ECOLOG Data Sheets

Status May 2015

Price list on demand
Subject to alterations

ELPRO

ECOLOG TN2
Part No. 800427
- For 2 NTC sensors, external: -50 °C..+140 °C, internal: -35 °C..+55 °C
- Alarm output
- External start, alarm reset, InPos detection (with special connector)

ECOLOG TN3-P
Part No. 800429
- For 3 NTC sensors, external: -50 °C..+140 °C, internal: -35 °C..+55 °C
- Alarm output
- External start, alarm reset, InPos detection (with special connector)
- Automatic printout for data

ECOLOG TN4
Part No. 800433
- For 4 NTC sensors -50 °C..+140 °C
- Alarm output, 2 digital inputs
- 4 Button key pad, external start, alarm reset, measurement and alarm scroll
- Direct connection to printer for alarm protocol and status

ECOLOG TN4-L
Part No. 800436
- For 4 NTC sensors -50 °C..+140 °C with LEMO connector
- Alarm output, 2 digital inputs
- 4 Button key pad, external start, alarm reset, measurement and alarm scroll
- Direct connection to printer for alarm protocol and status

ECOLOG TH1 with standard sensor
Part No. 800439
- Connection for 1 integrated -35 °C..+55 °C, 0 %RH..100 %RH and/or
  up to 2 external T/RH sensors -35 °C..+55 °C/110 °C, 0 %RH..100 %RH
  or 2 NTC temperature sensors -50 °C..+140 °C
- Calibrated, interchangeable temperature and humidity sensors (Part No. 800640, 800637, 800639)
- Alarm output, 1 digital input
- 4 Button key pad, external start, alarm reset, measurement and alarm scroll
- Direct connection to printer for alarm protocol and status

ECOLOG TH2
Part No. 800450
- For 2 external, calibrated and interchangeable temperature and/or humidity sensors
  -35 °C..+70 °C, -35 °C..+55 °C/110 °C, 0 %RH..100 %RH (Part No. 800640, 800637, 800639)
- Alarm output, 1 digital input
- 4 button key pad, External Start, Alarm Reset, Measurement and Alarm Scroll
- Direct connection to printer for data and alarm printout

ECOLOG TP2
Part No. 800445
ECOLOG TP4-L
Part No. 801237
- TP2:   For 2 Pt100 sensors -200 °C..+550 °C – 4 wire system with DB15 connector
  TP4-L: For 4 Pt100 sensors -200 °C..+550 °C – 4 wire system with LEMO connector
- Alarm output, 1 digital input
- 4 button key pad, external start, alarm reset, measurement and alarm scroll
- Direct connection to printer for alarm protocol and status

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ECOLOG TN2 — Part No. 800427
ECOLOG TN3-P — Part No. 800429
Data Logger System for 1-3 Temperatures

Technical Data

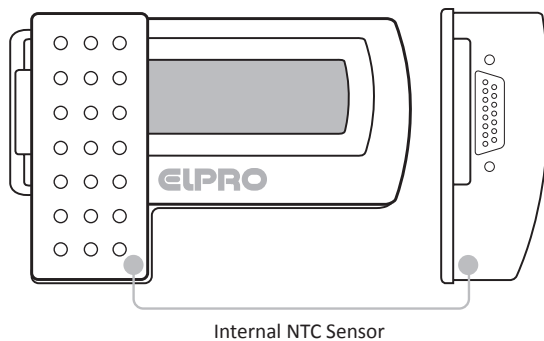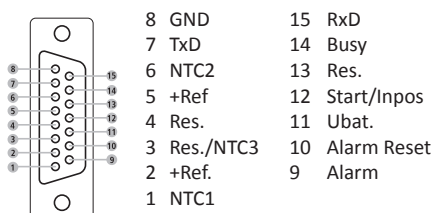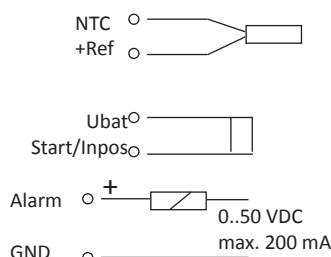|	
General:	TN2: 2 channel data logger with display and alarm functions
	TN3-P: 3 channel data logger with display and alarm functions
Case:	Thermoplastic ABS, IP54 with internal sensor and cover on DB15, suitable for foodstuff applications, 110 x 85 x 35 mm
Display:	Large LCD display, visible down to -20 °C, with alarm indication
Memory:	64'000 data points
	Loop memory or start-stop mode with external start option
Interval:	Programmable, 1 second to 3 hours
Log Period:	Days, months, years
Alarm:	External on DB15 and alarm display on LCD screen (programmable)
Operating:	-35 °C..+55 °C, display readable down to -20 °C
Measuring:	1 built-in NTC sensor -35 °C..+55 °C and/or up to 2/3 external NTC sensors -50 °C..+140 °C
Battery:	1 x Lithium 3.6 V, user-replaceable, life-span approx. 2 years
	Low-battery warning
Evaluation:	PC software elproLOG ANALYZE for all communication, reprogramming, display, statistics and printout (fast data transmission RS232 with 38'400 Baud)
Features:	Start extern and InPos with DB15 start socket, display alarm reset with DB15 reset socket
	TN2: No print function
	TN3-P: Direct printout of short protocol (serial printer RS232 with 9'600 Baud)

DB15 connector for sensors, RS232 and Alarm

Internal NTC Sensor

Accessories:	Part No.
Evaluation software elproLOG ANALYZE	800397
Data cable PC	800375
Simple fixation bracket	800531
Mounting bracket for DB15	800532
Bracket with terminals	800533
Seiko DPU414 protocol printer	800376
Data cable for Seiko DPU414	800356
DB15 socket for sensor etc.	800608
DB15 with screw terminals	800616
DB15 socket Start / Inpos	800612
DB15 socket Alarm reset	800611

