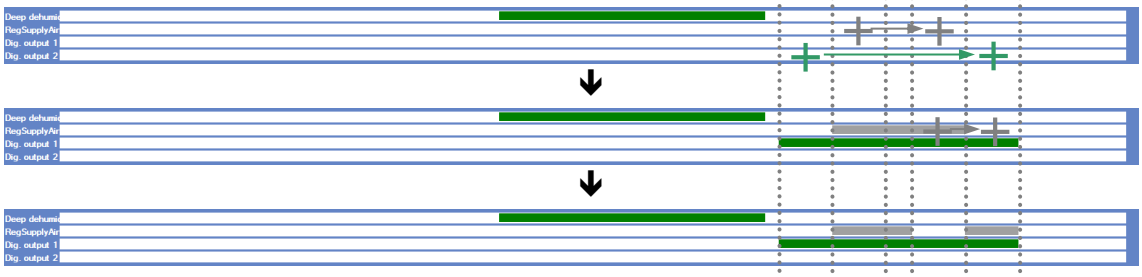
The digital channels can be changed for all the lines.
Below, the “RegSupplyAir” and “Dig. output 1” channels are to be changed.



1. A double-click on a time segment directly sets the digital channel

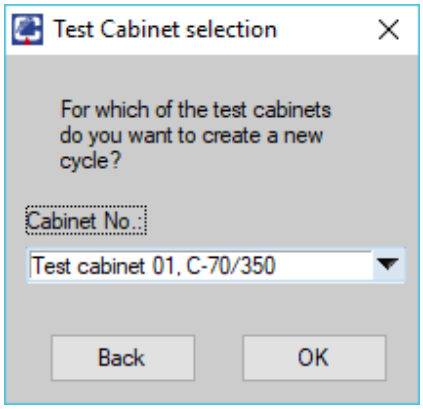


2. Mouse movement:
left-click and hold the beginning of a time segment
then release it at the end of the desired segment

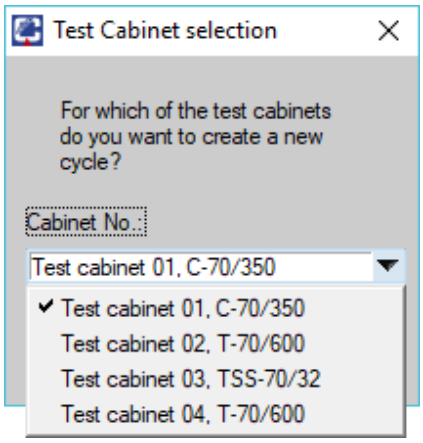


> **Notice**
> The values in the table are automatically adjusted and updated!

9.5 New program



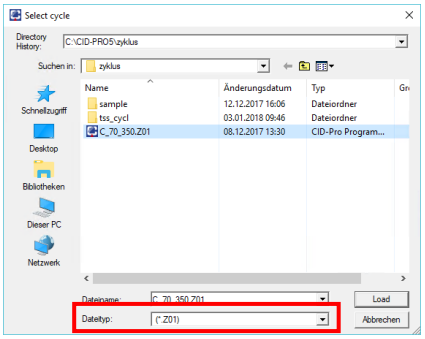
With this function, new programs can be created.



First, a selection field is displayed asking which test cabinet a new program is to be created for.

Once a test cabinet has been selected from the list and confirmed with OK, a new editor module with the **configuration** of the selected test cabinet (digital and analogue channels and their assignments) is created.

9.6 Opening a program



Here, already created programs can be opened and loaded into the editor module. To do so, the desired file must be selected from the list and Load must be confirmed.

To open a file with another cabinet configuration, the file type and name endings must be changed,
e.g. from *.Z01 to *.Z02.

- Z01 ➔ test cabinet 1,
- Z02 ➔ test cabinet 2 etc.

9.7 Saving a program (as)

This function saves the programs.
If a loaded program is changed, an asterisk * is added to the name of the loaded program in the header. This indicates that the program must be saved, if desired, e. g. when leaving the editor module. To do so, the following two possibilities are available:

- **save** : The program is saved under the name under which it was opened. In the case of a new program: ➔ save as
- **save as** : The program is saved under a new name which can be entered in the save dialogue. An existing file can also be overwritten if the Windows prompt is confirmed.

Saved programs are normally located in the "Cycle" subdirectory. It is, however, possible to change this directory.

Notice
A program which has been created for a specific test cabinet (e. g. *.Z01 for cabinet 1) can be saved under another ending (e. g. *.Z02) for cabinet 2. It must, however, be taken into account that the range of the analogue channels and the order of the digital channels in the cabinet must correspond to ensure that the program works for the new test cabinet. In this case, a corresponding message is displayed, because some adjustments must be carried out in the background:

The assignment of the digital channels has changed.
The program is being adjusted to the current cabinet configuration.

You are saving the program "...", created for cabinet 1, for another cabinet.
Please note that the number and position of the set value channels and the digital outputs must correspond.

9.8 Deleting a program

To delete programs which are no longer required, multiple files can be selected at the same time. When the Remove (All) button has been hit and the confirmation message has been confirmed with OK, the selected programs are deleted.

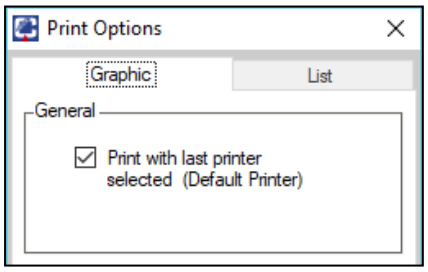
Notice
Deleted files or data are irrevocably lost!!!

9.9 Setting up the printer/page and printing …

The created program can be printed.
It is possible to print the program's graph (see point 2) or table lines (see point 3), both together (graph and table) (see point 4) or the screen (screenshot, see point 5). Besides this, print settings (see point 1) can be made.

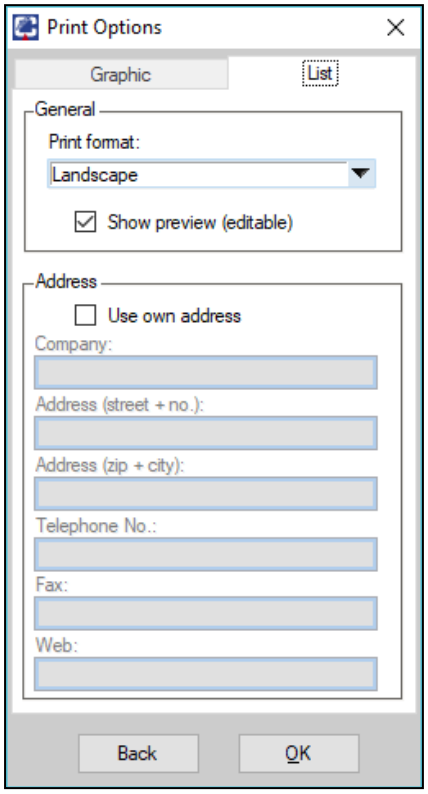
1. **Printer/page setup**

When the print options have been opened, the following options are available:



Graphic:

- Printout on the last printer selected (standard printer):
  If the graph is printed, the printer and its settings must be entered. If the standard printer is to be used with the standard settings, the checkbox must be ticked to avoid the printer prompt.



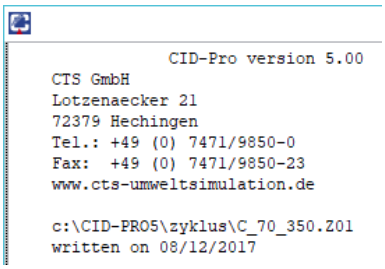
List:

- Print format:
  Select from **portrait format, landscape** or **printer settings.**

- Show preview (editable):
  Show a preview before printing?

> **Notice**
> The preview is editable, i.e. it can be changed in the window.

- Use your own address:
  The list contains a file header which includes the CTS address. To display your own address, "Use own address" must be ticked. The following address information is now freely selectable: **Company, street, zip + city, Telephone No., Fax and Web**.



2. **Print graph**

When this function has been selected, the graph is printed – depending on the setting in the options (see point 1 – Setup printer/page – graph) with printer selection or on the standard printer.

3. **Printing a list**

   With this function, the value list is printed on the standard printer. This printout can be controlled depending on the print options (see point 1 – Setup printer/page – list).

4. **Printing both (graph and list)**

   When this function has been selected, the graph and the list are printed – depending on the setting in the options, for the graph with printer selection or on the standard printer and for the list with the corresponding print option (see point 1 – Setting up the printer/page – graph and list).

5. **Printing the screen**

   The screen is output as it is displayed on the monitor. This function is the printout of a screenshot, except for the toolbar and menu bar.

9.10 Printing a PDF...

The PDF print functions create PDF files with the same content as the standard print functions, see Chapter 9.9 - Setting up the printer/page and printing …,

- Point 2 – Printing a graph
- Point 3 – Printing a list and
- Point 5 – Printing the screen

When these functions are selected, a dialogue opens in which the name and path of the PDF file can be indicated. The storage path indicates the standard program directory. The name differs as follows:

- **Printing the graph** The standard name is the test program opened, followed by the cabinet number and the suffix “graph”, e.g.:

Program:	NewProgram.z01
PDF graph file:	NewProgram_z01_Graph.pdf

- **Printing a list** The standard name is the open program followed by the cabinet number and the suffix “list”, e.g.:

Program:	NewProgram.z01
PDF list file:	NewProgram_z01_List.pdf

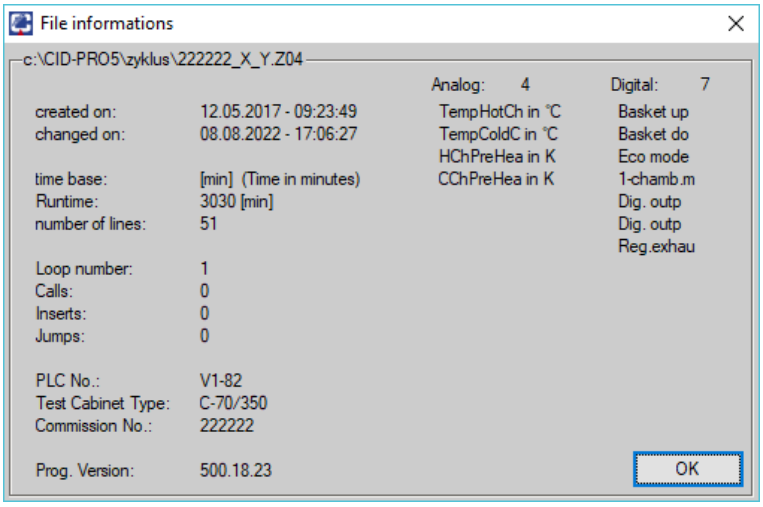
- **Printing the screen** The standard name is the open program, followed by the cabinet number and the suffix “screen”, e.g.:

Program:	NewProgram.z01
PDF screen file:	NewProgram_z01_Screen.pdf

After successful creation of the PDF file, this file is immediately opened in the default PDF viewer (activated option “Open PDF file immediately after saving?”, see Chapter 6.9 - PDF settings, page 54) or a message “C:\CID-PRO5\zyklus\NewProgram_z01_Graph.pdf was created successfully” is displayed.

9.11 File information of a loaded program

All data and properties saved in the program are displayed here.
The loaded program regulates the displayed analogue and digital channels, here in the example 4 analogue channels (temperature hot chamber, ...) and 7 digital channels (basket up, ...). The creation/change date, the time base, the entire runtime and the number of lines are also displayed. A listing of the special lines (loops, subprograms, etc.) and cabinet data (cabinet type, commission number, etc.) is output.



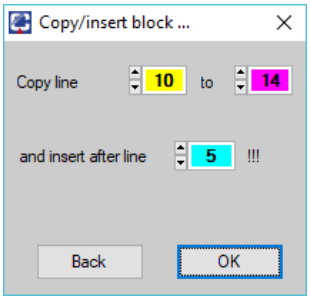
9.12 Copying/inserting/deleting a block

It is possible to copy, cut out and/or inserts not only one program line, but also an entire block of lines.

1. ...insert/copy

	Time t	Temperature in °C	Humidity in %rH	Deep dehumidi
1	0	-75.0	0.0	0
2	90	-75.0	0.0	0
3	0	180.0	0.0	0
4	180	180.0	0.0	0
5	0	-75.0	0.0	0
6	180	-75.0	0.0	0
7	0	-70.0	0.0	0
8	60	-70.0	0.0	0
9	0	-75.0	0.0	0
10	60	-75.0	0.0	0
11	0	-60.0	0.0	0
12	60	-60.0	0.0	0
13	0	-40.0	0.0	0
14	60	-40.0	0.0	0
15	0	-20.0	0.0	0
16	60	-20.0	0.0	0
17	0	20.0	0.0	0
18	60	20.0	0.0	0
19	0	40.0	0.0	0
20	60	40.0	0.0	0

After you click on the **copy/insert block** function (F6 key) the following window opens:



The lines which are to be copied are marked (from “yellow” to “pink”) and the line **after** which the block is to be entered is marked in light blue. If an indication is changed, the list is adapted and updated:

5 All lines can be selected.

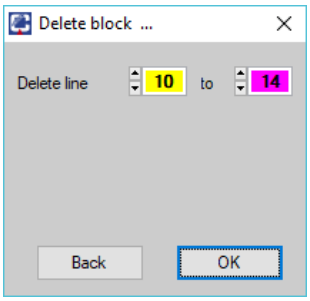
10 always < than 14

> **Notice**
> The copied block is inserted after the selected line.

2. ...delete

	Time t	Temperature in °C	Humidity in %rH	Deep dehumidi
1	0	-75.0	0.0	0
2	90	-75.0	0.0	0
3	0	180.0	0.0	0
4	180	180.0	0.0	0
5	0	-75.0	0.0	0
6	180	-75.0	0.0	0
7	0	-70.0	0.0	0
8	60	-70.0	0.0	0
9	0	-75.0	0.0	0
10	60	-75.0	0.0	0
11	0	-60.0	0.0	0
12	60	-60.0	0.0	0
13	0	-40.0	0.0	0
14	60	-40.0	0.0	0
15	0	-20.0	0.0	0
16	60	-20.0	0.0	0
17	0	20.0	0.0	0
18	60	20.0	0.0	0
19	0	40.0	0.0	0
20	60	40.0	0.0	0

After you click on the **delete block** function (F7 key) the following window opens:

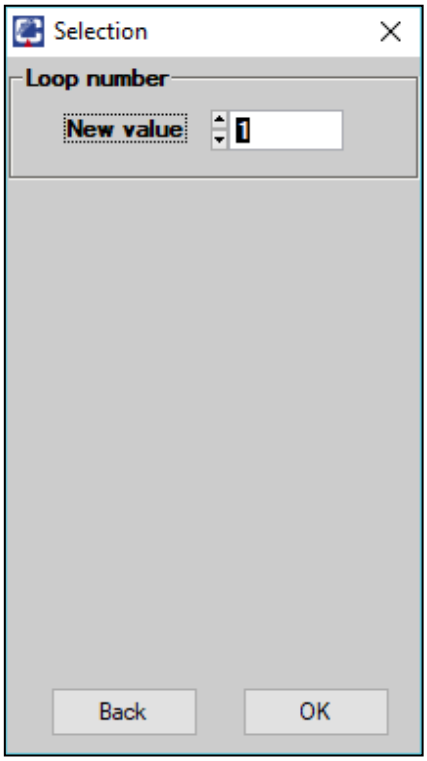


All lines which are to be deleted are marked; from “yellow” to “pink”. If an indication is changed, the list is adapted and updated:

10 always < than 14

9.13 Loop (beginning and end)

A loop serves to repeat a program segment multiple times. This requires a loop beginning and end. Besides this, the number of loops must be defined at the beginning of the loop.



Beginning of the loop:

To program a loop, the line **after** which the loop is to begin must be activated by left-clicking. If the **F2** key, the menu function or the icon is hit, the beginning of the loop is inserted. The table is displayed as follows:

1 x	SA	SA	S	S

"1x" in the time column indicates how often a loop runs, in this example once.
If the loop start line is **double-clicked**, the window next to it opens for you to enter the number of loops. This must be confirmed by hitting OK.
A vertical, pink line which marks the beginning of the loop is displayed in the graph for you to check.

End of the loop:

To insert a loop end, the line **after** which the loop end is to be inserted must be activated by left-clicking. If the **F3** key, the menu function or the icon is hit, the end of the loop is inserted. The table is displayed as follows:

	SE	SE	S	S

A vertical, purple line which marks the end of the loop is displayed in the graph for you to check.

Technical data:

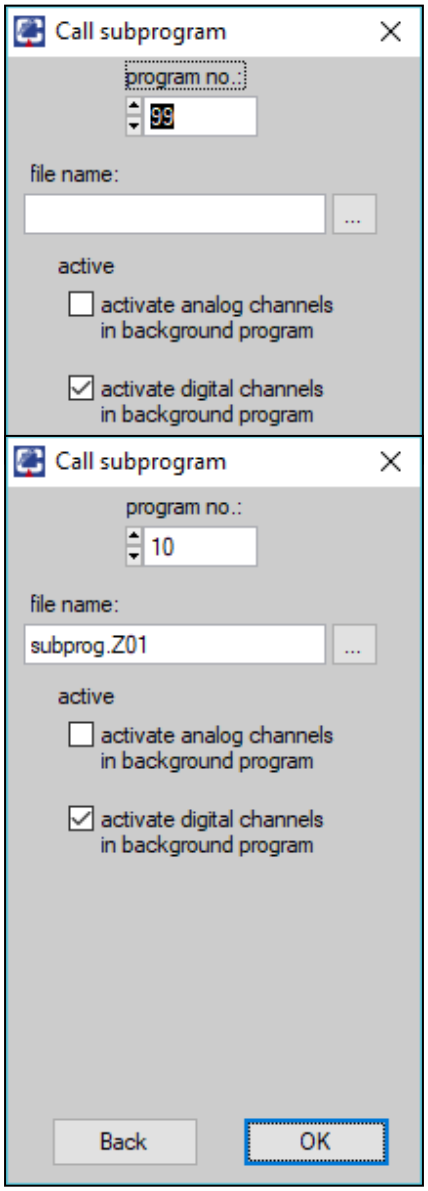
Maximum number of different loops:	20
Maximum number of loops per instance:	9999
The loops can also be nested:	{ { { } } { } }

L1 L2 L3

Notice
For each beginning of a loop an end must also be programmed. When the program is saved, the numbers of loop beginnings and ends are checked. If the numbers differ, a warning message is displayed.

Notice
If the loop repeat number is **1**, the code lines between the **beginning** and the **end of the loop** are run only once and are not repeated.

9.14 Calling a subroutine



If subroutines are to be used, the subroutine must always be created first and then the main program.

To call a subroutine, the line **after** which the subroutine is to be called must be activated by left-clicking. If the **F4** key, the menu function or the icon is hit, a new window for the subroutine call is displayed.

The program number assigns the subroutine a storage location in the cabinet control system. Besides this, the subroutine must be selected and loaded.
When the main program is transmitted, the subroutine is automatically transmitted to this program number, too. The main program and every subroutine used must get its own program number.

The status display in automatic mode always refers to the main program. This means that the set values in the test cabinet do not match with the displayed values if the analogue channels are active in the subroutine.

If OK is hit, the following line is displayed after the marked line:

Call	Prog 10		C	C

A vertical, turquoise line which marks the program call is displayed for you to check in the graph.

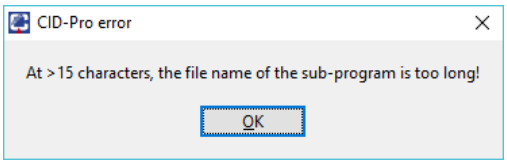
Notice

- When the main program ends, a started subroutine is terminated as well.
- **A subprogram may not contain any other subprogram (insert or call).**
- With a double click of the right mouse button on a table field of the call line (the field must already be selected), the call subprogram is opened in a new editor instance.

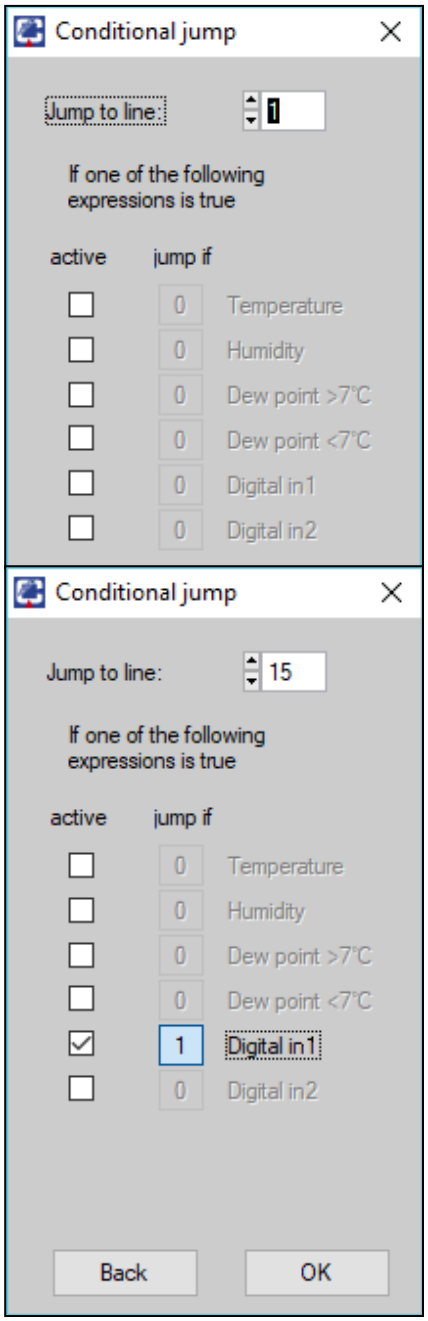
One example for the application of subroutines is when digital channels sometimes need to be switched between in a long main program. A recurring pattern for switching the digital channels can be stored in a subroutine. The desired set value course is now programmed in the main program. At the places where the digital channels are to be triggered, the subroutine is inserted and only the digital channels are activated in the subroutine.
If the digital channels are active in the subroutine, they remain in the state of the subroutine's last line until a new line is reached in the main program. The digital channels which are no longer required should be reset at the end of the subroutine.
The difference between a **Calling a subroutine** and **Inserting a program** (Chapter 9.16, page 88) is explained in Chapter 9.17 - Difference between "Call" and "Insert", page 89.

Notice

If a program is loaded whose name is too long (max. length: 16 characters including the file extension), an error message is displayed:



9.15 Conditional jump



Conditional jumps are program branches triggered by digital input statuses. The jump function allows programs to be terminated or varied by external events.
To insert a conditional jump, the line **after** which the jump is to be inserted must be activated by left-clicking. If the **F5** key, the menu function or the icon is hit, a window for the conditional jump is displayed. The table is initially displayed as follows:

xxxx	xxxx	xxxx	x	x

First, the line is shown to which the function is to jump if the conditions are met (**Jump to line**). Here, the desired line must be selected. To help you, the selected line is displayed in blue/black in the table:

xxxx	xxxx	xxxx	x
60	-60.0	0.0	0
0	-40.0	0.0	0
60	-40.0	0.0	0
0	-20.0	0.0	0

One or more digital channels (indicators) can be selected as **conditions for a jump**. If multiple channels are activated, they are linked via a logical **OR**. Besides this, the status of the respective channel can be defined.
For example, to activate the temperature, that channel must be ticked (active). Thus, the channel name is activated and no longer greyed out.
The status is defined by setting or resetting the button – the status 0 or 1 is displayed.

If OK is hit, the following line is displayed after the marked line:

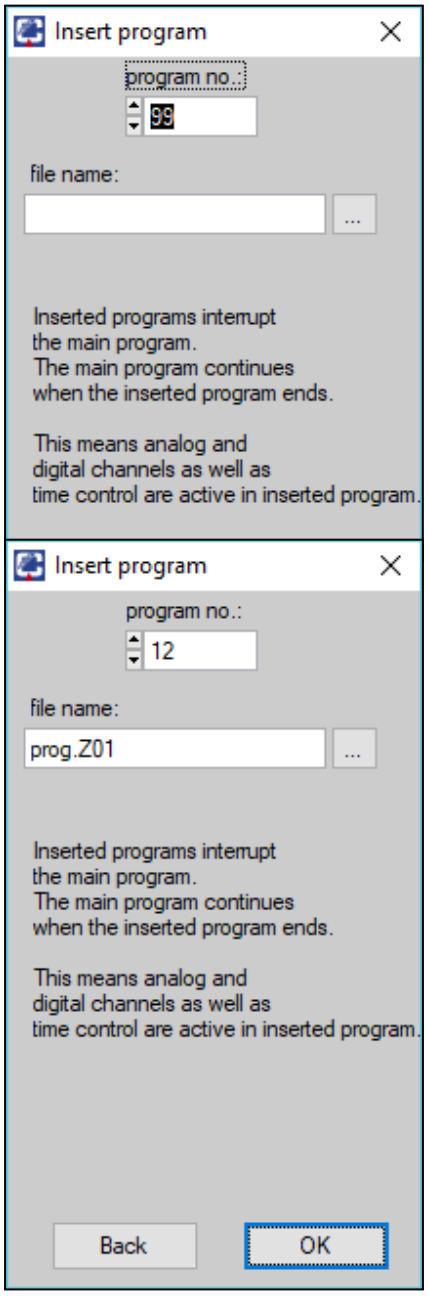
Jump	Line 15		J	J

A vertical, dark green line which indicates the conditional jump is displayed for verification in the graph.

Notice

- The jump function is active during the entire runtime of the line following the jump function. In this way, not only a single query, but also a type of interrupt is possible.
- If the jump function is used within loops and the jump target lies outside the loop, the displayed loop number and level are no longer correct.
- It is not possible to set two or more jump lines one after the other.

9.16 Inserting a program



If a subroutine is to be inserted, the subroutine must be created first and then the main program.

To insert a subroutine, the line **after** which the modular program is to be entered must be activated by left-clicking. If the **F10** key, the menu function or the icon is hit, a window for the modular program call is displayed.

The program number assigns the modular program a storage location in the cabinet control system. Besides this, the modular program must be selected and loaded.
When the main program is sent, the modular program is also transmitted automatically to this program location. The main program and every modular program used must get its own program number.

The status display in automatic mode (see Trend and auto graphs Chapter 5.8, page 23) shows the main program and the modular program.

When OK is hit, the following line is displayed after the marked line:

Insert	Prog 12	90 min	I	I

A vertical, light green line which indicates the modular program is displayed for verification in the graph.
The third column (here 90 min) indicates the total runtime of the inserted program.

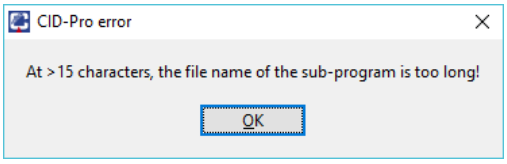
The difference between **Calling a subroutine** (Chapter 9.14, page 86) and **Inserting a program** is described in Chapter 9.17 - Difference between “Call” and “Insert”, page 89.

Notice

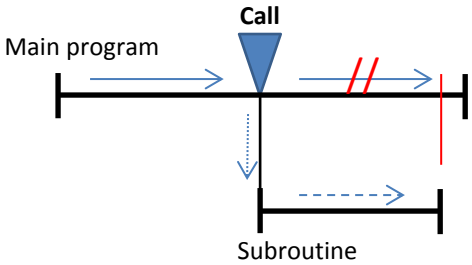
- Inserted modular programs interrupt the main program. The main program only continues if the modular program has been terminated. This means that in the modular program, not only the analogue and digital channels but also time control are active.
- **A subprogram may not contain any other subprogram (insert or call).**
- With a double click of the right mouse button on a table field of the insert line (the field must already be selected), the insert subprogram is opened in a new editor instance.

Notice

If a program is loaded whose name is too long (max. length: 16 characters including the file extension), an error message is displayed:



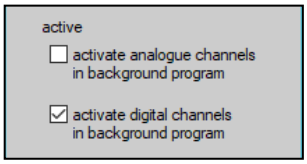
9.17 Difference between “Call” and “Insert”



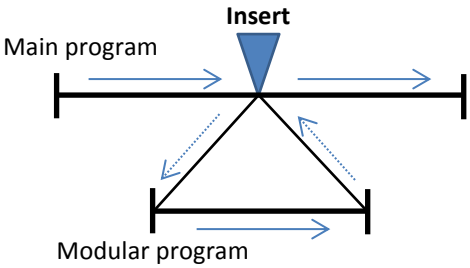
Call (calling a subroutine):

Called subroutines run parallel to the main program. For example, digital functions may run during a temperature program (with the same or a different time base).

The program which is to be called must be available in the standard program directory.



The active channels can be set or reset via checkboxes. The analogue and digital channels are correspondingly processed. During this time, the corresponding channels of the main program remain unobserved.



Insert (inserting a program):

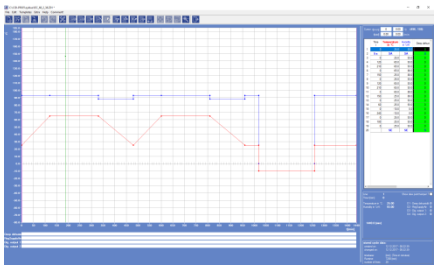
Inserted programs interrupt the main program.
The main program only continues when the inserted program ends. In the inserted program, not only the analogue and digital channels but also time control are active. The time base of the inserted program may differ from the main program’s time base.

The program which is to be inserted must be available in the standard program directory.

9.18 Templates

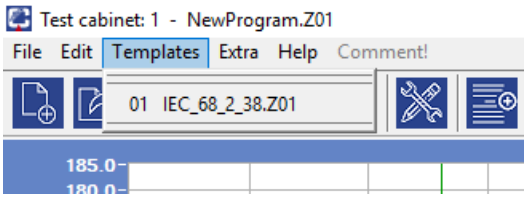
Templates are programs which can be used again and again. These templates are stored and can be opened via the template menu, then saved under another name after being adapted. In this way, recurring sequences can separately be saved, called and adapted. These templates are similar to the document templates (*.dot) from Microsoft® Word, which define the basic structures of a document.

1. Program creation



2. Save in the folder ***CID installation path*\zyklus\sample**
   , e.g.: **C:\CID-PRO5\zyklus\sample\IEC_68_2_30.Z01**
   (This path can be changed or adapted in the Configuration, General section under “default directories”.)

3. If the editor module is opened again and a new program is to be created, this template program appears as an entry in the “Templates” menu.



4. Clicking on this template opens this program in the editor module.

5. The opened program can now adapted to the new requirements.

6. Save the modified template under a new name which is characteristic for this application/test by hitting “save as ...” in the ***CID installation path*\zyklus** folder. The standard path for the “save as …” dialogue is the “zyklus” folder,
   e.g.: **C:\CID-PRO5\zyklus\sample\TestSensorA.Z01**

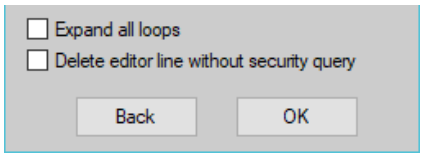
> **Notice**
> The “save” function without a path prompt (storing the file which is open at the moment) is only carried out with an additional security prompt, so as not to overwrite the template by mistake.

