



ECOLOG-PRO

Radio Modules

**ECOLOG-PRO RBR
ECOLOG-PRO 1NTR**

Operation Manual



Contents

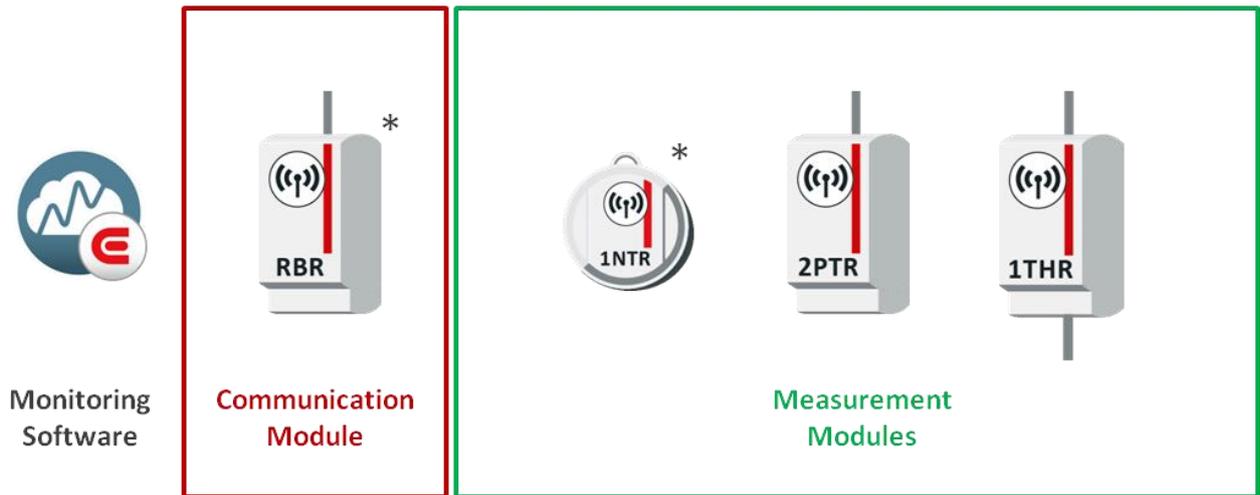
- 1. System Overview 4
- 2. Communication Module ECOLOG-PRO RBR..... 5
- 3. Measurement Module ECOLOG-PRO 1NTR 7
- 4. Disposal 10
- 5. Declaration of Conformity..... 11

Conformity and Symbols Used

	<p>Hereby, ELPRO-BUCHS AG declares that the radio equipment type ECOLOG-PRO 1NTR 868 MHz is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available in chapter 5 of this document or at the following internet address: https://www.elpro.com/fileadmin/Docs/Quality_Documents/ECOLOG-PRO_1NTR_DOC-Conformity_1000280V01.pdf</p> <p>Hereby, ELPRO-BUCHS AG declares that the radio equipment type ECOLOG-PRO RBR 868 MHz is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available in chapter 5 of this document or at the following internet address: https://www.elpro.com/fileadmin/Docs/Quality_Documents/ECOLOG-PRO_RBR_DOC-Conformity_1000278V01.pdf</p> <p>Above mentioned products operate in the 863-870MHz band with a maximum radiated output power of +11.6dBm.</p>
	<p>ECOLOG-PRO 1NTR 915 MHz and ECOLOG-PRO RBR 915 MHz Above mentioned devices comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Above mentioned devices operate in the 902-928MHz band with a maximum radiated output power of +4dBm.</p> <p>ECOLOG-PRO 1NTR 915 MHz contains FCC ID: S9NSPSGRF IC: 8976C-SPSGRF</p> <p>ECOLOG-PRO RBR 915 MHz contains FCC-ID: S9NSPSGRFC IC: 8976C-SPSGRFC</p>
	<p>Devices have to be disposed of according to WEEE (Waste Electrical and Electronic Equipment, 2002/96/EC).</p>

1. System Overview

The ECOLOG-PRO measurement and communication modules described in this document are used for temperature monitoring. The measured values are transmitted to a monitoring software (ELPRO Cloud), which stores and analyzes the data, provides alerts if alarm limits are violated, and generates reports. The system provides superior visibility and transparency in meeting GxP requirements. The sensor-based monitoring software is easily accessible via a web browser and is also used to configure the measurement modules and sensors.



