LIBERO CE CL CH

Operation Manual

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1 Safety Instructions

Intended Use
LIBERO CE/CH/CL data loggers are exclusively for commercial use (“business to business”) in industrial environments, representing monitoring solutions for temperature and humidity measurement with internal and external sensors. LIBERO CE/CH/CL data loggers are not intended for use with children or in vicinity of children.
If the device is used in a manner not specified by the manufacturer protection provided by the device may be impaired!

Battery
Material safety data sheets according to provisions of directive 91/155/EEC and shipping information are available from ELPRO-BUCHS AG. Do not subject the batteries to mechanical stress nor dismantle them. The leaking battery fluid is highly corrosive and can generate severe heat when it comes into contact with moister or it can ignite fire.

Environmental Conditions

Temperature	Temperatures exceeding 70°C can damage the battery. For the operation range see specifications on www.elpro.com.
Water	Device meets requirements of protection class IP54. Only for use in the specified IP protection class, penetrating water or moister can damage the device. The degrees of protection apply to any position and orientation of the device, regardless of the mounting arrangement.
Humidity	Operation range 0 … 100 %RH
Mechanical Force	Violent shocks and impacts can damage the battery (short circuit).
IR and Steam	Infrared radiation (heat) and superheated steam can damage the surface coating of the casing.
Microwave	There is a risk of battery explosion if the device is exposed to microwave radiation.
UV Radiation	Exposure to UV radiation diminishes the stability of the casing.
Pollution	Pollution of the device can lead to malfunctions. Maximum permissible pollution: Grade 2

Cleaning
For cleaning purpose use a slightly wetted cloth. Do not use thinner, fuel, alcohol or agressive cleaning detergents, they can damage the casing.

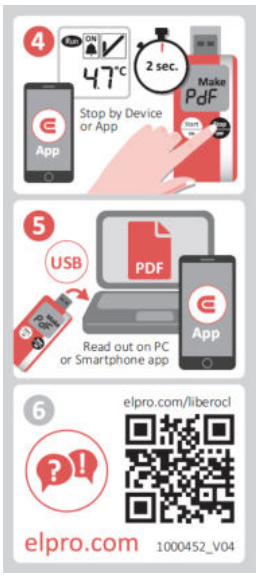
Bluetooth
The product operates in 2.40-2.48 GHz band with a maximum radiated output power of +3.7 dBm.

Distance to the body
The device should be installed and operated with a minimum distance of 20 cm between the device and your body.

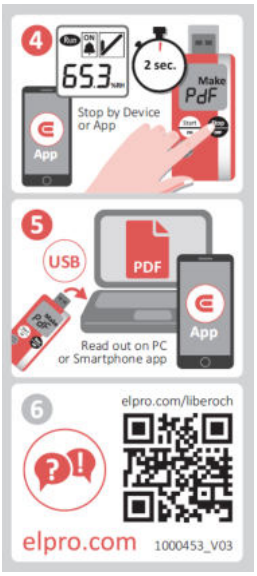
2 Quick Start Guides

LIBERO CE

LIBERO CL



LIBERO CH



3 System Overview

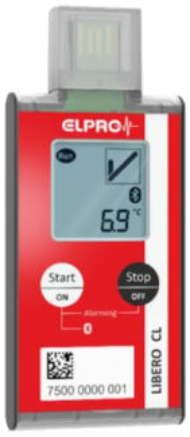
3.1 LIBERO CE

LIBERO CE is a multi-level and multi-use PDF Logger with USB and Bluetooth® interface for external Pt100 probe and the ideal PDF Logger to simplify storage and shipment process for products with known stability data.
It covers a wide measurement range from -200 °C to +400 °C and monitors temperature of cell and drug deliveries with cryogenic containers, dry ice or other applications using an external Pt100 probe.
Basically it can be used in all cases where the logger is to be mounted outside, also for equipment, e.g. refrigerators. For easy mounting, a stainless steel bracket can be ordered as an option.
Supporting up to eight temperature alarm zones, MKT and duration as alarm criteria – LIBERO CE allows you to create temperature profiles for individual products. In addition, you have the option to switch the alarming function off and on again if alarming criteria is required. This can be useful in cases where a transportation box has been cleaned, or liquid nitrogen has been refilled in a cryogenic container.
LIBERO CE is reconfigurable and reusable for up to 3 years (depending on usage of Bluetooth® interface). The external Pt100 probe and M8 connector enables reliable, superior temperature data transfer to the data logger. Up to 75’500 temperature values can be stored on the data logger.
Release products with confidence based on the OK or ALARM status on the display, the PDF report can be easily downloaded via the PC's USB interface or read out to a smart device via the LIBERO Cx BLE app (available for iOS and Android), thanks to the logger's Bluetooth® interface. The app can be used to start or stop the logger without having to remove it from your equipment or consignment.

LIBERO CE
with external probe

3.2 LIBERO CL

LIBERO CL is a multi-level and multi-use PDF Logger with USB and Bluetooth® interface with internal temperature sensor for shipment monitoring as well as monitoring of site and storage conditions.
The internal temperature sensor is highly accurate and comes with a 100% sensor calibration. Supporting up to eight temperature alarm zones, MKT and duration as alarm criteria – LIBERO CL allows you to create temperature profiles for individual products. In addition, you have the option to switch the alarming function off and on again if alarming criteria is required. This can be useful in cases where for example a transportation box or refrigerator has to be cleaned.
LIBERO CL can store up to 75’500 temperature values and has a battery lifetime of up to 3 years (depending on usage of Bluetooth® interface).
It can be ordered with an optional stainless steel bracket for easy mounting on your equipment.



LIBERO CL

Release products with confidence based on the OK or ALARM status on the display, the PDF report can be easily downloaded via the PC's USB interface or read out to a smart device via the LIBERO Cx BLE app (available for iOS and Android), thanks to the logger's Bluetooth® interface. The app can be used to start or stop the logger without having to remove it from your equipment or consignment.

3.3 LIBERO CH

LIBERO CH is a multi-level and multi-use PDF logger with USB and Bluetooth® interface with internal temperature and relative humidity sensor for shipment monitoring as well as monitoring of site and storage conditions.
The internal combined temperature and relative humidity sensor comes with a 100% sensor calibration. Supporting up to eight temperature alarm zones, two humidity thresholds, MKT and duration as alarm criteria – LIBERO CH allows you to create temperature/humidity profiles for individual products. In addition, you have the option to switch the alarming function off and on again if alarming criteria is required. This can be useful in cases where for example a transportation box or storage container has to be cleaned.
LIBERO CH can store up to 75’500 measurement values, 37’750 values each for temperature and humidity, and has a battery lifetime of up to 3 years (depending on usage of Bluetooth® interface). It can be ordered with an optional stainless steel bracket for easy mounting on your equipment.
Release products with confidence based on the OK or ALARM status on the display, the PDF report can be easily downloaded via the PC's USB interface or read out to a smart device via the LIBERO Cx BLE app (available for iOS and Android), thanks to the logger's Bluetooth® interface. The app can be used to start or stop the logger without having to remove it from your equipment or consignment.

LIBERO CH

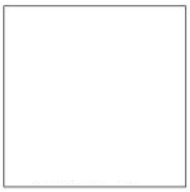
4 Devices - LIBERO CE CL CH

4.1 Functionality and Modes

Unless otherwise noted the following information applies equally to all three LIBERO Cx models.

After configuration of the logger measured values for temperature and relative humidity (LIBERO CH only) are recorded, stored and evaluated with regard to the defined alarm criteria. The display shows the current mode.

In **configuration mode** the device can be configured using the free liberoCONFIG software, this is shown on the display as follows:


or

After configuration, the logger is ready to start recording, this is indicated in the display accordingly.