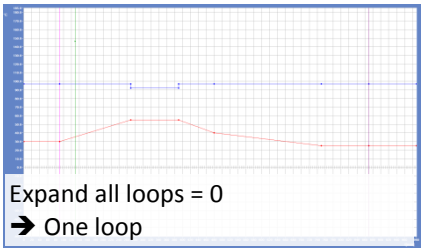
7. If the template in the ***CID installation path*\zyklus\sample** folder is to be changed, it must be opened as described above. The changed or adapted template must then be saved with the same name and the “save as ...” function in the sample folder. An additional security prompt ensures that you do not unintentionally overwrite an important template.

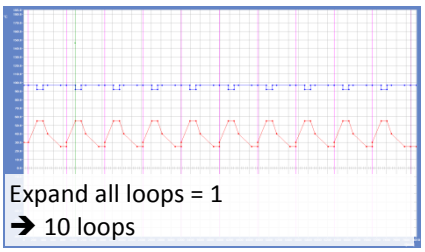
> **Notice**
> The **templates** for cabinet X are only **visible** in the editor module if cabinet X has been selected before the editor module was opened or if a new program is created.

9.19 Options

Notice
The functions of the “Programs in unit” menu are now located in the Cabinet information under Cabinet programs (see Chapter 7.6, page 60)!







Expand all loops:

If this option is set and program loops are used in the created program, these loops are displayed one after the other according to the indicated number.
In this way, the correct course of the set values can be checked, especially around the jump at the beginning of a loop and after a loop has been processed.

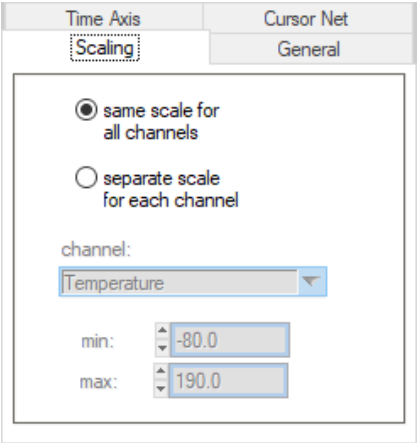
If this option is not set, only one loop is displayed in the graph.

The loops are displayed in different ways in the **same** program.

Delete editor line without security query:

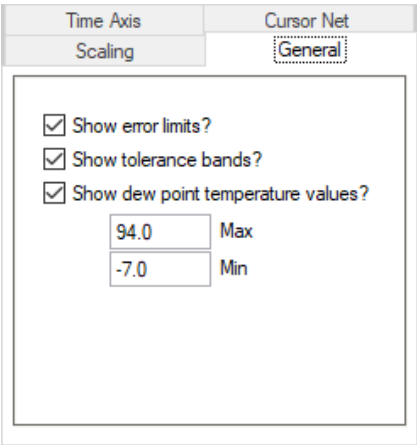
If a lot of lines are deleted in a program, a security prompt must be confirmed for each line.
If the “Delete editor line without security prompt” option is activated, the security prompt is suppressed and the lines are deleted immediately.

- **Scaling**



To scale the y axis, you can select whether the same range of values is to be valid for all channels. In this case the scale is always the same. It starts at the smallest value of all analogue channels and goes to their greatest value.
The alternative is for each channel to have its own range. If the active analogue channel is changed, the scale changes and the range displayed in the graph is shifted. Thus, the range for each channel can be set in such a way that the resolution is at a maximum.

- **General**

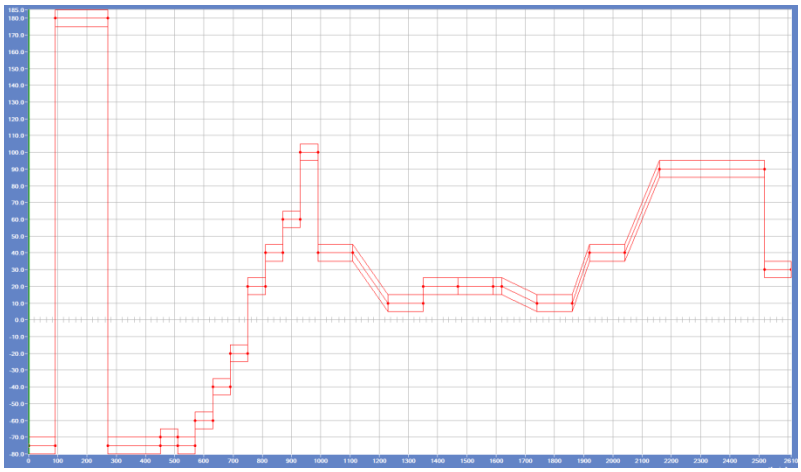


Show error limits?

The limits entered in the program (see Chapter 9.4.3 - Limits, page 72) are also displayed in the editor module graph.

Show tolerance bands?

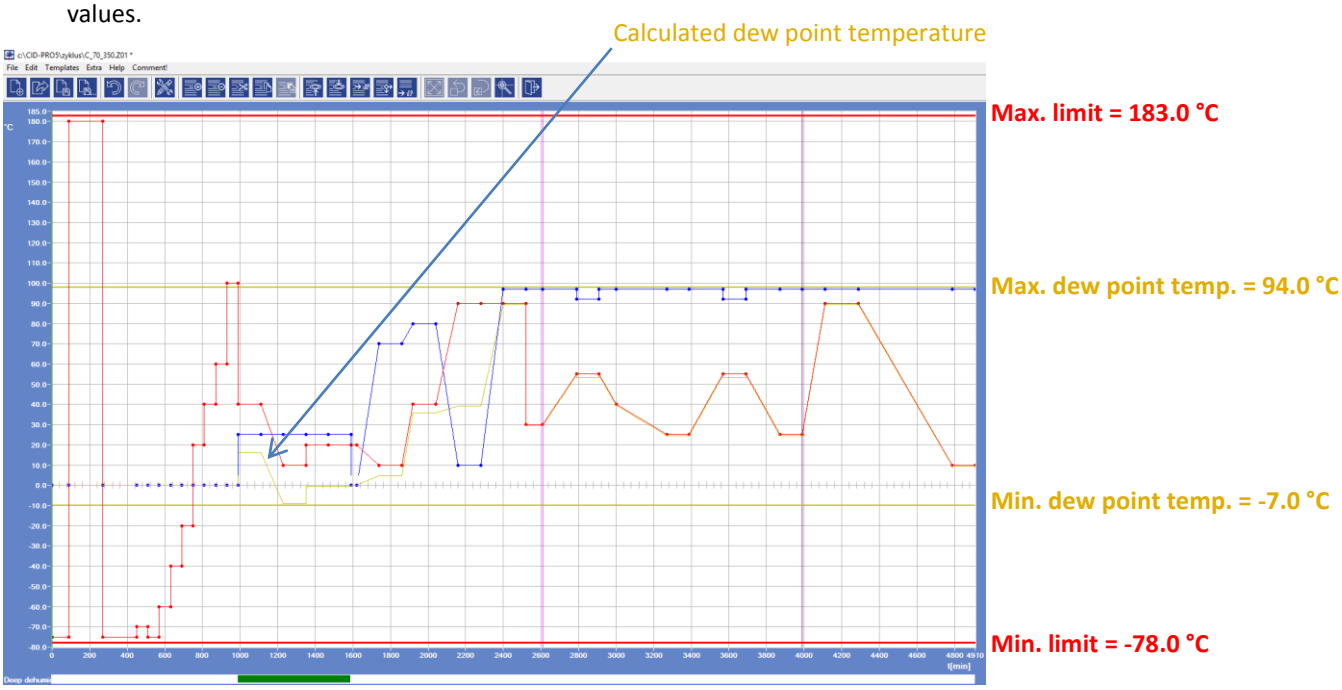
The tolerance bands entered in the program (see Chapter 9.4.3 - Tolerance bands, page 73) are also displayed in the editor module graph. The tolerance bands are then displayed as follows:



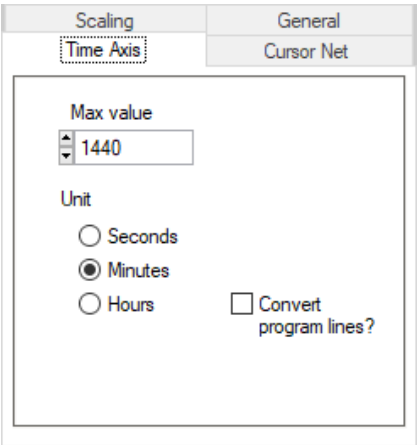
Show dew point temperature values?

The **Max** and **Min** entries are the maximum and minimum dew point temperatures of the integrated cabinet. This information can be found in the operating instructions or on the test cabinet's type plate.

If this option is activated, the maximum and minimum dew point temperatures are displayed with a thick, mustard-coloured line in the editor module graph. Besides this, the **calculated** dew point temperature values (thin, mustard-coloured line) are displayed for each individual value line.
Thus, it is immediately obvious whether the cabinet can reach the predefined temperature and humidity values.



- **Time Axis**



The **maximum value** defines the maximum duration of the program, here 1440 (minutes).

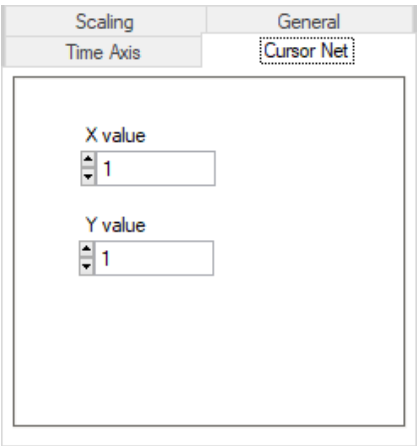
Unit defines the time base: seconds, minutes or hours.
If the unit is changed, the time base is adjusted, i.e. 5 minutes change to 5 hours, for example.
If a unit is changed and the "**Convert program lines?**" option is set, the program tries to convert all the time values of the loaded program.

> **Notice**
> Because the time values must be integrals, the conversion must also deliver an integral result, i.e. when changing from seconds to minutes and from minutes to hours the values must be a multiple of 60.
> ➔ 60 min = 1 hour correct
> ➔ 70 min = 1.17 hours **not** correct
> A conversion from hours to minutes or from minutes to seconds is always possible.

Conversion possibilities:

	Convert program lines?	
	Yes	**No**
Seconds to hours	**Check conversion**	✓
Seconds to minutes	**Check conversion**	✓
Minutes to hours	**Check conversion**	✓
Minutes to seconds	✓	✓
Hours to minutes	✓	✓
Hours to seconds	✓	✓

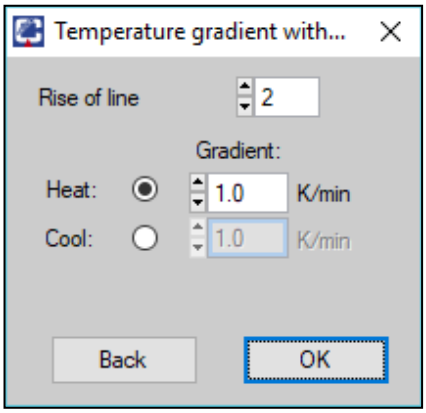
- **Cursor Net**



In the cursor net, the points can be defined to which the cursor jumps for the graphic input. Thus, the desired nodes can be found more easily.

9.20 Defining the gradient

With the **Gradient …** option under Extra, exact rises can be calculated/input.



...with (value calculation)

The value calculation determines the **Y coordinate** of the next point (e.g. temperature value) with the predefined duration and the desired rise. To activate the value calculation, the line which is to be the starting point of the defined rise must be activated by left-clicking. If the "**F8**" key or the **Gradient with …** function in the Extra menu is hit, a window for the rise information displayed:

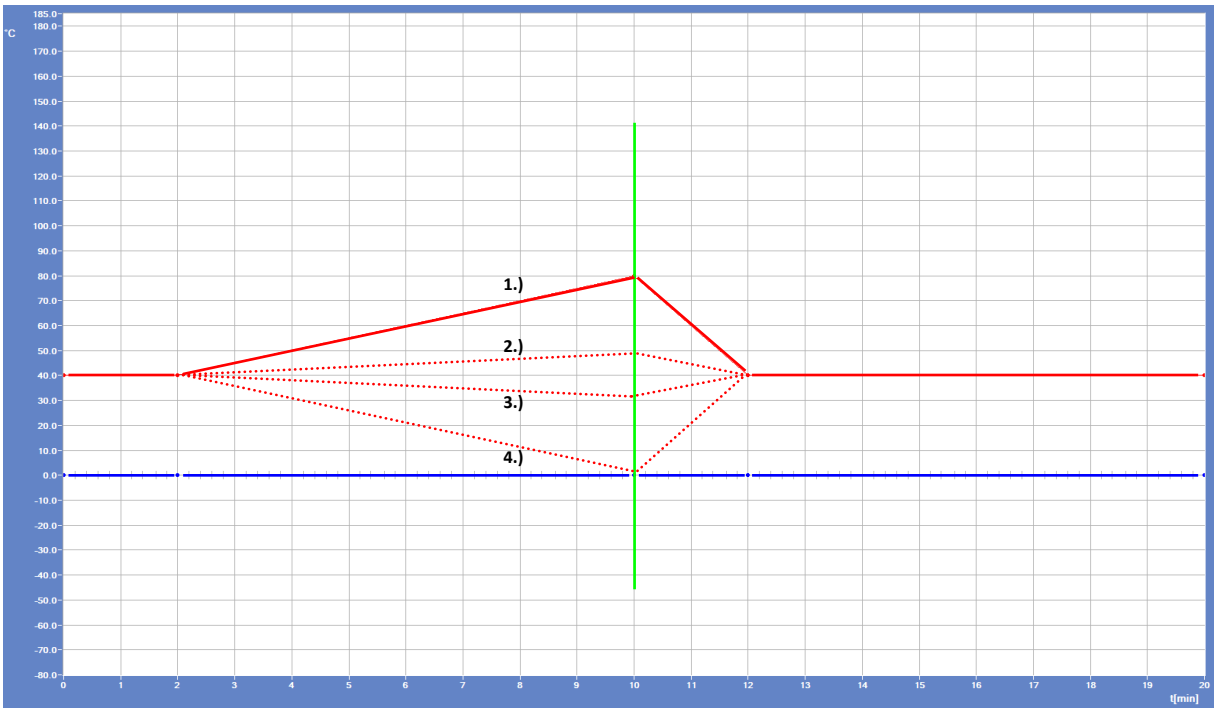
- **Rise from line:** Starting point of the rise
- **Heat:** **positive** rise in K/min (> 0)
- **Cool:** **negative** rise in K/min (< 0)

General calculation:

$$rise = m = \frac{y}{x} = \frac{temperature}{time}$$

Examples starting at line: 2 (time 2 min and temperature 40 °C)
next node line: 3 (time 8 min):

1.) Gradient: Heat 5 K/min ➔ point 3: temperature = 80 °C (= 40 °C + 5*8 °C)
2.) Gradient: Heat 1 K/min ➔ point 3: temperature = 48 °C (= 40 °C + 1*8 °C)
3.) Gradient: Cool 1 K/min ➔ point 3: temperature = 32 °C (= 40 °C + 1*8 °C)
4.) Gradient: Cool 5 K/min ➔ point 3: temperature = 0 °C (= 40 °C + 5*8 °C)



Notice
The control system tries to reach the predefined rise as it works through the program processing. The max change rate of the test cabinet must be checked. If a rise in the program exceeds the max change rate of the test cabinet, the program rise will not be achieved.

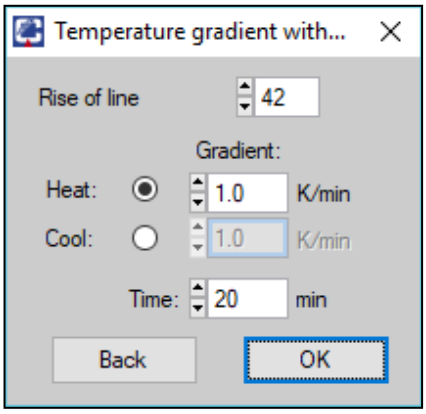
Notice

Only two line of values may be processed. If a line is not a value line, but instead, for example, the beginning of a loop, the function is interrupted and an error message is displayed.

If a value outside the permitted value range is calculated, e.g. Temperature = 400 °C, the function is interrupted and an error message is displayed.

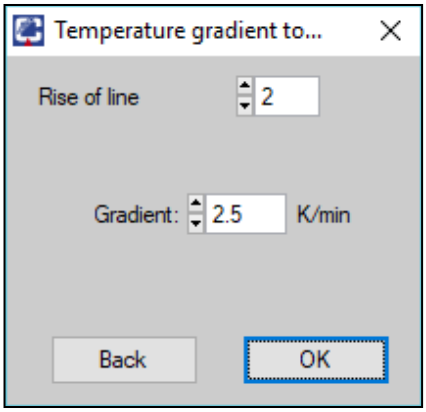
The time between the two nodes must be non-zero. If a jump has been programmed, the function is interrupted and an error message is displayed.

This procedure applies for the subsequent processing and/or adaptation of a program:



If the last line is to be selected as the starting line, additional information is required on how long the rise is to be.

The time field adopts the X coordinate (distance over time) for the calculation.



...to (time calculation)

The time calculation determines the **X coordinate** of the next point (duration over time) with the predefined Y coordinate of the next point (e.g. temperature value) and the desired rise.
To activate the value calculation, the line which is to be the starting point of the defined rise must be activated by left-clicking on it. If the "**F9**" key or the **Rise to ...** function in the Extra menu is hit, a window for the rise information is displayed:

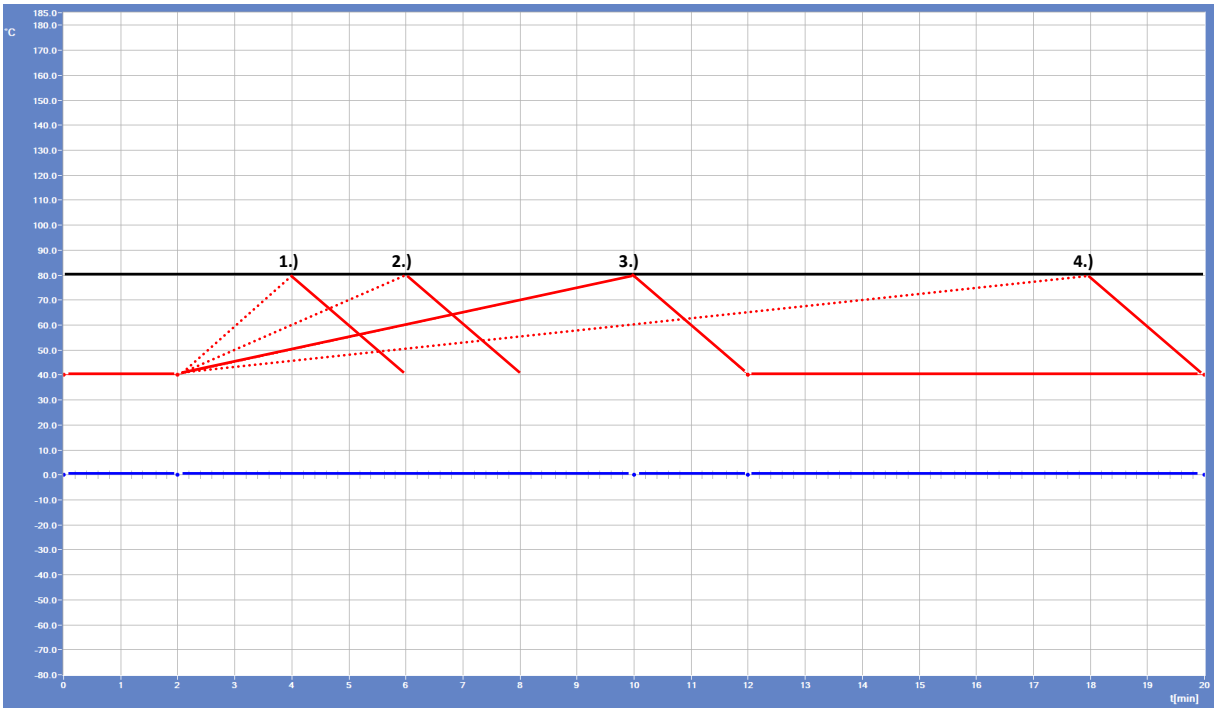
- **Rise from line:** Starting point of the rise
- **Gradient:** gradient in K/min (The heating and/or cooling is predefined by the Y coordinate (e.g. temperature))

General calculation:

$$rise = m = \frac{y}{x} = \frac{temperature}{time}$$

Examples starting at line: 2 (time 2 min and temperature 40 °C)
next node line: 3 (temperature 80 °C):

1.) Gradient: 20 K/min ➔ point 3: time = 2 min (= 40 °C / 20 K/min)
2.) Gradient: 10 K/min ➔ point 3: time = 4 min (= 40 °C / 10 K/min)
3.) Gradient: 5 K/min ➔ point 3: time = 8 min (= 40 °C / 5 K/min)
4.) Gradient: 2.5 K/min ➔ point 3: time = 16 min (= 40 °C / 2.5 K/min)



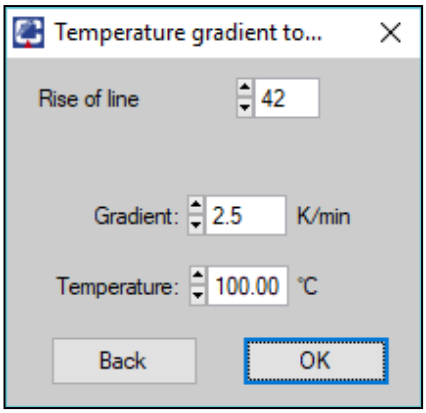
Notice

The control system tries to reach the predefined rise as it works through the program processing. The max change rate of the test cabinet must be checked. If the respective rise in the program exceeds the max change rate of the test cabinet, the program rise will not be achieved.

Only two lines of values may be processed. If a line is not a value line, but instead, for example, the beginning of the loop, the function is interrupted and an error message is displayed.

The value (e.g. temperature) between the two nodes must be non-zero. If a horizontal straight line has been programmed, the function is interrupted and an error message is displayed.

This procedure applies for the subsequent processing and/or adaptation of a program:



If the last line is to be selected as the starting line, additional information is required on the value (e.g. temperature) at which the rise is to end.

The value field (e.g. temperature) adopts the Y coordinate for the calculation.

9.21 Saving a file in a data pool

A data pool is a storage area in which universal programs are saved, i.e. programs are created which can be used on multiple identical test cabinets. The programs in this area differ from normal programs by their ending. Data pool programs end with *.Pxx, e.g. *P01, while normal programs end with *.Zxx, e.g. *Z01.
Data pool programs can be used like normal programs. To open a data pool program, however, you will need to click on the file type: All files (*.*) and select and open the correct file.

The big advantage of these data pool programs is that when starting in automatic mode, not only normal programs can be selected, but also data pool programs which come from another cabinet. When a data pool program is loaded, the configuration of this program is compared with the configuration of the test cabinet onto which the program is to be loaded. If the channels match, the data pool program can be loaded. If the most important features of the configurations do not match, the transmission is interrupted.
The exact procedure for running a data pool program in automatic mode is described in Chapter 11 - Starting programs (automatic mode), page 127.

Notice

If lots of different test cabinets are connected to the CID-PRO software, this data pool program function is normally not worth using.
If multiple identical test cabinets are connected to the CID-PRO software, i.e. cabinets with the same configuration, this data pool function makes sense, because only one program has to be maintained for all cabinets.

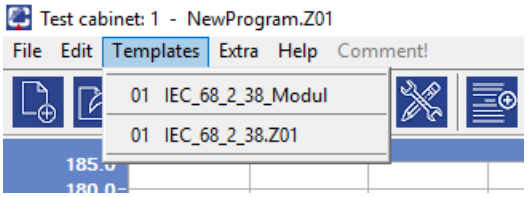
9.22 Saving a file as a library

Libraries differ from Templates (see Chapter 9.17, page 89) in the following points:

- **Display:** Libraries are displayed for **all cabinets**.
- **Saving:** Libraries can only be saved in the **Sample folder** ***CID installation path*\zyklus\sample**.

1. Program creation
2. Library is stored using the **Extras/Save file as library** function.
   The path and the file ending cannot be changed.
   Path: ***CID installation path*\zyklus\sample**
   (This path can be changed or adapted in the Configuration, General section under standard directories.)
   Ending: .clib (CTS library)

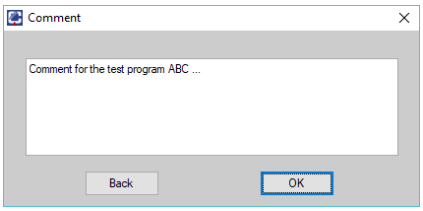
   e.g.: **C:\CID-PRO5\zyklus\sample\IEC_68_2_30_Modul.clib**
3. If the editor module is opened again and a new program thus created, this program appears as an entry in the “Templates” menu. The “.clib” ending is missing and is not displayed, because this entry does not depend on the cabinet and is thus displayed for any configuration / cabinet.



4. Clicking on this library template opens this program in the editor module. Now, the program is opened as **C:\CID-PRO5\zyklus\ IEC_68_2_30_Modul.Z01** (selected with cabinet 1).
5. Now, the opened program only needs to be adapted to the current requirements.

> **Notice**
> If a program is opened and saved using the library of another test cabinet, the channels are adapted after a safety message.

9.23 Comment

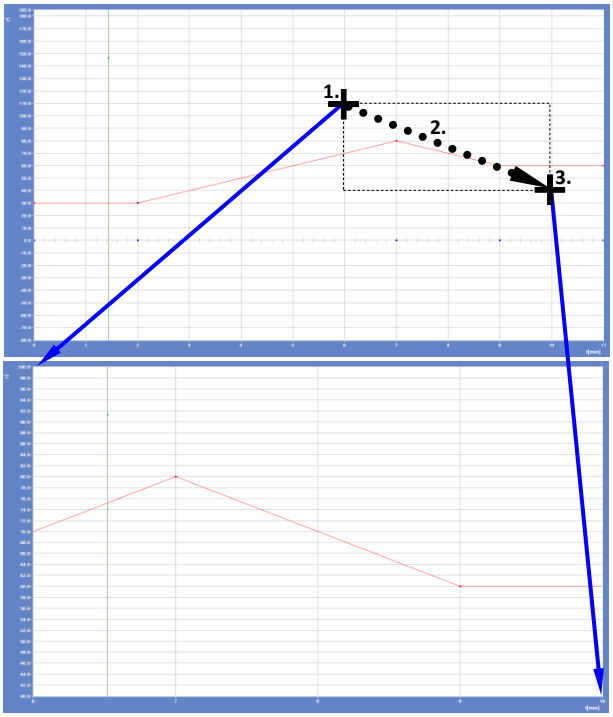


An input window opens in which a comment on the current program of up to 250 characters can be entered.

If **OK** is hit, the entry is saved.
If **Back** is hit, the window closes without adopting the modifications.
When a program is running in automatic mode, a comment about a currently running program can be retrieved in the status overview (see Chapter 5.7 - Program status, page 22).
Besides this, the comment is printed together with the program list.

9.24 Zoom functions (editor)

With the zoom function, areas can be enlarged. 20 zoom levels are available in total. A desired area can be enlarged/zoomed as follows:



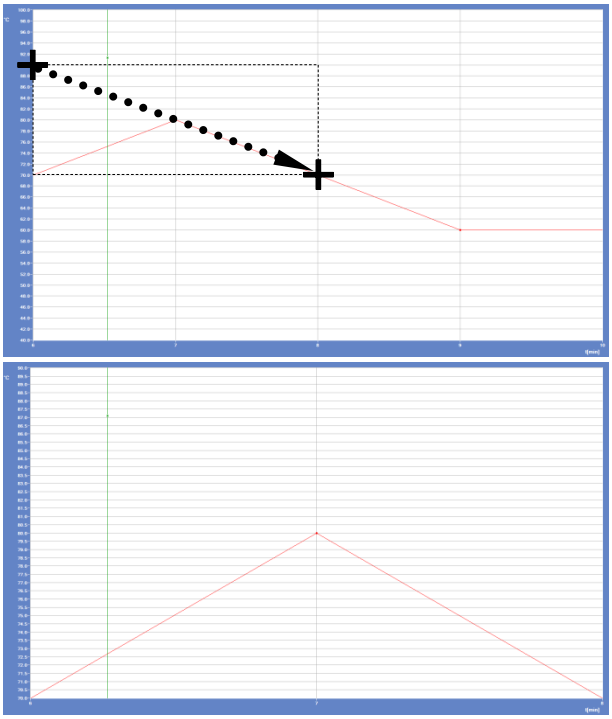
1. Right-click on the upper left corner of the desired area and keep the button pressed.
2. Right-click, hold and drag the mouse to the lower right corner of the desired area.
3. After the right mouse button has been released, the selected area is enlarged.

Example for the upper figure:

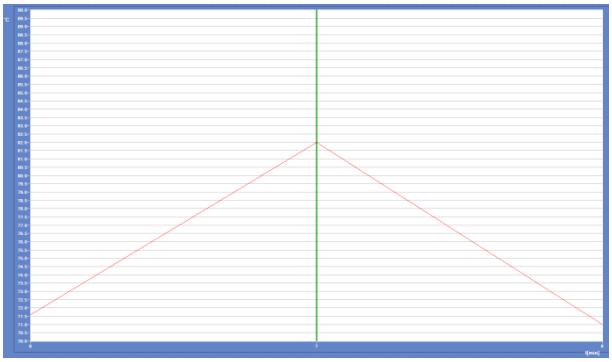
1. Right-click on the coordinate time = 6 min and temperature = 100 °C and keep it pressed.
2. Right-click, hold and drag the mouse to the coordinate time = 10 min and temperature = 40 °C.
3. Release the right mouse button.

Notice

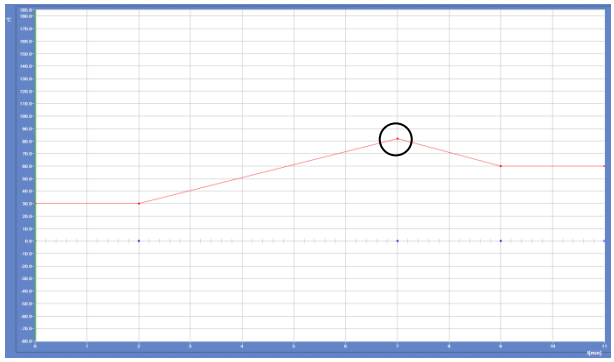
The visible gradients of the point-to-point connections can be displayed differently after zooming if the ratio between the X axis and the Y axis is no longer correct. However, if the rise is checked by calculating from the Y intercept to the X intercept, the rise does not change.



This zoom process can now be repeated up to 19 times.



The node can, for example, now easily be shifted by 2K from 80 °C to 82 °C.

