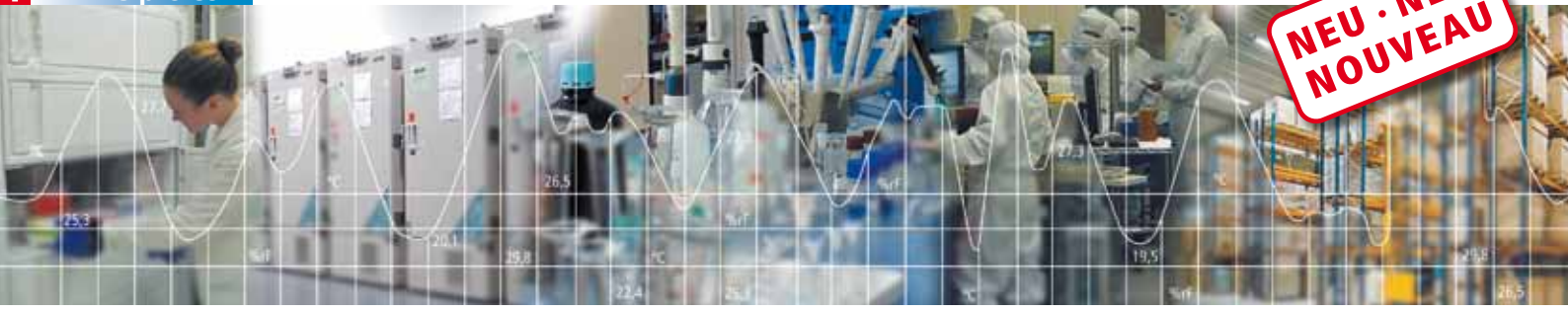


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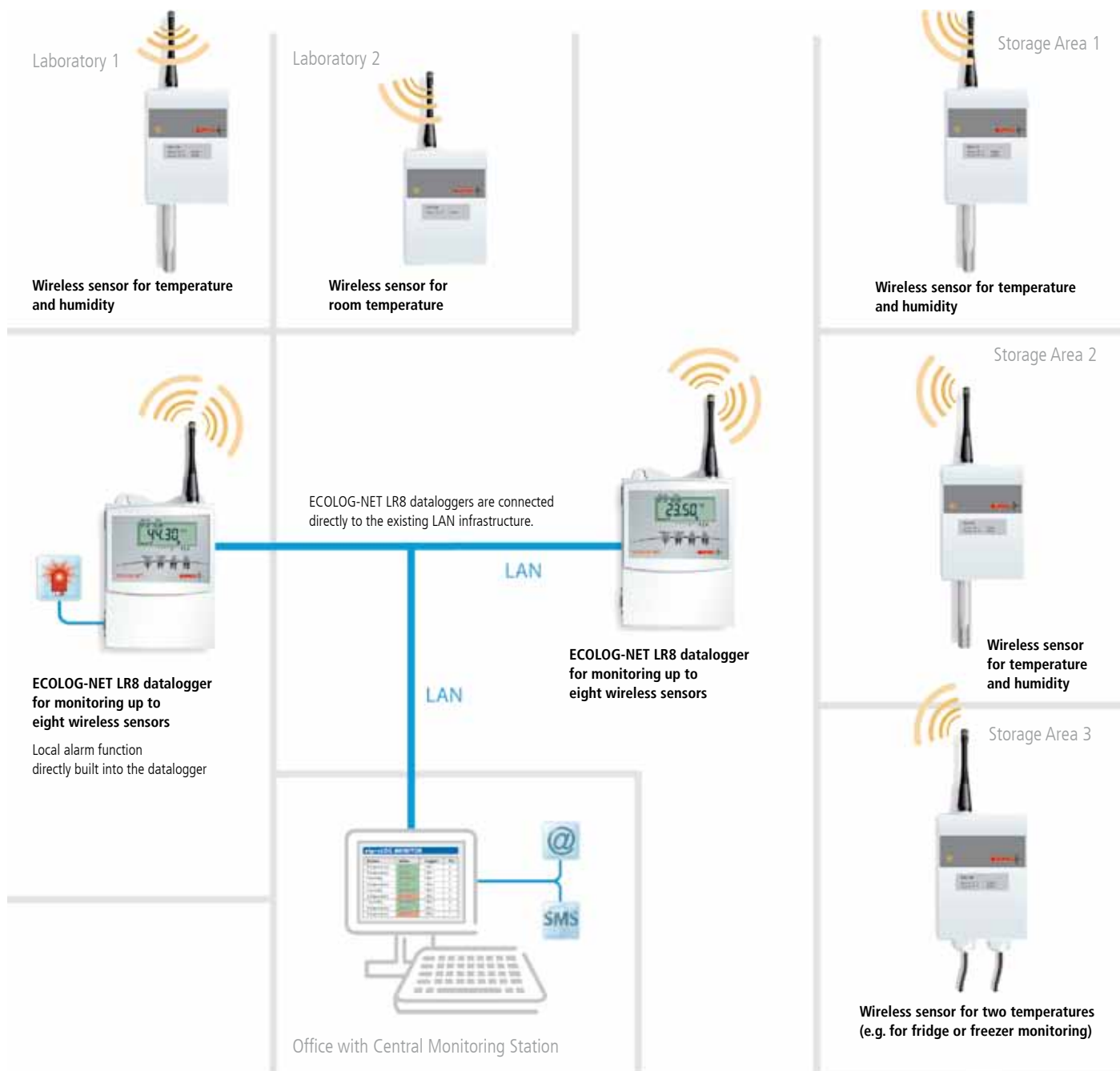


