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, the protection provided by the device may be impaired!

Battery
Material safety data sheet 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.
Humidity	Operation range 0 … 100%
Mechanical Force	Avoid violent knocks and blows, they 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.
Altitude	max. 2000 m
Pollution degree	degree 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 the 2.40-2.48GHz band with a maximum radiated output power of +3.7dBm.

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

The degrees of protection apply to any position and orientation of the device, regardless of the mounting arrangement.

ELPRO-BUCHS AG
Langaeulistrasse 45
9470 Buchs SG
Switzerland

2 Quick Start

2.1 LIBERO CE

2.2 LIBERO CL


Quick Start LIBERO CL
1
Software Download
elpro.com/software-downloads
2
Press
StArt
2
sec.
dELAy
Start by
Device or App
App
Start
ON
Stop
OFF
3
4
Run
ON
4.7°C
2 sec.
Make
PdF
Stop by Device
or App
App
Start
Stop
5
USB
PDF
Make
PdF
Read out on PC
or Smartphone app
App
6
elpro.com/liberocl
elpro.com
1000452_V04

2.3 LIBERO CH


Quick Start LIBERO CH
1
Software Download
elpro.com/software-downloads
2
Press
StArt
2
sec.
dELAY
Start by
Device or App
App
3
4
Run
ON
65.3
%RH
2 sec.
Make
PdF
Stop by Device
or App
App
5
USB
PDF
Make
PdF
Read out on PC
or Smartphone app
App
6
elpro.com/liberoch
elpro.com
1000453_V03

3 System Overview

3.1 LIBERO CE

The LIBERO CE data logger described in this document is a device for temperature monitoring using an external Pt100 probe. LIBERO CE saves the temperature measurements and can generate a PDF report when connected to a USB port on your computer. The PDF report contains all measured values and thus creates visibility and transparency to fulfil GxP requirements. The device is configured using free liberoCONFIG software or by assigning a pre-programmed profile (SmartStart).
The LIBERO CE data logger features Bluetooth Low Energy (BLE) and usage of liberoAPP. Bluetooth Low Energy (BLE) provides long battery life together with excellent connectivity. ELPRO liberoAPP is a mobile app to start/stop, monitor and read out LIBERO CE CL CH data loggers nearby. The app is available for iOS and Android.

LIBERO CE with external probe

3.2 LIBERO CL

The LIBERO CL data logger described in this document is a device for temperature monitoring using an internal temperature probe. LIBERO CL saves the temperature measurements and can generate a PDF report when connected to a USB port on your computer. The PDF report contains all measured values and thus creates visibility and transparency to fulfil GxP requirements. The device is configured using free liberoCONFIG software or by assigning a pre-programmed profile (SmartStart).
The LIBERO CL data logger features Bluetooth Low Energy (BLE) and usage of liberoAPP. Bluetooth Low Energy (BLE) provides long battery life together with excellent connectivity. ELPRO liberoAPP is a mobile app to start/stop, monitor and read out LIBERO CE CL CH data loggers nearby. The app is available for iOS and Android.

LIBERO CL

3.3 LIBERO CH

The LIBERO CH data logger described in this document is a device for temperature and relative humidity monitoring using an internal temperature and humidity probe. LIBERO CH saves the temperature and humidity measurements and can generate a PDF report when connected to a USB port on your computer. The PDF report contains all measured values and thus creates visibility and transparency to fulfil GxP requirements. The device is configured using free liberoCONFIG software or by assigning a pre-programmed profile (SmartStart).
The LIBERO CH data logger features Bluetooth Low Energy (BLE) and usage of liberoAPP. Bluetooth Low Energy (BLE) provides long battery life together with excellent connectivity. ELPRO liberoAPP is a mobile app to start/stop, monitor and read out LIBERO CE CL CH data loggers nearby. The app is available for iOS and Android.

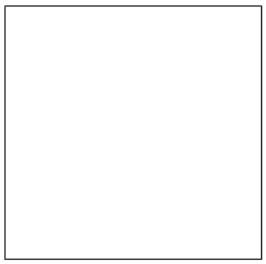
LIBERO CH

4 Device - LIBERO CE CL CH

4.1 Functionality and Modes

After configuration, the device measures the temperature using the connected external sensor, stores the measured values and evaluates them with regard to the defined alarm criteria. The display indicates the current mode.

In **configuration mode,** the device can be configured with the help of the free software liberoCONFIG. This is visualized on the display as follows:


or

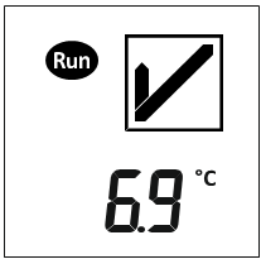

After the device has been configured, the device can be started by pressing the "Start" button for 3 seconds. The **start mode** is indicated on the display. In addition to starting the device, it can also be reconfigured from the start mode. The device is automatically recognized in liberoCONFIG.
Display:

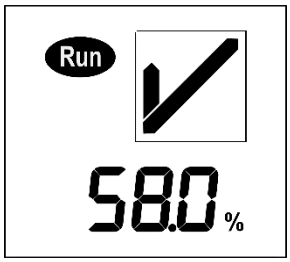
If a temperature-based or time-based delay has been configured, "delay" appears on the display after the device has been started:
- **Temperature-based delay**: the "delay" will be displayed until the configured temperature threshold has been reached. The device will then automatically switch to the measurement mode (see below).

- **Time-based delay**: the display shows the remaining time in minutes, before the device will automatically switch to the measurement mode.

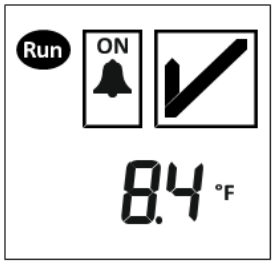
After the delay (if configured) has elapsed, the device switches to **measurement mode**. Depending on the device's configuration, we can distinguish between the following two types of measurement mode.

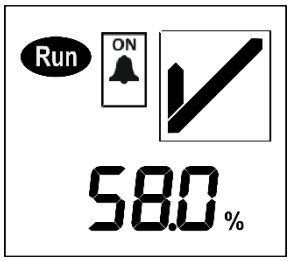
- **Measurement mode without "Alarming ON/OFF" function**: displays the current temperature value (bottom, if configured), alarm indicator (top right, if configured) and the logging indicator (top left). LIBERO CH alternately shows temperature and humidity value (bottom, if configured), alarm indicator (top right, if configured) and the logging indicator (top left).