DB15 Connector

8	GND	15	RxD
7	TxD	14	Busy
6	NTC2	13	Res.
5	+Ref	12	Start/Inpos
4	Res.	11	Ubat.
3	Res./NTC3	10	Alarm Reset
2	+Ref.	9	Alarm
1	NTC1		

Wiring Diagramme

NTC
+Ref

Ubat
Start/Inpos

Alarm   +
GND   0..50 VDC max. 200 mA

Simple Fixation Bracket 800531

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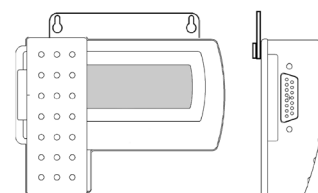
ECOLOG TN4
ECOLOG TN4-L
Data Logger System
for 1-4 NTC Sensors

Part No. 800433
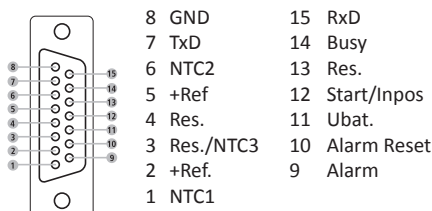
Part No. 800436

Technical Data

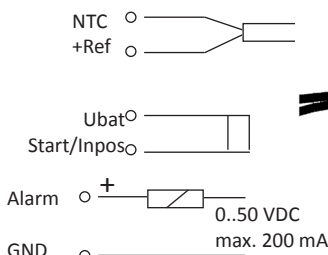|	
General:	4 Channel data logger with display and alarm functions
Case:	Thermoplastic ABS, IP52 with ext. sensor, suitable for foodstuff applications, 110 x 85 x 35 mm
Display:	Large LCD display, visible down to -20 °C, with alarm indication
Key pad:	4-keys: reset alarm, step by step data or alarm display, printout data/alarm
Memory:	64'000 data points
	Loop memory or start-stop mode with external start by using the key pad
Interval:	Programmable, 1 second to 3 hours
Log Period:	Days, months, years
Alarm:	External on DB15 and alarm display on LCD screen (programmable)
Operating:	-35 °C..+55 °C, display readable down to -20 °C
Measuring:	4 x NTC sensors -50 °C..+140 °C
Sensor connection:	TN4: DB15 connector
	TN4-L: 4 LEMO connectors 2 pin or on DB15 connector
Battery:	1 x Lithium 3.6 V, user-replaceable, life-span approx. 2 years
	Low-battery warning
Evaluation:	PC software elproLOG ANALYZE for all communication, reprogramming, display, statistics and printout (fast data transmission RS232 with 38 400 Baud)
Printer:	Direct printout of alarm protocol and status (serial printer RS232 with 9600 Baud)

DB15
connector
for
sensors,
RS232,
alarm

4 x LEMO connector

Key pad

Menu Enter ◁ ▷
I   F1   F2   F3
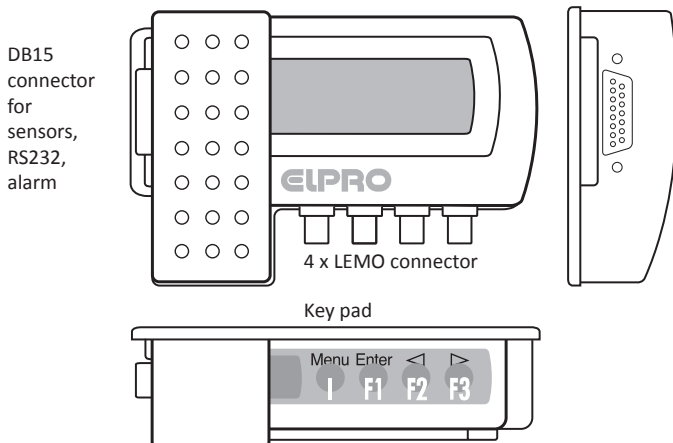
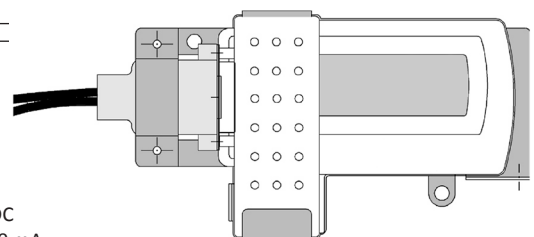| Accessories:	Part No.
Evaluation software elproLOG ANALYZE	800397
Data cable PC	800375
Simple fixation bracket	800531
Mounting bracket for DB15	800532
Bracket with terminals	800533
Seiko DPU414 protocol printer	800376
Data cable for Seiko DPU414	800356
DB15 socket for sensor etc.	800608
DB15 with screw terminals	800616
DB15 socket with built-in NTC	800609

DB15 Connector

8	GND	15	RxD
7	TxD	14	Busy
6	NTC2	13	Res.
5	+Ref	12	Start/Inpos
4	Res.	11	Ubat.
3	Res./NTC3	10	Alarm Reset
2	+Ref.	9	Alarm
1	NTC1		