ECOLOG-NET Wireless Temperature and Humidity Monitoring



Reliable, Flexible and Compliant Wireless Temperature and Humidity Monitoring

ELPRO's new wireless monitoring system provides the reliability of the original ELPRO Central Monitoring System with added flexibility of wire-free sensors. The wireless sensors transmit their signals to the receiving station, ECOLOG-NET LR8, where the data is stored and forwarded onto the LAN network for alarm and real-time information.



dependable and accurate monitoring

One System for Many Applications.

Move equipment freely without relocating wires and monitor equipment where no sensor cable can be routed. This is now possible with the new ELPRO wireless sensor system: the ideal solution for the pharmaceutical and biopharma industry, hospitals, medical institutes and for the food industry.



Warehouses

The ELPRO Central Monitoring System offers ideal possibilities for the secure monitoring of storage processes.



Laboratories and Biorepositories

Fully automatic monitoring of refrigerators, freezers, ultra-low freezers, liquid nitrogen storage or incubators.



Production

24/7 monitoring of temperature and humidity in production processes.

Your advantages

- **Easy Installation:**
No wiring of sensors required
- **One or two-channel wireless sensors** for optimum system utilization
- **Flexible:**
Move equipment freely without relocating wires, monitor equipment where no sensor cable can be routed
- **Intuitive:**
No expensive start-up equipment to purchase since wireless sensors can be combined with ELPRO's existing central monitoring system
- **Scalable:**
Additional sensors can be added easily at any time
- **Compliant:**
cGMP, cGLP, GAMP5, FDA 21 CFR Part 11, Annex 11 and HACCP
- **Swiss quality and global presence** for installation, qualification and calibration services

The system components

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Simple Solutions for Wireless Monitoring



The ECOLOG-NET wireless sensor system consists of different, multifunctional components: wireless sensors and the ECOLOG-NET LR8 receiving station. On one side, the wireless sensors transmit either one or two temperatures or combined temperature and humidity. On the other side, the ECOLOG-NET LR8 receiving station receives signals from the sensors, then stores and analyzes the data. To ensure instant access to all your important measurements from any PC in your company, the data is forwarded onto the LAN network for alarm and real-time information.




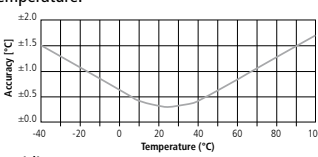
The latest radio technology with impressive performance characteristics (open field range up to 1000 m) ensures reliable connections at all times and uninterrupted access to your important measurement data.

ECOLOG-NET LR8 Wireless datalogger



The ECOLOG-NET LR8 is the receiving station for the ELPRO wireless sensors. Each instrument can monitor up to eight wireless signals and reliably stores the received data in the built-in memory. Thanks to its LAN connectivity, the ECOLOG-NET LR8 integrates seamlessly into your existing network infrastructure. This means you can review and analyze recorded temperature and humidity in real-time from any PC in your company.