In this **start mode** the configuration of the device can be changed again if required. When plugged into the USB port of a PC, the device is automatically recognized by the liberoCONFIG software and set to "ConF"-mode without the need to press any keys.

The logger can be started by pressing and holding (3 seconds) the "Start/ON" key, the display shows the current measured value and the flashing "Run" symbol.

If a temperature- or time-dependent delayed alarm activation has been configured a corresponding note appears in the display after the device is started:

- **Temperature-based delay**:
The delay until the configured temperature threshold is reached is indicated by "dELAY". The device then automatically switches to alarm activated measuring mode (see below).

- **Time-based delay**:
The display shows the remaining time in minutes before the device automatically switches to alarm activated measuring mode (see below).

(Countdown to zero takes place in measuring interval steps, e.g. measuring interval = 10 min. >> recounting 60 - 50 - 40 - …)

Depending on the device's configuration we can distinguish between the following two types of **measurement mode**:

- **Measurement mode without "Alarming ON/OFF" function**:
Display of current temperature measured value (in the lower section of the display), the alarm status (in the upper right section of the display) and the flashing measurement mode- / "Run"- indicator (top left on the display).
LIBERO CH alternatively displays the humidity value after briefly pressing the "Stop/OFF" key. Press the key again briefly to display the temperature value again.

- **Measurement mode with "Alarming ON/OFF" function:**
Display of current temperature measured value (in the lower section of the display), the alarm status (in the upper right section of the display), the flashing measurement mode- / "Run"- indicator (top left on the display) and the status "Alarming ON" (top center section of the display), which indicates that the measured values are evaluated according to set alarm criteria.
LIBERO CH alternatively displays the humidity value after briefly pressing the "Stop/OFF" key. Press the key again briefly to display the temperature value again.

Users who wish to take advantage of **pausing the alarm** (e.g. when refilling or cleaning) can do so by pressing and holding (3 seconds) the "Stop/Alarming OFF" button in measurement mode.
In this case the note "AL on" appears in the lower half of the display every 2 seconds alternating with the currently measured value, to inform the user that the alarm is suspended and can or should be reactivated. This is done very simply by pressing and holding (3 seconds) the "Start/ON" button.

From measuring mode without configured function "Alarming ON/OFF" or from measuring mode with status "Alarming OFF", the device can be stopped by pressing and holding (3 seconds) the "Stop/OFF" button.

Two different display states are possible in **stop mode**:
Immediately after stopping the logger "Make PdF" appears on the display. This message ensures that the user does not forget to read out the device and it disappears after the PDF report has been created by plugging the device into the USB port of a computer.

After the device has been read out, "Stop" appears on the display. In this situation, the device can either be restarted (based on the existing configuration) or reconfigured via liberoCONFIG software by connecting it to a USB port on the computer without pressing any more buttons.

4.2 Logger service life / battery runtime

PDF Loggers LIBERO Cx BLE are designed for an extended usage period of up to 3 years. The actual service life is reduced by operation at low temperatures (especially below 0 °C) and frequent use of Bluetooth® connection to a smart device.

Shortening the period of use

Should the period of use for the devices be deliberately limited to 12 or 24 months, the user can order this option from ELPRO as a factory-made configuration.

Note: This factory-configured expiry date cannot be reset by the user by reconfiguring with liberoCONFIG.

Reaching the end date is indicated in the display by the message "EoL" (End-of-Life), the logger can no longer be used.

Reduction of battery runtime

Depending on the Bluetooth® mode selected, there is a reduction in the service life due to increased energy consumption, according to the following table:

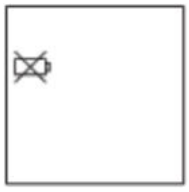
Bluetooth® mode	Runtime
BLE permanently OFF	36 months
BLE temporarily ON (by pressing "Start" button)	24 months
BLE permanently ON	14 months

Conditions: Measuring interval: 10 minutes, operating temperature range,
Customer usage behavior: average assumptions.

Battery warning

If the capacity of the battery has reached a minimum level, this is indicated by a warning symbol in the logger display.

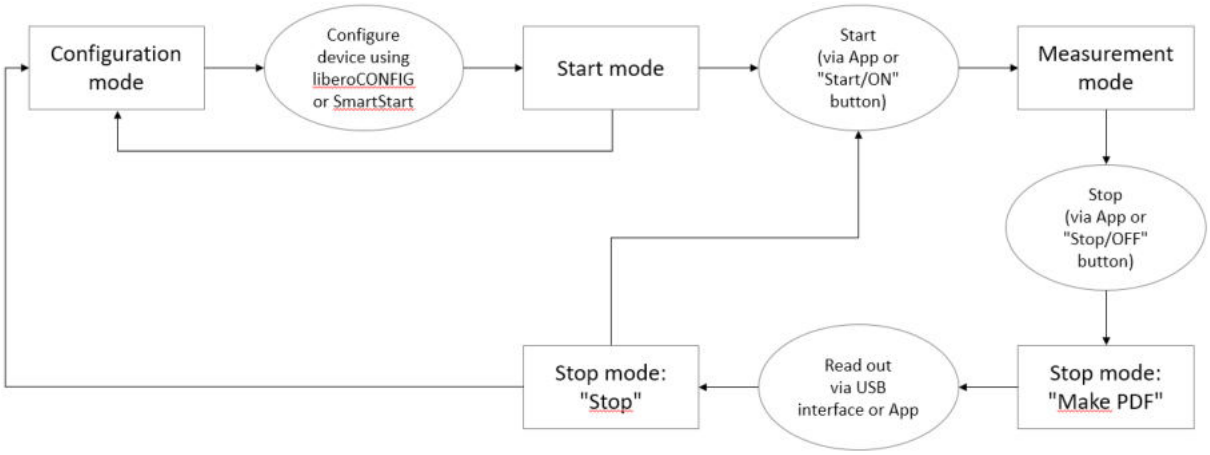
From this moment on, the logger should no longer be used and can therefore no longer be started. If the logger is in "Run" mode, a remaining period of use of approx. 8-10 days can be assumed.



4.3 Workflow

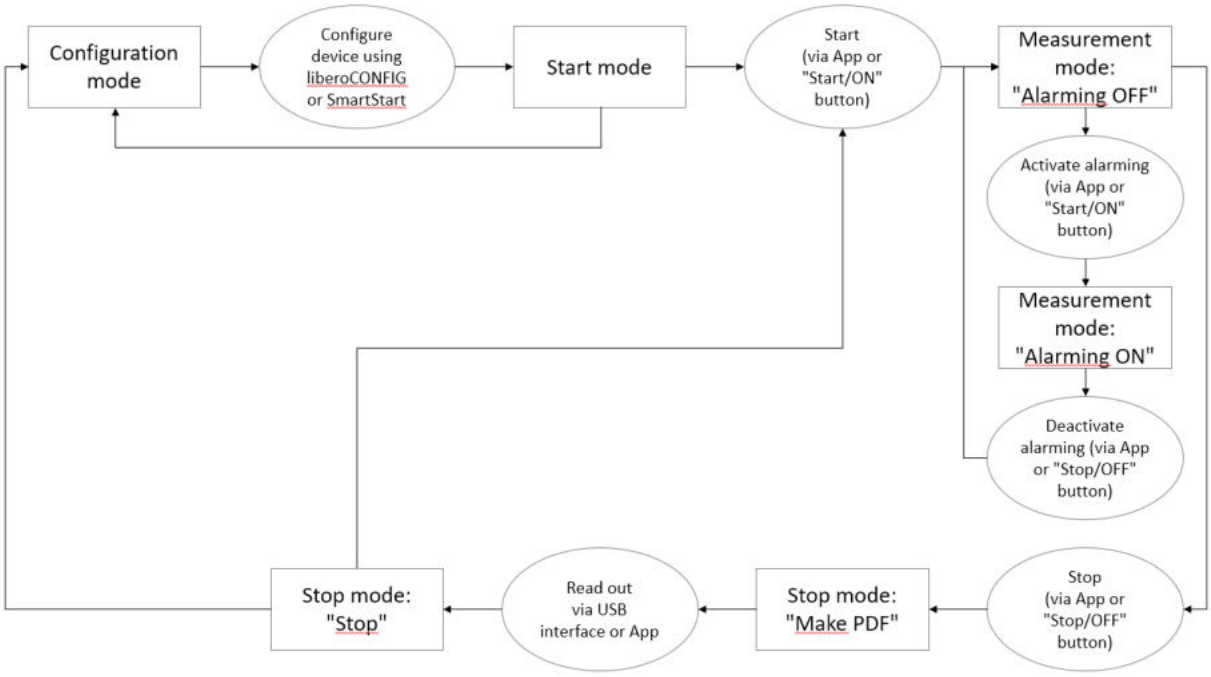
4.3.1 "Alarming ON/OFF" function not configured

The following figure shows the sequence of modes if "Alarming ON/OFF" function has not been configured (see chapter 6, section Alarm Conditions).