Wiring Diagramme

NTC
+Ref

Ubat
Start/Inpos

Alarm   +

0..50 VDC
max. 200 mA

GND

Bracket 800532 with Alarm Cable

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ECOLOG TH1
Data Logger System
for Temperature and
Humidity
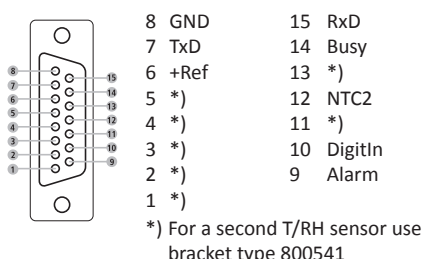
Part No. 800439

Technical Data

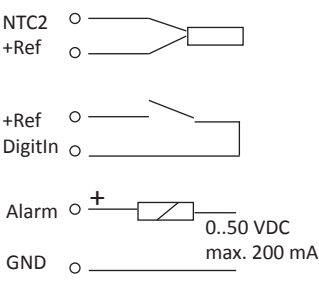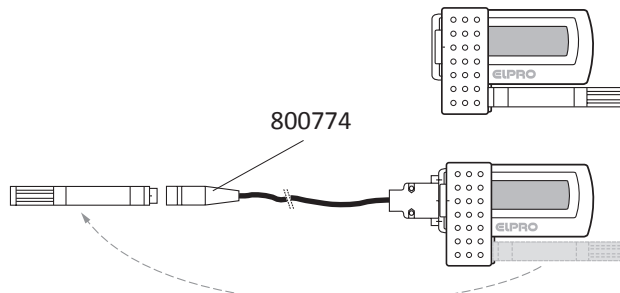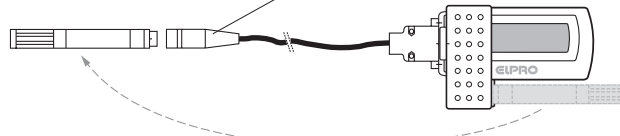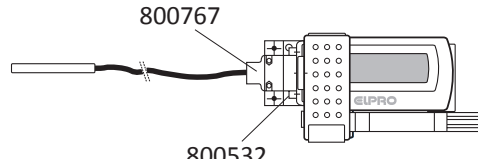|	
General:	4 Channel (2 x Temperature and 2 x Humidity) data logger with display and alarm functions
Case:	Thermoplastic ABS, IP50, suitable for foodstuff applications, 110 x 85 x 35 mm
Display:	Large LCD display, visible down to -20 °C, with alarm indication
Key pad:	4-key: reset alarm, step by step data or alarm display, printout data/alarm
Memory:	64'000 data points
	Loop memory or start-stop mode with external start by using the key pad
Interval:	Programmable, 1 second to 3 hours
Log Period:	Days, months, years
Alarm:	External on DB15 and alarm display on LCD screen (programmable)
Operating:	-35 °C..+55 °C, display readable down to -20 °C, 0 %RH..100 %RH, with condensation
Reaction Constant:	Temperature: 110 s, Humidity: 110 s
	Data logger with sensor, standard dust filter, air speed: 1 m/s
Measuring:	- 800637, 800639: - Integrated temperature and humidity sensors: T: -35 °C..+70 °C, H: 0 %RH..100 %RH
	- Up to 2 external temperature and humidity sensors: T: -35 °C..+55 °C, H: 0 %RH..100 %RH
	- 800640: - Up to 2 external temperature and humidity sensors: T: -35 °C..+110 °C, H: 0 %RH..100 %RH
	- Up to 2 external NTC temperature sensors: T: -50 °C..+140 °C
Battery:	1 x Lithium 3.6 V, user-replaceable, life-span approx. 1.5 years
	Low-battery warning
Evaluation:	PC software elproLOG ANALYZE for all communication, reprogramming
	display, statistics and printout (fast data transmission RS232 with 38'400 Baud)
Printer:	Direct printout of alarm protocol and status (serial printer RS232 with 9'600 Baud)

DB15
connector
for
sensors,
RS232,
alarm

Key pad

Interchangeable
temperature and
humidity sensor

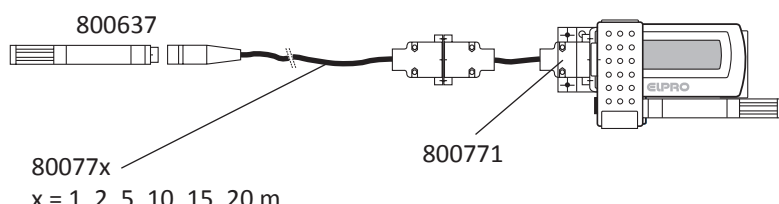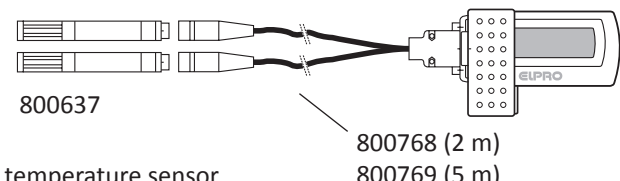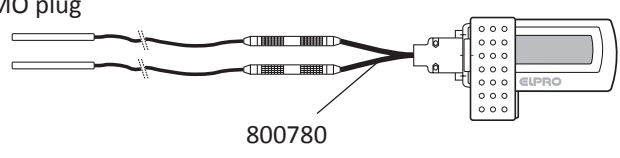| Accessories:	Part No.
Evaluation software elproLOG ANALYZE	800397
Data cable PC	800375
Simple fixation bracket	800531
Mounting bracket for 3215-Sx	800532
Bracket with 3 x DB15 sockets	800541
Seiko DPU414 protocol printer	800376
Data cable for Seiko DPU414	800356
DB15 socket for alarm etc.	800608
DB15 with screw terminals	800616
Temperature-humidity sensor	800637
Temperature-humidity sensor (replacement)	800639
Temperature-humidity sensor (high temp.)	800640
Humidity calibration set	800548
Extension cable 1, 2, 5, 10 m	80077X
Connection lead for 2 T/RH sensors 2 m	800768
Adapter sensor 1/2 to 3/4	800771
Adapter for 2 temperature sensors	800780