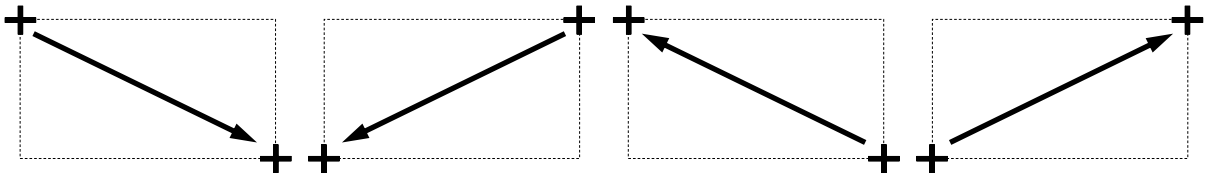


The result in the **complete overview** is then displayed as shown opposite.

- **Full-screen** : Return from any zoom level to the complete overview / to the full-screen view.
- **Zoom** : Zoom in (enlarge) one zoom level, provided that this level has already been defined. Otherwise, this function / button is dimmed.
- **Zoom out** : Zoom out (reduce) one zoom level.

> **Notice**
> It is only possible to zoom to exactly **one unit**, for example to exactly 1 minute or 1 °C.

The method for dragging a certain area using the mouse was explained using the example of the upper left corner being dragged to the lower right corner. This function can be carried out in **any direction**:

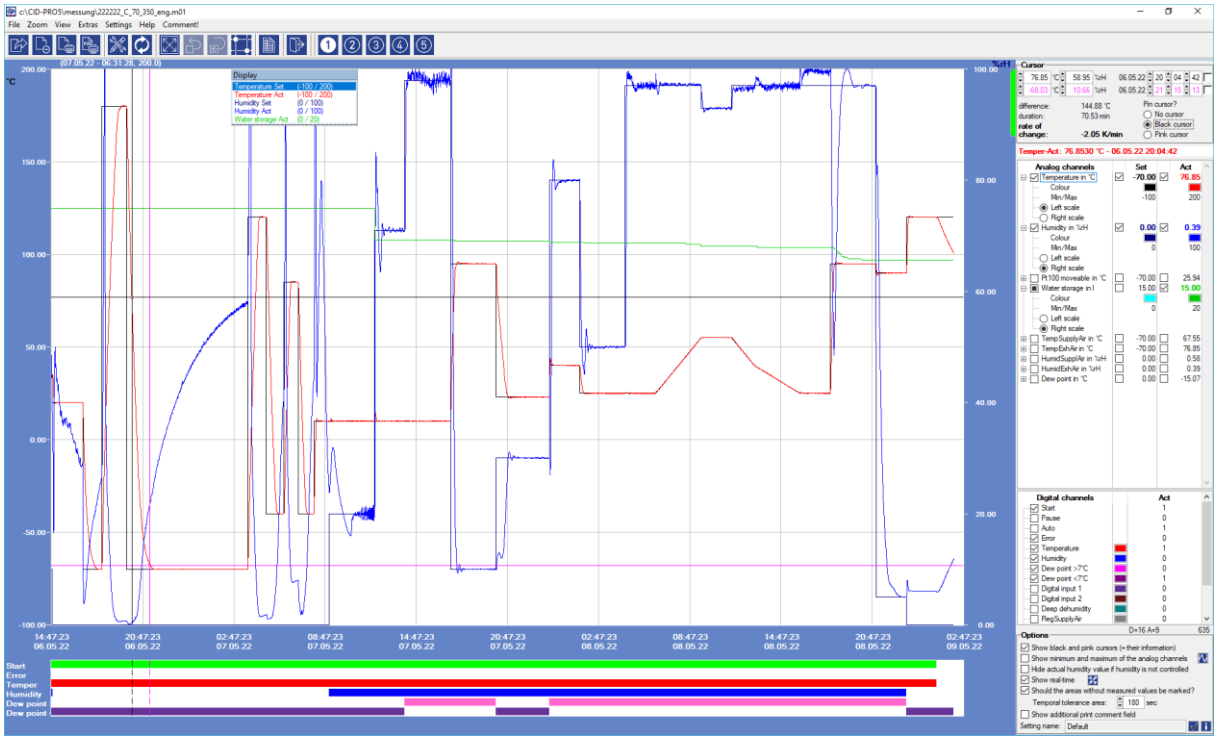


When zooming out, the area is shown as a **dashed rectangle**. This enables the area to be defined better.

10 Measurement data analysis graph (graphic module)

10.1 General

In the graphic module, the measurement recordings are displayed and evaluated as a graph.



- When a measurement recording is opened, the **measurement values** are loaded into an **internal memory** and can now be further processed without any loss of time.
- Option changes such as setting a channel are **carried out immediately** - with a click on an analogue or digital channel it is **immediately displayed in the graphic**.
- The display runs **smoothly**, e.g. when **changing settings** and does not have to be reloaded as before.
- A **zoom function** with **scroll bars** has been implemented:
  Simply zoom in and move in time in the X-direction and in the Y-direction using the horizontal and vertical scroll bars.
  If you have zoomed in, you can move the graphic completely by holding down the Ctrl key and the left mouse button.
  A change of settings is now smooth without returning to full screen.
- The **graphic setting (right area)** with the cursor information, the tables for analogue and digital channels and the options can be shown and hidden using the green buttons.

  List open: click on the green bar with the left mouse button and the list will be closed
  List closed: move the mouse over the green bar and the list will open

  All Graphic Settings (Cursor information, Table of analog channels, Table of digital channels and the setting Options) described in chapter 10.11.1 to 10.11.4, page 112 to 115 replace the earlier options that it no longer exists. The current Options (see Chapter 10.12, page 117) primarily relate to the start parameters of the graphics module.

- One of the two cursors can be "**attached**" to one of the analogue channels, i.e. when you click in the graphic it is connected to the nearest target or actual channel.
  As a result, however, it can no longer be placed freely.
  If this function is activated, the **internal memory** is accessed directly and **all measured values** at the selected time are output in the tables as **set and actual values**. These are the exact measured values as they are saved in the measurement file.
  With the keyboard arrow keys you can now "move" directly on the attached channel (**in steps of 1, with the shift key pressed in steps of 10**) and the measured values are updated in the table.
  Which channel were "hit" shows the channel name and the associated detailed information in the lower cursor area. In this example it is the actual temperature with numerical value, unit and the time stamp (date and time) of the cursor position.

  Temper-Act: 76.8530 °C - 06.05.22 20:04:42

- With the checkboxes next to the **cursor information fields**, an **info window** is displayed in the graphic in the **centre** of the cursor with X and Y values. This makes it very easy to highlight a characteristic point in the graph. The cursor info is displayed as long as the checkbox is set and follows the cursor.

- Individual **analog channels** can be "picked up" (only if they are also displayed) in order to show a course more clearly:
  If you **click** on a set or actual value with the left **mouse button**, this analog channel will be shown in bold in the graphic, with another click it will go back to normal.
  If you **double-click** on a set or actual value with the left **mouse button**, this analog channel flashes for a short moment.

- The **order** of the **analog and digital channels** in the tables corresponds to the order of the PLC programming. For example, in order to have all temperature channels one below the other in order to be able to compare them better, a single channel can **be moved up/down** with a mouse click. To do this, click on a channel with the left mouse button and keep it pressed. Move the marked channel up/down with the mouse and release it again at the desired position.
  This also works in the same way for the digital channels. If a digital channel is activated for viewing, the graphic order of the channels in the lower area of the graphic module also changes.

  > **Notice**
  > The changed order of the analog or digital channels is **not** saved.
  > This means that after restarting the graphics module, the channels are displayed again in the order in which they were programmed in the PLC.

- Additional submenus (extras) and key combinations are available for better evaluation:
  - F1 to F10 ➔ Setting1 to Setting10
  - Ctrl + F1 ➔ Black cursor becomes active.
  - Ctrl + F2 ➔ Pink cursor becomes active.
  - Ctrl + F3 ➔ Black cursor is pinned + active.
  - Ctrl + F4 ➔ Pink cursor is pinned + active.
  - Ctrl + F5 ➔ No cursor is pinned.
  - Ctrl + F7 ➔ Shows the local min/max from cursor to cursor (see).

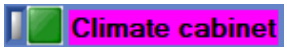
- The **last opened setting** is **saved**:
  For example, if setting 2 was the last to be opened when the measurement was recorded, it will also be automatically selected when it is opened again.

- The **measured values are updated** with the **update button** or the "**F12**" key, i.e. loaded again and up-to-date into the internal memory. This makes sense if an active recording is opened, e.g. from the laboratory in the office, and the values should be updated occasionally.

10.2 Functionality since V5

As of CID-Pro software, version 5, the measurement data analysis graph – the **graphic module** – is an independent program, i.e. a separate exe file (GraphicModule.exe). Thus, when a measurement recording is called, instead of a CID-Pro internal window opening, an external call is started. System parameters are transmitted which, for example, contain the measurement recording file path, and are evaluated and processed by the graphic module.
This innovation has the advantage that now multiple graphic modules with the same or different measurement recordings can be opened simultaneously. If, for example, various measurement recordings are to be compared or if the same measurement recording is to be compared with various settings, this innovation is very helpful.
Because of the separate module, it is now possible to start a measurement recording with the graphic module by double-clicking in Windows Explorer. The precondition is, however, that the CID-Pro 5 software has been installed.

Up to now, it was possible in all CID-Pro versions to start a measurement recording as an active recording. The file was loaded and new values for the analysis were added. The measurement recording became longer or moved forward. When a file was loaded, the selected measurement recording was only opened, without being updated.
In the graphics module, **loading** works as usual.
Now however, an **active** measurement recording is updated via a defined **shared memory** area in the operating system memory. This means that the CID-Pro 5 software writes all necessary data (all analogue and digital channels + the time stamp) of a test cabinet in a system memory which the graphic module can read out and display in the loaded measurement recording. After the recording cycle, the data is updated.
When a measurement recording is started – automatically or manually – the current measured values are written into the system's shared memory area (the activation is marked by the rectangle in front of the cabinet icon):



Now, the values from the climatic test cabinet are cyclically updated on the operating system storage location.

Double-clicking on the icon or the cabinet name (here “Climate cabinet”) still opens the graphic module and the measurement recording which has been started for the climatic test cabinet is loaded. After the graphic module has been opened, the rectangle in front of the cabinet icon changes as follows:

At the lower edge of the graphic module, the connection to the memory area is displayed as follows:

If both LEDs are green, the data is automatically updated. The graphic module limit which can be updated is 10, i.e. ten graphic modules which update the values can be opened simultaneously. Then, the measurement recording is opened via the **Load** function. This applies independently to all of the connected test cabinets (32 at most).

Another innovation is the fixed transmission of the digital channels **Start**, **Pause**, **Auto** and **Error**. Then, all other indicators and softkeys are displayed. As from now, these four channels are always saved and are completely independent from the loaded PLC version of a test cabinet. These channels are displayed according to special rules, see Chapter 10.11.3 - Table of digital channels in the Graphic Settings, page 114.

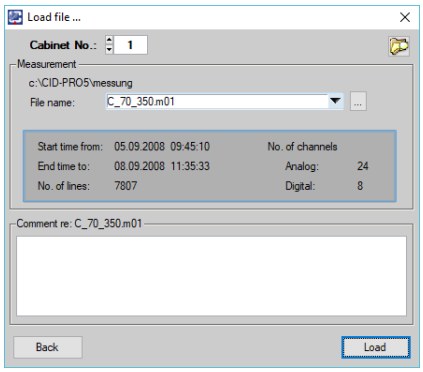
Notice

Before CID-Pro 5 is installed all active measurement recordings in the older versions, e.g. CID-Pro 4 must be stopped. The measurement recordings must be restarted in Version 5 and may/cannot be added/appended to the previous measurement recordings.

10.3 Buttons

Menus	*Symbol*	*Submenus*	*Also in the toolbar?*	*Key combination*	*Reference*
File		**Open…**	**X**	**Ctrl+O**	Open and load measurement see Chapter 10.4, p. 105
		Delete	**X**	**Ctrl+D**	Deleting a measurement see Chapter 10.5, p. 106
		Print	**X**	**Ctrl+P**	Printing a measurement see Chapter 10.6, p. 107
		Print PDF	**X**	**Ctrl+F**	Printing a measurement as a PDF see Chapter 10.7, p. 107
		File information			File information of a loaded measurement see Chapter 10.8, p. 108
	---	*Files last opened*			*Open and load measurement (10.4)*
		Exit	**X**	**Ctrl+E**	Exit the graphic module
Zoom		**Full screen/restore**	**X**	**Ctrl+R**	Zoom functions see Chapter 10.9, p. 109
		Zoom out	**X**	**Ctrl+U**	
		Zoom	**X**	**Ctrl+Z**	
		Zoom to cursor positions	**X**	**Ctrl+S**	
View		**Display**		**Ctrl+I**	Display see Chapter 10.10, p. 110
		Update		**F12**	General see Chapter 10.1, p. 101
Extras		**Options**	**X**	**Ctrl+T**	Options see Chapter 10.12, p. 117
		EXCEL conversion program		**Ctrl+X**	Excel conversion program see Chapter 10.13, p. 118
		Display measurement values – **all**	**X**		Display measured values see Chapter 10.14, p. 122
		Display measurement values – **cursor position**			
		Copy to clipboard		**Ctrl+C**	Copy to clipboard see Chapter 10.15, p. 122
		More extra options		**Ctrl+F1** **Ctrl+F7**	General see Chapter 10.1, p. 101
		Join measurement files		**Ctrl+M**	Merging measurement files see Chapter 10.16, p. 123
		Cut current measurement file (cursor)			Cut current measurement file see Chapter 10.17, p. 123
Settings		**Settings 1 to 10 available**	**X**	**F1 - F10**	Settings see Chapter 10.18, p. 124
		Settings 1 to 10, if selected	**X**	**F1 - F10**	
		New setting			
		Delete setting			
		Delete ALL settings			
		Save setting			
		Load setting			
Help		**Help**			
		Info…			
Comment!					Comment see Chapter 10.19, p. 126
		Update (the measurement data)	**X**	**F12**	General see Chapter 10.1, p. 101

10.4 Open and load measurement



This function opens a window with which any CID-PRO measurement recording can be selected.

The more important information about the selected measurement recording from the **File name** field is in the middle area:

- Start / stop time
- Number of analogue/digital channels
- Number of lines, i.e. measured values (data records)
- Comments regarding the measurement file

Cabinet no. limits the measurement recording selection in the **File name** field to the cabinet number. If cabinet number 1 is selected, the file name list is exclusively filled with the measurement recordings from test cabinet 1. Those end with *.m01.

File name lists all files which have been recorded with the selected **cabinet** (e.g. files: *.m01).
If you hit the "up" / "down" (↑/↓) cursor keys to change to another file, the information on this measurement recording and the corresponding comment are displayed.
If you click on the menu with the mouse, a list with all measurements of the selected cabinet opens in the indicated path, here C:\CID-PRO5\messung. Now, the desired file can be selected.

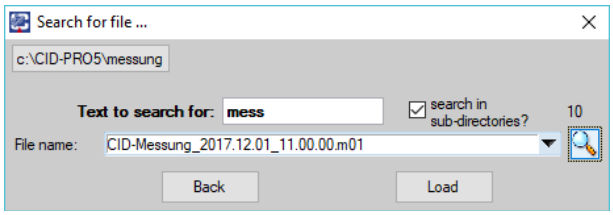
... : the **current path** from which the measurement recordings can be selected is displayed above the **file name**. This path can be changed by hitting the ... button to select the directory. The presettings for this entered path can be changed in the configuration, see Chapter 6.4 - Configuration: Directories, page 41.

Active recording is displayed if a measurement recording which can be loaded and updated is active.

The **Load** function opens the selected measurement recording in the graphic module. After the measurement recording has been read completely, the data are displayed in the graph.

The difference between **Load** and ***active recording*** is that the active recording is **updated**.

: **Searching** for a specific measurement recording?
After you click on the search button, the following window opens:

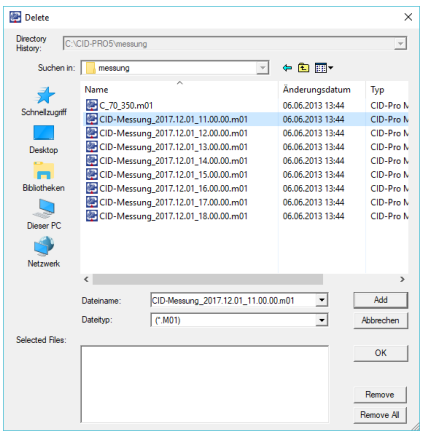


Now, the following possibilities are available:

- **Path:** The search path is adopted from the load window. If you want to search in another path, it can be changed by hitting the button.
- **Text to search for:** The program searches for this text. All measurement file names which contain this text (case sensitive) are displayed.
- **Sub-directories:** With this option, the program also searches in the sub-directories of the indicated path.
- **File name:** List of all files found.
- **10:** Number of files found.
- Search is **started**.

- **Load:** The selected measurement recording is loaded in the graphic module. The search and load windows are closed.
- **Back:** Interrupts the search function.

10.5 Deleting a measurement



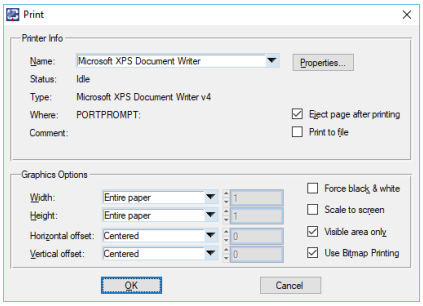
To delete measurements which are no longer required, these files can all be selected at the same time.

With **Remove (All)** the selection must be confirmed.
The selected files are irrevocably deleted if the security prompt is confirmed with OK.

Notice
The file type to select the correct files may need to be set to All files (*.*).

Deleted files or data are irrevocably lost!!!

10.6 Printing a measurement



The currently displayed and loaded measurement is printed using the printer function. Before the measurement is transmitted to the printer, the print options can be changed.

In the upper area, the printer can be selected from all installed Windows printers. In the Properties field, printer-specific settings can be entered for the selected printer, e.g. colour and greyscale printing, portrait format or landscape, or the tray from which the paper is taken in or output.

Further settings for the displayed measurement can be entered in the lower part of the window:

Width/Height

The ***Entire Paper*** standard value enlarges the graph in such a way that the entire sheet width/height is utilized. Alternatively, the width/height of the printout can be indicated in tenths of millimetres.

Horizontal/vertical offset

As standard, the graph is output ***centred*** on the sheet. It is, however, possible to indicate a value in 10^{ths} of mm, for example as a setting for a gutter margin.

Force black & white

Useful setting when sending a fax, because greyscale images are very badly transmitted via fax.

Bitmap printing

If this function is not selected, the printed image is finer and more visually appealing. For reasons of compatibility, bitmap printing can, however, be useful. This must also be selected if the print function does not work properly. If bitmap printing is not selected, problems can occur in connection with some printer drivers, especially if the PC's memory is small.

10.7 Printing a measurement as a PDF

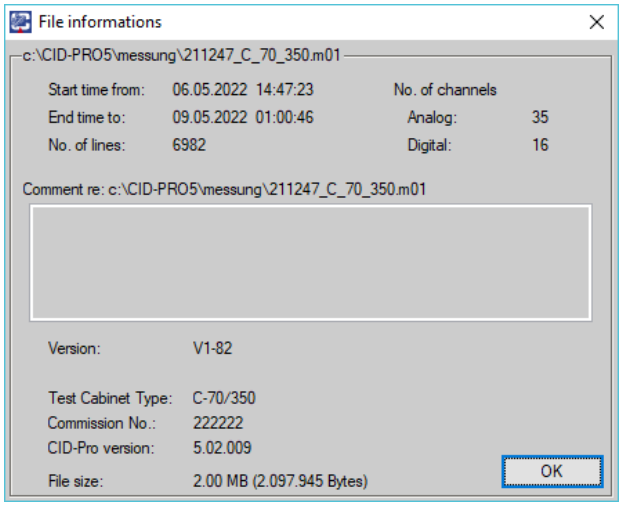
The function "print PDF" creates a PDF file of the measurement displayed and loaded at that time. After you select this function, a dialogue is opened in which the PDF file name and path can be indicated. The storage path is the standard directory for the measurement recordings. The standard name is the measurement displayed and loaded at present, e.g.:

Measurement recording:	C_70_350.m01
PDF file:	C_70_350.pdf

After successful creation of the PDF file, this file is immediately opened in the default PDF viewer (activated option "Open PDF file immediately after saving?", see Chapter 6.9 - PDF settings, page 54) or a message "C:\CID-PRO5\messung\C_70_350.pdf was created successfully" is displayed.

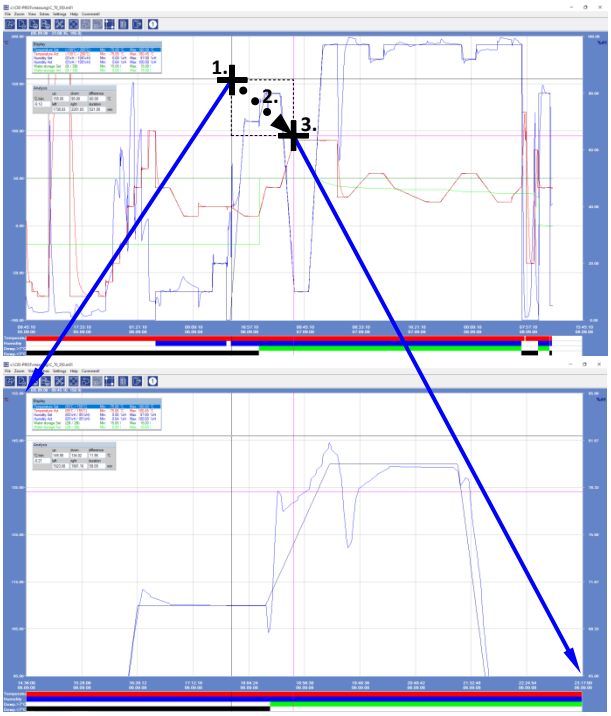
10.8 File information of a loaded measurement

All data and properties saved in the measurement recording are displayed here.
In addition to the start and end time of the recording, the number of channels, the saved comment and cabinet data (cabinet type, commission number, etc.) are also displayed.



10.9 Zoom functions

With the zoom function, areas can be enlarged. 20 zoom levels are available in total. A desired area can be enlarged/zoomed as follows:



1. Right-click on the upper left corner of the desired area and keep the button pressed.
2. Right-click, hold and drag the mouse to the lower right corner of the desired area.
3. After the right mouse button has been released, the selected area is enlarged.

Example for the upper figure:

1. Right-click on the coordinate temperature = 155 °C and 02:36:00 p.m. on Sept.06, 2008 and keep it pressed.
2. Right-click, hold and drag the mouse to the coordinate temperature = 95 °C and 11:17:00 p.m. on Sept. 06, 2008.
3. Release the right mouse button.

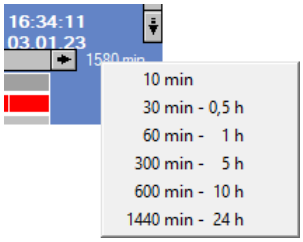
Notice
The visible gradients of the point-to-point connections can be displayed differently after zooming if the ratio between the X axis and the Y axis is no longer correct. However, if the rise is checked by calculating from the Y intercept to the X intercept, the rise does not change.

This zooming can be repeated up to 19 times; see Chapter 9.24 - Zoom functions (editor), page 99 for more details.

- **Full-screen** : Return from any zoom level to the complete overview / to the full-screen view.
- **Zoom** : Zoom in (enlarge) one zoom level, provided that this level has already been defined. Otherwise, the icon is dimmed.
- **Zoom out** : Zoom out (reduce) one zoom level.
- **Zoom to Cursor positions:** The area defined by the cursor is drawn/zoomed.

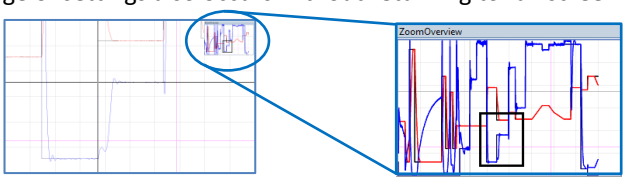
Notice
It is only possible to zoom to exactly **one unit**, for example to exactly 1 minute and 1 °C.

Extension of the graphics module with a zoom function with scroll bars:
Simply zoom in and use the horizontal and vertical scroll bars to shift in time in the X direction and in the Y direction.
If you have zoomed in, the graphic can be moved completely by holding down the Ctrl key and the left mouse button.
A change of settings also occurs without returning to full screen.



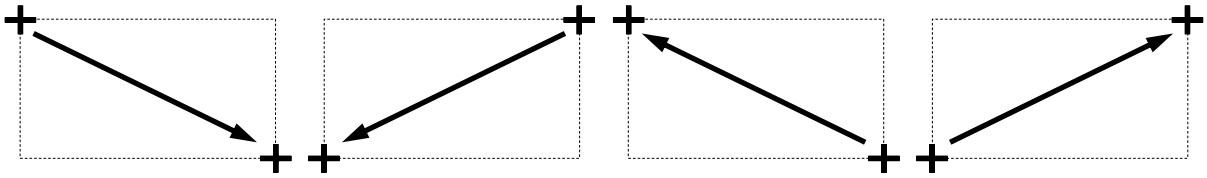
In zoomed mode, the temporal range can be adjusted. A selection is opened by right-clicking on the given difference time (here 1580 min).
After activating an entry, the zoom area is adapted to this selection, based on the start time on the left.

A change of settings also occurs without returning to full screen.



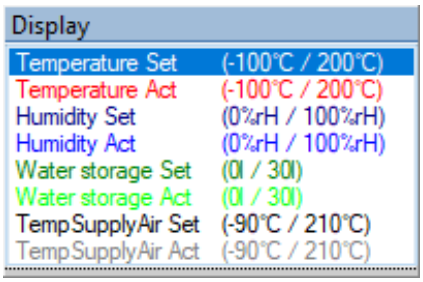
The black rectangle can also be moved
➔ Zoom area adjusts itself
➔ Graphics module is updated

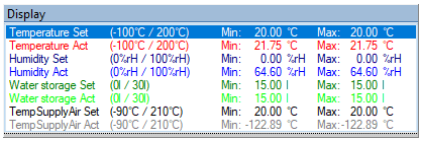
The method for dragging a certain area using the mouse was explained using the example of the upper left corner being dragged to the lower right corner. This function can be carried out in **any direction**:



When zooming out, the area is shown as a **dashed rectangle**. This enables the area to be defined better.

10.10 Display





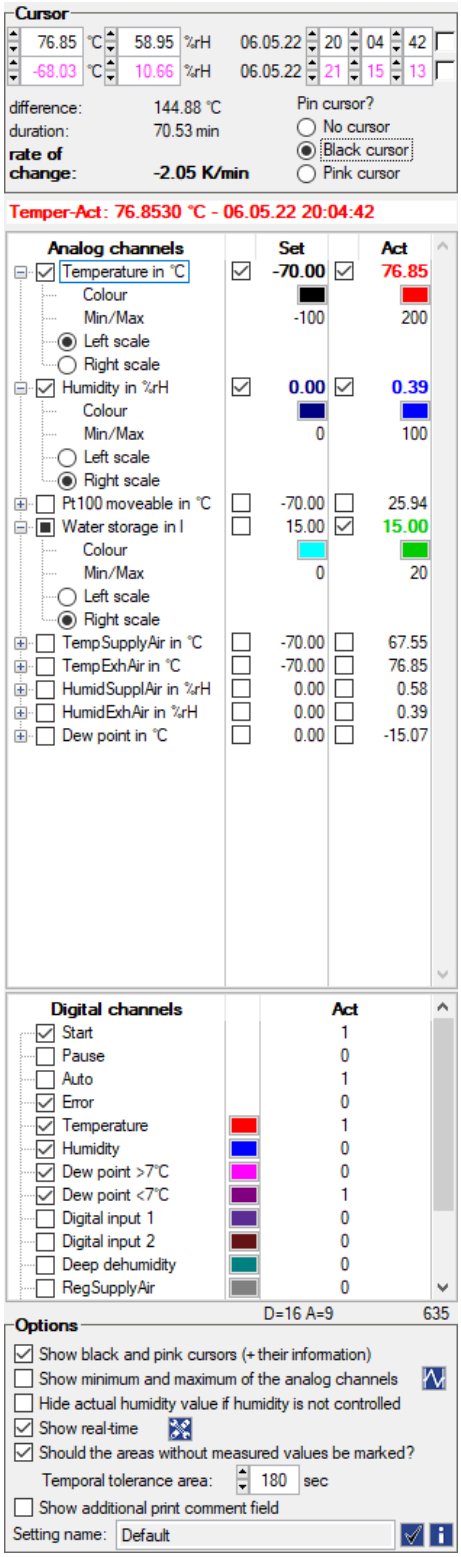
In the small display / legend on the graph display, the currently displayed curves can be seen in the corresponding colour.
Clicking on one of the analogue channels changes the scale to the left/right of the graph (depending on the setting in the Table of analog channels of the Graphic Settings (see Chapter 10.11.2, page 113)). The unit changes into the colour and the maximum value range set.
The values in brackets (e.g. (-100 °C / 200 °C)) show the **current scale ranges**. This is very useful when zooming, to see the zoomed areas of the displayed channels.
Min./Max. values are the individual channels' minimum and maximum values in the current measurement recording. They are only displayed if the **Show minimum and maximum of the analog channels** checkbox is ticked in the Options of the Graphic Settings (see Chapter 10.11.4, page 115)).

Notice

Activating the **display**:	Tick the **View/Display** menu or press the **Ctrl+G** key combination.

10.11 Graphic Settings

The graphic settings with the cursor information, the tables for analogue and digital channels and the options can be shown and hidden using the green button.



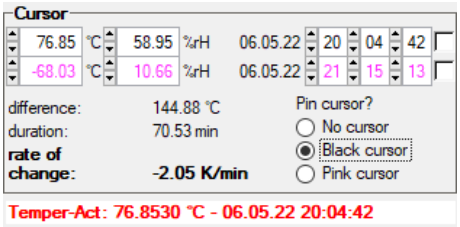
All Cursor information at a glance
(see Chapter 10.11.1, page 112):
Value and time display, difference and duration as well as the rate of change of the two cursors (black and pink).
Pin cursor (none/black/pink).

Display of the Table of analog channels
(see Chapter 10.11.2, page 113):
- Display of name and unit.
- Set and actual values in the graphic can be activated individually/together.
- Set and actual readings are displayed by the pinned cursor.
- Set and actual colour adjustable.
- Adjustable Min/Max values.
- Adjustable right/left scale.

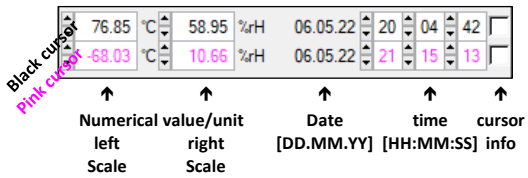
Display of the Table of digital channels
(see Chapter 10.11.3, page 114):
- Display of channel names.
- Channel colour adjustable.
- Actual readings are displayed by the pinned cursor.