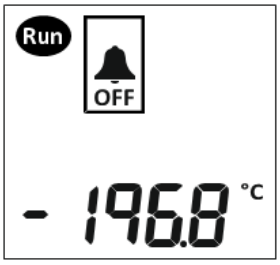


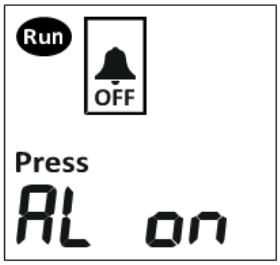
- **Measurement mode with "Alarming ON/OFF" function:** displays the current temperature value (bottom, if configured), alarm indicator (top right, if configured), the logging indicator (top left) and the "Alarming ON" status (top center). This state indicates that the measured values are evaluated according to the alarm criteria. LIBERO CH alternately shows temperature and humidity value (bottom, if configured), alarm indicator (top right, if configured) and the logging indicator (top left) and the "Alarming ON" status (top center).





Users who want the benefit of pausing the alarming (e.g. while refilling the liquid nitrogen or while cleaning the refrigerator), can do so by pressing the "Alarming OFF" button on the device. In this case, the display shows the current temperature value (bottom, if configured), alarm indicator (top right, if configured), logging indicator (top left) and the "Alarming OFF" status (top center). LIBERO CH also shows humidity value by pressing any button (bottom, if configured).
Alternating every 2 seconds, the display informs the user that the alarming can be reactivated:





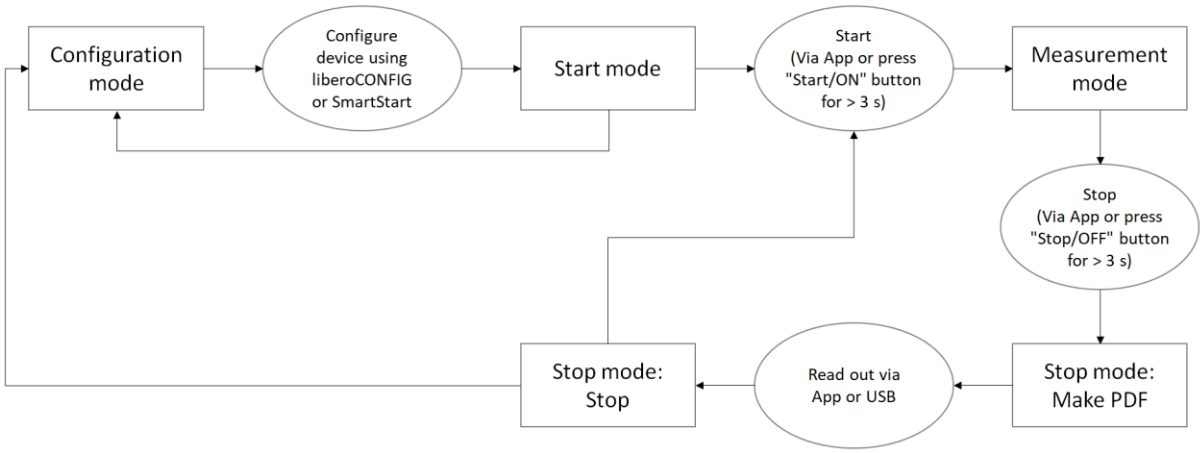
From the measuring mode, without configured "Alarming ON/OFF" function or from the measuring mode with status "Alarming OFF," the device can be stopped by pressing the "Stop" button for 3 seconds.
In **stop mode** there can be two different display states as seen below. Immediately after stopping, "Make PDF" appears. This will only disappear after the PDF report has been created by plugging the device into a USB port. This ensures that the user does not forget to read out the device.

After the device has been read out, "Stop" appears on the display. At this point the device can either be started again (with the existing configuration) or reconfigured.

4.2 Workflow

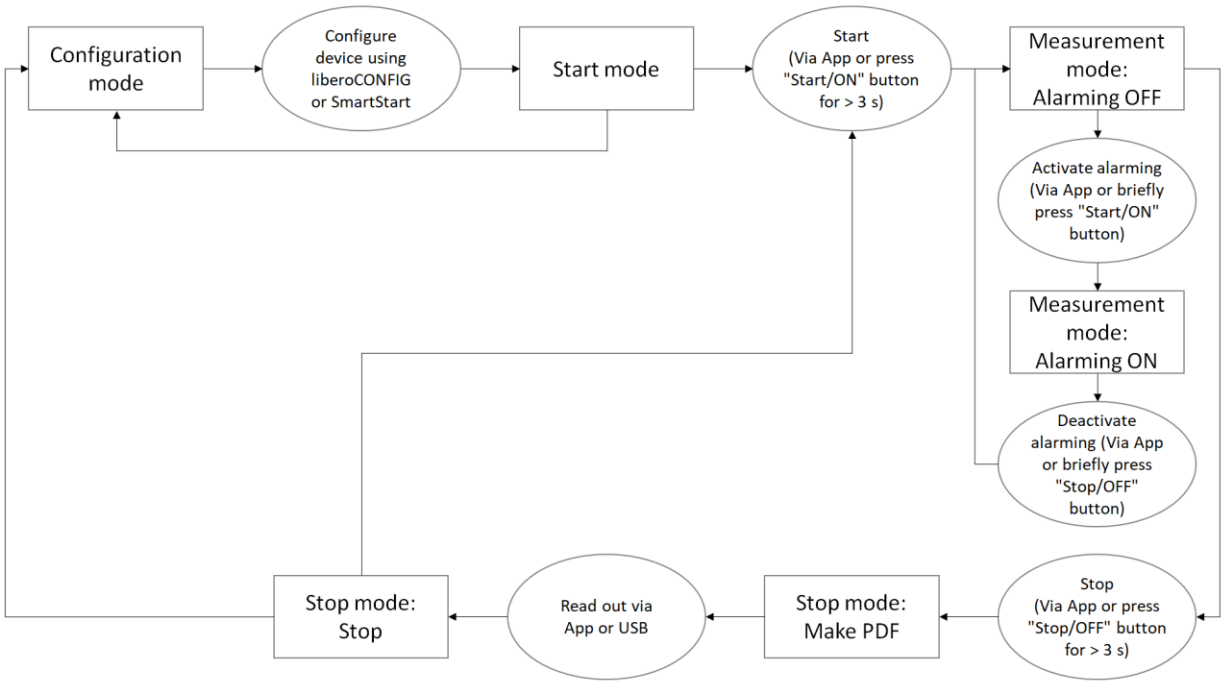
4.2.1 “Alarming ON/OFF” function not configured

The following figure shows the sequence of modes if the "Alarming ON/OFF" function has not been configured (see chapter 6.1, section Alarm Conditions).