* module covered in this document

2. Communication Module ECOLOG-PRO RBR



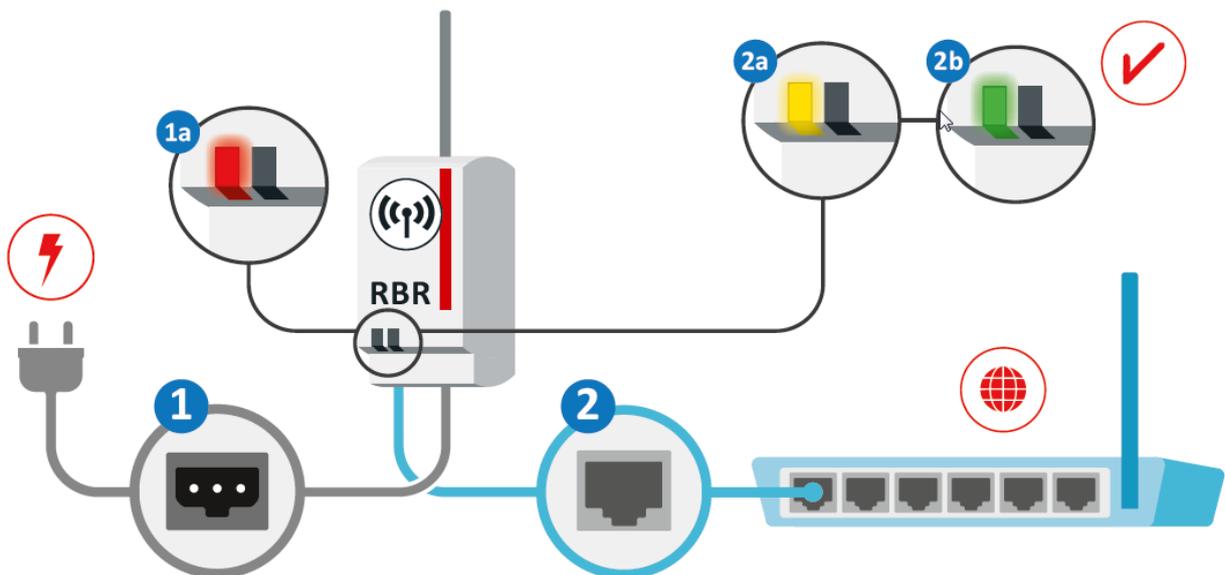
Functional characteristics:

The ECOLOG-PRO RBR module is the link between the wireless measurement modules of the ECOLOG-PRO series and the monitoring software. The data is transferred to the software over the Internet using an Ethernet connection (via RJ45 plug).

Power supply	<ul style="list-style-type: none"> External power supply unit 6V -10%... +10% POE specification according IEEE 802.3af
Power supply unit	<p>Input voltage: 100 VAC..240 VAC, 50 Hz..60 Hz Output voltage: 6 VDC \pm5 % Output current: 1200 mA max. Country-specific plugs: Europe, United Kingdom, USA Size: 55 x 31 x 41 mm Length of connector cable: 1830 mm</p> <p>The module may only be operated with the supplied power supply unit.</p>
Network connection	<p>Plug: 1xRJ45 Ethernet plug Cable: The Ethernet cable used must fulfill specifications of category Cat-5e or higher. If the cable length exceeds 3 meters, shielded cables are mandatory. Speed: 10Mbit or 100Mbit IP configuration: DHCP (default) or static</p>
Maximum number of measurement modules	ECOLOG-PRO RBR can connect up to 50 radio measurement modules.
Environmental storage temperature / humidity	-10 °C..+50 °C 10 %RH..90 %RH, non-condensing
Environmental operating temperature / humidity	0 °C..+40 °C 10 %RH..90 %RH, non-condensing

