

# PR8001/01 PowerTools

# **Operating Manual**





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## Contents

1 0	GENERAL INTRODUCTION	5
1.1	OTHER MANUALS	5
1.2	SAFETY INSTRUCTIONS	5
1.3	INSTRUCTIONS FOR UNPACKING	5
1.4	DISPOSAL	5
1.5	COPYRIGHT NOTE	6
1.6	TRADE MARKS, BRANDS	6
1.7	EXEMPTION FROM LIABILITY	
1.8	RISK CONSIDERATION	
1.9	LICENCE INFORMATION	
1.10	ACTIVATING OTHER PROGRAMS	
1.11	SYSTEM PREREQUISITES	7
2 l	NSTALLING THE SOFTWARE	
2.1	Installing FlashIt	
2.2	Installing DisplayIt	
2.3	Installing AccessIt	
2.4	INSTALLING THE PR1792 OPC SERVER	
2.5	Installing TranslateIt	
2.6	INSTALLING RECOVERIT	
2.7	Installing LayoutIt	13
3 (	CONTROLLER CONFIGURATION	
3.1	CONNECTION OF CONTROLLER AND POWERTOOLS PC	
3.1.1	Connection via RS-232 cable	
	RS-232 cable at the X4 & X6 controller RS-232 cable at the PR1713 & X5 controller	
3.1.1.2	Connection via RS-485 cable	
3.1.2	Connection via Ethernet	
3.2	COMMUNICATION	
3.3	CONNECTION BETWEEN CONTROLLER AND ACCESSIT (OPC SERVER)	
3.3.1	Licence input	
3.3.2	Starting the PR1792 OPC server	
3.3.3	Starting the OPC client	
3.3.4	Error messages	
4 F	LASHIT	23
4.1	APPLICATION	
4.1.1	BIOS	
4.1.2	Firmware	
4.1.3 4.2	Application FLASHING FROM INSTRUMENTS	
4.2 4.3	FLASHING FROM INSTRUMENTS FLASHING A NEW FIRMWARE	
4.3 4.4	FLASHING A NEW FIRMWARE FLASHING AN APPLICATION	
4.4 4.5	FLASHING AN APPLICATION FLASHING A PR1750 PROJECT	
4.5 4.6	FLASHING A PRITT SU PROJECT	
4.0 4.7	FLASHING A PRINT LABEL FLASHING TRANSLATEIT FILES	
т./		

## Contents

4.8	CREATING A MERGE FILE	
4.9	Flashing a merge file	40
4.10	Flashing a Bios file	41
4.11	Flashing via Ethernet	43
4.12	ERROR MESSAGES	
4.12.1	FlashIt	
4.12.2	Controller	45
5 D	DISPLAYIT	46
5.1	OPERATOR INTERFACE	
5.1.1	Operation via PC keyboard	
	Key allocation of controller vs. PC keyboard	
5.1.2	Operation via PC mouse	
	Alternative operator interface OPERATION OF SEVERAL DISPLAYIT CONTROLLERS VIA A PC	
5.2		
5.3	OPERATION OF SEVERAL DISPLAYIT CONTROLLERS VIA A NETWORK	
5.4	ERROR MESSAGES	53
6 A	ACCESSIT	54
6.1	LICENCE INFORMATION	54
6.2	Operating principle	54
6.3	INSTALLATION OF ACCESSIT & OPC SERVER	55
6.4	CONFIGURATION OF THE OPC SERVER	
6.5	CONTROLLER CONFIGURATION	
6.5.1	Connection to the serial interface	
6.5.2	Ethernet	
6.6	Start AccessIt	55
6.6.1	Error message during login	57
6.7	Logout	57
6.8	AccessIt main window	57
6.9	Menu structure	58
6.10	System settings	59
6.10.1	Edit user	59
6.10.1.		
	Select Language	
	Edit text	
	Directory	
	DATABASE	
	Online (AccessIt & Controller connection)	
	Offline Close	
	Remove	
	Exit	
6.12	DATABASE SURVEY	
6.13	TABLE	
6.14	Rемоvе	
6.15	Edit	
6.16	UPLOAD	
6.17	Download	
6.18	DELETE	
6.19	Polling TABLE	
	De-activating Polling Table	

## PowerTools Operating Manual

	INDEXES ANNEX Used datatypes Weight format	68 68
7 T	RANSLATEIT	69
7.1 7.2 7.3 7.3.1 7.3.2 7.4 7.5 7.6 7.7 7.8 7.8.1 7.8.2 7.9	EXTRACTING THE CUSTOMIZING KITS	
7.10	FINISHING TRANSLATEIT	
8 R	ECOVERIT	
8.1 8.2 8.3 8.4 8.4.1 8.4.2 8.4.3 8.5 8.5.1 8.5.2 8.6	Controller settings Installing RecoverIT Starting RecoverIT UPDATE DATA FROM DEVICE. Upload RAM data Upload EAROM data Simultaneous RAM & EAROM upload DOWNLOAD DATA TO DEVICE Download RAM data. Download EAROM data ERROR MESSAGES	
9 L	AYOUTIT	92
9.1 9.2 <b>10 I</b> M	Prerequisite of LayoutIt Using LayoutIt	92

## **1 GENERAL INTRODUCTION**

The PowerTools provide powerful functions for smooth commissioning and trouble-free operation of the System Controllers already during installation and commissioning. Our experienced specialists have developed a multitude of practical function packages which facilitate the on-site tasks considerably.

The PowerTools programs are applicable to the following instruments:

- PRO Controller
- BATCH Controller
- BULK Controller
- FILL Controller
- FLOW Controller
- IBC Controller
- LOG Controller
- TRUCK Controller
- PHASE Controller
- PR1713

### 1.1 Other manuals

This manual describes the operation of the individual PowerTools programs.

We expect that you are in possession of the manuals for the PC, for Windows, for the connected batch controllers and for Nice Label Express. If you have questions concerning fundamental subjects, please, refer to the Windows literature. This operating manual deals only with PowerTools-specific subjects.

For the technical details of configuration and installation, please, refer to the system documentation of the connected batch controllers and to the detailed documentation of the used instruments and programs. The operation is described in the manuals for the applications of the relevant controllers.

## **1.2** Safety instructions

The PowerTools applications are installed on the hard disk of the PC, which need not be opened for this purpose. The PC with the PowerTools and PR5510 / PR5610 / PR5710 / PR1713 are electrical apparatus which may be operated only by trained personnel. Maintenance and repair may be done only by trained and authorized personnel (familiar with the implied hazards). Before opening, the instruments must be disconnected from the supply voltage, because live parts risk being exposed. Detailed information is given in the instrument manuals.

## 1.3 Instructions for unpacking

Scope of delivery: PowerTools is delivered on a CD together with the operating manual in electronic forms. Special hint for unpacking: Do not use sharp or pointed objects for unpacking.

## 1.4 Disposal

CDs are special waste. Please, note the regulations of your local disposal company.

## 1.5 Copyright note

Power]	Fools
TOWCI	10013

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All rights reserved.	Sartorius Hamburg GmbH
	Meiendorfer Str. 205
	22145 Hamburg

### 1.6 Trade marks, brands

MS-DOS, MS-Windows, Windows NT, Windows 2000, Windows XP and MS-Access are registered trademarks of Microsoft Corporation.

All other brand or product names are trade names or registered trade names of their respective manufacturer or holder.

## 1.7 Exemption from liability

The PowerTools programs are state of the art. No warranty is taken for correctness, mainly in connection with the third-party software and hardware required for operation of this program.

The manufacturer is not liable for damage caused by other parts of the installation or by incorrect use of these programs.

The above conditions are recognized by using the program.

### 1.8 Risk consideration

For the case of trouble, sufficient protection against damage (e.g. EMERGENCY OFF) must be provided in the system.

During PowerTools installation, the folders are copied into Windows directories. When doing this, already existing folders with the same name risk to be overwritten. This means that e.g. language-specific messages of other programs can be lost. Moreover, other programs can be an obstacle or a cause of trouble for PowerTools operation. Smooth operation can be expected only in a computer environment which fully meets the above specifications.

## 1.9 Licence information

All parts of the content of the PowerTools CD are protected by copyright. All parts of programs AccessIt and PR1792 OPC server are copyright-protected and may not be used without licence. For transmitting information via/to the instrument using the OPC server, a corresponding licence in the instrument must be provided. For using AccessIt, the licence for AccessIt and OPC server is required.

The licence is instrument-specific, i.e. the instrument board number is required when ordering. When using together with the controller, the licence numbers for PR1792/20 and PR1792/13 must be entered into the instrument in menu item [Setup]-[License Setup]-[Add] (see chapter 3.3).

### 1.10 Activating other programs

 $\mathbf{V}$  Using AccessIt and PR1740 on the PC simultaneously is not possible.

Installing an earlier DisplayIt version after installation of AccessIt is not permissible.

## 1.11 System prerequisites

The PowerTools do not make any special requirements on the PC configuration. Before installing the PowerTools, however, you should ensure that the computer is operated with operating system Windows NT, Windows 2000 or Windows XP. Moreover, the PC should have at least 1 free serial interface (e.g. COM1) or 1 Ethernet card with 10 Mbits/sec.

## 2 INSTALLING THE SOFTWARE

For installation, Windows log-in with administrator privileges is required. If necessary, consult your system administrator. To avoid conflicts during access to system files during installation, close all other programs or applications before installing the PowerTools on your PC.

The set-up programs for installation of PowerTools and PR1792 OPC server are stored on the CD.

The set-up program will unpack compressed files and copy them into a new directory (installation directory) with the ".exe" program and with sub-directories on the PC.

De-installation is possible via [Start]-[Control-Panel]-[Add / Remove Programs].

By re-installation of the application, installation of missing files or correction of installation errors are possible. The re-installation procedure is analogous to the program installation.

The technical prerequisites on the PC for installation of PowerTools are listed in chapter 1.11. Please, note also the risk consideration, see chapter 1.8.

Insert the PowerTools CD into the CD/DVD drive.

A new browser (new window) with headline "X5 PowerTools" will be opened.

In this window, you can select and tick the individual PowerTools applications.



#### Note:

Unless the PowerTools browser is called up automatically after inserting the PowerTools CD, double-click on icon workstation, click on the icon of the CD/DVD drive with the right mouse key and select [Open]. Now, a survey of the CD (CD/DVD browser) content is displayed and you can open the folder of any program by double clicking. Double click on the file with name extension ".exe" (e.g. "Flashlt!32 2.20.4 Setup.exe"), in order to start the installation of the relevant PowerTools program and follow the instructions for installation displayed on the monitor.



Driver "ewdrv\_01.exe" is installed automatically.

This drive is required for building up the communication between controller and PC via Ethernet. If you have installed a personal firewall (e.g. included in the Microsoft XP Service Pack 2 installation), you have to enable the access to this driver.

## 2.1 Installing FlashIt

Click on "Flashlt!32 X.XX.X" in the PowerTools browser. This window will be opened. Click on [Open]. Dependent on system settings, a warning is displayed immediately. Confirm again by clicking on [Open].

Unless the PowerTools browser opens automatically, double click on file "FlashIt!32 X.XX.X Setup.exe". in folder FlashIt!32 in the CD/DVD.



		me to the t!32 Setup		
	This will inst	all Flashit!32 02.26	.01 on your comp	outer.
		ended that you clo		
	Click Next to	o continue, or Canc	el to exit Setup.	
10100011 10010100 10100011				
sartori	US			
			Next >	Cancel
Setup - Sartorius	Elashlt!32			
License Agreemen	t			
	lowing important inform	nation before contin	uing.	
Please read the foll agreement before of	lowing License Agreer continuing with the ins	ment. You must acc tallation.	ept the terms of t	his
Sartorius Hamburg Version 2.01	) GmbH			^
WWWeb : www.s	artorius.com vare@global-weighing.	.com		
	LICENSE AGREEME ant - read carefully:	NT FOR THIS SO	TWARE	
	ense Agreement ("EUI	LA'') is a legal agree	ement	~
O I accept the ag				
	the agreement			
⊙ I <u>d</u> o not accept	the agreement			
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	ule agreenierit	< <u>B</u> ack	Next >	Cancel
⊙ I <u>d</u> o not accept		< <u>B</u> ack	Next >	Cancel
⊙lgonotaccept Setup - Sartorius	FlashIt!32	< <u>B</u> ack	Next >	Cancel
⊙ I do not accept Setup - Sartorius Select Destination	FlashIt!32		<u>N</u> ext >	Cancel
<ul> <li>I go not accept</li> <li>Setup - Sartorius</li> <li>Select Destination Where should Sart</li> </ul>	FlashIt! 32 Directory	talled?		
I do not accept      Setup - Sartorius      Select Destination      Where should Saft      Select the folder wi     Next.      D:\Programme\Saft	Flashit!32 Directory orius Flashit!32 be inst here you would like Sa	talled?		
I do not accept      Setup - Sartorius      Select Destination      Where should Sart      Select the folder wi Next.      Diverselect the folder wi Next.	Flashit!32 Directory orius Flashit!32 be inst here you would like Sa	talled?		
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Setup - Sartorius Select Destination Where should Safe Select the folder wi Next.  PtProgramme Programme Satorius Accessit Application	FlashIt!32 Directory onius FlashIt!32 be inst here you would like Si atorius\FlashIt!32	talled?		n click
I do not accept      Setup - Sartorius      Select Destination     Where should Safu      Select the folder wi     Next.      Programme     Satorius     Accessit     Accessit     Accessit     Accessit     Backup Ba	Flashit!32 Directory onius Flashit!32 be inst here you would like So ntorius/Flashit!32	talled?		n click
I do not accept      Setup - Sortorius      Select Destination     Where should Safe      Select the folder wi     Next.      P:Vrogramme     Satorius     Accessit     Accessit     Accessit     Backup Ba     Configuret	FlashIt!32 Directory orius FlashIt!32 be inst here you would like So here you would like So	talled?		n click
I do not accept      Setup - Sartorius      Select Destination      Where should Safe      Select the folder wi      Next.      Programme     Satorius     Accessit     Accessit     Accessit     Configurent     Gedinguett      wet. office-winx	FlashIt!32 Directory orius FlashIt!32 be inst here you would like So here you would like So	talled? artorius Flashilt32 to		n click

The following window is displayed. Click on [Next].

Read the licence agreement carefully and click on "I accept the agreement" for consent to the licence agreement. This is the prerequisite for continuing the installation.

Now, click on [Next].

In dialogue field "Select Destination Directory", you can select the folder in which you want to install the installation and program files.

For changing the pre-defined installation path, click on button [Browse].

Click on button [Next] to continue the installation.

In this mask, you can select a FlashIt program shortcut for the start menu, which can be found in [Start]-[All Programs]-and e.g. [Sartorius]-[FlashIt!32].

Click on [Next] to continue the installation. In this case, the program copies all files into the defined folder and prepares the program set-up and the set-up icons.

If it should be necessary to change the settings, click on button [Back] to return to the previous mask. Click on button [Cancel] to cancel the installation. Click on [Install], if you want to realize the installation.

Click on [Finish] for exit from the set-up.

You can activate checkbox "View Flashlt!32 History.txt" for display of changes in the installed software compared to earlier versions. In this case, a text editor is opened.



## 2.2 Installing DisplayIt



The installation of AccessIt and DisplayIt requires installation of the PR1792 OPC server (also contained on the PowerTools CD)! AccessIt and DisplayIt use the PR1792 OPC server for communication with the X4/X5/X6 and PR1713 controller.

The installation of Displaylt is analogous to the installation of Flashlt, see chapter 2.1.

Additionally, the following window appears:

Click on [Next] to install programs DisplayIt and PR1792 OPC Server (="Full installation").

If the PR1792 OPC server is also contained on the PowerTools PC, de-activate the relevant checkbox before clicking on [Next].

tup - Sartorius DisplayIt!		
elect Components Which components should be installe	d?	
Select the components you want to i		do not want to
install. Click Next when you are ready	to continue.	
Full installation		×.
Sartorius DisplayIt		10,9 MB
PR1792 OPC Server		2,6 MB
Current selection requires at least 13,	5 MB of disk space.	
	< <u>B</u> ack <u>N</u> ext	> Can
tup - Sartorius Displaylt!		
ady to Install		
Setup is now ready to begin installing	Sartorius DisplayIt! on your comp	outer.
Click Install to continue with the insta change any settings.	lation, or click Back if you want to	o review or
Destination directory: D:\Programme\Sartorius\Display	1d	^
Setup type: Full installation		
Selected components: Sartorius DisplayIt!		

If it should be necessary to change any settings, click on button [Back] to return to the previous mask.

Click on button [Cancel] to cancel the installation. Click on [Install] to realize the installation.

If you have selected installation option "Full installation", the following window is displayed. For installation of the PR1792 OPC server, proceed as described in chapter 2.1.

 Setup - PR1792	
010010100 110100011 01001000 110100011 010010	Welcome to the PR1792 Setup Wizard This will install PR1792 OPC Server on your computer. It is recommended that you close all other applications before continuing. Click Next to continue, or Cancel to exit Setup.
010010100 110100011 110100011 110100011 010010	
sartorius	Next> Cancel

Start Menu folder: Sartorius\DisplayIt

#### Note:

Driver "ewdrv\_01.exe" is installed automatically with Displaylt.

This driver is required to build up the communication between controller and PC via Ethernet. If you have installed a personal firewall (installed e.g. with Microsoft XP Service Pack 2), you have to enable the access to this driver.

## 2.3 Installing AccessIt



The installation of AccessIt and DisplayIt requires the installation of the PR1792 OPC server (also contained on the PowerTools CD)! AccessIt and DisplayIt use the PR1792 OPC server for communication with the X4/X5/X6 and PR1713 controller.

The installation is analogous to the installation of FlashIt and DisplayIt, see chapter 2.1 and 2.2.

## 2.4 Installing the PR1792 OPC server

The installation is analogous to the installation of Flashlt, see chapter 2.1

## 2.5 Installing Translatelt

The installation is analogous to the installation of Flashlt, see chapter 2.1.

## 2.6 Installing RecoverIt

The installation is analogous to the installation of Flashlt, see chapter 2.1.

## 2.7 Installing LayoutIt



Layoutlt can be installed only, if PR1750/NT and Nice Label Express version 2.7.1 or higher are provided on the PC.

With Nice Label Express version 2.8 and higher, the installation of Layoutlt is omitted, because Layoutlt is already integrated in Nice Label Express from this version.

Click on "Nice Label Express 1.00 Update" in the PowerTools browser. The window shown opposite is displayed. Click on [Open].

File Dov	vnload 🛛 📉 🔀
?	You are downloading the file: LabelExpress 01.00 Update.exe from E:\LayoutIt! Would you like to open the file or save it to your computer? <u>Open</u> <u>Save</u> Cancel <u>More Info</u> Always ask before opening this type of file
P NiceLal	bel Upgrade for EditLabels - InstallShield Wizard
11010001	NiceLabelExpress Upgrade
D1001010 11010001 01001010 11010001 010010	The Installation will help upgrade NiceLabelExpress to Edit Labels.
11010001 01001010 11010001 01001010	To continue, click Next.
11010001 01001010 11010001 01001010	
01001010 11010001 01001010	
01001010	0
	eee sartorius group
	< Back Next > Cancel
Nice	LabeWpgrade for EditLabels 🗵
G	Files have been installed

ΟK

Click on [Next].

