



# Libero PDF Logger<sup>®</sup>

## Operation Manual





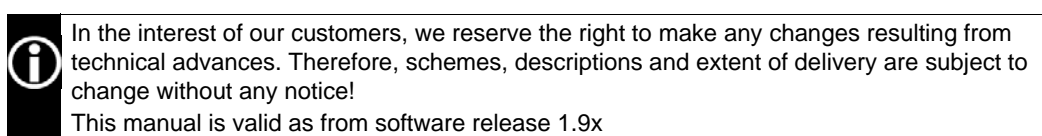
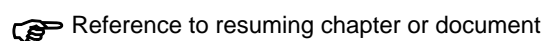
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## Used symbols & designation key



# Introduction

Libero is used for the monitoring of temperature sensitive goods. It provides reports on any PC around the world without the need for specific, validated software.

After transportation, it can be plugged into the USB port of a PC and automatically provides a report in Adobe® PDF/A file format.

Libero is compliant with the new ISO Standard ISO-19005-1 for Document Management and therefore heralds a new area in cold chain monitoring.

Configuration is done by means of the Libero Configuration Utility (3. *Configuration Software*) or with SmartStart (6. *SmartStart Software*).

Further data evaluation might be done with the aid of the elproLOG ANALYZE software (minimum requirement: release 3.41). elproLOG ANALYZE

1. Protection cap
2. USB connector
3. Display
4. ARRIVED-button
5. TRANSIT-button
6. Backside: Space for customer related information, datalogger ID number and its bar code.
7. Expiry Date: Regardless of the battery condition after this date Libero should not be used anymore.

## Housing



Details about the current models and their data sheets are available on the Libero Homepage: [www.pdf-datalogger.com](http://www.pdf-datalogger.com)

# 1. Safety Information

## 1.1 Influence of temperature

For the operating range  [www.pdf-datalogger.com](http://www.pdf-datalogger.com).

- There is danger of a gas explosion when the lithium battery heats up to temperatures exceeding 100°C.
- Do not throw dataloggers into fire, the battery could explode.


## 1.2 Battery

Lithium battery 

Material Safety Data Sheet (form according to EEC Directive 93/112/EC) and shipment recommendation are available from ELPRO-BUCHS AG.

- Lithium, Thionyl Chloride (Li-SOCl<sub>2</sub>)
- non-rechargeable battery

## 1.3 Disposal

WEEE 

### Europe



This product has to be disposed of according to WEEE (Waste Electrical and Electronic Equipment, 2002/96/EC)!

### U.S.A.


Find a drop-off center for electronic waste in your area. In any case it is recommended to contact the local EPA (U.S. Environmental Protection Agency) office. <http://www.epa.gov>

### International

If possible, dispose the logger in a drop-off center for electronic waste in your area. Many countries enforce electronic recycling.

[http://en.wikipedia.org/wiki/Electronic\\_waste](http://en.wikipedia.org/wiki/Electronic_waste)

## 1.4 Exceptional environmental conditions

Infrared  
Microwaves  
X-Ray 

Pay attention to the following when loggers are used under exceptional environmental conditions:

- IR radiation (warmth) and superheated steam can result in deformation of the housing.
- There is a risk that the battery may explode if the logger is used in conjunction with microwaves.
- X-Ray may harm the datalogger. The specifications may be ordered by ELPRO-BUCHS AG.

CE 



This product must be certified with CE


The manufacturer warrants this product is compliant to the following guidelines EN 61000-6-2:2006 and EN 61000-6-4:2006.

## 2. How to set the Config Mode

### 2.1 Configuration in Start- Mode

The configuration mode is used to set or change all logging features (profile). These settings are done with the Libero Configuration Utility


Libero may be delivered switched ON and with a pre-configured profile, ready for use. Ask your supplier for more details.

Display is blank 



As soon as the PDF Logger is connected to an USB port, it is going to start up in the configuration mode. Continue with 3. *Configuration Software*



Display is blank. 

If the datalogger is removed from the USB port, and no configuration took place, it switches itself off again.




### 2.2 Config Mode when running

To configure a PDF datalogger, Libero Configuration Utility has to be used. This software is downloadable from the internet page <http://www.pdf-logger.com>.

There are two different proceedings:

- Monitoring with previous settings  
Continue with 4. *Transport*
- Monitoring needs new settings  
Continue with 2.3 *Start Configuration Mode*

Display shows data and status information 

## 2.3 Start Configuration Mode



### TRANSIT- & ARRIVED-Taste

To switch the datalogger into the configuration mode, simultaneously press the TRANSIT- and ARRIVED-button for at least 3 seconds.

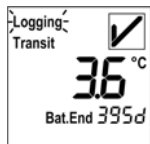
DO NOT TRANSLATE



### Configuration mode

As soon as the datalogger is put into the configuration mode, it has to be connected to an USB port within 10 seconds.

Continue with 3. *Configuration Software*



### Configuration Mode - Exit

Press one of the buttons prior connecting the datalogger to the USB port.



The following cases could cause communication problems:

- Bad extension cable
- Passive USB hub. Please use an active USB hub or connect the logger directly to the PC.
- The required USB Driver is not installed on the used COM port.

### 3. Configuration Software

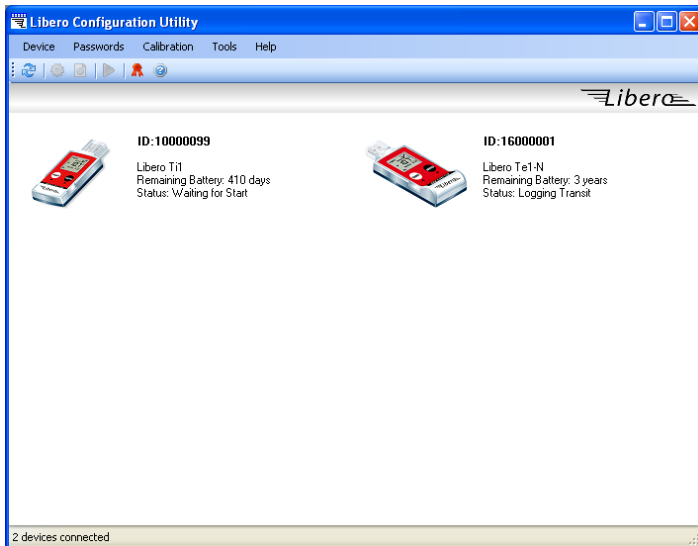
The following chapter represents a step-by-step procedure for the configuration. After configuration, continue with 4.2 *Transport Monitoring*.

#### 3.1 Common - Libero Configuration Utility

##### 3.1.1 System requirements

- Windows XP, Vista or 7 (32 or 64 Bit)
- Pentium 1.5GHz
- Memory: 512 MB RAM
- Free hard disk space: 50 MB
- Monitor 800 x 600 Pixel

##### 3.1.2 Start-Up Screen



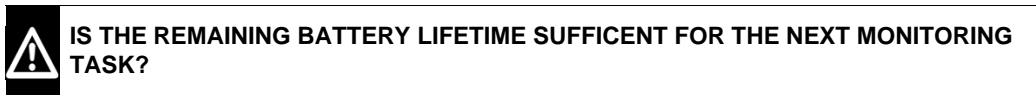
*On this screen all available dataloggers are visible.*

- Datalogger ID
- Datalogger type
- Status
- Remaining battery lifetime

**The following information are shown**

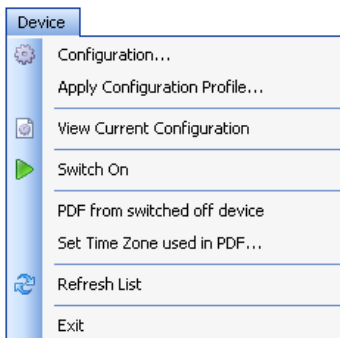
Except "Device - Configuration" and "Calibration - New Device" all functions described in the following chapters could be applied to the selected dataloggers at the same time.

**Single / multiple device selection**



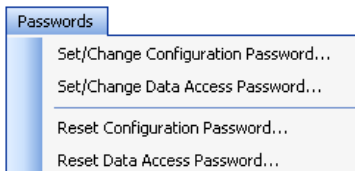
### 3.1.3 Menus

#### Chapter

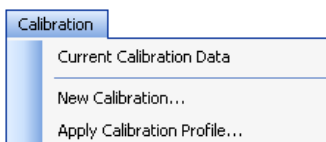


3.2 Configuration

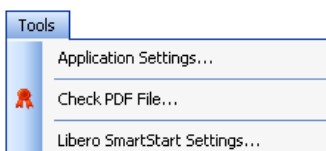
3.3 Menu functions: From "Apply Configuration Profile..." till "Exit"



3.4 Passwords



5. Calibration



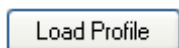
3.5 Application settings

3.6 Check PDF File...

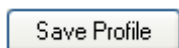
3.7 Libero SmartStart Settings

### 3.1.4 Buttons

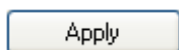
The following buttons are used within the Libero Configuration Utility:



- Load profile  
Used to open a formerly saved profile for setting-up dataloggers



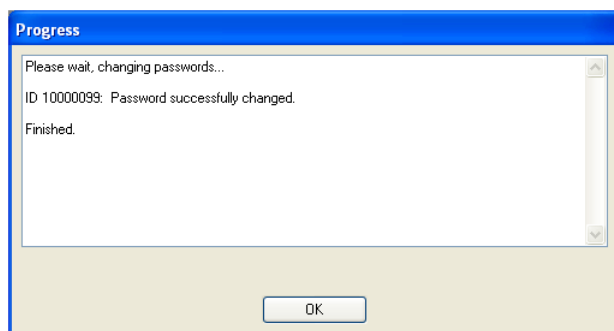
- Save profile  
Used to save a new profile in a file



- Apply  
The selected dataloggers will be configured and started according to the open profile.

### 3.1.5 Confirmation

All successful actions are confirmed, e.g. changing the password.



### 3.1.6 Profiles

A configuration profile represents all set-up information used by the selected datalogger for a monitoring task like:

- Description of the PDF report
- Logging functions
- PDF Options
- Format settings
- Handling Options
- Calibration data

Profiles could be created, saved and loaded. To prevent from unauthorized manipulations, a Libero could be protected by a password. 3.4 Passwords & 3.5 Application settings

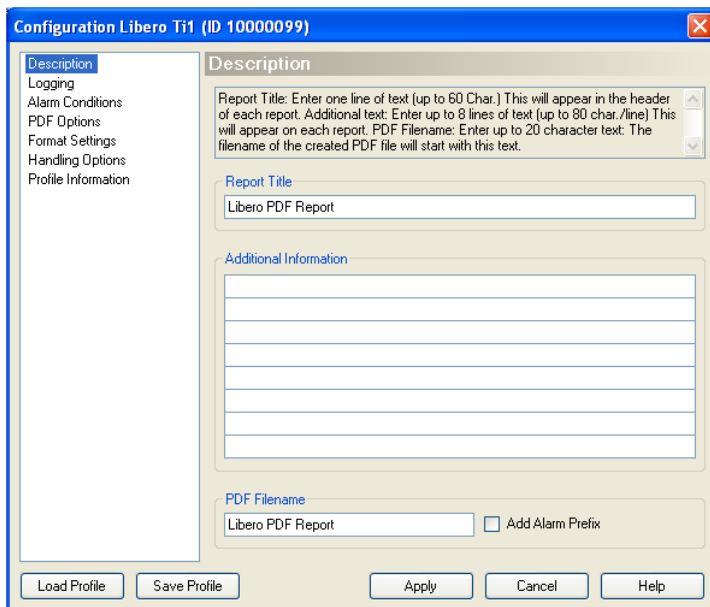
## 3.2 Configuration

The following chapters (3.2.1 Description - 3.2.6 Handling Options) are related to the functions within the "Configuration" menu.