DB15 Connector on ECOLOG

8	GND	15	RxD
7	TxD	14	Busy
6	+Ref	13	*)
5	*)	12	NTC2
4	*)	11	*)
3	*)	10	DigitIn
2	*)	9	Alarm
1	*)		

*) For a second T/RH sensor use
bracket type 800541

Wiring Diagramme

NTC2
+Ref

+Ref
DigitIn

Alarm

GND

0..50 VDC
max. 200 mA

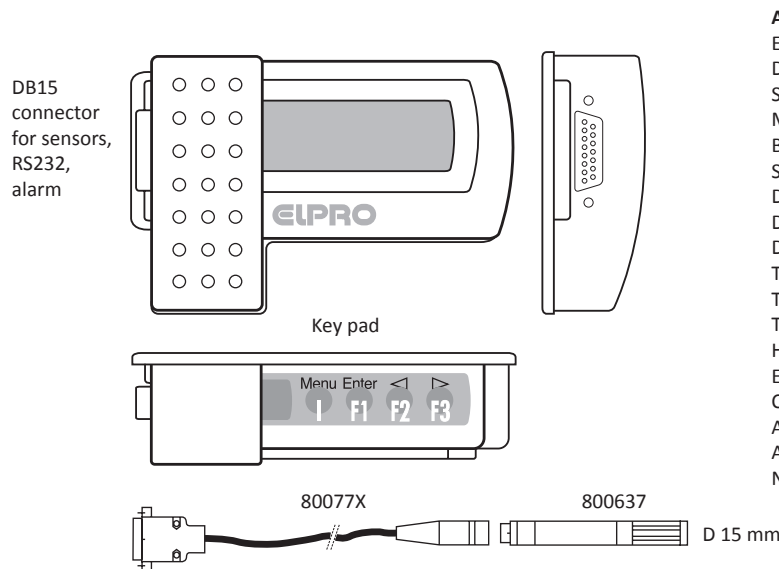|	Configuration	Function
800774	ECOLOG TH1 with 1 internal T/RH sensor	Internal: Temperature and humidity
	ECOLOG TH1 Calibration	External: Temperature and humidity
any NTC temperature sensor — 800767 / 800532	ECOLOG TH1 with a second temperature sensor and bracket	Internal: Temperature and humidity External: Temperature
any NTC temperature sensor — 800616	ECOLOG TH1 with a second temperature sensor and connector	Internal: Temperature and humidity External: Temperature
800637 / 80077x x = 1, 2, 5, 10, 15, 20 m / 800541	ECOLOG TH1 with a second T/RH sensor and bracket	Internal: Temperature and humidity External: Temperature and humidity
800637 / 80077x x = 1, 2, 5, 10, 15, 20 m / 800771	ECOLOG TH1 with a second T/RH sensor and adapter	Internal: Temperature and humidity External: Temperature and humidity
800637 / 800768 (2 m) / 800769 (5 m)	ECOLOG TH1 with 2 T/RH sensors and connection lead	External: 2 x temperature and humidity
any NTC temperature sensor with LEMO plug / 800780	ECOLOG TH1 with 2 temperature sensors and adapter	External: 2 x temperature

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ECOLOG TH2 Data Logger System for Temperature and Humidity

Part No. 800450

Technical Data

General:	4 Channel (2 x Temperature and 2 x Humidity) data logger with display and alarm functions
Case:	Thermoplastic ABS, IP52 with ext. sensor, suitable for foodstuff applications, 110 x 85 x 35 mm
Display:	Large LCD display, visible down to -20 °C, with alarm indication
Key pad:	4-key: reset alarm, step by step data or alarm display, printout data/alarm
Memory:	64'000 data points
	Loop memory or start-stop mode with external start by using the key pad
Interval:	Programmable, 1 second to 3 hours
Log Period:	Days, months, years
Alarm:	External on DB15, and alarm display on LCD screen (programmable)
Operating:	-35 °C..+55 °C, display readable down to -20 °C
	0 %RH..100 %RH, with condensation
Measuring:	- 800637, 800639: 1 or 2 external temperature and humidity sensors: T: -35 °C..+70 °C , H: 0 %RH..100 %RH
	- 800640: 1 or 2 external temperature and humidity sensors: T: -35 °C..+110 °C, H: 0 %RH..100 %RH
	- Up to 2 external NTC temperature sensors: T: -50 °C..+140 °C
Battery:	1x Lithium 3.6 V, user-replaceable, life-span approx. 1.5 years
	Low-battery warning
Evaluation:	PC software elproLOG ANALYZE for all communication, reprogramming,
	display, statistics and printout (fast data transmission RS232 with 38'400 Baud)
Printer:	Direct printout of alarm protocol and status (serial printer RS232 with 9'600 Baud)