4.3.2 "Alarming ON/OFF" function configured

The following figure shows the sequence of modes if the "Alarming ON/OFF" function has been configured (see chapter 6, section Alarm Conditions).



4.4 Technical Specifications

LIBERO CE

https://shop.elpro.com/daten/img/Documents/TechSpecs/LIBERO/TS_LIBERO_CE_BLE_EN_web.pdf

Monitors valuable goods in ultra-low freezers and during cryogenic shipments
Simple and safe in use
Compatible with ELPRO's libernMANAGER cold chain database
Alarming on and alarming off

Technical Specifications LIBERO CE

LIBERO CL

https://shop.elpro.com/daten/img/Documents/TechSpecs/LIBERO/TS_LIBERO_CL_BLE_EN_web.pdf

Monitors your valuable goods during transport or storage
Highly accurate and 100% calibrated temperature sensor
Simple and safe in use
Compatible with ELPRO's libernMANAGER cold chain database
Alarming on and alarming off

Technical Specifications LIBERO CL

LIBERO CH

https://shop.elpro.com/daten/img/Documents/TechSpecs/LIBERO/TS_LIBERO_CH_BLE_EN_web.pdf

Monitors your valuable goods during transport or storage
100% calibrated temperature and humidity sensor
Simple and safe in use
Compatible with ELPRO's libernMANAGER cold chain database
Alarming on and alarming off

Technical Specifications LIBERO CH

5 Accessories

5.1 External Pt100 probes for LIBERO CE

LIBERO CE can be used for different applications, depending on the sensor element. ELPRO offers standard probes for three main applications:

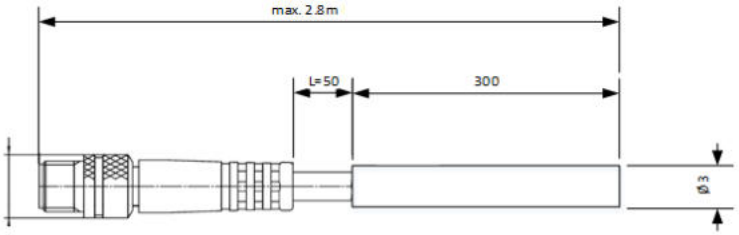
- Cryogenic shipments and storage
- Dry ice shipments and storage
- Freezer (-25 °C..-15°C, typ.) / fridge (+2 °C..+8 °C) / ambient (+15 °C..+25 °C) shipments and storage

5.1.1 Cryogenic shipments and storage

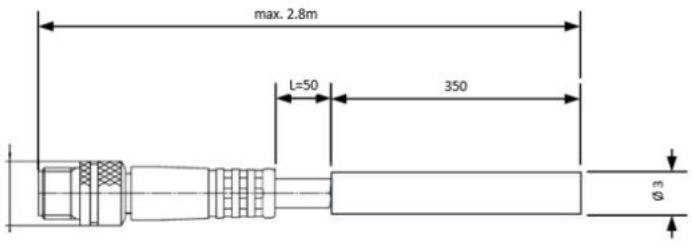
For cryogenic applications the LIBERO CE logger is usually mounted directly to the container or the container lid, using the optionally available stainless steel bracket, with the sensor leading into the tank. ELPRO offers an easy, turnkey service for mounting the assembly and calibration.

ELPRO offers two Pt100 standard probes for cryogenic applications with M8 connector in different lengths:

PRO_PT100_ST300D3_M8_CRYO (part number 802287)

Note	Cable with mounted M8 plug (male). Probe can be bent (do not kink) once at room temperature, except for the foremost 3 cm.
Probe length	30 cm
Probe diameter	3 mm
Temperature range of probe	-200 °C...+200 °C
- Temperature range Class A	n.a
- Temperature range Class B	-50 °C...+200 °C
Cable length	0.05 m
Cable diameter	4.0 mm
Litz wire	4x AWG 22
Cable material	Silicon
Cable color	black
Temperature range of cable	bendable in the range between -60 °C...+90 °C
Drawing	

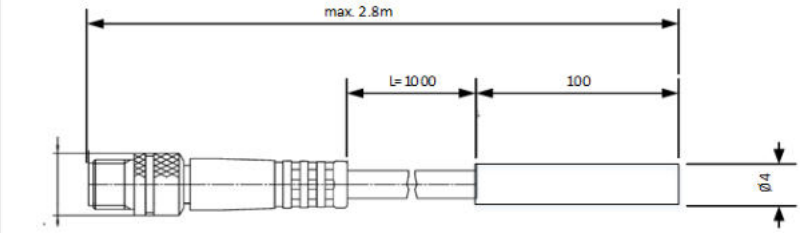
PRO_PT100_ST350D3_M8_CRYO (part number 802288)

Note	Cable with mounted M8 plug (male). Probe can be bent (do not kink) once at room temperature, except for the foremost 3 cm.
Probe length	35 cm
Probe diameter	3 mm
Temperature range of probe	-200 °C...+200 °C
- Temperature range Class A	n.a
- Temperature range Class B	-50 °C...+200 °C
Cable length	0.05 m
Cable diameter	4.0 mm
Litz wire	4x AWG 22
Cable material	Silicon
Cable color	black
Temperature range of cable	bendable in the range between -60 °C...+90 °C
Drawing	

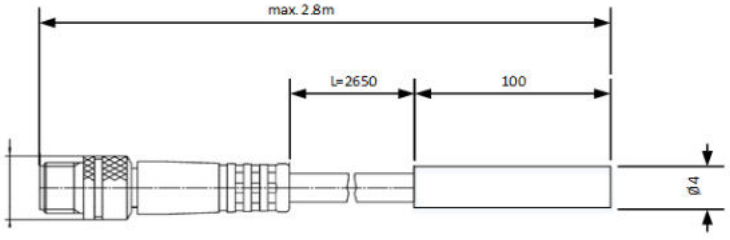
5.1.2 Dry ice shipments and storage

Also in dry ice applications, the LIBERO CE is usually attached to the outside of the container using the optionally available stainless steel bracket and the sensor leads into the tank. ELPRO offers an easy, turnkey service for mounting the assembly and calibration.
For this application, ELPRO offers two standard probes with a probe length of 10 cm and Teflon cable in different lengths:

PRO_PT100_ST100D4_PTFE1_M8 (part number 802284)

Note	Cable with mounted M8 plug (male).
Probe length	10 cm
Probe diameter	4 mm
Temperature range of probe	-90 °C...+250 °C
- Temperature range Class A	-30 °C...+250°C
- Temperature range Class B	-50 °C...+250 °C
Cable length	1 m
Cable diameter	3.5 mm
Litz wire	4x AWG 28
Cable material	PTFE
Cable color	white
Temperature range of cable	bendable in the range between -90 °C...+70 °C
Drawing	