Depending on the model, configuration is possible during the first 10 days of activation or at any time. [www.pdf-datalogger.com](http://www.pdf-datalogger.com)

**Time of Configuration**

### 3.2.1 Description



Information used as head line on the evaluation report; up to 60 characters

**Report Title**

Comment about the current task, up to 8 lines of 80 characters

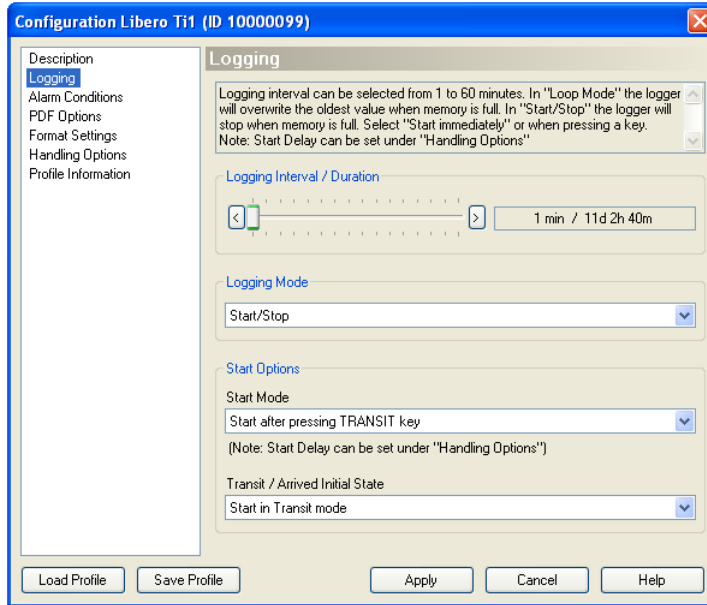
**Additional information**

Depending on the recorded data and the alarm conditions "ALARM" or "OK" will be added preceding to the file name.

**Add Alarm Prefix**

### 3.2.2 Logging

You may set the time period over which data shall be collected. The logging interval and recording time will be displayed. You can adjust settings by clicking on the arrow buttons at the interval display or by dragging the rectangular button in the interval field.



#### 3.2.2.1 Logging Interval Duration

Depending on the model the recording interval is between 1 or 3 minutes and up to 60 minutes.

[www.pdf-datalogger.com](http://www.pdf-datalogger.com)

#### 3.2.2.2 Logger Mode

Logging is blinking

- Loop mode  
Logging is done continuously. If the memory is full (16000 measuring data points), each further value overwrites the oldest data with the newest one. The oldest value is irretrievably lost.
- Start/Stop mode  
You have got control over the logging start by pressing a button or a preset delay time has elapsed.



The end of logging is automatically determined by the start time and the selected metering interval.

### 3.2.2.3 Start Options

#### Start Mode

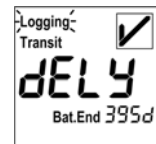
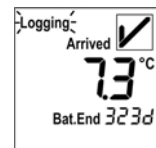
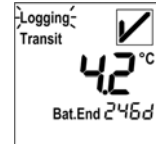
- Start immediately  
Data recording starts as soon as the datalogger is configured.
- Start after pressing the TRANSIT-button  
Data recording starts after the TRANSIT-button has been pressed for 2 seconds.

*Determines the operating condition of the datalogger after it has been configured.*

#### Initial state: Transit / Arrived

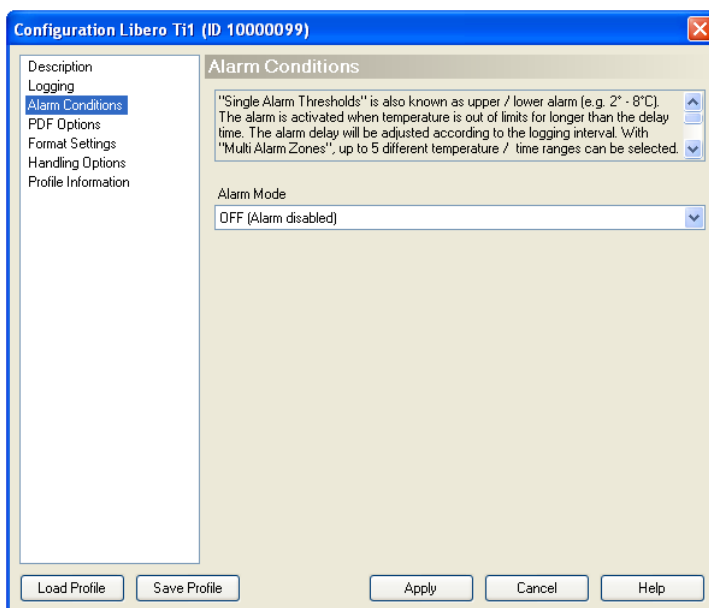
Depending on the transportation cycles, you may switch several times between the two modes:

- Start in Transit mode  
The datalogger starts recording with consideration of the alarm settings.
- Start in Arrived mode  
The datalogger starts recording without considering the alarm settings. This mode is used for transport monitoring where the products are ready for shipment, but the transport starts sometimes later e.g. to respect cool down phase of packaging. Just before the transport starts, press the TRANSIT-button to activate the alarm monitoring.



Both modes could be delayed 3.2.6 Handling Options.

### 3.2.3 Alarm Conditions



*There are 3 different alarm condition settings, selectable by the Alarm Mode pull down menu*

*Selection: Alarm disabled*

- OFF (Alarm disabled)      No alarm monitoring takes place.
- 3.2.3.2 Single Alarm Thresholds
- 3.2.3.3 Multiple Alarm Zones      This function is not available for temperature and humidity recording Liberors.

#### Alarm Mode

### 3.2.3.1 Alarm Representation

Limit value over stepping

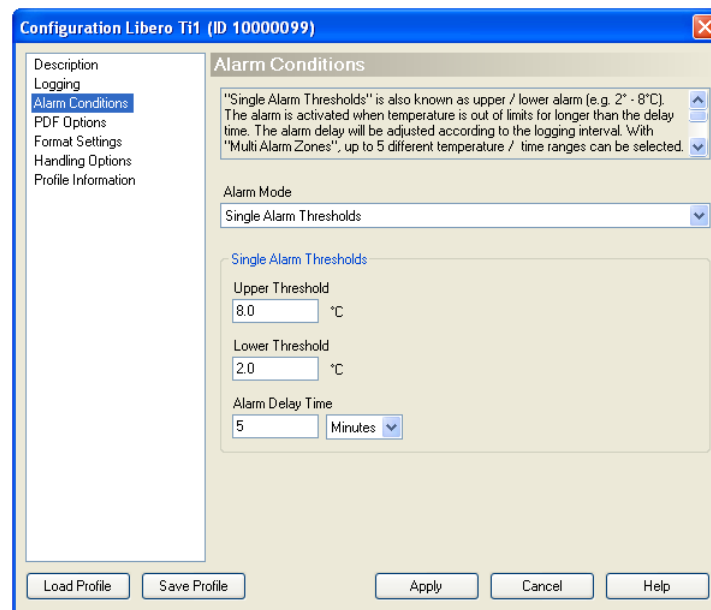


Limit value under stepping

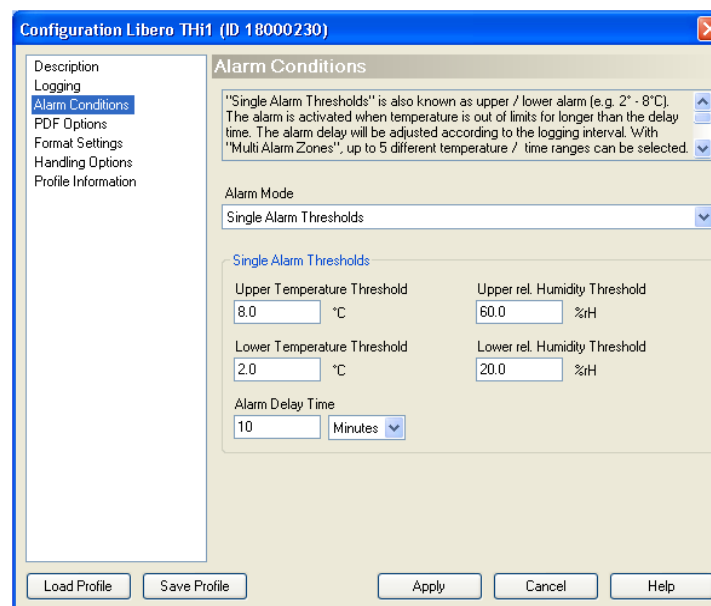


**AN ALARM COULD BE RESET BY A NEW CONFIGURING ONLY!**

### 3.2.3.2 Single Alarm Thresholds



*Libero for temperature recording*



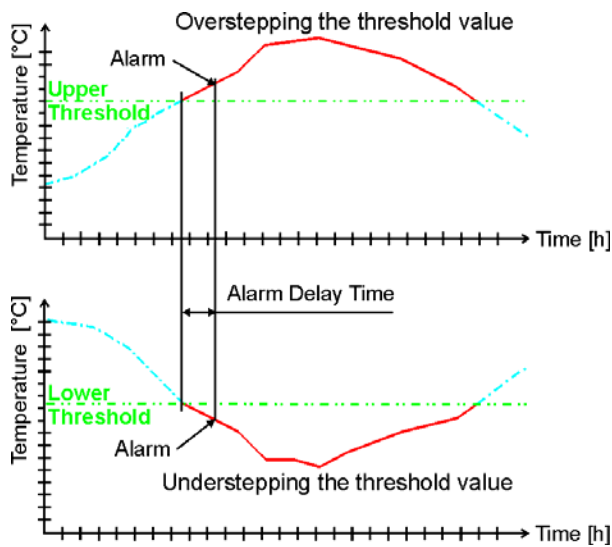
*Libero for temperature and humidity recording*

Data entry fields for the lower and upper thresholds.

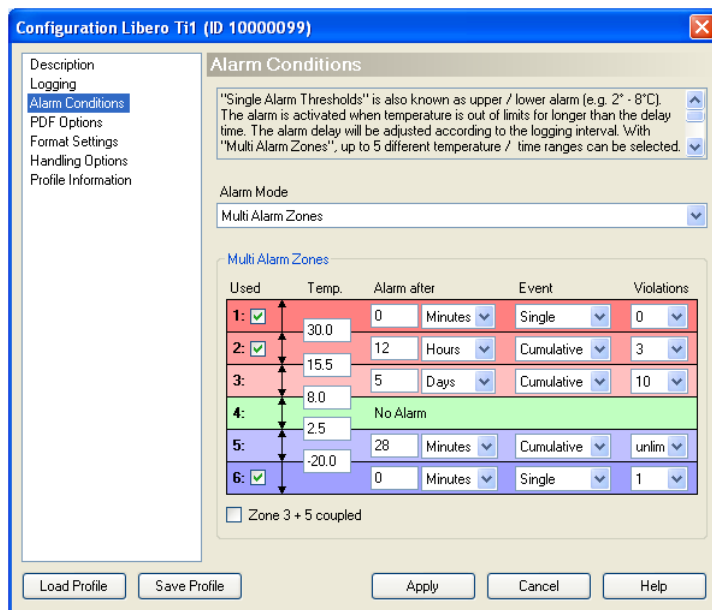
**Upper Thresholds / Lower Thresholds**

An alarm is not triggered until the threshold violation has lasted longer than the specified time.

**AlarmDelay Time (Minutes, Hours, Days)**



### 3.2.3.3 Multiple Alarm Zones



The "Multiple Alarm Zones" function splits the alarm condition into 6 independent zones. Zone 4 represents the temperature range where none of the alarm conditions are fulfilled.

These check boxes are used to select the desired alarm zones.

**Used**

Data entry fields for the threshold values.

**Temperature**

An alarm is not triggered until the threshold violation has lasted longer than the specified time.

**Alarm after**

- Single  
The delay time restarts for each threshold violation.

**Event**

- Cumulative  
An alarm will be triggered as soon as the elapsed time of all violations together has reached the delay time.