DB15 connector for sensors, RS232, alarm

Key pad

Menu Enter ◁ ▷
I F1 F2 F3

80077X   800637   D 15 mm

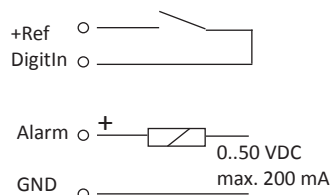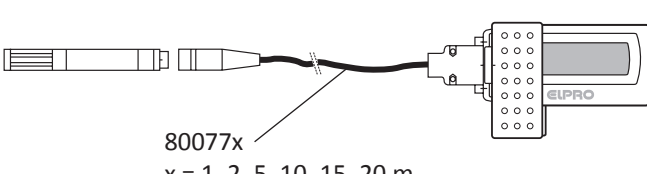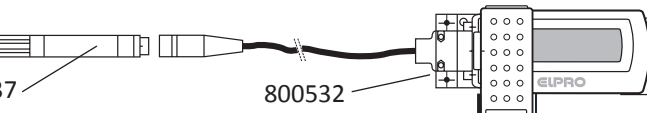| Accessories:	Part No.
Evaluation software elproLOG ANALYZE	800397
Data cable PC	800375
Simple fixation bracket	800539
Mounting bracket for 80077x	800532
Bracket with 3 x DB15 sockets	800541
Seiko DPU414 protocol printer	800376
Data cable for Seiko DPU414	800356
DB15 socket for alarm etc.	800608
DB15 with screw terminals	800616
Temperature-humidity sensor	800637
Temperature-humidity sensor (replacement)	800639
Temperature-humidity sensor (high temp.)	800640
Humidity calibration set	800548
Extension cable 1, 2, 5, 10 m	80077X
Connection lead for 2 T/RH sensors 2 m	800768
Adapter sensor 1/2 to 3/4	800771
Adapter for 2 temperature sensors	800780
NTC temperature sensors	Page 5

DB15 Connector
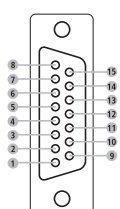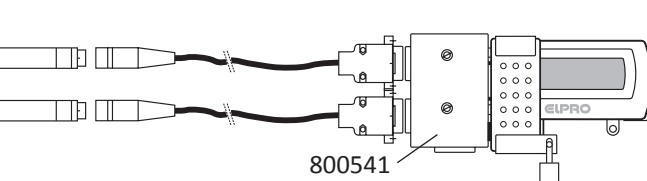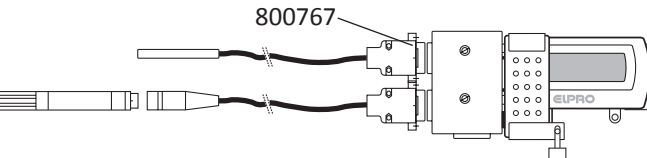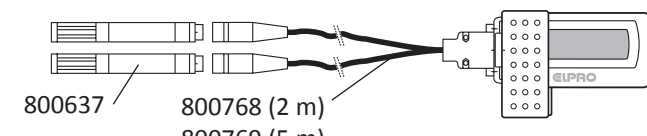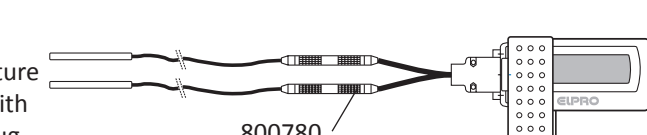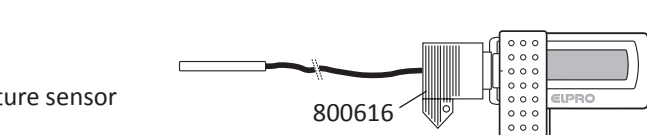
8	GND	15	RXD
7	TXD	14	Busy
6	+Ref.	13	NTC1
5	A1	12	NTC2
4	A2	11	D1
3	B1,2	10	DigitIn
2	D2	9	Alarm
1	C1,2		

For a second T/RH sensor, alarm etc. the use of bracket 800541 is recommended

Wiring Diagramme

+Ref
DigitIn

Alarm   +
GND   0..50 VDC
                max. 200 mA

	Configuration	Function
80077x x = 1, 2, 5, 10, 15, 20 m	ECOLOG TH2 as portable T/RH data logger	External: Temperature and humidity
800637 800532	ECOLOG TH2 with 1 T/RH sensor and bracket	External: Temperature and humidity
800541	ECOLOG TH2 with 2 T/RH sensors and bracket	External: Two times temperature and humidity
800767	ECOLOG TH2 with a T/RH sensor, second tem- perature sensor and bracket	External: Temperature and humidity and second temperature
800637 800768 (2 m) 800769 (5 m)	ECOLOG TH2 with 2 T/RH sensors and connection lead	External: 2 x temperature and humidity
any NTC temperature sensor with LEMO plug 800780	ECOLOG TH2 with 2 temperature sensors and adapter	External: 2 x temperature
any NTC temperature sensor 800616	ECOLOG TH2 with 1 temperature sensor and connector	External: Temperature

Important Note:
Max. added cable length for T/RH sensor 1 and 2 is 20 m
(e.g. 1 x 800779 or 2 x 800777)

Save Operation Area of T/RH Sensor 800640, Sensor with Extended Temperature Range up to +100 °C
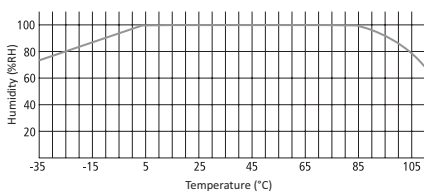
Save operation area of the T/RH sensor 800640 for extended
temperature application corresponds to the plot shown.
+110 °C for temperature peeks, permanent operation +100 °C only.