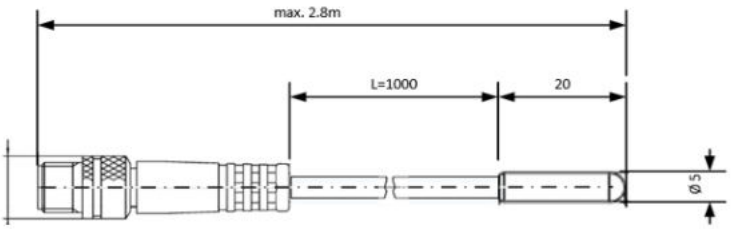
PRO_PT100_ST100D4_PTFE2.65_M8 (part number 802285)

Note	Cable with mounted M8 plug (male).
Probe length	10 cm
Probe diameter	4 mm
Temperature range of probe	-90 °C...+250 °C
- Temperature range Class A	-30 °C...+250°C
- Temperature range Class B	-50 °C...+250 °C
Cable length	2.65 m
Cable diameter	3.5 mm
Litz wire	4x AWG 28
Cable material	PTFE
Cable color	white
Temperature range of cable	bendable in the range between -90 °C...+70 °C
Drawing	

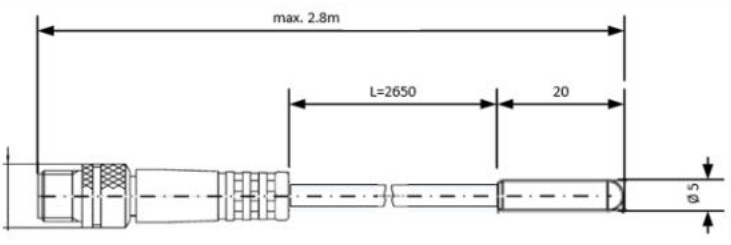
5.1.3 Freezer / fridge / ambient shipments and storage

For temperature monitoring of freezers, refrigerators or rooms, ELPRO offers two waterproof silicon Pt100 probes with different cable lengths as standard articles:

PRO_PT100_P20D5_PLA1_M8 (part number 802290)

Note	Cable with mounted M8 plug (male). Waterproof
Probe length	2 cm
Probe diameter	5 mm
Temperature range of probe	-50 °C...+105 °C
- Temperature range Class A	-30 °C...+105 °C
- Temperature range Class B	-50 °C...+105 °C
Cable length	1 m
Cable diameter	4.0 mm
Litz wire	4x AWG 24
Cable material	Silicon
Cable color	black
Temperature range of cable	bendable in the range between -60 °C...+90 °C
Drawing	

PRO_PT100_P20D5_PLA2.65_M8 (part number 802291)

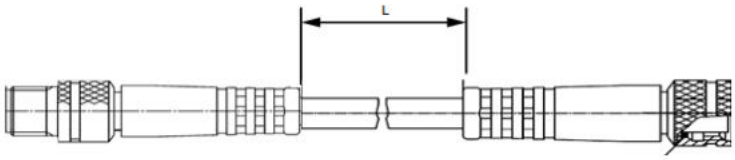
Note	Cable with mounted M8 plug (male). Waterproof
Probe length	2 cm
Probe diameter	5 mm
Temperature range of probe	-50 °C...+105 °C
- Temperature range Class A	-30 °C...+105 °C
- Temperature range Class B	-50 °C...+105 °C
Cable length	2.65 m
Cable diameter	4.0 mm
Litz wire	4x AWG 24
Cable material	Silicon
Cable color	black
Temperature range of cable	bendable in the range between -60 °C...+90 °C
Drawing	

5.2 Extension of sensor cables

An extension cable with two M8 connectors at a length of 1m is also available to attach the PDF data logger and the probe.

ATTENTION:
Total cable length (including sensor and cable tail on the data logger) must not exceed 3 m!

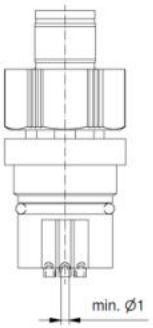
ECA_PLA_1M_M8 (part number 802282)

Note	M8 plugs on both ends (male, female)
Probe length	n.a.
Probe diameter	n.a.
Temperature range of probe	n.a.
- Temperature range Class A	n.a.
- Temperature range Class B	n.a.
Cable length	1 m
Cable diameter	3.5 mm
Litz wire	4x AWG 28
Cable material	PVC
Cable color	black
Temperature range of cable	bendable in the range between -60 °C...+90 °C
Drawing	

5.3 M8 connector incl. mounting service on Pt100 probe

ELPRO offers a mounting service, adding an M8 connector to a Pt100 temperature sensor in order to use any 4-wire Pt100 probe in combination with LIBERO CE.

CTR_M8_SER (part number 802289)

Note	M8 connector incl. mounting on any 4-wire Pt100 temperature probe
Probe length	depends on the selected probe
Probe diameter	depends on the selected probe
Temperature range of probe	depends on the selected probe
- Temperature range Class A	n/a
- Temperature range Class B	n/a
Cable length	depends on the selected probe
Cable diameter	depends on the selected probe
Litz wire	must be 4-wire
Cable material	depends on the selected probe
Cable color	depends on the selected probe
Temperature range of cable	depends on the selected probe
Drawing	

5.4 Stainless steel bracket

ELPRO offers an optional stainless steel bracket for mounting of LIBERO CE/CL/CH loggers if required, i.e. to containers for cryogenic applications.

BRA_LIBERO CE CL CH (part number 802286)

6 Configuration

liberoCONFIG is the free software to configure LIBERO PDF data loggers. It allows users to define all necessary configuration parameters and to save them as profiles. A profile contains all settings for the monitoring task and is summarized in the PDF report generated by the logger or in a special configuration report that can be generated in liberoCONFIG.

The configuration of a single LIBERO Cx is done with liberoCONFIG.
With **SmartStart Pack & Go** a profile can be assigned to a larger number of LIBEROs quickly and safely. SmartStart Pack & Go .exe files can be used on any PC without installation and without special drivers.

System requirements

- Operating system:	Windows 7, 8 or 10
- CPU clock frequency:	1.5 GHz
- Memory/RAM:	512 MB
- Hard disk:	100 MB
- Monitor resolution:	800 x 600 pixel