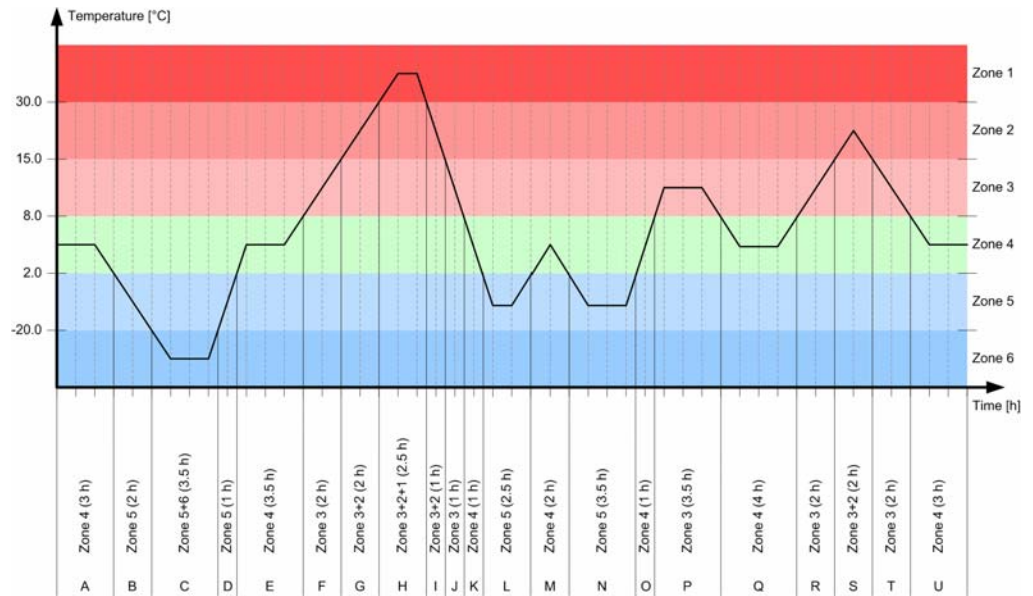
**Violations**

Accepted number of violations, without respect to the set delay time for the past monitoring task.

**Zone 3 + 5 coupled**

If this check box is set, an alarm won't be triggered unless it is outside the threshold defined for zone 3 and 5 (accumulation of over- and under steppings).

**Graphical Representation / Evaluation**

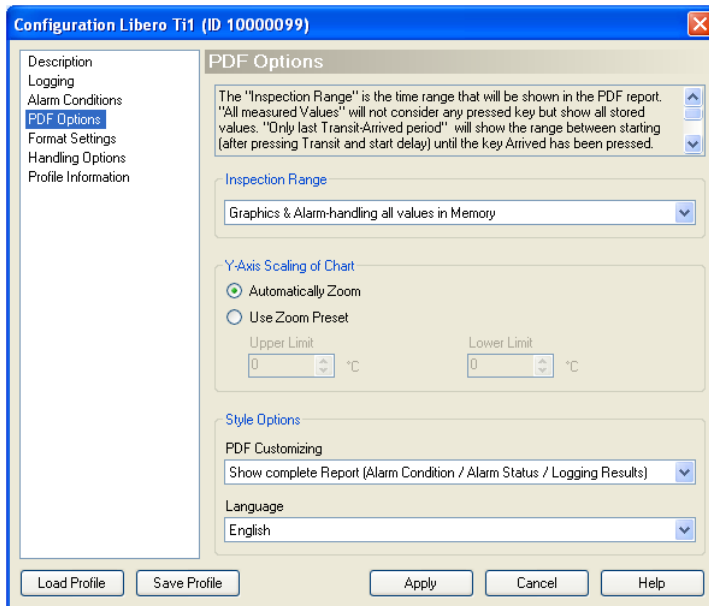


A - U plot sections

**Data**

Zone	Temperature Range [°C]	Add-up time [h]	Number of limit value violations	Plot section used for calculation
1	over 30	2.5	1	H
2	over 15	7.5	2	G+H+I+S
3	over 8	18.0	3	F+G+H+I+J
4	2 to 8	17.5	0	A+E+K+O+Q+U
5	below 2	12.5	3	B+C+D+L+N
6	below -20	3.5	1	C

## 3.2.4 PDF Options



### 3.2.4.1 Inspection Range

Der The inspection range determines the period over which the data shall be evaluated. There are 3 possibilities for the statistic calculation:

- Graphics & Alarmhandling all values in Memory  
All data logged will be used for the statistical evaluation
- Graphics & Alarmhandling "Last Transit - Arrived" period  
Only data and alarms logged during the last transit - arrived period will be used for the statistical calculation. If the ARRIVED-button was not pressed, all values until the moment of evaluation will be used.
- Graphics all values in Memory & Alarmhandling "Last Transit - Arrived" period  
All data logged but only alarms during the last transit - arrived periode will be used for the statistical evaluation.

For display statistics 4.3.1 *Display - Statistics*

For an example printout 4.3.4 *Example of a PDF report*



#### THE "INSPECTION RANGE" IS GOING TO INFLUENCE:

- Alarm statistics on the datalogger display
  - Alarm representation within the PDF file
- All measuring values in memory

### 3.2.4.2 Y-Axis Scaling Chart

- Automatically Zoom  
The Y-axis will automatically be scaled according to the range of the measured values
- Use Zoom Preset  
The Y-axis will be scaled according to the lower and upper limits



THE SETTINGS, "INSPECTION RANGE" AND "Y-AXIS SCALING CHART" DO NOT INFLUENCE THE MEASURING RANGE OF THE DATALOGGER.

### 3.2.4.3 Style Options

#### Language

Dansk, German, English, Español, Français, Italiano and Nederlands

#### PDF customizing

Representation of the various alarm information in PDF

Libero PDF Report No 87863316 (QA Libero\_20071219110257 10007584.pdf)

**QA Libero**

**Additional Information**

AA  
BB  
CC  
DD  
EE  
FF  
GG  
HH

**Device Configuration**

Type:	Libero T11 V1.20	Inspection Range:	Last Tr-Ar / Show all
Logger ID:	10007584	Current State:	Logging Transit
Log Interval /Duration:	1 m / 11:1 d	Remaining Battery:	405 g
Log Mode:	Start/Stop	Logger Start:	19.12.2007 11:02:57
Report Time Base:	GMT+01:00		
Configured by:	ELPRO69/agubler, 19.12.2007 11:02:57		

**Alarm Conditions**

	Total Time	Status
Upper Threshold: 8.0 °C	Time above Threshold: 1 m	OK
Lower Threshold: 2.0 °C	Time below Threshold: 0 s	OK
Alarm Decay: 20 m		

**Logging Results**

Highest Temperature:	29.3 °C	Transit Start at:	19.12.2007 11:02:57
Lowest Temperature:	29.3 °C	Arrived at:	not available
Average Temperature:	29.3 °C	File created:	19.12.2007 11:02:57

Evaluation report created by Libero, the PDF Logger®

Show complete report:  
Alarm Condition / Alarm Status / Logging Results

Libero PDF Report No 72305191 (QA Libero\_20071219110403 10007584.pdf)

**QA Libero**

**Additional Information**

AA  
BB  
CC  
DD  
EE  
FF  
GG  
HH

**Device Configuration**

Type:	Libero T11 V1.20	Inspection Range:	Last Tr-Ar / Show all
Logger ID:	10007584	Current State:	Logging Transit
Log Interval /Duration:	1 m / 11:1 d	Remaining Battery:	405 g
Log Mode:	Start/Stop	Logger Start:	19.12.2007 11:04:03
Report Time Base:	GMT+01:00		
Configured by:	ELPRO69/agubler, 19.12.2007 11:04:03		

**Alarm Conditions**

	Total Time	Status
Time above Threshold: 1 m		OK
Time below Threshold: 0 s		OK

**Logging Results**

Highest Temperature:	29.3 °C	Transit Start at:	19.12.2007 11:04:03
Lowest Temperature:	29.3 °C	Arrived at:	not available
Average Temperature:	29.3 °C	File created:	19.12.2007 11:04:03

Evaluation report created by Libero, the PDF Logger®

Don't show:  
Alarm Conditions

Libero PDF Report No 62268011 (QA Libero\_20071219110529 10007584.pdf)

**QA Libero**

**Additional Information**

AA  
BB  
CC  
DD  
EE  
FF  
GG  
HH

**Device Configuration**

Type:	Libero T11 V1.20	Inspection Range:	Last Tr-Ar / Show all
Logger ID:	10007584	Current State:	Logging Transit
Log Interval /Duration:	1 m / 11:1 d	Remaining Battery:	405 g
Log Mode:	Start/Stop	Logger Start:	19.12.2007 11:05:29
Report Time Base:	GMT+01:00		
Configured by:	ELPRO69/agubler, 19.12.2007 11:05:29		

**Alarm Conditions**

[Redacted]

**Logging Results**

Highest Temperature:	29.2 °C	Transit Start at:	19.12.2007 11:05:29
Lowest Temperature:	29.2 °C	Arrived at:	not available
Average Temperature:	29.2 °C	File created:	19.12.2007 11:05:29

Evaluation report created by Libero, the PDF Logger®

Don't show:  
Alarm Conditions & Alarm Status

Libero PDF Report No 23450851 (QA Libero\_20071219110134 10007584.pdf)

**QA Libero**

**Additional Information**

AA  
BB  
CC  
DD  
EE  
FF  
GG  
HH

**Device Configuration**

Type:	Libero T11 V1.20	Inspection Range:	Last Tr-Ar / Show all
Logger ID:	10007584	Current State:	Logging Transit
Log Interval /Duration:	1 m / 11:1 d	Remaining Battery:	405 g
Log Mode:	Start/Stop	Logger Start:	19.12.2007 11:01:34
Report Time Base:	GMT+01:00		
Configured by:	ELPRO69/agubler, 19.12.2007 11:01:34		

**Alarm Conditions**

[Redacted]

**Logging Results**

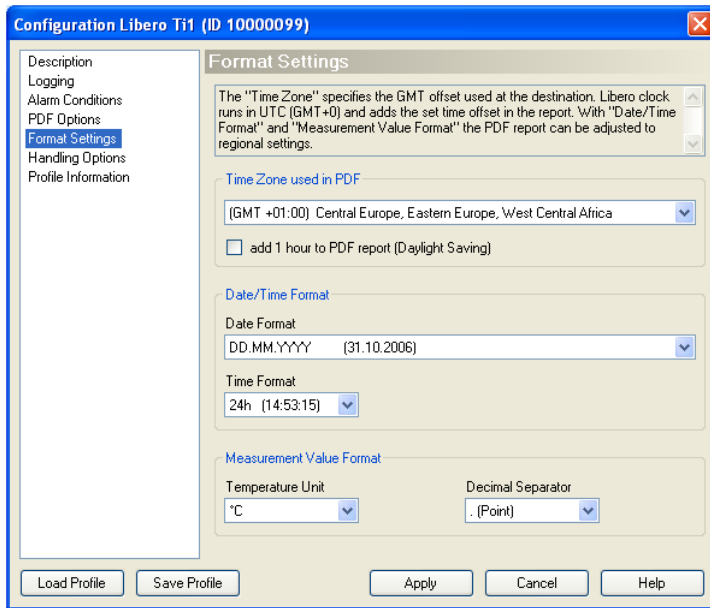
hidden		Transit Start at:	19.12.2007 11:01:34
		Arrived at:	not available

Evaluation report created by Libero, the PDF Logger®

Don't show:  
Alarm Condition & Alarm Status & Logging Results

### 3.2.5 Format Setting

Country-specific settings.



- Represents the time zone used on the printout and in the PDF-file, which could be imported into elproLOG ANALYZE software. This setting refers to GMT.
- Check box: Daylight Saving (1 hour)  
It is used to change the selected time zone between standard time and daylight saving time (+1 hour)

**Time Zone used in PDF**

**DAYLIGHT SAVING TIME:** change is not Done automatically

Choose format settings for date and time.

**Date/Time Format**

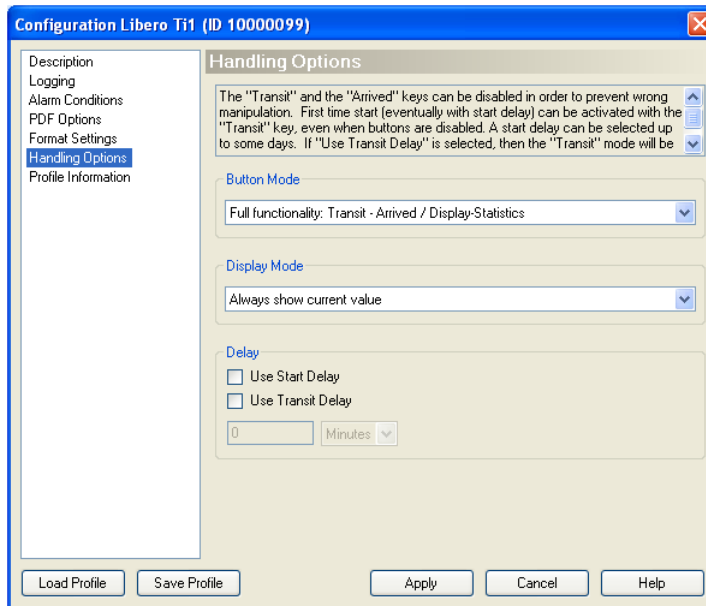
Selection of different representation formats is possible.