4.2.2 “Alarming ON/OFF” function configured

The following figure shows the sequence of modes if the "Alarming ON/OFF" function has been configured (see chapter 6.1, section Alarm Conditions).



4.3 Technical Specifications

4.3.1 LIBERO CE

Type	PDF Logger with USB and Bluetooth Low Energy (BLE) interface for external Pt100 temperature probe (probe not included)
Application area	Site Monitoring, Container Monitoring, Cryo Container Monitoring, Dry-ice Container Monitoring
Recording options and mode	Multiple use: start/stop or loop mode
Type of probe	Pt100 probe (4-wire measuring technique), max. cable length 3 m (118.1 inch), requires M8 connector
Measurement range	Measurement range (depending on probe): -200 °C..+400 °C ; Operating range of data logger: -30 °C..+70 °C
Measurement accuracy	**System accuracy*:** ±1.4 °C in the range of -200.0 °C..-100.1 °C (Class B) ±1.0 °C in the range of -100.0 °C..-50.1 °C (Class B) ±0.4 °C in the range of -50.0 °C..-10.1 °C (Class A) ±0.3 °C in the range of -10.0 °C..+25.0 °C (Class A) ±0.5 °C in the range of +25.1 °C..+100.0 °C (Class A) ±0.7 °C in the range of +100.1 °C..+200.0 °C (Class A) ±1.1 °C in the range of +200.1 °C..+400.0 °C (Class A) *Includes data logger and external Pt100 probe of stated class
Measurement resolution	0.1 °C
Measurement interval	1 to 60 minutes, user configurable
Measurement capacity	75'500 measurement values (equals logging duration of 17 months at 10 minute logging interval)
Battery life	14 months to 3 years (depending on usage of Bluetooth interface)
Battery type	Button cell contained in equipment UN3091, exempt from DGR declaration Non-replaceable battery
Configurable alarms	8 temperature alarm zones with single or cumulative delays, Alarm on MKT, Alarm on duration/run time
Start-up delay	User configurable based on time or temperature
Display	Multifunction LCD, size: 22 × 22 mm (0.87 x 0.87 inch), with OK and Alarm indicator
Certificate	Validation and calibration certificate available via compliance.elpro.com, optionally according to ISO 17025
Traceability	Unique ID number (traceable to component level)
Report	Built-in PDF file generator automatically establishes an evaluation report with embedded data upon connection to a USB port or when triggered in the LIBERO app connected via Bluetooth. Complies with the ISO standard 19005-1 Document Management for the long-term preservation of electronic documents (PDF/A) and FDA 21 CFR Part 11. - Customizable report title and filename - Text area for additional information (e.g. shipment information, instructions for recipient, etc.) - Statistics (min/max, average, alarm, alarming on/off) and detailed logger information (ID, configuration, etc.) - Chart visualizing the temperature curve and alarm limits
Case | dimension | weight | IP code	ABS plastic material | 95 × 41 × 11 mm (3.74 x 1.61 x 0.43 inch), cable tail 85 mm (3.35 inch) including M8 connector | 44 g (0.1 lb) | IP54
Accessories	LIBERO CE stainless steel bracket, variety of Pt100 probes, extension cable with M8 connector
Certifications | conformity	CE | FCC | ICES | RoHS | Safe Transport of Chemical Goods | WEEE | Technical Conformity Mark
Standards and Guidelines	EN12830* | RTCA DO-160 | GAMP5
App for Smart Device	iOS and Android
Wireless connection to the App	Bluetooth Low Energy
Data logger configuration and additional analysis software	liberoCONFIG software to create, store and manage individual settings in a logger profile as well as SmartStart, a liberoCONFIG component allowing a safe and quick application of profiles and additional information to PDF Logger. elproVIEWER software to access and export embedded data of PDF report, for data analysis and comprehensive report features. Both software products can be downloaded at www.elpro.com/downloads. Fully compatible with liberoMANAGER database.

4.3.2 LIBERO CL

Type	PDF Logger with USB and Bluetooth Low Energy (BLE) interface with internal temperature probe
Application area	Shipment container monitoring; round trip shipment monitoring; monitoring for rooms, refrigerators, freezers
Recording options and mode	Multiple use: start/stop or loop mode
Type of probe	Internal temperature probe
Measurement range	-30.0 °C..+70.0 °C
Measurement accuracy	±1.0 °C for -30.0 °C..-20.1 °C ±0.5 °C for -20.0 °C..-0.1 °C ±0.4 °C for 0.0 °C..+65.0 °C ±0.5 °C for +65.1 °C..+70.0 °C
Measurement resolution	0.1 °C
Measurement interval	1 to 60 minutes, user configurable
Measurement capacity	75'500 measurement values (equals logging duration of 17 months at 10 minute logging interval)
Battery life	14 months to 3 years (depending on usage of Bluetooth interface)
Battery type	Button cell contained in equipment UN3091, exempt from DGR declaration Non-replaceable battery
Configurable alarms	8 temperature alarm zones with single or cumulative delays, Alarm on MKT, Alarm on duration/run time
Start-up delay	User configurable based on time or temperature
Display	Multifunction LCD, size: 22 × 22 mm (0.87 x 0.87 inch), with OK and Alarm indicator
Certificate	Validation and calibration certificate (3-points) available via compliance.elpro.com, optionally according to ISO 17025
Traceability	Unique ID number (traceable to component level)
Report	Built-in PDF file generator automatically establishes an evaluation report with embedded data upon connection to a USB port or when triggered in the LIBERO app connected via Bluetooth. Complies with the ISO standard 19005-1 Document Management for the long-term preservation of electronic documents (PDF/A) and FDA 21 CFR Part 11. - Customizable report title and filename - Text area for additional information (e.g. shipment information, instructions for recipient, etc.) - Statistics (min/max, average, alarm, alarming on/off) and detailed logger information (ID, configuration, etc.) - Chart visualizing the temperature curve and alarm limits
Case | dimension | weight | IP code	ABS plastic material | 95 × 41 × 11 mm (3.74 x 1.61 x 0.43 inch) | 39 g (0.1 lb) | IP54
Certifications | conformity	CE | FCC | ICES | RoHS | Safe Transport of Chemical Goods | WEEE | Technical Conformity Mark
Standards and Guidelines	EN12830* | RTCA DO-160 | GAMP5
App for Smart Device	iOS and Android
Wireless connection to the App	Bluetooth Low Energy
Data logger configuration and additional analysis software	liberoCONFIG software to create, store and manage individual settings in a logger profile as well as SmartStart, a liberoCONFIG component allowing a safe and quick application of profiles and additional information to PDF Logger. elproVIEWER software to access and export embedded data of PDF report, for data analysis and comprehensive report features. Both software products can be downloaded at www.elpro.com/downloads. Fully compatible with liberoMANAGER database.