Attention:
Temperature range for the sensor cable 80077X is -35 °C..+80 °C
The cable should not be moved at such high temperatures!
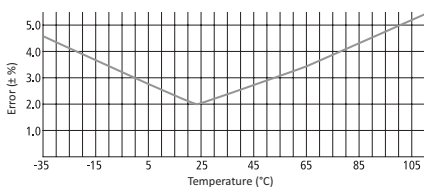
Sensor 800640 temperature dependence off the measurement error
at the time of shipment.
For sensor 800637 and 800639 reduced temperature range:
-35 °C..+70 °C only

ELPRO

ECOLOG TP2
ECOLOG TP4-L
Data Logger System
for 1-4 Pt100 Sensors

Part No. 800445

Part No. 801237

Technical Data

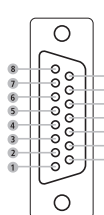|	
General:	TP2: 2 channel data logger with display and alarm functions
	TP4-L: 4 channel data logger with display and alarm functions
Case:	Thermoplastic ABS, IP52 with ext. sensor, suitable for foodstuff applications, 110 x 85 x 35 mm
Display:	Large LCD display, visible down to -20 °C, with alarm indication
Key pad:	4-key: reset alarm, step by step data or alarm display, printout data/alarm
Memory:	64'000 data points
	Loop memory or start-stop mode with external start by using the key pad
Interval:	Programmable, 1 second to 3 hours, 10 months battery life at measurement interval of 1 minute
Resolution:	High and low resolution selectable. Attention: Display in low resolution mode always!
Log Period:	Days, months, years
Alarm:	External on DB15, and alarm display on LCD screen (programmable)
Operating:	-35 °C..+55 °C, display readable down to -20 °C
Measuring:	2/4 x Pt100 sensors -200 °C..+550 °C, 4 wire system
Sensor connection:	TP2: DB15 connector
	TP4-L: 4 LEMO connectors 4 Pin or sensor 1 and 2 on DB15 connector
Battery:	1x Lithium 3.6 V, user-replaceable, life-span up to 1.5 years, depending on measurement interval and resolution. Low-battery warning
Evaluation:	PC software elproLOG ANALYZE for all communication, reprogramming, display, statistics and printout (fast data transmission RS232 with 38'400 Baud)
Printer:	Direct printout of alarm protocol and status (serial printer RS232 with 9'600 Baud)

DB15
connector
for
sensors,
RS232,
alarm

4 x LEMO connector

Key pad
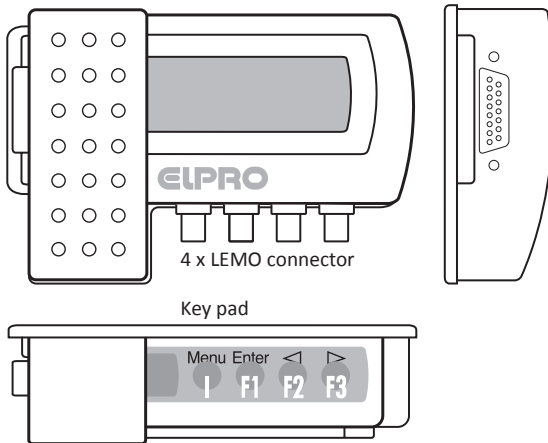
Accessories:	Part No.
Evaluation software elproLOG ANALYZE	800397
Data cable PC	800375
Simple fixation bracket	800531
Mounting bracket for DB15	800532
Bracket with terminals	800541
Seiko DPU414 protocol printer	800376
Data cable for Seiko DPU414	800356
DB15 socket for alarm etc.	800608
DB15 with screw terminals	800616

DB15 Connector

8 GND	15 RxD
7 TxD	14 Busy
6 Ubat	13 A2
5 A1	12 A2
4 A1	11 B2
3 B1	10 DigitIn
2 B1	9 Alarm
1 B2	

LEMO Connector
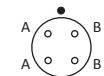
Plug soldering
side seen

Wiring Diagramme

PTA
PTA
PTB
PTB
Ubat
DigitIn
Alarm
0..50 VDC
max. 200 mA
GND
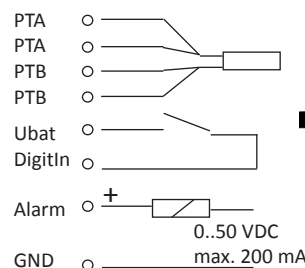
Bracket 800532 with Alarm Cable
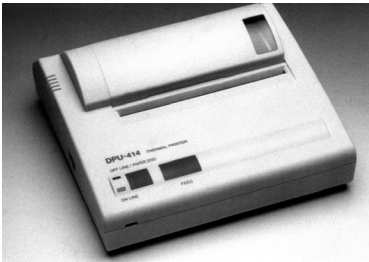
Seiko DPU414 printer   Part No. 800376
- For 220 V and battery operation, 110 mm thermopaper
- Printer cable   Part No. 800356
- Printer paper (3 rolls)   Part No. 800357

EcoPrint
- Multivolt for operation in transporters, 10-30 VDC
- Set made of: printer, TN3-P, 1 sensor 800674
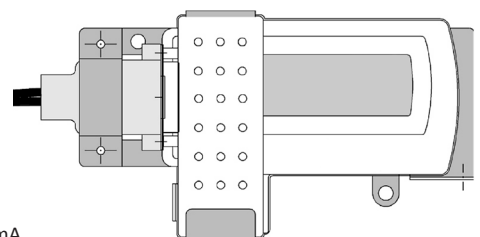 and protective housing
- Printer paper (5 rolls)   Part No. 800372

USB Data Cable   Part No. 800375
To connect any ECOLOG data loggers to a PC by using
the USB port of the PC.

Replacement battery for ECOLOG data loggers   Part No. 800556
Set of 2 batteries, minimum storage time is 5 years

DB15 Connector   **Part No. 800608**
Sensor with Customized Mounting   **Part No. 800610**
2-3 cables can be attached
Metal housing with connector head-solder
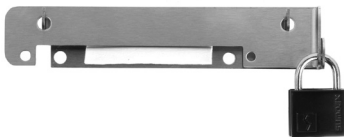hook terminated for sensor, alarm output, etc.

