



TECHNICAL SPECIFICATIONS

LIBERO CS

Multi-Level PDF Data Logger with Cold Chain Database

LIBERO CS is the PDF data logger that simplifies the shipment process for products with known stability data. Supporting up to 8 alarm levels, MKT and duration as alarm criteria, the LIBERO CS allows the user to create temperature profiles for individual products. No need to keep different loggers in stock. Simply apply the correct configuration profile, add shipment information at the time of use, and send off the data logger. No equipment and no software is required. Release products based on the OK or ALARM status on the display, download the PDF report and forward it to the sender or to liberoMANAGER, ELPRO's cold chain database, for further analysis.

LIBERO CS PDF report with multi level alarm criteria

Additional Information:

This is an example PDF report of the LIBERO CS with multiple temperature zones. The system allows monitoring during the whole of the shipment process.

It has temperature information for the receiver or sender (e.g., information: e.g., Transportation Number, Country, Origin, or any other information). Adding a header to automatically generate related data can be added here.

LIBERO Configuration

Parameter	LIBERO CS	Current State	Shipped
Device ID	71000000000000000000	Start at	14 Sep 2012 10:23:51
Log Interval	15 min	Temp Measurement	14 Sep 2012 11:03:51
Alarm Time Delay	15 min	Checksum	12345678901234567890
Configured By	ELPRO / Partner	14 Sep 2012 08:17:04	

Alarm Zone

Alarm Zone	Alarm Time	Total Time	No. of Events	Alarm Level	Status
AL1: over 40.0 °C	0.0 min	0.0 min	0	1	OK
AL2: over 40.0 °C	0.0 min	0.0 min	0	1	OK
AL3: over 40.0 °C	0.0 min	0.0 min	0	1	OK
AL4: over 40.0 °C	0.0 min	0.0 min	0	1	OK
AL5: over 40.0 °C	0.0 min	0.0 min	0	1	OK
AL6: over 40.0 °C	0.0 min	0.0 min	0	1	OK
AL7: over 40.0 °C	0.0 min	0.0 min	0	1	OK
AL8: over 40.0 °C	0.0 min	0.0 min	0	1	OK

MKT Limits and Maximum Duration

Parameter	LIBERO CS	Alarm Condition
Duration	0.0 min	None
MKT	0.0 min	None

Logging Results

Parameter	LIBERO CS	Alarm at
Highest Temperature	30.0 °C	14 Sep 2012 10:23:51
Lowest Temperature	10.0 °C	14 Sep 2012 10:23:51
Average Temperature	19.0 °C	14 Sep 2012 10:23:51

Temperature graph with alarm limits

The graph shows temperature over time, with a peak at 30.0 °C and a trough at 10.0 °C. The alarm limits are indicated by horizontal lines at 40.0 °C and 0.0 °C.

LIBERO CS PDF Data Logger

LIBERO CS PDF Report

Callouts:

- USB Interface
- Any configuration on one device
- Secure Start/Stop button
- Auto expiry date management
- LIBERO CS PDF Data Logger
- LIBERO CS PDF Report
- Temperature graph with alarm limits
- MKT and duration
- Multi-level alarm statistics
- Shipment information
- OK and ALARM indicator

we prove it.

SWISS QUALITY



- > Simple and safe, no equipment, no software
- > Quick implementation, also by 3rd parties
- > Compatible with liberoMANAGER cold chain database
- > 100% calibrated sensors and electronics
- > Fully compliant with industry guidelines

Technical Specifications LIBERO CS

Type	PDF Data Logger with multiple alarm levels	
Application area	Cold Chain Monitoring – applications with stability data or other allowed time/temperature excursions	
Recording options and mode	Single use: start/stop mode	
Operating range	-30 °C..+70 °C	
Measurement accuracy	The LIBERO CS is the most accurate data logger among its peers and features a guaranteed accuracy of ± 0.4 °C in the core range of 0.0 °C to 25.0 °C. The typical accuracy (95 % of all LIBEROs) is even better with ± 0.3 °C in the core range.	
	Accuracy over full temperature range: ± 0.4 °C from 0.0 °C to +25.0 °C ± 0.5 °C from -10.0 °C to -0.1 °C as well as +25.1 °C to +35.0 °C ± 1.0 °C from -30.0 °C to -10.1 °C as well as +50.1 °C to +70.0 °C	
Resolution	0.1 °	
Measurement interval	1 to 60 minutes, user programmable	
Memory capacity	24.200 measurement values (equals 168 days run time with 10 min interval)	
Expiry date & battery life	<ul style="list-style-type: none"> - Data logger can be started any time during shelf life. - Started data logger runs until memory is full or data logger is stopped (max. expiry date +30 days). - Auto expiry date management: After expiry, display changes status and data logger cannot be started anymore. - Use below 0 °C and above +40 °C for prolonged times can limit battery life. 	
Battery type	Button cell contained in equipment, UN3091, exempt from DGR declaration	
Certificate	ILAC / NIST / ISO 17025 traceable production calibration certificate	
Programmable alarms	<ul style="list-style-type: none"> - 8 temperature alarm levels with single or cumulative delays - 2 temperature thresholds with alarm delay 	<ul style="list-style-type: none"> - Alarm on MKT - Alarm on duration / run time
Start-up delay	0 minutes to 24 h	
Display	Multifunction LCD, size: 23.5 × 23.5 mm, with large OK and ALARM indicator	
Display functionality	<ul style="list-style-type: none"> - Status: Conf, Start, Run, Stop - OK, ALARM, or blank 	<ul style="list-style-type: none"> - Current temperature measurement - Configuration profile identification
Report	Built-in PDF file generator automatically establishes an evaluation report with embedded data upon connection to USB port. 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. <ul style="list-style-type: none"> - Customizable report title and filename. - Text area for additional information (shipment information, instructions for recipient, etc.). - Statistics (min/max, average, alarm) and detailed logger information (ID, configuration, etc.). - Chart visualizing the temperature curve and alarm limits. 	
Traceability	ID number (traceable to component level)	
Case dimension weight IP code	ABS plastic material 96 × 37 × 11 mm (3.8 × 1.5 × 0.5 inch) 38 g (1.34 oz) IP54	
Certifications	CE EN12830 EMC RTCA DO-160 RoHS WHO-PQS Safe Transport of Chemical Goods	
Data logger configuration and analysis software	liberoCONFIG and SmartStart software to create, store, and manage individual settings in a settings profile. liberoMANAGER database as cloud service to store shipment reports and results, analyze shipments, manage release status, and trigger customer specific workflows in cold chain processes. elproVIEWER software to access and export embedded data of PDF report, for data analysis and comprehensive report features (for users nor using liberoMANAGER).	