Operating altitude	This device must not be used at altitudes higher than 2000 meters above sea level.
IP protection class	IP20
ID number	The ID number printed on the front of the module is the module's default host name.
Communication interval	1 to 60 minutes, depending on configuration of sensors
Radio connection to measurement modules	Available in two versions with 868 MHz (Europe) or 915 MHz (US) Only the supplied antenna may be used.
Left LED	Red: Module is active, but is not connected to the network Yellow: Module is active and is connected to the network Green: Module is active and is connected to the monitoring software Blue: Module is active and communicating
Right LED	Green: Module is connected to one or several measurement modules Blue: Communication with measurement module taking place
Factory default	Press and hold the Factory Reset Button at the bottom for more than 3 seconds to reset the module's factory settings: <ul style="list-style-type: none"> - Left LED shows three short flashes in green. - All measurement modules are disconnected. - Communication module is disconnected from the network. - Network settings are reset to default settings: module is configured for dynamic IP addresses (DHCP client); host name equals ID number
Manual configuration of network settings	Use the online tool available at https://web.elpro.cloud/bridge to manually configure specific network settings.

How to connect:



1. Plug in your ECOLOG-PRO RBR using the power supply unit provided with your device.
 - 1a. Once power is connected, the ECOLOG-PRO RBR's left LED will turn red.
2. Connect the ECOLOG-PRO RBR to the Internet by connecting it to your modem, router or local network.
 - 2a. Once the connection to the network is made, the left LED will turn yellow, indicating that it is connected to the network
 - 2b. The left LED will ultimately turn green, indicating that the module is connected to ELPRO Cloud.

3. Measurement Module ECOLOG-PRO 1NTR



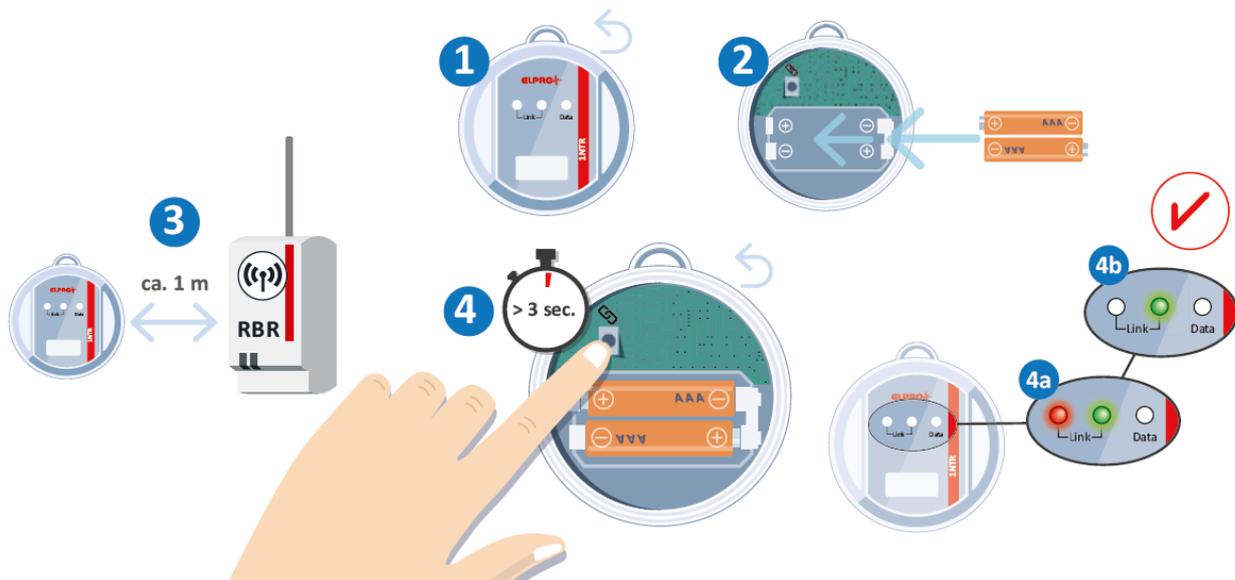
Functional characteristics:

