Measuring instruments and systems

64.3 % rH

225 ℃

56.9 ℃

- 10.6 ℃

12.2 ℃

- 3.9 ℃

18 Pa

- 40.6 ℃

- 24.7 ℃

290 ℃

-45.3 ℃

12.8 ℃

48.2 % rH

105.6 ℃

23.5 ℃

67.1 % rH

4 Pa

18.3 ℃

- 89.3 ℃

18.4 ℃

12.8 ℃

- 5.7 ℃

7.2 ℃

12.07 09:54 18.5 ℃

12 Pa

121.0 ℃

18.6 ℃

05.09 13:27

174.5 ℃

53.1 % rH

- 9.4 ℃

Logging
Arrived ✓

- 10.7 ℃

23.5 %rH

SENSOR 2

Bat.End 63d

Min
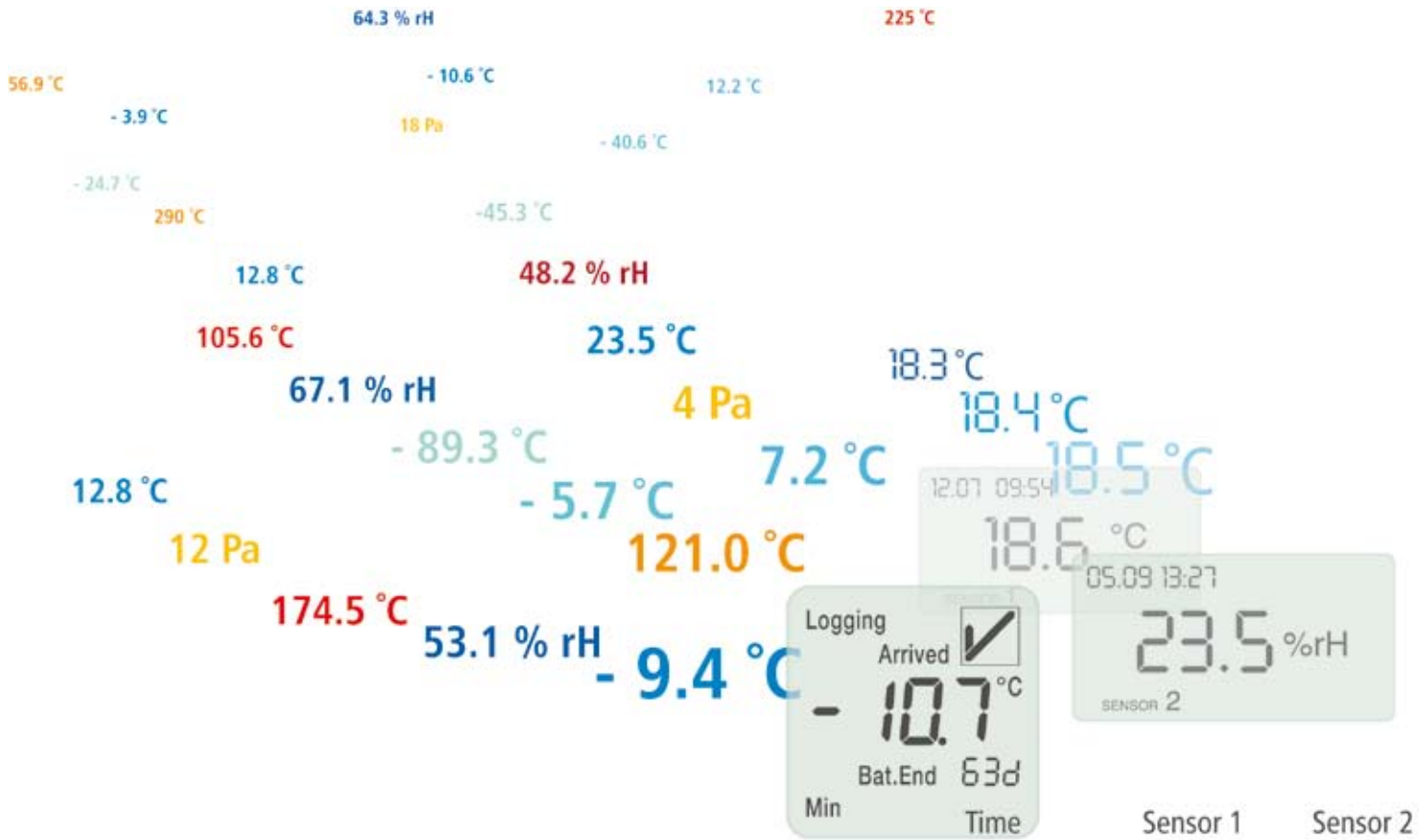
Time	Sensor 1	Sensor 2
13:34:20	+29.9 °C	+31.2 °C
13:35:20	+30.0 °C	+31.4 °C