Finish the installation by clicking on [Ok].

## **3** CONTROLLER CONFIGURATION

## 3.1 Connection of controller and PowerTools PC

For working with the PowerTools, controller and PowerTools PC must be connected via the "Builtin" (or an RS-232) interface, or via Ethernet.

Please, note that only programs "Flashlt", "Accesslt" and "Displaylt" can be used via an Ethernet interface.

### 3.1.1 Connection via RS-232 cable

The simplest case of communication between the PowerTools PC (Com1/Com2) and a controller is the communication by means of the RS-232 (V-24) interface and a cable.

Connect the controller via a serial line with the PC at Com1 or Com2. For this, use e.g. interface "Builtin" (or an RS-232 interface) at the controller for connection of the RS-232 cable.



#### 3.1.1.1 RS-232 cable at the X4 & X6 controller

Note that the PIN allocation (PIN 2, 3) with 9/25-pole connectors is different. Pre-fabricated "serial" cables from the computer accessories can be used. Description: 9-pole D-sub connector/socket, V24-connecting/extension cable 1:1, not null modem.

### 3.1.1.2 RS-232 cable at the PR1713 & X5 controller



### 3.1.2 Connection via RS-485 cable

Alternatively, the connection via a bus system for sender and receiver is possible. For this, RS485 (for max. 16 controllers) is used. The bus system is superior to an RS-232 point-to-point connection and permits considerably higher speed (up to 19600 Baud) over large distances. A special plug-in card or a converter at the PC can be used. The documentation of the connected instruments contains more details and a circuit diagram. The BUS circuitry must be as specified in the documentation.

### 3.1.3 Connection via Ethernet

When using the Ethernet connection, the IP address must be entered as ComPort into the OPC server (see chapter 3.3.2). Take care that the IP address is identical with the instrument address. In X4/X5/X6 & PR1713, the address can be defined in menu [Setup]-[Network parameter]. More details on the configuration of [Network Parameter] are given in the instrument installation manuals and in the "X4 Network & fieldbus installation manual".

### 3.2 Communication

For working with AccessIt, DisplayIt and RecoverIt, the communication must be switched on with each controller. For this, the following controller settings are required (see also chapter 3).

#### Short-form survey [Setup]-[Serial Ports]-[Builtin RS-232]

2]	[Protocol]:	[EW-COM V3]
	[Baudrate]:	[19k2]
	[Bits]:	[8]
	[Parity]:	[Even]
	[Stopbits]:	[1]
	[Slave-ad]:	[A]

#### Detailed survey

Batch	Control	ler
Start	•Setup	•ATest

Start the controller. Press [Setup].

Setur	 	
+Seria	 orts	ŀ

Scroll to sub-menu [Serial Ports] using 主 / 💽. Open menu item [Serial Ports] with 💽 To leave a menu item, press 🖭 When you have made a change, a prompt, if you want to store the changes is displayed when leaving the menu item.

#### Make sure that...

+Operator	device att
	none
+Printer	device att
	none
+Remote	device at:

none

[Operator device at] is set to [none] rather than to the Builtin RS-232 interface.

[Printer device at] is set to [none] rather than to the Builtin RS-232 interface.

[Remote device at] is set to [none] rather than to the Builtin RS-232 interface.

Serial port setup +Builtin RS232 t	Press $\bigcirc$ / $\bigcirc$ to select [Serial Port setup]. Press $\bigcirc$ / $\bigcirc$ to select the serial port for loading and press $\bigcirc$ . In this example, the [Builtin RS-232] interface is selected.
Setup Builtin RS232 +Protocolt:EW-Com V3	[Protocol] is displayed on the second text line. Confirm with $\textcircled{N}$ . Press $$ / $$ to select protocol [EW-COM V3].
Setup Builtin RS232 +Baudratet: 19k2	Press $\textcircled{\bullet}$ / $\textcircled{\bullet}$ to select the [Baudrate] and press $\textcircled{\bullet}$ . Set the Baudrate to 19k2 with $\textcircled{\bullet}$ / $\textcircled{\bullet}$ .
Setup Builtin RS232 +Bits t: 8	The number of bits is 8 (cannot be changed).
Setup Builtin RS232 +Parity t: Even	Parity is even (cannot be changed).
Setup Builtin RS232 +Stopbits: 1	The number of stop bits is 1 (cannot be changed).

### Configuration Controller & OPC-Server

Setup Builtin RS232 +Slave-adt: A	Press $\bigcirc$ / $\bigcirc$ to select [Slave-ad]. Set the "Slave-ad" to [A] with key $\textcircled{2}$ and confirm it with $\textcircled{8}$ .
	The slave address is the instrument address for the serial bus (e.g. RS-485, RS-422). We will use the built-in RS-232 interface so that only one instrument per serial line can be used. Press $\boxed{\text{Ext}}$ .
Save Builtin RS232 ? Yes • • No	If you have made changes, a prompt if you want to store the changes is displayed. Confirm by pressing [YES]. Leave the [Serial Ports] menu with .

## 3.3 Connection between Controller and AccessIt (OPC server)

### 3.3.1 Licence input

Prerequisite for connection between controller and AccessIt (not relevant for the remaining PowerTools):

- PR1792/13 software licence for the OPC server must be provided in the instrument.
- PR1792/20 AccessIt licence must be provided in the controller.
- PR1792 OPC server and AccessIt were installed already on the PC.



### 3.3.2 Starting the PR1792 OPC server



This step is required only for working with Displaylt or AccessIt.

The PR1792 OPC server is started automatically by an OPC client (i.e. DisplayIt & AccessIt) or manually by the operator for configuring the interface.

Start PR1792: [Start]-[All Programs]-[Sartorius]-[PR1792]-[PR1792 OPC Server]

When the program is active, the OPC server icon is shown at the bottom right in the system "tray".

At first, you have to configure the OPC group for the controller for which you want to use programs AccessIt or DisplayIt. A separate OPC group must be defined for each instrument. The OPC server is delivered already with one standard group which is configured as "PR1713".

Press button Info.

Alternatively, you can select menu [Configure]-[Show / Edit Group Configuration].

The "Configure OPC Groups" window starts. Click on group "PR1713" and press [Edit]. Alternatively, you can also click on [New], if you want to set up a new group rather than working with an existing group.

Click on [Delete] to delete the marked OPC group. Press [Ok] to leave this dialogue window.

- Define a group name in field "Group name", if you have clicked on [New] instead of [Edit] at the previous step
- Select slave address "A".
- Select device type "PR1713, X4, X5, X6".
- Select the COM port at which you have connected the serial cable or enter the IP address for communication via Ethernet.
- Finally, select Baudrate "19200".

It is very important to make these settings correctly, otherwise, the OPC server won't communicate with the instrument.





OPC GROUP	🕮 STATUS	OK
PR1713	IDLE	
$\bigcirc$		
		New
		Delete
		Edit

Group Configuration	×
Group name: PR1713 Slave address: A	<u>O</u> K <u>C</u> ancel
Device Type PR1713, X4, X5, X6	•
License number: 0	
COM port / IP Address: COM2	•
Baud Rate: 19200 💌	
Alias File:	Browse

#### Note:

The setting must correspond with the adjustments in the X4/X5/X6 or PR1713 controller (see chapter 3).

Now, "Configure OPC Groups" should look exactly like shown above. As you can see, the status of the "PR1713" group is "IDLE", because no OPC client is connected. Configure OPC Groups

If you have set up a new group in addition to the	2
existing one, further groups are displayed	
accordingly.	

#### Note:

Note that a second program was started ("ewdrv\_01.exe"). This is a low level communication server. So, please, don't close this program. Whenever you restart PR1792, it will try to restart "ewdrv\_01.exe" as well.

If you use a personal firewall, you have to enable the access to this driver.

C	Configure OPC Groups		X
	OPC GROUP     PR1713     X4	IDLE	ОК
			New Delete
	<		Edit
	Statistics		

### 3.3.3 Starting the OPC client



This step is required only for working with Displaylt or Accesslt and the configuration should be tested in the OPC group.

If you test the OPC group configuration directly with e.g. Displaylt, you can skip this chapter. When Displaylt is running, i.e. the weight is displayed, the relevant OPC group is configured correctly in the OPC server.

The OPC server can be tested also with an OPC client application. Start the OPC client: [Start]-[All Programs]-[Sartorius]-[PR1792]-[OPC-Client]

Click on [OPC]-[Connect].

File OffC View Help Connect Disconnect				
Disconnect				
Tag Server Status	Value	Time		
Group Parameters				
Add Item				
Item Properties				
Write Value to Item Read Item				
Refresh				
Remove Item				
				(E)
Select OF	PC Servi	er		>
	5 557 7			
Server Na	eme			04
SCIVEITIC	anic			OK
				Cancel
Conver Ma	de CSS ee	بملاءم للمورية	an and an think	ww.server.com")
Serverinu	nne ( 7726	aver or se	erver or ww	ww.server.com j
				Refresh List
			<b>T</b>	nellesh List
			-	
	cervers		- O 1.0 🖲	2.0
Available				
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartorius	: Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartorius	: Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartorius	: Hamburg ()	PC Server)
		1 (Sartorius	: Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartorius	: Hamburg O	PC Server)
		1 (Sartoriu:	s Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartoriu:	s Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)
		1 (Sartoriu:	: Hamburg O	PC Server)

Click on server "GWT.OPCServer.1" and then on [Ok].

Unless an error message is displayed, you are connected with the PR1792 OPC server, otherwise you have to check the settings made on the PR1792 OPC server and on the controller (see chapter 3 and 3.3.2).

Next, add an "Item" by clicking on [OPC]-[Add Item] in the menu.

Correct			
Connect Disconnect Server Status	Value	Time	
Group Parameters			
Add Item			
Item Properties Write Value to Item			
Read Item			
Refresh Remove Item			

### Configuration Controller & OPC-Server

Click on "PR1713" (or on the group, if you have set up a new group) in "Browse items:".

A list of pre-defined items is displayed right of it. Double click on the pre-defined item [ST\_WGT\_A] and then on [Done].

#### Note:

A complete item name comprises the group name ("PR1713" in this case), a dot (".") and the local item name (e.g. "ST\_WGT\_A"). "ST\_WGT\_A" is a pre-defined item which contains a character string with the actual weight data.

When you see a weight value, the OPC connection is successful and you can proceed with the next step.

Please, note that the values change from "Bad" into the actual weight values. Column "Time" shows the last time stamp (the time at which the value changed last was received).

Please, have a look at PR1792 window "Configure OPC Groups". (The OPC server icon is displayed at the bottom right in the system "tray". Double click on it to display the window.)

Click on button "Info".

Note that the controller group status has changed from "IDLE" into "OK: DEVICE ALIVE" and that the traffic light is green. If the traffic light is red, the connection is not correct. Have a look at the PR1792 main window for error messages.

#### Note:

For further information related to OPC server or OPC client, see the PR1792/00 OPC server manual.

Add Item		
Access Path		Add Item
Item Name PR1713	.ST_WGT_A	<u>D</u> one
Browse items:	Filter:  *	Item Properties
( PR1713		ST_ACTIVE_POINTS ST_COMM_OK
		ST_CYCLE_TIME ST_DEVICE_VERSION ST_EXECUTE ST_SERVER_VERSION ST_SPUNT_ACTIVE ST_WGT_A ST_WGT_A
Data Type	C land	ST_DEVICE_VERSION ST_EXECUTE ST_ <u>SERVER_VERSION</u> ST_SPUNT_ACTIVE ST_WGT_A
Data Type • Use native type • Bool	⊂ Long ⊂ Double	ST_DEVICE_VERSION ST_EXECUTE ST_SERVER_VERSION ST_SPUNT_ACTIVE ST_WGT_A





PR1792 Version : 2, 0, 0, 75 Release with database support
File View Logging Configure <u>H</u> elp
Sentig file is : D:\Programme\Sartorius\PR1792\PR1792.cfg Lib Version: \$Id: gplib.h,v 1.12 2002/11/15 10:00:30 dec3par Exp \$ EW-DLL version: 8, 0, 0, 14 EW-driver version: 8, 0, 0, 14 Server Product version: 2, 0, 0, 75 Server File version: 2, 0, 0, 75 PR1792: : Log file path is: D:\Programme\Sartorius\PR1792\

OPC GROUP     PR1713	OK: DEVICE ALIVE	OK
		New
		Delete
		Edit

### 3.3.4 Error messages

If this error message is displayed, check once again, if...

- licence PR1791/13 in the controller is activated.
- the RS-232 cable is plugged in correctly.
- you have selected the right COM port.
- the settings in the controller in [Setup]-[Serial Ports]-[Builtin] are correct.
- an OPC group was set up
- the OPC configuration is correct.

FactorySoft OPC Client 🛛 🔀
AddItems: This ItemID is not known.
(OK

## 4 FLASHIT

The Sartorius FlashIt program permits loading (flashing) of

- BIOS,
- firmware,
- applications (projects),
- various print-outs and
- various languages.

It can be used for easy loading (flashing) of software releases and updates for instruments PR1713, PR1730, X4, X5 & X6 without having to make hardware changes (EPROMS). Firmware and applications are provided on the PowerTools CD and on our Internet site www.sartorius.com.

The required data can be selected in the program. 4 selection windows in which the data can be selected are provided for this purpose. The parameters are set automatically in the instruments. Connection via serial interface or via Ethernet can be selected.

Right behind button "Info", information related to the current file selection is displayed.

When opening the dropdown lists right of [Select] a history of the files used last is displayed.

Click on [Flash] to load the selected data into the controller.

Click on [Merge] to merge firmware, application, print label and Translatelt text file into one file.

Click on [Exit] to finish FlashIt.

A help function is available for support. It can be started by clicking on [Help].

Flashlt!32	
Project Options	Help
Firmware	<u> </u>
Info sxx no file sxx	Merge
	<u>E</u> xit
Select ro application *	<u>H</u> elp
Info	Flashlt!32 Rel 02.20.4
Print Label	Jan 2 2003
Select ro labels *	14:33:59 //w
Label	STATIS
Translation	COM-Port
Select * no translation *	COM1 -
Lang	☐ HighSpeed

## 4.1 Application

Instruments PR1713, X4, X5 & X6 can be equipped with different programs by the manufacturer. Moreover, free programming based on IEC 61131 is possible.

### 4.1.1 BIOS

The BIOS (Basic Input Output System) is a program developed by Sartorius, which handles the basic instrument functions.

### 4.1.2 Firmware

The instrument firmware is provided for conversion of the weight value, display and all other weight data monitoring functions. It is developed only by Sartorius and is available only in object format for loading into an instrument.

### 4.1.3 Application

Normally, applications are sold as complete packages with BIOS and firmware by Sartorius. Changes / extensions or new applications can be created by the customer only using Sartorius programming tool PR1750 and must be loaded into the instrument by means of FlashIt. Access to the instrument firmware functions by the applications is via a defined program interface.

## 4.2 Flashing from instruments

Flashing (program upload into the instrument) is only possible by means of the Flashlt program provided by Sartorius. The possibilities for program loading dependent of the CAL switch position are described below.



On the standard instrument, program flashing with the CAL switch closed is not possible. When the CAL switch is open, BIOS, firmware and application can be flashed into the instrument.

	Flashing							
CAL switch	BIOS	Firmware	Application					
Docked geschi.	Not possible	Not possible	Not possible					
open offen	Possible	Possible	Possible					

## 4.3 Flashing a new firmware

### Step 1: Controller settings

Connect the controller with the PC at Com 1 or Com 2 via a serial cable. For this purpose, use interface "Builtin" (or a RS-232 interface) at the controller for connection of the RS-232 cable. Open the boot menu. Go to the boot menu by:

- pressing when switching on the controller
- pressing keys and *ent* or *som* and *and* with PR1713 (dependent on system setting in the controller in [Setup]-[Software Parameter]-[Reset on stop+exit])
- menu [Setup]-[Reboot]-[Bios], wait, until messages "Doing Bios..." and "Bios ready" are displayed.

#### Note:

Note that returning to the uppermost menu level might be possible in the boot menu only by means of cold start, erase or flash. There is no other possibility.

- A cold start deletes all programs and tables stored in RAM.
- Erase deletes all data and licences stored in EAROM (controller reset to default), when the CAL switch is open.

Further hints are given in the relevant installation manual.

StopQu	i t	reset	
Cold	4 E	raset	<u>Flash</u>

ſ	5	t		r	t		F	1	3	h	Ι	t	1	
	4	8	U	i	1	t	i	n				†		

Press [Flash].

The controller is ready for flashing.

5t	 r.	÷	F	1	æ	s	h	Ι	÷	1	
45	o	t2	•	R	S	2	3	2	t		

If the serial port [Builtin] is not free,  $\textcircled{\bullet}$  or  $\textcircled{\bullet}$  and

can be pressed to select the RS-232 interface (available only, if a serial I/O card PR1713/04 or PR5510/04 is fitted). For flashing via Ethernet, select [Ethernet] (see chapter 4.11).

### Step 2: Settings on the PC

Insert the PowerTools CD into the CD/DVD drive.

#### Option 1

Now, a new browser (new window) with headline "PowerTools" is opened.

Click on "PR1713-X5-Firm X.XX.X" and then on [Open].

Alternatively, you can click on firmware file "PR1713-X5-Firm X.XX.X.hex", see Option 2.

Care badetes Assist	norm the ' C () Pade Steam Onder () C+ S E +	2
and #31-lynder.html		ni 🖬 Washanina 🛛 🗠
X5 Powerto	ols	
Arcesslif	Accessible 1.00.0035 (Sering Be) 10/2011/requires installation of PR1292 CPC Server	
DisplayIt	Establish 2.00.0010 (Geno file) 100(Elemparte metablishen of FR1792 OPC Server	
Flashlet32	Eachdr32.2.20.4 (Sena) Elc) Sen <u>History</u> for a last of changes	
Layworld	Hischalt-Burerne 10.00 Thelate (Topdate Bio) 1970 The LabelExpense Version 2.7.1 or higher in required	
PR1792 OPC Server	PE1792.2.0.075 (Ferme Be)	
Recoverat	Recoverb 1.12 (Setup Be)	
TranslateId	Transfercht 1.00 (Temp Bic)	
X5		
8005	1917713-XS-Born 2.12.fem (Fan beslin) Ben Hytensferender of sheages	
Presser (	El1713-20-Firm 2.202 (Februtrating archive file) See Entry for a list of changes	
VEDaak	Platfills.XS-Bim 220.2 her (Funchedle)	
1.528.82 States	Annual Inc. Marcel Streets Inc. Annual Inc.	g atomates

#### Note:

If the PowerTools browser is not displayed automatically after inserting the PowerTools CD, double click on icon workstation, click on the icon of the CD/DVD drive with the right mouse key and select [Open]. Now, a survey of the CD contents (CD/DVD browser) is displayed. Double click on folder "X5" and then on folder "Firmware". Double click on file "PR1713-X5-Firm X.XX.X Archive.exe".