**Format Measurement Value**

- Temperature Unit: °C or °F
- Decimal Separator: xx.yy (point) or xx,yy (comma)

### 3.2.6 Handling Options

Used to determine the button functions and data shown on the display.



#### 3.2.6.1 Button Mode

Location of the buttons

Introduction

##### Full functionality: Transit - Arrived / Display-Statistics

- Switch to configuration mode for a new setting 2.3 Start Configuration Mode
- To start recording, press the TRANSIT-button for 2 seconds.
- Enables the buttons to mark the start and the arrival of the shipment. These marks are shown in the PDF file. 4.3.4 Example of a PDF report
- Measurement statistics shown on the display 4.3.1 Display - Statistics

##### Transit - Arrived / NO Display-Statistics

- Switch to configuration mode for a new setting 2.3 Start Configuration Mode.
- To start recording, press the TRANSIT-button for 2 seconds.
- Enables the buttons to mark the start and the arrival of the shipment. These marks are shown in the PDF file. 4.3.4 Example of a PDF report

##### Transit - Arrived ONCE / Display-Statistics

- Switch to configuration mode for a new setting 2.3 Start Configuration Mode
- To start recording, press the TRANSIT-button for 2 seconds.
- Enables the buttons to mark the start and the arrival of the shipment. These marks are shown in the PDF file. 4.3.4 Example of a PDF report
- Measurement statistics shown on the display 4.3.1 Display - Statistics



**LIBERO COULD BE USED FOR ONE TRANSIT - ARRIVED PERIOD ONLY!**

### Transit - Arrived ONCE / NO Display-Statistics

- Switch to configuration mode for a new setting  
 2.3 Start Configuration Mode
- To start recording, press the TRANSIT-button for 2 seconds.
- Enables the buttons to mark the start and the arrival of the shipment. These marks are shown in the PDF file.  
 4.3.4 Example of a PDF report



**LIBERO COULD BE USED FOR ONE TRANSIT - ARRIVED PERIOD ONLY!**

### Display-Statistics only

- Switch to configuration mode for a new setting  
 2.3 Start Configuration Mode
- Measurement statistics shown on the display  
 4.3.1 Display - Statistics

### Disabled (Start & Config only)

- Switch to configuration mode for a new setting  
 2.3 Start Configuration Mode
- To start recording, press the TRANSIT-button for 2 seconds.

### Buttons disabled

Switch to configuration mode for a new setting

- 2.3 Start Configuration Mode.

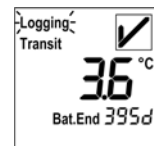


For any button modes, data recording continues till the memory is full. These data could be evaluated by elproLOG ANALYZE but don't show up in the PDF file.

## 3.2.6.2 Display Mode

### Always show current values

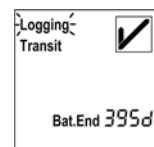
All display possibilities are enabled



### Don't show current value when in "Arrived" Mode

#### Never show current value

- Temperature values are not shown
- Status information is shown



Is used for transport monitoring where the products have been packed or stored prior the monitoring starts.

### 3.2.6.3 Delay

#### Use Start Delay

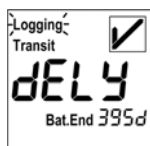
- Loop mode  
The delay time starts immediately after the datalogger has been configured
- Start/Stop mode  
The delay time starts after the datalogger has been started by keypress.

#### Use Transit Delay

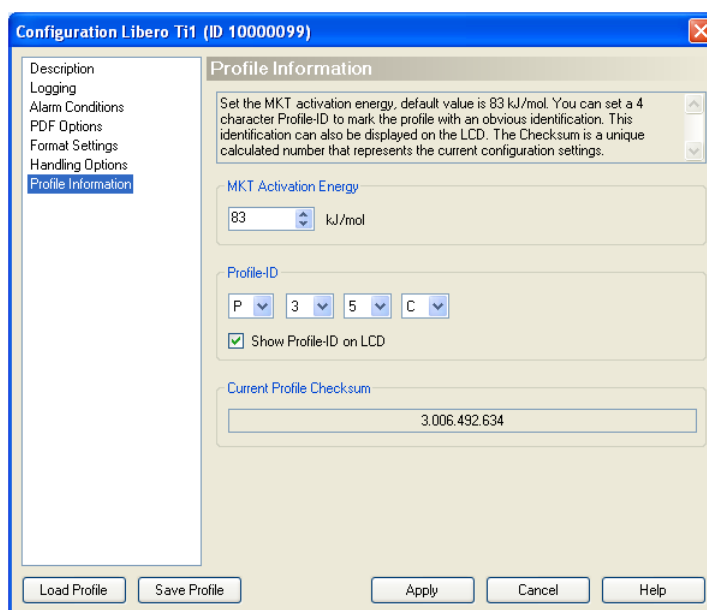
Delay time starts after the datalogger mode changed from Arrived mode to Transit mode by keypress.

#### Minutes / Hours / Days

Data entry field for the delay time



### 3.2.7 Profile Information



#### 3.2.7.1 MKT Activation Energy

Possibility to enter a product specific value for the MKT activation energy between 42.... 125 kJ/mol. For details about the MKT calculation (Mean Kinetic Temperature) see documentation on the home page [www.elpro.com](http://www.elpro.com).

#### 3.2.7.2 Profile-ID

A profile is a set of configuration data. These data can be described with a Profile-ID for easier recognition. The character set for the Profile-ID is restricted to the display capability. The Profile-ID is documented in the "Device Configuration" part of the Libero pdf-Report. 4.3.4 Example of a PDF report

#### Show Profile-ID on LCD

Depending on handling procedures, the Profile-ID could be shown on the display.

4.3.1 Display - Statistics - Show Profile-ID on LCD

#### 3.2.7.3 Current Profile Checksum

The checksum is used to proof validity of the profile and as aid for a configuration check. It is documented in the "Device Configuration" part of Libero pdf-Reports.

4.3.4 Example of a PDF report

### 3.3 Menu functions: From "Apply Configuration Profile..." till "Exit"

The following functions are related to the menu: Device

Assigns an already created or saved profile to selected dataloggers.

**Apply Configuration Profile**

Creates a report with all configuration data. This report contains as many pages as dataloggers selected.

**View Current Configuration**



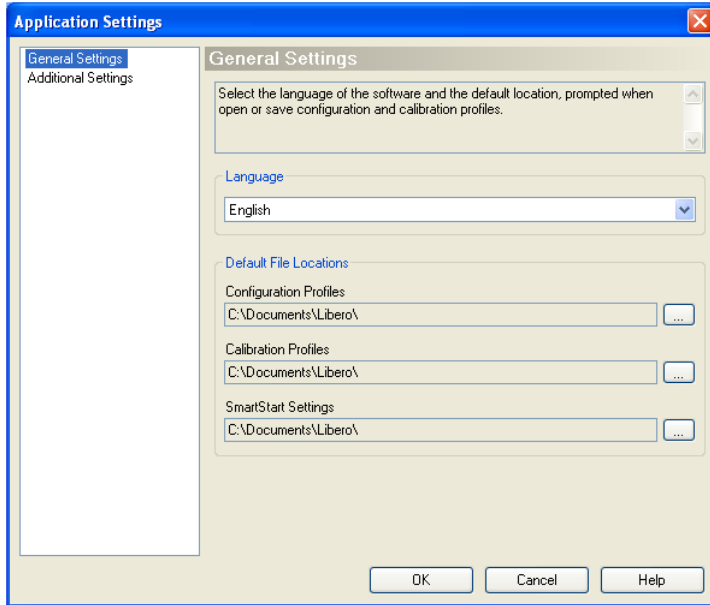
Menu bar

Libero Device Configuration			
<b>Profile</b>			
Profile Checksum:	2.705.838.266	Profile-ID:	
<b>Device</b>			
Type:	Libero T11 (V 1.22 / 0.18 / 3.7)	Current State:	Waiting for Start
Logger ID:	10000099	Remaining Battery:	1,1 y
Configured by:	S164, EC08/brudolf 04.11.2008 14:26:24	Device initialization:	28.10.2008 09:50:54
<b>Description</b>			
Report Title:	Vaccine Cold Chain Report		
Add. Info. Line 1:	Shipping No:		
Add. Info. Line 2:	A vaccine is an antigenic preparation used to establish immunity to a disease.		
Add. Info. Line 3:	*****		
Add. Info. Line 4:	IMPORTANT for Reciever:		
Add. Info. Line 5:	a) E-MAIL this PDF-File immediately to: quality@elpro.com		
Add. Info. Line 6:	b) Send logger back to: Elpro-Buchs AG, CH-9470 Buchs		
Add. Info. Line 7:	*****		
Add. Info. Line 8:	Shipper's Name & ID: Andrea Meier		
Filename:	Vaccine Cold Chain		
<b>Logging</b>			
Log Interval / Duration:	2 min / 22d 5h 20m	Start Mode:	Start after pressing a key
Log Mode:	Start/Stop	Transit Initial State:	Start in Transit mode
MKT Activation Energy:	83 kJ/mol		
<b>Alarm Conditions</b>			
Alarm Mode:	Multi Alarm Zones		
Zone 3+5 coupled:	No		
<b>Temperature:</b>	<b>Allowed Time:</b>	<b>Event Mode:</b>	<b>Allowed Violations:</b>
Z1: over 25,0 °C	15 m	Single	unlimited
Z2: over 12,0 °C	5,0 h	Cumulative	unlimited
Z3: over 8,0 °C	24,0 h	Cumulative	unlimited
Z4: 2,0 °C to 8,0 °C	unlimited		
Z5: below 2,0 °C	24,0 h	Cumulative	unlimited
Z6: below 0,0 °C	5 m	Single	unlimited



## 3.5 Application settings

### 3.5.1 General Settings



- English
- Deutsch
- Français
- Italiano
- Nederlands

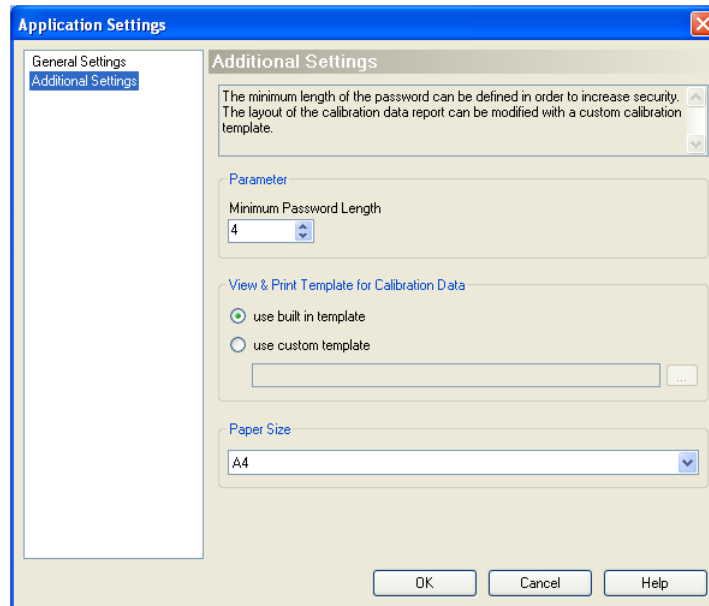
**Language**

3 different profile locations may be defined or selected:

- Configuration Profiles [3.2 Configuration](#)
- Calibration Profiles [5.2 Calibration - New Calibration...](#)
- SmartStart Settings [3.7 Libero SmartStart Settings](#)

**Default File Location**

### 3.5.2 Additional Settings

**Parameter**

Data entry field used for the definition of the minimum password length.