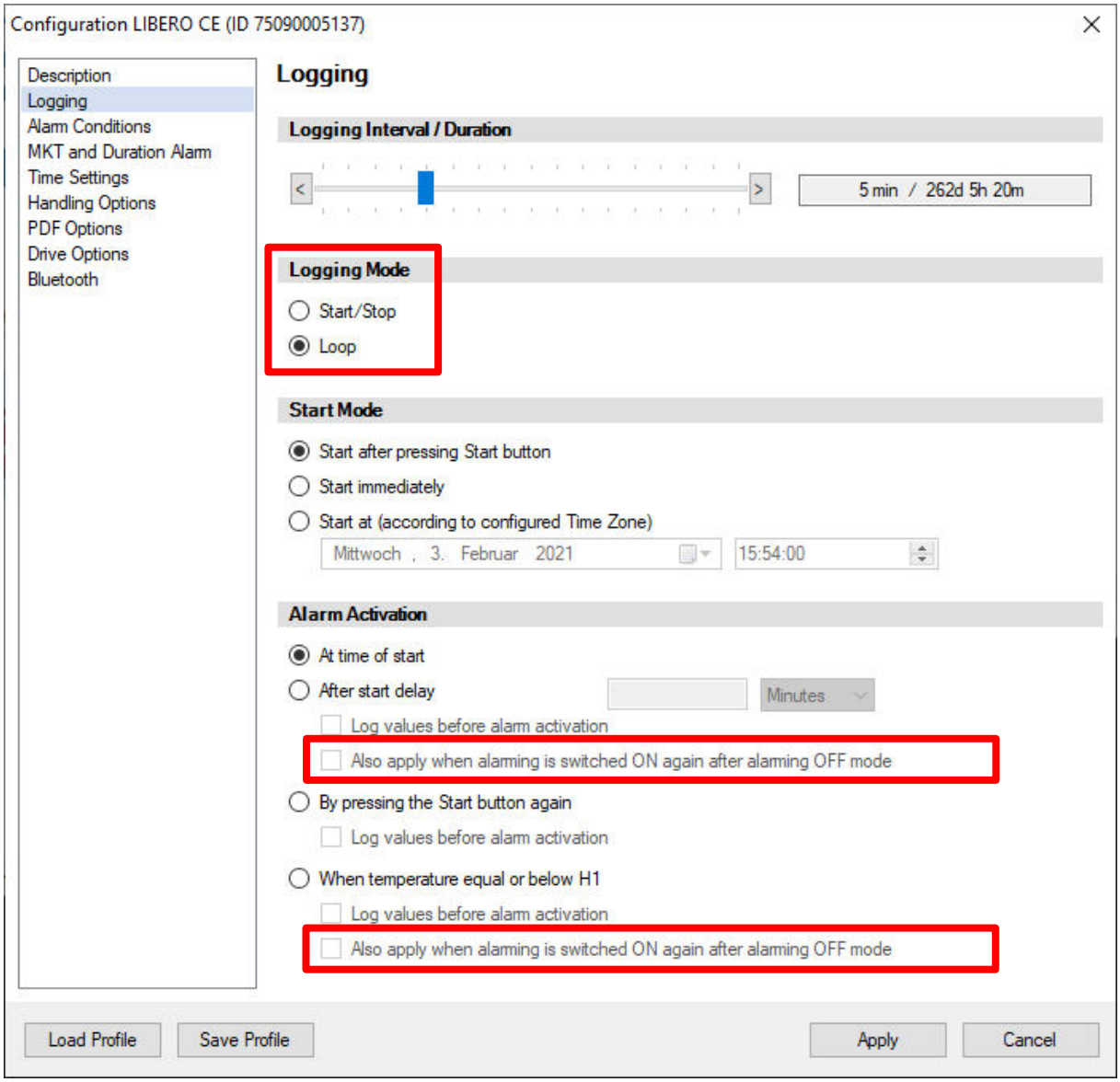
Details regarding configuration of LIBERO Cx can be found in the corresponding manual (https://shop.elpro.com/daten/img/Documents/Operation%20Manuals/LIBERO/OM_LIBEROC_EN_web.pdf).

In the following section only differences or additional configuration options for LIBERO CE / CL / CH are described.

Logging

"Loop" has been added as an additional recording mode, since LIBERO CE/CL/CH loggers are for multiple use.

NOTE: When memory capacity of the logger is reached, newly measured values continuously overwrite the oldest stored values!



For temperature- or time-delayed alarm activation the option has been added that such activation is also possible in case the alarm is subsequently switched on again after a phase of "alarming OFF" mode.

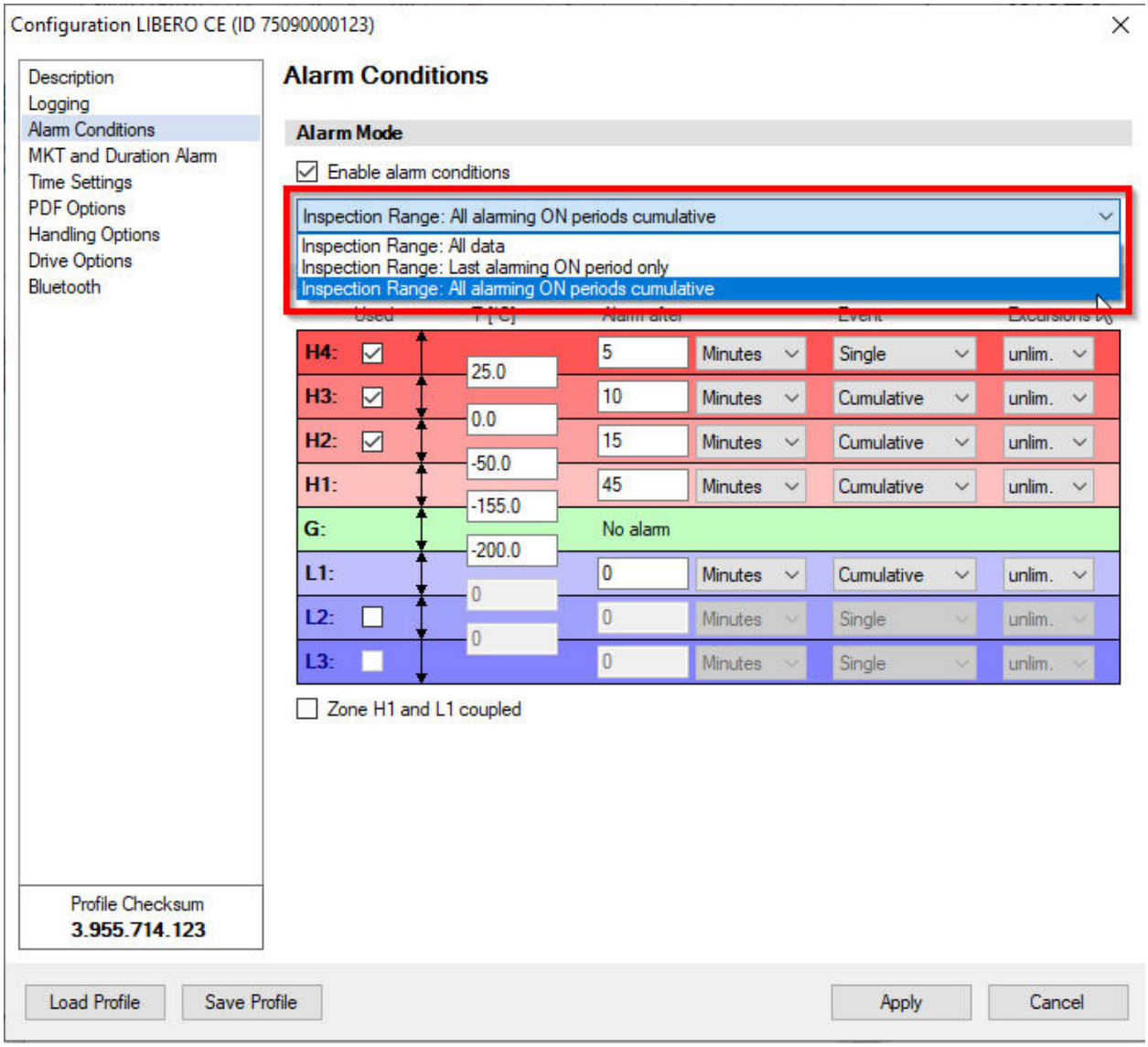
Alarm Conditions

In the section "Alarm Mode" the possibility to select the inspection range has been added. The following options are available:

- **All data:** all recorded values are taken into consideration when assessing the alarm status (based on the configured alarm conditions)
- **Last "alarming ON" period only:** only the measured values between the last pressing of the "Alarming ON" button and the last pressing of the "Alarming OFF" button on the device are considered in the assessment. If the "Alarming ON" button was pressed last, i.e. the alarming is still active, all measured values since that time are taken into account.
- **All "alarming ON" periods cumulative:** all measured values recorded in phases with activated alarming are considered in the assessment.

Alarming ON/OFF

Only if one of the last two options are selected, the alarming can be activated ("Alarming ON") or deactivated ("Alarming OFF") during measurement mode.