Number of channels	8
Frequency range	<ul style="list-style-type: none"> • EU: 433 MHz / 868 MHz, configurable • US: 915 MHz
Range	<ul style="list-style-type: none"> • Open field: up to 1000 m • Within buildings: app. 40-80 m (depending on the structural conditions)
Operating temperature	-30°..+55°C
Connectivity	LAN and USB connection
Memory	64'000 data points, non-volatile
Data security	Built-in backup battery for uninterrupted operation during power failures
Display	Large LCD for measurement values and alarm information
Alarm functions	<ul style="list-style-type: none"> • Local alarm at the datalogger (to connect alarm flashes or dialing units) • Alarm forwarding via e-mail, text messages, telephone or building management systems • Alarm indication on the LCD
Power supply	10..30 VDC
Validation certificate	✓
Part No.*	ECOLOG-NET LR8 2717-EU; 2717-US

	RT1i Wireless sensor	RT1e RT2e Wireless sensors	RTH1i RTH1e Wireless sensors
			
Sensor type	1 x Temperature, internal	RT1e: 1 x Temperature, external RT2e: 2 x Temperature, external	1 x Temperature and humidity
Typical application	<ul style="list-style-type: none"> Monitoring of warehouses and production conditions General room climate documentation 	<ul style="list-style-type: none"> Monitoring of fridges, freezers, ultra-low temperature freezers, liquid nitrogen storage or incubators Monitoring of warehouses/production conditions General room climate documentation 	<ul style="list-style-type: none"> Monitoring of room climate during storage or production Monitoring of climate chambers and incubators
Accuracy	±0.4°C: -10°..+25 °C ±0.65°C: -30°..-10.1 °C ± 0.65°C: +25.1°..+55 °C	±0.3°C: -10°..+25°C ±0.5°C: +25.1°..+200°C / -200°..-10.1°C System accuracy with PT100 DIN A probe: ±0.4°C (-10°..+25°C)	Temperature:  Humidity: ±1.8% 10..90%; ±4%: <10%, >90%
Measurement range	-30°..+55°C	-200°C..+200°C	-30°..+55°C; 0..100%
Sensor cable length	—	20 m	3 m (RTH1e)
Measuring principle	PT100, 3 or 4 wire		Combined, integrated T/rH measurement
IP protective class	IP54		IP50
Operating temperature	-30°..+55°C; non condensing		
Battery lifetime	3 years; monitoring of wireless sensor battery status (via elproLOG MONITOR)		
Power supply	3 x Lithium 3.6 V		
Frequency range	<ul style="list-style-type: none"> EU: 433 MHz / 868 MHz, configurable US: 915 MHz 		
Validation certificate	✓	✓	✓
Bracket	✓	✓	✓
Part No.*	RT1i 3456-EU; 3456-US	RT1e 3452-EU; 3452-US RT2e 3454-EU; 3454-US	RTH1i 3450-EU; 3450-US RTH1e 3458-EU; 3458-US

* EU: 433 MHz / 868 MHz; US: 915 MHz

The wall-mount bracket
is included with every wireless sensor and allows an easy mounting of the sensor.



Dependable real-time monitoring made easy



Now you can review and analyze recorded temperature and humidity data from any PC in your company.

The ELPRO software is an out-of-the-box and easy-to-use system, developed at ELPRO in a GMP-compliant development life-cycle. Contact us today and join the many pharmaceutical and biopharma research labs, food manufacturers and distributors, hospitals, medical institutes and warehouses relying on ELPRO's advanced datalogging solutions.

Alarm

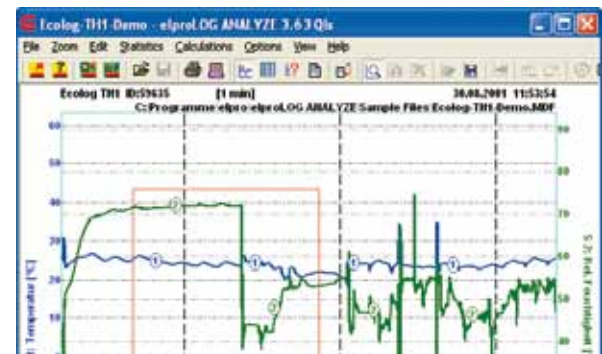
- Real-time display of readings and alarms
- Alarm and warning notifications
- Audible and visual alarm functionality at local computer
- Forwarding of alarms and warnings via e-mail, telephone, SMS/Fax
- Alarm acknowledgement functions
- Automatic data archiving
- Self-monitoring for highest system security