DD4 74 2 D-L 0 2 20 2

	PR1713 RELUZ. 20.2
A self-extracting file is opened. Confirm it with [Ok].	PR1713 Firmware Rel 02.20.2 This archive contains Firmware for PR1713 Extract it to any suitable directory © 2003 GWT Global Weighing Technologies GmbH.
Click on [Browse], or directly enter a path in the input field left beside button [Browse] to select a directory for extraction of the data. Subsequently, click on [Unzip].	WinZip Self-Extractor - PR1713-X5-Firm 2.20.2         To unzip all files in this self-extractor file to the specified folder press the Unzip button.         Unzip to folder:         D:\Programme\Sartorius\Firmwar         @rowse         @ overwrite files without prompting         Image:         When done unzipping open: notepad
Click on [Ok]. Extraction was completed successfully.	WinZip Self-Extractor 8 file(s) unzipped successfully

	🖻 pr1713.txt - Editor					
	Datei Bearbeiten Format Ansicht ?					
	ÞR1713 Rel 2.20.2 ======					
A text editor is opened automatically. The	NOTE! This firmware/bios is not intended to be used with applications prior 2.12! This archive contains:					
extracted data are displayed. Close the text editor via [File]-[Exit]. The text editor	 Firmware Bios	: pr1713-firm-rel02.20.2.hez : pr1713-bios-rel02.12.hex				
can be called up at any time in the extraction path.	History of changes in firmware History of changes in bios Bitmap for DeviceNet-manager Icon for RS-Networx EDS for Devicenet	: history-firm.txt : history-bios.txt : pr1713.bmp : pr1713.ico : pr1713.eds				
	Update the bios only if reques	ted by the instrument.				
	(c) 2003 GWT Global weighing T	echnologies GmbH				

Now, the firmware file is on the PC. Flashing into the controller can be done using Flashlt.

#### Option 2

Alternatively, you can click on firmware file "PR1713-X5-Firm X.XX.X.hex" and store the file. Double click on file "PR1713-X5-Firm X.XX.X.hex" for direct firmware flashing. FlashIt starts automatically and the firmware is selected already in FlashIt.

BIOS	<u>PR1713-X5-Bios 2.12 hex</u> (Plain hexfile) See <u>Histour Gene Ket of</u> changes	
Firmware	PR1713-X5-Firm 2.20.2 (Selfestracting archive file) See <u>History</u> for a list of changes	
	<u>PR1713-X5-Firm 2 20 2 hex</u> (Plain hexfile)	

### Step 3: Flashlt settings

Now, FlashIt!32 must be started on the connected PC: [Start]-[All Programs]-[Sartorius]-[FlashIt!32]-[FlashIt!] or double click on a on the desktop, if any. You can also start FlashIt by double clicking on a ".hex"- and ".p32" file.

Select the COM port at which the controller is connected via the RS-232 cable (COM2 in this example) or select "Network" for IP input.

When using the connection via a serial cable, you can activate checkbox "HighSpeed" by mouse clicking. In this case, a warning message is displayed (see below). Activating "HighSpeed" accelerates data transmission considerably.

#### Note:

If the required COM port is not selectable, it is used by another application.

Flashit! 32		
Project Options		Help
Firmware		<u>F</u> lash
Select	<b>•</b>	Merge
Info *** no file ***		
Application		Exit
Select   * no application *	<b>T</b>	Help
Info		Flashltl32 Rel 02.20.4
Print Label		Jan 2 2003 14:33:59
Select × no labels ×	<b>v</b>	16.
Label		
Translation		COM-Port
Select × no translation *	5	СОМ2 🔽
Lang		HighSpeed

### Flashlt

The following message is displayed. When you have read the message and want to maintain the "HighSpeed" option, click on [Ok]. Otherwise, click on [Cancel] to continue at normal data transmission speed.

#### Note:

The HighSpeed option is without problems over short distances, if the controller is connected directly to the PC via a serial cable.

Click on [Select] to select the firmware.

Go to the extraction folder and double click on "PR1713-**Firm**-relXX.XX.A.hex".

Now, click on [Flash] to start flashing.



Select firmware	to flash					?×
Look jn:	DR1713R02.2	0.2	•	← 🗈 ı	•	
My Recent Documents Desktop	PR1713-Bios-rel					
My Documents						
My Computer						
My Network Places	File <u>n</u> ame: Files of <u>t</u> ype:	PR1713-Firm-rel02.20. Supported Hex Files	2		- -	<u>O</u> pen Cancel
	2755	1				

Flashli	!!32	
Project O	otions	Help
Firmware		Elash
[Select]	PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwares	Maria
Info	PR1713/00 r02.20.02 03.04.2003 13:54	
Applicatio	n	<u>E</u> xit
Select	* no application *	Help
Info		FlashIt!32
_ <u>ī</u> 1110		Rel 02.20.4
Print Lab		Jan 22003 14:33:59
Select	* no labels *	14.00.00
Label		Shinday.
- Translatio	n	COM-Port
Select	* no translation *	COM2 🔻
Lang		✓ HighSpeed

### Flashlt

A flash status window is displayed. It is closed automatically after flashing when activating checkbox "Close".

When message "No communication" or "No prompt from device" is displayed, the causes can be:

- selection of wrong COM port
- cable connection between PC and instrument missing or faulty
- controller is not in flash mode.

Action	
Erase	100 %
348.224 kB = 38% remaining	~
Download FLASH software	
Version 19.09.2002 16:56	
Ask for Prompt	
Set parameters 115k WORD 820000 900000	
Call Bootstrap Wait for code start	
Ask for Prompt	
Check jumper	
Jumper is open	
Erase	~

Flashi	t! 32	
Project O	ptions	<u>H</u> elp
Firmware		Flash
Select	PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwa	
Info	PR1713/00 r02.20.02 03.04.2003 13:54	Merge
Applicatio	on	<u>Exit</u>
Select	* no application *	<u>H</u> elp
Info		Flashit!32
Print Lab	el	Rel 02.20.4 Jan 2 2003
Select	* no labels *	14:33:59
Label		Spinnin
- Translatio	on	COM-Port
Select	* no translation *	COM2 💌
Lang		✓ HighSpeed

After successful flashing, this program window is displayed again. Flashing is finished. Click on [Exit] to terminate the program.

### Step 4: Controller cold start

Flash	n com	plet	8
	4 % E	maco	t Flash

I	P	R	1	7	1	3	R	e	1			0	2	 2	0	2	
							S	0	÷	U	p						

After flashing, a controller cold start with [Cold] is required.

A cold start is followed by the display as shown opposite dependent on instrument and firmware, unless an application was loaded into the controller so far.

## 4.4 Flashing an application

Flashing of an application into the controller must be preceded by flashing a firmware into the controller, if FlashIt is used for the first time, see 4.3. Application flashing is possible only now.

1000 281211.35-Barr 2.12 her

### Step 1: Settings on the controller

See chapter 4.3.

### Step 2: Settings on the PC

Insert the PowerTools CD into the CD/DVD drive.

A new browser (new window) with headline "PowerTools" is opened.

Scroll down in the window, until you can see the names of the applications.

Proceed as described in Option 1 or in Option 2.

	(Plan health) See <u>History</u> for a list of changes	
Firmeware	PET713-XS-Fem 2.20.2 (SeStemating archive Be) See <u>Hatter</u> for a lat of changes	
	PE1713-XS-Firm 2.20.2 her (Flain herdio)	
X5 Batch	Retch 02.12.1Continuent.Eat (Defentiating archeve file) See <u>Hatter</u> for a last of changes	
(	Batch 2.12/25-Fren 2.20 21bes (Plan heifle Routy/To-Finet)	
X5 Flaw	BareyController 2.04.105-Firm 2.20.21.hea (Plan, bentler <i>Roody TerFanit</i> ) See <u>Hatters</u> for a last of changes	
	Elem-Controller 2.041Controlming Kit) (Selfentracting archive file)	
X5 EBC	IBC 02.021X5-Fem 02.2021hes	
No. (22) (housing all pho	ndesti Littinigi eve	V Atutoplay

#### **Option 1: Customizing kit**

Each application program of PR5510 (X4), PR5610 (X5) or PR5710 (X6) is delivered with a "Customizing Kit" file. Apart from the application program itself, it contains further files which pertain to this application version. All files are packed in this "customizing kit" and must be extracted first.



Don't change the names of the unpacked files! Don't change the structure or the names of this folder!

Click on the file with extension "[Customizing Kit]" in the PowerTools browser to extract the provided files of the relevant application on the PC. A self-extracting file is opened. Proceed as described in chapter 4.3 (step 2).

The following files are extracted:

- folder "...\Labels" with pre-defined layout files for Nice Label Express
- .txt description of software changes
- .lbls start file for Nice Label Express
- .ltxt text file for Translatelt
- .p32 application program (project)

🖿 D: \Programme\Sartorius\Applicati	ons\Batch 02.12		J×
Datei Bearbeiten Ansicht Eavoriten	Egtras <u>?</u>		R
Gzrak . O . A Dad	en 🕞 Ordner 🔝 -		
Adresse D:\Programme\Sartonius\Applicat	ions/Batch 02.12	🛩 🛃 Wechse	sin zu
	Name -	Größe Typ Geändert am	
Datei- und Ordneraufgaben 🚴	Batch	Dateiordher 00.10.2004 13:38	
2 Neuen Ordner erstellen	Batch History.txt	7 KB Textdokument 15.10.2002 13:39	
Ordner im Web veröffentlichen	Batch.Ibls	1 KB Edit Labels 29.10.2002 15:54	
~	Batch.kxt	22 KB LTXT Translation 29.10.2002 15:54	
Ordner freigeben		201 KB Application Object 29.10.2002 15:54	
Andere Orte 8			
Ch Applications			
Eigene Dateien			
	-		

Click on the file with extension "[X5-Firm X.XX.X].hex" for flashing the application directly.

The application file with extension "[X5-Firm X.XX.X].hex" is a file containing the firmware and the relevant application. I.e. one flashing operation covers firmware and application flashing.

#### Example:

Click on [Save] to copy the application on the PC and to flash it by double clicking (on the ".hex" file), or click on [Open] for flashing immediately. Flashlt!32 is opened automatically.

### Step 3: Flashlt settings

See chapter 4.3.

#### Option 1

Make the settings at the "COM port" ("COM2" in this example) and for "HighSpeed" (activated in this example).

Make sure that you have selected the correct firmware in "Firmware".

#### Note:

Applications can be loaded only, if the appropriate firmware is also loaded.

Click on [Select] under "Application" to select the application file (".p32").

Go to the extraction folder and double-click on the ".p32" file (e.g. "Batch.p32").

File Dov	vnload 🛛 🔍
?	You are downloading the file: tch 2.12 [X5-Firm 2.20.2].hex from E:\X5\X5 Batch
	Would you like to open the file or save it to your computer?         Open       Save         Cancel       More Info         Always ask before opening this type of file

		אינייניים בפרות מער מער מער מער מער מער מער מי
🍐 Flashi	1!32	
Project O	ptions	Help
Firmware		Elash
Select	PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwa	
Info	PR1713/00 r02.20.02 03.04.2003 13:54	Merge
		Exit
Application	on	
Select	* no application *	<u>H</u> elp
Info		FlashIt!32
		Rel 02.20.4 Jan 2 2003
Print Lab		14:33:59
Select	* no labels *	16.
Label		SAM
- Translatio	on	COM-Port
Select	* no translation *	COM2 💌
Lang		✓ HighSpeed

🍐 Flashli	1132	
Project O	ptions	<u>H</u> elp
Firmware		Elash
Select	PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwa	Merge
Info	PR1713/00 r02.20.02 03.04.2003 13:54	morgo
Applicatio		<u>E</u> xit
Select	* no application *	Help
Info		Flashlt!32 Rel 02.20.4
Print Lab	el	Jan 2 2003
Select	* no labels *	14:33:59
Label		Sport
Translatio	on	COM-Port
Select	* no translation *	COM2 💌
Lang		✓ HighSpeed

Now, click on [Flash] to start flashing.

Another flash status window is displayed. It closes automatically after flashing.

After successful flashing, this program window is displayed again. Click on [Exit] to close the program.

🏄 Flashli	1!32	
Project O	ptions	Help
Firmware		Flash
Select	PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwe	Merge
Info	PR1713/00 r02.20.02 03.04.2003 13:54	merge
Applicatio	nn	<u>E</u> xit
Select	Batch.p32 => D:\Programme\Sartorius\Applications\Batch 02.	<u>H</u> elp
Info	PR1713R1:29.10.2002 15:54:05	FlashItl32
Print Lab	el	Rel 02.20.4 Jan 2 2003
Select	* no labels *	14:33:59 //a.
Label		Spann
- Translatio	on	COM-Port
Select	* no translation *	COM2 💌
Lang		✓ HighSpeed

#### Option 2

Make the settings at the "COM port" ("COM2" in this example) and for "HighSpeed" (activated in this example).

If selection window "Firmware" does not contain the required ".hex" file, click on button [Select] below "Firmware". Find the folder which contains the ".hex" file and double click on this file.

Now, click on [Flash] to start flashing. A flash status window is displayed. It is closed automatically after flashing.

After successful flashing, this program window is displayed again. Click on [Exit] to finish the program.

### Step 4: Controller cold start

	complete \$ Erase\$	Flash
Batch	Controlle	:r
Start	•Setup •A	ITest

Flashi	!!32	
Project O	ptions	<u>H</u> elp
Firmware		Flash
Select	Batch 2.12 [X5-Firm 2.20.2].hex => D:\Programme\Sartorius\Ap 💌	Merge
Info	PR1713/00 r02.20.02 03.04.2003 13:54	morge
Application		<u>E</u> xit
Select	* no application *	<u>H</u> elp
Info		Flashlt!32 Rel 02.20.4
Print Lab	el	Jan 2 2003 14:33:59
Select	* no labels *	14.00.00
Label		STATE
- Translatio	on	COM-Port
Select	* no translation *	COM2 💌
Lang		✓ HighSpeed

After flashing, a controller cold start with [Cold] is required.

Dependent on the flashed application, a cold start is followed by the display shown opposite.

## 4.5 Flashing a PR1750 project

For flashing into the controller by means of FlashIt, an application (project) made with PR1750 must be converted into a ".p32" file with [Built]-[Make]in the PR1750 menu. Subsequently, the project can be flashed into the instrument as described in chapter 4.4.

## 4.6 Flashing a print label

For flashing print labels for the first time, a firmware must be flashed into the controller when using Flashlt for the first time, see chapter 4.3. This is a prerequisite for flashing print labels. For flashing the print label into the controller, at least firmware (".hex") and application (".p32") must be flashed at the same time.

### Step 1: Settings on the controller

See chapter 4.3.

### Step 2: Settings on the PC

Print label file ".lbls" exists only (i.e. it can be flashed), when the customizing kits on the PC were extracted, see chapter 4.4. For further information related to the ".lbls" file, see chapter 9.

### Step 3: FlashIt settings

See chapter 4.3.

#### Note:

Make sure that you have selected the right firmware in "Firmware" and the right application in "Application". The print label can be flashed only together with firmware and application. Additionally, the Translatelt text file can be flashed.

Click on [Select] below "Print Label" to select the label file (".lbls").

Go to the extraction folder of the customizing kit and double click on the .lbls file (e.g. "Batch.lbls") or open this file.

The window shown opposite is displayed. In this window, you can select the labels edited previously with Nice Label Express. Click on [Select All] to select all labels for flashing, [Select None] cancels your choice. You can also mark several different labels by clicking on the relevant labels. Click on [Ok].



🍐 Select labels	?×
BATF_D BATF_E BATH_D BATH_E BATL_E CONSF_D CONSF_E CONSF_E CONSH_E CONSH_E CONSL_E CONSL_E	<u>C</u> ancel Select <u>A</u> ll Select <u>N</u> one
# Flashlt

Subsequently, click on [Flash] to start flashing. A flash status window is displayed and closed automatically after flashing.

After successful flashing, the program window shown opposite is displayed again. Click on [Exit] to close the program.

🌮 Flashl	!!32	
Project O	ptions	Hel
Firmware		Flash
Select	PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwa	
Info	PR1713/00 r02.20.02 03.04.2003 13:54	Merge
Applicatio	0	<u>E</u> xit
Select	Batch.p32 => D:\Programme\Sartorius\Applications\Batch 02.1 -	<u>H</u> elp
Info	PR1713R1:29.10.2002 15:54:05	Flashlt!32 Rel 02.20.4
Print Lab	el	Jan 2 2003 14:33:59
Select	Batch.lbls => D:\Programme\Sartorius\Applications\Batch 02.1 💌	14:33:59
Label	BATF_D,BATF_E,BATH_D,BATH_E,BATL_D,BATL_E,CONSF_D,(	Sport
Translatio	on	COM-Port
Select	* no translation *	COM2 -
Lang		✓ HighSpeed

#### Step 4: Controller cold start

complete \$ Erase\$ Flash
Controller •Setup •ATest

Flashing must be followed by a cold start of the controller with [Cold].

After the cold start, the following display dependent on flashed application appears.

# 4.7 Flashing Translatelt files

For flashing a Translatelt text file for the first time, a firmware must be flashed into the controller previously when using FlashIt first, see chapter 4.3. This is a prerequisite for flashing a Translatelt text file. For flashing the Translatelt text file into the controller, at least firmware (".hex") and application (".p32") must be flashed as well.

#### Step 1: Controller settings

See chapter 4.3.

#### Step 2: Settings on the PC

The Translatelt text file ".ltxt" exists only (i.e. it can be flashed), if the customizing kits on the PC were extracted, see chapter 4.4. Detailed information related to Translatelt and to Translatelt text file editing is given in chapter 6.

#### Step 3: FlashIt settings

See chapter 4.3.

#### Note:

Make sure that you have selected the right firmware below "Firmware" and the right application below "Application". The Translatelt text file can be flashed only together with firmware and application. Additionally, the print label can be flashed at the same time.

Click on [Select] below "Translation" to select the TranslateIt text file (".ltxt").

Go to the extraction folder and double click on the ".ltxt" file (e.g. "Batch.ltxt") or open this file.

The window shown opposite is displayed. In this window, you can select the text files or languages edited previously with Translatelt (see chapter 6) by clicking on the relevant language.

Click on [Ok].

Flashi	!!32	
Project O	ptions	Help
Firmware		Elash
Select	PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwa	Merge
Info	PR1713/00 r02.20.02 03.04.2003 13:54	
Applicatio		<u>E</u> xit
Select	Batch.p32 => D:\Programme\Sartorius\Applications\Batch 02.*	<u>H</u> elp
Info	PR1713R1:29.10.2002 15:54:05	Flashlt!32 Rel 02.20.4
Print Lab	el	Jan 2 2003 14:33:59
Select	* no labels *	//.
Label		Subara .
Translatio	2n	COM-Port
Select	no translation *	COM2 -
		✓ HighSpeed

Select languages	?×
English Deutsch	Cancel

# Flashlt

Subsequently, click on [Flash] to start flashing. A flash status window is displayed and closed automatically after flashing.

After successful flashing, the program window shown opposite is displayed again. Click on [Exit] to close the program.

!!32	
ptions	Help
	Flash
PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwa	
PR1713/00 r02.20.02 03.04.2003 13:54	Merge
	<u>E</u> xit
	Help
Batch.p32 => D:\Programme\Sartorius\Applications\Batch 02.1	
PR1713R1:29.10.2002 15:54:05	Flashlt!32 Rel 02.20.4
el	Jan 2 2003 14:33:59
* no labels *	14.55.55
	Samo
on	COM-Port
Batch.ltxt => D:\Programme\Sartorius\Applications\Batch 02.1?	COM2 💌
English,Deutsch	✓ HighSpeed
	ptions   PR1713-Firm-reI02.20.2.hex => D:\Programme\Sartorius\Firmwx  PR1713/00 r02.20.02 03.04.2003 13:54   PR1713R1:29.10.2002 15:54:05  el  n Batch.Ixt => D:\Programme\Sartorius\Applications\Batch 02.1;

#### Step 4: Controller cold start

F	1		s	ŀ'n	C		0	M	p	1	e	t	e					
	C	O	1	d	:	-		E	r	a		e	\$	-	1	-	s	h

Batch	Control	ler
Start	•Setup	•ATest

After flashing, a controller cold start with [Cold] is required.