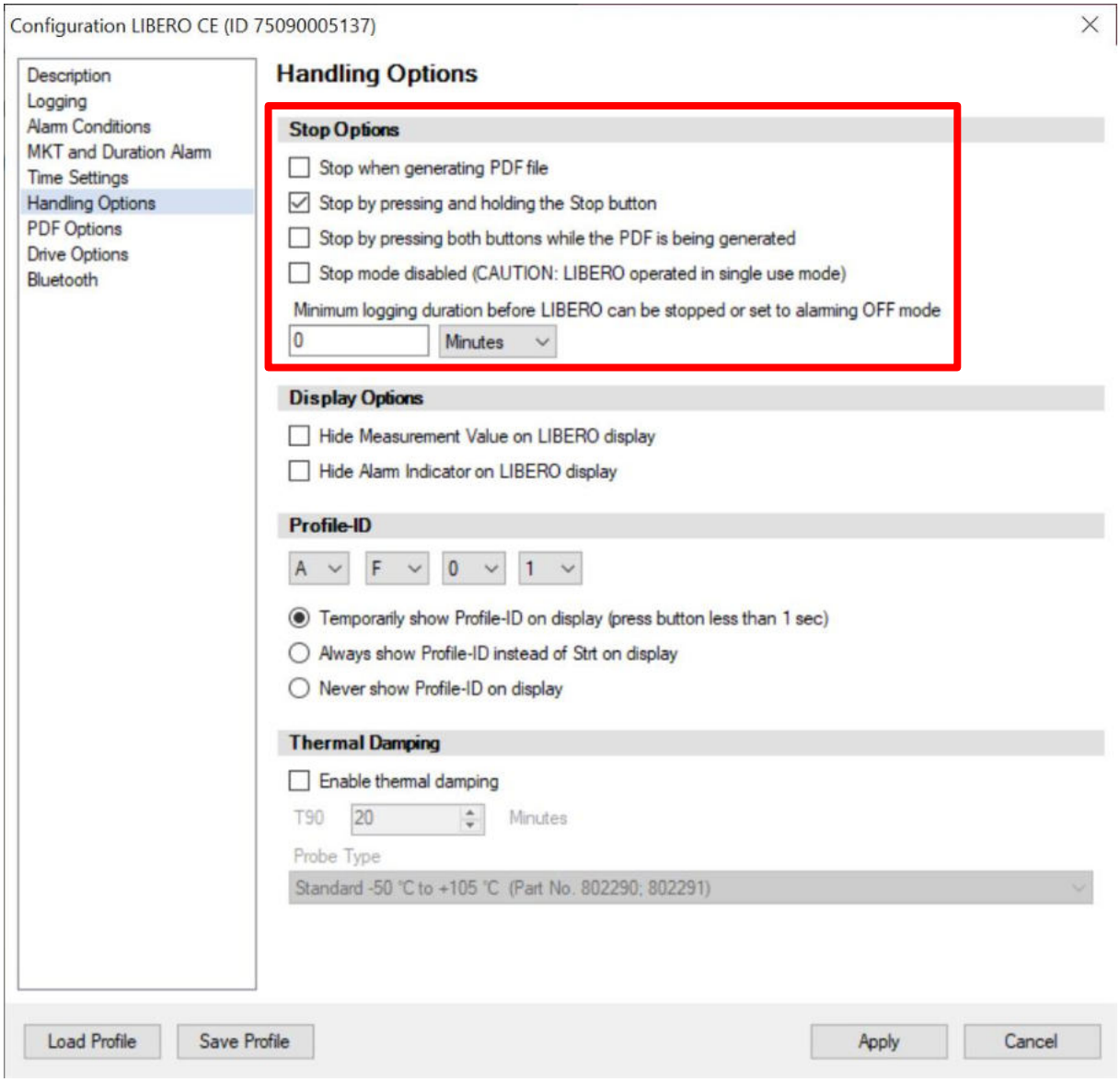


Stop Options

There are four options to stop data recording:

- Stop when generating the PDF report *)
- Stop by pressing and holding (> 3 seconds) the Stop button *)
- Stop by pressing both buttons at the same time while the PDF is being generated (so stopping is basically possible, but the logger will hardly ever be stopped accidentally)
- Stop mode disabled (CAUTION: this means that the logger can never be stopped and becomes a single-use device! Therefore there is no stop time available and the logger can no longer be reconfigured!)

*) … these two options can be combined.

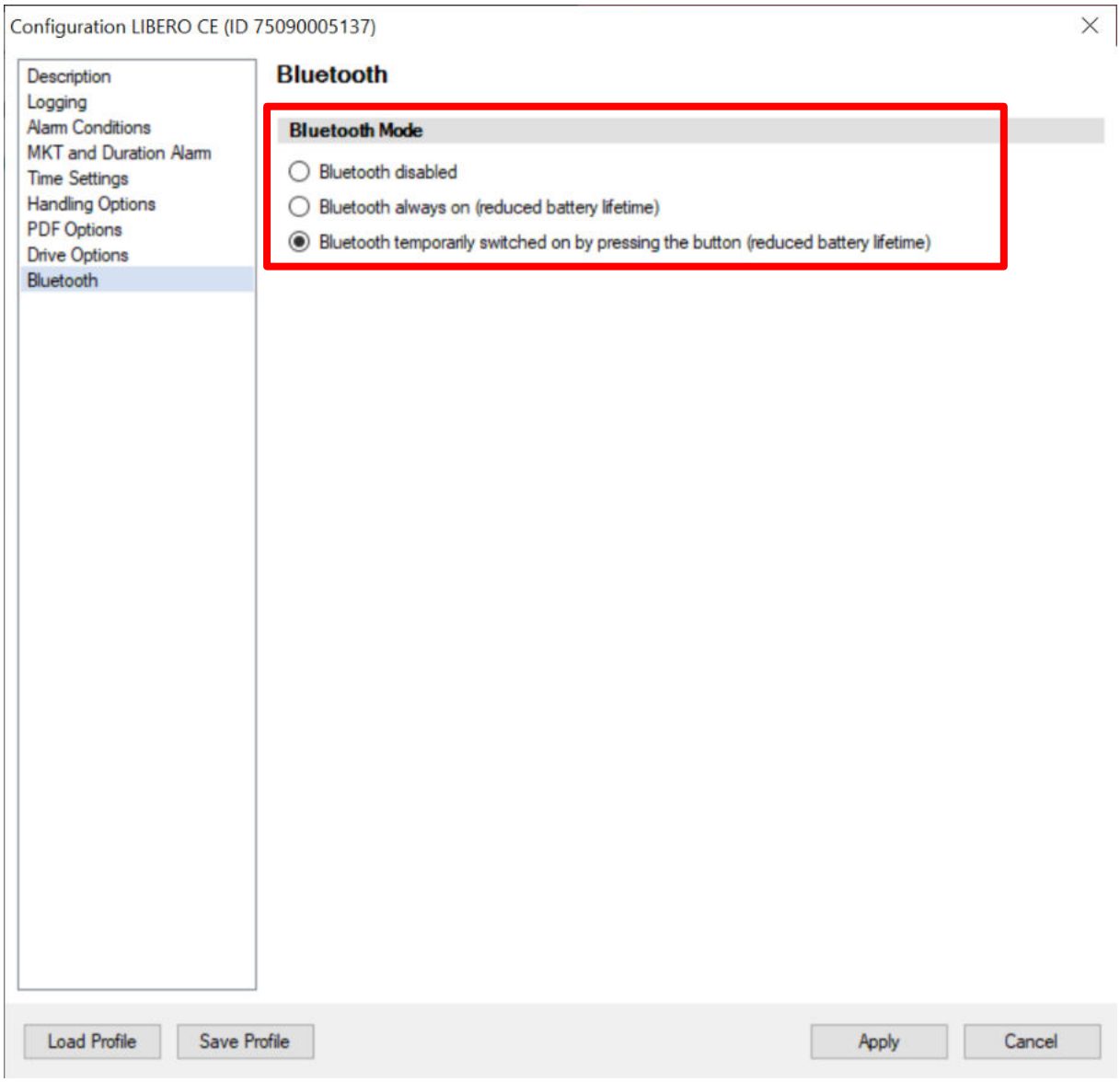


Bluetooth® Mode

To enable operation of the logger via LIBERO Cx BLE app, Bluetooth® mode must be selected accordingly when configuring the logger. The following are available for selection:

- Bluetooth® permanently off: there is no communication with the app.
- Bluetooth® permanently switched on: communication with the app is possible at all times.
- Bluetooth® temporarily switched on: the Bluetooth® interface is only activated for a short time (30 seconds) and when required, by briefly pressing the "Start" key.