4.3.3 LIBERO CH

Type	PDF Logger with USB and Bluetooth Low Energy (BLE) interface with internal temperature probe
Application area	Site Monitoring, Container Monitoring, Round Trip Monitoring, Storage
Recording options and mode	Multiple use: start/stop or loop mode
Type of probe	Combined internal T/RH probe
Measurement range	-30.0 °C..+70.0 °C, 0 %RH..100 %RH
Measurement accuracy	**Temperature:** ±1.0 °C for -30.0 °C..-10.1 °C ±0.5 °C for -10.0 °C..-0.1 °C ±0.4 °C for 0.0 °C..+25.0 °C ±0.5 °C for +25.1 °C..+50.0 °C ±1.0 °C for +50.1 °C..+70.0 °C **Relative humidity:** ±2.5 %RH for 0 %RH..90 %RH ±3.5 %RH for 90 %RH..100 % RH
Measurement resolution	0.1 °C, 0.1 %RH
Measurement interval	1 to 60 minutes, user configurable
Measurement capacity	37'750 temperature and 37'750 relative humidity values (equals logging duration of 8.5 months at 10 minute logging interval)
Battery life	14 months to 3 years (depending on usage of Bluetooth interface)
Battery type	Button cell contained in equipment UN3091, exempt from DGR declaration; non-replaceable battery
Configurable alarms	8 temperature alarm zones with single or cumulative delays, 2 humidity thresholds with alarm delay, MKT alarm
Start-up delay	User configurable based on time or temperature
Display	Multifunction LCD, size: 22 × 22 mm (0.87 x 0.87 inch), with OK and Alarm indicator
Certificate	Validation and calibration certificate available via compliance.elpro.com, optionally according to ISO 17025[1]
Traceability	Unique ID number (traceable to component level)
Report	Built-in PDF file generator automatically establishes an evaluation report with embedded data upon connection to a USB port or when triggered in the LIBERO app connected via Bluetooth. Complies with the ISO standard 19005-1 Document Management for the long-term preservation of electronic documents (PDF/A) and FDA 21 CFR Part 11. - Customizable report title and filename - Text area for additional information (e.g. shipment information, instructions for recipient, etc.) - Statistics (min/max, average, alarm, alarming on/off) and detailed logger information (ID, configuration, etc.) - Chart visualizing the temperature curve and alarm limits
Case | dimension | weight | IP code	ABS plastic material | 95 × 41 × 11 mm (3.74 x 1.61 x 0.43 inch) | 44 g (0.1 lb) | IP54
Certifications | conformity	CE | FCC | ICES | RoHS | Safe Transport of Chemical Goods | WEEE | Technical Conformity Mark
Standards and Guidelines	EN12830* | RTCA DO-160 | GAMP5
App for Smart Device	iOS and Android
Wireless connection to the App	Bluetooth Low Energy
Data logger configuration and additional analysis software	liberoCONFIG software to create, store and manage individual settings in a logger profile as well as SmartStart, a liberoCONFIG component allowing a safe and quick application of profiles and additional information to PDF Logger. elproVIEWER software to access and export embedded data of PDF report, for data analysis and comprehensive report features. Both software products can be downloaded at www.elpro.com/downloads. Fully compatible with liberoMANAGER database.

5 Accessories

5.1 External Pt100 Probes for LIBERO CE

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

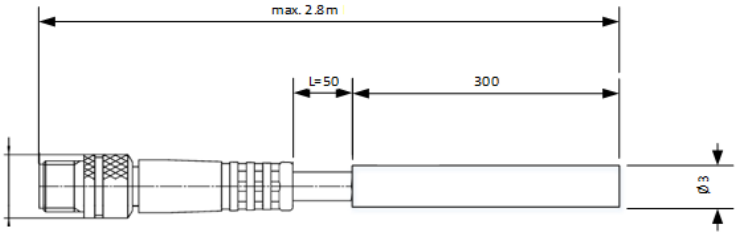
- Cryogenic shipments and storage
- Dry ice shipments and storage
- Freezer (-25 °C..-15°C, typical) / fridge (+2 °C..+8 °C) / ambient (+15 °C..+25 °C) shipments and storage

5.1.1 Cryogenic shipments and storage

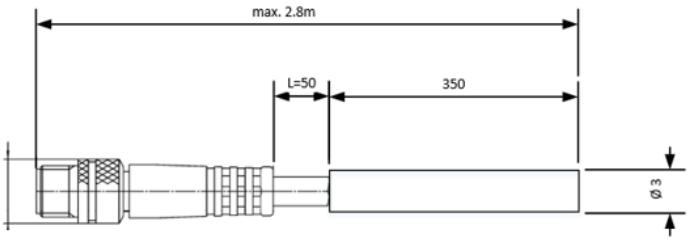
For cryogenic applications the LIBERO CE is usually mounted directly to the container, or the container lid, using the optional bracket with the sensor leading into the tank. ELPRO offers an easy, turnkey service for mounting the assembly and calibration.