ECOLOG-PRO 1NTR is a measurement module with an internal temperature sensor. Communication from this module with the ECOLOG-PRO RBR is via radio signal.

<p>Power supply</p>	<p>2 AAA Alkaline or LiFe (lithium-iron) batteries</p> <p>SAFETY INSTRUCTIONS! Improper use or misuse of batteries may result in leakage of battery fluid or, in the worst case, explosion and/or fire. Please note:</p> <ul style="list-style-type: none"> - Always choose the correct type of battery that best suits your intended use (see 'Measurement range'). - So that battery status can be determined correctly, always insert new, unused batteries when changing batteries. - Never insert different types of batteries into the device at the same time. - All batteries should be replaced at the same time. Mixing old and new batteries may cause the batteries to leak and damage the product. - Make sure that the battery contacts and mating contacts in the device are clean before inserting the batteries. - Make sure that the batteries are inserted properly i.e. observe polarity (+ and -). - Remove the batteries if you are not going to use the product for a longer period of time to avoid damage from leakage. Leaking or damaged batteries can cause acid burns on skin contact. When handling damaged batteries, you should wear protective gloves. - Remove expired batteries immediately from the device. - Do not disassemble batteries, do not short-circuit them and do not throw them into fire. Never try to charge non-rechargeable batteries. There is a danger of explosion! - Keep batteries out of reach of children. Do not leave batteries lying around as they may be swallowed by children or pets.
<p>Battery life</p>	<p>14 months (provided that the module's radio connection is stable and that the defined temperature range (see below) is maintained)</p>
<p>Measurement range</p>	<p>With alkaline batteries: -10°C.. +50°C With LiFe batteries: -35 °C..+50 °C</p>
<p>Measurement resolution</p>	<p>0.1 °C</p>
<p>Measurement accuracy</p>	<p>±1.0 °C in the range between -35.0 °C and -10.1 °C ±0.5 °C in the range between -10.0 °C and -0.1 °C ±0.4 °C in the range between 0.0 °C and +25.0 °C ±0.8 °C in the range between +25.1 °C and +50.0 °C</p>

Logging and communication interval	1, 2, 3, 5, 10, 15, 20, 30, 60 minutes; user programmable via software (ELPRO Cloud) NOTE: Logging interval will impact battery life
Channels	1 temperature channel
Probe type	Internal NTC probe
Memory capacity	14'800 measurement values
Environmental storage temperature / humidity	-10 °C..+50 °C 10 %RH..90 %RH, non-condensing
Environmental operating temperature / humidity	-35 °C .. +50 °C, depending on batteries used (see 'Measurement range') 0 %RH..100 %RH
Operating altitude	This device must not be used at altitudes higher than 2000 meters above sea level.
IP protection class	IP67
ID number	"S" followed by a 6-digit number; the ID number is used to identify the module in the ELPRO Cloud software.
Radio connection to communication module	Available in two versions: 868 MHz (Europe) or 915 MHz (US)
Left and middle LED (Link):	Red flashing light on left LED: ECOLOG-PRO 1NTR is active but is not connected to a communication module (ECOLOG-PRO RBR) Green flashing light on middle LED: ECOLOG-PRO 1NTR is active and connected to a communication module (ECOLOG-PRO RBR) The interval of the flashing light is 10s.
Right LED (Data):	Green flashing light on right LED: Measurement on the channel has started. Everything is OK. The interval of the flashing light is 10s.