Options activated quickly
(see Chapter 10.11.4, page 115):
- Cursors and their information can be shown/hidden.
- The min/max values of the analog channels shown are displayed in the graphic.
- Humidity actual value can be hidden if humidity control is not active.
- Real-time display can be activated.
- Make interruptions visible (adjustable tolerance range).
- Show print comment field.
- Setting name changeable.
- Specify standard values.
- Display information about the digital readings.

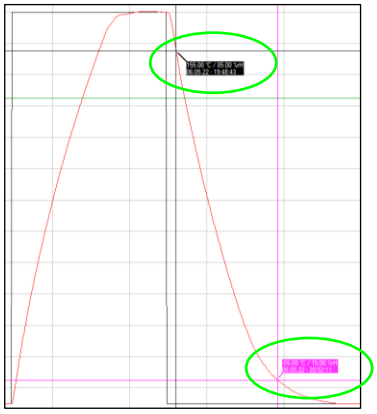
10.11.1 Cursor information



With the cursor displayed, all relevant cursor information is displayed in the **Cursor** area:

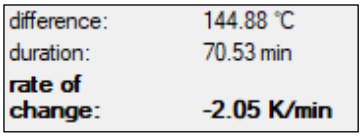


The value or date/time fields show the current positions of the two cursors when the cursors are placed in the graphic.
If these fields are changed, the cursors are set accordingly in the graphic.
The cursor info places a field at the respective cursor centre with the current values:

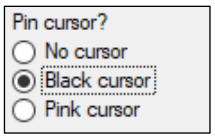


This makes it very easy to highlight a characteristic point in the graph.

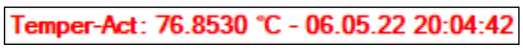
The cursor info is displayed as long as the checkbox is set and follows the cursor.



Temperature difference and duration as well as the rate of change of the two cursors (black and pink) relative to each other,
where v = ΔTemper/Δt in K/min.
Negative rate of change means cooling,
positive rate of change means heating up.



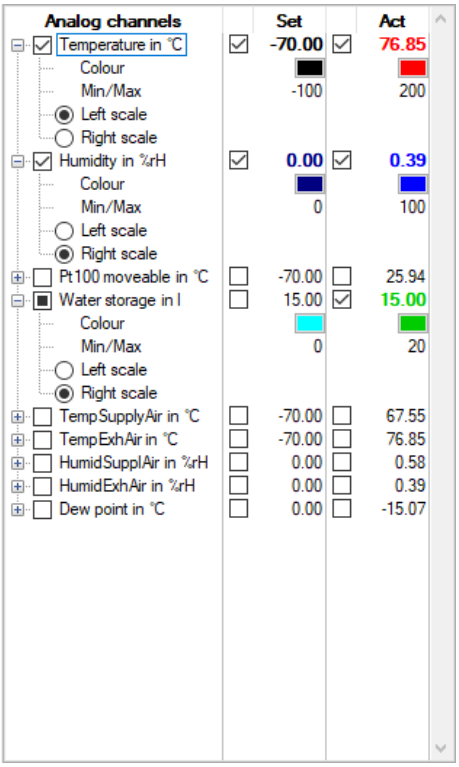
Pin cursor?
One of the two cursors can be “pinned” to one of the analog channels, i.e. it is connected to the nearest target or actual channel, but can no longer be placed freely.
If this function is activated, the internal memory is accessed directly and all measured values at the selected time are output in the tables as target and actual values. These are the exact measured values as they are saved in the measurement file.



If a cursor has been attached, this information also shows in colour which analogue channel you have “hit”. The information displayed relates to the current position of the pinned cursor.

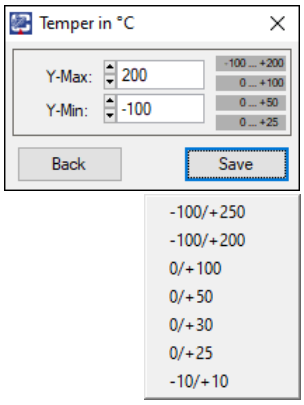
Notice
The cursors area and all associated fields are hidden when the option “Show black and pink cursors (+ their information)” (see Chapter 10.11.4 - Options, page 115) is deselected.

10.11.2 Table of analog channels



All **analogue channels** are displayed in the table **with names and units**. An analog channel consists of the **set and actual values**.

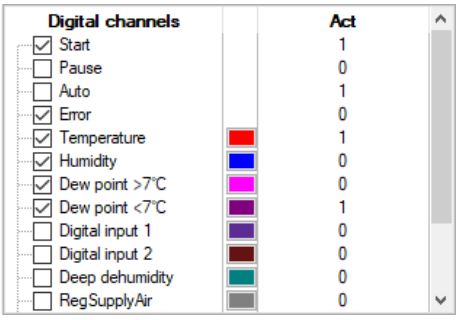
- With a click on the checkbox in front of the channel name, the **set and actual checkboxes** of this channel are activated and the set and actual values are immediately displayed in the graphic at runtime.
- With a click on the **set checkbox** of a channel, the target values of this channel are immediately displayed in the graphic at runtime.
- With a click on the **actual checkbox** of a channel, the actual values of this channel are immediately displayed in the graphic at runtime.
- Analog channels can be deactivated by **resetting** the checkboxes.
- When a cursor is pinned, the **set and actual values** of all channels at the position of the pinned cursor are displayed in the table.
- The colours of the analog channels can be changed immediately at runtime with the **set or actual colour** field:
  Clicking on the colour field opens a colour selection where you can select a channel colour. Simply “moving over” changes the colour of the selected channel.
- When the cursor is pinned, all displayed channels are shown in bold in whatever colour they are running. Channels that are not displayed appear thin and black.



- The **Min/Max specifications** are the maximum and minimum Y display in the graphic. The temperature channel is normally displayed in the range -100 °C to 200 °C, the humidity between 0 % and 100 % rH. Left-clicking on the min. or max. value opens a window for adjusting the respective channel range. Y-Max must be greater than Y-Min.

  With a right mouse click on the min. or max. value, the adjacent context menu appears with a standard selection. With the selection of a min/max combination, these values are accepted immediately and the graphic is adjusted.
- By clicking on the **Left/Right scale**, the scale of this channel is displayed on the left or right edge of the graph (default is the left side). It makes sense to show the temperature on the left and the humidity on the right.
- Individual analog channels can be “**picked up**” (only if they are also displayed): If you click on a set or actual value, this analog channel is shown in bold in the graphic, with another click it goes back to normal.
  When you double-click on a set or actual value, this analog channel flashes for a moment.
- The **order of the analog channels** corresponds to the order of the PLC programming. For example, in order to have all temperature channels one below the other in order to be able to compare them better, a single channel can **be moved up/down** with a mouse click. To do this, click on a channel with the left mouse button and keep it pressed. Move the marked channel up/down with the mouse and release it again at the desired position.

10.11.3 Table of digital channels



All digital channels are displayed with **their names** in the table. A digital channel consists of the **actual values**.

- With a click on the checkbox in front of the channel name, the actual values are immediately displayed in the digital graphic at runtime.
- Digital channels can be deactivated by **resetting** the checkboxes.
- When a cursor is pinned, the **actual values** of all channels at the pinned cursor position are displayed in the table.

- With the **colour** field, the colours of the digital channels can be changed immediately at runtime:
  Clicking on the colour field opens a colour selection where you can select a channel colour. Simply "moving over" changes the colour of the selected channel.
  The colour of **Start**, **Pause**, **Auto** and **Error** cannot be changed. The respective status of these 4 channels is firmly defined:

Start:

Status	Meaning	Cabinet control panel	
OFF	Test cabinet not in operation / OFF	Start button is white	- no trend graph
Wait / Flashing	until the PLC control system starts or an error is output.	Start button flashes green	- grey trend graph
ON	Test cabinet in operation / ON	Start button lights up in green	- green trend graph

Pause:

Status	Meaning	Cabinet control panel	
OFF	Pause inactive / OFF	Pause button is white	- no trend graph
Wait / Flashing	until the PLC control system confirms the pause (without stop)	Pause button is white	- grey trend graph
ON	Pause active / ON	Pause button lights up	- black trend graph

Auto:

Status	Meaning	Cabinet control panel	
OFF	Automatic mode inactive	Program not in operation, or in manual mode	- no trend graph
ON	Automatic mode active	Program is in operation	- green trend graph

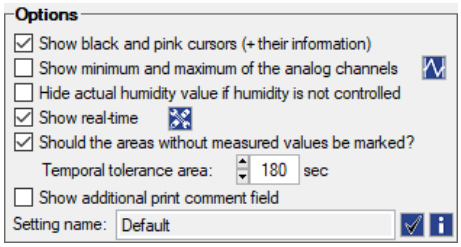
Error:

Status	Meaning	Cabinet control panel	
OFF	No error, no warning message and no operating message are output	Error button lights up in white	- no trend graph
Error	An error is output	Error button lights up in red	- red trend graph
Warning	A warning message is output	Error button lights up in orange	- orange trend graph
Operat.	An operating message is output	Error button lights up in white	- yellow trend graph

Notice
If multiple messages are output, the following applies:
An error is more important than a warning message and is therefore displayed first.
A warning message is more important than an operating message and is therefore displayed first.

- The **order of the digital channels** corresponds to the order of the PLC programming. Now a single channel can **be moved up/down** with a mouse click. To do this, click on a channel with the left mouse button and keep it pressed. Move the marked channel up/down with the mouse and release it again at the desired position.
  If a digital channel is activated for viewing, the graphic order of the digital channels in the lower area of the graphic module also changes.

10.11.4 Options

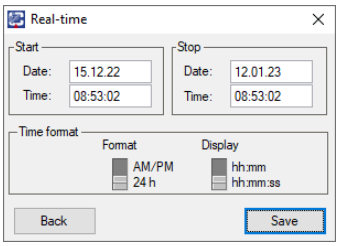


- **Show black and pink cursors (+ their information)**:
  Both cursors and the Cursor information field are shown or hidden. In addition, the set and actual values of the analog channels in the analog table and the digital actual values in the digital table are shown or hidden.

- **Show minimum and maximum of the analog channels**:
  The respective min/max values of the analog channels shown are displayed in the graphic as an information panel.
  shows the local min/max from cursor to cursor!

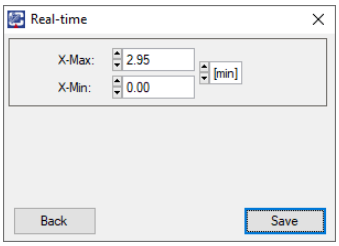
- **Hide actual humidity value if humidity is not controlled**:
  If the actual value of the humidity is to be hidden in the state without humidity control, the option must be set.

- **Show real-time** :



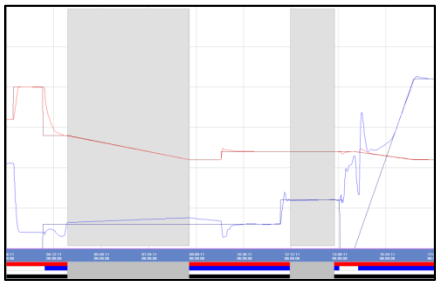
The real-time display is activated:
The time axis is displayed with the exact time information (hour and date) of the measurement recording.

The time axis or the **start date/time** and **stop date/time** can be freely defined within the measurement recording. If a value is entered in these fields, the measurement recording time period is limited. The present format must be respected. Otherwise the entry is ignored.
The **time format** can be varied with the help of the **Format** and **Display** switches. Changes on these switches are immediately displayed on the screen.



The real-time display is deactivated:
The time axis is displayed with the absolute time values on the basis of the hours, minutes or seconds taken by the measurement recording. The measurement recording always starts at time zero.

The time axis or **X-Min** and **X-Max** can be freely defined within the measurement recording. Because of the automatic division, it is not always possible to maintain the time axis entered – small differences can appear. If a graph is always to be adapted automatically, the value in both fields must be zero.



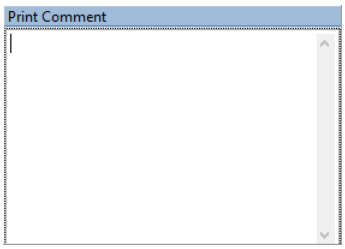
- **Should the areas without measured values be marked?**
  This is an option to determine the interruptions in communication. Here, the time between every single recording cycle is checked and displayed as a grey background if this time is larger than the input made in the **Temporal tolerance area** field (standard: 180 sec.).
  A standard measurement recording, for example, has a storage cycle of 30 seconds, and the corresponding tolerance range over time is 180 seconds. If six or more continuous data records are missing, this range is now marked.
  The smaller the tolerance range and/or the closer it comes to the storage cycle, the greater the number of system-dependent interruptions in communication displayed. This is because most PC systems are not real-time systems and can therefore cause delays in their actions.

Recommendation:

Scanning rate	x 6 to 10	=	tolerance range
30 sec.	x 6 to 10	=	*from 180 sec. to 300 sec.*

Notice

- There are no measured/storage values in the grey areas.
- The dots at the beginning and the end of a grey area are directly connected with each other.
- Without the grey areas, an interruption in communication might in some circumstances not be perceived.
- If, for example, at storage cycle of 300 seconds = 5 minutes a tolerance range of 180 seconds is chosen, every cycle is displayed as an interruption and the graph is totally grey.



- **Show additional print comment field**:
  This additional comment field is used to document facts that are to be printed. The size of the window can be changed as required and can be placed anywhere in the graphics module. If the window is hidden, the content is unchanged when it is displayed again. However, when the graphics module is restarted, the comment field is reset.

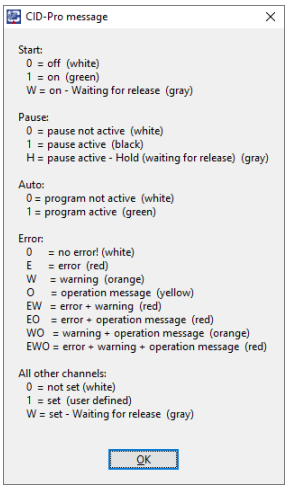
- **Setting name**:
  Each setting (see Chapter 10.18, page 124) can be assigned a characteristic name that can be edited here.

- Specify **default values** ☑:
  These specifications can be used to quickly define standard settings:
  the first four analog and digital channels are provided with standard set/actual colours.

Up to version 5	
Digital channel	***Colour***
Channel 1 (temperature)	Red
Channel 2 (humidity)	Blue
Channel 3	Green
Channel 4	Black

As from version 5	
Digital channel	***Colour***
Start	automatic, see above
Error	automatic, see above
Channel 1 (temperature)	Red
Channel 2 (humidity)	Blue

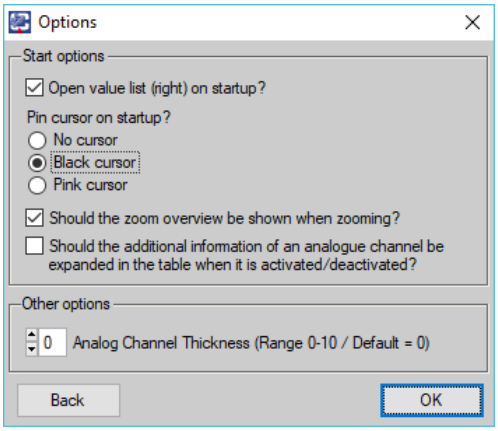
Analogue channel	***Status***	***Values***	***Colour***
Channel 1 (temperature)	Set value Actual value Right-hand scale Y Max Y Min	☑ Yes ☑ Yes ☐ No 200 -100	Dark red Light red
Channel 2 (mostly humidity)	Set value Actual value Right-hand scale Y Max Y Min	☑ Yes ☑ Yes ☐ No 100 0	Dark blue Light blue
Channel 3	Set value Actual value Right-hand scale Y Max Y Min	☑ Yes ☑ Yes ☐ No 0 0	Dark green Light green
Channel 4	Set value Actual value Right-hand scale Y Max Y Min	☑ Yes ☑ Yes ☐ No 0 0	Black Dark grey



- Display **information about the digital measured values** :
  The displayed values of the digital channels (start, pause, auto, error and all other channels) can deviate from the representation of 0 and 1. The exact meaning is shown here.

10.12 Options

Start options and other options can be set in the options:



- **Start options**

  Open value list (right) at startup? by default, the value list is always displayed or always hidden when the module is started. The value list can be activated/deactivated in the running graphics module. However, this option applies when the graphics module is started.

  Pin cursor on startup? by default the black cursor, the pink cursor or no cursor is pinned at graphics module start. The cursors can be pinned or unpinned in the running graphics module. However, this option applies when the graphics module is started.

  Should the zoom overview be shown when zooming? can be set individually.

  The option **Should the additional information of an analogue channel be expanded in the table when it is activated/deactivated?** defines the table behaviour of the analogue channels.

- **Other options**

  With the **Analog Channel Thickness (Range 0-10 / Default = 0)** the thickness of the analog channels in the graphic can be adjusted. This option can be used for diagrams, evaluations or presentations. The range is 0 to 10. The default thickness is 0.

> **Notice**
> The change in the analog channel thicknesses is only applied after restarting the graphics module.

10.13 Excel conversion program

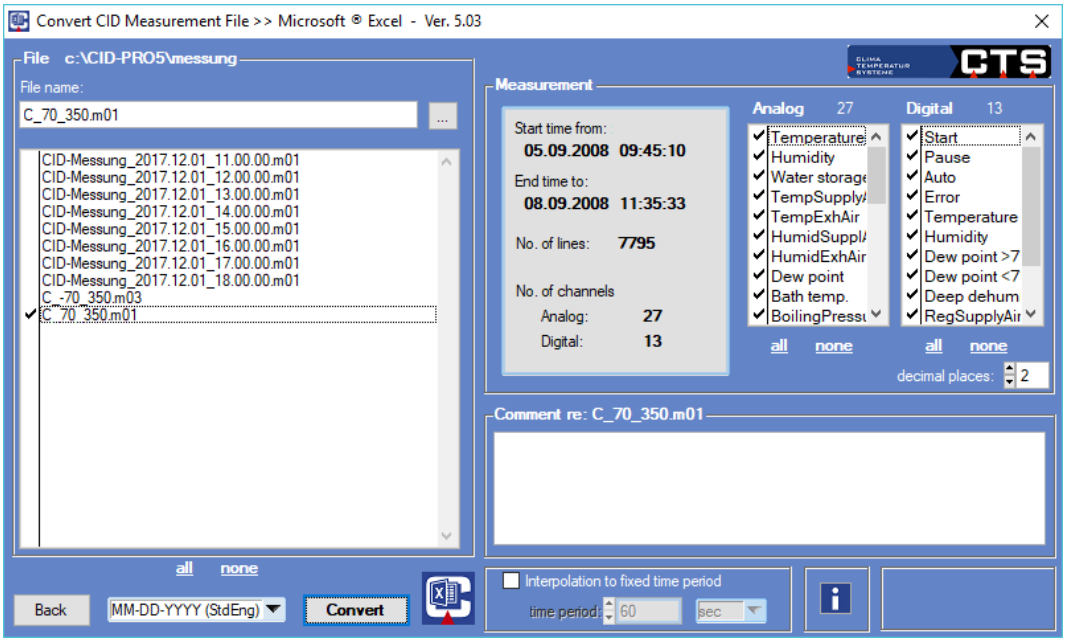
With the new **CID measurement file >> Microsoft® Excel – Ver. 5.03** conversion program, measurement recordings can be converted into text files (ASCII format) which can be read and displayed in Microsoft® Excel.

> **Notice**
> The Excel conversion program is an independent program, i.e. a separate exe file (ExcelConvertModule.exe). If the conversion program is called, a CID-PRO internal window is not opened; instead, an external call is started.

This program can be started in two ways:

1. In the editor module via the menu entry
   Extras ➔ Excel conversion program
2. Via the start-up manager or Windows Explorer
   ***CID installation path*\ExcelConvertModule.exe**

After one of those two actions has been carried out, the conversion program starts:



In the **left program area** there is a list with all measurements which are saved in the selected folder (top left, here: C:\CID-PRO5\messung). All measurement recordings (*.*) are displayed and not only those of certain test cabinets.
The files which are to be converted can be marked in the list; a multiple selection is possible.

If the ... button is hit, the directory can be changed and a file can be selected directly. The new path is then adapted and the list updated depending on the path.

In the **right-hand program area** are the data which more closely describe the active measurement recording selected in the **File name** field and marked in the list:

- Start / stop time
- Number of lines, i.e. measured values (data records)
- Number of analogue/digital channels
- Comments regarding the measurement file
- List of all analogue and digital channels

The **Analogue** and **Digital** lists make available all channels which have been stored in the measurement recording. As standard, all channels are marked, i.e. all channels are adopted at the conversion.
If only certain channels are required, the important channels must be ticked and the channels which are not required must be deactivated. Now, only the activated, ticked channels are converted.

The **decimal places** refer to the analogue channel version.

The **comment** is only displayed and cannot be changed. It is, however, not converted.

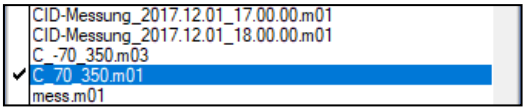
all or **none** marks all or none of the measurement recording files and analogue/digital channels in their respective tables.

With the list selection **MM-DD-YYYY (StdEng)** different date formats can be selected, depending on the Microsoft® Excel region and language setting.

If **Back** is hit, the program ends.

Convert starts the program. Now, all marked files are converted individually one after the other.

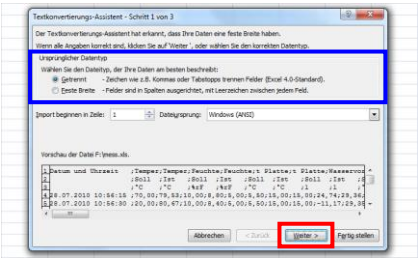
Selected file ➔



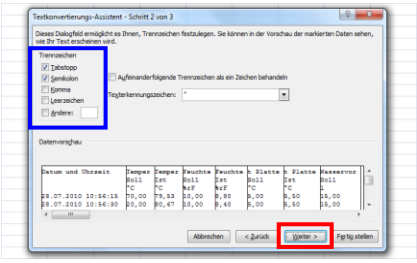
A new file name must subsequently be entered for each selected file one after the other. The file extension is created automatically (*.csv).
After the respective new file name has been entered correctly, the conversion starts, and can last up to some minutes depending on the file size.
All available data/lines are converted, i.e. the measured values of the respective analogue and digital channels selected.

The created and converted data can be read into Microsoft® Excel or another spreadsheet program:

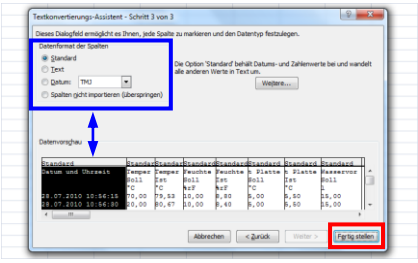
- **Open spreadsheet program**
- Select and open the desired file by hitting **File/Open…**
- **Start text conversion assistant**



Select the file type **separately**



Semicolon as separating character

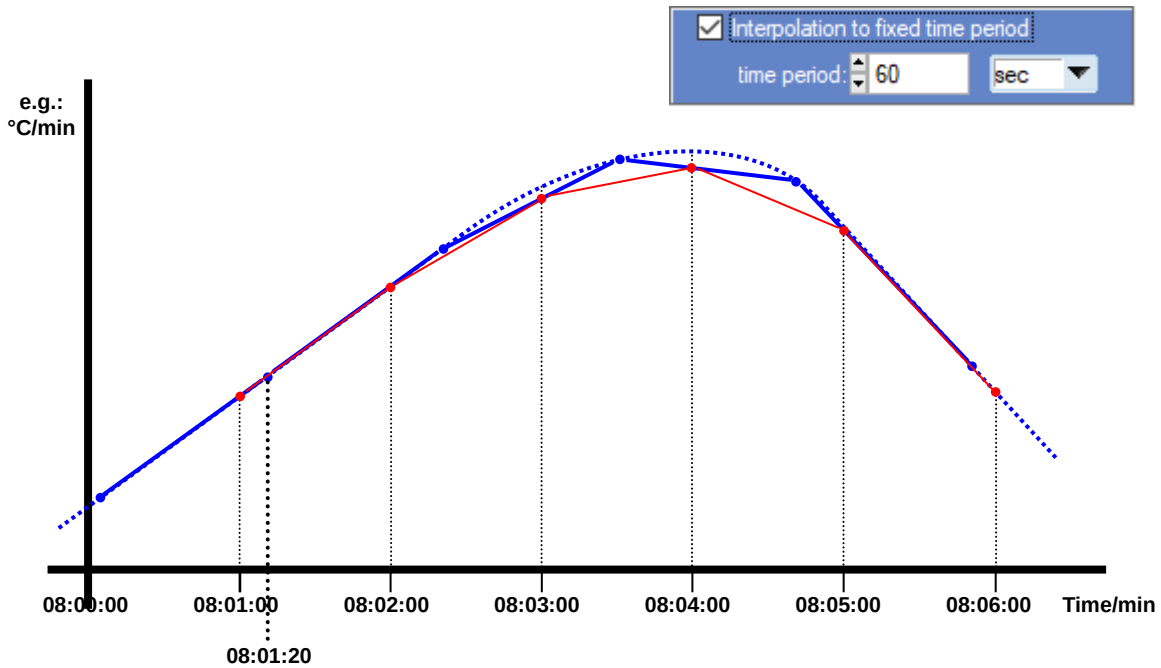


Adapt **column file format**, if necessary

- **Terminate text conversion assistant**

Notice
The file created by the conversion program uses a decimal point (e.g. 123.40 °C). In Microsoft® Excel the decimal information separator can be chosen for each country (menu: **Extras ➔ Options ➔ International ➔** Decimal separator or **File ➔ Options ➔ Advanced ➔ Editing options ➔** Decimal separator). To import converted files without problems, the decimal separator must be adapted here.
The individual spreadsheet cells are separated by a **semicolon (;)**.

If the created measured values are to be compared with another system, systemic value distortions can occur. If **Interpolation to fixed time period** is activated, all measured values are adapted to the time period entered, here 60 seconds (1 minute):



Legend:

- Original curve
- Original nodes from the measurement recording which are slightly displaced over time
- Interpolated/approximated curve from the measurement recording (with slightly displaced nodes over time)
- Calculated values which are now positioned on the full minutes
- Curve from the calculated values which are now positioned on the full minutes

Attention
The measured values are adapted, i.e. they are **calculated** and **not measured**!

Notice
The measured value (Y axis, e.g. °C) is calculated **proportionally** from the nodes **before** and **after**.
In the case of **slight changes** to the curve, the measured and calculated values are almost **identical**.
In the case of **major changes** to the curve, the calculated values are **incorrect** from the start.

The separate Excel conversion tool (external exe file, ExcelConvertModule.exe) offers the following automation options:

Syntax

ExcelConvertModule.exe *Source* [**/q**] [**/y**]

Parameters

Source: necessary. This indicates the storage place and the name of the files which are to be converted. This parameter must contain the complete path.
/q: Suppresses the message display.
/y: Prevents any pre-existing destination file from being overwritten.

Notes

- The Excel conversion program creates an "ABC.csv" output file from the "C:\CID-PRO5\messung\ABC.m01" source file in the same directory.
- Each time, only one source file can be converted. In the case of multiple files the tool must be called several times.
- Application of /q
  /q can be used if the message display (mainly the progress bar) is to be suppressed.
- Application of /y
  /y can be used if the destination file is not to be overwritten. If the destination file already exists and /y is executed, this tool terminates the function.

Examples

The "C:\CID-PRO5\messung\ABC.m01" source file is to be converted into the "C:\CID-PRO5\messung\ABC.csv" destination file:

ExcelConvertModule.exe *"C:\CID-PRO5\messung\ABC.m01"*

The destination file is automatically overwritten and the progress bar is active.

The "C:\CID-PRO5\messung\ABC.m01" source file is to be converted into the "C:\CID-PRO5\messung\ABC.csv" destination file without the progress bar displayed:

ExcelConvertModule.exe *"C:\CID-PRO5\messung\ABC.m01"* **/q**

The "C:\CID-PRO5\messung\ABC.m01" source file is to be converted into the "C:\CID-PRO5\messung\ABC.csv" destination file if the destination file does not yet exist (otherwise abortion):

ExcelConvertModule.exe *"C:\CID-PRO5\messung\ABC.m01"* **/y**

Depending on the conversion, a call of this type can be realized via a bat file or a command line call.

In addition, up to 3000 measurement recording files can now be converted from "outside" via Windows Explorer:
Simply select/mark the desired measurement recordings and drag them over the ExcelConvertModule.exe file ➔ they are all converted one after the other without a name query and with a progress bar.

10.14 Display measured values

This function displays the data records for the loaded measurement file in a separate window. In this display, the data records are listed with the following information:

- **exact time information (date and time)**
- **all analogue channels (set and actual value) – down to: 4 decimal places**
- **all digital channels (actual value)**

- Number of listed data records/entries in the window's header, here 7807 entries!

c:\CID-PRO5\messung\C_70_350.m01 (7807 Entries)

Date / Time		Temperature		Humidity		Water storage		TempSupplyAir	
		Set	Act	Set	Act	Set	Act	Set	Act
		°C	°C	%rH	%rH	l	l	°C	°C
05/09/08	09:55:45	-60.0000	-39.2806	0.0000	5.6272	15.0000	8.0000	-60.0000	-46.5404
05/09/08	09:56:18	-60.0000	-40.7578	0.0000	5.5742	15.0000	8.0000	-60.0000	-47.9481
05/09/08	09:56:51	-60.0000	-42.1401	0.0000	5.5351	15.0000	8.0000	-60.0000	-49.1859
05/09/08	09:57:23	-60.0000	-43.3884	0.0000	5.5084	15.0000	8.0000	-60.0000	-50.3616
05/09/08	09:57:56	-60.0000	-44.5703	0.0000	5.4660	15.0000	8.0000	-60.0000	-51.3942
05/09/08	09:58:28	-60.0000	-45.6635	0.0000	5.4014	15.0000	8.0000	-60.0000	-52.2986
05/09/08	09:59:01	-60.0000	-46.5720	0.0000	5.3376	15.0000	8.0000	-60.0000	-53.0139
05/09/08	09:59:33	-60.0000	-47.4521	0.0000	5.2574	15.0000	8.0000	-60.0000	-53.7149

In this display, the measured values can be compared and the ranges analysed exactly, such as measured values between 12.00 (noon) and 1 p.m. of the same day.

Under

- **complete** the data records of the entire measurement recording are displayed!
- **cursor position** the data records which are between the two cursors over time, are displayed. This function is only carried out if the cursors are active. The cursor start and end time and the order are of no importance.

Notice
The indications cannot be edited. This means that the open measurement recording is not changed!

10.15 Copy to clipboard

To be able to insert the current graphic module view, for example in Microsoft ® Word, this view must be copied into the clipboard.

This function saves the screen to the clipboard as a screenshot. This can then be inserted into all programs which can access the clipboard and thus insert screenshots – **Insert as new screenshot** -, e.g. Microsoft® Word, Microsoft® Paint, Microsoft Photo Editor or Corel Photo-Paint.