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)

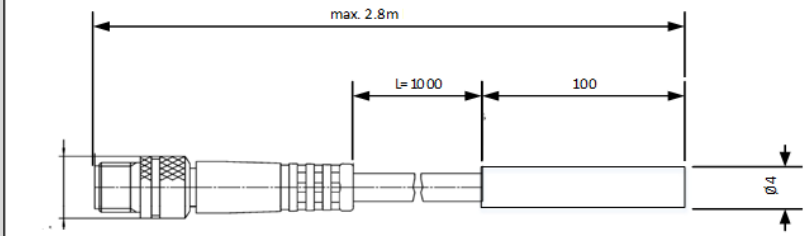
Note	Cable with mounted M8 plug (male). Probe can be bent (do not kink) once at room temperature, except for the foremost 3 cm.
Probe length	35 cm
Probe diameter	3 mm
Temperature range of probe	-200 °C...+200 °C
- Temperature range Class A	n.a
- Temperature range Class B	-50 °C...+200 °C
Cable length	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

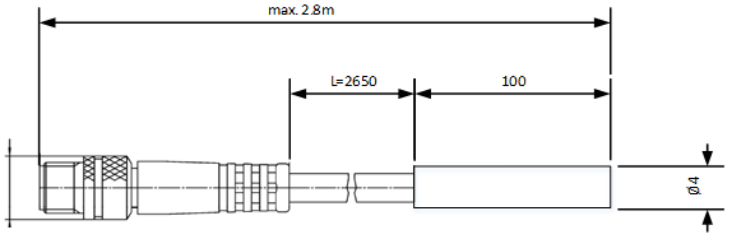
Also in dry ice applications, the LIBERO CE is usually attached to the outside of the container using the optional bracket and the sensor leads into the tank. ELPRO offers an easy, turnkey service for mounting the assembly and calibration.

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	

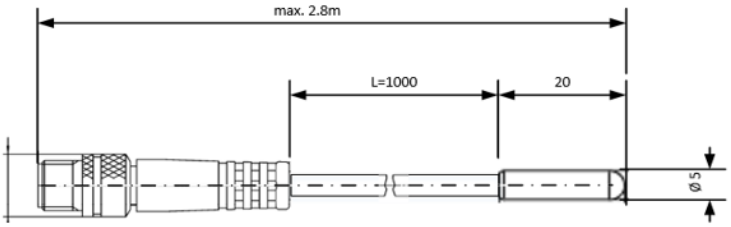
PRO_PT100_ST100D4_PTFE2.65_M8 (part number 802285)

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	

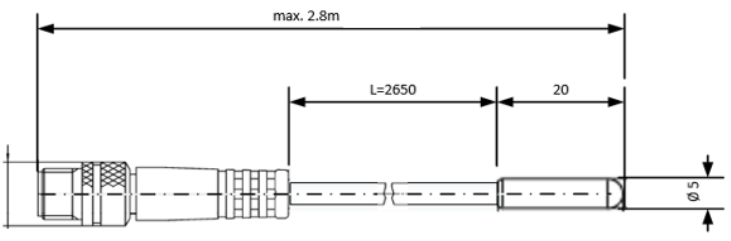
5.1.3 Freezer / fridge / ambient shipments and storage

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)

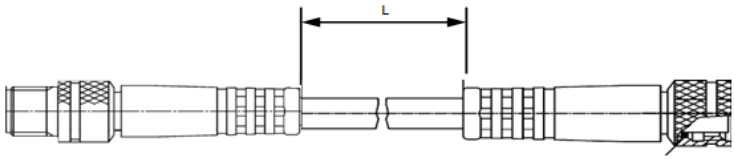
Note	Cable with mounted M8 plug (male). Waterproof
Probe length	2 cm
Probe diameter	5 mm
Temperature range of probe	-50 °C...+105 °C
- Temperature range Class A	-30 °C...+105 °C
- Temperature range Class B	-50 °C...+105 °C
Cable length	2.65 m
Cable diameter	4.0 mm
Litz wire	4x AWG 24
Cable material	Silicon
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!

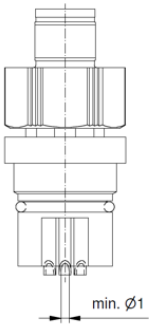
ECA_PLA_1M_M8 (part number 802282)

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 for LIBERO CE/CL/CH

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

BRA_LIBERO CE CL CH (part number 802286)

6 Configuration/Monitoring of the Logger

6.1 liberoCONFIG

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 documented in the PDF report generated by the logger.

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.

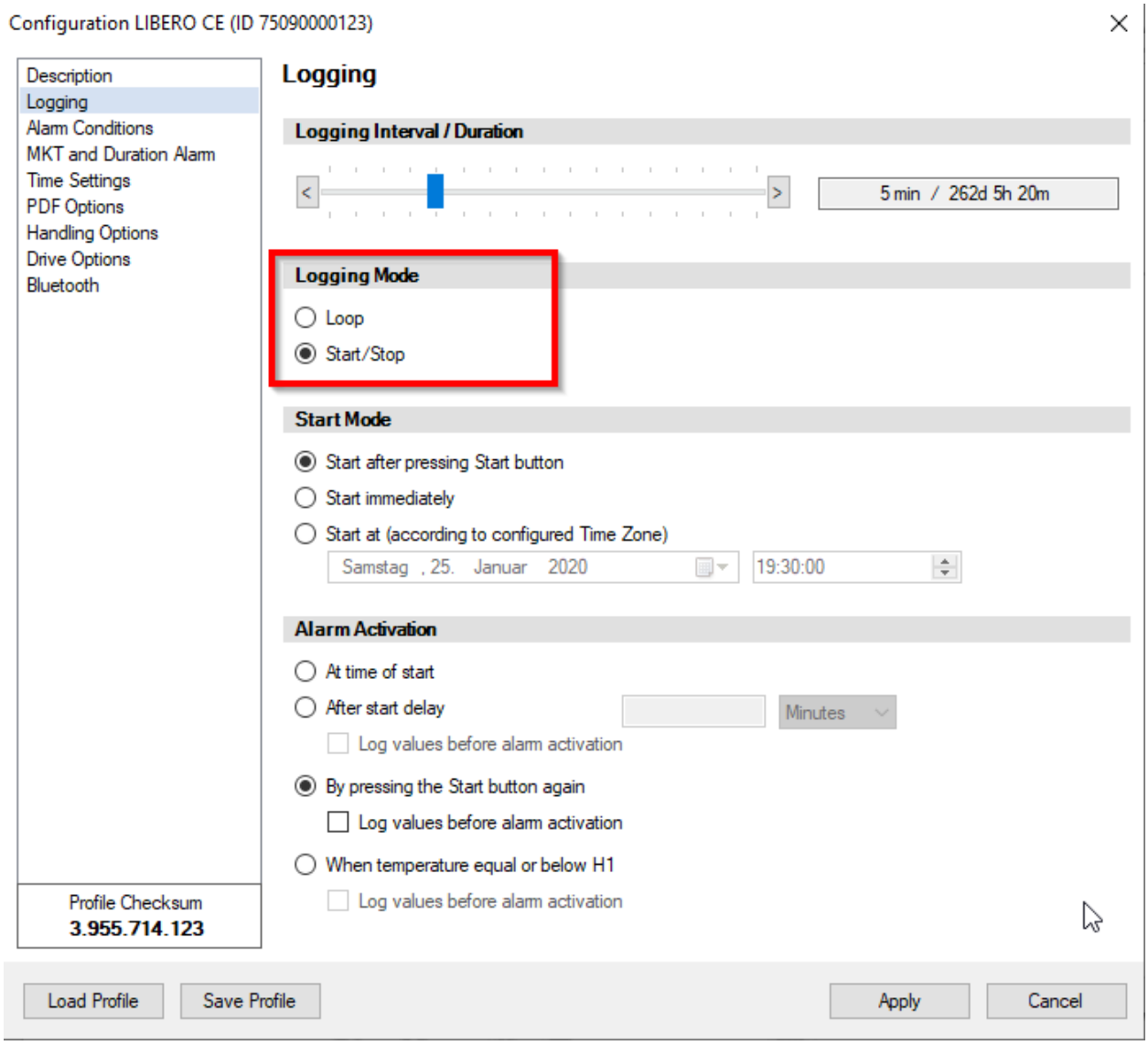
System requirements
- Windows 7, 8 or 10
- CPU 1.5GHz
- Memory: 512 MB RAM
- Hard disk: 100 MB
- Monitor resolution: 800 x 600 Pixel