The cold start is followed by the display shown opposite dependent on flashed application.

# 4.8 Creating a merge file

Flashlt!32 provides the functionality for merging firmware, application, print label and Translatelt text file into one file.



As a min. prerequisite for merging, the firmware (correct version) and the relevant application (correct version) must be selected. In addition to firmware and application, print labels and/or Translatelt text file can be selected for merging.

After selecting, click on [Merge].

#### Note:

An already merged file must not be merged again. Always use the source file for merging:

/	J
Firmware	Firm Rel. X.XX.hex
Application	.p32
Print label	.lbls
Translation	.ltxt

After clicking on [Merge], a status window is displayed shortly.

When message "Entry for Ressource PLC is used. Replace merged object?" or "Entry for Ressource OPR is used. Replace merged object?" is displayed, the cause can be:

- you try to merge an already merged file.
- you try to merge an inadmissible file.
- the application file or the firmware are already used.

In this case, check your selected files.



#### Flashlt

Subsequently, a window is opened. In this window, you can specify or change the file name and the target folder for the merge file.

Now, click on [Save]. The merge file is stored in the target folder on the PC.

select merge ou	utput name				?×
Savejn:	C Merge		•	+ ⊞ * ⊞•	
My Recent Documents					
Desktop My Documents					
My Computer					
My Network Places	File <u>n</u> ame: Save as <u>t</u> ype:	Project Merged Files (*.MRG)		•	<u>S</u> ave Cancel

🊈 Flashi	!!32	
Project O	ptions	Help
Firmware		Elash
Select	PR1713-Firm-rel02.20.2.hex => D:\Programme\Sartorius\Firmwa	Merge
Info	PR1713/00 r02.20.02 03.04.2003 13:54	
Applicatio		<u>E</u> xit
		Help
Select	Batch.p32 => D:\Programme\Sartorius\Applications\Batch 02.1	<u></u> eih
Info	PR1713R1:29.10.2002 15:54:05	Flashlt132
Print Lab	el	Rel 02.20.4 Jan 2 2003 14:33:59
Select	Batch.lbls => D:\Programme\Sartorius\Applications\Batch 02.1 💌	14.33.33
Label	BATF_D,BATF_E,BATH_D,BATH_E,BATL_D,BATL_E,CONSF_D,(	Spann
_ Translatio	on	COM-Port
Select	Batch.ltxt => D:\Programme\Sartorius\Applications\Batch 02.12	COM2 💌
Lang	English,Deutsch	HighSpeed

After successful merging, the program window shown opposite is displayed again. Click on [Exit] to close the program.

# 4.9 Flashing a merge file

Files merged by means of Flashlt can be flashed into the controller. Merged files are files which comprise at least firmware and application. Moreover, they can consist of firmware and application and/or print labels and/or Translatelt text files.

#### Step 1: Settings on the controller

See chapter 4.3.

#### Step 2: Settings on the PC

For flashing a merge file, you must have created a merge file by means of FlashIt!32 previously, see chapter 4.8, or a merge file must exist on your PC.

#### Step 3: Flashlt settings

See chapter 4.3.

Click on [Select] below "Firmware". Find the target folder in which the ".mrg" file is stored. Double click on the ".mrg" file.

Click on [Flash] to start flashing. A flash status window is displayed and closed automatically after flashing.

Flashit	!32	
Project Op	otions	Help
Select	PR1713/00 r02.20.02 03.04.2003 13:54	<u>E</u> lash Merge
Applicatio	2	<u>E</u> xit
Select	ro application *	<u>H</u> elp
Info Print Labe	9	Flashlt!32 Rel 02.20.4 Jan 2 2003
Select Label	* no labels *	14:33:59
Translatio Select Lang	n s no translation *	COM-Port

#### Step 4: Controller cold start

complete \$ Erase\$ Flash
Controller •Setup •ATest

After flashing, a controller cold start with [Cold] is required.

A cold start is followed by the display shown opposite dependent on application.

# 4.10 Flashing a Bios file



Unless message BIOS too old is displayed, the BIOS must not be flashed a second time. Renew the BIOS only, if requested by the instrument. The flash procedure must not be interrupted, because the loading program for FlashIt!32 is included in the BIOS and will be destroyed by an interruption. In this case, the instrument must be returned to Sartorius Hamburg for repair.

#### Step 1: Settings on the controller

See chapter 4.3.

#### Step 2: Settings on the PC

The Bios file exists only when you have extracted file "PR1713-X5-Firm 2.20.2" on the PC (see chapter 4.3)

Flashit!32

#### Step 3: FlashIt settings

See chapter 4.3.

#### Click on [Select] below "Firmware".

Search the target folder which contains file "Bios-ReIXX.XX.hex". Double click on the Bios file.

Click on [Flash] to start flashing.



Warning! You have selected a bios file!

Do you want to continue?

ÖK

You may cancel this NOW without any harm.

Failing to program the bios may leave your device unusable.

Cancel

After a short time, a warning message is displayed. Read the warnings attentively.

If you agree, click on [Ok]. Flashing is continued. If you don't agree, click on [Cancel] in order to cancel flashing.

#### Note:

Renew the BIOS only when requested by the instrument.

A last warning is displayed.

Bios flashing must not be interrupted, because the loading program for FlashIt!32 is included in the BIOS, otherwise, the instrument must be returned for repair. Confirm with [Ok].



X

After successful flashing, the FlashIt program window is displayed again. Click on [Exit] to finish the program.

# Step 4: Controller cold start

F											F	1	a	S	h
p	R	1	7	1	3		14		0	2	2	0		2	

After flashing, a controller cold start with [Cold] is required.

The cold start is followed by the display shown opposite dependent on firmware, if no application was loaded into the controller so far.

# 4.11 Flashing via Ethernet

Only the differences as opposed to flashing via the Com port are described in this chapter.

For flashing via Ethernet, you need ...

• FlashIt version  $\geq$  02.26.01.



- for the X5 & X6 controllers: Ethernet card PR1713/14 with software release ≥ 01.14.01; update the software release, if necessary. The procedure is as described for firmware flashing (see chapter 4.3).
- BIOS version ≥ 3.XX in the X5 & X6 controller.

#### Step 1: Settings on the controller

An already configured Ethernet card must be inserted in the controller (see chapter 3.1.2).

#### StopQuit reset Cold & Erase& Flash

Start FlashIt! +Builtin t

Start FlashIt! +Ethernet t Press [Flash].

The controller is ready for flashing.

For flashing via Ethernet, select [Ethernet].

#### Step 2: Settings on the PC

No differences.

#### Step 3: Flashlt settings

See chapter 4.3.

Select "Network" in the "COM-Port" dropdown list. Specify the configured IP address of the Ethernet card below.

#### Note:

When message "No communication. Receive timeout" is displayed, the causes can be:

- No connection between Ethernet controller and FlashIt PC
- No Ethernet card inserted in the controller
- The Ethernet card is not configured correctly.
- A faulty IP address was entered for "Network".

#### Step 4: Controller cold start

No differences.



# 4.12 Error messages

#### 4.12.1 FlashIt

The CAL switch is closed.

Click on [Ok] to return to the FlashIt program window.

Open the CAL switch on the Controller before flashing and re-start flashing.

#### Note:

When flashing, the CAL switch must be open.

When message "No communication" or "No prompt from device" is displayed, the causes may be:

- faulty COM port was selected, or
- missing or faulty cable connection between PC and instrument
- controller is not in flash mode.

When message "No communication. Receive timeout" is displayed during flashing via Ethernet, the causes can be:

- no connection between Ethernet controller and FlashIt PC
- no Ethernet card inserted in controller
- The Ethernet card is not configured correctly.
- A faulty IP address was entered for "Network".

Click on [Cancel], when message "Entry for Ressource PLC is used. Replace merged object?" or "Entry for Resource OPR is used. Replace merged object?" is displayed during merging. The causes can be:

- You are using an already merged file.
- You are using an inadmissible file for merging.
- The application file or the firmware is already being used.

In this case, check your selected files.









#### 4.12.2 Controller

F	i	r	m	W	a	r	0	i	3	too	old,
U	P	d	a	t	e		to		Χ.	XX	

жF	at	al	Sys	tem	Eri	ro	r:*
	ΒI	05	iΞ	too		d,	

Flash	not r	Possi	ble
CAL-Ju	mper	clos	ed

The instrument contains a more recent BIOS version or application, which is not compatible with the flashed (earlier) version. Load a compatible (new) firmware version into the instrument.

#### Note:

When you have extracted the customizing kits, you will find a "History.txt" file in the extraction folder. It describes, for instance, which firmware version is compatible with the extracted application.

A more recent firmware was flashed to an (earlier) BIOS version existing in the instrument. Flash a BIOS pertaining to the firmware into the instrument.

#### Note:

When flashing BIOS, it is indispensable to follow the instructions given in chapter 4.10.

When the CAL switch is closed, the error message is output on the instrument with BIOS versions >3.12.x.

# 5 DISPLAYIT

Sartorius program "Displaylt" permits direct operation of controllers in the process from a PC. Displaylt mirrors the operator interface of the controller connected at the PC or via Ethernet directly on the PC. Direct key actuation or data input from the PC are possible by means of the mouse or using the keyboard connected to the Displaylt PC. Communication is possible via a DDE server or via the integrated OPC server.

A connected controller is identified by an OPC group defined in the OPC server. The communication settings to be done once are stored, i.e. the communication with the controller is built up directly when calling up Displaylt again. Selecting a controller is done in a dropdown menu on the Displaylt operator interface. By multiple program starting, several controllers at a time can be displayed. In addition to the serial interfaces, Displaylt can be used also via Ethernet. Operation via fieldbus is not possible.

The program can be used from firmware version 2.0.

Note:

As a prerequisite for working with DisplayIt, the OPC server must be installed and configured (see 3.3.2 and 3.3.3).

Moreover, the Displaylt controller must be connected with the PC via an RS-232 interface or via Ethernet.

# Step 1: Installation of DisplayIt & OPC server

See chapter 2.2 and 2.4.

# Step 2: Configuration OPC server

See chapter 3.3.2 and 3.3.3.

# Step 3: Starting DisplayIt

Start Displaylt via [Start]-[All Programs]-[Sartorius]-[Displaylt]. [Start]-[All Programs]-[Sartorius]-[Displaylt] also permits creation of a desktop shortcut. For this, click on Displaylt icon with the right mouse key and select [Send to]-[Desktop (create shortcut)]. Now, starting Displaylt is possible easily and quickly by clicking on desktop icon

The OPC server starts automatically with the Displaylt program start, i.e. it need not be started separately.

#### Note:

If you have entered a different installation path during installation, the start path mentioned above will change accordingly.



# DisplayIt

Click on button [Server], if you haven't installed an OPC server and if you rather want to use a DDE server.

In this case, dialogue window "Server" is opened.

In this window, you can change between OPC und DDE server.

A DDE server already installed on the system can also be used. However, we recommend using the OPC server, because the OPC server is also started directly when starting the Displaylt program, whilst the DDE server must be started separately.

The OPC server is activated as standard in Displaylt, i.e. no changes are required, if you work with an OPC server.

Click on [Ok] to close dialogue window "Server" (or to confirm your entry).

Selecting a controller is done by clicking on the dropdown menu behind "PR1713" on the Displaylt operator interface.

The choice was set up and configured previously in the OPC server (for OPC groups, see chapter 3.3.2). For each open DisplayIt application, only one controller can be selected simultaneously.

Subsequently, weight display, application name and menu of the connected controller (or of the OPC group configured in the OPC server) are displayed on the operator interface.

At the first program start, the PR1713 controller operator interface is displayed. In the "Style" dropdown menu, you can change between the PR1713 controller standard operator interface and the X5 controller operator interface by mouse clicking (also if an X4 or an X6 instrument is connected).



s	erver			1	
	Server				
	PR1792 (OPC-Server)	œ			
	PR1791 (DDE-Server)	С			
				Ök	







## DisplayIt

# **PowerTools Operating Manual**

The "X5" operator interface was selected.

Click on button [Help] for hints on configuration and communication of controller, Displaylt and OPC server.

Click on [Exit] to close Displaylt. Closing Displaylt won't finish the OPC server, which will continue running in the background.

To close the OPC server, double click on the OPC server icon in the system tray. Subsequently, click on [File]-[Exit] in the OPC server menu.



# 5.1 Operator interface

The operator interface can be used for direct operation of controllers in the process from the Displaylt PC.

The function of the keys of the Displaylt operator interface shown opposite is identical to the function of the keys on the controller.

You can select the keys on the Displaylt operator interface by mouse clicking and using the keyboard.

The two methods are equivalent and can be used alternatively.

# 5.1.1 Operation via PC keyboard



The function of the first softkey  $\bigcirc$  ([Start] in this example) is handled by pressing key F6  $\bigcirc$ , the function of softkey  $\bigcirc$  ([Setup] in this example) in the middle is handled by pressing key F8  $\bigcirc$  and the function of the right softkey  $\bigcirc$  ([ATest] in this example) is handled with F10  $\bigcirc$ .

#### Note:

For detailed information on key allocation, see the survey given below (see chapter 5.1.1.1).

#### Example:

Press key F8 for [Setup] at the topmost menu level (as shown above).

Scroll up and down by pressing arrow keys  $\square$  /  $\square$  or  $\square$  /  $\square$  .

To go to menu [Config], press the Enter key





#### 5.1.1.1 Key allocation of controller vs. PC keyboard

The operator interface of DisplayIt or of the controller is provided with an alphanumeric keypad. The two functions are equivalent and can be used alternatively.



#### 5.1.2 Operation via PC mouse

Click with the mouse on the menu you want to reach.

For handling the functions of function, menu, numeric and alphanumeric keys, click on the relevant key on the Displaylt operator interface.

#### Example:

Click with the mouse on [Setup] at the topmost menu level (as shown above).

Click on the arrows on display or on arrow keys to scroll up and down. To go to menu [Config], click on [Config].

#### 5.1.2.1 Alternative operator interface

By double clicking on the weight display (marked area), the window can be reduced to weight and menu display. I.e. the window can remain open for monitoring without hiding the complete screen.

Double click on the weight display (marked area) again to return to full display of the operator interface.

#### Note:

The active OPC group (i.e. the active instrument) is displayed in the headline.







# 5.2 Operation of several DisplayIt Controllers via a PC

Several controllers can be connected at the PC directly via the serial RS-232 interface, provided that the PC has a sufficient number of free COM sockets.

Set up an OPC group for each connected controller in dialogue window "Configure OPC Groups" in the OPC server (see chapter 3.3.2). Take care to select the right COM ports for the OP groups or for the controllers connected to the PC.

Now, several controllers can be displayed and operated simultaneously by multiple program starting. Proceed analogously as described in chapter 5 (step 3).



# 5.3 Operation of several DisplayIt Controllers via a network

When using Displaylt with a network, 16 controllers can be connected and displayed and operated via the PC. If a network is used, the controller can be installed anywhere in the process at the site and controlled and operated from another workstation. In case of faulty function, the controller can be checked and any changes can be made directly without time loss due to transport distances by a technician.

Set up an OPC group for each controller used in the Ethernet. For creating and configuring the OPC groups in the OPC server, proceed analogously as described in chapters 3.3.2 and 3.3.3, with the exception that you enter a valid IP address behind [COM port / IP Address]. Click on [Ok].

#### Note:

For connection to the Ethernet network, the controllers require an Ethernet TCP/IP card. How to assign an IP address to the controllers is described in the relevant installation manual with PR1713, X5 and X6 and in the X4 network/fieldbus installation and operating manual for X4.

By starting DisplayIt multiple times, several controllers can be displayed simultaneously.

Group Configuration	×
Group name: Ethernet MAR	<u>0</u> K
Slave address:	<u>C</u> ancel
Device Type PR1713/PR5610 💌	Help
License number:	
Serial line	
COM port / IP Address: 1172.26.28.155	$ \rightarrow $
Baud Hate.	



# 5.4 Error messages

When message...

- "-----",
- "No communication",
- "No Server" or
- "ActiveX component can't create object"

is displayed, or if selection of a controller in the "PR1713" dropdown menu is not possible, the possible causes are:

- selection of faulty COM port / faulty IP
- no or faulty cable connection between PC and instrument
- The adjustment of [Setup]-[Serial Ports]-[Builtin] in the controller are not correct.
- no OPC group was set up.
- faulty OPC configuration

5 JKL 8 0 \_↑) +) → 舀) WP È) +ĵ>) +()+) ⊙) F1 > ) More F2 Server PR1713 ▼ Style ×5 • Help Exit 2 ABC 5 JKL 6 No Server 8 q 0 B WP Ì ÷t)  $\odot$ →[]+] F1 More PR1713 ✓ Style X5 •

DisplayIt		$\sim$
ActiveX co	omponent can't ci	reate object
	OK	

FR1792 Version : 2, 1, 33, 2	
Ble Yew Logging Configure Belp	
0	
Canding Line 1: D59F0GGAT/USARTIORT/UF117827911/32.cfg Line Versions: 91: 69: 1099F0GGAT/USARTIORT/UF11808:00 dec3par Exp 9 EW-0LL versions: 8, 0, 0, 14 Weddrev version: 8, 0, 0, 14 Weddrev version: 8, 0, 0, 14 Server File versions: 2, 1, 3, 2, 2 PH 17752: Long line public D59F0GGAT/USARTIORT/UF91782 2004 F1 03 11 34:25.224 FPS515: CommMarging-Linearendler, no license for Server, group: PFS510, 0.0hy DisplayH possible! 2004 F1 03 11 34:25.224 FPS515: CommMarging-Linearendler, no license for Server, group: PFS510, 0.0hy DisplayH possible! 2004 F1 03 11 34:25.224 FPS515: CommMarging-Linearendler, no license for Server, group: PFS510, 0.0hy DisplayH possible! 2004 F1 03 11 34:25.224 FPS515: CommMarging-Linearendler, no license for Server, group: PFS510, 0.0hy DisplayH possible! 2004 F1 03 11 35:22.235 FPS515: USE United Vision CommonState: Soling communication 2004 F1 03 11 35:22.235 FPS515: CommMarging-claenage: communication with Group PFS510 Liceed 2004 F1 03 11 25:27.257 FPS515: USE CommMarging-claenage: communication with Group PFS510 Liceed 2004 F1 03 11 25:27.257 FPS510: CommMarging-claenage: communication with Group PFS510 Liceed 2004 F1 03 11 25:27.257 FPS510: CommMarging-claenage: communication with Group PFS510 Liceed 2004 F1 03 11 25:27.257 FFS510: CommMarging-claenage: communication with Group PFS510 Liceed 2004 F1 03 12 12:57.47, FS FPS510: CommMarging-claenage: communication Min Group PFS510 Liceed 2004 F1 03 12:57.47, FS FPS510: CommMarging-claenage: communication Min Group PFS510 Liceed 2004 F1 03 F2:57.47, FS FPS510: CommMarging-claenage: communication Min Group PFS510 Liceed	

Moreover, you can always check for conflicts and solutions in the OPC server protocol in case of error messages.