**View & Print Template for calibration data**

- use built in template  
The factory defined layout of the calibration template is used for printouts.
- use custom template  
The customer has the possibility to design his own calibration template.  
Please contact ELPRO-BUCHS AG them for further support.

**Paper Size**

You may choose between A4 and Letter.

### 3.6 Check PDF File...

This function is used to validate PDF files. If the files have passed, test results will be shown and can be printed or archived.

**Procedure: Libero Libero Check PDF File Integrity**

1. Select and open PDF files which should be checked
2. Check PDF File

A report with the check results will be created. This report contains as many pages as dataloggers selected.



Menu bar

---

**Libero  
Check PDF File Integrity**

---

**Device**

Logger ID: 10000099  
 Type: Libero Ti1

**PDF File**

Report number: 68240667  
 File created: 04.11.2008 12:29:14  
 File name: L:\Libero PDF Report 20081104122914 10000099.pdf

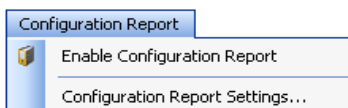
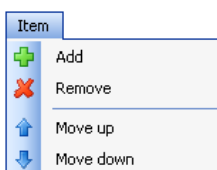
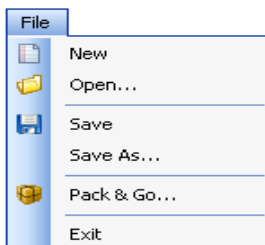
**Check Results**

File content: **Checked - OK**  
 Embedded data: **Checked - OK**

## 3.7 Libero SmartStart Settings

Used to setup a file containing all profile information. This file will be use later by the SmartStart (👉 6. *SmartStart Software*) program to configure a Libero fast and secure within one second. This allows a safe operation with the correct settings.

### 3.7.1 Menus



### Chapter

3.7.2 Create a new SmartStart Setting File

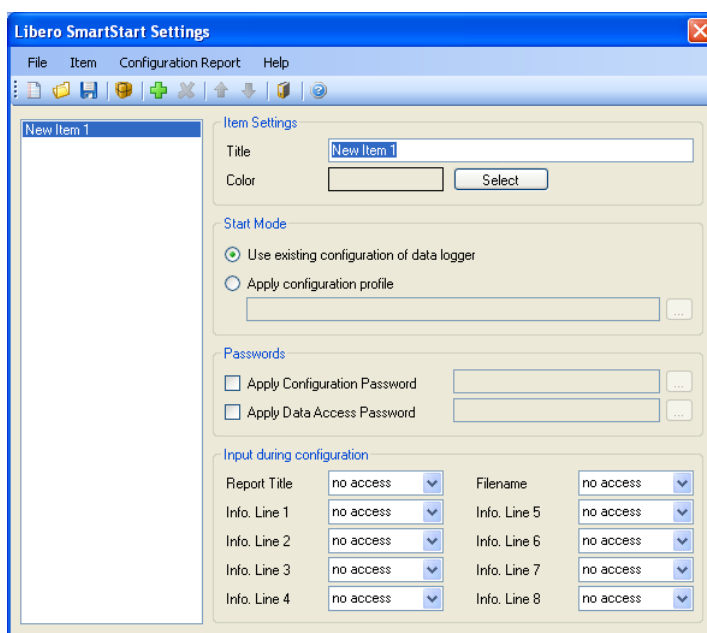
3.7.3 Load / Change SmartStart Settings

3.8 SmartStart - Pack & Go

Use toolbar or the item menu to add or remove predefined settings to the SmartStart setting file. When running SmartStart each product setting can be selected from a list. Save settings with a filename for a later use.

3.9 Configuration Report

### 3.7.2 Create a new SmartStart Setting File



Overview: *Libero SmartStart Settings*

#### 3.7.2.1 Item Settings

**Titel** Enter a short, clear name

**Color** Select a color for the window

### 3.7.2.2 Start Mode

#### Use existing data logger configuration

Will be used if no specific profile has to be programmed into the data logger. The data logger is going to keep the current configuration.

#### Apply Configuration Profile

Means that a previously saved, specific profile will be used for configuration and start. The logger is going to display the appropriate profile.

### 3.7.2.3 Text input during configuration

For each variable part of the PDF-report entries can be done. With the input menu one of the following options can be selected:

*Text input during configuration*

- no access: There are no entries possible  
If all entries are set to "no access" SmartStart will not ask for any entries and will directly start the logger. In all other cases an entry window will appear allowing to enter text by barcode reader or by keyboard.
- add only Entries can be added to the existing text
- edit Enable editing of existing text

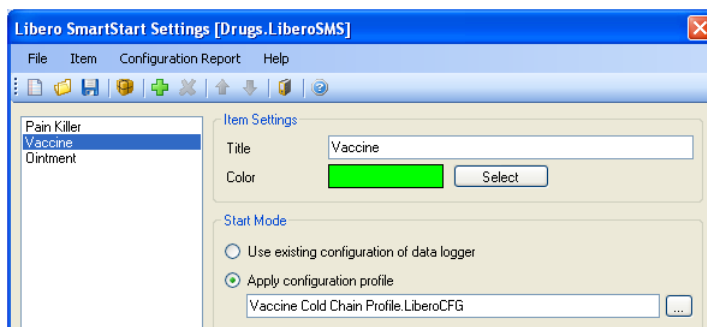
*Example of Input:  
Entry in "Info. Linie  
1"; Freight number*

Set each field to the required setting.

### 3.7.2.4 Passwords

Configuration- and data access passwords can be entered. They will be automatically added to each Libero started by SmartStart.

### 3.7.3 Load / Change SmartStart Settings



Open an existing SmartStart setting file from a directory and modify existing settings.

## 3.8 SmartStart - Pack & Go

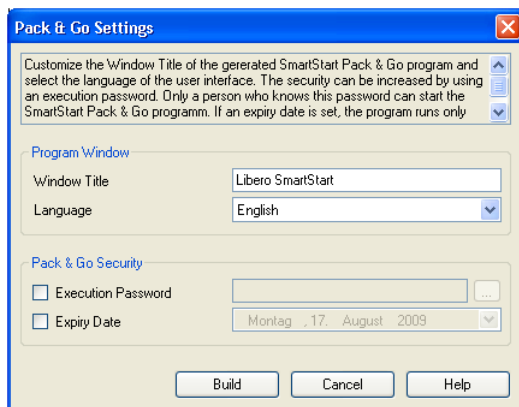
This is a function to set up an executable file (\*\*\*\*\*.exe) of SmartStart including all required settings and configuration profiles.

This file allows to configure Libero dataloggers with a given profile, without any additional profiles and software.

### Pack & Go runs:

- on any pc
- from a WEB, FTP or file server
- or from the Internet

### 3.8.1 Settings



#### 3.8.1.1 Program Window

##### Window Title

Window title bar of the running \*\*\*\*\*.exe file. This title could provide information like: owner, configuration content or freight number.

##### Language

- English
- Deutsch
- Français
- Italiano
- Nederlands

#### 3.8.1.2 Pack & Go Security

- Execution Password - authorized staff is able to do the configuration only.
- Expiry Date - the program is going to run until this date only.

### 3.8.2 Workflow of Pack & Go

1. Define profile and SmartStart settings.
2. Set up a \*\*\*\*\*.exe file which includes the following information:
  - Defined profiles and SmartStart settings
  - File name and title of the window
  - Optionally: Password and expiry date
3. Send the \*\*\*\*\*.exe file to the assigned department.
4. The recipient runs the \*\*\*\*\*.exe file for the configuration of Libero dataloggers.

Requirements: Libero USB Driver and .NET Framework have to be installed.

## 3.9 Configuration Report

The configuration report documents all configurations done by Pack & Go. With the aid of the "Placeholder Editor" the used file name, path and the parameters documented may be selected.

The recording of the actions for the configuration report is started.

**Enable Configuration Report**

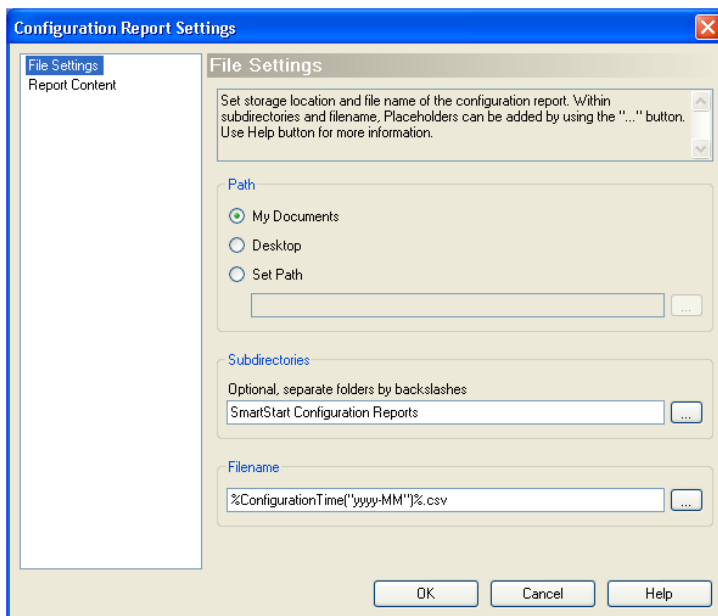


Opens the window to select the placeholders used in the configuration report.

3.9.1 File Settings, 3.9.2 Report Content & 3.9.3 Placeholder Editor

**Configuration Report Settings...**

### 3.9.1 File Settings

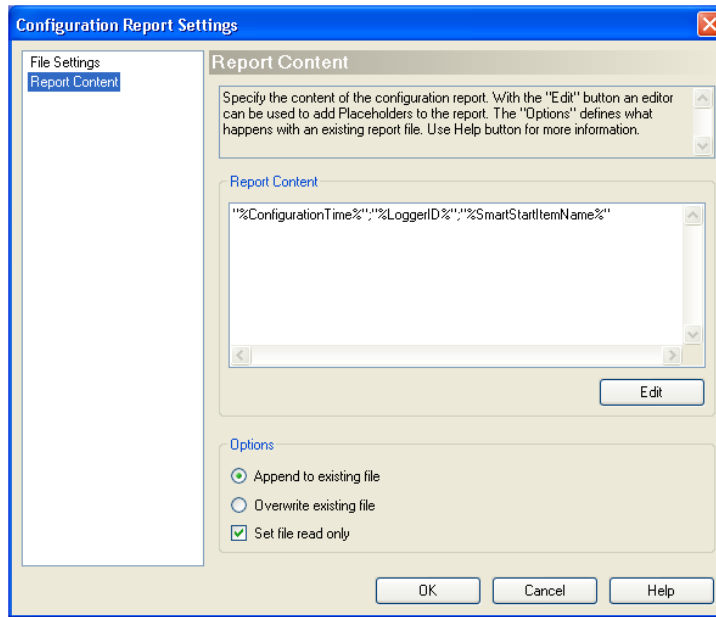


**Path Subdirectories Filename**

This button is used to insert placeholders for the designation of subdirectories and filenames. 3.9.3 Placeholder Editor



### 3.9.2 Report Content

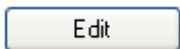


#### Report Content

This window represents the placeholders and the formats used to create the report.

#### Options

The current configuration report will be added as an extension to the existing one or the existing report will be replaced by a new one.



This button starts the „Placeholder Editor“. The selected placeholders determine the content of the report.

### 3.9.3 Placeholder Editor

Placeholders are expressions that appear as variable information in the report.

This is the syntax of the placeholder: "DatenloggerID" as it appears in the window.