DB15 Connector with Sensor   **Part No. 800609**
For ECOLOG TN4 as internal sensor, analog 800608
Operating: -35 °C..+55 °C

Simple Fixation Bracket   **Part No. 800531**
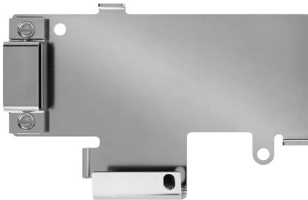Ideal for ECOLOG TN2 and TH1
Support plate made of stainless steel
With 2 PT screws for attachment to data logger

Fixation Bracket with Padlock   **Part No. 800536**
Ideal for ECOLOG TN2 and TH1
Support plate made of stainless steel
The data logger can be protected and secured
with a padlock (not part of delivery)

Fixation Bracket ECOLOG for DB15   **Part No. 800532**
Ideal for ECOLOG TN2, TN4 and TH2
Made of stainless steel for wall-mounting
With mounting bracket to attach DB15 connector
With 2-3 cables, without DB15 connector
The data logger can be protected and secured
with a padlock (not part of delivery)

Fixation Bracket ECOLOG with Terminals
Ideal for customer applications
Made of stainless steel for wall-mounting
For simple attachment of all sensor cables, digital inputs
and alarm cables to the connecting terminals
The data logger can be protected and secured with a padlock
(not part of delivery)

Data Logger Type	Bracket Type
TNx:	800533, 800535 (with additional RS232 connector)
THx:	800541
TPx:	800528 (with additional RS232 connector)

Protective Housing ECOLOG   **Part No. 800404–800409**
As accessories, ELPRO provides a protective
housing made of shockproof plastic material with IP66,
and 3 different brackets for simple fixation of data loggers.
For more information, see specific data sheets.

Temperature Measurement TPx
(Data logger only, at room temperature)

Operating Range	Resolution	Accuracy
-200.0 °C..-100.0 °C	0.2 °C	± 0.6 °C
-99.9 °C..+500.0 °C	0.1 °C	± 0.3 °C
+500.1 °C..+550.0 °C	0.2 °C	± 0.5 °C

Temperature Measurement TNx and THx
(Data logger with ELPRO sensor typical, data logger at room temperature)

Operating Range	Resolution	Accuracy (U95, k = 2)
-50.0 °C..-25.0 °C	0.1 °C	± 0.4 °C
-24.9 °C..0.0 °C	0.1 °C	± 0.3 °C
+0.1 °C..+30.0 °C	0.1 °C	± 0.2 °C
+30.1 °C..+70.0 °C	0.1 °C	± 0.3 °C
+70.1 °C..+100.0 °C	0.1 °C	± 0.4 °C
+100.1 °C..+140.0 °C	0.1 °C	± 0.7 °C

Check / Verification of Temperature Measurement

1) New devices:
- All data loggers are factory-checked using precision
  resistors and subsequently receive a calibration certificate.
- NTC resistor sensors (thermal resistor) are interchangeable
  in terms of accuracy – see the adjacent table.
- Pt100 sensors are interchangeable with respect to their
  class of accuracy.

2) Periodical recalibration:
Data logger: every 1–2 years – with calibration resistor by end user
or by ELPRO service center.
Sensor: every 2 years or when deviations occur – in calibration bath
by end user or by ELPRO service center.

Time
The accuracy of the data logger internal clock is: ±20 minutes/year at +25 °C
If the ambient temperature is changed, the following deviations are possible:
Between -20 °C and +55 °C up to ±1 hour/year

Norms
EN12830 Temperature recording instrument for transport, storage and distribution of foodstuffs
EN13485 Thermometers for measuring the air and product temperature for the transport,
storage and distribution of chilled, frozen, deep-frozen/quick-frozen food and ice cream
GZ1480 Exceptional approval for calibration GZ1480/2000 from 10. 4. 2000, BEV Austria
FDA Software validation for GLP application
CE The data loggers are conform to EN61000-6-2:2006 and EN61000-6-4:2006

Relative Air Humidity ECOLOG THx

Operating Range	Resolution	Accuracy of Measurement	
0 %RH..100 %RH	0.2 %RH	At ambient temperature, +23 °C:	± 1.5 %RH
		Hysteresis 10-90-10 %RH:	< 1 %RH
		Temperature coefficient:	see page 7

Check / Verificaton of the Relative Humidity Measurement

a) New devices
    All data loggers are factory-calibrated with SCS* calibration solutions and subsequently receive a calibration certificate.
    The adjustment points are 0 %RH and 80 %RH (95 %RH for high levels of humidity). The humidity sensors are calibrated
    and interchangeable. The calibration values are read in by the data logger.

b) Periodical recalibration
    With SCS calibration solutions and calibration device by the end user or by ELPRO service center.
    Alternatively there is the possibility to get a calibrated sensor as an interchangeable part from ELPRO.
    Interval: every 12 months in clean operating environment; in environment with high humidity, dust,
    smoke etc., every 6 months or in case of doubt.