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 only differences or additional configuration options for LIBERO CE CL CH are described.

Logging

"Loop" was added as an additional logging mode, as LIBERO CE is a multi-use device.

NOTE: If the memory of the logger is full, newly measured values will continuously overwrite the oldest values.



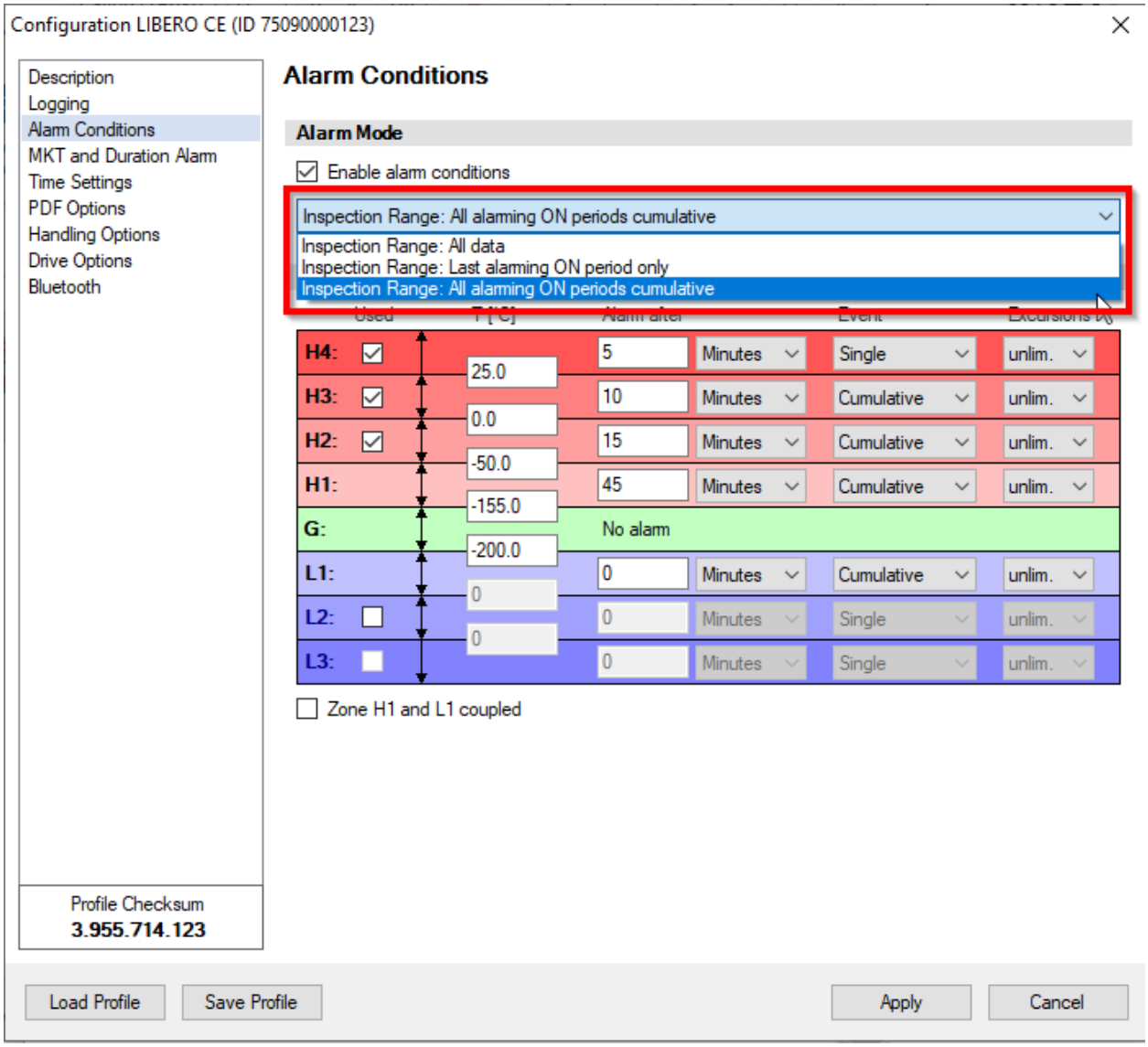
Alarm Conditions

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

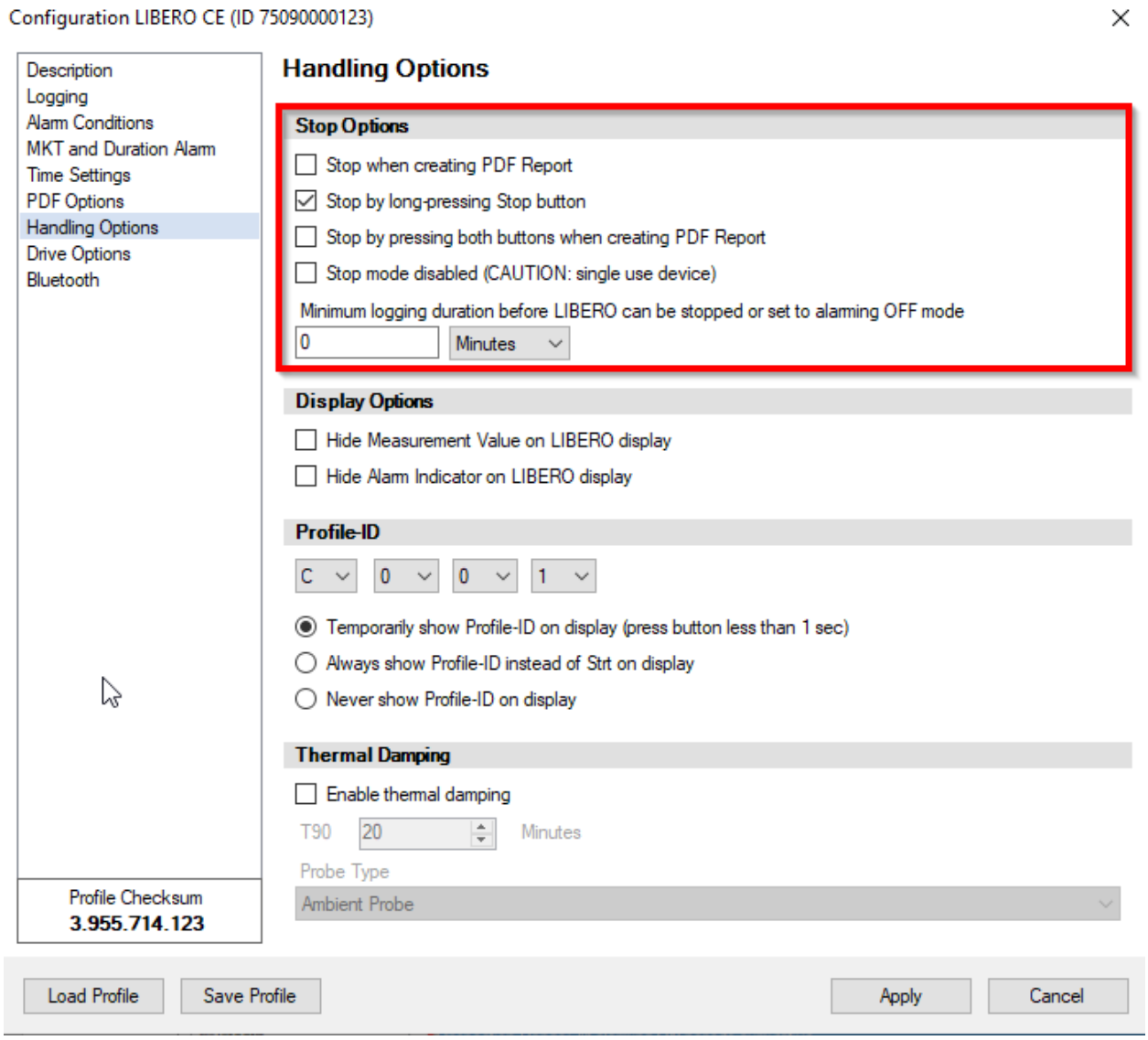
Only if one of the last two options are selected, the alarming can be activated (Alarming ON) or deactivated (Alarming OFF) during measurement mode.



Stop Options

There are four options for LIBERO CE to stop data recording:

- Stop when creating PDF report
- Stop by long-pressing (> 3 seconds) the Stop button
- Stop when the PDF is generated and both buttons on the device are pressed at the same time (so stopping is basically possible, but the logger will hardly ever be stopped accidentally)
- Stop mode disabled (CAUTION: This turns LIBERO CE into a 3-year single-use device, as it cannot be stopped and therefore the configuration cannot be changed!)



6.2 liberoAPP

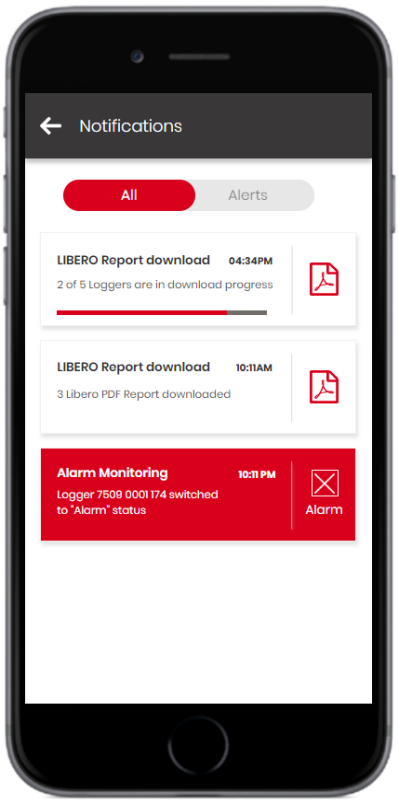
ELPRO liberoAPP is a mobile app available for iOS and Android. LIBERO data loggers with Bluetooth are able to connect with the app on your phone or tablet.
ELPRO liberoAPP helps to start/stop, monitor and read out LIBERO CE, CL, CH data loggers nearby. The App allows to quickly download PDF reports without touching the device and no need for plugging to the computer. Moreover, it features monitoring of all measured values and alarms as well as the possibility of adding individual shipment notifications. Finally, you can start and stop all devices nearby as well as turning on and off the alarming.
The logger is configured using free liberoCONFIG software or by assigning a pre-programmed profile (SmartStart). LIBERO CE CL CH use Bluetooth Low Energy (BLE) in order to provide long battery life together with excellent connectivity.
The following illustrations give an overview of the key features of liberoAPP. For more information, please visit the full online knowledge base:
{Link must be inserted later}

Main screen

The main screen of the app shows all loggers nearby and their current temperature values (LIBERO CH also humidity value), their alarming mode and battery life as well as the alarm status (OK or Alarm).