# 6 AccessIt

AccessIt makes the internal databases of instruments PR1713 / PR5510 / PR5610 / PR5710 on a PC. Hereby, AccessIt uses the tables in the controller via the OPC server.

AccessIt permits creation of Access tables on the PC with the same structure as in the instruments connected via Ethernet or serial interfaces.

Data can be read out of the instrument databases and written into the databases on the PC. Subsequently, these data are accessible by an application via ODBC/OLE DB.

AccessIt provides own functions for handling of the databases on the PC. These functions include display, changing, upload and download.

Communication with the instrument is via the PR1792 OPC server, which is included in the AccessIt scope of delivery. Separate manuals in PDF format for the OPC server and further system components to which only reference is made in this documentation are available.

#### Note:

As a prerequisite for working with AccessIt, AccessIt and the PR1792 OPC server must be installed on the same PC. An already installed earlier version of the PR1792 OPC server must be de-installed previously via [Start]-[Control-Panel]-[Add / Remove Programs]. Subsequently, re-installation is possible.

After installation of AccessIt, installation of an earlier DisplayIt version is not permissible!

# 6.1 Licence information

See chapters 1.9 and 3.3.1.

# 6.2 Operating principle

Data communication to the instrument is built up only, provided that the license is valid and the instrument was configured correctly (see instrument documentation). Unless a license number was entered, or if an invalid license was specified, an error message is generated by AccessIt.

An instrument is addressed by the EW protocol driver via a serial interface or a PC Ethernet connection. Data communication is handled automatically by PR1792. Plausibility checking between the instrument configured in the software and the instrument actually found at the connection is done, whereby errors (e.g. confused connectors at the PC interface) can be localized.

# 6.3 Installation of AccessIt & OPC server

See chapter 2.3 & 2.4.

# 6.4 Configuration of the OPC server

See chapter 3.3.2

# 6.5 Controller configuration

See chapter 3.



The instrument must be equipped with a firmware  $\geq$  2.20. The versions can be found in [Setup]-[Show Version]-[Firmware version] in the instrument. The latest firmware versions are available at <u>www.sartorius.com</u>.

Instrument set-up must be done as described in the installation.

#### 6.5.1 Connection to the serial interface

The instruments can be connected to the PC via the built-in serial interface (Builtin) or via option PR1713/04 or PR5510/04 Serial I/O, see chapter 3.1.

#### 6.5.2 Ethernet

The instruments can be connected to the PC via Ethernet. For this, option PR1713/14 or PR5510/14 in the instrument is required. Select the following settings (example) in [Setup]-[Network Parameter] (menu item is provided only with an Ethernet card fitted in the controller) in the instrument:

[IP address]-[192.160.0], [Subnet mask]-[255.255.255.0],

[Default gateway]-[0.0.0.0], don't change [Multicast address]-[224.3.0.9], don't change [Device address]-[0], don't change.

Moreover, settings in the OPC server must be made, see chapter 3.3.2 and analogous to chapter 5.3.

The addresses are defined by your local network administrator. For further information on the installation of the Ethernet card and on the configuration, see the instrument installation manual and the manual of the Ethernet card.

## 6.6 Start AccessIt

Start AccessIt via [Start]-[All Programs]-[Sartorius]-[AccessIt]. You have also the possibility to create a desktop shortcut. For this, click via [Start]-[All Programs]-[Sartorius]-[AccessIt] on the AccessIt icon 🛱 with the right mouse key and

#### AccessIt

select [Send to]-[Desktop (create shortcut)]. Now, you can start AccessIt easily and quickly by double clicking on Desktop shortcut 🖾 .

The OPC server starts automatically with the AccessIt program start and must not be started separately.

#### Note:

If you have entered a different installation path during installation, the installation path specified above will change accordingly.

AccessIt starts and the following input mask is displayed:

"User":	Specify your user

"Password"

name. Enter the password. During entry, the password is displayed with \* on the monitor.

#### Note:

After installation or when logging in for the first time, user **system** is already configured. Specify:

- "User": system
- "Password": system

We recommend changing the password immediately to prevent unauthorized access to the system (see chapter 6.10.1.1).

After entry, click on button [Ok] to log in with your access privileges.

Unless you want to log in, click on [Cancel].

After completing his work, a user can log out, see chapter 6.7.

Database	Table	User	System	Help					
Log	jin								1
U	ser				system				
P	assword				*****				
		<u>C</u> a	incel			<u>0</u> k			
	_	-	_	-	_	_	-	-	

#### 6.6.1 Error message during login

This error message is displayed, when you have entered a non-defined user, or a faulty user name. Click on [Ok] and enter the correct user name.

If you have entered a faulty password, the error message shown opposite is displayed. Click on [Ok] and re-enter your password.



Ace	cessIt	x
I	nvalid Passwo	rd
	OK	1
-		

# 6.7 Logout

You are logged out by AccessIt, when you click on [User]-[Logout] in the AccessIt menu and confirm with [Ok].

If you don't want to log out, click on [Cancel].

#### 6.8 AccessIt main window

All operating, report and editing functions can be reached via the menu bar. The possible functions are dependent on the access privileges and the previous history. Functions which cannot be used are displayed in gray. Dependent on access privilege, the user can open all or only defined subjects from the menu – these subjects are displayed in black letters. Access to all menu items is possible for user SYSTEM.

This is a picture of the main window. The icon bar contains status fields with date/time and with the logged out user.

All points of the program operation are identical with the Microsoft Windows conventions.

Lo	gout
	Cancel
	<u>O</u> k

Database Table User System Help

#### 6.9 Menu structure

- Database

- Online
- Offline
- Close
- Remove
- Exit

- Table

- Remove Edit
- Upload
- Download Delete
- Polling Table

- User

- | Login | Logout | Set Password

- System

- Edit UserSelect Language
- Edit Text
- Directory

- Help |- Info

### 6.10 System settings

The following settings are possible:

#### 6.10.1 Edit user

Window "Create User" contains a table for definition or changing of users and their access privileges.

#### Note:

User "System" is always defined and has all access privileges. The system administrator can set up max. 20 lines for users.

Click on button [Create] to create a new user. In this case, a new line is added.

Specify the required user name in column "User". Define the corresponding password. The password is required for logging in.

Define access privileges for the user: The privileges are defined by activating the corresponding checkbox  $\boxed{\square}$ . If e.g. a system is not activated, button System in

the main menu is displayed in gray letters.





Create	User						
	User	Password	Edit PC-Tables	Download / Delete Device Tables	Upload Device-Tables	Remove PC-Databases /	System
1	System	System	R	N	R	R	R
2			11	11	11	10	10
4						_1	
	Create		Delete	Cancel		<u>Ω</u> k	

Create	9 User						
	User	Password	Edit PC-Tables	Download / Delete Device Tables	Upload Device-Tables	Remove PC-Databases /	System
1	System	System	R	R	R	R	N
2	Sartorius	180	10	10	×	3	ĸ
•							
	Cregle		Delete	Dancel		<u>k</u>	

	e User						
	User	Password	Edit PC-Tables	Download / Delete Device Tables	Upload Device-Tables	Remove PC-Databases /	System
1	System	System	因	R	N	R	N
2	Sartorius	1.hg	10	10	K	10	K
•							

"Password":

"Repeat Password":

#### 6.10.1.1 Set Password

Click on [User]-[Set Password] in the AccessIt menu.

Database	Table	User	System	Help	
		Log			
			gout t Passwor	a 🛛	
		_			
Set Password					
Password					
Repeat Passwo	rd				
			<u> </u>	- 1	
			<u>C</u> ancel		
			<u>0</u> k		

The password is displayed only by spacekeepers (no plain text).

Now, click on [Ok], the old password is replaced.

Specify your new

Repeat your password.

password.

If you don't want to change your password, click on [Cancel]. After errors or cancelling, the old password remains valid.

Unless the same password was entered twice, the following error message is displayed. Click on [Ok] and re-enter your password.

AccessIt 🛛 🗙
Invalid Password
ОК

## 6.10.2 Select Language

In this menu, the language (D, GB) can be changed at run-time.

The language displayed with \* can be defined by changing texts (see chapter 6.10.3).

When starting AccessIt for the first time, the menu is displayed in English ("GB"). Changing over to German ("D") is possible.

Select Language
Language
• GB
C D
C *
<u> </u>

#### 6.10.3 Edit text

Changing texts is possible on by a user with [System] access privileges.

The table contains the keywords (approx. 140 in total) of the internal database with signification in English and in German.

The column marked with \* can be used for entry of texts which are displayed instead of the English or German expression in the masks and hints, as soon as the language is set to \*.

The character displayed as a "hotkey" (underlined on the buttons) is preceded by character "&". As to the length of the translated text, note that the button size must be sufficient.

The German and English texts can also be adapted for the application by the user.

	Accessit	GB	D	×
1	BTN_APPEND	Cre&ate	&Erzeugen	?
2	BTN_CANCEL	&Cancel	&Abbrechen	?
3	BTN_DELETE	&Delete	&Löschen	?
4	BTN_DELETE_ALL	Delete &All	&Alles löschen	?
5	BTN_FILTER	&Filter	&Filter	?
6	BTN_OK	&Ok	&Ok	?
7	BTN_PRINT	&Print	&Drucken	?
8	BTN_REFRESH	&Refresh	&Aktualisieren	?
9	BTN_SORT	&Sort	&Sortieren	?
10	CAP_DB_BROWSEF	Tables	Tabellenübersicht	?
11	CAP_DELETE	Delete Records	Daten löschen	?
12	CAP_DIR	Working Directory	Arbeitsverzeichnis	?
13	CAP_DOWNLOAD	Download	Schreiben ins Gerät	?
14	CAP_EDIT_DB	Edit Records	Daten editieren	?
15	CAP_EDIT_TEXT	Edit Text	Texte ändern	?
16	CAP_LANGUAGE	Select Language	Sprache auswählen	?
17	CAP_LOGIN	Login	Anmelden	?
18	CAP_LOGOUT	Logout	Abmelden	?
19	CAP_OFFLINE	Offline	Offline	?
20	CAP_ONLINE	Online	Online	?
21	CAP_PASSW	Set Password	Benutzerkennung	?
		<u>P</u> rint		

Clicking on [Print] will print out the complete table on the printer. Press [Ok] for exit from the menu. Any changes made in the table are stored.

#### 6.10.4 Directory

In this mask, the directory for database storage can be determined.

The files are stored with name extension "\*.mdb" and can be opened with Windows program Access.

For test purposes, it may be purposeful to store databases for an instrument in an additional directory for editing without affect on the existing databases.



# 6.11 Database

Click on "Database" in the AccessIt menu. Click on "Online" to select online and on "Offline" to select offline mode (see below).

Database	Table	User	System	Help
Online				
Offline	- 11			
Close	- 11			
Remove	-			
Exit				

# 6.11.1 Online (AccessIt & Controller connection)

After clicking on [Database]-[Online] in the AccessIt menu, the dialogue window "Select Devices" will appear after a short time. In this window, all connected instruments which were set up previously in "Configure OPC Groups" in the OPC server, will be displayed.

Select the instrument or the instruments which should have access to AccessIt, by activating the relevant checkboxes and clicking on [Ok].

Unless a PR1792/20 or PR1792/13 licence is provided in the instrument, the following error messages are displayed. In this case, AccessIt does not build up communication with the controller. Enter the required licences.

Select Devices		
PR5510		
BATCH-X5		
☐ MIX-X5		
Ethernet MAR		
Ethernet PRO		
Ethernet TSG		
PR1713		
PR5610		<u>0</u> k
Select Devices		
PR5510		
K BATCH-X5		
☐ МІХ-Х5		
Ethernet MAR		
Ethernet PRO		
Ethernet TSG		
PR1713		
PR5610		<u>0</u> k
	AccessIt	×

	Accessit	×
Accessit   BATCH-X5: No License PR1792/20		BATCH-X5: no connection
		ОК

The connection to the instrument database is built up and the database tables on the PC are created. After activating [Online] by clicking on [Table]-[Upload], the tables can be transmitted into the PC database.



When selecting [Online] for the first time after AccessIt program start, the PR1792 OPC server starts automatically and is included as an icon in the Windows task bar.



## 6.11.2 Offline

During offline, there is no connection to the instrument, all actions are effective only for the database existing on the PC. The databases provided on the PC are displayed.

#### 6.11.3 Close

After clicking on "Close", the online or offline connection is cancelled and the window for table editing is closed. The tables are stored automatically on the PC.

#### 6.11.4 Remove

The database for the connected instrument is erased physically on the PC (\*.mdb). As long as [Polling Table] is activated, the command is not possible.

#### 6.11.5 Exit

Leaving the program.

# 6.12 Database survey

Instrument name (defined in the OPC server)	CAccessIt 1.00.0034 - Global Weighing Database Table User System Help Chamber Champer	×
Selected table	⊕ III BAT_REPO_LINE     III indic - MATERIAL       ● III MATERIAL       ● IIII MATERIAL       ● IIII MAT	
Table window	Image: Structure         Image: Structure<	
Table fields	B: Tage SPM_OUT         Wonderpowder         1         A         B1         65535         1026         0 kg         50 kg         27 kg         15 kg         0 kg         0 kg         0 kg         50 kg         27 kg         15 kg         0 kg         0 kg         0 kg         0 kg         50 kg         27 kg         15 kg         0 kg         0 kg         0 kg         50 kg         27 kg         15 kg         0 kg         0 kg         0 kg         50 kg         27 kg         15 kg         0 kg         0 kg         0 kg         50 kg         27 kg         15 kg         0 kg         0 kg         0 kg         50 kg         27 kg         15 kg         0 kg         0 kg         0 kg         50 kg         27 kg         15 kg         0 kg         0 kg         0 kg         50 kg         27 kg         15 kg         0 kg	
Ň		
Transfer information Polling Table	B	

Database example for a batch controller, the material table is selected.

Database example for a truck controller, TRK is selected

🔽 AccessIt 1.00.0034 - Global Wei	ghing		
Database Table User System Help			
G Offline - p:\temp\			
i i i i i i i i i i i i i i i i i i i	IIII acessit - TRK		-
⊞ BAT_REPO_HEADER     BAT_REPO_LINE	<u>R</u> efresh <u>S</u> ort <u>E</u> ilter	<u>D</u> elete Dele	ete <u>A</u> ll <u>O</u> k
I MATERIAL I PRD	Name ID Tare TareDT TU:	ser MaxWGT UseTare Pr	oduct Customer Hauler Site
III IIII STA ⊡			
teren la			
tine tine Tare			
tareDT ⊕ 醒 TUser			
tosei tien MaxWGT			
teren useTare teren Product			
i Hauler ⊕- Site			
ternes ternes	I Record 0/0		
Image: State of the state	3		
terimite in the second			

Tables BAT\_REPO\_HEADER ..... RECIPE\_LINE are also loaded. They are provided in the instrument, however, they are not used by application Truck-X5.

\_ 🗆 ×

- 0 ×

#### Table 6.13

As long as no database was loaded, all menu items are displayed with gray background.

In the example for the batch controller, [Database]-[Online] was followed by selection of table "Material".

#### Remove 6.14

The previously selected table (MATERIAL in the example) is removed from the database. A safety prompt must be acknowledged by the operator. After the command, the table does not exist any more. For erasing, see also chapter 6.18.

🗑 AccessIt 1.00.0034 - Global We Database Table User Syst

Remove

Upload Download

Delete

Polling Tabl

Eite

Delete

Edit

#### Edit 6.15

The selected table in example MATERIAL can be edited with [Edit] after [Upload]. Several windows can be opened simultaneously (e.g. MATERIAL and RECIPE\_LINE).

#### Note:

When changing text entries, take care that the field length is not exceeded. The number of characters appearing on the two-line display must not exceed 18.

1/1													<b>F</b> FI
	171	171	171	1/1	171	171	1/1	1/1	1/1	171	1/1	1/1	1/1

Delete <u>A</u>ll

Coline - C:\Programme\GWT\AccessIt\DB

Indic
 Hand
 Hand

🖃 india

PRODLINI



The data are not checked for plausibility when changing tables. E.g. recipe lines can be provided with components which do not exist in the instrument. In this case, an error message is displayed by the instrument when handling the recipe after writing in the instrument. Generally, changing data after writing in the instrument can cause a crash.

[Refresh]	The datasets from the PC database are updated for display (the datasets are not read from the instrument again!)
[Sort]	A window for determination of the sorting conditions (field name) is opened. After entry, the datasets are displayed in the order of the specified field.
[Filter]	A window for entry of the filter condition s opened. After entry, only the datasets which meet the filter condition are displayed. The filter condition (e.g. field names =, <, > <value>) complies with the SQL standard / WHERE condition. Text strings must be specified in ' ', e.g. MAT_ID= 'water', for date: e.g. TIMESTART &lt;= #Month/Day/Year#.</value>
[Delete]	The marked dataset is deleted after a safety prompt. If the database was opened with [Online] another prompt if the dataset in the instrument should be deleted is also displayed.
[Delete All]]	All datasets of the table are deleted. If the table was opened with [Online], a prompt whether the datasets in the instrument should be deleted as well is also displayed.
[Ok]	The table editor window is closed.

#### AccessIt

## 6.16 Upload

Reads the actual data from the instrument and stores them in the PC database.

#### 6.17 Download

Modified data can be downloaded into the instrument.

#### 6.18 Delete

The datasets of the marked table in the database are deleted. The table continues existing.

#### Note:

As long as Polling Table for a table is activated, [Delete] is not possible.

# 6.19 Polling table

Die Polling Table can be activated/de-activated by checking. Activation and de-activation are possible only during 'Online' mode.

The datasets are uploaded cyclically from the instrument database into the PC database. Subsequently, the datasets in the instrument are deleted.

Polling details can be visualized by clicking on the + sign of the selected table:

The data polling cycle can be adjusted within 1 and 1440 min. (24 hrs).

Polling Table is possible only for one table per instrument.

The user must set the cycle time according to the arising data requirements. The time for data transmission to the PC database within a cycle must be sufficient, otherwise, data are lost.



When Polling Table reading is active, parallel access to tables can cause a crash.







# AccessIt

In the table editor, a turquoise background (b/w = gray) indicates that Polling Table for this table is activated.

In the example, table MATERIAL is selected: (dark blue, b/w = black)

For table PRODUCTION Polling Table is activated: (turquoise, b/w = gray)

## 6.19.1 De-activating Polling Table

After de-activating checkbox  $\square$  and [Ok], automatic table polling is not effective any more. Automatic table polling can be de-activated also directly via the menu [Table].





#### 6.20 Indexes

Indexes are keys in a table and can be used e.g. for accelerated searching.

Indexes which permit duplicating in a table or primary keys precluding duplicates can be defined. Indexes are fixed in the instrument and must not be changed.