ISO 9001
QUALITY ASSURED FIRM
SGS
80013

ELPRO™ **Datalogging**Company

Data**Logging**

THE VISION …

In 1987, ELPRO-BUCHS AG recognized the more demanding requirement of life science, pharmaceutical and industrial research laboratories, museums, and storage facilities worldwide:

…to monitor, record and document temperature, humidity or other physical values independent of cables and connectors.

Through personal commitment and expertise, the company mastered the technical challenges and introduced the HAMSTER – the trend setting forerunner for a new generation of measuring instruments known as dataloggers.

THE COMMITMENT …

The vision grew steadily as new ideas and ELPRO datalogger products were developed step-by-step: HAMSTER, HOTDOG, HOTBOX, ECOLOG and elproLOG software. All ELPRO products are developed and manufactured in compliance with the highest quality requirements.

Technical progress has resulted in a fast-moving, short-product-cycle climate. Yet, we are committed to continuous upward compatibility. It is even possible to read 1989 pioneer HAMSTER modules with present-day infrared interfaces and the most up-to-date Windows® operating system. ELPRO continues to optimize technology as it identifies the changing requirements of customers and regulations.

Windows® is a registered trademark of Microsoft Corporation.

Requirements for documentation processes are redefined continuously. Non-manipulation of data and saved files, individual access rights and alarms with internal system monitoring were required and are now ensured. Monitor programs display currently measured values; web servers make these values available to authorized personnel while sending alarm information to selected receiving devices and a broad range of media.

Today, ELPRO offers innovative and optimized solutions for most types of applications. From small, fully automated dataloggers to sophisticated systems with alarming and printing functions for mobile or stationary uses. Networkable dataloggers with Ethernet LAN or Wireless LAN connectivity allow online-monitoring and seamless integration with your current network. The latest member of the ELPRO family is the LIBERO, the worlds first PDF Logger® capable of creating complete temperature reports in PDF format without any specific software.

THE WORLD OF ELPRO DATALOGGERS …

In addition to providing the latest technology and a broad range of accessories, qualified employees in Switzerland, the USA / Canada and Germany deliver the services you expect. From consultation to calibration, from software validation to system qualification. Even complete documentation of temperature distribution inside a warehouse or within a manufacturing process is provided by our GMP-experienced employees.

With more than 100'000 loggers supplied and over 20 years of continuous software development and enhancement – this is **the world of ELPRO dataloggers.**

INSTALLATIONS, …

… retrofits and upgrades: On request, our specialists will install your new datalogger system, a retrofitted system or an upgrade to your existing system. If you prefer, you may use our documentation to perform the installation and qualification.

TRAINING AND SUPPORT

Our technicians will train your personnel in the optimal use of the dataloggers and software. We also offer basic courses on a regular basis. Contact your distributor or visit www.elpro.com for additional information.

APPLIKATIONEN
APPLICATIONS

LAGERRÄUME
WAREHOUSES
DEPOTS

KÜHL- & WÄRMEPROZESSE
LOW TEMPERATURE &
HEATING PROCESSES
PROCESSUS THERMIQUE

PRODUKTION
REINRÄUME
PRODUCTIONS
CLEAN ROOMS
PRODUCTIONS
SALLES
BLANCHES

TRANSPORTE
VERSAND
TRANSPORTS
SHIPMENT
LOGISTIQUE
EXPEDITION

MESS-SYSTEME
MEASUREMENT SYSTEMS SYSTEME DE MESURE
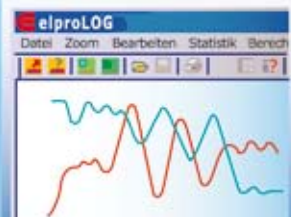
SPEICHERN
STORAGE
STORAGE

MESSEN
MEASURING
MESURER

ÜBERWACHUNG
MONITORING
SURVEILLANCE

ALARM
ALARME

elproLOG LOGICIEL
SOFTWARE

elproLOG
Datei Zoom Bearbeiten Statistik Bereich

DOKUMENTATION
DOCUMENTATION

ANALYSE

online
12.8 °C | 18.6 Pa
12.2 °C | 16.4 Pa

B.1
B
A
3.2
C
C.1

MAINTENANCE, CALIBRATION, IQ/OQ TESTS AND PROTOCOLS

We can perform these tasks on-site or you can perform them in conjunction with the documentation provided. In addition to factory calibration service, we offer an exchange program for many of our products and on-site service. All new dataloggers are covered by a two-year warranty.