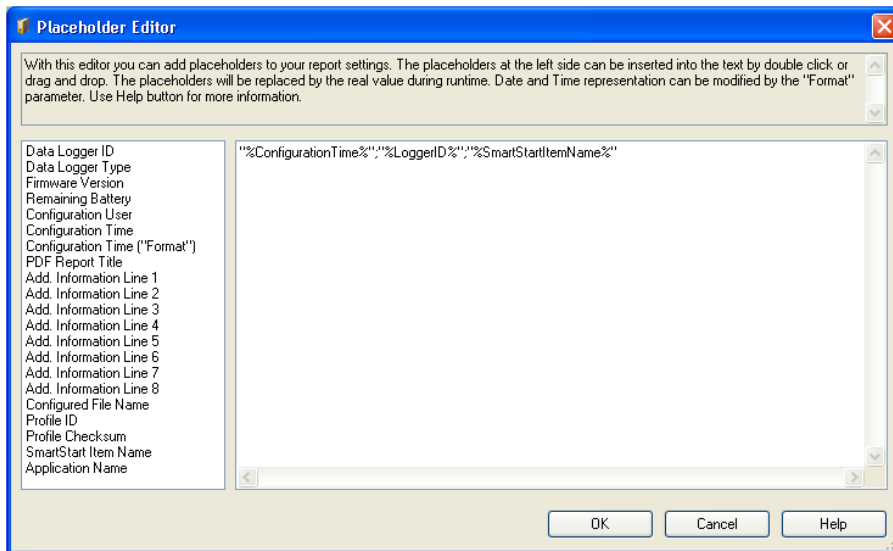
The placeholders will be replaced by the current information, of the Libero configured with Pack & Go, during the creation of the report.


#### Example

Datenlogger ID

%LoggerID%

12149877



Description	Syntax	Function
Data Logger ID	%LoggerID%	ID of the data logger configured with SmartStart
Data Logger Type	%LoggerID%	Type of the datalogger (Ti1, Ti1-S, Te1-N etc.), configured with SmartStart.
Firmware Version	%FirmwareVersion%	Firmware version of the data logger configured with SmartStart.
Remaining Battery	%RemainingBattery%	Current battery level of the datalogger at the time of configuration with SmartStart in days.
Configuration User	%ConfigurationBy%	Computer and user name
Configuration Time	%ConfigurationTime%	Point of time of the data logger configuration. Format settings according to regional settings of the computer. Time zone corresponds to PDF settings.
Configuration Time ("Format")	%ConfigurationTime("Format")%	Point of time of the data logger configuration with user defined time and date format
PDF report title	%ReportTitle%	Title of the Libero PDF report
Add. Information Line 1... 8	%InfoLine1% ... %InfoLine8%	Line 1 to 8 of the additional information in PDF
Configured File Name	%ConfiguredFileName%	Configured PDF file name
Profile ID	%ProfileID%	User defined profile ID
Profile Checksum	%ProfileChecksum%	Automatically calculated checksum
SmartStart Item Name	%SmartStartItemName%	Name of the selected SmartStart item
Application Name	%ApplicationName%	Corresponds to the "Window Title"  3.8.1.1 Program Window

**Placeholder:** This placeholder allows a customized date and time format.  
**Configuration Time ("Format")**

Placeholder	Function
dd	Day with leading zero
MM	Month with leading zero
MMM	Shortcut month (Jan, Feb, Mar. ...)
MMMM	Name of month not abbreviated
yyyy	Year with four digits
hh	Time in 12-hour format with leading zero
HH	Time in 24-hour format with leading zero
mm	Minutes with leading zero
ss	Seconds with leading zero
tt	AM/PM designator
zzz	UTC Offset in format hh:mm

### 3.9.4 Example of a report

The following line numbers refer to the line of text in the "Placeholder Editor"  
 The used control characters quotation marks ("...") and semicolon (;) are interpreted according to the country settings of MS Excel. Depending on the country settings different characters for the described functions have to be used.

**Notes**

Line	Description
1	Date and time configured with the placeholder: Configuration Time ("Format")
2	Text
3	<ul style="list-style-type: none"> <li>- Always use placeholder with quotation marks. In this case a semicolon (;) used within the text of the placeholder, will not be interpreted as column formatting.</li> <li>- Semicolon (;) between placeholders are used for column formatting.</li> <li>- Control characters have no effect on reports opened with an editor.</li> </ul>
4	Entire line in quotes <ul style="list-style-type: none"> <li>- Text and parameters are not separated into different columns.</li> <li>- Control characters have no effect on reports opened with an editor.</li> </ul>

**Placeholder Editor**

```
%ConfigurationTime("yyyy MMM dd hh:mm")%
Datlogger Type and ID
"Datlogger Type and ID";"%LoggerID%";"%LoggerType%"
"Datlogger Type and ID;%LoggerID%;%LoggerType%"
```

**Report opened with MS Excel**

	A	B	C
1	2011 Jan 19 01:23		
2	Datlogger Type and ID		
3	Datlogger Type and ID	16002844	Te1-N
4	Datlogger Type and ID;16002844;Te1-N		

2011 Jan 19 01:23  
Datlogger Type  
Datlogger Type and ID; "16002844"; "Te1-N"  
"Datlogger Type and ID; 16002844; Te1-N"

Report opened with  
an editor

	A	B	C	D	E	F
1	18.01.2011 11:56	S1903, EC50/ameier	2-8°C non freezing products	Delivery No: 12345678	Shipping Box No: 080_2	Buenos Aires
2	18.01.2011 11:56	S1903, EC50/ameier	2-8°C may freeze products	Delivery No: 12345679	Shipping Box No: 120_6	New York
3	18.01.2011 11:57	S1903, EC50/ameier	15-25°C products	Delivery N: 12345680	Shipping Box No: 140_5	Singapore

Example of  
transportation

## 3.10 Help

Used to search for a specific help topic.

Direct link to the homepage: [www.pdf-datalogger.com](http://www.pdf-datalogger.com)

Indicates information about the used program version.

Index

Libero Online


About



**PLEASE KEEP THIS INFORMATION READY FOR ANY TROUBLESHOOTING!**

## 4. Transport


### 4.1 Battery Lifetime - Display


Bat.End xxx 

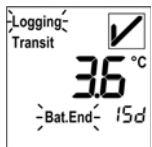


The value shown is the remaining battery lifetime in days.

Depending on the model, the maximum operation period is between 100 days and 3 years.

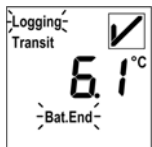
 [www.pdf-datalogger.com](http://www.pdf-datalogger.com)

Bat.End is blinking 



**Remaining lifetime < 30 days**

If no lifetime for "Bat. End" is displayed, change Libero at your next possibility (as soon as possible).




The display is blank. 



**Datalogger has stopped working.**

Recorded data are still available for evaluation.

 [3.3 Menu functions: From "Apply Configuration Profile..." till "Exit" - PDF from Switched Off Device](#)


### 4.2 Transport Monitoring

#### Packing

For transport monitoring, the Libero datalogger has to be placed according to the product related transportation SOP.

#### Data logging

Libero dataloggers have several possibilities to start/stop a recording.

 [3.2.2 Logging](#)

## 4.3 Data evaluation

### 4.3.1 Display - Statistics

Libero dataloggers have the capabilities to calculate and display statistical data.

There are 3 possibilities for the statistic calculation:

- Graphics & Alarmhandling all values in Memory
  - Graphics & Alarmhandling "Last Transit - Arrived" period
  - Graphics all values in Memory & Alarmhandling "Last Transit - Arrived" period
- 3.2.4 PDF Options - Inspection Rang

*Data logging continuous during the evaluation.*



If for the "Last Transit - Arrived" periode, the ARRIVED-button was not pressed, all values until the moment of evaluation will be used.

#### 4.3.1.1 Enter the statistic display

- To access the statistical data, simultaneously press the TRANSIT- and ARRIVED- button.
- For an immediate exit, press the TRANSIT-button again or wait approximately 10 seconds till the device displays measurement values again.



#### 4.3.1.2 Buttons

Move up / down in menu:

- Step forward - press ARRIVED-button
- Step backward - press TRANSIT-button

#### 4.3.1.3 Indicators

ALARM: Pass / Fail indicator



#### 4.3.1.4 Evaluation Modes

There are two different evaluation modes available.

To enable this function, 3.2.3 Alarm Conditions

Depending on the selected mode, continue with:

- Single Alarm Thresholds or
- Multiple Alarm Zones

#### 4.3.1.5 Single Alarm Thresholds

For the determination of alarm zones 3.2.3.2 Single Alarm Thresholds

The data evaluation starts with a display test. All display segments and the LED will be visible for 0.5 seconds.

*Start Display*



Profile-ID

If "Show Profile-ID on LCD" is selected, the ID will be shown after the display test.

3.2.7 Profile Information



P - I d | Abbreviation for: Profile-ID

Display



Min | Minimum value  
 Max | Maximum value  
 Avg | Average value

xxx Time



Total time above / below set limit values

xx		
nn	0 ... 179	Minutes
h	3.0 ... 71.9	Hours
d	3.0 ... 729.9	Days
y	2.0 ... n	Years

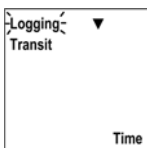
None



Will be shown as long as no data were logged

- After the logger status has been change from Arrived to Transit
- After a restart of the datalogger

Exit statistic display

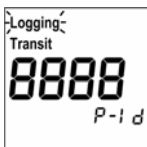


If the last statistic display has been reached ▼, return to standard display by pressing the ARRIVED-button or wait approximately 10 seconds till the device displays measurement values again.

**4.3.1.6 Multiple Alarm Zones**

For multiple alarm zones determination 3.2.3.3 Multiple Alarm Zones

Profile-ID



If "Show Profile-ID on LCD" is selected, the ID will be shown after the display test.

3.2.7 Profile Information

P - I d | Abbreviation for: Profile-ID

Start Display

Alarm zones

ZZ	
1 to 5	Time within temperature zone 1 to 5
35	Zone 3 and 5 are coupled
4	Represents the zone within the limit values - no alarm will be shown.



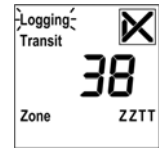
Total time within an alarm zone

TT		
nn	0 ... 179	Minutes
h	3.0 ... 71.9	Hours
d	3.0 ... 729.9	Days
y	2.0 ... n	Years

**ONLY ALARM ZONES WHICH ARE USED WILL BE DISPLAYED.**

Exit statistic display

- If ZZ = 1; press TRANSIT-button
- If ZZ = 5; press ARRIVED-button
- or wait approximately 10 seconds till the device displays measurement values again.



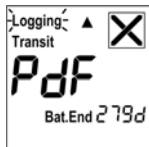
### 4.3.2 Create PDF-Report at any USB



- Libero dataloggers have the feature to create a PDF file, which could be printed out on any printer.
- Data logging continuous during the creation of PDF file.

There are 2 possibilities for the statistic calculation:

- All logged values in memory
  - Last Transit / Arrived period only
- ☞ 3.2.4 PDF Options - Inspection Rang



#### 4.3.2.1 Start - PDF

As soon as the datalogger is connected to an USB-port, the PDF file will be created.



#### 4.3.2.2 End - PDF

After the PDF file has been created, Libero returns to normal data logging.



**A LIBERO PDF FILE IS A PDF/A - ISO STANDARD FILE  
OPEN FILE WITH ANY ACROBAT READER ONLY**

Do NOT save this files with Acrobat Writer / Distiller or any other software capable to modify PDF Files. Otherwise the "Check PDF File integrity" function of the Configuration Software will recognize this as manipulated file

### 4.3.3 Error Messages

#### 4.3.3.1 On the display

s.e.

Sensor input temporarily short-circuited

n.c.

Sensor temporarily disconnected or there is a bad connection (loose contact) between the datalogger and the sensor.

#### 4.3.3.2 In the PDF printout

**WARNING: Device Error**

If the possibility exists, for not completed data because the datalogger made a reset, this warning is printed above the graphic in bold.

**WARNING: Sensor Error**

If a sensor short circuit or disconnection was detected this warning is printed above the graphic in bold.

**WARNING: All Data n.c.**

If no sensor is connected and the curve is made of nc values only, this warning is printed above the graphic in bold.