## 6.21 Annex

#### 6.21.1 Used datatypes

BOOL	dbBoolean	
USINT	dbByte	
BYTE	dbByte	
WORD	dbLong	
UINT	dbLong	
DWORD	dbLong	
UDINT	dbDouble	
LWORD	dbText	
ULINT		- not supported
SINT	dbInteger	
INT	dblnteger	
DINT	dbLong	
LINT		- not supported
REAL	dbSingle	
LREAL	dbDouble	
TIME	dbDouble	
DATE	dbDate	
TOD	dbDate	
DT	dbDate	
STRING	dbText	
WEIGHT	dbText	
	dbText	- additional field, not visible in AccessIt (raw), see chapter 6.21.2.
	dbDouble	- additional field, not visible in AccessIt (value for calculating), see 6.21.2.
BLOB/Struct	dbMemo	

Note:

The user must take care that the entered data are purposeful.

E.g. for a TIME type field, the entry of value of 1,5555555555, which does not make sense, is possible. With WEIGHT field type, the value must be entered always with . as a decimal separator. BLOB/dbMemo fields should not be changed with Access.

#### 6.21.2 Weight format

Weight values are transmitted in 3 data formats (e.g. SETPOINT, SETPOINT\_value, SETPOINT\_raw). The two additional tables with .....\_value (dB Double) .....\_raw (dB Text) are not displayed with AccessIt.



When opening databases with MS Access, the additional tables may be read only for further processing.

Modifications of the additional tables for weight values are not permissible.

# 7 TRANSLATEIT

Sartorius PC program "Translatelt" offers the possibility to change all displayed texts of an application. A change can be a translation of the overall text or only an adaptation of single words. For safety reasons, firmware (i.e. [Setup] menu) texts cannot be changed.

Translatelt lists all existing texts of an application in columns. By adding new columns, further languages are generated and can be defined. Loading the new language into the controller is done by means of program FlashIt (see chapter 4.7).

The choice of words or characters is limited by a defined character length and resolution. A line is limited to 20 characters and the resolution is 5x7 dots. This offers numerous possibilities.

The program can be used from firmware version 2.0.

Note:

As a prerequisite for working with Translatelt, programs Translatelt (see chapter 2.3) and Flashlt (see 2.1) must be installed.

# 7.1 Extracting the customizing kits

File Translatelt ".ltxt" is stored in the customizing kits on the PowerTools CD. These customizing kits must be extracted on your PC (see chapter 4.4). The most recent application versions or customizing kits can be downloaded from Internet site <u>www.sartorius.com</u>.

# 7.2 Starting Translatelt

To start Translatelt, open the folder in which you have extracted the customizing kits and double click on the Translatelt ".ltxt" file ("ProController.ltxt" in this example). D/WrogrammetSartoriusApplicationsWroController 02.12.01

 D/WrogrammetSartoriusApplicationsWroController 02.12.01

 D/WrogrammetSartoriusApplicationsVroController 02.12.01

 D/WrogrammetSartoriusApplications

 Procontroller 02.12.01

 D/WrogrammetSartoriusApplications

 D/WrogrammetSartoriusApplicationsVroController 02.12.01

 D/WrogrammetSartoriusApplications

 D/WrogrammetSartoriu

The Translatelt start window opens.

**Column "POU" (Program Organization Units)**: Lists all existing programs of an application. (Example: The PRO application consists of many program parts. When pressing [Start] on the controller, one of these partial programs is executed.)

Consequently, only the application descriptions can be altered, whilst, for safety reasons, the firmware menu items cannot be changed.

🗃 ProCont	troller. It	st - Tran	islatelt		
Ele Langua	age Yew	Belp			
1 H H H	关 阳 的	08	A C S S 8 8 8		
Pou	Index	Len	English	Deutsch	^
store	1	20	Memory contains	"Speicher enthält	
store	2	10	'day(s)	'Tag(e) '	
Typ2Text	1	6	Calcul	Yaluf	
Typ2Text	2	6	'Gross'	"Brutto"	
Typ2Text	3	6	Tiet '	Netto '	
Typ2Text	4	6	'Tare '	'Tara '	
Typ2Text	5	6	Viross 1	"Brutto"	
Typ2Text	6	6	Net '	Netto '	
Typ2Text	7	6	'Tare '	'Tara '	
Typ2Text	8	6	'Calouf	Kaluf	
Report	1	20	Trinter Fault	Truckerfehier	
Report	2	20	'Wibi memory fault. '	'Albi-Speicherfehler'	
Report	3	20	'Scale fault	Waagenfehler	
Report	4	20	"Weight to small	'Gewicht zu klein	
WGT_PRT	1	20	'Cannot print	Kann nicht drucken 1	
WGT_PRT	2	20	Weight printout:	'Gewichtsausdruck: '	
WGT_PRT	3	10	'Scale:	Waage: 1	
WST_PRT	4	10	"Sequence: "	Sequenz: 1	
WGT_PRT	5	10	Date:	Detunc	
WGT_PRT	6	10	'Time:	'Zeit: '	
WGT_PRT	7	10	'Gross: '	Brutto:	
WGT_PRT	8	10	Net:	Netto:	
WGT_PRT	9	10	'Tare: '	'Tara:	
Print	1	20	Printing	Trucke	
Ultrint	1	20	Trinting \$04	Trucken \$04	
LPrint	2	20	'Cannot print	'Kann nicht drucken '	
SEARCH	1	20	No printer	'Kein Drucker '	
SEARCH	2	20	No matching entry I*	Kein Eintrag I	
SEARCH	3	20	No more entries	'Xeine Einträge mehr '	
SEARCH	4	9	'Time:	'Zeit: '	
SEARCH	5	20	No database !	Keine Datenbank !	
SEARCH	6	20	"Reading database	Lese Datenbank	
SEARCH	7	20	"Database is empty !"	"Datenbank ist leer 1"	
SEARCH	0	20	"Search for	'Suche nach	
SEARCH	9	20	"Date \$03Range \$03 Seg."	"Datum \$03 Ber \$03 Vorg"	
SEARCH	10	20	"Date \$03 \$03 Seq '	"Datum \$03 \$03 Vorg"	
SEARCH	11	20	Date:	Totum:	
SEARCH	12	20	'First date:	Trstes Datum:	
SEARCH	13	20	Last date:	Letztes Datum:	
SEARCH	14	20	Sequence number	Vorgang	8
For Help, pres	44 E 1				N.M

#### Column "Index":

Contains a successive number within the relevant "POU".

#### Column "Len":

Contains the length of characters which must be used for translating the relevant "POU".

#### Column "English":

Contains the English translation of the relevant "POU".

#### Column "Deutsch":

Contains the German translation of the relevant "POU".

#### Note:

The English language version is loaded into the controller automatically when flashing the ".ltxt" file, in order to ensure operation by Sartorius engineers in case of faulty translations or other languages. Columns "English" and "Deutsch" cannot be deleted or changed.

# 7.3 Adding a language

Click on menu item "Language" and then on "Add". Dialogue window "Add Language" is opened.

Ele Lang	uage ⊻jew	Help		
9 E	关际的	æ	8 3 5 8 8 8 8	
Pou	Index	Len	English	Deutsch A
ingt_prt	1	8	WGT_E '	'WGT_D '
rigt_prt	2	20	\Gross	Trutto
prink_1	1	20	'printing '	'druckt '
print_1	2	20	'Weight is too small '	"Gewicht ist zu Klein"
print_1	3	20	Tor printing	"zum Druckem "
print_1	4	15	Trink error	Truckfehler
ATesR	1	20	'Analog test active '	'Analogtest alitiv '
ATest	2	6	'Ext.'	'Ext'
ATest	3	20	'Analog test failed "	'Analogtestfehler '
reci0	1	20	'No component found '	Saine Komponentel
recladd	1	20	'Append new line?	Neue Zelle anflügen? *
recladd	2	20	"Yes \$03 \$03 No "	' Ja \$03 \$03 Nein '
recladd	3	20	'nothing appendable "	'nichts mehr anfügbar'
REC_PRT	1	20	Recipe name	Trezeptnane
REC_PRT	2	20	Recipe ident	Traceptriumner
REC_PRT	3	20	Date	'Detum'
REC_PRT	4	20	'Setpoint'	'Solvert'
REC_PRT	5	60	Calculatio	
REC_PRT	6	60	Line Component Setpoint	
REC	1	50	Locked by key switch'	Verriegek
REC	2	20	'DBase error	Daterbank Fehler
REC	3	20	'D6ase error	Datenbank Fehler
REC	4	20	'DEase error	Datenbank Fehler
REC	5	50	No components!	Keine Komponenteni *
REC	6	20	Tecipe	Kezept
REC		20	"New \$05 Edit \$05Delete"	"Neu \$05 Edit \$05Losch"
REC	0	20	\$05 Edk \$05	\$05 Edk \$05
REC	9		Tack of MemorySpace1	"SpeicherplatzMangell"
REC	10	20	New not accepted	Neuricht alzeptiert'
REC	11	20 20	\$05 \$05Pvint	\$05 \$05Druck
REC	12	20	Recipe name Name already exists	Receptnamen Name existient schon
REC	13	20	Name already exists Recipe ident	Name existent schon' Repeatrummer
REC	14	20	'Ident already exists'	Nezeptrummer Nummer doppek
REC	15	20	Tident already exists' Not more appendable '	Nummer doppelt Nicht mehr anfügbar
REC	10	20	Table is empty	Tabelle ist leer
REC	18	20	Delete recipe	Rezept kischen
REC	19	20	'Sindle\$03 All \$03	Target(0) Ale (0)
REC	20	20	Recipe number	Repetrumer
REC	20	20	'Delete all recipes?'	"Ale Recet Kischen?"
HEL.		20	CHARGE OF LOCORD?	All Hitcher Astronomy

Ven H	ale			
	ev.			
ALT+A	) 🗟	C C K 8 K		
		English	Deutsch	
	0			
2				
1				
8				
1				
	20			
4				
1				
9				
1				
2	20			
3		"No more entries	Keine Enträge mehr 1	
		"Reading database	"Lese Datenbank	
8	20	Search for	'Suche nach	
		"Date \$03Range \$03 Seq."	"Datum \$03 Ber \$03 Vorg "	
11	20	"Date:	Datum:	
			Tirstes Datum:	
13	20	Last date: *	'Letztes Datum:	
14	20	'Sequence number '	Vorgang 1	
	123456789011213		All Inc.         Depth           All Inc.         Depth           2         Bit Meany soldman           2         Bit Meany soldman           2         Bit Meany soldman           3         A Meany soldman           4         Depth Meany soldman           5         A Meany soldman           6         Meany soldman           7         A Meany soldman           8         Meany soldman           9         Bit Meany soldman           9         Bit Meany soldman           9         Bit Meany soldman           10         Depth field           11         Depth field           12         Depth field           13         Depth field           14         Depth field           15         Depth field           16         Tomes           17         Depth field           18         Depth field           19         Depth field           10         Tomes           11         Depth field           12         Depth field           13         Depth field           14         Depth field           15	All Inc.         Design           All Inc.         Design           B         Very scalar         Specher wrb.ht           Inc.         Target         Target           Inc. </td

<u>H</u>elp

Select a language behind "Copy from" to copy an existing language into the new column. This alternative is recommended, if you want to use an already existing language as a basis for changes of existing texts, or if you don't want to translate all texts.

You can also store this field with [\*empty\*] to facilitate the pure translation work.

# e all <u>N</u>ew language

\*empty\*

Add Language

Copy from

#### Note:

We recommend using option [\*empty\*] only for translating all texts of the application. In case some POU texts should not be translated, no text is
indicated in the relevant position on the controller display.

Button [Ok] can be actuated only, when the name of the new language is entered behind "New language".

This name will be displayed as headline of the column in Translatelt.

After entry, click on [Ok] to continue configuration of the new language, or on [Cancel] if you want to cancel translation..

A new column with the new column headline (language name) was added in the start window. Dependent on whether a language was or was not selected in the previous step behind "Copy from", the copied text descriptions of the selected language are listed in the new column, or the lines of the new column remain empty.

Double click on the line the language version of which should be edited.

A new window is opened.

The name of the "POU" is displayed behind "POU" (in this example: "store").

The successive number of POU "store" is displayed behind "Index".

Behind "Len:", the number of characters which must be used for language editing is displayed.

#### "English":

Contains the English translation of the relevant "POU". Cannot be changed, is contained as standard in file ".txt".

#### "Deutsch":

Contains the German translation of the relevant "POU". Editable, included as standard in file ".txt".

#### "French":

"French" is the headline of the new language. As no language was selected behind "Copy from" in dialogue window "Add language" ("\*empty\*"), no text is displayed in the input field of the new language.



ProCon	troller.ltx	t - Trans	latelt			
Ele Langu	age Vjew	Belp				
19 E	关 陆 氏	@ Q	228 8 8			
Pou	Index	Len	English	Deutsch	French	~
store	1	20	"Memory contains	"Speicher enthält		
store	2	10	'day(s)	'Tag(e) '		
Typ2Text	1	6	Calouf	Kaluf		
Typ2Text	2	6	'Gross'	"Brutto"		
Typ2Text	3	6	Net '	"Netto"		
Typ2Text	4	6	'Tare '	'Tara '		
Typ2Text	5	6	'Gross'	"Brutto"		
Typ2Text	6	6	Net '	"Netto"		
Typ2Text	7	6	'Tare '	'Tara '		
Typ2Text	8	6	'Calouf	Kaluf		
Report	1	20	Printer Fault	"Druckerfehler		
Report	2	20	'Wibi memory fault '	'Albi-Speicherfehler'		
Report	3	20	'Scale fault	"Waagenfiehler		
Report	4	20	"Weight to small	"Gewicht zu klein		
WGT_PRT	1	20	'Cannot print	'Kann nicht drucken '		
WGT_PRT	2	20	Weight prinkout:	'Gewichtsausdruck: '		
WGT_PR.T	3	10	'Scale: '	Waage:		
WGT_PRT	4	10	'Sequence: '	Sequenz: 1		
WGT_PRT	5	10	Date: 1	Datum:		
WGT_PRT	6	10	'Time:	'Zek: '		
WGT_PRT	7	10	Gross:	"Brutto:		
WGT_PRT	8	10	Net:	Netto:		
WGT_PRT	9	10	'Tare: '	'Tara: '		
Print	1	20	Printing	Trucke		
LPrint	1	20	Trinting \$04	Trucken \$04		
LPrint	2	20	'Cannot print	'Xann nicht drucken '		
SEARCH	1	20	No printer	'Kein Drucker "		
SEARCH	2	20	No matching entry I *	Kein Eintrag I		
SEARCH	3	20	No more entries	Keine Einträge mehr 1		
SEARCH	4	9	'Time: '	'Zeit:		
SEARCH	5	20	No detabase !	Keine Datenbank !		
SEARCH	6	20	"Reading database "	"Lese Datenbank."		
SEARCH	7	20	"Database is empty ! "	"Datenbank ist leer 1"		
SEARCH	0	20	"Search for	'Suche nach		
SEAROH	9	20	"Date \$03Range \$03 Seq "	"Datum \$03 Ber \$03 Vorg "		
SEARCH	10	20	"Date \$03 \$03 Seq '	"Datum \$03 \$03 Vorg		
SEARCH	11	20	'Date:	'Datum:		
SEARCH	12	20	'First date:	Tirstes Datum:		
SEARCH	13	20	Last date:	Letztes Datum:		
SEARCH	14	20	"Sequence number	Vorgang		×
For Help, pre	68 F1					N.M A

🔲 Enter	strings			?	
POU	store	lı	ndex 1 Le	en: 20	•
English	'Memory cont	ains			
Deutsch	'Speicher en	thält	•		
French	ŀ		•		
Message					
<u>0</u> k	<u>C</u> ancel	Next Empty	Prev Empty	<u>H</u> elp	-

## Translatelt

## **PowerTools Operating Manual**

Enter an appropriate translation for your new language (in this example: French).

As soon as you start language editing, a dialogue is displayed at the bottom behind "Message". This dialogue provides information, if your entry is too long or too short.

For being accepted by Translatelt, the entered number of characters must comply with the number of characters specified behind "Len:".

In this example, 17 characters were entered and 20 characters are required (see "Len:" and dialogue behind "Message") for acceptance of the entry. This means three more spaces must be entered.

In this example, 23 characters were entered, whilst 20 characters are required (see "Len:" and dialogue behind "Message") for acceptance of the entry. You have to remove three spaces.





🗖 Enter	strings				?×
POU	store	lı	ndex 1 l	_en: 20	-
English	'Memory cont	ains	-		
Deutsch	'Speicher en	thält			
French	'Mémoie cont	ient	- J		
Message	23 is to long (expected	ad 20)			
Message	120 is to long (expect				
<u>0</u> k	<u>C</u> ancel	Next Empty	Prev Empty	<u>H</u> elp	1 -

#### Note:

The pre-defined number of characters includes also entered spaces, i.e. you can influence the entered number of characters by inserting or removing spaces.

If the entered number of characters complies with the pre-defined number of characters, button [Ok] is enabled.

Click on [Ok] to confirm your entry and to store the data set. Translatelt returns to the start window.

Click on [Cancel] to close the window without storing your entries.

Click on button [Next Empty] / [Prev Empty] to go to the next / return to the previous empty "POU" entry in dialogue window "Enter strings".

After editing or translating the POUs, click on button [Ok]. Translatelt returns to the start window.

Now, store the edited TranslateIt file.

#### Note:

We recommend storing the file with a different name to keep the ".ltxt" source file unchanged.

Click on [File]-[Save as] in the menu and enter another file name to store this file.