SOFTWARE VALIDATION

ELPRO offers software for applications in qualified environments. The elproLOG software package fulfills the requirements according FDA / GMP / GLP / GAMP 4. The software package includes the validation documentation (IQ / OQ) with test results and simple step-by-step instructions.

GLOBAL PRESENCE

We provide technical support from our headquarters in Switzerland and from our offices in the USA / Canada, Germany and the United Kingdom.
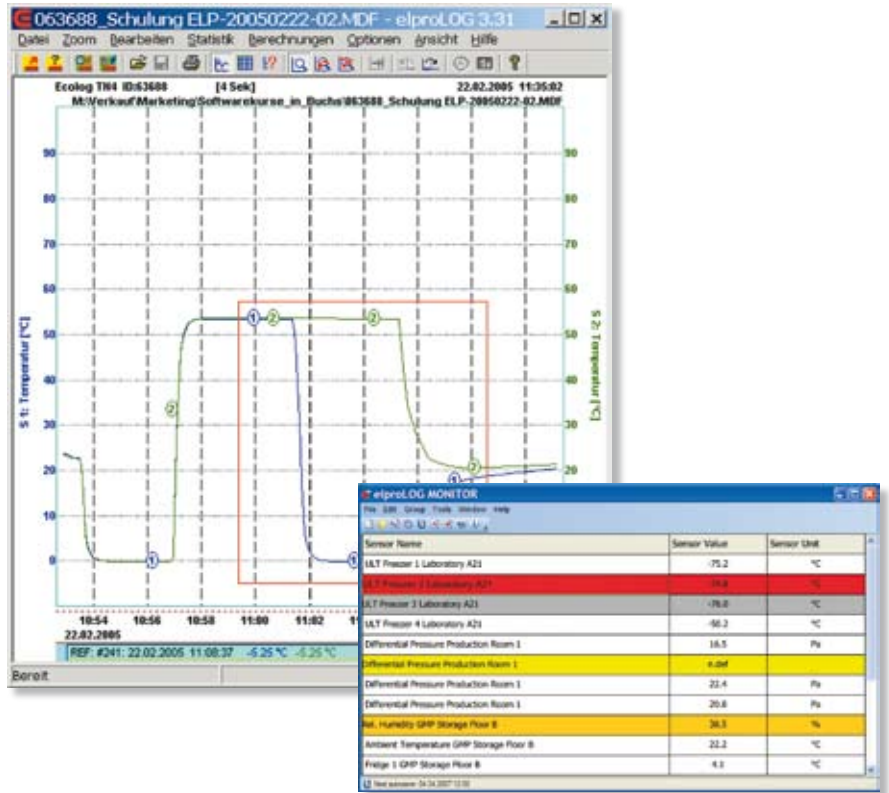We also work closely with many distributors in Europe, Asia and South America to ensure worldwide knowledge and service.
Please visit www.elpro.com to locate your distributor's contact information.

Made in Switzerland – for 20 years

FROM SIMPLE DATALOGGER
TO MONITORING SYSTEM

ELPRO offers easy-to-use software for fast, efficient data evaluation and reporting. In addition, network components provide immediate online information and data analysis. Measured values are displayed and alarms are forwarded in real-time via the LAN / Wireless LAN network. The software helps you comply with the provisions of 21 CFR Part 11, GMP, GAMP 4 and GLP.
And the detailed validation manual includes IQ / OQ templates for software and dataloggers, as well as sample Standard Operating Procedures (SOPs).

- **Software for self-contained systems**
- **Software for networks**
- **Software for qualified environments**

elproLOG FUNCTIONS

- **Programming for all ELPRO dataloggers**
- **Data readout from datalogger**
- **Hardcopies of all screens with print preview**
- **Clearly laid-out graphs and tables**
- **Min, max values displayed**
- **Status printout with information about the datalogger**
- **Statistical data**
- **Histogram representation**
- **Dew point, F-value, multi-curves, free color choice**
- **Superimposing**
- **MKT (Mean Kinetic Temperature), Arrhenius calculation**
- **Zooming**
- **Drawing marking lines**
- **Own company logo on all documents**
- **Data and graph export**
- **E-mail: send data file via e-mail to receiver**

SECURITY FEATURES

- **Software validation with ELPRO validation manual for 21 CFR Part 820**
- **Non-manipulation of data and saved files – coded data transfer from logger to PC**
- **Multi-path transmission with check sums**
- **Compact, coded data file**
- **Logger programming protection with pin code**
- **Compliance with FDA 21 CFR Part 11**
- **Automatic AUDIT TRAIL creation at datalogger readout**

Data**Logger**

LIBERO Ti1 THE INDEPENDENT ONE

**Temperature data evaluation
without any software**

Libero makes cold chain monitoring of temperature-sensitive products easier than ever before. The datalogger itself produces the evaluation report (PDF/A file) as soon as it is plugged into the USB port of any PC – anywhere in the world.