The view saved to the clipboard is the graphic module screen without the toolbar or command bar. The operator can determines the display/analysis layout (if there are dialogues and where they are), the zoom factor (an enlarged section), option settings (which channels are displayed) and the graphic module size, and this is taken into consideration when copying to the clipboard.
At the upper edge of the copy, a comment is displayed containing the software version, the copy date and time and the file name and path.

CID-Pro version 5.00 16/02/2018 - 12:36:13 c:\CID-PRO5\messung\C_70_350.m01

10.16 Merging measurement files

This function allows measurement recordings to be merged, if, for example, split measurement data or only parts of a measurement recording are to be merged to create one file. This function is carried out via selection dialogues:

Extras ➔ Merge measurement files
↓
Select and confirm the first measurement file
↓
Select and confirm the all other measurement recordings
↓
Select and save the name/path of the resulting measurement recording

> **Notice**
> The measurement recording's structure is checked to ensure that only identical measurement recordings can be merged. If the measurement recording structures are not identical, an error message is displayed and the file is ignored.
> Since hundreds of messages could be displayed in different configurations with the same number of analogue and digital channels, the messages are redirected to a temporary text file "Installation path\graphicMergeErrorProtocoll.txt" and only a general error message is displayed. Thus, the exact reason why the selected file cannot be attached can be found out.

10.17 Cutting the current measurement file (cursor)

If only a certain time range is required from a measurement recording, the loaded measurement recording may be cut. The two cursors are used to define the range to be saved as a cut measurement recording.
Proceed as follows:

- **Open the measurement recording to be cut**
- **Mark the range with the two cursors (temporal)**
- **Execute the function "cut current measurement file"**
  Via a dialog selection "Save measurement" a new name/path can be assigned to the resulting file.
  The default name is the previous file name with the appendix "_Cut".
  The opened measurement recording is then cut and saved.
- **This cut measurement recording is not opened immediately.**
  ➔ Open this new file, for example in a separate graphic module instance.

Name convention:

Original file:	**C_70_350.m01**	
Default cropped file name:	**C_70_350_Cut.m01**	**(changeable)**

After the measurement recording has been successfully cut, a message is displayed:
"C:\CID-PRO5\messung\C_70_350_Cut.m01 was created successfully"

10.18 Settings

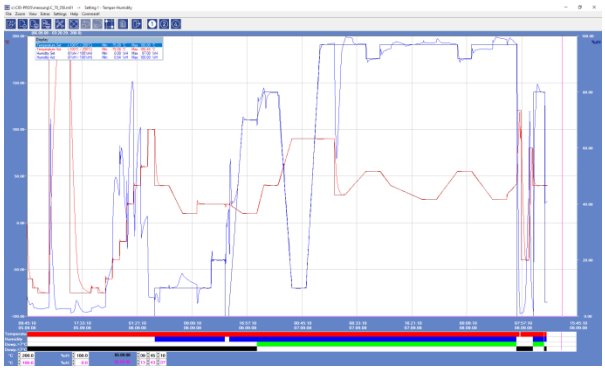
Here, all graphic module settings are stored. This means that the settings made in the options, e.g. analogue and digital channels and their display, are stored in one setting. This now allows different settings to be defined for different purposes, depending on the information to be displayed.
These settings can be switched by clicking on the setting icons.
To create new settings, proceed as follows:

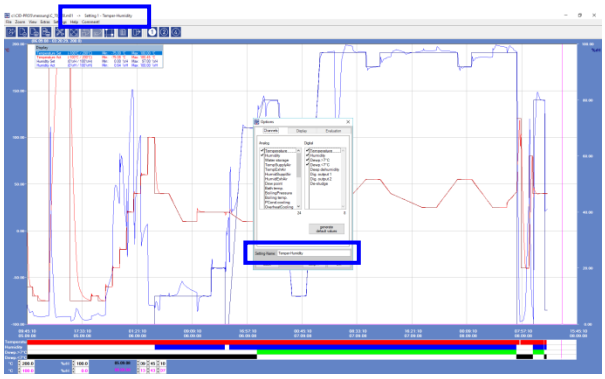
- **Setting 1** is the **start setting** which is available from the start and which cannot be deleted.
- Define setting 1: display the graph in the value list, e.g. number and display of the analogue and digital channels or real-time display, etc.
- Select the **New Setting** entry in the **Menu settings** to create a new setting ➔ the graphic module display is reset to the standard settings.
- Define setting 2: display the graph in the value list, e.g. number and display of the analogue and digital channels or real-time display, etc.

> **Notice**
> With this procedure, a total of 10 useful settings can be allocated.

Various setting examples are briefly described below:

1st setting: Temper-Humidity

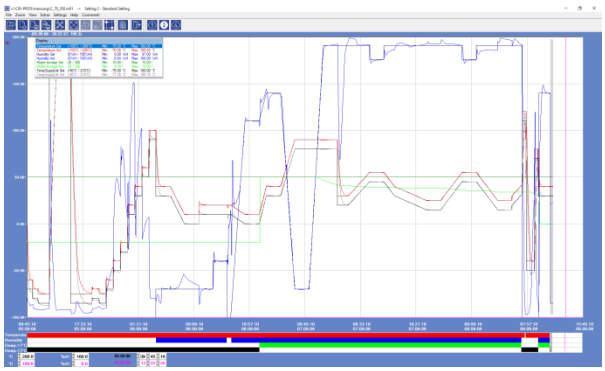




Display:
Temperature (set/actual)
Humidity (set/actual)

Setting name:
Temper-Humidity

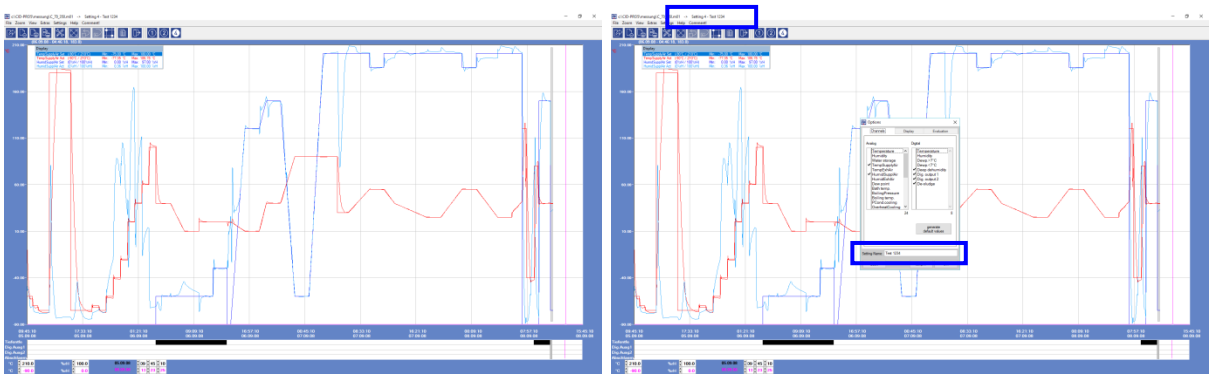
2nd setting: Standard setting



Display:
Temperature (set/actual)
Humidity (set/actual)
Water storage (set/actual)
TemperSupplyAir (set/actual)

Setting name:
Standard setting
(the first 4 analogue and digital channels have been selected
➔ **Standard values**)

4th setting: Test 1234



Display:
TemperSupplyAir (set/actual)
HumidSupplyAir (set/actual)
HumidExhaustAir (set/actual)

and 4 other digital channels as standard setting.

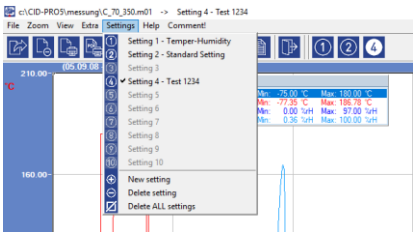
Setting name:
Test 1234

Features of the settings display:

- Pressing **New setting** (settings menu) creates a new setting.
- Pressing **Delete setting** (settings menu) deletes the **currently displayed setting**.
- Pressing **Delete ALL settings** (settings menu) deletes **all displayed settings**. Setting 1 is again created and displayed with standard values.
- Pressing **Save setting** (settings menu) saves the **currently displayed setting** as an INI file with any name.
- Pressing **Load setting** (settings menu) loads any setting INI file into the **currently displayed setting**.
- If you click on a setting number, e.g. 4 – 4 in the settings menu or the toolbar 4 – that setting (here 4) is loaded.

  ➔ A defined setting is displayed in normal font in the menu and displayed with the setting name, if selected. The icon is displayed in the toolbar.

  ➔ An undefined setting is displayed dimmed in the menu and not selectable. This setting is not present in the toolbar (see Setting 3 in the examples above)

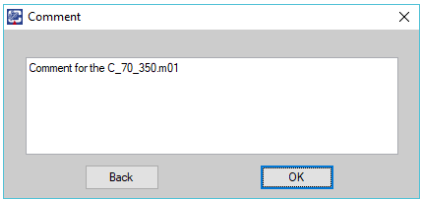


  ➔ The selected setting is ticked in the menu and displayed in an inverted mode in the toolbar 4.

- A new setting is always put in the next free storage location.
  ➔ Setting 3 is created.
- The setting name in the options is freely selectable and is indicated in the title bar if selected.

Notice
All settings directly refer to the selected/loaded file.
It is not possible to load another measurement recording per setting.

10.19 Comment



An input window opens in which a comment on the current measurement recording of up to 255 characters can be entered.
If **OK** is hit, the entry is saved.
If **Back** is hit, the window closes without adopting the modifications.

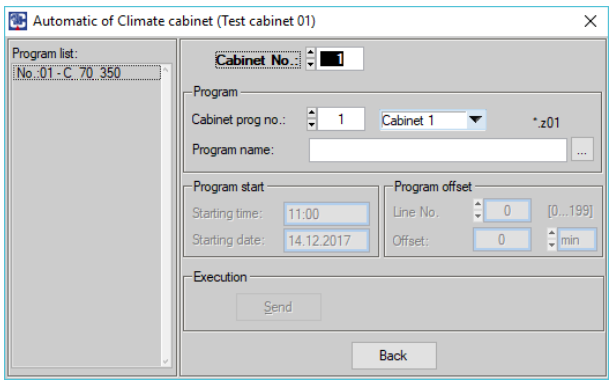
If the measurement recording has been saved with **one** comment, the “comment” entry in the menu bar is displayed as follows:

If the measurement recording has been saved **without** a comment, the “comment” entry in the menu bar is displayed as follows:

Notice
Maximum comment length: 255 characters!
From 200 characters, a character counter is displayed, which turns red from 255 characters. From this character length, the comment can no longer be saved and must be shortened.

Notice
A completed measurement recording file can only be changed by **changing the comment**. The file modification date is then changed.
None of the other functions change the loaded measurement recording.

11 Starting programs (automatic mode)



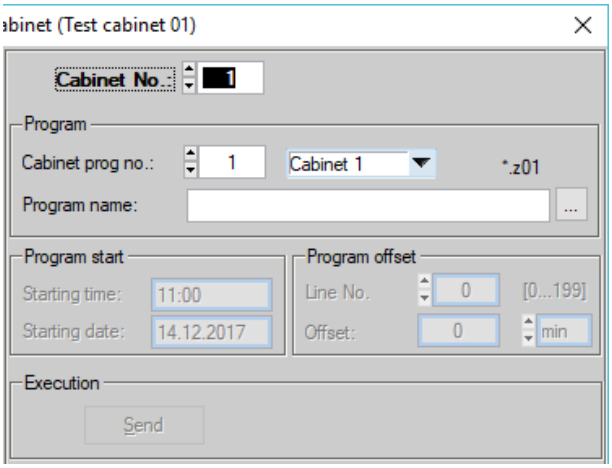
Via the automatic menu, programs are sent to the test cabinets, a measurement recording is activated and the program started, if necessary. The cabinet control is switched to automatic mode.

When the automatic menu is opened, a list of the programs saved in the cabinet control system is displayed on the left. A check can be made as to whether a present program is to be overwritten or if a free storage location is selected.

Notice

- The program list is updated with a left mouse double click on the list heading.
- Double-clicking on a listed program with the left mouse button opens it in the editor module if the program exists under this name on the PC.

11.1 Selecting a program



The following information all refers to the test cabinet or **Cabinet number** selected.
Under **Cabinet program number**, the number under which the program is stored in the cabinet control is defined.
The **program type**, here **Cabinet 1**, indicates whether a cabinet program is selected, e.g. for cabinet 1 (*.z01), or a program from the data pool (see Chapter 9.21 - Saving a file in a data pool, page 97), i.e. all *.P* programs. The text on the right, here *.z01, indicates which program types may be selected.

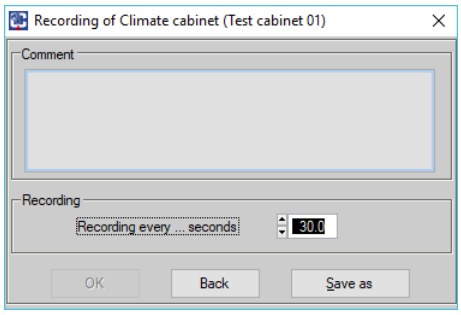
Program name indicates the desired program which has been selected by hitting the ... button in a file selection window.

If "**Send**" Send is hit, the program data are transmitted, but only if a program has been selected before.

11.2 Recording a program

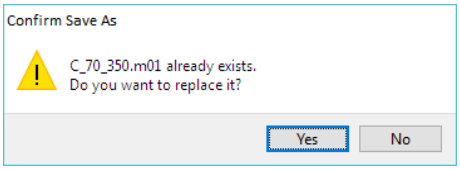
It is optionally possible to start a measurement recording for the program.

To do so, the following steps must be carried out:

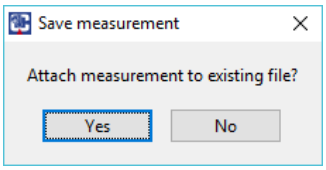


1. If **Record** is hit, the opposite window opens.

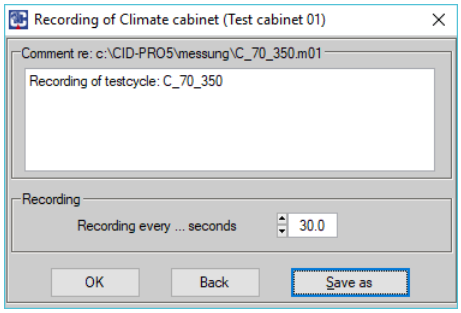
2. A measurement file can be indicated via the **Save as** function.



If a **measurement is to be attached to an existing file…**:
- Select an existing file and confirm that this file is to be replaced/overwritten.



- If **Yes** is hit, the new measured values are attached to the already existing file.
  If **No** is hit, the selected and pre-existing file is irrevocably overwritten.



3. In the **Comment** field, a description regarding this program and thus the measurement recording can be entered. With the help of the comment function, procedures can be described in more detail or special comments can be entered.

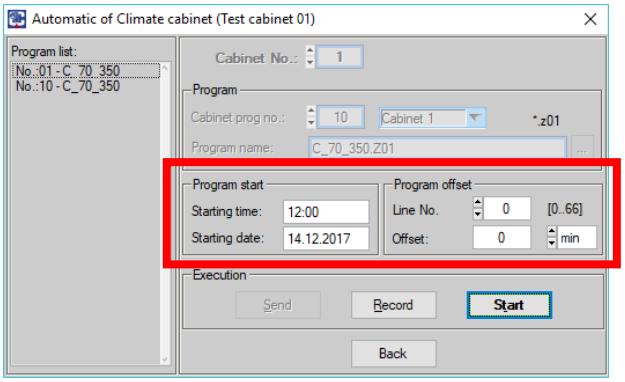
4. The recording cycle (**Recording every … seconds**) defines the time intervals between recordings and is decisive for the recording data quantity.
   For a program with few changes, it is enough to record every 2 minutes ➔ 120 seconds.
   For programs with frequent changes, the standard value of 30 seconds makes sense. The exact indication differs for each test cabinet and each program and can be entered optionally.

5. If "**OK**" is hit, the settings for the recording are saved and if "**Back**" is hit, they are ignored.

Notice

- The recording cycle minimum value depends on the query cycle in the configuration.
- This interval only applies for the ***currently selected cabinet***. If another measurement recording is started with another test cabinet, another recording cycle can be entered on it.
- When creating a measurement recording, the following device data is also saved:
  Commission number, cabinet type and SPS number as well as the exact CID-Pro version
  This information can be viewed in the file information of the graphics module (10.8/108).
- If the selected cabinet is declared a client (see Chapter Communication - client/server communication), the activated measurement recording is not started on the client, but on the server. The command to start this automatic measurement recording is sent to the server and activated there.

11.3 Start options



After a program has been transmitted, the program **start** (time and date) and **offset** must be entered.

Program start:

The **Starting time** / **Starting date** are entered via the keyboard. Any permitted date within one year can be entered. The time must keep to the hh:mm (hour:minute) format. If the predefined formats are not met, the entry is ignored.
If a time before the current time is entered, the current time is adopted
➔ the date should therefore be changed before the time.
If an incorrect date is entered, the current date is adopted.

> **Notice**
> The current system date and time should be checked!

Program offset:

The **Line No.** input field defines the starting line and serves to skip past the first part of the program. The range within the entry can be is situated behind the line no. field and depends on the length of the selected program, here [0..66].

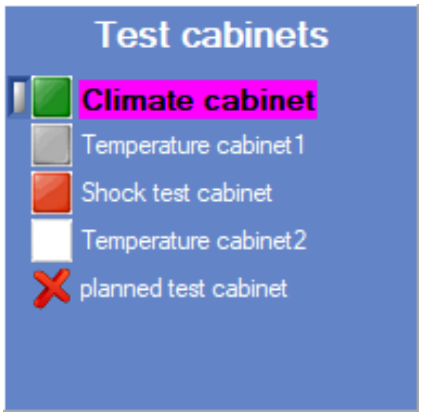
Entering a starting line also changes the display in the **offset time** field. Here, the time which will be skipped, is calculated.
Loops and Wait functions are not considered for the calculation. If an advance is to be integrated into a loop, the advance time can be entered directly. “-1” is then displayed in the starting time field, because the line assignment is missing.

> **Notice**
> If no program starting time or program offset is entered, the current time and a program launch are preallocated in the first line
> ➔ start: now and in the 1st line.

11.4 Automatic mode

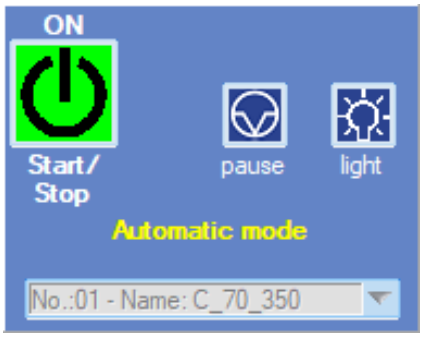
After confirmation with "**Start**"

(all settings are adopted and processed) and "Back" (automatic window is closed), automatic mode is started.



Display for the recording:

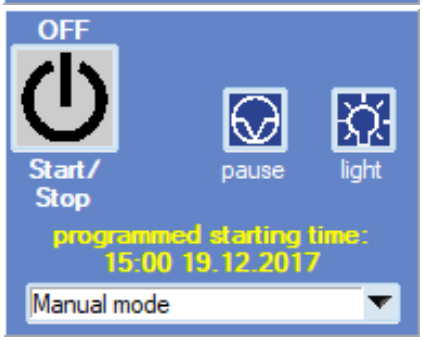
If an automatic measurement recording is started, the background in the cabinet overview display (see Chapter 5.3 - Test cabinets, page 17) changes to **pink**.



Starting time display:

The test cabinet starts the program at the indicated time.
Depending on the type of starting moment selected (immediately or later), the cabinet status display changes (see Chapter 5.5 - Operational status, page 19):

Immediate start:
Automatic mode

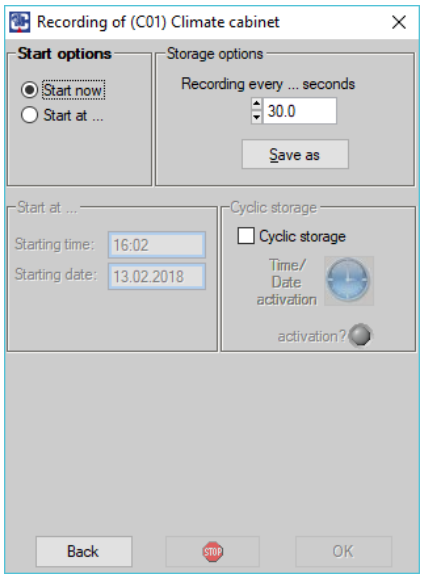


Start later:
programmed starting time:
15:00 19.12.2017

> **Notice**
> The automatic measurement recording is stopped automatically when the program ends. Compare this with the manual recording (see Chapter 12 - Manual measurement recording, page 131) which continues to run after the program has been stopped.

If the integrated cabinet is a client application, the pink background is displayed in dark green. In this case, the current measurement recording does not run on the client, but on the server.

12 Manual measurement recording



The continuous measurement data storage is activated in the measurement recording menu. The title shows the name of the test cabinet selected in the status overview.

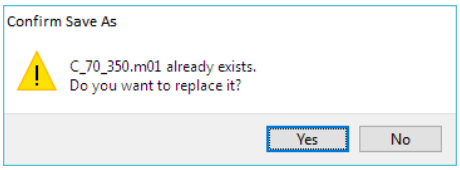
12.1 Start a manual measurement recording

- **Storage options**

  The recording cycle (**Recording every … seconds**) defines the time intervals in which is recorded and is decisive for the recording data quantity.
  For a program with little changes, it is enough to record every 2 minutes ➔ 120 seconds. For programs with frequent changes, the standard value of 30 seconds makes sense. The exact indication differs for each test cabinet and each program and can be entered optionally.

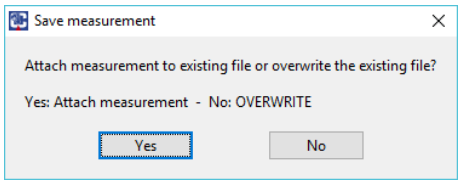
> **Notice**
> The recording cycle minimum value depends on the query cycle in the configuration. This interval only applies for the ***currently selected cabinet***. If another measurement recording is started with another test cabinet, another recording cycle can be indicated on that cabinet.

A measurement file must be indicated via the **Save as** function. This selection is necessary to start the measurement recording.

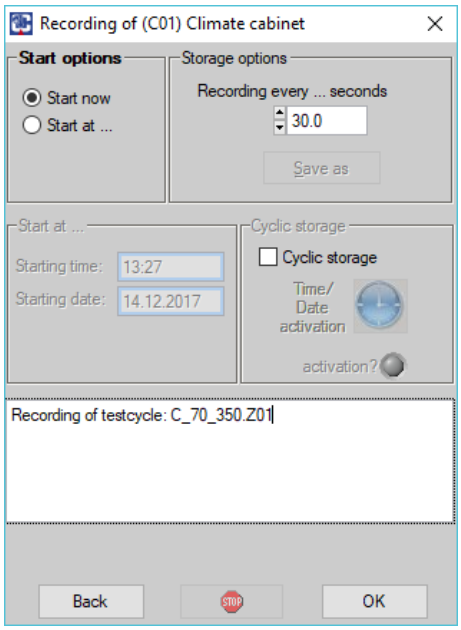


If a **measurement is to be attached to an existing file …** :

- Select an existing file and confirm that this file is to be replaced/overwritten.

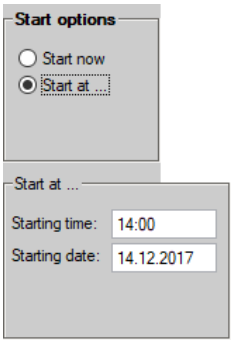


- If **Yes** is hit, the new measured values are attached to the already existing file.
  If **No** is hit, the selected and pre-existing file is irrevocable overwritten.



After an already existing or new measurement file has been selected, a comment field is displayed in which the processes can be described in more detail or special comments can be entered.

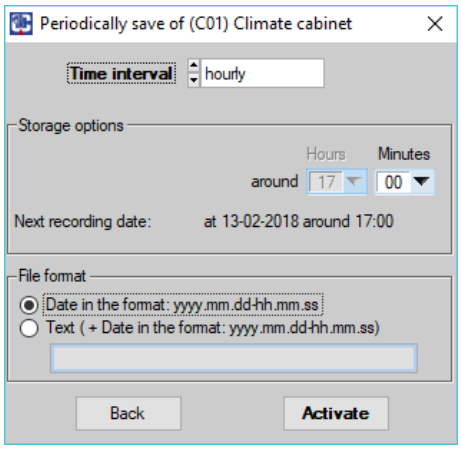
- **Start options / Start at…**



In addition to starting immediate recording, a delayed start can also be activated.
The **Starting time** / **Starting date** are entered via the keyboard. Any permitted date within one year can be entered. The time must keep the hh:mm (hour:minute) format.
If the predefined formats are not met, the entry is ignored.
If a time before the current time is entered, the current time is adopted ➔ the date should therefore be changed before the time.
If an incorrect date is entered, the current date is adopted.

Notice
The current system date and time should be checked!

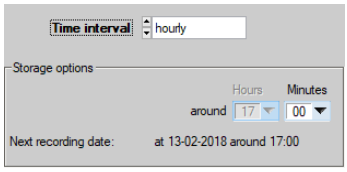
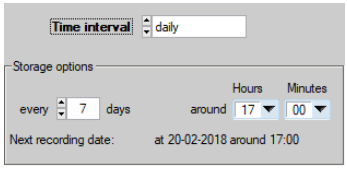
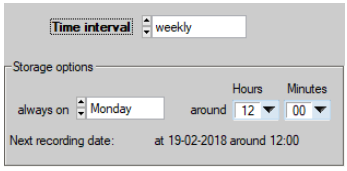
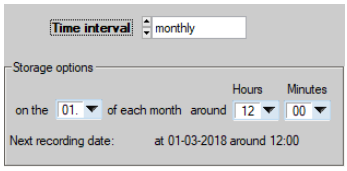
- **Cyclic storage:**



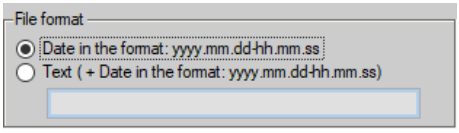
Cyclic storage is very useful for measurement recordings with extremely big amounts of data or defined time slots (a separate measurement file every day or every week).
The check box must be activated:

To define the **time interval**, the opposite window opens.

The following **time intervals** are available:

Time interval	*Storage options*		
Hourly		Minutes	**Every 5 minutes** (00, 05, 10, 15, ..)
Daily		Number of days + hours/minutes	**Max. 60 days** + Every hour + every 5 minutes (00, 05, 10, 15, ..)
Weekly		Weekday + hours/minutes	**Weekday (Sun-Sat)** + every hour + every 5 minutes (00, 05, 10, 15, ..)
Monthly		Day of the month + hours/minutes	1st–28th **of the month** + every hour + every 5 minutes (00, 05, 10, 15, ..)

In the case of changes, the **next storage date** will immediately be updated.



The **file format** defines how the automatically created measurement files are to be named:

- **Date** in the yyyy.mm.dd-hh.mm.ss format
- **Text** + **date** in the yyyy.mm.dd-hh.mm.ss format

Notice
Year(4-digit).month(2-digit).day(2-digit)-hour(2-digit).minutes(2-digit).seconds(2-digit)

Saved measurement file: *C:\CID-PRO5\messung***Test-SensorA.m01**
Automatic file 1: *C:\CID-PRO5\messung***Test-SensorA_2017.08.26-14.30.00.m01**
Automatic file 2: *C:\CID-PRO5\messung***Test-SensorA_2017.08.26-15.30.00.m01**
…

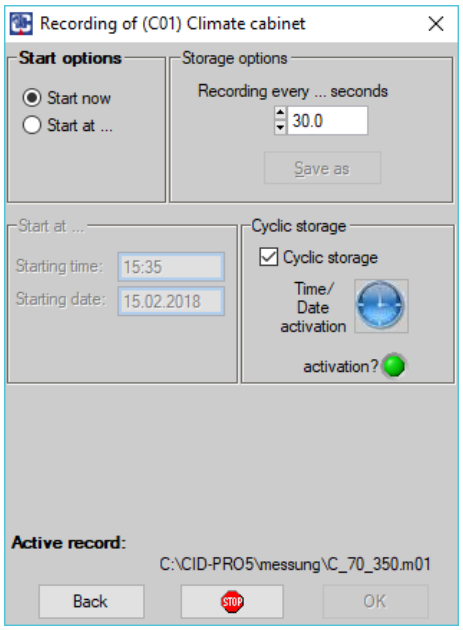
In this process, the measured values are always written into the stored, original measurement file, here **Test-SensorA.m01**, which is renamed at the time of saving, here in **Test-SensorA_2010.08.26-14.30.00.m01,** and recreated to continue the measurement recording with the original measurement file.

The following example results from the addition of a text:

Example with addition of text: A375
Saved measurement file: *C:\CID-PRO5\messung***Test-SensorA.m01**
Automatic file 1: *C:\CID-PRO5\messung***Test-SensorA_A375_2010.08.26-14.30.00.m01**
Automatic file 2: *C:\CID-PRO5\messung***Test-SensorA_A375_2010.08.26-15.30.00.m01**
…

If "**Activate**" is hit, the settings for the cyclic recording storage are adopted.
If "**Back**" is hit, they are ignored.

If the recording has been activated, the activated cyclic storage is indicated by a **green LED** in the window for the manual measurement recording.

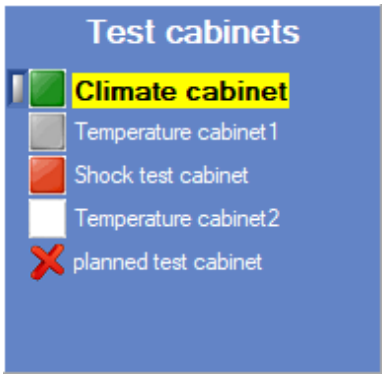


Also in the status overview, the activated cyclic storage is displayed in the upper bar, which in its turn is indicated by a **green LED**. The days, hours, minutes and seconds are displayed until the next storage.