How to connect:



Make sure that you have defined the sensor's settings in the ELPRO Cloud software and that the "Add sensor" wizard shows the image displayed above. This gives you a 10 minutes time frame to connect your module via the following steps:

1. Open the measurement module's screw cap.
2. Insert the two AAA batteries.



3. Bring the measurement module ECOLOG-PRO 1NTR in close proximity (approximately 1 meter) to an ECOLOG-PRO RBR connected to ELPRO Cloud.
4. Press and hold the "Connect" button inside the measurement module for more than 3 seconds. The left LED will blink red 3 times.
 - 4a. Wait until the left and middle LEDs start to blink synchronously (once per second).
 - 4b. A successful connection will be indicated by only the middle LED illuminating in green for 10 seconds. Afterwards, the middle LED will blink in green every 10 seconds.
5. Close the communication module's screw cap and place it in its intended location (e.g. freezer, refrigerator, storage room, etc).

4. Disposal

a) Product



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 categorized as containing hazardous material are marked with the adjacent symbol, under which is printed the chemical symbol for the heavy metal (Cd = cadmium, Hg = mercury, Pb = lead) used. You can dispose of used batteries at collection points in your local community. Please help protect our environment and dispose of batteries properly.

5. Declaration of Conformity



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	ECOLOG-PRO 1NTR 868MHz
Produkt Nr. No de produit Product no.	801429

Beschreibung | Description | Description:

Das Modul ECOLOG-PRO 1NTR ist ein Messmodul mit einem internen Temperatur-Messfühler. | Le module ECOLOG-PRO 1NTR est un module de mesure avec une sonde de température interne. | The module ECOLOG-PRO 1NTR is a measuring module with an internal temperature sensor.

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:

Funkanlagen Richtlinie 2014/53/EU | Directive sur l'équipement radio 2014/53/UE | Radio Equipment Directive 2014/53/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 301 489-1 V2.1.1: 2017 EN 301 489-3 V1.6.1: 2013 EN 301 489-17 V2.2.1: 2012 EN 61326-1: 2013
Funk Radio Radio	EN 300 220-2 V3.1.1: 2017
Elektrische Sicherheit Sécurité électrique Electrical security	EN 62368-1: 2014
Elektrische und magnetische Felder Champs électriques et magnétiques electrical and magnetic fields	EN 62479: 2010

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 16. April 2019
Buchs, le 16 avril 2019
Buchs, April 16, 2019

ELPRO-BUCHS AG



Dirk Neumann
Leiter der Entwicklung
Chef du développement
Head of Development

we prove it



EU Konformitätserklärung
Déclaration UE de conformité
EU Declaration of conformity

Hersteller Fabricant Manufacturer	ELPRO-BUCHS AG
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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	ECOLOG-PRO RBR 868MHz
Produkt Nr. No de produit Product no.	801425

Beschreibung | Description | Description:

Das Modul ECOLOG-PRO RBR ist das Bindeglied zwischen den Funk-Messmodulen der Serie ECOLOG-PRO und der Monitoring-Software. | Le module RBR ECOLOG-PRO constitue le lien entre les modules de mesure sans fil de la série ECOLOG-PRO et le logiciel de surveillance. | The ECOLOG-PRO RBR module is the link between the wireless measurement modules of the ECOLOG-PRO series and the monitoring software.

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:

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

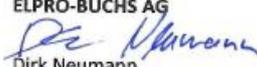
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Zubehör für den bestimmungsgemässen Betrieb | Accessoires pour l'usage prévu | Accessories for the intended use:

Antennentyp Type d'antenne Antenna type	ANT-868-CW-HW
Antennenhersteller Fabricant d'antennes Antenna manufacturer	Linx Technologies

Buchs, den 16. April 2019
Buchs, le 16 avril 2019
Buchs, April 16, 2019

ELPRO-BUCHS AG

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Chef du développement
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