Attention: temporary or permanent activation of Bluetooth® mode leads to a shortening of the battery runtime!



7 Operation via LIBERO Cx BLE App

The ELPRO LIBERO Cx BLE app is a free of charge mobile app available for smart devices with iOS and Android operating systems. LIBERO data loggers with Bluetooth® Low Energy (BLE) interface are able to connect wirelessly to the app once installed on smartphones or tablets.
The ELPRO LIBERO Cx BLE app helps to start/stop, monitor and read out LIBERO CE/CL/CH data loggers in the nearby proximity. The app also allows quick download of PDF reports without direct physical contact to the data logger and without connecting to the USB port of a computer. Measured values and alarms can be monitored via the app and it is possible to add individual information/notification lines prior to generating the final PDF report.

Download and use of the app

The app is available for iOS and Android operating systems and can be downloaded from the Apple App Store or Google Play Store.
After downloading, opening and closing the app is done in the conventional way.

Main screen

The main screen of the app shows all loggers located in the vicinity and detected by the app. The following information is displayed for each logger:

- Logger-ID (serial number)
- Operating status (e.g. running, stop, …)
- Actual temperature value
- Actual relative humidity value (LIBERO CH only)
- Alarm mode (ON/OFF)
- Alarm status (OK/Alarm)
- Battery life time (in days)
- Signal strength of Bluetooth® connection
- Bluetooth® connection update time

Main menu

By selecting the menu icon the main menu is displayed.

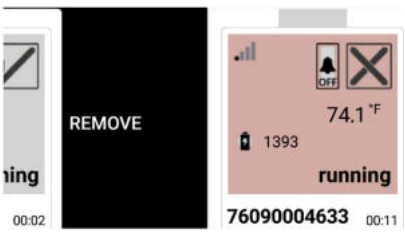
_ *LIBERO within reach*	leads to the main screen
_ *Last LIBERO actions*	displays a list of the last operations performed via the app
_ *Security settings*	edit app and logger password
_ *General settings*	setting of units and editing of predefined email addresses
_ *Privacy policy*	statements on privacy policy
_ *Quick Start Guide*	Quick Start Guide reference
_ *Support*	link to ELPRO product support page
_ About	information about ELPRO and app version

Displaying loggers

The smart device displays all loggers that are in the immediate vicinity and to which a Bluetooth® Low Energy (BLE) connection can be established.
If a logger is out of range or the Bluetooth® functionality has not been configured accordingly, the device is not displayed.
The order of the loggers shown is based on the serial number, in ascending order.

Tapping "**Refresh**" identifies any loggers that have been added and includes them in the overall display.

A logger can be removed from the main display by touching the symbol display and then swiping to the left.



The selection of loggers to be displayed is simplified by using the **filter function**.

Tapping the filter icon opens a screen where the filter function can be activated and you can choose from a variety of criteria for filtering.

Filtering is possible according to following criteria:

- LIBERO serial number (edit or scan)
- Signal strength of Bluetooth® connection
- Battery level (remaining days)
- Temperature value
- Relative humidity value (LIBERO CH only)
- Alarm mode
- Alarm status
- Info fields 1…6

Acceptance of the set filter criteria must be confirmed by tapping "APPLY".

Selection of loggers

The loggers shown on the display of the smart device can be selected for further operating steps by tapping the logger display symbol.

- The selection of a logger is visually recognizable by a black border line and a black bar above the logger display symbol.

- Tapping "Select all" selects all loggers displayed in the main display. Tapping again cancels the selection.

Operating steps / Actions

Operating steps (actions) can be performed for a single logger or for all loggers.
If one or more loggers have been selected confirmation is in the information bar of the screen.

Tapping the arrow key opens a control panel which allows for the following actions:

- Start
- Stop
- Alarm On
- Alarm Off
- PDF Report Download
- Show Info Fields
- Set/Add Info Fields

The execution of each action must be confirmed immediately after the selection in order to exclude unintentional operating errors.

Starting a logger is done by tapping "Start" in the control panel.
On the display of the logger you will see a flashing “Run” symbol confirming that the logger has started logging.

Stopping a logger is done by tapping "Stop" in the control panel.
On the display of the logger you will see "Make PdF" confirming that the logger has stopped logging and that it is now possible to download the PDF report.

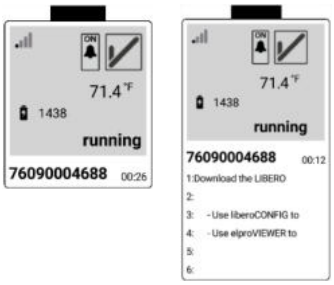
Alarm monitoring is **activated** by tapping "Alarm On" in the control panel.
The logger display will show the alarm bell icon with the "ON" status message above it.

Alarm monitoring is **deactivated** by tapping "Alarm Off".
On the logger display the status message under the alarm bell icon changes to "OFF".
At the same time the measured temperature value and the note for reactivating the alarm monitoring "AL on" are displayed underneath in alternating cycles.

A **PDF report** is generated and downloaded to the smart device by tapping «PDF Export».
After this action has been executed the logger will display "Stop" if the logger was stopped before the download command was issued.
If a download is requested during operation ("Run Mode") the logger continues to run without any change in recording mode.

As part of configuring the logger using liberoCONFIG, information can be edited in predefined fields (Info Fields).

Displaying Info Fields is done by tapping "Info Fields" in the control panel.
On the screen of the smart device the symbol representation of the logger is extended downwards and the contents of the 6 info fields are displayed.



It is possible to **create new entries in Info-Fields** by tapping "Set Info-Fields" in the control panel.

Entry of data into the 6 item lines is completed by "START".
The updated content of the info fields will be exported into the PDF report and listed accordingly.

Note: Existing entries in info lines (created during configuration using liberoCONFIG) will be overwritten by newly edited entries.

Last LIBERO actions

All executed operations are recorded chronologically in an event list. This event list can be accessed via this main menu item or the icon in the upper right corner of the screen; in addition, tapping on an entry can call up further details about the executed operation (e.g. serial number of the logger concerned, re-reading/forwarding of created PDF reports, etc.).

Security settings

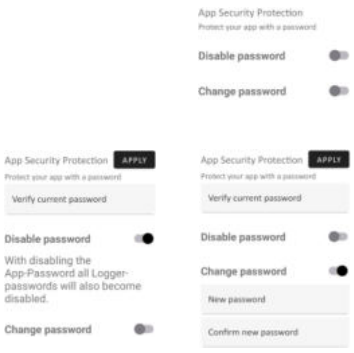
The use of LIBERO Cx BLE app can be protected by a password, just as the LIBERO CE/CL/CH loggers themselves can be provided with appropriate security measures as part of the configuration (password protection for configuration, data access and Bluetooth® connection).

Notice:
Setting, changing and deleting logger passwords is only done via the liberoCONFIG configuration software!
In the app, entries are stored in a password list and are matched when requested (when access to the logger is desired).
This has the advantage that the respective password does not have to be entered individually for each password-protected access.