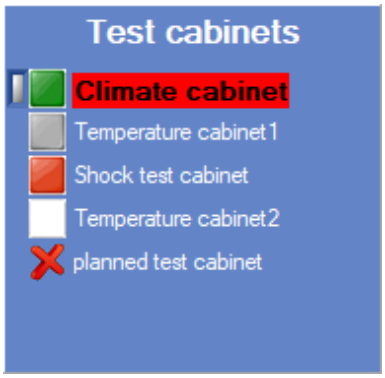
If these settings are adopted by hitting "**OK**", the measurement recording starts.
When a manual measurement recording is started, the background of the cabinet overview display (see Chapter 5.3 - Test cabinets, page 17) changes to **yellow** or **red**:

Manually started, active recording

with **immediate start**



with **later start**



Notice

- This started manual measurement recording runs until it is stopped manually (see Chapter 12.2 - Stopping a manual measurement recording, page 135). It is mainly to be applied for manual mode or if automatic measurement recording is not possible.
- When creating a measurement recording, the following device data is also saved:
  Commission number, cabinet type and SPS number as well as the exact CID-Pro version
  This information can be viewed in the file information of the graphics module (10.8/108).
- If the selected cabinet is defined as a client (see Chapter Communication - client/server communication), the activated measurement recording is not started on the client, but on the server. The command to start this manual measurement recording is sent to the server and activated there.
- Then, the yellow background is displayed in light green:

12.2 Stopping a manual measurement recording

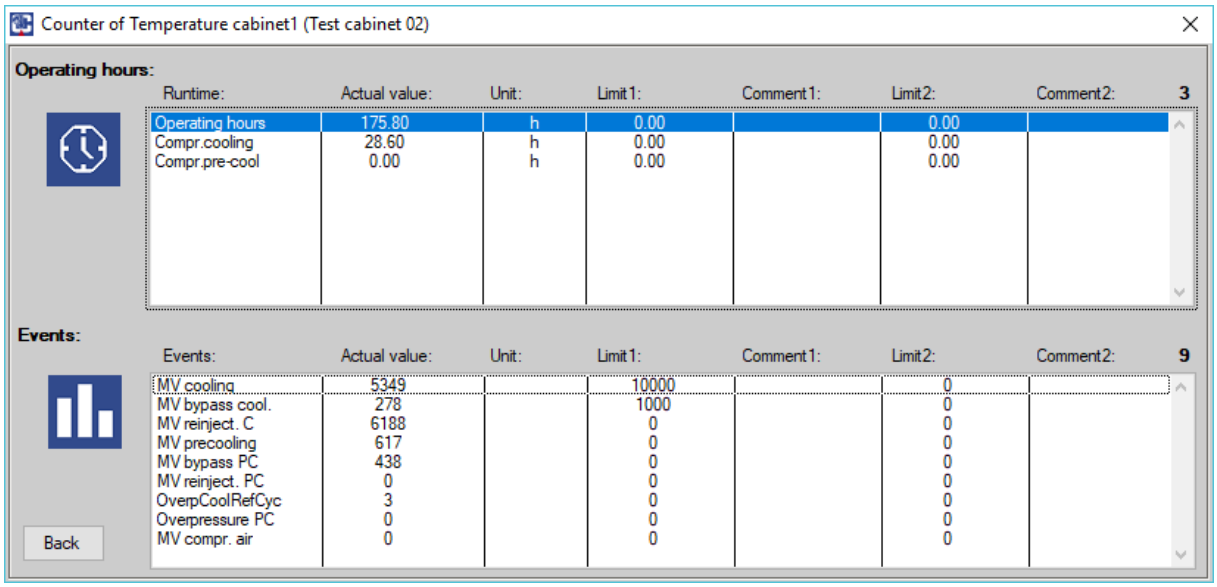
In contrast to automatic recording, manual recording does not stop by itself.

If the manual measurement recording of the selected test cabinet is to be stopped, the button must be hit.

Notice
The automatic recording can also be stopped with the stop button.

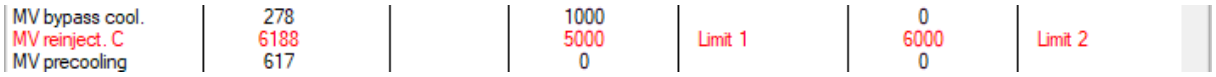
13 Operating hours and event counter

Two different lists are displayed in the counter menu:

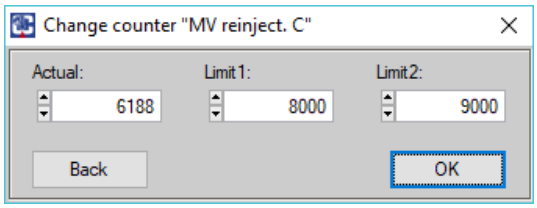


In the upper list, the counters for the **operating hours** are displayed – here the total operating hours of the test cabinet and further operating hours of the compressor and other components used.
In the lower list, the **event** counters are displayed, e.g. the operation cycles of magnetic valves or maximum pressure controls.

All counters are displayed with the current value (actual value), its unit and the maximum value (limit) the counter value may be.
If a counter exceeds the limit (e.g. 6188 > 5000), the corresponding line is displayed in red and a comment is added, Comment1 at Limit1 and Comment2 at Limit2.



If the control PLC allows a counter value or threshold to be changed, these data can be changed. Double-clicking on the corresponding line or hitting the Enter key opens the following data entry form:



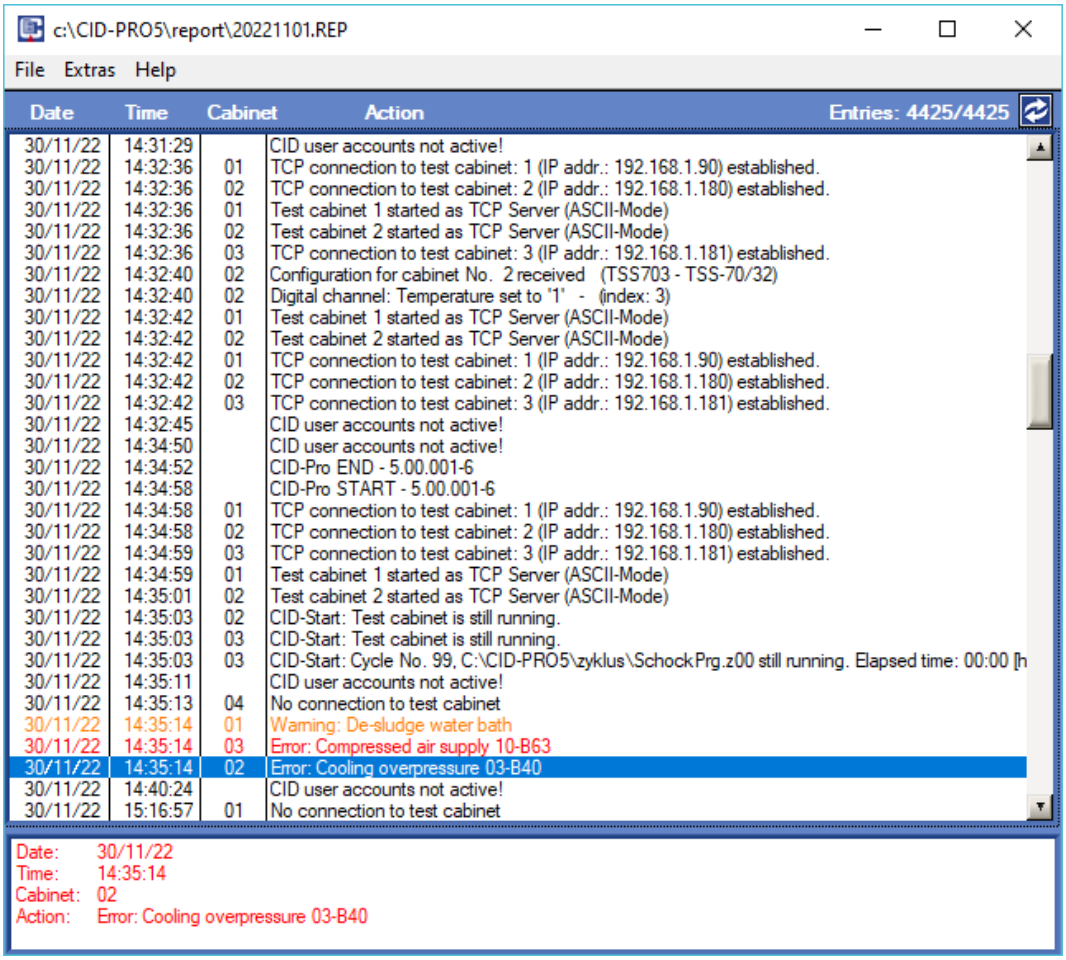
Here, the **Actual value** and **Limit1** are displayed. As from CID-Pro version 5, the new internal configuration structure (see Chapter 3 - General, page 13) allows **Limit2** to be displayed and edited in the same way as via the cabinet control panel, if necessary.

If **OK** is hit, the changes are confirmed and the new values are transmitted to the active test cabinet.
If **Back** is hit the changes are ignored.

14 Event logs (report module)

14.1 General

When the report module is opened, the current report file opens automatically. All actions which have been recorded by the operator and the test cabinets in the background to the CID-Pro 5 software are displayed. The display settings are made in the options (see Chapter 14.7 - Options, page 141).



All actions are deposited in a file which is regenerated every month. The file name shows when the file has been created.
In this example, the file has been created on **01.11.2022** (***CID installation path*\report\20221101.REP**).
A 5-line area is displayed at the bottom, which shows the details of the marked message.

Notice

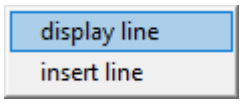
The report files are saved under the

YYYYMMDD.rep ➔ year(4-digit)month(2-digit)day(2-digit).rep

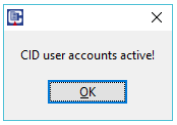
format. This allows them to be arranged much better in the system and search for a specific date.

As of CID-Pro software, version 5, the event logging or, as from now, the **report module** is an independent program, i.e. a separate exe-file (ReportModule.exe). If a report file is called, a CID-Pro internal window does not open; instead, an external call-up is started.
Because of the separate module, it is possible to start a report file with the report module by double-clicking in Windows Explorer. The precondition is, however, that the CID-Pro 5 software has been installed.

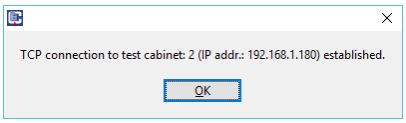
If some entries in the list should be too long, they can be displayed completely via a separated message window. Therefore, the corresponding line must be selected with the right mouse button. If you now right-click, a context menu is displayed. If **display line** is selected, the entire line content is displayed**:**



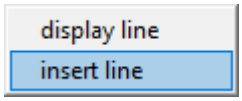
➔



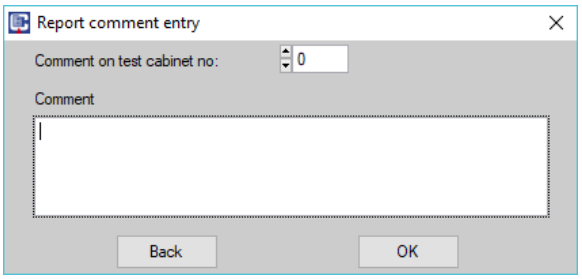
or



In addition it is possible to insert **comment** lines in the report via this context menu.



➔



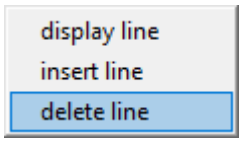
A free text for explanation can be entered into the comment field, e.g. power failure on PC.

The report files entered by the user are displayed in pink in the list.
If the cabinet number 0 (zero) is entered, the entry is not assigned to a specific test cabinet, but to the entire system:

30/11/22	08:59:35		Power failure on the PC

If the cabinet number is greater than 0 (zero), e.g. 1, the entry is directly assigned to this test cabinet 1:

30/11/22	09:00:20	01	Start of the test sensor ABC



A comment line can be deleted again via the context menu. It is, however, not displayed **any security prompt**.

Notice
Comments which have been deleted are cancelled irrevocably!

CID-PRO actions CANNOT be deleted, only the comment lines.

Notice
The "**report new**" function is now in the Configuration menu
(see Chapter 6.6.3 - Report module, page 45) options to be set.

The "**e-mail messages!**" are now in the Configuration menu
(see Chapter 6.7 - Notification, page 46) options to be set.
The "**error list!**" is now in the Cabinet information menu
(see Chapter 7.1 - Error list, page 55) options to be set.
The "**power failures!**" are now in the Cabinet information menu
(see Chapter 7.2 - Power failure list, page 56) options to be set.

14.2 Buttons

Menus	*Symbol*	*Submenus*			*Key combi-nation*	*Reference*
File		**Load**			**Ctrl+L**	Loading a report see Chapter 14.3, p. 139
		Delete			**Ctrl+Del**	Deleting a report see Chapter 14.4, p. 139
		Print ...		**whole list**	**Ctrl+W**	Printing a report ... see Chapter 14.5, p. 140
			PDF	**whole list as PDF**		
				filtered list	**Ctrl+F**	
			PDF	**filtered list as PDF**		
	TXT	**Export...**		**whole list**		Exporting a report ... see Chapter 14.6, p. 140
				filtered list		
		Exit			**Ctrl+E**	Exit the report module
Extras		**Options**			**Ctrl+O**	Options see Chapter 14.7, p. 141
Help		**Help**			**F1**	
		Information				

14.3 Loading a report

This function loads a report file from the ***CID installation path*\report** subdirectory and displays it with the restrictions made in the options (see Chapter 14.7, page 141).

14.4 Deleting a report

Here, the report files which are no longer required can be deleted. For the deletion, a security prompt must be confirmed.

Notice
Report files which have been deleted are lost irrevocably!

14.5 Printing a report …

There are two possible ways to print a report file:

Entire list (as PDF) – all entries in the report file:
This function prints the **entire report file**. It contains all messages and comments.

Filtered list (as PDF) – the currently displayed and filtered list:
This function prints the report file taking into account the restrictions made in the options (see Chapter 14.7, page 141). All comments and messages which have not been filtered out are printed.

The selected function then prints the report entries as text on the connected standard printer and/or creates a PDF file with the desired content.

After the PDF function has been selected, a dialogue opens in which the name and path of the saved PDF file must be indicated. The standard name consists of the text “report” and the name of the loaded report file, e.g.:

Report file:	20221101.REP
PDF file:	Report_20221101.pdf

If the filtered report file is to be created as a PDF file, the addition 'filtered' is added, e.g.:

Report file:	20221101.REP
PDF file:	Report_20221101_filtered.pdf

After successful creation of the PDF file, this file is immediately opened in the default PDF viewer (activated option “Open PDF file immediately after saving?”, see Chapter 6.9 - PDF settings, page 54) or a message “C:\CID-PRO5\report\Report_20221101.pdf was created successfully” is displayed.

14.6 Exporting a report …

There are two possible ways to export a report file:

Entire list – all entries in the report file:
This function exports the **entire report file**. It contains all messages and comments.

Filtered list – the currently displayed and filtered list:
This function exports the report file taking into account the restrictions made in the options (see Chapter 14.7, page 141). All comments and messages which have not been filtered out are exported.

The selected function then exports the report entries into a text file.

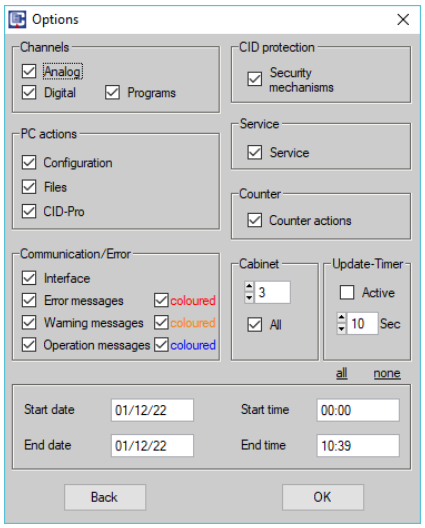
After the respective function has been selected, a dialogue opens in which the name and path of the saved text file must be indicated. The standard name consists of the text “report” and the name of the loaded report file, e.g.:

Report file:	20221101.REP
Text file:	Report_20221101.txt

If the filtered report file is to be created as a txt file, the suffix “filtered” is added, e.g.:

Report file:	20221101.REP
Text file:	Report_20221101_filtered.txt

14.7 Options



The options change the way the report file is displayed. The messages which are to be displayed must be ticked; the messages which are not to be displayed must be left unticked.

If individual entries, e.g. analogue channels, are deactivated, they are filtered out in the report file display. This makes the list clearer.

The **coloured** option for error, warning or operating messages displays errors, warnings and operating messages in red, orange or blue in the report menu.

It is also possible to choose whether all test cabinets (All) are to be displayed or only a certain test cabinet (here: cabinet 1).

With **all**, all options are ticked.
With **none**, all options are deactivated.

An active **Update Timer** updates the report display of the messages every 10 seconds, for example. The update cycle can be entered between 1 and 300 seconds, the standard value is 10 seconds.

The time interval in which the messages are to be displayed can be indicated. The indicated format for the date and time must be observed. If those data are not changed, the entire file is displayed in terms of time.

Notice

Depending on which entries have been deactivated, the messages are no longer displayed.

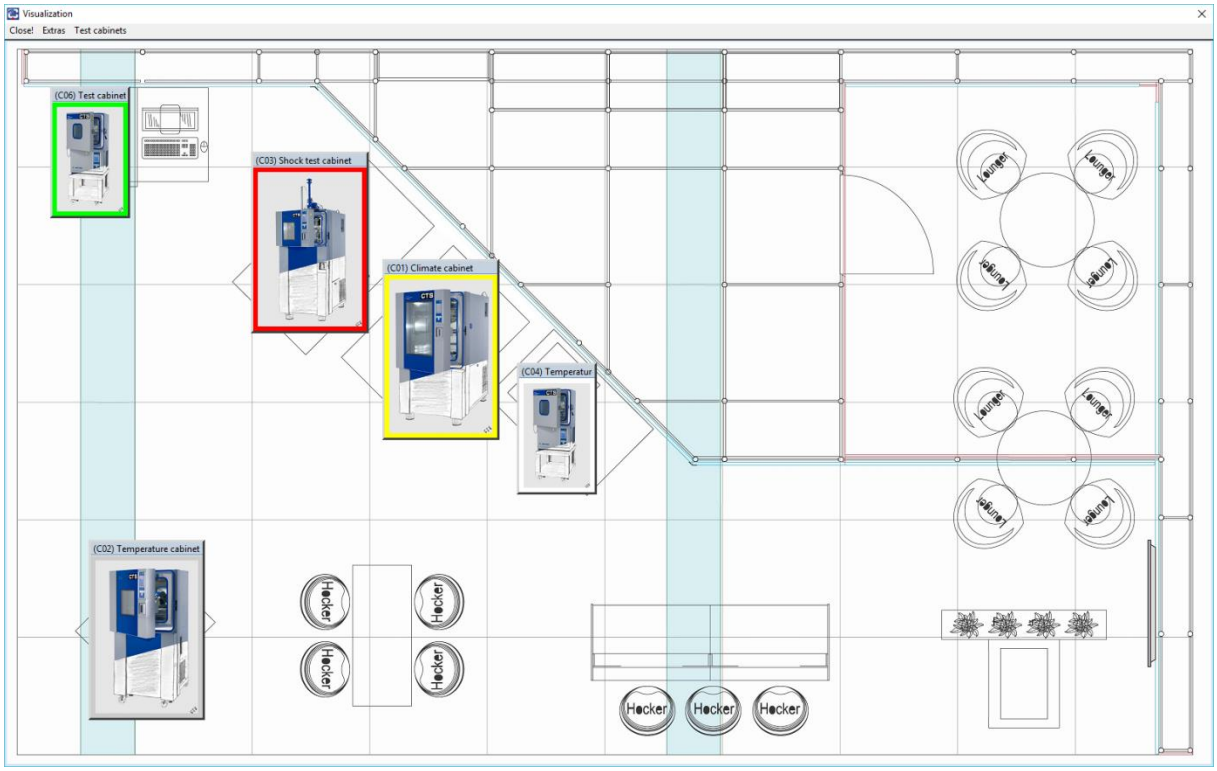
The number of **current entries** / **total entries** Entries: 511/18863 in the report module indicates how many messages have been activated and how many messages can be displayed as a maximum.

If **OK** is hit, the new settings are activated, saved and re-used when the report module is opened again.
If **Back** is hit the changes are ignored.

15 Visualisation

15.1 General

The visualisation menu allows you to visually represent the test cabinet's environment with the help of a background image and cabinet diagrams. The size, position and aspect of the test cabinets can be set with user-defined parameters.



CTS booth plan from the productronica fair in Munich in 2017

15.2 Buttons

Menus	*Symbol*	*Submenus*	*Key combi-nation*	*Reference*
Close!				Exit the visualisation
Extras		**Configuration**	**Ctrl+C**	Configuring a setting see Chapter 15.4, p. 144
		Load settings	**Ctrl+L**	Loading a setting see Chapter 15.6, p. 146
		Save settings	**Ctrl+S**	Saving a setting see Chapter 15.5, p. 146
		Reset settings	**Ctrl+R**	Resetting a setting see Chapter 15.7, p. 146
Test cabinets		*Test cabinets*		Displaying a test cabinet see Chapter 15.8, p. 146

15.3 Visualisation display

Each cabinet has a name (here: "(C01) Climate cabinet" for cabinet 1) and a coloured frame which displays the test cabinet status.

All possible statuses are displayed on the right:

This status description is the same as the cabinet display in the status overview, see Chapter 5.3 - Test cabinets, page 17.

White frame:
the test cabinet is not connected and does not respond

Grey frame:
the test cabinet is connected and not started

Green frame:
the test cabinet is connected and in operation

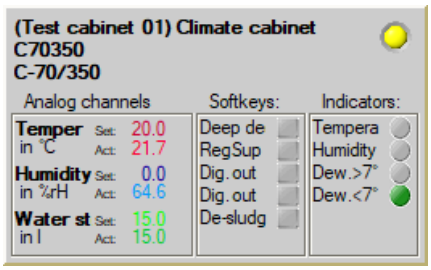
Orange frame:
the test cabinet is connected and in operation – pause

Red frame:
the test cabinet is connected and an error is upcoming

Yellow frame:
the test cabinet is connected and a warning is upcoming

No display:
test cabinet not configured

If the mouse is moved over the test cabinet, the most important information is displayed:

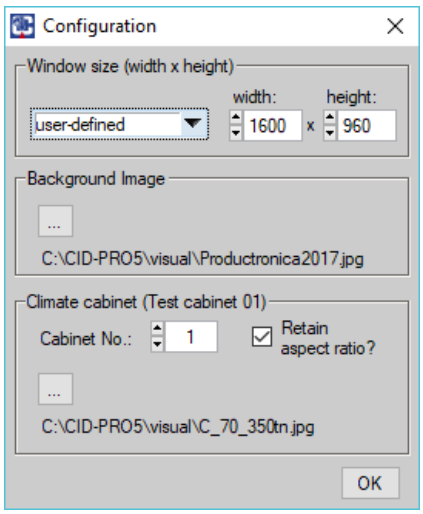


- Cabinet number (Test cabinet 01)
- Cabinet name (Climate cabinet)
- Commission number (C70350)
- Cabinet type (C-70/350)
- Analogue and digital channels (softkeys and indicator channels).

The LED at the upper right edge turns red if an error is upcoming on this test cabinet.
The entire window turns green if the test cabinet is started.
If a program is running in automatic mode, the program path is displayed.

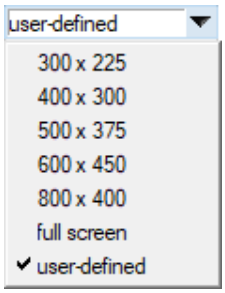
15.4 Configuring a setting

In the visualisation configuration, the display can be changed:



Window size (width x height):

The window size can be selected from the displayed default settings. In the case of a fixed size (e.g. 800 x 400 pixels) the values in the **width** and **height** fields are adopted and displayed dimmed.



The full-screen view maximises the window and also sets the values in the dimmed width and height fields.

The **user-defined** function activates the width and height fields, in which the desired values can be entered.

> **Notice**
> Changes are **immediately** adopted!

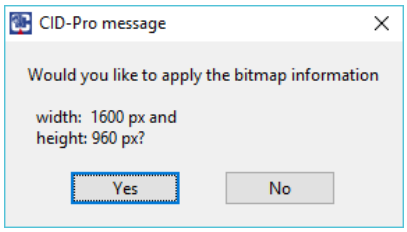
Background image:

If the ... button is hit, a bitmap or JPG file can be selected as a background. The path of the selected image is displayed below the button.

Layout plans of the workplace, laboratory or production hall, or bitmap or JPG files you have designed can be used as a background. Because the image ratio of these files rarely matches that of the screen, it is useful to adapt the window size (width x height) to this background image.

The dimensional information can be entered via the **width** and **height** fields. It is also possible to enter the dimensional information via the image file name. This change work as follows:

- Create an image file in bitmap or JPG format, e.g. **Productronica2017.jpg**
  ➔ This file has a width of 1600 pixels and a height of 960 pixels.
- Rename the file as follows: Name_wwww_hhhh.jpg, e.g. **Productronica2017_1600_0960.jpg**
- If this image file is loaded, this width and height information is processed. A prompt to adopt the values is displayed:



- If **Yes** is hit, these new values are adopted and the window size is changed.
- If **No** is hit, the old values remain unchanged.

> **Notice**
> The **width** and **height** pixel values must have **four characters**, i.e. remaining ones must be filled with 0s.
> The size information must be completed in the **_wwww_hhhh** format. The underscore tells the system that this is size information. Therefore, the rest of the name must not contain **another underscore**.

Test cabinets:
For each test cabinet, a separate cabinet image can be selected. The desired test cabinet is selected via the cabinet no. For orientation, the section heading changes when the cabinet name is indicated, e.g. Climate cabinet (Test cabinet 01).

If the button is hit, a bitmap or JPG file which is used as the cabinet image is selected for the selected test cabinet. The selected image is displayed as a path under the button.
The **aspect ratios** option displays a loaded image in the correct aspect ratio of the pages. This option refers to all test cabinets.

If this option is set, the width-to-height ratio remains the same when the size of the respective cabinet image is changed ➔ there are no distortions.
If this option is not set, the size of the cabinet images can be changed at will ➔ distortion of the images.

This option can also be set later. The ratio, however, is only adapted the next time the images are resized.
If an image is changed and this option is active, the smaller side is always set and the bigger one recalculated.

Original image: **Change:** **Option:** **Result:**

15.5 Saving a setting

It is possible to save the setting of the created configurations for the various displays.
In the **Extras ➔ Save setting** menu item, these settings can be saved under a characteristic name. The file ending is *.vcg (**v**isual **c**onfi**g**uration).

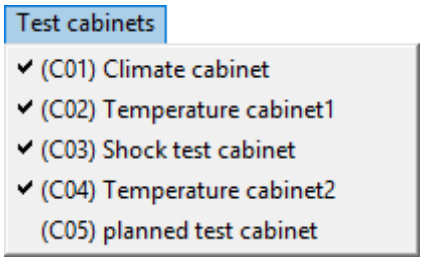
15.6 Loading a setting

The various configurations which have been saved can be reloaded at any time.
The vcg files can be selected in the **Extras ➔ Load setting** menu item. After confirmation, the selected setting is adopted and the visualisation is completely regenerated.

15.7 Resetting a setting

If the visualisation is to be created again from scratch, select the **Extras ➔ Reset setting** menu item. The saved settings are reset, i.e. all image paths, sizes and positions are set to the standard values.

15.8 Displaying a test cabinet



The displayed test cabinets from the program configuration (see Chapter 6.1 - Configuration: Settings: Number of cabinets, page 32) are all listed with the cabinet number and name (e.g. (G01) climate cabinet).
As standard, all test cabinets are ticked and therefore displayed.
Whether a test cabinet is displayed depends on the tick in front of the entry. If a test cabinet is to be displayed, it must be ticked.

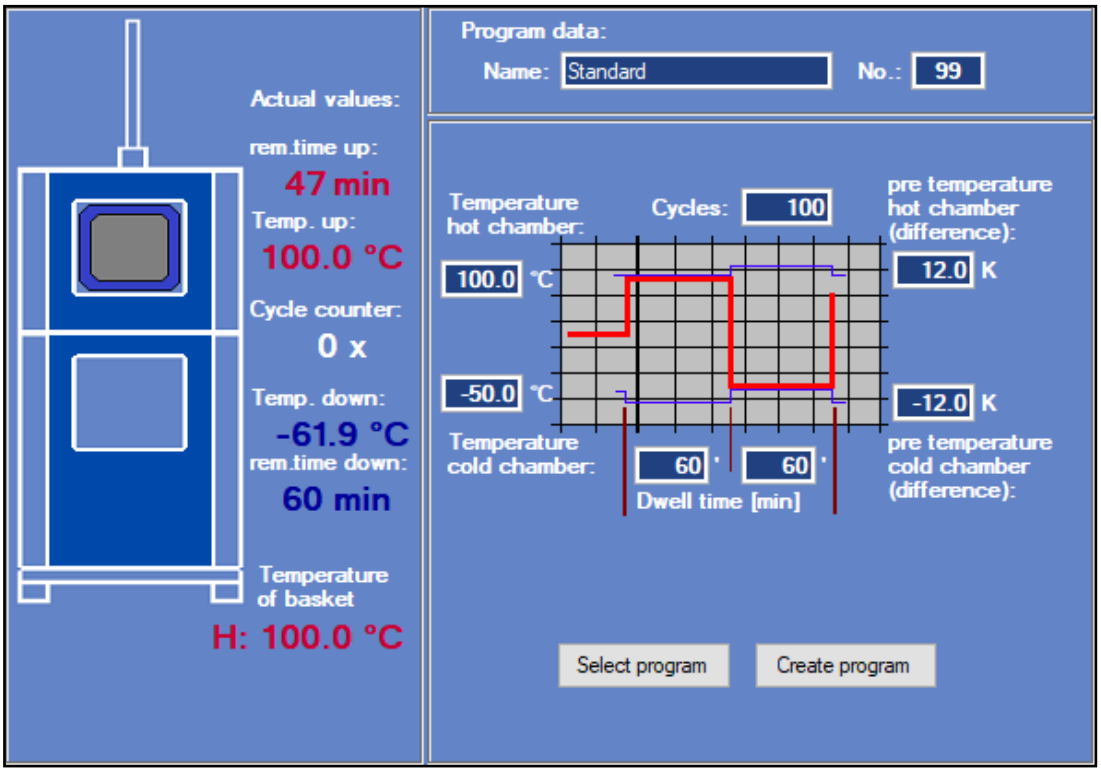
Notice
Test cabinets which are not configured cannot be ticked and there is no possibility to change this status.

16 Special menus for specific cabinet types

16.1 Temperature shock test cabinets

The shock test cabinet is a special cabinet type in which very fast temperature changes can be generated. The temperature changes are not achieved by changing the temperature in a zone, but by moving the test specimen from one temperature zone to another. For this special function, a separate menu is available which allows programs to be created for this cabinet type.

16.1.1 Overview menu

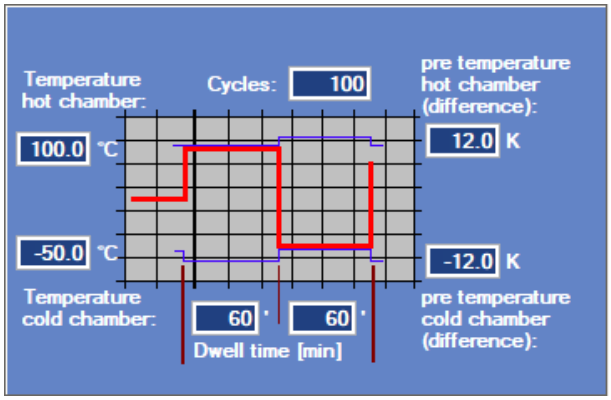


On the left side, a symbolic representation of the cabinet is displayed. The grey basket icon shows the basket position (shown in this image with the basket at the top). Below, the basket temperature is displayed, if the shock test cabinet has a basket sensor (external PT100).
If the shock test cabinet has no external basket sensor, the hot chamber temperature is displayed as the basket temperature if the basket is in the upper chamber, and the cold chamber temperature is displayed if the basket is in the lower chamber. The basket temperature is then indicated as follows:

Hot chamber / upper chamber	**H:**	**100.0 °C**
Cold chamber/ lower chamber	**C:**	**-61.9 °C**

The current actual values are displayed to the right of the test cabinet.