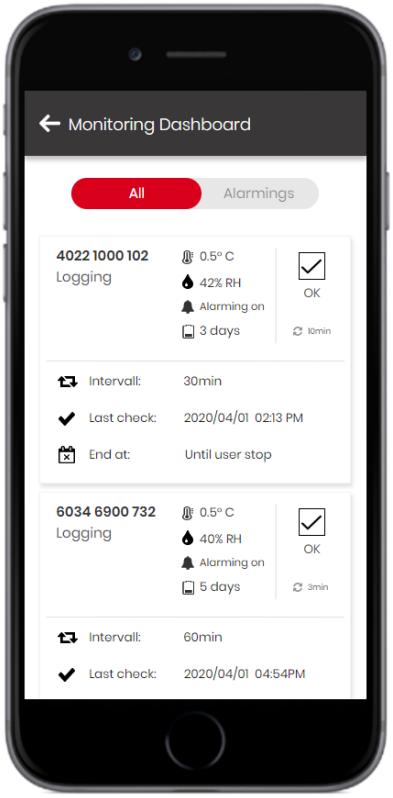
Notifications

By clicking on the message icon in the main screen's top right corner, the notifications view will open and show all messages. You can see current and past PDF Report downloads as well as Alarms.



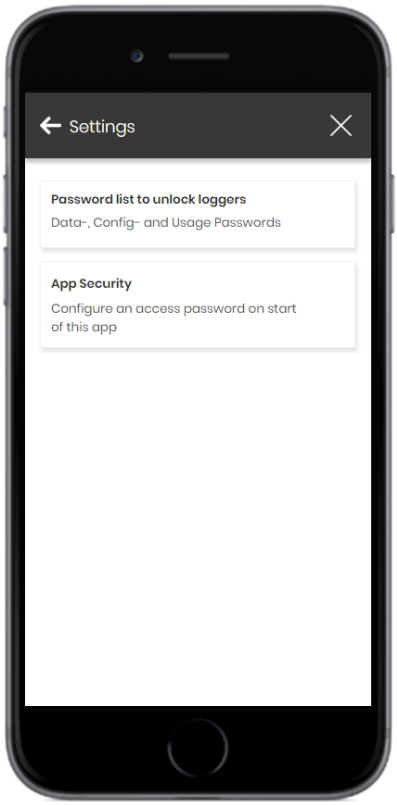
Monitoring dashboard

At the monitoring dashboard, a more detailed view for all loggers is given, and quickly filtering for loggers with alarming is possible.



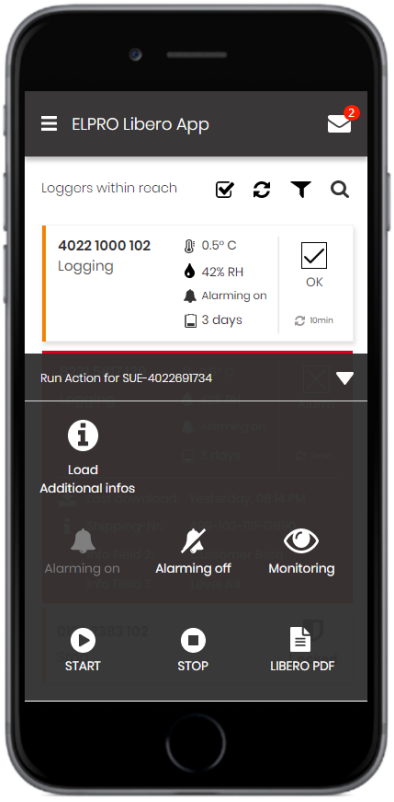
Security Settings

A password for the entire App can be set. For every Logger you can set passwords for specific access rights in order to allow for access to the settings of the logger or to see the data only.



Data logger actions

The following illustration shows all possible actions that you can run from the app, for one or more logger at the same time: Additional information, Alarming on/off, Start/Stop and get PDF Report.



7 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. Remove any batteries and dispose of them separately from the product.

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.

8 Declaration of Conformity

8.1 CE Declaration

8.1.1 LIBERO CE {new for BLE … must be updated later}

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**

Produktname | Nom du produit | Product name	**LIBERO CE**
Produkt Nr. | No de produit | Product no.	**802279**

Beschreibung | Description | Description:

LIBERO CE ist ein PDF Logger zur kontinuierlichen Temperaturüberwachung und Alarmierung, mit externem Pt100 Fühler, bis zu einer Kabellänge von 3m. | LIBERO CE est un enregistreur PDF pour la surveillance de température en continu et l'alarme, avec sonde externe Pt100, longueur maximale du câble 3m.| LIBERO CE is a PDF Logger for continuous temperature monitoring and alarming, with external Pt100 probe, maximum cable length 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:

EMV Richtlinie 2014/30/EU | Directive compatibilité électromagnétique 2014/30/UE | Electromagnetic compatibility Directive 2014/30/EU
RoHS - Richtlinie 2011/65/EU | Directive RoHS 2011/65/UE | RoHS Directive 2011/65/EU

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

EMV | Compatibilité électromagnétique | Electromagnetic compatibility	**EN 61326-1 : 2012-02**

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 25. November 2019
Buchs, le 25 novembre 2019
Buchs, November 25, 2019

ELPRO-BUCHS AG
Dirk Neumann
Leiter der Entwicklung
Chef du développement
Head of Development

we prove it

8.1.2 LIBERO CL {Must be inserted later}

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**

Produktname | Nom du produit | Product name	**LIBERO CE**
Produkt Nr. | No de produit | Product no.	**802279**

Beschreibung | Description | Description:

LIBERO CE ist ein PDF Logger zur kontinuierlichen Temperaturüberwachung und Alarmierung, mit externem Pt100 Fühler, bis zu einer Kabellänge von 3m. | LIBERO CE est un enregistreur PDF pour la surveillance de température en continu et l'alarme, avec sonde externe Pt100, longueur maximale du câble 3m.| LIBERO CE is a PDF Logger for continuous temperature monitoring and alarming, with external Pt100 probe, maximum cable length 3m.

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RoHS - Richtlinie 2011/65/EU | Directive RoHS 2011/65/UE | RoHS Directive 2011/65/EU

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

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ELPRO-BUCHS AG
Dirk Neumann
Leiter der Entwicklung
Chef du développement
Head of Development

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8.1.3 LIBERO CH {Must be inserted later}

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**

Produktname | Nom du produit | Product name	**LIBERO CE**
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Beschreibung | Description | Description:

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

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ELPRO-BUCHS AG
Dirk Neumann
Leiter der Entwicklung
Chef du développement
Head of Development

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CE

8.2 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