- **Self contained datalogger for temperature**
- **Libero Ti1: Multiple use on 400 days during 3 years; on/off functionality Libero Ti1-S: Single use, battery life: 100 days**
- **PDF file generator; USB Interface**
- **Measuring range: -35° .. + 70°C**
- **Accuracy: ± 0.2° (-10° .. +25°C)**
- **Memory: 16'000 temperature data points**
- **Alarm: 2 limit values or 5 alarm ranges**
- **Large, multifunctional display**
- **Mass: 95 x 40 x 12 mm, weight: 40 g**
- **Detailed analysis with elproLOG software**

Visit **www.pdf-datalogger.com**
for more information on the Libero PDF Logger®.

HAMSTER-E THE SMALL ONE

HAMSTER-E is the starter model.
Its proven measuring technology is well suited for simple temperature and relative humidity recording.
Available with a large display, internal or external sensors and alarm display, HAMSTER-E can be used for a wide range of applications.

- **Self contained datalogger for temperature and humidity**
- **Memory for 32'000 data points**
- **Recording interval programmable from 10 s - 3 hrs**
- **Programmable alarms**
- **Alarm and status display**
- **Battery lifetime 2 years, user replaceable**
- **Infrared communication**

Various models with specific functions available.

ECOLOG THE ALL-ROUNDER

The ECOLOG provides temperature and humidity logging for the demanding user. Versatile programming and alarm functions make the ECOLOG an all-purpose instrument.

- **Self-contained datalogger for temperature (NTC, PT100) and humidity**
- **Large memory for 64'000 data points**
- **Recording interval programmable from 1 s - 3 hrs**
- **2 - 4 channels**
- **Programmable alarms with alarm output**
- **Large display with auto-scroll**
- **Multifunctional keypad**
- **Wide selection of probes, brackets and alarm devices**
- **Fast readout to PC and printer**

Various models with specific functions available.

Refer to page 7 for a definition of each icon.

Data**Logger**

ECOLOG-NET THE NETWORK ONE

ECOLOG-NET is a reliable, self-contained data recording instrument with state-of-the-art network technology.
Designed for reliable and safe logging of temperature, humidity and 4-20 mA sensor signals, ECOLOG-NET is the foundation of the ELPRO central monitoring system.

- **Networkable datalogger for temperature, humidity and 4-20mA signals for logging differential pressure, CO_2, particles, etc**
- **Central, automated evaluation of all measured data in network**
- **Integrateable in existing infrastructure**
- **Memory for 64'000 data points**
- **Recording interval programmable from 4 s - 3 hrs**
- **Autonomous logging, high data security even during a power failure**
- **4- or 8-channel datalogger**
- **Extensive alarm and reporting function**
- **Display / auto-scroll / keypad**

Various models with specific functions available.

HOTBOX SE THE MOBILE ONE

All-purpose HOTBOX SE is ideal for service technicians to use at locations where fast, uncomplicated logging of process data is required. The programmable HOTBOX SE measures parameters such as temperature, humidity, CO_2, differential pressure, pressure and various signals.

- **Self-contained datalogger for temperature, humidity, voltage and current signals**
- **Large memory for 64'000 data points**
- **Recording interval programmable from 1 s - 3 hrs**
- **Universal sensor connections**
  - **for NTC temperature probes**
  - **for 4-20 mA signals**
  - **for DC signals**
- **Programmable alarms with alarm output**
- **Auto-scroll display**
- **Power supplied by internal batteries (2 x 9 V = 18 V)**
- **Connection for protocol printer**

ECOLOG-BT/HS THE TIGHT ONE

The ECOLOG-BT TN4 and ECOLOG-HS TN4 are 4 channel temperature dataloggers. Designed for exterior use, with a watertight and rugged housing, the instruments are available with either RS232 interface or integrated Bluetooth communication.