### 4.3.4 Example of a PDF report

Libero PDF Report No 88568611 (Alois\_ABCD 20070803194130 10000624.pdf)



**ALARM**

## Test Switzerland\_CCM Report

### Additional Information

Shipping No:

```

=====
IMPORTANT!
A) EMAIL this LIBERO PDF-File immediately to: info@elpro.com
B) Send Logger back to: Elpro-Buchs AG; CH-9470 Buchs, Switzerland
=====
    
```

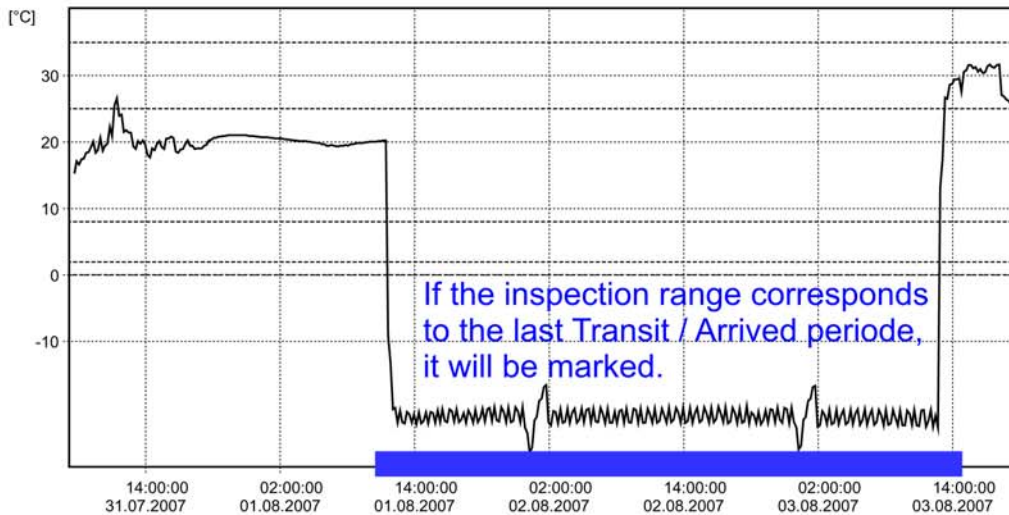
### Device Configuration

Type:	Libero Ti1 V1.15	Inspection Range:	Last Transit / Arrived
Logger ID:	10000624	Current State:	Logging Transit
Log Interval /Duration:	3 m / 33.3 d	Remaining Battery:	372 d
Log Mode:	Loop	Logger Start:	03.07.2007 16:42:18
Report Time Base:	GMT +02:00		
Configured by:	ELPRO67/abischof, 03.07.2007 16:41:03		

Alarm Zones	Allowed Time	Total Time	No. Violations	Status
Z1: over 35.0 °C	15 m (sin)	0 s	0 / unlim.	OK
Z2: over 25.0 °C	3.0 d (cum)	6.8 h	3 / unlim.	OK
Z3: over 8.0 °C	5.0 d (cum)	34.8 h	2 / unlim.	OK
Z4: 2.0 to 8.0 °C	unlimited	39.1 h		
Z5: below 2.0 °C	24.0 h (cum)	49.3 h	1 / unlim.	ALARM
Z6: below 0.0 °C	5 m (sin)	49.3 h	1 / unlim.	ALARM

### Logging Results

Highest Temperature:	31.7 °C	Transit Start at:	31.07.2007 07:30:41
Lowest Temperature:	-26.7 °C	Arrived at:	not available
Average Temperature:	-3.5 °C	File created:	03.08.2007 19:41:30





Report created by Libero, the PDF Data Logger

### 4.3.5 Further options - PC


#### PDF File Integrity

The software Libero Configuration Utility has the capability to check the integrity of the logged data

 3.6 *Check PDF File...*

A Libero datalogger could be treated as any other USB device. Start-up of the PC evaluation   
2.3 *Start Configuration Mode.*

- File from a switched off device

 3.3 *Menu functions: From "Apply Configuration Profile..." till "Exit" - PDF from Switched Off Device*

- For data archiving or later evaluation, the PDF-file may be copied to any desired drive.
- elproLOG ANALYZE

For further evaluation Libero files could be imported into elproLOG ANALYZE. You are going to need version 3.41 R2 or higher.

## 4.4 Preparation for the next monitoring task


Depending on the next task, continue with one of the following 3 cases:


#### Case 1: No further configuration is required

Step 1:  4.1 *Battery Lifetime - Display*


Step 2:  4.2 *Transport Monitoring*

#### Case 2: Datalogger has to be configured for the next monitoring task


 3. *Configuration Software* or

 6. *SmartStart Software*

#### Case 3: Datalogger needs a calibration according to your SOPs

 5. *Calibration*

# 5. Calibration

The following chapter describes the set-up and procedure to calibrate a Libero dataloggers. Launch the configuration utility and choose calibration  2.3 Start Configuration Mode.

## 5.1 Calibration - Current Calibration Data

Shows a calibration report. This report contains as many pages as dataloggers selected. There are 3 different types of reports possible:

A new device without optional calibration is provided with a validation certificate from ELPRO-  
BUCHS AG.

**Case 1**



Menu bar

---

### Libero Documentation of Validation

---

#### Device

Logger ID: 10000099  
Type: Libero Ti1 (V 1.24)

#### Validation

This Libero PDF Logger has been factory tested upon specifications of ELPRO-BUCHS AG Switzerland, using standards having traceability to international standards.

Temperature Range:  
-35 °C to +70 °C

Temperature Accuracy:  
+/- 0.2 °C from -10 °C to +25 °C  
+/- 0.5 °C from -35 °C to -10 °C and from +25 °C to +70 °C

#### Validation Points

-25.0 °C	o.k. within Tolerance of +/-0.5 °C
0.0 °C	o.k. within Tolerance of +/-0.2 °C
+25.0 °C	o.k. within Tolerance of +/-0.2 °C
+40.0 °C	o.k. within Tolerance of +/-0.5 °C

**Case 2, 3**

The datalogger has been calibrated according to the requirements of a single or multipoint calibration procedure. (Document: Calibration Certificate). After the calibration, the document shows true and rated values instead of system test values. This document may be printed out for inspection purpose.

## 5.2 Calibration - New Calibration...

### 5.2.1 Calibration points

Used to determine the number of calibration points and the calibration values.

The screenshot shows the 'New Calibration' dialog box with the 'Calibration Points' tab selected. The 'Calibration Process' dropdown is set to 'Calibration Process'. The 'Number of used Calibration Points' is set to 2. The 'Calibration Values' section contains a table with 4 rows and 2 columns: 'Rated Value' and 'Allowed Tolerance'. The values are as follows:

	Rated Value	Allowed Tolerance
Calibration Point 1:	0.0 °C	0.2 °C
Calibration Point 2:	40.0 °C	0.5 °C
Calibration Point 3:	0.0 °C	0.0 °C
Calibration Point 4:	0.0 °C	0.0 °C

Buttons at the bottom include 'Load Profile', 'Save Profile', 'Apply', 'Cancel', and 'Help'.

*Libero for temperature recording*

The screenshot shows the 'New Calibration' dialog box with the 'Calibration Points rH' tab selected. The 'Calibration Process' dropdown is set to 'Calibration Process'. The 'Number of Humidity Calibration Points' is set to 2. The 'Calibration Values' section contains a table with 4 rows and 2 columns: 'Rated Value' and 'Allowed Tolerance'. The values are as follows:

	Rated Value	Allowed Tolerance
Calibration Point 1:	30.0 %rH	5.0 %rH
Calibration Point 2:	80.0 %rH	5.0 %rH
Calibration Point 3:	0.0 %rH	0.0 %rH
Calibration Point 4:	0.0 %rH	0.0 %rH

Buttons at the bottom include 'Load Profile', 'Save Profile', 'Apply', 'Cancel', and 'Help'.

*Libero for temperature and humidity recording*

### 5.2.1.1 Number of used Calibration Points

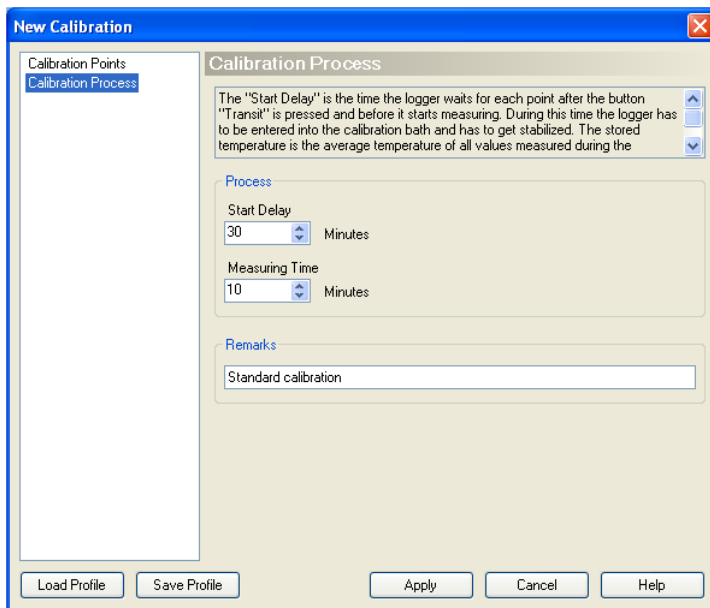
There are up to 4 calibration points selectable.

### 5.2.1.2 Calibration values

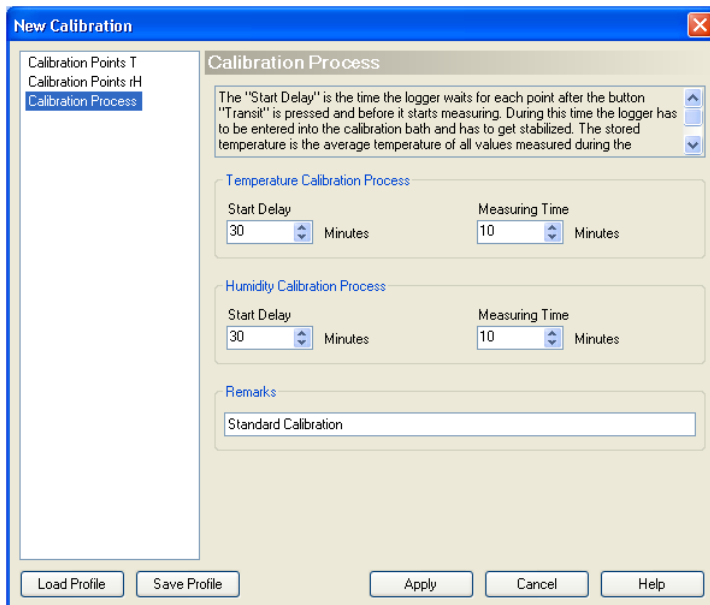
Data entry fields for each calibration temperature, "Rated Value" and the "Allowed Tolerance". Calibration data could be saved as a calibration profile. To prevent the profile from unauthorized manipulations, it may be protected by the configuration password.

3.4 Passwords & 3.5 Application settings

## 5.2.2 Calibration Process



*Libero for temperature recording*



*Libero for temperature and humidity recording*

### 5.2.2.1 Process

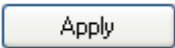
- Start Delay  
Data entry field for the desired delay time between manual calibration start and start of data logging. The "Start Delay" depends on the time required to reach the "Rated Value" after the datalogger has been submerged into the bath. Please be aware to have as less air as possible in the packaging.
- Measuring Time  
Data entry field for the determined measurement period. This value depends on acceptable temperature deviation within the evaluated data, e.g. 10 minutes returns an average value measured over the last 10 minutes.

### 5.2.2.2 Remarks

Additional comment about the calibration, e.g. 2 Point Calibration.

### 5.2.2.3 Start of Calibration

To start to calibration press "Apply"



5.3 *Methods for Temperature Calibration* states several details about the calibration process

#### Waiting for start



After the datalogger has been configured, it is waiting for the start of the calibration.

CAL x: Calibration point (1-4) under process

#### Delay of the calibration



The calibration starts after pressing the TRANSIT-button. The datalogger is waiting until the "Start Delay" time has elapsed.

#### Data logging



The datalogger is recording in a 1 minute interval.

#### Evaluation



At the end of the "Measuring Time", the average value of the logged data will be calculated and displayed. Additionally, the indicator shows "pass" or "fail" according to the "Allowed Tolerance". For the next calibration point, press the TRANSIT- or ARRIVED-button. 5.2.1 *Calibration points*

#### End of calibration



Display is blank - after completion of the calibration, Libero switches off itself. To check / view the calibration

5.1 *Calibration - Current Calibration Data*

### 5.2.3 Calibration - Apply Calibration Profil...


Assigns an already created or saved profile to selected dataloggers.