- **red values**
  - remaining dwell time of the basket in the hot chamber at the top
  - actual temperature in the hot chamber at the top
- **white value**
  - already processed cycles
- **dark blue values**
  - actual temperature in the cold chamber at the bottom
  - remaining basket dwell time in the cold chamber at the bottom



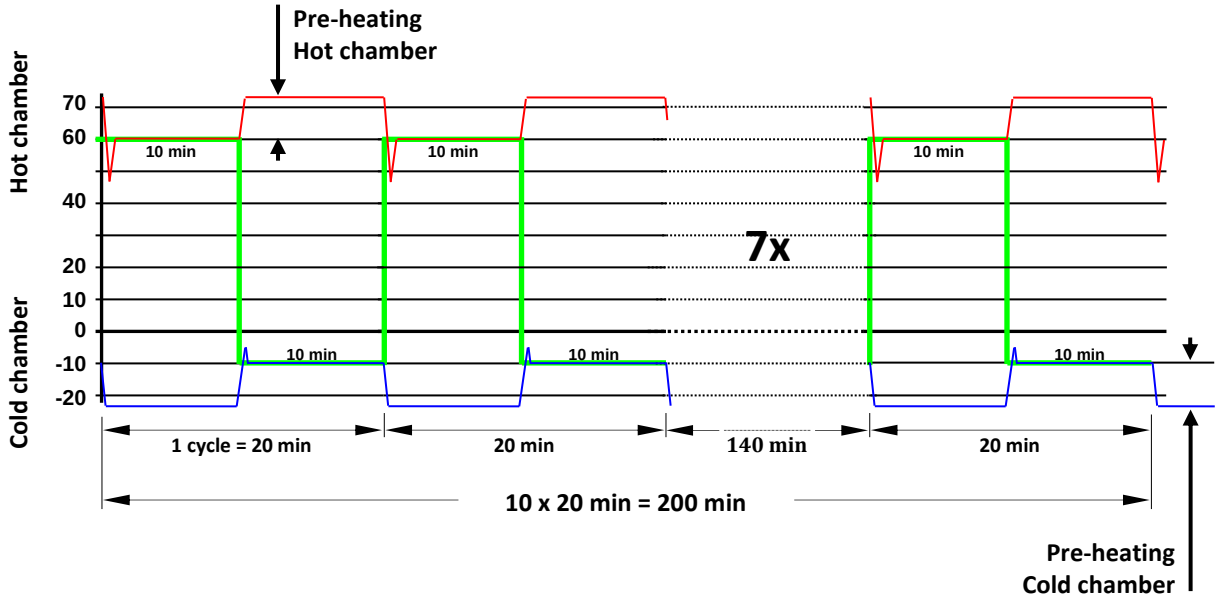
The program data is displayed in the right-hand area. It is a graphical display of the test cycle with the programmed data.

- **Temperature hot chamber:** (top left) — Set temperature value in the hot chamber
- **Temperature cold chamber:** (bottom left) — Set temperature value in the cold chamber
- **Pre-temperature hot chamber (difference):** (top right) — This temperature value is added to the hot chamber's set value. The hot chamber temperature is regulated to this total if the basket is not in this zone.
- **Pre-temperature cold chamber (difference):** (bottom right) — This temperature value is added to the cold chamber's set value. The cold chamber temperature is regulated to this total if the basket is not in this zone.
- **Cycles:** (top centre) — Number of hot chamber/cold chamber moves
- **Dwell time hot chamber:** (left side, bottom centre) — Basket dwell time in the hot chamber in minutes
- **Dwell time of cold chamber:** (right-hand side, bottom centre) — Basket dwell time in the cold chamber in minutes

16.1.2 Pre-temperature / pre-heating

If the basket enters a chamber, the temperature in that chamber drops. The extent of the drop depends on the chamber temperature, the basket and the test specimen at the moment the basket entered.
To achieve the desired set value again as soon as possible after the basket moves, the hot chamber is heated before the move by a certain value above the set value. The cold chamber is cooled down by a certain value below the set value.
These values are the **pre-heating**. This value is positive for the hot chamber (hot chamber pre-heating – **HChPreHea**), and negative for the cold chamber (cold chamber pre-heating – **CChPreHea**).

This variable pre-heating is similar to channels which can be optimised for the set values and, above all, for the test specimen mass (changing the analogue channels: see Chapter 5.11 - Analogue channels, page 27).



Notes on the diagram:

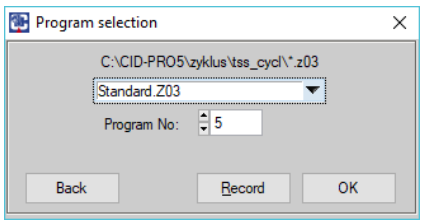
- The thick, light green characteristic curve which varies between +60 °C and -10 °C displays the **basket's** set temperature.
- The thin, red characteristic curve in the upper area of the schematic drawing displays the changes in the actual temperature of the **hot chamber**. It varies between approx. +45 °C and approx. +72 °C. The different values have the following meaning:
  - +60 °C: Set temperature (= actual temperature) of the hot chamber with the basket
  - +72 °C: +60 °C + 12K (set value + set pre-temperature control only if the basket is in the cold chamber)
  - +45 °C Temperature shortly after the cold basket enters the hot chamber. The temperature in the chamber drops.
- The thin, blue characteristic curve in the lower area of the schematic drawing displays the changes in the actual temperature of the **cold chamber**. It varies between approx. -22 °C and approx. -5 °C. The different values have the following meaning:
  - - 10 °C: Set temperature (= actual temperature) of the cold chamber with the basket
  - - 22 °C: -10 °C + (-12K) (set value + set pre-heating only if the basket is in the hot chamber)
  - - 5 °C Temperature shortly after the hot basket enters the cold chamber. The temperature in the chamber increases.

Notice

The pre-heating should possibly be selected in such a way that the peak ranges (here +45 °C and -5 °C) correspond to the temperature set value when the basket enters the respective chamber.

With the two buttons Select program (see Chapter 16.1.3 - Starting a program, page 150) and Create program (see Chapter 16.1.4 - Creating a program, page 151) further windows are called.

16.1.3 Starting a program



When the Select program button is hit, a window to select the program name and number opens.

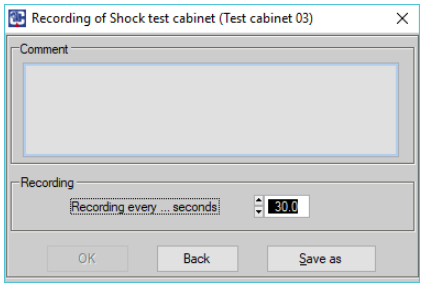
The cabinet control has the program numbers from 1 to 99. The program is stored in the control system under the program number displayed here.
Only the programs from the shock test standard directory of the program cycles can be selected. This subdirectory is named as follows:

*CID installation path**zyklus***tss_cycl**

e.g.: C:\CID-PRO5\zyklus\tss_cycl

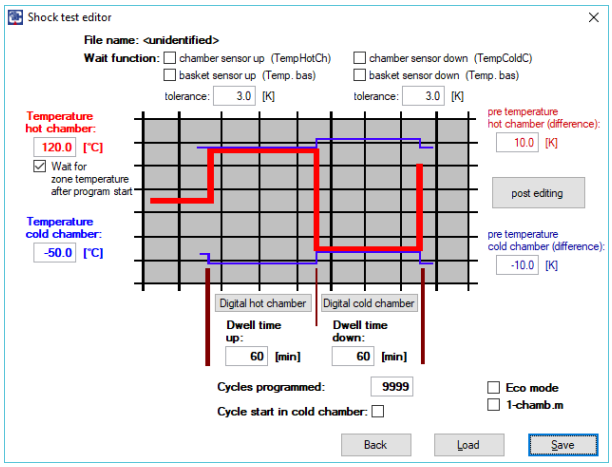
If **Back** is hit, the function is interrupted.
If **OK** is hit, the selected program is transmitted to the desired program number in the control system and started.

> **Notice**
> If a program is already on this program number, this program is **overwritten**.



Recording opens a window to activate an automatic measurement recording (see Chapter 11.2 - Recording a program, page 128)

16.1.4 Creating a program



When the Create program button is hit, a window opens to enter and save programs for the shock test cabinet.

The shock test editor shows a similar image to the overview of the programmed shock test program. This input form creates a normal program in the background which can be post edited for special requirements (e.g. switching digital outputs) using the editor (see Chapter 9 - Program editor (editor module), page 62). Normally, however, this is not necessary. This input allows programs for the shock test cabinet to be created very quickly and clearly.

- Inputs for **temperatures**, **pre-temperatures**, **dwell times** and **number of cycles** are the program's set values.
- **Wait for zone temperature after program start** inserts a Wait function into the program. Before the first cycle starts, the program waits until the hot chamber has reached its set value with a tolerance of 3K.
- **Wait function: chamber sensor up (TempHotCh)** inserts a Wait function at each cold/hot move. The dwell time in the hot chamber only starts to run if the entered tolerance band (here 3K) of the **hot chamber temperature sensor** has been reached. The temperature must approach the zone from below.
- **Wait function: basket sensor up (Temp. bas)** inserts a Wait function at each cold/hot move. The dwell time in the hot chamber only starts to run if the entered tolerance band (here 3K) of the **basket sensor** has been reached. The temperature must approach the zone from below.
- **Wait function: chamber sensor down (TempColdC)** inserts a Wait function at each hot/cold move. The dwell time in the cold chamber only starts to run if the entered tolerance band (here 3K) of the **cold chamber temperature sensor** has been reached. The temperature must approach the zone from above.
- **Wait function: basket sensor down (Temp. bas)** inserts a Wait function at each hot/cold move. The dwell time in the cold chamber only starts to run if the entered tolerance band (here 3K) of the **basket sensor** has been reached. The temperature must approach the zone from above.

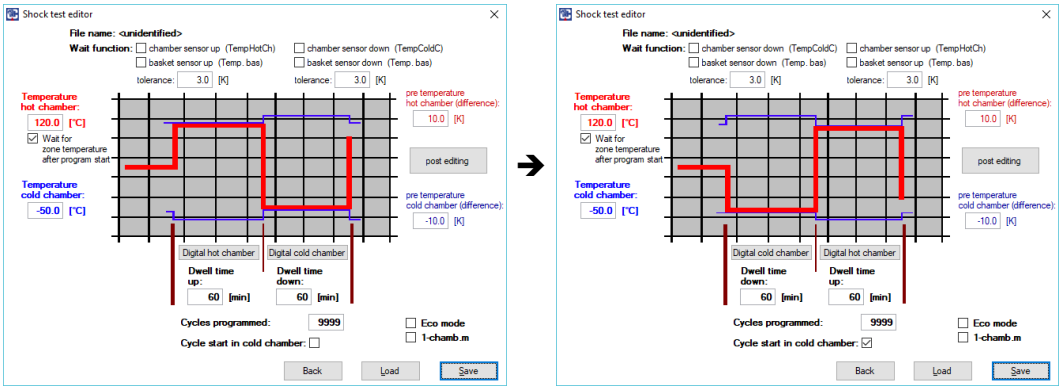
Notice

The test takes longer if Wait functions are used. The wait time depends on the set tolerance and the basket loading.
If the Wait functions are not activated, the program starts to run, independently of the actual values in the chambers.

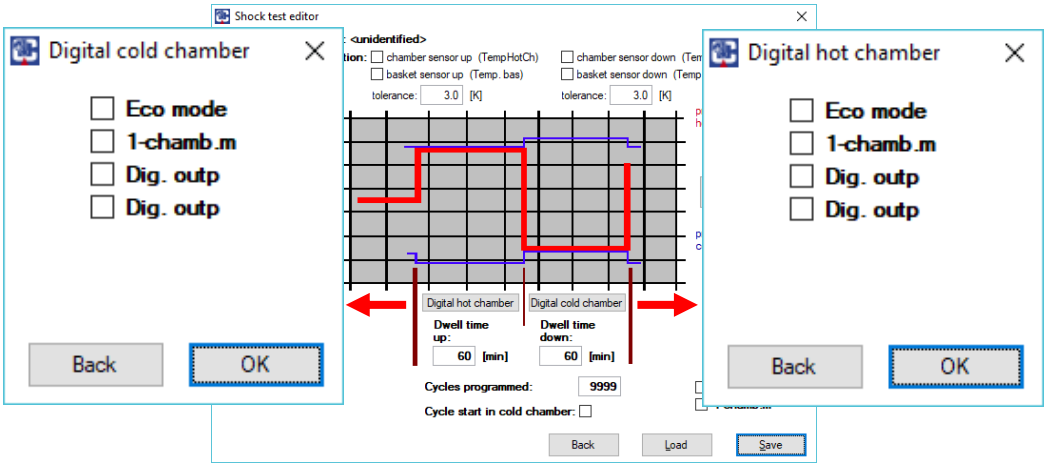
The set program cycle is stored under a freely selectable name if **Save** is hit.

If **Load** is hit, an already created program cycle can be loaded, edited, modified and saved again under the same name or another if **Save** is hit.

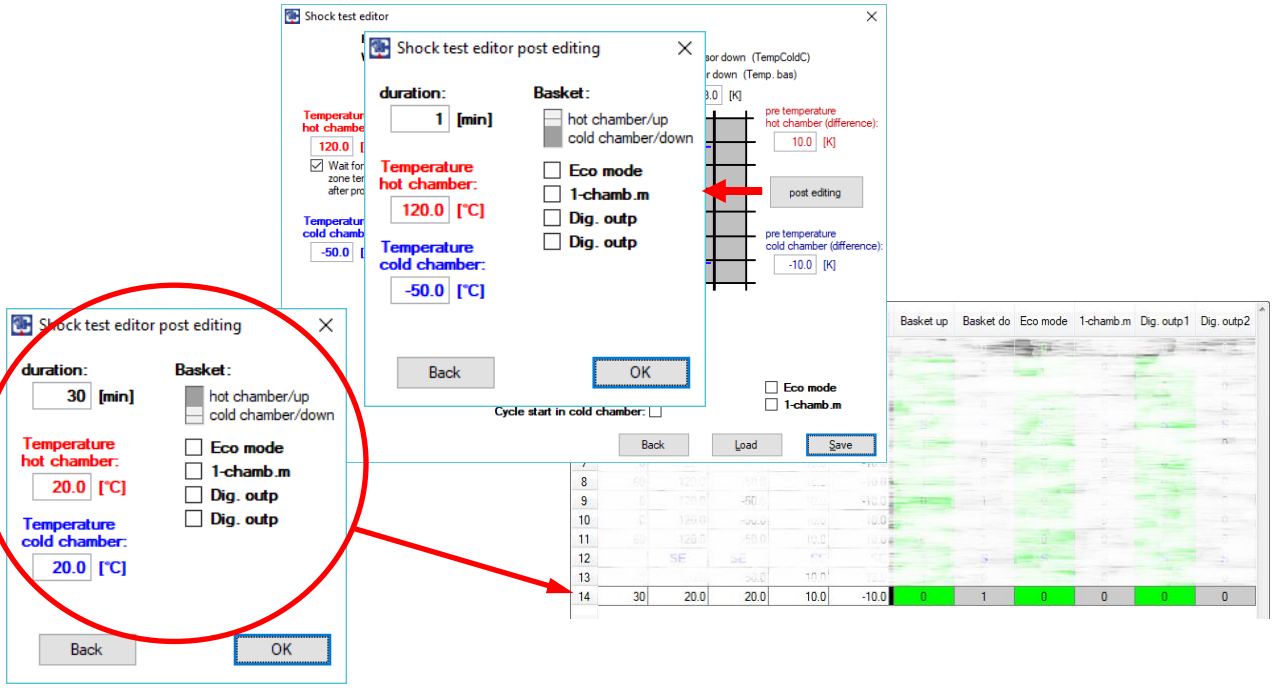
If **Cycle start in cold chamber** is selected, the graph changes:



Digital hot chamber or **Digital cold chamber** set or reset the displayed digital channels in the hot chamber phase or cold chamber phase:



During **post editing**, the temperature of the hot and cold chambers can be set, as can all available digital channels which are activated at the end (line 14) of the running (started) program. Thus, a defined program end can be specified (e.g. when one-chamber operation in the cold chamber reaches a defined temperature and a digital exit 1 is set):



16.1.5 Manual/program mode

If a shock test cabinet is started with the start / stop button in the status overview (see Chapter 5.5 - Operational status, page 19), the program mode, i.e. the standard shock test program (storage location 99) is started as standard.
In the case of a general standard temperature or climatic test cabinet, manual mode is started if the start / stop push button is hit.

If the shock test cabinet is to be started in manual mode, the digital channel **automatic** must be deactivated in the CID-Pro 5 software.

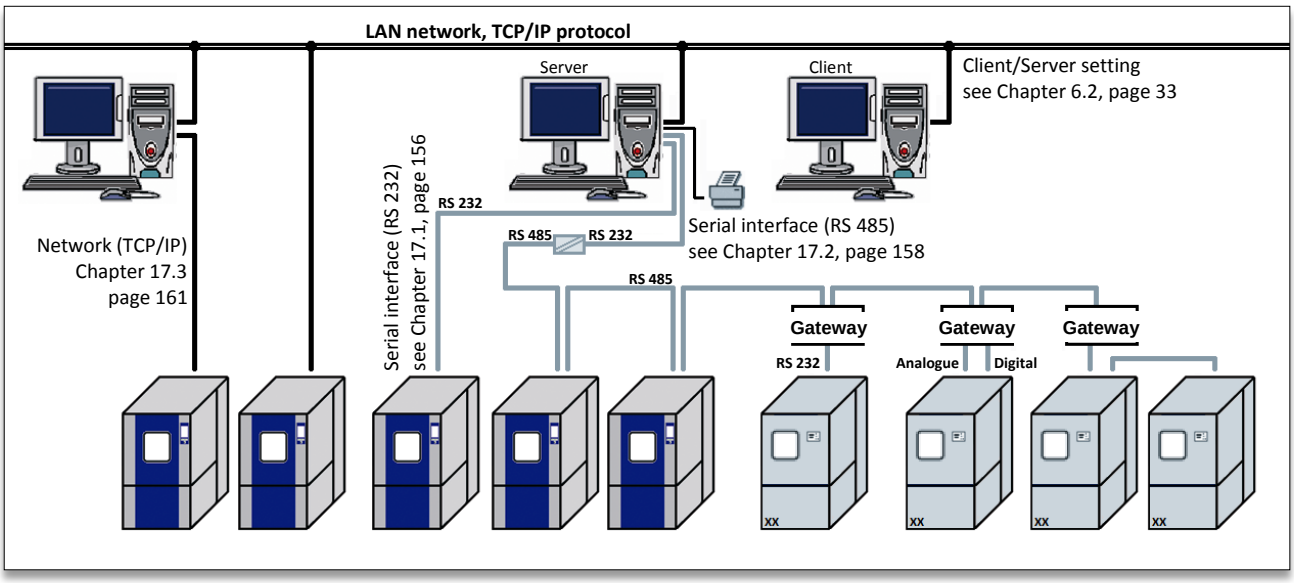
This channel, **automatic**, has the following meaning:

Automatic = 1	Start up the shock test cabinet with the standard shock test program
Automatic = 0	Start up the shock test cabinet in manual mode (In this case, the basket can be moved manually)

Notice
The digital channel **automatic** is not visible on the cabinet control panel.

17 Cabinet networking

There are the following possibilities to link the test cabinets:



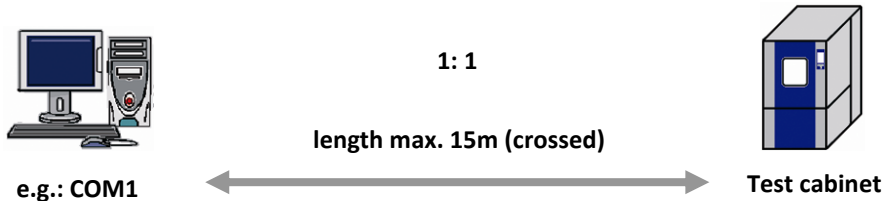
There are two possibilities to connect the cabinets

- Serial interface
  - RS232 (1:1 connection) see Chapter 17.1 - Serial interface (RS 232), page 156
  - RS485 (network) see Chapter 17.2 - Serial interface (RS 485), page 158
  - Customer cabinets see Chapter 17.4 - Cabinets from other manufacturers, page 162
- Ethernet interface
  - 1:1 connecting see Chapter 17.3 - Network (TCP/IP): 1:1, page 161
  - Via a (company) network see Chapter 17.3 - Network (TCP/IP): m:n, page 161

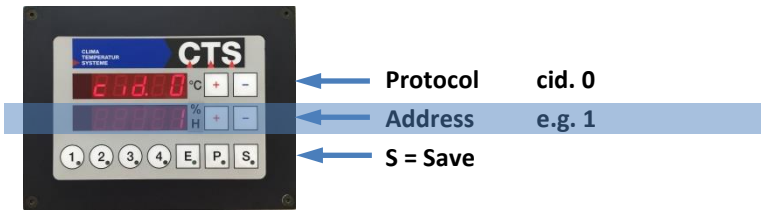
To check a test cabinet which is connected to the CID-Pro software via a 1:1 connection, the following Client/Server administrations are available:

- Client/Server administration see Chapter 6.2 - Communication: Client/Server, page 33

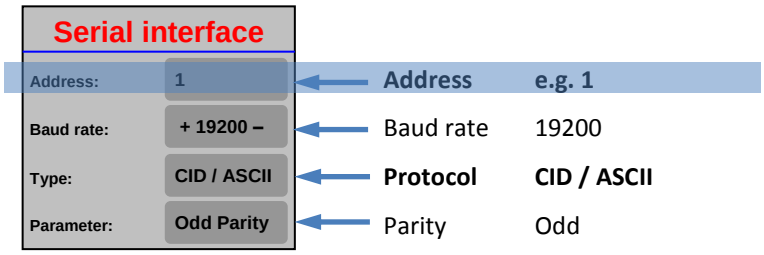
17.1 Serial interface (RS 232)



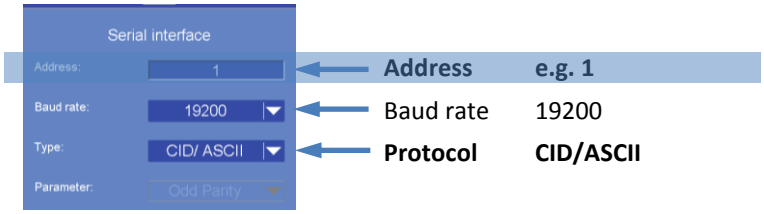
- Connection of a test cabinet and a PC system via a **crossed** serial RS232 interface cable.
- The cabinet address and the serial interface parameters in the configuration are set as follows:
  - 7-segment control panel: Key order **E – P – P**



  - V2 Touch control panel: **Main menu 2/3 ➔ System data ➔ Interfaces**

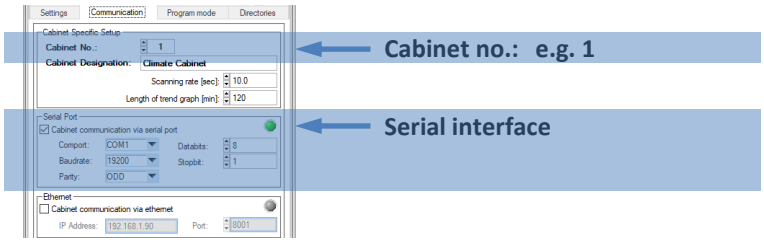


  - V3 Touch control panel: **Main menu 2/2 ➔ System data ➔ Interfaces**



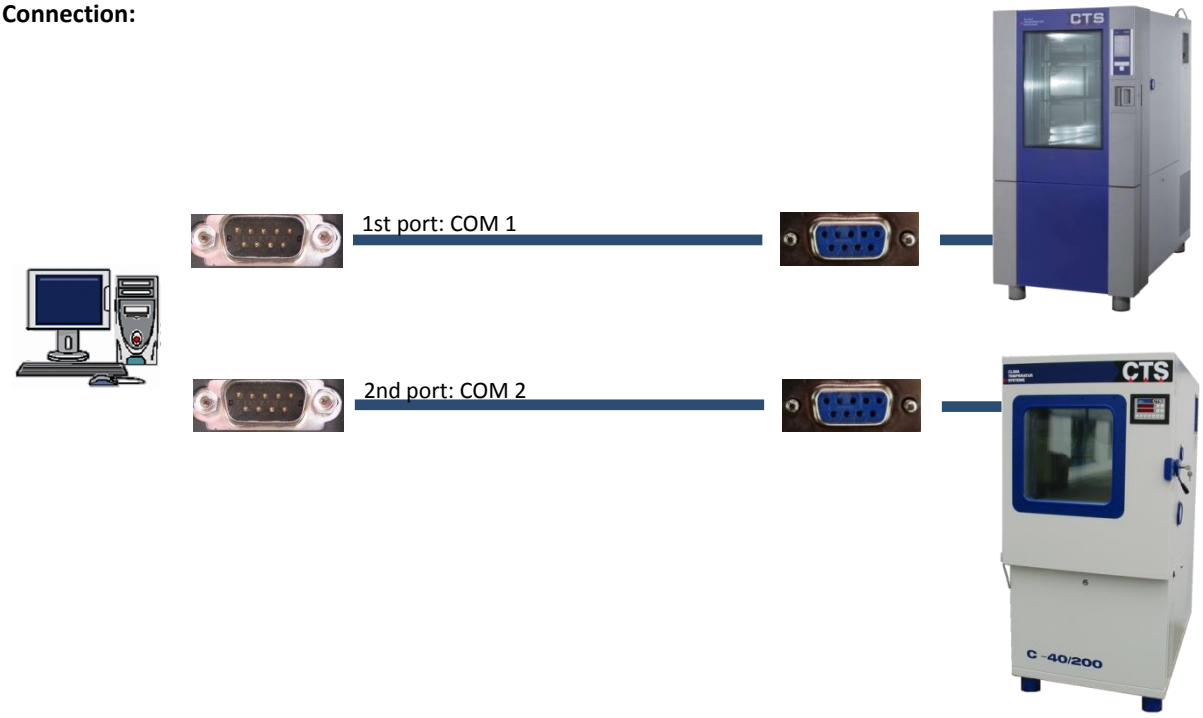
These indications must correspond to:

- the same parameters as the serial interface in the CID-Pro 5 software configurations (see Chapter 6.2 - Communication: Serial interface, page 33).
- The correct PC COM port number must be selected.

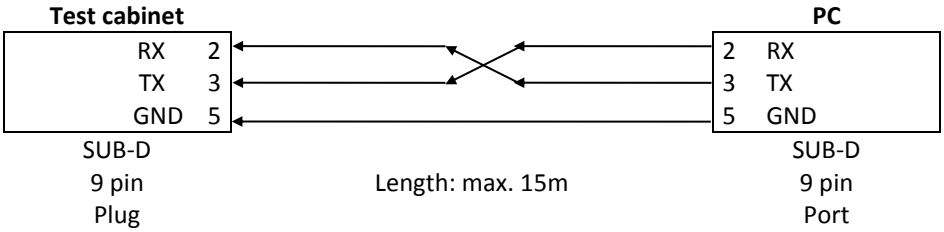


> **Notice**
> Only one test cabinet can be connected to each PC COM port.

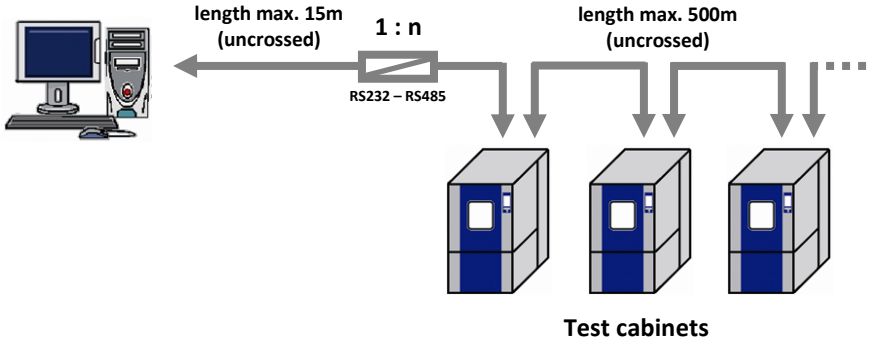
Connection:



Port cable:

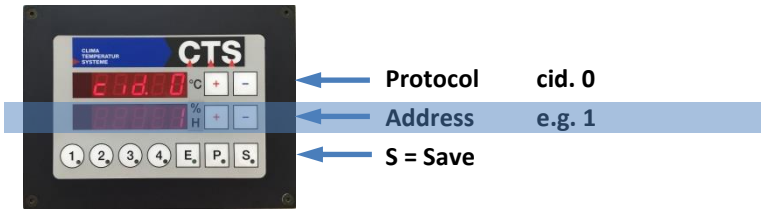


17.2 Serial interface (RS 485)

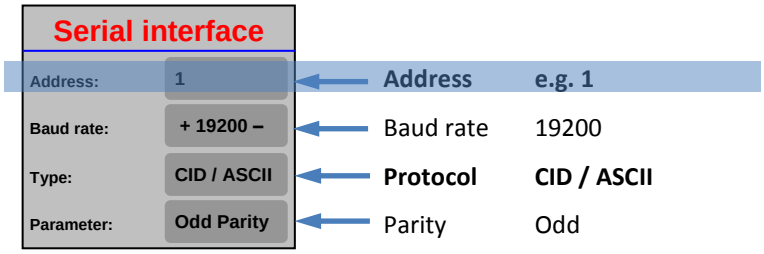


If multiple test cabinets are operated in a row or if long lines are necessary for each serial COM port, the RS485 interface can be used. An interface converter from RS232 to RS485 is required for this purpose.