Via the "**App Security Protection**" selection field a password for the use of the app can be set in the window appearing next.

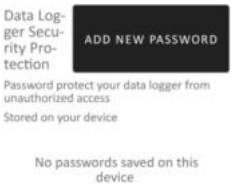
This password is requested each time the app is opened.

The password can be changed or disabled.



Attention:
When deactivating the app password, all entries in the password list are deactivated at the same time!

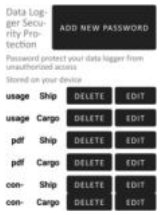
Via the "**Data Logger Security Protection**" selection field entries in the password list stored on the app can be created in the window appearing next, to prevent unauthorized access to the configuration, the data and the Bluetooth® usage.



Passwords can be created individually for each area to be protected.

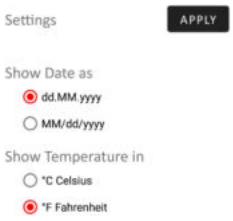
- Configuration Access
- PDF (Data) Access
- BLE Access

For a better overview, a freely selectable name can be added to each of the entered passwords, which is displayed in the list in a shortened scope of 6 characters. The entries made can be edited or deleted from the list at any time.



General settings

In the general settings, the date format and the units of temperature values can be selected.



In addition, it is possible to enter predefined email addresses for the distribution of PDF reports.

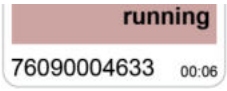
About

This menu item contains a link for more details about the company ELPRO ("ABOUT US") and provides information about the version of the currently used app software.

Processing speed and functionality of Bluetooth® Low Energy (BLE) connection

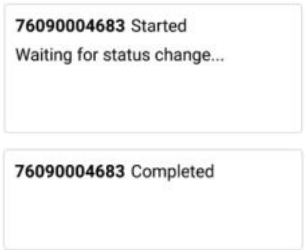
With the aim of optimizing battery life an active connection between the logger and the smart device is only established for the time it takes to execute a specific action. Apart from that only basic information of presence and actual status is exchanged.

Repeated reset of a displayed counter in the logger icon reflects the frequent communication dialog between a logger and the smart device.

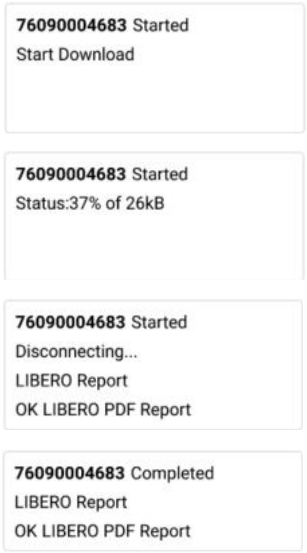


The user is continuosly informed via the app about any communication between the smart device and the logger. Below are two examples of dialog information for clarification:

Action: Start



Action: PDF Export



8 Disposal

a) Device

Electronic devices are recyclable and do not belong in the household waste. Dispose of the product at the end of its service life in accordance with applicable laws.

b) Batteries

You are legally obliged to dispose of all used batteries according to applicable laws; disposal via household waste is prohibited. Batteries are marked with the adjacent symbol, under which is printed the chemical symbol for the heavy metal (Cd = cadmium, Hg = mercury, Pb = lead). This indicates the battery contains hazardous material. You can dispose of used batteries at collection points in your local community. Please help protect our environment and dispose of batteries properly.

9 Declaration of Conformity

9.1 EU Declaration

EU Konformitätserklärung
Déclaration UE de conformité
EU Declaration of conformity

Hersteller | Fabricant | Manufacturer	**ELPRO-BUCHS AG**
Adresse | Adresse postale | Postal address	**Langäulistrasse 45**
PLZ | Code postal | Postcode	**9470**
Stadt | Ville | City	**Buchs**
Land | Pays | Country	**Schweiz** | Suisse | Switzerland
Telefon | Téléphone | Phone	**T +41 81 552 08 08**
E-Mail | E-mail | E-mail	**swiss@elpro.com**

Produktnamen | Noms du Produit| Product names	**LIBERO CE, LIBERO CL, LIBERO CH**
Produkt Nr. | No. de produit | **Product no.**	**802279, 802280, 802281**

Beschreibung | Description | Description:

LIBERO Cx sind Geräte zur kontinuierlichen Temperatur- oder Feuchtigkeitsüberwachung mit Bluetooth Funktionalität. LIBERO CE wird betrieben mit externem Pt100 Fühler bis zu einer Kabellänge von 3m. | LIBERO Cx sont des appareils de surveillance continue de la température ou de l'humidité avec fonctionnalité Bluetooth. Le LIBERO CE fonctionne avec un capteur Pt100 externe jusqu'à une longueur de câble de 3m. | LIBERO Cx are devices for continuous temperature or humidity monitoring with Bluetooth functionality. LIBERO CE is operated with external Pt100 sensor up to a cable length of 3m.

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union. | L'objet de la déclaration décrit ci-dessus est conforme à la législation d'harmonisation de l'Union applicable. | The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

Funkanlagen - Richtlinie 2014/53/EU | Directive sur l'équipement radio 2014/53/UE | Radio Equipment Directive 2014/53/EU
RoHS - Richtlinie 2011/65/EU und ihre Änderungsrichtlinie (EU) - Richtlinie 2015/863 | Directive RoHS 2011/65/UE et sa directive modificative (UE) 2015/863 | RoHS Directive 2011/65/EU and its amending Directive (EU) 2015/863

Harmonisierte Normen und Spezifikationen | Normes harmonisées et spécifications | Harmonized standards and specifications:

Elektromagnetische Verträglichkeit | Compatibilité électromagnétique | Electromagnetic compatibility	Draft EN 301 489-1 V2.2.3 Draft EN 301 489-17 V3.2.2
Funk | Radio | Radio	EN 300 328 V2.2.2
Elektrische Sicherheit | Sécurité électrique | Electrical security	EN 62311:2008 EN 62368-1:2014 + AC:2015 + A11:2017

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller. | La présente déclaration de conformité est établie sous la seule responsabilité du fabricant. | This declaration of conformity is issued under the sole responsibility of the manufacturer.

Buchs, den 9. Dezember 2020
Buchs, le 9 décembre 2020
Buchs, December 9th, 2020

ELPRO-BUCHS AG

Dirk Neumann
Leiter der Entwicklung
Chef du développement
Head of Development

ELPRO-BUCHS AG | Langaeulistrasse 45
9470 Buchs SG | Switzerland
T + 41 81 552 08 08 | www.elpro.com

we prove it

9.2 FCC/ISED Regulatory notices

Modification statement
ELPRO-Buchs AG has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

ELPRO-Buchs AG n'approuve aucune modification apportée à l'appareil par l'utilisateur, quelle qu'en soit la nature. Tout changement ou modification peuvent annuler le droit d'utilisation de l'appareil par l'utilisateur.

Interference statement
This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Wireless notice
This equipment complies with FCC and ISED radiation exposure limits set forth for an uncontrolled environment. The antenna should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet appareil est conforme aux limites d'exposition aux rayonnements de l'ISDE pour un environnement non contrôlé. L'antenne doit être installée de façon à garder une distance minimale de 20 centimètres entre la source de rayonnements et votre corps. L'émetteur ne doit pas être colocalisé ni fonctionner conjointement avec à autre antenne ou autre émetteur.

FCC Class B digital device notice
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC (USA) ID: Z45LIBEROCEHL

CAN ICES-3 (B) / NMB-3 (B)
This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de classe B est conforme à la norme canadienne NMB-003.

IC (CAN) ID: 9954A-LIBEROCEHL

ELPRO-BUCHS AG
Langaeulistrasse 45
9470 Buchs SG
Switzerland