-	strings				?	×
POU	store	Ir	ndex 👘	1 Len:	20	4
English	'Memory conta	ins	1			_
Deutsch	'Speicher ent	hält	·			
French	'Mémoie conti	ent	•			
Message						
<u>0</u> k	<u>C</u> ancel <u>I</u>	Next Empty	Prev Empl	ty <u>F</u>	<u>l</u> elp	•

	age Yew	Rep				
98 🖬 🗌	X Pa 18	0 8	000888			
Pou	Index	Len	English	Deutsch	French	
zore	1	20	"Memory contains	"Speicher enthält	Mémoie contient	
core	2	10	'day(s) '	'Tag(e) '	')our(s) '	
fyp2Text	1	6	Calcul	Xaluf	Calcul	
(yp2Text	2	6	"Gross"	"Brutto"	"Brut"	
yp2Text	3	6	Net '	"Netto"	Net '	
yp2Text	4	6	'Tare '	'Tara '	'Tare '	
yp2Text	5	6	"Gross"	"Brutto"	"Brut"	
lyp2Text	6	6	Net 1	"Netto"	Net 1	
lyp2Text	7	6	'Tare '	"Tara "	'Tare '	
Typ2Text	8	6	"Calcul"	Kaluf	'Calcul'	
teport	1	20	'Cannot print / allbi'	'Kein Druck / Alibi '	Pas impr. / albi	
WGT_PRT	1	20	'Cannot print '	'Kann nicht drucken '	'mpossible imprimer '	
WGT_PRT	2	20	Weight printout:	'Gewichtsausdruck: '	'Impress. poids : '	
VGT_PRT	3	10	'Scale:	Waage:	'Balance: '	
VGT_PRT	4	10	'Sequence: '	Sequenz: 1	"Sequence: "	
VGT_PR.T	5	10	Dote:	Deturn:	Date:	
VGT_PRT	6	10	'Tme:	'Zek: '	Heure:	
WGT_PRT	7	10	Vaross:	Brutto:	Brut :	
AGT_PRT	8	10	Net:	Netto:	Net:	
WGT_PR.T	9	10	'Tare:	'Tara:	Tare:	
Tint	1	20	Printing	Drucke	Impression	
Print	1	20	Printing \$04	Trucken \$04	Imprimer \$04	
Print	2	20	'Cannot print '	Kann nicht drucken 1	'Impossible imprimer'	
EARCH	1	20	No printer	Kein Drucker	"Pas d imprimante	
EARCH	2	20	'No matching entry 1	Xein Eintrag I	'Pas d entrée valide!'	
EARCH	3	20	No more entries	Keine Einträge mehr	Trop d entrées	
EARCH	4	9	'Tme:	'Zeit: '	Heure: "	
EARCH	5	20	No database I	Keine Datenbank I	Pas de D8	
EARCH	67	20 20	Reading database	Lese Datenbank	Lecture DB	
EARCH			Database is empty !	'Datenbank ist leer f'	Tib est vide	
EAROH	8	20 20	"Search for	'Suche nach	Recherche sur	
EARCH	10	20	"Date \$03Range \$03 Seq " "Date \$03 \$03 Seq "	"Datum \$03 Ber \$03 Vorg" "Datum \$03 \$03 Vorg"	"Date \$030nter \$03 Seq " "Date \$03 \$03 Seq "	
		20				
EARCH	11	20	Date: First date:	Tostes Datum:	Date: Date de début:	
	12	20	Test date:	Letztes Datum:		
EARCH	13	20 20	Last date: Sequence number	Vorgang	Date de fin : Numéro de séquence	
	19	20	Not enough memory	Norgang Nicht genug Speicher'	Pas assez de mémoire'	
REPARE	2	20				
REPARE	2	20	Number of entries: " Delete database \$04	Wnzahl Einträge: Lösche Dateribank \$04	Nombre d'entrées " Télface DB \$04	
v Help, pre		20	Delete ostabase \$04	Losche Lacenbark \$04	Errace up \$04	N.M

# 7.3.1 Navigation in dialogue window "Enter strings"

		Enter strings	x
If the entered number of the pre-defined characte enabled.	characters complies with r length, button [Ok] is	POU store Index 1 Len: 20 English 'Memory contains ' Deutsch 'Speicher enthält '	-
Click on button [Ok] to c store the data set. Transl window.	onfirm your entry and to atelt returns to the start	French 'Mémoie contient '	
Click on [Cancel] to close storing your entries.	the window without		
Click on button [Next Em to the next / return to th entry in dialogue windov	• • •	Message           Ok         Cancel         Next Empty         Prev Empty         Help	<b>-</b>
Note: Alternatively, you can als for navigation of the ind PC key:	so use your PC keyboard ividual language data sets: <b>Order:</b>		
[ ↓	Go to next line / Gehe zum r	nächsten Datensatz	
	Go to previous line / Gehe zu	um vorherigen Datensatz	
Ctrl (Strg) +	Go to next line with empty s	string / Gehe zum nächsten leeren Datensatz	
Ctrl (Strg) +	Go to previous line with emp	oty string / Gehe zum vorherigen leeren Datensatz	
Shift +	Go to next POU / Gehe zur n	ächsten POU	
Shift +	Go to previous POU / Gehe z	ur vorherigen POU	
Ctrl (Strg) +	Go to first line / Gehe zum e	rsten Datensatz	
Ctrl (Strg) +	Go to last line / Gehe zum le	tzten Datensatz	

## 7.3.2 Entry of special characters

You can use special characters for editing prompt

🔲 Enter	strii	ngs								?×
POU	Start					Index	2 Le	en:	20	
English	1	Yes	\$03	No	\$03	Alibi'				
Deutsch	·	Ja	\$03	Nein	\$03	Alibi'				
French	·	Oui	\$03	Non	\$03	Alibi'				
Message										
Message										

#### Entry

The following escapes can be used

texts, see table below.

## \$\$

\$' Special character for front-panel display

\$01

\$02

\$03

\$04

\$05

#### Display

Oui	\$	No	\$	A1	iЬi
0ui	2	No	2	A1	іЬі

The \$ itself

A single quote

Oui + No + Alibi	Down scroll character
Oui † No † Alibi	Up scroll character
	Single softkey indicator
Oui = No = Alibi	(no More key)
	· //
Оџі … No … АlіБі	Small dots
	More coftkov indicator
Oui t No t Alibi	More softkey indicator (with More key)
	(

# 7.4 Adding a language from another ".ltxt" file

Double click on the ".ltxt" file (in this example: "ProController.ltxt"). Translatelt starts. Click on [Datei]-[Merge] in the Translatelt menu.

Now, search the ".ltxt" file (in this example: "PROCONTROLLER FR.ltxt") for taking over the languages.

Translatelt searches automatically for all existing languages in file "PROCONTROLLER **FR**.ltxt" and inserts the existing translations into new columns in the "ProController.ltxt" file after clicking on [Ok].





Langua	pe Wew H	telp	<ul> <li>Translatelt</li> </ul>			
Open		Ctrie	0 5 2 10			
Save		Ctrie	5	Deutsch	French	
Save As			tontains '	Speicher enthält	Mémoie contient	
Merge			portans	"Tag(e)	Yemore contrent.	
e ser ye				Tage) Kaluf	Calcul	
Info		ALTA	+Return	Teutto'	'Brut '	
				Netto "	Terce '	
Print		Ctrie	PP	'Tara '	Tare "	
<b>Print Previe</b>	TWV			Teutto	Dut '	
Print Setup				"Netto"	Text '	
Page Setup				Tara '	Tare -	
Page Secu	,			Xaluf	Calouf	
1 ProContr	oller_test FR	. Int	ke -	Truckerfehler *		
2 ProConts			pry fault '	'Albi-Speicherfehler'		
	TROLLER FR			Waager/iet/ier		
			a share a	'Gewicht zu klein "		
4 Batch Fa			ent .	'Kann nicht drucken '	'mpossible imprimer'	
5 Batch Co	ntroller.Itst		rintout:	'Gewichtsausdruck: 1	Impress, poids :	
6 Batch Fa	rsi Itvit			Waage: 1	'Balance: '	
7 Batch Co	ntroller.Itst		k.*	Sequenz: 1	'Sequence: '	
				Datum:	'Date:	
Ext				Zeit:	Heure:	
		19		Terutto:	"Drut : '	
GT_PRT	0	10	Net:	Netto:	Net: '	
GT_PRT	9	10	Tare:	"Tara:	'Tare:	
nt	1	20	Printing	Drucke	Impression	
int .	1	20	Printing \$04	Trucken \$04	Imprimer \$04	
int	2	20	"Cannot print	'Kann nicht drucken '	'Impossible imprimer '	
ARCH	1	20	No printer	Kein Drucker	Pas d imprimante	
ARCH	2	20	"No matching entry !"	Xein Eintrag !	Pas d entrée valide!	
ARCH	3	20	No more entries	Keine Einträge mehr 1	Trop d entrées	
ARCH	1	9	Time:	Zek:	Houre:	
ARCH ARCH	5	20 20	No database !	Keine Datenbank I	Pas de DB	
ARCH	2	20	Reading database			
ARCH	8	20	Database is empty ! Search for	"Saterbank ist leer ("	'Db est vide Recherche sur	
ARCH	9	20	"Date \$03Range \$03 Seg."	"Datum \$03 Ber \$03 Vorg."	"Date \$031nter \$03 Seg."	
ARCH	9	20 20	"Date \$03Range \$03 Seq " "Date \$03 \$03 Seq "	"Datum \$03 Ber \$03 Vorg " "Datum \$03 \$03 Vorg "	"Date \$03 seg " Date \$03 \$03 Seg "	
ARCH	10	20	Date:	Datum:	Date:	
ARCH	11	20	Text date:	Trates Datum:	Date: Date de début:	
ARCH	12	20	Last date:	Letztes Datum:	Date de fin :	
ARCH	13	20	Securice number	Vorgano	Date de nn : Numéro de sécuence "	
			Securice number	TO GRAD	reaments one seldutence	N.M

We recommend saving the edited "ProController.ltxt" file with a different name: [File]-[Save as...].

# 7.5 Copying an existing language

For copying an existing language into a new column, e.g. for changing texts, at least a third language column must be provided apart from English and German. If necessary, insert an **empty language column ("\*empty\*")** using menu item [Language]-[Add].

ndownoling Mit Tonolskill Proven Die Version Proven Die Version

Click in [Language]-[Copy] in the menu, in order to copy an existing language into the empty language column.

Window "Copy Languages" is opened.

Behind "Copy from", you can select the language which should be copied.

In "Copy to", you have to select the destination, i.e. the column, into which the copied language should be inserted. This column must be empty for copying.

Click on button [Ok] to confirm your entry, or on [Cancel] to cancel copying.

Now, text changes can be made in the new column.



🛗 ProContro	oller.ltxt	- Transl	atelt		
Eile Language	<u>V</u> iew Ł	telp			
🗃 🖬   🐰	e C	<i>a</i> D	SS 8 8 %		
Pou	I	Len	English	Deutsch	veränderte Versior
store	1	20	'Memory contains	'Speicher enthält '	'Speicher enthält
store	2	10	'day(s) '	'Tag(e) '	'Tag(e) '
Typ2Text	1	6	'Calcul'	'Kalkul'	'Kalkul'
Typ2Text	2	6	'Gross '	'Brutto'	'Brutto'
Typ2Text	3	6	'Net '	'Netto '	'Netto '
Typ2Text	4	6	'Tare '	'Tara '	'Tara '
Typ2Text	5	6	'Gross '	'Brutto'	'Brutto'
Typ2Text	6	6	'Net '	'Netto '	'Netto '
Typ2Text	7	6	'Tare '	'Tara '	'Tara '
Typ2Text	8	6	'Calcul'	'Kalkul'	'Kalkul'
Report	1	20	'Printer fault	'Druckerfehler '	'Druckerfehler
Report	2	20	'Alibi memory fault	'Alibi-Speicherfehler'	'Alibi-Speicherfel
Report	3	20	'Scale fault	Waagenfehler	'Waagenfehler
Report	4	20	Weight to small	'Gewicht zu klein '	'Gewicht zu klein
TRG TOM	1	20	'Cannot print	'Kann nicht drucken '	'Kann nicht drucke

# 7.6 Deleting an existing language

Click on [Language]-[Remove] in the menu.



Select the language which should be copied and click on [Ok].

You can cancel deleting by clicking on [Cancel].

#### Note:

The delivered standard languages English and German cannot be deleted.

A last warning message is displayed. This is the last possibility to cancel deleting by clicking on [Cancel].

When clicking on [Ok], the selected language is deleted.

 Remove Language

Remove

French

OK

Cancel



le Langua		Ctried					
Open		Ctri+1					
Save		C01+3	,	Deutsch	French		
Save As			ontains "	"Speicher enthält	"Mémoie contient		-
Merge				'Tag(e) '	'jour(s) '		
Info			Return	Xaluf	Calcul		
Info		ALTH	Recurn	"Brutto"	"Brut		
Print		Christ	,	'Netto '	Tiet '		
Print Prevá				'Tara '	"Tare "		
				"Brutto"	Bruk "		
Print Setup				"Netto"	Tiet '		
Page Setu	2			'Tara '	"Tare "		
				Xahuf	Calcuf		
	oller_test FR.	.Rot	MR .	"Druckerfehler			
2 ProConb	oller.kit		ory fault	'Albi-Speicherfehler'			
3 PROCON	TROLLER FR.	kit	Ganal '	"Waagen/iehler 'Gewicht zu klein			
4 Batch Fa	rsi Itut		p small	"Gewicht zu klein " 'Kann nicht drucken "	'mpossible imprimer '		
E Barba Co	ntroller.itst		intext:	Kann nick drucken Gewichtsausdruck:	Impress, poids :		
6 Batch Fa			recoue:	Water:	Talance: "		
				Sequenz: "	Sequence: '		
7 Batch Co	ntroller.Itst			Datum	Date:		
5.8				Zel:	Heare: 1		
EX.				Tirutto: '	Text:		
IGT PRT	0	10	Net:	Netto:	Net:		
NGT PRT	÷.	10	Tare	Tara:	Tare:		
Wet .	í	20	Printing	Drucke	Inpression		
Print		20	Printing \$04	Trucken \$04	Incrimer \$04		
Print	2	20	'Cannot print	Kann nicht drucken 1	'Inpossible imprimer '		
EARCH	ī	20	'No printer	Kein Drucker	Pas d imprimante		
EARCH	ż	20	"No matching entry !"	Kein Eintrag !	'Pas d entrée valide!'		
EARCH	3	20	No more entries	Xeine Einträge mehr 1	'Trop d entrées '		
EARCH	4	9	Time:	Zet:	Heure: "		
EARCH	s	20	'No database i	Keine Datenbank I	'Pas de DB		
EARON	6	20	"Reading database "	Lese Datenbank	Lecture DB "		
EARCH	7	20	'Database is empty ! '	"Daterbank ist leer !"	T/b est vide		
EARCH	8	20	Search for	'Suche nach	Recherche sur		
EAR OH	9	20	"Date \$03Range \$03 Seq."	"Datum \$03 Ber \$03 Vorg "	"Date \$031nter \$03 Seg."		
EARCH	10	20	"Date \$03 \$03 Seq "	"Datum \$03 \$03 Vorg"	'Date \$03 \$03 Seq '		
EARCH	11	20	'Date:	"Datum:	Date:		
EARCH	12	20	'First date: "	"Erstes Detum:	'Date de début:		
EARCH	13	20	Last date: '	'Letztes Datum:	'Date de fin :		
EARCH	14	20	'Sequence number	Vorgang 1	Numéro de séquence "		
and the sector	e document v	the second	Lana .			N.M	

The language was deleted.

Save your ".ltxt" file, if you want to keep these changes, or close the file without storing. In this case, changes are not taken over.

Font changing is possible in the Translatelt operator interface. For this, click on [View]-[Set font...] in the menu.

Subsequently, select the required font and font size and confirm by clicking on button [Ok].

#### Note:

Changing the font or font size in the Translatel operator interface does not affect the print-out



#### **POU translation print-out** 7.8

Print out the existing languages with

corresponding language or text changes by clicking on [File]-[Print...] in the menu.

In the printer properties, you can make changes of print layout and print quality.

## 7.8.1 Adjusting the print font

Font and font size can be changed via [View]-[Setup Printer Font...] in the Translatelt menu. Confirm your choice with [Ok].

## 7.8.2 Print preview

Before printing the language survey, a print preview can be opened in [File]-[Print Preview]. In this preview, font and font size are shown exactly as adjusted (see chapter 7.8.1).

File: D:>Pressente	Sartorius\TranslateIt\ProController.ltxt
store 1 20	
English: 'Memory	CONTAINS
Deutsch: 'Speic	her enthält ′
store 2 10	
English: 'day(s,	
Deutsch: 'Tag(e,	, · ·
Typ2Text 1	6
English: 'Calcu.	$\overline{t'}$
Deutsch: 'Kalku.	
Typ2Text 2	6
English: 'Gross	
Deutsch: 'Brutte	a'
Typ2Text 3	6
English: 'Net	,
Deutsch: 'Netto	,
Typ2Text 4	6
English: 'Tare	1
Deutsch: 'Tara	,
Typ2Text 5	6
English: 'Gross	
Deutsch: 'Brutte	

#### 7.9 Flashing the altered ".ltxt" file

See chapter 4.7.

#### **Finishing Translatelt** 7.10

Close the program by clicking on [File]-[Exit] in the TranslateIt menu.

	106 El 8.	✓ Toolbar		5 XX Y NY		
	Pou	🖌 Status Da		lish	 Deutsch	
	store	Set Font.		acry contains	'Speicher enthält	
	store	Set Printe	v Forit	v(s)	'Tag(e)	
	Typ2Text	_	6 .	Calcul	'Kalkul'	
	Typ2Text			Gross '	'Brutto'	
	Typ2Text	- 1		Net '	'Netto	
	Typ2Text	- i	6 -	Tare '	'Tara '	
t	Typ2Text	ŝ	6 1	Gross '	'Brutto'	
ι	Typ2Text	- Z		Net '	'Netto '	
	Typ2Text		÷ -	Tare	'Tara '	
	Typ2Text	é		Calcul'	'Kalkul'	
	Report	ĩ		Printer fault	'Druckerfehler	
	Report	- 2		Alibi memory fault	'Alibi-Speicherfehler	
	Report	3		Scale fault	'Waagenfehler	
F	Report	ă.		Weight to small	'Gewicht zu klein	
L	WGT_PRT	1		Cannot print	'Kann nicht drucken	
-	WGT PRT	- 2		Weight printout:	'Gewichtsausdruck:	
	WGT_PRT	3		Scale:	'Vaage:	
	WGT_PRT	ā.		Sequence: "	Sequenz:	
	WGT_PRT	ŝ		Date:	Datum:	
	WGT PRT	é.	10 -	Tine:	Zeit	
	WGT PRT	7		Gross	Brutto:	
	WGT_PRT		10 -	Net: "	'Netto: '	
	WGT_PRT	2	10 -	Tere:	'Tere:	
	Print	1		Printing	Drucke	
	LFrint	1	20 *	Printing \$04	Drucken \$04	
	LPrint	2	20 *	Cannot print	'Kann nicht drucken	
	SEARCH	1		No printer	'Kein Drucker	
14	SEARCH	2		No matching entry !	'Kein Eintrag	
IT	SEARCH	- 3	20 *	No acre entries	'Keine Einträge mehr	
i c	SEARCH	4		Time: "	'Zeit:	
	SEARCH	5		No database	Keine Datenbank	
+	SEARCH	6	20 *	Reading database	Lese Datenbank	
it.	SEARCH	7	20 *	Database is eapty !	'Datenbank ist leer !	
	SEARCH	8	20 *	Search for	'Suche nach	
	SEARCH	9		Date \$03Range \$03	Datum \$03 Ber \$03 .	
	SEARCH	10			'Datum \$03 \$03 .	
	SEARCH	11		Date:	'Datum:	
	SEARCH	12		First date:	Erstes Datum:	
	SEARCH	13		Last date:	'Letztes Datum:	
	SEARCH	14	20 -	Sequence number	Vorgang	

Programme\Sartorius\TranslateIt\ProController.ltxt

Menory contains Speicher enthält

# 8 RECOVERIT

Sartorius PC program "Recoverlt" saves all settings (incl. EAROM, i.e. calibration and configuration data and all other user data in the RAM (e.g. materials, recipes, tables, ...) of the Sartorius controller in a PC file. This ensures that the operability can be restored within a few minutes in case of failure or accidental deletion of controller data.

Via the serial interface (not possible via Ethernet or fieldbus), the data are uploaded from the controller into the PC and can be stored safely. Re-configurations are not necessary.

Accordingly, data can be downloaded. After starting the program, the file with the data is selected and the communication data are checked. After a short time, the data are on the controller.

RecoverIt should be done regularly, especially before RAM or EAROM data changing.



Download of the back-up file is possible only to the same application and firmware version as used for generation of the back-up file, otherwise, the back-up file will be spoiled!

After the recover process, table structures must not be changed, otherwise, the stored back-up file will be spoiled.

Data storage on the PC is in a non-readable file format, i.e. data cannot be edited. This editing functionality will be made available in the future by tool "Accesslt".

The program can be used for data saving from firmware version 2.0.

Note:

The controller must be connected with the PC via an RS-232 interface.

## 8.1 Controller settings

Parameter settings on the controller are required, see chapter 3.