    *SCS = SWISS CALIBRATION SERVICE

Interchangeability of T/RH Sensors

a) Humidity Sensor used in T/RH Sensors
    All humidity sensors are factory-calibrated with SCS calibration solutions and subsequently receive a calibration certificate.
    The adjustment points are 0 %RH and 80 %RH. (95 %RH for high levels of humidity)
    The ECOLOG T/RH sensors are interchangeable in their pre-calibrated state. The calibration data are read in by the data logger.

b) Temperature Sensor used in T/RH Sensors
    For the temperature sensor used in the T/RH sensor are the same conditions valid as for the NTC sensors used. Based on
    the strong relation between temperature and measurement value, in most of our cases a check at 0 °C ice water is sufficient.

c) Data Logger
    For the production of our data loggers we use high quality components only. The functionality of all data loggers is checked
    by the use of high precision resistors for the temperature measurement and with a simulated signal for the humidity measurement.
    According to these checks all data loggers receive a calibration certificate.

Check / Verification of T/RH Sensors

a) Temperature measurement
    According to the information about temperature measurement, see page 15.

b) Humidity measurement
    With SCS calibration solutions and calibration device by the end user or by ELPRO service center.
    Interval: In clean operating environment every 12 month, in environments with high humidity,
    dust, smoke etc. every 6 month or in case of doubt.

Required for Humidity Calibration and Adjustment:
Extension cable for ECOLOG THx for calibration
Calibraton unit for humidity data logger
Calibration ampullae (set of 5)

Traceability
ELPRO uses SCS calibrated humidity standards for calibration.
The ELPRO certificate can be used for GLP applications.

ECOLOG TNx , THx and TPx Temperature – Calibration

ECOLOG TNx and THx: Modules for Measuring Temperature with Precise NTC Sensors

Data loggers belonging to the TNx and THx series are supplied with very precise temperature sensors. Consequently, it is possible to dispense with adjustment procedures. However, we recommend that you perform an operational check on the module and its temperature sensors approx. every 12 months. If you detect a deviation from the permissible range, there is a defect at the sensor, cable or connector. The cause of this defect must be eliminated.

ECOLOG THx Humidity – Calibration

Modules for measuring relative air humidity

At delivery, each of our humidity data loggers is fitted with a precisely calibrated humidity sensor. We recommend that humidity sensors used in normal working environments are calibrated every 6–12 months. If necessary, they should also be readjusted. In particuarly contaminated environments, it is necessary to clean the RH sensor very carefully using water or a solution with max. 40 % of alcohol.

Calibration procedure

a) Return the sensor to ELPRO-BUCHS AG.
b) Replace the sensor with a calibrated sensor.
c) Calibration at customer-site performed by the
   ELPRO-BUCHS AG calibration service (Switzerland only).

PC Requirements

Hardware	PC with pentium/500	
Software	Windows NT4, 2000, XP, VISTA or Windows 7	

Items Required for Evaluation

		Part No
Software	Full version standard	800397
	Update standard	800396
	Basic licence QLS	800392
	Follow licence QLS	800394
Data cable	Used to interconnect the data logger to the USB port	800375

Screen Shots
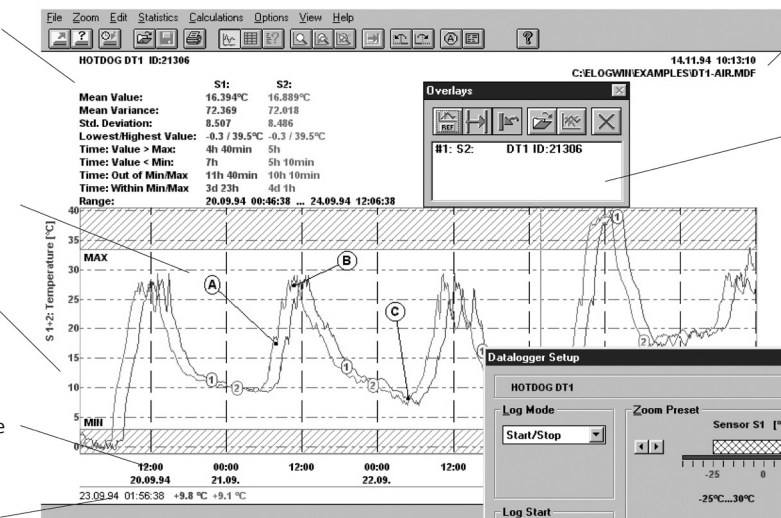
ON/OFF Statistics with additional Information

Alarm levels may be implemented in Histogram

Draw marking lines and store configurations
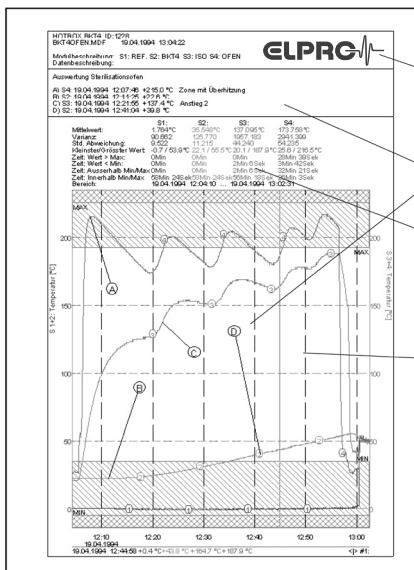
Automatic scaling and block time zoom

Autoscale for time and date

Info line with data at cursor

File name and date/time of reading

Info windows, tool boxes and sub-menues
- dew point
- F-Value
- multi curves
- free colour selection
- export
- 1/2 page printout

Structured setup window

As easy as 123,
Perfect Documents for Your Quality Assurance

Logo of customer on all printout

6 line- text editor, automatic time/date/values stamp with the use of Mark Lines

Statistics with timeperiod «value outside of Min/Max»

clear graphic printout

Status printout with all relevant information about data logger settings

Tabel printout with change of colour when outside Min/Max level

These documents comply to: EN12830, EN13485, FDA Reg. 21 CFR Part 11, 58, 820

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