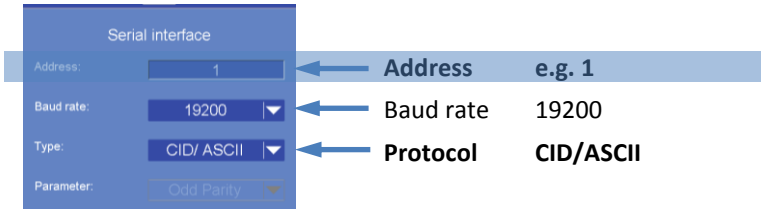
- Connect the PC system with the interface converter (RS232 to RS485) using an **uncrossed** serial RS232 interface cable (SUB-D adapter cable, 9 pins/25 pins, port/ plug).
- Connect the interface converter (RS232 to RS485) and the first test cabinet with an **uncrossed** RS485 interface cable.
- Connect the first and the next test cabinet using a second **uncrossed** RS485 interface cable. Thus, all test cabinets can be connected.
- The cabinet address and the serial interface parameters in the configuration are set as follows:
  - 7-segment control panel: Key order **E – P – P**



  - V2 Touch control panel: **Main menu 2/3 ➔ System data ➔ Interfaces**

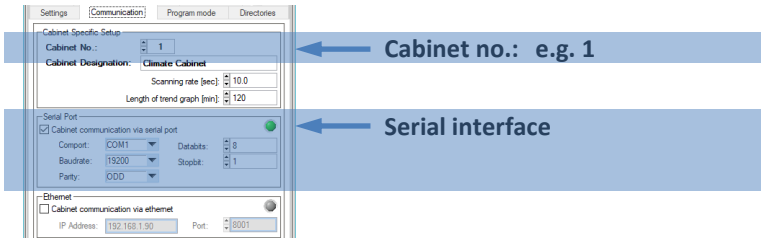


  - V3 Touch control panel: **Main menu 2/2 ➔ System data ➔ Interfaces**



These indications must correspond to:

- the same parameters as the serial interface in the CID-Pro 5 software configurations (see Chapter 6.2 - Communication: Serial interface, page 33).
- The correct PC COM port number must be selected.



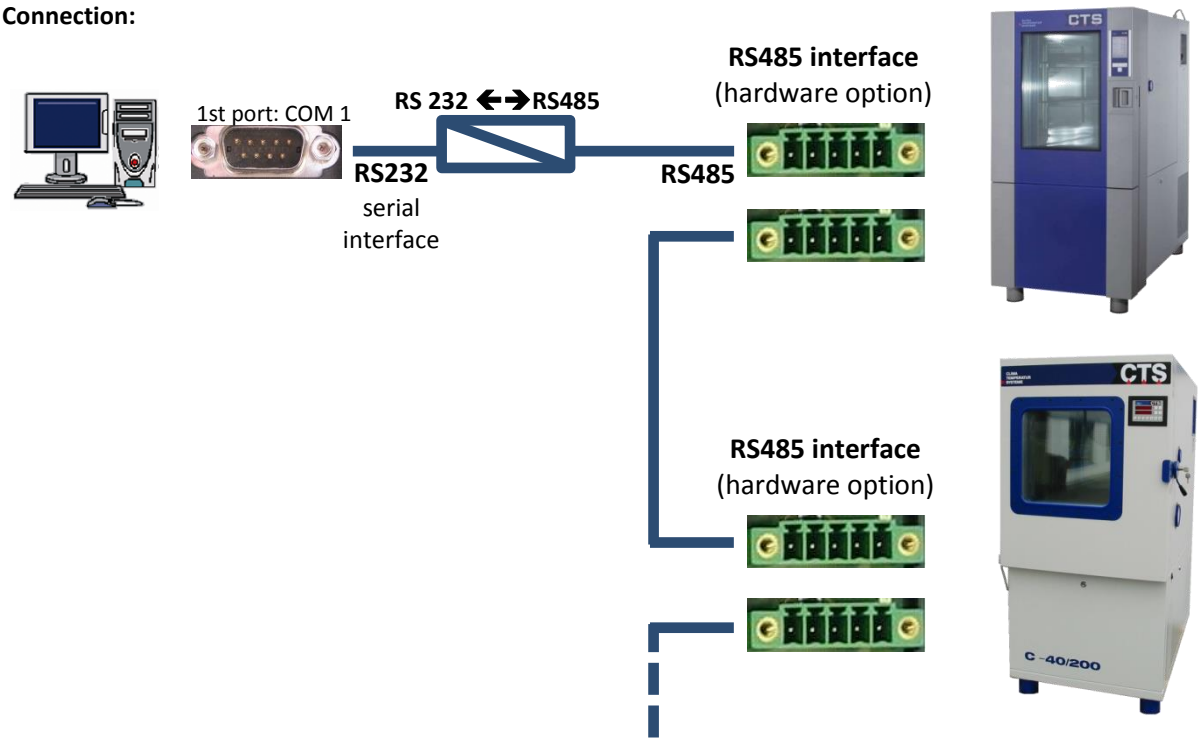
Notice

Only one test cabinet can be connected to each PC COM port.

The COM port in the configuration is identical for all cabinets connected in this way.

The cabinets are only distinguished by their address.

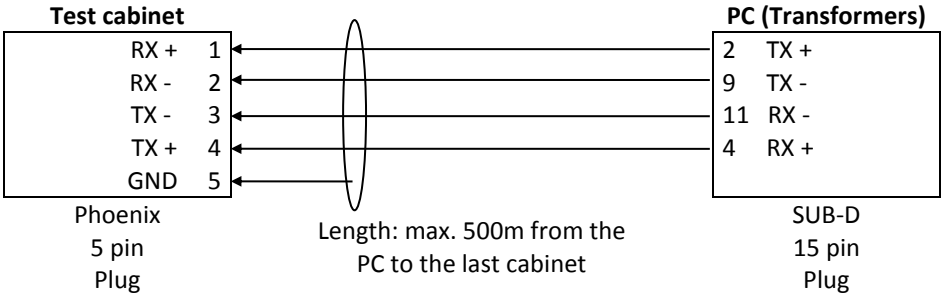
Connection:



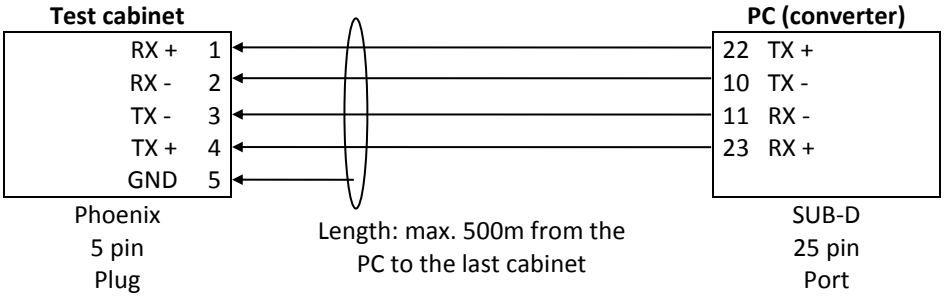
Port cable:
The connecting cables are to be shielded with 4 cores (e.g. LIYCY 4x 0.25mm²).

Connecting cable: Test cabinet – PC (RS485-RS232 converter)

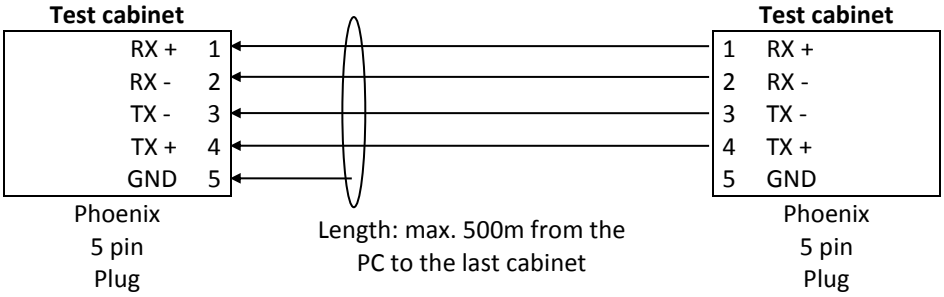
1. Phoenix PSM V24/V11



2. W&T no.: 86000

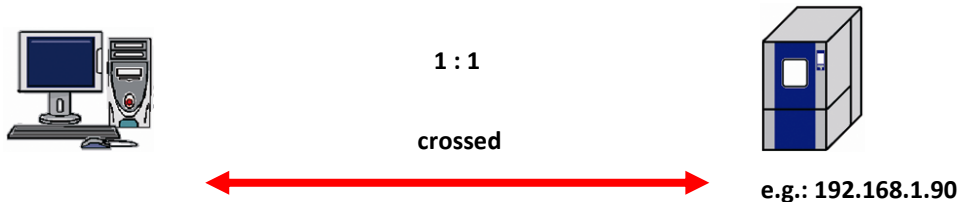


Connecting cable: Test cabinet – test cabinet

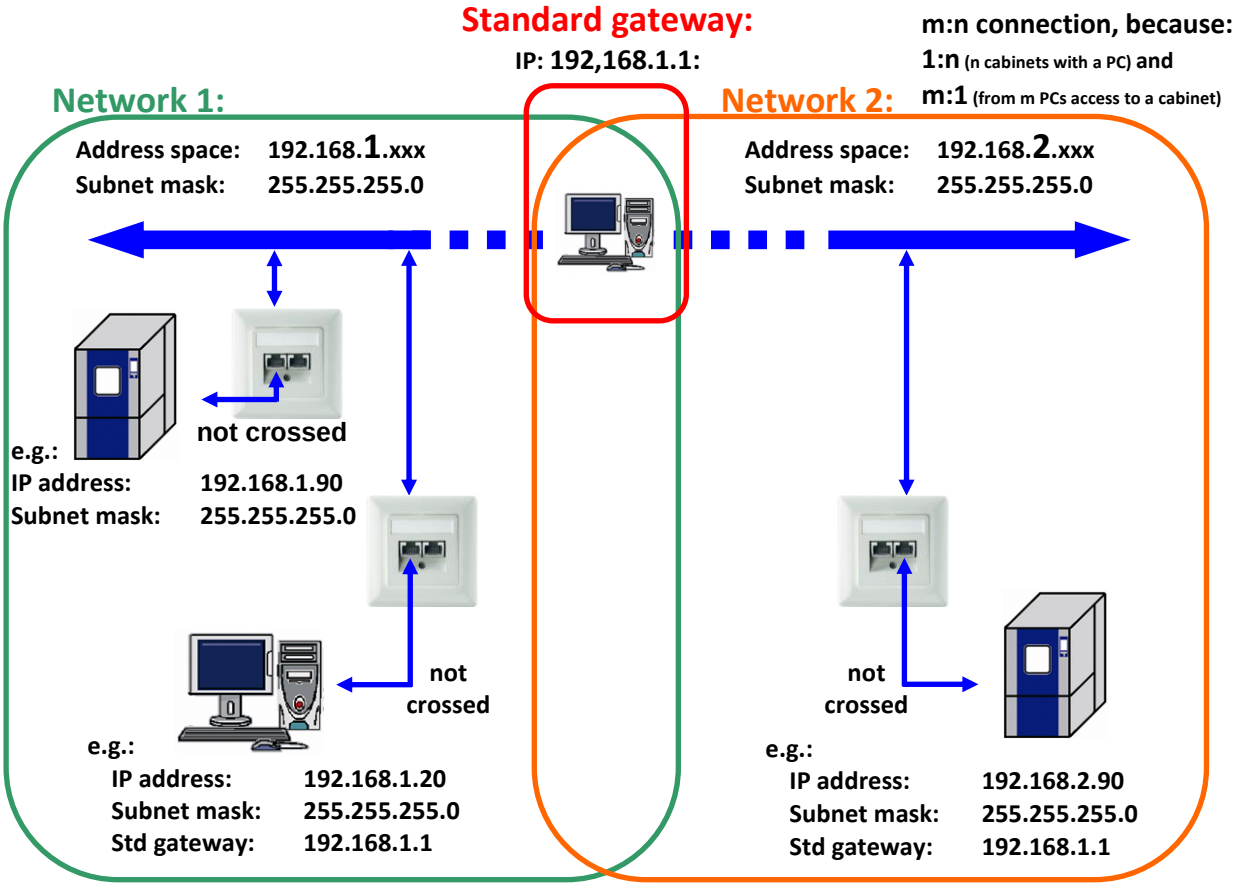


17.3 Network (TCP/IP)

- **Either:**



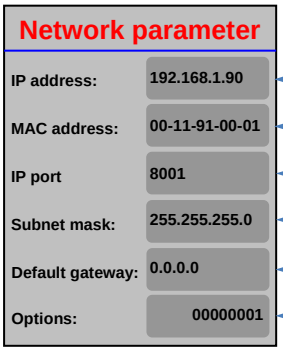
- **Or:**



The CID-Pro 5 software allows networking via a company-integrated network. The precondition is a LAN (Local Area Network) with a correctly installed TCP/IP protocol. The CID-Pro 5 software sets up the communication with a **fixed IP address**. This can cause problems in networks with a dynamic DHCP (Dynamic Host Configuration Protocol) address allocation.

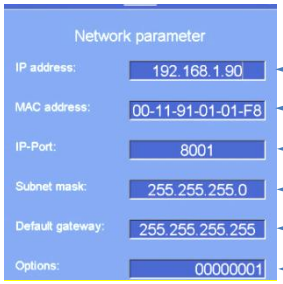
> **Notice**
> **The test cabinets do not support the DHCP!**

- Connect the test cabinet and a free network socket with a RJ45 patch cable.
- Connect the PC system and a free network socket with a RJ45 patch cable.
- Network parameter setting in the configuration:
  - 7 segment control panel: These test cabinets do not have any internal Ethernet interface.
  - V2 Touch control panel: **Main menu 2/3 ➔ Settings ➔ Network**



IP address	**e.g. 192.168.1.90**
MAC address	unambiguous cabinet identifier
IP port	**e.g. 8001**
Subnet mask	**e.g. 255.255.255.0**
Default gateway	**e.g. 0.0.0.0**
Options	**00000001**

  - V3 Touch control panel: **Main menu 2/2 ➔ Settings ➔ Network**



IP address	**e.g. 192.168.1.90**
MAC address	unambiguous cabinet identifier
IP-port	**e.g. 8001**
Subnet mask	**e.g. 255.255.255.0**
Default gateway	**e.g. 255.255.255.255**
Options	**00000001**

These indications must correspond to:

- the parameters of the Ethernet interface in the CID-Pro 5 software configurations (see Chapter 6.2 - Communication: Ethernet interface, page 33).

Notice

The Ethernet option must be activated ➔ options *0000000*1 must be set!

The network sockets must be activated by the network administrator.

The necessary parameters (IP address, IP port, subnet mask and standard gateway) must be requested from the network administrator.

The IP address is unambiguous in the network, i.e. it must only be assigned once.

The cables should be **uncrossed** patch cables.

17.4 Cabinets from other manufacturers

Via the CID-Pro 5 software it is possible to integrate cabinets from other manufacturers.
These cabinets from other manufacturers are tripped via the protocol converter (so-called gateways (hardware)). Gateways convert various cabinet interfaces so that they seem to be CTS cabinets.
Besides this, there is a special CID-Pro 5 software version which can integrate standardized cabinets from other manufacturers.

In the case of questions regarding hardware or software solutions, please contact the technical support service (see Chapter 22, page 175).

18 CID-Pro 5 software buttons

18.1 Status overview

	Exit the software		Exit!
	Visualisation (Chapter 15, page 142) Visually displays all cabinets in a self-created environment	**Ctrl+V**	Functions
	Status overview for all test cabinets (Chapter 8, page 61) Overview of all connected test cabinets at a glance	**Ctrl+O**	Functions
	Program editor (editor module) (Chapter 9, page 62) Create, edit, modify and delete programs	**Ctrl+E**	Functions
	Measurement data analysis graph (graphic module) (Chapter 10, page 101) Evaluate all measured data in a diagram	**Ctrl+G**	Functions
	Starting programs (automatic mode) (Chapter 11, page 127) Start a program in automatic mode	**Ctrl+A**	Functions
REC	**Manual measurement recording** (Chapter 12, page 131) Document the history of analogue and digital channels by recording measurements	**Ctrl+M**	Functions
	Configuration (Chapter 6, page 32) Software configuration	**Ctrl+S**	Functions
	Cabinet information (Chapter 7, page 55) Display all cabinet information		Functions
	Operating hours and event counter (Chapter 13, page 136) Display the operating hours and events	**Ctrl+C**	Functions
	Event logs (report module) (Chapter 14, page 137) Display all modifications, warnings and errors and leave comments	**Ctrl+R**	Functions
	Help	**F1**	Help
	Service data … (Chapter 5.15, page 31)		Help
	Information **Software information** (Chapter 19.1, page 167)	**Ctrl+I**	Help
	Search for updates … (Chapter 5.16, page 31)		Help

18.2 Editor module

Menus	Symbol	Submenus		Also in the toolbar?	Key combi-nation	Result
File		**New...**		X	**Ctrl+N**	New program see Chapter 9.5, p. 79
		Open...		X	**Ctrl+O**	Opening a program see Chapter 9.6, p. 79
		Save		X	**Ctrl+S**	Saving a program (as) see Chapter 9.7, p. 80
		Save As		X	**Ctrl+A**	
	---	**Setup printer/page**			**Ctrl+I**	Setting up the printer/page and printing ... see Chapter 9.9, p. 81
		Print...	**Print graph**		**Ctrl+G**	
			Print list		**Ctrl+L**	
			Print both		**Ctrl+B**	
			Print screen		**Ctrl+T**	
		Print as PDF...	**Print graph as PDF**			Printing a PDF... see Chapter 9.10, p. 82
			Print list as PDF			
			Print screen as PDF			
		File information				File information of a loaded program see Chapter 9.11, p. 83
	---	*Last files opened*				*Opening a program (9.6)*
		Exit		X	**Ctrl+E**	Exit the editor module
Edit		**Insert line**		X	**Ins**	Editing a line (insert, change, cut and copy) via the keyboard/menu functions see Chapter 9.4.3, p. 69
		Delete line		X	**Del**	
		Cut line		X	**Ctrl+X**	
		Copy line		X	**Ctrl+C**	
		Paste line		X	**Ctrl+V**	
		Copy/insert block...			**F6**	Line block see Chapter 9.12, p. 84
		Delete block...			**F7**	
		Insert Start of Loop		X	**F2**	Loop (beginning and end) see Chapter 9.13, p. 85
		Insert End of loop		X	**F3**	
		Call subprogram		X	**F4**	Calling a subroutine see Chapter 9.14, p. 86
		Insert conditional jump		X	**F5**	Conditional jump see Chapter 9.15, p. 87
		Insert program		X	**F10**	Inserting a program see Chapter 9.16, p. 88
Templates		**Templates**				Templates see Chapter 9.17, p. 89
Extras		**Options**			**Ctrl+P**	Options see Chapter 9.19, p. 91
		Delete program			**Ctrl+D**	Deleting a program see Chapter 9.8, p. 80
		Gradient...	**...with (value calculation)**		**F8**	Defining the gradient see Chapter 9.20, p. 94
			... to (time calculation)		**F9**	
		Save file in data pool ...			**Ctrl+F**	Saving a file in a data pool see Chapter 9.21, p. 97
		Save file as library ...				Saving a file as a library see Chapter 9.22, p. 97
Help		**Help**			**F1**	
		Info...				
Comment						see Chapter 9.23, p. 98
		Zoom functions				Zoom functions (editor) (9.24, p. 99)

18.3 Graphic module

Menus	*Symbol*	*Submenus*	*Also in the toolbar?*	*Key combination*	*Reference*
File		**Open...**	**X**	**Ctrl+O**	Open and load measurement see Chapter 10.4, p. 105
		Delete	**X**	**Ctrl+D**	Deleting a measurement see Chapter 10.5, p. 106
		Print	**X**	**Ctrl+P**	Printing a measurement see Chapter 10.6, p. 107
		Print PDF	**X**	**Ctrl+F**	Printing a measurement as a PDF see Chapter 10.7, p. 107
		File information			File information of a loaded measurement see Chapter 10.8, p. 108
	---	*Files last opened*			*Open and load measurement (10.4)*
		Exit	**X**	**Ctrl+E**	Exit the graphic module
Zoom		**Full screen/restore**	**X**	**Ctrl+R**	Zoom functions see Chapter 10.9, p. 109
		Zoom out	**X**	**Ctrl+U**	
		Zoom	**X**	**Ctrl+Z**	
		Zoom to cursor positions	**X**	**Ctrl+S**	
View		**Display**		**Ctrl+I**	Display see Chapter 10.10, p. 110
		Update		**F12**	General see Chapter 10.1, p. 101
Extras		**Options**	**X**	**Ctrl+T**	Options see Chapter 10.12, p. 117
		EXCEL conversion program		**Ctrl+X**	Excel conversion program see Chapter 10.13, p. 118
		Display measurement values — **all**	**X**		Display measured values see Chapter 10.14, p. 122
		Display measurement values — **cursor position**			
		Copy to clipboard		**Ctrl+C**	Copy to clipboard see Chapter 10.15, p. 122
		More extra options		**Ctrl+F1** **Ctrl+F7**	General see Chapter 10.1, p. 101
		Join measurement files		**Ctrl+M**	Merging measurement files see Chapter 10.16, p. 123
		Cut current measurement file (cursor)			Cut current measurement file see Chapter 10.17, p. 123
Settings		**Settings 1 to 10 available**	**X**	**F1 - F10**	Settings see Chapter 10.18, p. 124
		Settings 1 to 10, if selected	**X**	**F1 - F10**	
		New setting			
		Delete setting			
		Delete ALL settings			
		Save setting			
		Load setting			
Help		**Help**			
		Info...			
Comment!					Comment see Chapter 10.19, p. 126
		Update (the measurement data)	**X**	**F12**	General see Chapter 10.1, p. 101

18.4 Report module

Menus	*Symbol*	*Submenus*			*Key combi-nation*	*Reference*
File		**Load**			**Ctrl+L**	Loading a report see Chapter 14.3, p. 139
		Delete			**Ctrl+Del**	Deleting a report see Chapter 14.4, p. 139
		Print ...		**whole list**	**Ctrl+W**	Printing a report ... see Chapter 14.5, p. 140
			PDF	**whole list as PDF**		
				filtered list	**Ctrl+F**	
			PDF	**filtered list as PDF**		
	TXT	**Export...**		**whole list**		Exporting a report ... see Chapter 14.6, p. 140
				filtered list		
		Exit			**Ctrl+E**	Exit the report module
Extras		**Options**			**Ctrl+O**	Options see Chapter 14.7, p. 141
Help		**Help**			**F1**	
		Information				

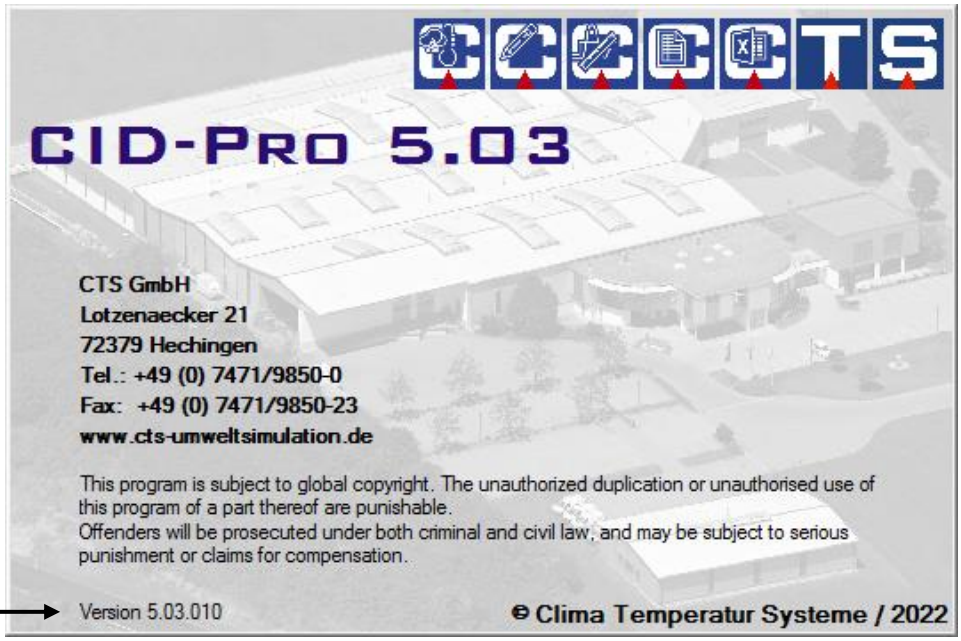
18.5 Visualisation

Menus	*Symbol*	*Submenus*	*Key combi-nation*	*Reference*
Close!				Exit the visualisation
Extras		**Configuration**	**Ctrl+C**	Configuring a setting see Chapter 15.4, p. 144
		Load settings	**Ctrl+L**	Loading a setting see Chapter 15.6, p. 146
		Save settings	**Ctrl+S**	Saving a setting see Chapter 15.5, p. 146
		Reset settings	**Ctrl+R**	Resetting a setting see Chapter 15.7, p. 146
Test cabinets		*Test cabinets*		Displaying a test cabinet see Chapter 15.8, p. 146

19 Software updates

19.1 Software information

The software information gives a quick overview of the started software version. Besides the CTS GmbH contact information, the exact version number is also displayed.
The software version and the information in the support area of our website (see Chapter 19.2 - Support area on the internet, page 168) allow you to check at any time whether the started software is up to date.



exact version denomination

20 End-user license agreement

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a) intent
b) gross negligence of the legal representatives or executives
c) any culpable loss of life, injury or adverse effect on health
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Should any individual provision be or become ineffective, this shall not affect the validity of all other provisions or agreements. Instead of the invalid provisions, an appropriate provision shall apply which comes as close as possible to the legally permissible possibilities of the ineffective clause.

21 Index

Cabinet information
1st entry into the tolerance band 58
2nd entry into the tolerance band 58
Cabinet programs 60
Error history 56
Error limits (test specimen protection) 57
Error list 55
Measurement buffer 59
Permanent monitoring 58
Power failure list 56
Read the control system's program list 60
Tolerance bands 58
Cabinet networking 155
Customer cabinets 162
Network (TCP/IP) 161
Serial interface (RS 232) 156
Serial interface (RS 485) 158
Configuration 32
Access configuration 51
Access configuration – during operation 53
Activate an e-mail configuration 47
Administrator settings 51
Cabinet name 33
Change an e-mail configuration 47
Change password 50, 53
Change user 52
Client/server setting 34
Communication 32
Communication test 37
Configuration of (all) cabinets 37
Configuring cabinet x 37
Create a new report file 45
Delete an e-mail configuration 47
Delete user 52
Directories 41
Editor module 45
Ethernet 33
Graphic module 45
Insert user 52
Language 32
New e-mail configuration 46
Number of cabinets 32
Open PDF immediately? 54
Options 41
PDF settings 54
PDF user-specific information? 54
Program mode 39
Query cycle 33
Report module 45
Serial interface 33
Settings 32
simple password 49
SMTP server 46
Standard directories 41
Test cabinet integration 38
Trend graph time slot 33
User login 53
User logout 53
Window size 44
Contents 3
Editor module
1st entry into the tolerance band 74
2nd entry into the tolerance band 74
Buttons 66
Calling a subroutine 86
Changing a line 69
Changing a value line 76
Changing multiple lines 70
Comment 98
Conditional jump 87
Copying a line 70
Cutting a line 71
Defining the gradient 94
Delete without security prompt 91
Deleting a block of lines 84
Deleting a line 70
Deleting a program 80
Difference between Call and Insert 89
Editing a block of lines 84
Editing a line 69
Editing digital channels 78
Expand all loops 91
File information of a loaded program . 83
Functionality since V5 64
General 62
Important notes on program creation . 67
Insert/copy block 84
Inserting a copied line 71
Inserting a program 88
Inserting a value line 69, 75
Inserting a value line subsequently 77
Inserting/changing a line in the graph 75
Limits 72
Loop (beginning and end) 85
New program 79
Opening a program 79
Options 91
Permanent monitoring 74
Print graph 81
Printing a list 82
Printing a PDF... 82
Printing both (graph and list) 82

Printing the screen 82
Program components..... 67
Saving a file as a library..... 97
Saving a file in a data pool 97
Saving a program (as) 80
Setup printer/page 81
Show dew point temperature values? 92
Show error limits? 92
Show tolerance bands? 92
Templates..... 90
Tolerance bands 73
Wait function..... 71
Zoom functions 99
End-user license agreement
Copyright 169
License agreement 169
Place of performance, place of jurisdiction, applicable law 170
Warranty 170
General..... 13
Graphic module
active recording 105
Automatic Excel conversion 121
Buttons 104
Comment..... 126
Copy to clipboard..... 122
Cursor information 112
Cutting the current measurement file 123
Deleting a measurement..... 106
Display..... 110
Display measured values 122
Excel conversion program..... 118
File information of a loaded measurement 108
Functionality since V5 103
General..... 101
Merging measurement files..... 123
Open and load measurement..... 105
Options 111, 117
Printing a measurement..... 107
Printing a measurement as a PDF ... 107
Searching for a measurement file 105
Setting options 115
Settings..... 124
Table of analog channels 113
Table of digital channels 114
Zoom functions 109
Installation 8
ASCII protocol..... 10
CID-Pro 5..... 9
Manuals (Adobe Acrobat Reader)..... 11
Manual measurement recording
cyclic storage 132
recording every … seconds 131
start 131
stopping 135
Note regarding licensing 7
Operating hours and event counter..136
Overview of all buttons
Editor module 164
Graphic module 165
Report module.....166
Status overview 163
Visualisation 166
Permissions 7
Program launch
Cabinets 14
Software 14
Report module
Buttons 139
comment lines 138
Deleting a report.....139
display line 138
Exporting a report … 140
General 137
Loading a report 139
Options.....141
Printing a report … 140
Software updates 167
Software information 167
Support area on the internet.....168
Special menus for specific cabinet types.....147
Starting programs (automatic mode)
Attaching a measurement.....128, 131
Automatic mode 130
Comment.....128
display for the recording 130
Program advance 129
Program start 129
Recording.....128
recording every … seconds 128
Selecting a program 127
Start options 129
starting time display.....130
Status overview
Analogue channels..... 27
Cabinet information 18
Changing set value..... 27
Digital channels 26
Error list..... 29
Error status..... 21
General 15
Indicators..... 26
Locking the control panel..... 28
Messages..... 25
Operational status 19
Program status..... 22
Search for updates 31
Service data 31
Size adaptation..... 30
Softkeys 26

Test cabinets 17
Toolbar and menu bar..... 16
Trend and auto graphs..... 23
Status overview for all test cabinets.. 61
System requirements 7
Temperature shock test cabinets..... 147
Automatic..... 153
Creating a program..... 151
Manual/program mode..... 153
Overview menu..... 147
Pre-temperature/pre-heating..... 148
Starting a program 150
Uninstallation 12
Visualisation
Aspect ratios..... 145
Background image..... 144
Buttons.....142
Configuring a setting 144
Displaying a test cabinet.....146
General 142
Loading a setting 146
Mouse movement.....143
Resetting a setting.....146
Saving a setting.....146
Test cabinets.....145
Visualisation display 143
Window size (width x height) 144
Zoom
cursor positions 109
full-screen view.....100, 109
Zoom.....100, 109
Zoom out.....100, 109

22 Technical support

For further details about CTS GmbH and the CID-Pro 5 software, visit our website www.cts-umweltsimulation.de which gives you the latest news about the further development of the company and the CID-Pro 5 software.

For all questions relating to licensing and buying our software, our sales and service partners in more than 30 countries will be on hand with help and advice. You will find the names and addresses of our partners on our website under the contact area. We will gladly name a partner in your vicinity.

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