Sensor Name	Sensor Value	Sensor Unit
ULT Presser 1 Laboratory A21	-75.2	°C
ULT Presser 2 Laboratory A21	18.8	°C
ULT Presser 3 Laboratory A21	-76.0	°C
ULT Presser 4 Laboratory A21	-50.2	°C
Differential Pressure Production Room 1	16.5	Pa
Differential Pressure Production Room 2	16.5	Pa
Differential Pressure Production Room 1	22.4	Pa
Differential Pressure Production Room 1	20.8	Pa
Rel. Humidity GMP Storage Floor B	38.5	%
Ambient Temperature GMP Storage Floor B	22.2	°C
Fridge 1 GMP Storage Floor B	4.1	°C

Real-time monitoring and alarm forwarding with elproLOG MONITOR

Analysis and documentation

- Configuration of ELPRO dataloggers
- Clearly laid-out graphs and tables
- Multiple zooming functions
- Statistical data: min/max, mean value, standard deviation, variance
- Graph superimposing
- MKT (Mean Kinetic Temperature), Arrhenius calculation
- Tools for commenting and marking data
- Complete reports in PDF format directly from elproLOG ANALYZE

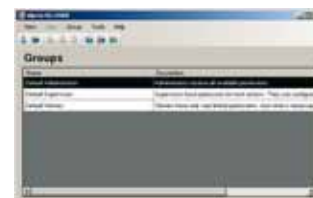


Data analysis and report generation with elproLOG ANALYZE / ANALYZE QLS

Working in a regulated industry?

Specifically tailored towards meeting the requirements of regulated industries, ELPRO offers software modules for controlling access to the software or a central audit trail for complete traceability. In addition, the software module elproLOG MONITOR WebAccess allows web-based data access via Intranet/Internet.

Please contact us for more information or see our software overview elproLOG SUITE, SE1010 for more information.



User management with elproLOG USER



Web Visualization with elproLOG MONITOR WebAccess

Event ID	Event Name	Event Description	Event Date	Event Time	Event User
1	Temperature Change	Temperature in Lab 10 changed from 20.0 to 22.0	2007-10-10	10:00:00	Admin
2	Humidity Change	Humidity in Lab 10 changed from 40% to 45%	2007-10-10	10:05:00	Admin
3	Pressure Change	Differential Pressure in Lab 10 changed from 15.0 to 16.5	2007-10-10	10:10:00	Admin

Central audit trail functionality with elproLOG EVENT

Ready-to-go sets

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Set 1

Monitoring of room temperatures, fridges or freezers



- 1x ECOLOG-NET LR8
- 1x power supply 2750-V24 (not shown)
- 2x RT1i wireless temperature sensor
- 1x RT2e wireless temperature sensor
- 3x wireless sensor bracket
- 2x 3167-LO3 PT100 sensor
- 1x elproLOG SUITE START QLS
- 1x 2758 cable set (not shown)

Set 2

Room climate monitoring in storage and production processes



- 1x ECOLOG-NET LR8
- 1x power supply 2750-V24 (not shown)
- 2x RT1i wireless temperature sensor
- 2x RTH1i wireless sensor for temperature and humidity
- 4x wireless sensor bracket
- 1x elproLOG SUITE START QLS
- 1x 2758 cable set (not shown)

Set 3

Room climate monitoring in storage and production processes



- 1x ECOLOG-NET LR8
- 1x power supply 2750-V24 (not shown)
- 4x RTH1i wireless sensor for temperature and humidity
- 4x wireless sensor bracket
- 1x elproLOG SUITE START QLS
- 1x 2758 cable set (not shown)

Set 4

Monitoring of fridges and freezers



- 1x ECOLOG-NET LR8
- 1x power supply 2750-V24 (not shown)
- 4x RT2e wireless sensor for temperature
- 4x wireless sensor bracket
- 8x 3167-LO3 PT100 sensor
- 1x elproLOG SUITE START QLS
- 1x 2758 cable set (not shown)



DIRECTIVES & STANDARDS

ISO 9001: 2008

SGS certificate no. CH98/0013

ATEX

Approval for EX protection zone 1

EN 60079-0:2006

EN 60079-11:2007, EN 1127-1:2007

CE

EN 61000-6-2:2006 and EN 61000-6-4:2006

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

& RECOMMENDATIONS

GMP/GLP/GAMP 5

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

SERVICE & QUALITY

- ISO 9001 quality system
- SCS calibration laboratory
- Vendor and internal audits
- Expert systems
- Own production and development
- Calibration according to all standards (ISO 17025)
- 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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