- **Self-contained temperature datalogger**
- **Large memory for 64'000 data points**
- **Recording interval programmable from 1 min - 3 hrs**
- **4 channel datalogger**
- **Designed for data exchange with existing communications systems using the Bluetooth-interface**
- **Programmable alarms with alarm output**
- **Auto-scroll display**
- **Inputs for recording digital states**
- **Can be connected to external supply systems (12/24 V)**
- **Rugged design**

Standards

HAMSTER-A THE EXTREME ONE

HAMSTER-A is the enhanced and compatible version of the HOTDOG DT1. It is a proven performer under harsh conditions. Watertight and virtually indestructible, HAMSTER-A is the ideal instrument for transport documentation for applications in tough environments.

- **Self-contained temperature datalogger**
- **Large memory for 64'000 data points**
- **Recording interval programmable from 1 min - 3 hrs**
- **Washable, submersible to 10 meters**
- **Battery lifetime up to 5 years, factory replaceable**
- **Full range of accessories**
- **Infrared communication**

HOTBOX Special

HTH

HTN

HOTBOX HTH Datalogger
Logging temperature and humidity plus one high temperature

- **Self contained datalogger for humidity and temperature**
- **Measuring range: 0% .. 100% rH, -35°C .. +105°C**
- **Large memory for 64'000 data points**
- **Robust aluminum housing**

HOTBOX HTN Datalogger
Logging drying and pasteurization processes

- **Self contained datalogger for temperature**
- **Operating range: -50°C .. +110°C**
- **Measuring range: -50°.. +140°C**
- **Large memory for 64'000 data points**
- **Robust aluminum housing**

DIRECTIVES & STANDARDS

ISO 9001: 2000
SGS certificate no. CH98/0013

ATEX
SNCH 01 ATEX 3280/Directive 94/9/EC

EX1, CE 0499
Approval for EX protection zone 1
(EN 50014 and EN 50020)

CE
EN 50081-2 and EN 50082-2

EN12830/EN13485/EN13486
Temperature recorder for transport, storage and distribution of foodstuffs and products

GZ1480
Exceptional approval for calibration GZ1480/2000 from 10.4.2000, BEV, Austria

INTEGRATED REGULATIONS AND RECOMMENDATIONS

GMP/GLP/GAMP 4
Software validation in compliance with
21 CFR Part 820, Electronic records
21 CFR Part 11, 21 CFR Part 210/211,
21 CFR Part 110, 21 CFR Part 58

EG/EU
Directive (EC) 37/2005
Directive 2002/95/EC (RoHS)

HACCP
Hazard Analysis Critical Control Points

EXPLANATION OF ICONS

Temperature | humidity | pressure measurement

Gas | wind | comfort measurement | universal 4-20 mA inputs

Networks | Bluetooth

Alarm functions: display alarm | alarm output | central alarming

IP protective class | EEx-certified

USB stick for PC | Report as PDF file

21 CFR Part 11

ELPRO Customers

The following companies use ELPRO products:

3M, ABB, Agfa, Alfa Romeo, Akzo Nobel, Aldi, Altana, American Red Cross, AMD, Bauknecht, Bahlsen, Barilla, BASF, Baxter, Bayer Schering Pharma, Berna Biotech, Biostorage Technology, Boehringer Ingelheim, BoFrost, Cadbury, CeramTec, Chiron, Ciba, Coop, CSL Behring, Daimler Chrysler, Danzas, DRK, DuPont, Emmi, EMPA, Genzyme Corporation, Glaxo Smith Kline, Heraeus, Holcim, Human Genome, Kodak, Langnese, Lidl, Linde, Maggi, Mars, McDonalds, Merck Serono, Merckle Ratiopharm, Migros, Museum Bern, KVK Nagel, Nestlé, Novartis, Novo Nordisk, OC Oerlikon Balzers, Pharmacia, Philip Morris Products, Ricola, Robert Bosch, Roche, Rolex, Sanofi Aventis, Securit, Siemens, Suchard, Swissmedic, Thermo, Toblerone, UPS, Wyeth Pharma and numerous offices, institutes and universities – Just request our up-to-date list of references!

Service Quality

- **ISO 9001 quality system**
- **Vendor and internal audits**
- **Expert systems**
- **Own production and development**
- **Own calibration laboratory**
- **Calibration according to all standards**
- **Customer calibration service**
- **Modern facilities**
- **Datalogger service since 1989**
- **Repair service**
- **IQ/OQ qualifications**
- **Temperature mapping service**
- **Worldwide distributors**
- **Return of ELPRO instruments and batteries for eco-friendly disposal**

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Switzerland
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