The controller must be at the topmost menu level, i.e. the application handling must not be running. Moreover, no other program (e.g. PR1740, PR1791 or PR1792) may make an access to the controller, i.e. it must not be active on the PC.

## Note:

For EAROM back-up, a controller firmware version 2.0 or better is required.

## 8.2 Installing RecoverIt

See chapter 2.6

## 8.3 Starting Recoverlt

Start RecoverIt by clicking on [Start]-[All Programs]-[Sartorius]-[RecoverIt]-[RecoverIt] or by

double clicking on desktop shortcut Recovert, if a desktop item is provided.

A help function provides support for application Recoverlt. For this, click on button [Help].

## Note:

If you have entered a different installation path during installation, the start path specified above will change accordingly.

Ignore Reports Ignore Production Clear (all) tables after upload Upload EAROM	<ul> <li>Download EAROM</li> <li>Calibration</li> <li>Setup (Firmware)</li> <li>Config (Application)</li> </ul>
name	Browse

# 8.4 Update Data from Device

## 8.4.1 Upload RAM data

Activate checkbox "Update Data from Device".

Now, you can select between complete saving of all controller RAM data or saving of individual RAM areas. The back-up file generated by Recoverlt is saved on the PC.

📲 Step 1: Select action	?×
Update Data from Device     Upload DBase     Ignore Reports     Ignore Production     Clear (all) tables after upload     Upload EAROM	Download Data to Device     Download DBase     Download EAROM     Calibration     Setup (Firmware)     Config (Application)
Filename	Browse
D:\Programme\Sartorius\Backup Batch	h-X5\Backup(2004-10-26 114539).dat /eiter >AbbrechenHilfe

Activate checkbox "Upload DBase", if you want to save controller RAM data on the PC.

E.g. the following data are saved in RAM:

- databases
- materials
- recipes
- tables (with the batch application: material, recipe and report tables)
- reports

When activating only checkbox "Upload DBase", all RAM data (tables) are saved in the PC back-up file.

For detailed information on the data saved in RAM, see the operating manual for the application.

If you activate checkbox "Ignore Reports" additionally, the report table is not included in the back-up file.

If you activate checkbox "Ignore Production" additionally, the production table is not included in the back-up file.

You can activate checkbox "Clear (all) tables after upload". In this case, all tables in the controller will be deleted after uploading, i.e. after generation of the back-up file on the PC.

Click on button [Browse] to change or to determine the destination for storage of the back-

Update Data from Device     Upload DBase     Ignore Reports     Ignore Production     Clear (all) tables after upload     Upload EAROM	Download Data to Devic     Download DBase     Download EAROM     Calibration     Setup (Firmware)     Config (Application)	
ilename D:\Programme\Sartorius\Backup Batc		Browse

<ul> <li>Update Data from Device</li> <li>Upload DBase</li> <li>Leaves Basette</li> </ul>	C Download Data to Device C Download DBase
Ignore Reports     Ignore Production     Clear (all) tables after upload     Upload EAROM	<ul> <li>Download EAROM</li> <li>Calibration</li> <li>Setup (Firmware)</li> <li>Config (Application)</li> </ul>
lename	Browse
):\Programme\Sartorius\Backup Batc	h-X5\Backup(2004-10-26 135151).dat

up file. You can also enter a different file name for the back-up file.

After defining the destination for the back-up file, click on button [Next].

#### Note:

The name extension of the back-up file for the RAM data is ".dat".

Select the parameters in dialogue window "Step 2: Setup communication":

Protocol:	[EW-Com V3]
Baudrate:	[19200]
Com Port:	Select the PC Com port to which the
	controller is connected.
Slaveaddr:	[A]

Subsequently, click on [Next].

#### Note:

These settings must correspond with the settings made in [Setup]-[Serial Ports] on the controller (see chapter 3).

A status window is displayed.

During uploading, Recoverlt loads driver "ewdrv\_01.exe" (installed automatically with Recoverlt). This load operation opens a DOS window which can be closed manually after uploading.

#### Note:

Clicking on [Cancel] during uploading will cancel uploading. No back-up file is generated.

The following warning is displayed. Click on [No] to continue uploading, or on [Yes] to cancel RecoverIt.



🚽 Step 3: Recover in progress	?×
Table LBAT_REP_LINE has 0 records a 310 bytes Table LBAT_REP_HEAD has 0 records a 324 bytes Table UNIT has 0 records a 26 bytes Table PRODUCTION has 0 records a 44 bytes Table BAT_REP0_LINE has 0 records a 310 bytes Table BAT_REP0_HEADER has 0 records a 324 bytes Table BAT_REP0_HEADER has 0 records a 324 bytes Table RECIPE_LINE has 2 records a 304 bytes Table RECIPE_HEADER has 1 records a 30 bytes Table RECIPE_HEADER has 1 records a 40 bytes Table MATERIAL has 3 records a 414 bytes	
< <b>∠urück</b> Fertig stellen Abbrechen	Hilfe



To ensure successful termination of the upload operation, note hint "Total XXXX bytes saved" in the last line and the load bar.

After successful upload, you can click on button [Again] to go to the Recoverlt start window, or to cancel Recoverlt by clicking on [Cancel] (in this case, you can close DOS window "ewdrv\_01.exe").

🚽 Step 3: Recover in progress	?×
Step 3: Recover table BAT_REPD_HEADER     D record saved     Recover table RECIPE_LINE     2 record saved     Recover table RECIPE_HEADER     1 record saved     Recover table MATERIAL     3 record saved     Total 3866 bytes saved	
Abbrechen	Hilfe

## 8.4.2 Upload EAROM data

Activate checkbox "Update EAROM" to save the controller EAROM data on the PC.

The calibration, configuration and licence data are saved in EAROM.

Click on button [Browse] to change or to determine the destination for the back-up file. Moreover, you can specify a different file name for the back-up file.

After determining the destination for the back-up file, click on button [Next].

#### Note:

The name extension of the back-up file for the RAM data is ".ear".

Make the parameter selections in dialogue window "Step 2: Setup communication":

Protocol:	[EW-Com V3]
Baudrate:	[19200]
Com Port:	Select the PC Com port at which
	the controller is connected.
Slaveaddr:	[A]

Then, click on [Next].

#### Note:

These settings must correspond with the settings made in [Setup]-[Serial Ports] on the controller (see chapter 3).

A status window is displayed.

During uploading, Recoverlt loads driver "ewdrv\_01.exe" (installed automatically by Recoverlt). This loading operation opens a DOS window which can be closed manually after uploading.

🔲 Upload DBase	C Download DBase
☐ Ignore Reports ☐ Ignore Production ☐ Clear (all) tables after upload ✔ Upload EAROM	C Download EAROM Calibration Setup (Firmware) Config (Application)
lename	Browse
):\Programme\Sartorius\Backup Batcl	h-X5\Backup(2004-10-27 170829).ear

🚽 Step 2: Se	etup communication
Protocol	EW-Com V3
Baudrate:	19200 💌
Com Port:	COM 2
Slaveaddr:	A
	< <u>Z</u> urück <u>₩</u> eiter > Abbrechen Hilfe

🚽 S	itep 3: Recover in progress	?×
ĥ	Begin process Open comm Read version Start loading EAROM	
	Again Abbrechen	Hilfe

## RecoverIt

#### Note:

Clicking on [Cancel] during uploading will cancel uploading. No back-up file is generated.

The following warning is displayed. Click on [No] to continue uploading, or on [Yes] to cancel RecoverIt, i.e. uploading.

successfully, note hint "Total XXXX bytes saved" on

After successful uploading, you can click on button [Again] to go to the RecoverIt start window, or on [Cancel] to cancel RecoverIt (in this case, you may

To ensure that uploading was terminated

the last line, and the progress bar.

close DOS window "ewdrv\_01.exe").

**PowerTools Operating Manual** 

Recover It!		
2	Transfer is in progres	s
~	Abort operation?	
<u>]a</u>		1
<u>2</u> 0		1

🚽 Step 3: Recover in progress	?×
Begin process Open comm Read version Start loading EAROM Total 2082 bytes saved	
Again Abbrechen	Hilfe

## 8.4.3 Simultaneous RAM & EAROM upload

For saving RAM and EAROM data simultaneously in a step on the PC, activate checkboxes "Update Data from Device", "Upload DBase" and "Upload EAROM".

Continue uploading as described in chapter 8.4 or 8.4.2.

After successful uploading, two files (".dat" and ".ear") are saved in the back-up destination folder.

Step 1: Select action	?×	
<ul> <li>Update Data from Device</li> <li>Upload DBase</li> <li>Ignore Reports</li> <li>Ignore Production</li> <li>Clear (all) tables after upload</li> <li>Upload EARDM</li> </ul>	Download Data to Device     Download DBase     Download EAROM     Calibration     Setup (Firmware)     Config (Application)	
Filename Browse D:\Programme\Sattorius\Backup Batch-X5\RAM und EAROM.dat		
	/eiter>	

? X

Download Data to Device

C Download DBase

O Download EAROM

Calibration

## 8.5 Download Data to Device

## 8.5.1 Download RAM data



Downloading the back-up file is possible only to the same application and firmware version as used for generation of the back-up file, otherwise, the back-up file will be spoiled!

After the recover process, table structures must not be changed, otherwise the stored back-up file will be spoiled!.

🚽 Step 1: Select action

🔽 Upload DBase

☐ Ignore Reports
 ☐ Ignore Production

Update Data from Device

🔲 Clear (all) tables after upload

Activate checkbox "Download DBase".

which should be loaded into the controller.

Click on button [Browse] to select the back-up file

After selecting the back-up file, click on button

Browse
eiter.> Abbrechen Hilfe
5
Download Data to Device     Download DBase
Download EAROM     Calibration     Setup (Firmware)     Config (Application)
Browse

[Next].

## RecoverIt

# Make the parameter selections in dialogue window "Step 2: Setup communication":

Protocol:	[EW-Com V3]
Baudrate:	[19200]
Com Port:	Select the PC Com port to which
	the controller is connected.
Slaveaddr:	[A]

Then, click on [Next].

#### Note:

These settings must correspond with the settings made in [Setup]-[Serial Ports] on the controller (see chapter 3).

A status window is displayed.

During downloading, Recoverlt loads driver "ewdrv\_01.exe" (installed automatically with Recoverlt). This loading operation will open a DOS window, which can be closed manually **after** downloading.





🚽 Step 3: Reco	ver in progress	?×
Begin process Öpen comm Read version Restoring UNIT		
	<b>∠Zurück</b> Fertig stellen Abbrechen	Hilfe

#### Note:

Click on [Cancel] during downloading will cancel downloading. The back-up data will not be loaded into the controller.

The following warning is displayed.

Click on [No] to continue downloading or on [Yes] to cancel Recoverlt, i.e. downloading.

To ensure successful termination of the download operation, note hint "Total XXXX bytes saved" on the last line, and the progress bar.

After successful downloading, you can click on button [Again] to go to the Recoverlt start window, or on [Cancel] to cancel Recoverlt (in this case, you can close DOS window "ewdrv\_01.exe").

Recover	lt!	
?	Transfer is in p Abort operatio	
<u>]a</u>	<u>N</u> e	in

🚽 Step 3: Recover in progres	\$\$		?×
Read version Restoring UNIT Restoring PRODUCTION Restoring BAT_REPO_LINE Restoring BAT_REPO_HEADER Restoring RECIPE_UNE Restoring RECIPE_HEADER Restoring MATERIAL Total 2230 bytes saved			
	Again	Abbrechen	Hilfe

## 8.5.2 Download EAROM data



Downloading the back-up file is possible only to the same application and firmware version as used for generation of the back-up file, otherwise, the back-up file will be spoiled!

After the recover process, table structures must not be changed, otherwise the stored back-up file will be spoiled.

	Step 1: Select action
Activate checkbox "Download Data to Device".	C       Update Data from Device         □       Upload DBase         □       Ignore Reports         □       Ignore Production         □       Clear (all) tables after upload         □       Upload EAROM         □       Upload EAROM         □       Calibration         □       Setup (Firmware)         □       Config (Application)
Activate checkbox "Download EAROM" to load all saved EAROM data into the controller.	Step 1: Select action
Moreover, you can activate checkboxes "Calibration", "Setup (Firmware)" and/or "Config (Application)" to select which EAROM data should be loaded into the PC.	Update Data from Device     Download Data to Device     Upload DBase     Ignore Reports     Ignore Production     Clear (all) tables after upload     Upload EAROM     Setup (Firmware)     Config (Application)
Click on button [Browse] to select the back-up file which should be downloaded into the controller.	Filename Browse D:\Programme\Sartorius\Backup Batch-X5\Backup(2004-10-27 170829).ear
After selecting the back-up file, click on button [Next].	< <u>∠</u> urück <u>Weiter&gt;</u> Abbrechen Hilfe
Make the parameter selections in dialogue window "Step 2: Setup communication":	Step 2: Setup communication
Protocol: [EW-Com V3] Baudrate: [19200] Com Port: Select the PC Com port to which the controller is connected. Slaveaddr: [A]	Protocol EW-Com V3  Baudrate: 19200 Com Port: COM 2 Slaveaddr: A
Subsequently, click on [Next].	
	<zurück weiter=""> Abbrechen Hilfe</zurück>

#### Note: These settings must correspond with the settings

## RecoverIt

made in [Setup]-[Serial Ports] on the controller (see chapter 3).

A status window is displayed.

During downloading, Recoverlt loads driver "ewdrv\_01.exe" (is installed automatically with Recoverlt). This load operation will open a DOS window which can be closed manually **after** downloading.

#### Note:

Clicking on [Cancel] during downloading will cancel downloading. The back-up data are not loaded into the controller.

The following warning is displayed. Click on [No] to continue downloading or on [Yes] to cancel Recoverlt, i.e. downloading.

To ensure that downloading was terminated successfully, note hint "Total XXXX bytes saved" on the last line, and the progress bar.

After successful downloading, you can click on button [Again] to return to the Recoverlt start window, or on [Cancel] to cancel Recoverlt (in this case, you can close DOS window "ewdrv\_01.exe").

🚽 Step 3: Recover in progress	?×
Begin process Open comm Read version Restoring UNIT	
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	ellen Abbrechen Hilfe



🚽 Step 3: Recover in progress	?×
Begin process Open comm Read version Start storing EAROM Total 0 bytes saved	
Again Abbrechen	Hilfe

## 8.6 Error messages

The causes of this message can be :

- wrong COM port,
- missing or faulty cable connection between PC and instrument,
- faulty cable,
- the settings in [Setup]-[Serial Ports]-[Builtin] on the controller are not correct,
- the settings in RecoverIt are not correct: e.g. faulty Baudrate, faulty slave address, etc.



If this message is displayed, a faulty protocol was selected in the controller and/or in Recoverlt. Please, use protocol [EW-COM V3].

An incomplete Recoverlt file was loaded into the instrument previously, i.e. an internal controller error was made. Make a [Cold] start at the instrument.

#### Note:

During [Cold] start, the RAM data are lost.

Driver "ewdrv\_01.exe" is not found, or access to this driver is not enabled.

Re-start Recoverlt, and repeat the recover operation.

If the error message is displayed again, ensure that driver "ewdrv\_01.exe" is on your PC (D:\WINDOWS\system32). If necessary, re-install RecoverIt to re-load the driver.











# 9 LAYOUTIT

Driver Layoutlt is an extension of the Sartorius Nice Label Express program for Sartorius controllers X4, X5, X6 & PR1713 and printers.

Installation of the driver permits changing of print layouts (".lbls" files) with Nice Label Express and using graphic and line printers. Apart from the well-known labels and tickets, the layouts of complete reports in A4 format, e.g. batch reports, can be determined.

The print layouts (".lbls" files) are included in the customizing kits on the PowerTools CD contained in the scope of delivery. These customizing kits must be extracted on your PC (see chapter 4.4). The most recent customizing kits can be downloaded from our Internet site <u>www.sartorius.com</u>.



Don't change the names of the unpacked files! Don't change structure or names of this folder!

A standard layout file (".lbls" file) is provided in the application. If necessary, these data can be adapted to the individual requirements. Changes such as print-out of other data, use of a logo, inclusion of bar codes or print-out on a different printer are possible without programming expenditure.

## 9.1 Prerequisite of Layoutlt

As a prerequisite for using driver "Layoutlt", a full version of the Sartorius Nice Label Express program (from version 2.71) and the Sartorius PR1750/NT programming software must be installed. PR1750 knowledge is not necessary, because this program handles the data communication automatically.

## Note:

With Nice Label Express version 2.8 and better, the installation of Layoutlt is omitted, because Layoutlt is already integrated in Nice Label Express from this version.

The program can be used for firmware version >2.0 and better.

## 9.2 Using Layoutlt

Open the folder in which you have extracted the customizing kits on your PC.

Double click on a ".lbls" file which should be changed. Nice Label Express opens automatically and changes can be made. The operation of Nice Label Express is explained in the short-form instructions of Nice Label Express for controllers X4, X5 & X6.

Datei Bearbeiten Ansicht Eavoriten Eg	tras <u>2</u>				R)
Gzunak · O · D D sucher	Crdner 📰 •				
Adresse D:\Programme\Sartonius\Application	s\Batch 02.12			V 🗗 Wechs	ein zu
	Name -	Größe	Тур	Geändert am	
Datei- und Ordneraufgaben     (2)       Weuen Ordner erstellen     (2)       Ordner im Web veröffentlichen     (2)       Ordner freigeben     (2)	Batch Hore.bt Batch.Bs Batch.kt Batch.p32	1 KB 22 KB	Dateiordner Textdokument Edit Labels LTXT Translation Application Object	00.10.2004 13:30 15.10.2002 13:39 29.10.2002 15:54 29.10.2002 15:54 29.10.2002 15:54	
Andere Orte   Applications  Eigene Dateien					

The altered print layouts are loaded into the controllers by means of program FlashIt (see chapter 4.6).

# 10 INDEX

## А

AccessIt
В
BIOS24
C
CAL switch24
CAL switch position24
Communication16
Communication parameters16
Connection btwn Controller & OPC server 17, 18

# Create user (AccessIt)......59

Data types (AccessIt)	68
Database survey (AccessIt)	64
DisplayIt	
Download	
	•

Connection of controller and pc.....14

## Ε

D

Edit password (AccessIt)	59, 60
Edit text (AccessIt)	61
Edit user (AccessIt)	59
Error message during login (AccessIt)	57
Error messages "DisplayIt"	53
Error messages "FlashIt"	44
Ethernet connection	15

## F

Firmware	24
Flashing a label	34
Flashing a merge file	40
Flashing a PR1750 project	33
Flashing a print label	34
Flashing a project	33
Flashing a Translatelt file	36
Flashing a translation file	36
Flashing an application	33
Flashing BIOS	

FlashIt!32
I
Installing the PowerTools8
К
Key allocation of controller vs. PC keyboard 50
L
Layoutlt92Licence6Licence information6Login (AccessIt)56
Μ
Main window (AccessIt)57 Menu structure (AccessIt)58
0
Offline (AccessIt)63Online (AccessIt)62OPC Client20OPC server18Operating principle (AccessIt)54
Р
Polling table (AccessIt)66 PR1792 OPC server54
R
RecoverIt
S
Set password (AccessIt)60 System settings (AccessIt)
Т
Translatelt
U
Upload82, 85, 86

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