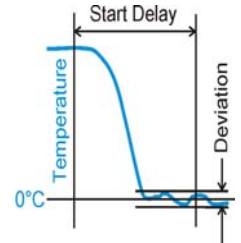
## 5.3 Methods for Temperature Calibration

- 0°C Ice-water  
Calibration, which uses the triple point of ice-water (0°C) as reference temperature. You can expect an accuracy of approx. 0°C ±0.1K.
- Calibration bath  
If a calibration bath is used (-35°C .. 70°C), should the reference sensor be fastened to the datalogger under calibration. This ensures, there is no temperature difference between the datalogger and reference sensor. The watertight packet datalogger should be immersed completely and the bath should be stable. Also make sure that the dataloggers do reach the reference temperature. Repeated measuring and averaging can improve the measured values.

### 5.3.1 Ice Water Calibration Procedure

1. Fill up an insulated container, e.g. a camping coolbox with ice cubes. Use ice from an ice machine (-1°C) not from a freezer (-20°C). Fill the coolbox with cold water up to the filling height of the ice. In order to mix it well, stir the contents.
2. The "Logging Interval" is factory set to 1 minute, the "Start Delay" to 30 minutes and the "Measuring Time" to 10 minutes.
3. Wrap up the datalogger in watertight packaging material, e.g. latex glove.
4. Submerge the datalogger completely in the ice water.
5. Carry out the calibration.
6. Evaluate the calibration.

 5.1 Calibration - Current Calibration Data



The calibration process lasts as long as the total time required for "Start Delay" + "Measuring Time" for each calibration point.

# 6. SmartStart Software

This is a software tool ensures a fast and error-free start of a Libero PDF Logger® in the Shipping Department, Libero becomes "plug & play":

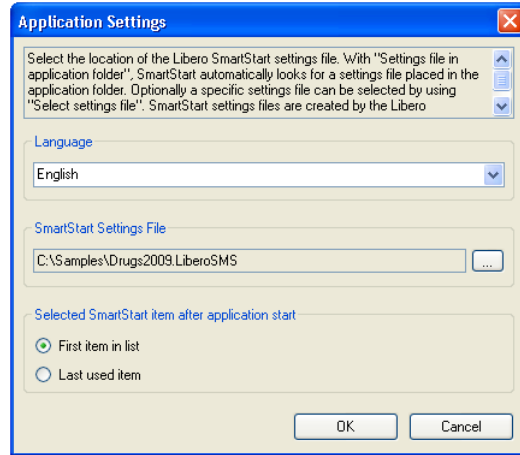
The Sender launches the program and inserts a Libero into the USB port. Then a pre-defined profile is automatically programmed onto the Libero PDF Logger® and off it goes...

## 6.1 Select the setting file

*First time use or change of setting file: right-click with the mouse.*

When SmartStart is used for the first time, a setting window will be displayed. The same window can be opened by rightclick and selecting "Settings ..." any time.

Select the setting file (Example: ..\SmartStart\Barbiturate.LiberoSMS)



"First item in the list" will make sure, the selection list will show the same sequence as defined by the configuration software at the first program start.

## 6.2 Use of SmartStart

### Mode:

*Plug in Libero in OFF-Mode or in CONF-Mode only! If the modes are not set properly, a PDF file will be shown.*

At launch of the SmartStart program the window will show a pre-programmed setting. This will be specified with a text and a color code by using the Libero Configuration Utility.

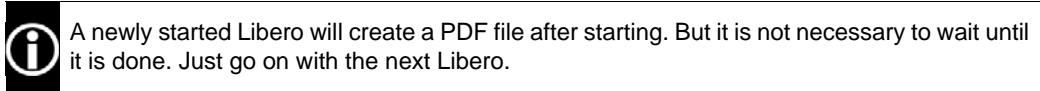


*Prior using SmartStart, make sure, that the Libero USB driver has been installed!*

In the start screen SmartStart the first item from the selected list with color code and name tag. Now a Libero may be plugged into an USB socket.

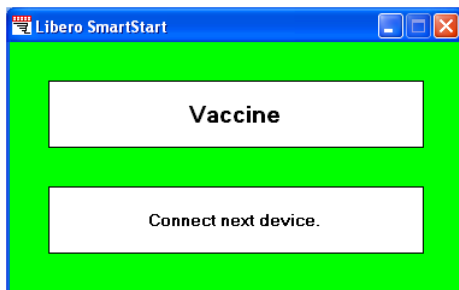
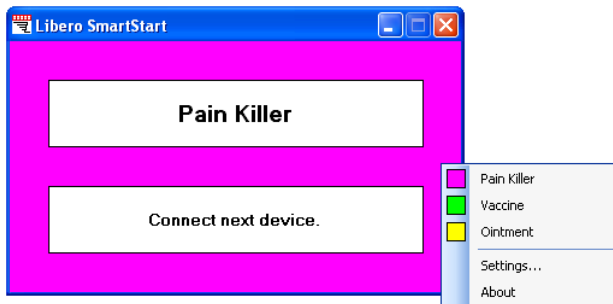


SmartStart will automatically download the predefined profile and starts Libero. Now the datalogger can be unplugged from the USB port and one can continue with the next one.



### 6.2.1 Change of Settings

SmartStart can be set to different profiles. Use a click with the right mouse button to active the window with the selection list. Select a profile like e.g. Vaccine

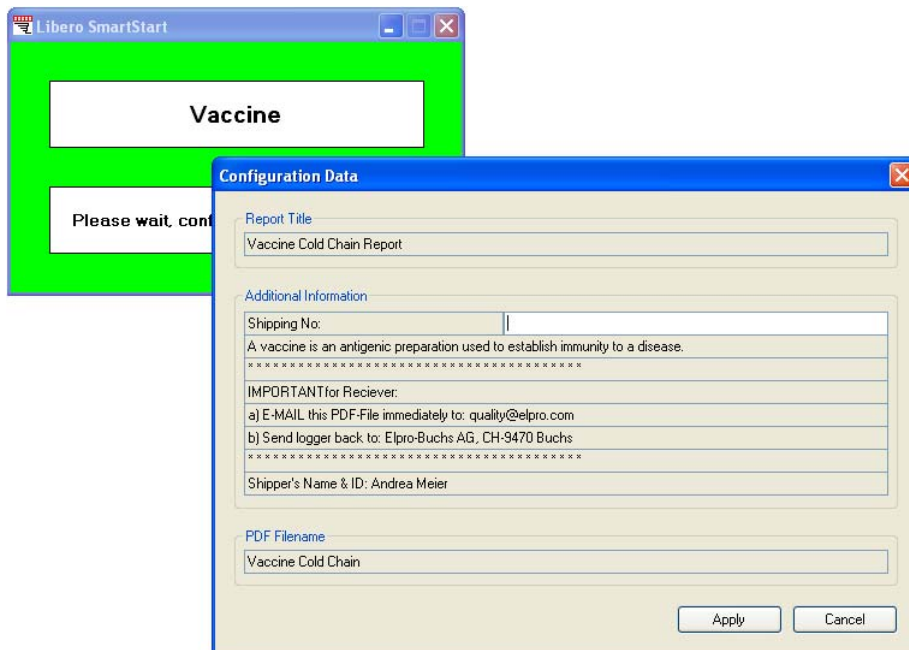


Plug in Libero when it is in OFF-Mode or in CONF-Mode. Libero will wait for an input or start with this profile.

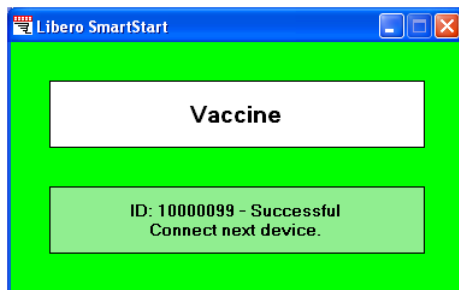
## 6.2.2 Add Text by Keyboard or Barcode Reader

*Example of Input:*  
 Report title "Vaccine  
 Cold Chain Report"  
 and PDF file name  
 "VaccineColdChain"

Depending on the definition of the SmartStart settings (Libero Configuration Utility), text can be added to the PDF file header or the filename. When plugged into USB port, SmartStart will automatically request the corresponding input.



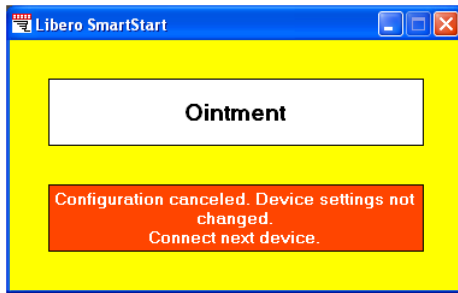
Enter text by barcode reader or by keyboard.  
 After the last entry choose "Apply", Libero will be automatically configured and started where appropriate. ID-Number will be shown in the green window indicating what has been done. Plug in the next Libero and continue.



SmartStart will automatically download the predefined profile and start the next Libero.

### 6.2.3 Error Messages

In case of an error, a message will be displayed.



#### Reasons for error messages:

- Battery empty
- Password incorrect
- Profile incompatible
- Libero has been disconnected during configuratio.
- Single-use type (Ti1-S) and battery life time below 90 days
- "Cancel" selected during data download

# 7. Miscellaneous

## 7.1 Waht if... ?

- Alarm**
  - Set ☞ 3.2.2 Logging & 3.2.3 Alarm Conditions
  - Reset / Confirm ☞ 3.2.3.1 Alarm Representation
  - No display - The alarm mode is deactivated ☞ 3.2.3 Alarm Conditions
  
- COM port busy**
  - The used COM port is occupied by another program. Close all programs and restart Libero Configuration Utility only.
  
- PdF and not CONF on display**
  - The Libero buttons were not pressed long enough ☞ 2. How to set the Config Mode
  
- Download not possible**
  - File is classified as spam or is blocked by the firewall. To solve the problem, get in touch with your IT.
  
- Change of language**
  - Change of application language ☞ 3.5.1 General Settings

## 7.2 ELPRO Customer Service Information

If you need any support from the ELPRO Customer Service, please hold the following information ready:

- Software version; Select "About.." in the menu option "Help"
- Device type used
- Which were the preceding actions, before problems arose (exact description of the dataloggers deployment: time, temperature, shock etc.)
- Specification of the error, error code, copies of status report, diagrams and communication history

### 7.2.1 Software License

```

LIBERO CUSTOMER
-----
Von: PDF Logger [elpro@pdf-logger.com]
Gesendet: Donnerstag, 6. November 2008 08:27
An: Andreas Gubler
Betreff: LIBERO Configuration Utility

Dear customer,

Thank you for having chosen LIBERO as your cold chain monitoring solution.

Please find below the link to the setup program for your LIBERO Configuration Utility as well as a personal serial number that is required during installation. Click onto that link and the setup program will automatically be executed. Please be aware that the link works just twice. In case it is not anymore valid, thank you for your registering again.

We wish you a lot of success with LIBERO, the independent PDF Data Logger!

Yours sincerely,
Your LIBERO Team

Download link:
http://www.pdf-logger.com/download.php?id=3da4fb3f066ac804e2442aa0da34d49128714e155f

License Information:
=====
User name: xxxxxx xxxxxx
Company name: xxxxxx
Serial number: 8197-7949-0717
=====

```

This license information is kept within the email:

```

=====
User name: andreas gubler
Company: Elpro
serial number: yyyy-yyyy-yyyy
=====

```

```

License agreement:
This license entitles the owner to install the software on several computers if those belong to the same user group of a company. Without written permission of ELPRO-SCODE Ltd., the software neither may be passed on to other users nor be spread by e-mail, data medium or internet. It is specifically prohibited to download the software from another Internet site than www.pdf-logger.com.
Copyright laws and regulations of international contracts protect this software. Unauthorized reproduction or illegal selling of this program or part of it is liable to prosecution, also by civil law. It could entail serious penalties and claims for compensation.

```

## 7.3 Revision History

Author	Date	Version	Description
AG	13.12.2007	-	first edition
AG	15.01.2008	a	New functions added see "Configuration Libero" window; PDF Options, Handling Options Handling Options
AG	05.11.2008	b	New types added; Ti1-D, Ti1-L, Te1-N
AG	25.06.2009	c	New datalogger type: Te1-U, Pack & Go
AG	21.10.2009	d	Data logger models replaced by reference to homepage, new layout, A4
AG	20.01.2011	e	New datalogger type: TH, new function: Report

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