EN

TH-ERD

Ground Sensor for KNX I4-ERD

Technical specifications and installation instructions

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1. Description

The **TH-ERD sensor** measures ground temperature and humidity. The sensor is intended for communication with the **KNX I4-ERD** evaluation unit and cannot be used with other systems

Functions:

- Ground temperature measurement
- Measurement of the ground humidity content
- For connection to the KNX I4-ERD evaluation unit

1.1. Deliverables

- Ground sensor with 10 m lead

1.2. Technical data

Colour	Black (measuring surface green)
Protection category	IP 68
Dimensions	approx. 220 x 32 x 10 (W × H × D, mm), lead length 10 m
Max. cable length	100 m
Weight	approx. 250 g
Measurement accuracy of humidity volume share	~ 1.5%, dependent on ground properties
Humidity volume share measurement resolution	~ 0.5%
Ambient temperature for temperature measurement	-55...125°C
Ambient temperature for humidity measurement	-10...0.70°C
Accuracy Temperature measurement	± 0.5°C
Power consumption	65 mA for less than 1 second during measurement
Data output	RS485

2. Installation and start-up

2.1. Installation notes

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

2.2. Connection to the KNX I4-ERD evaluation unit

The sensor should only be connected to the evaluation unit by a qualified electrician.

DANGER!
Risk to life from live voltage (mains voltage)!
The KNX I4-ERD evaluation unit works with a 230V mains supply voltage.

- National legal regulations are to be followed.
- Make sure all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

Connecting lead pin assignment:

brown ➔ *+ (+4...24V DC)*
white ➔ *- (ground)*
green ➔ *A (RS485 lead A)*
yellow ➔ *B (RS485 lead B)*

ATTENTION!
The KNX I4-ERD sensor connections are not protected against reverse polarity!

- Ensure they are connected correctly!

The connection lead can be extended with an off-the-shelf twin-pair lead compatible with the type of installation (max. lead length approx. 100 m).

2.3. Placing the sensor

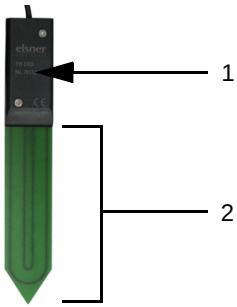

Fig. 1
1 Temperature sensor (in the black casing)
2 Humidity sensor (green surface with conducting tracks)

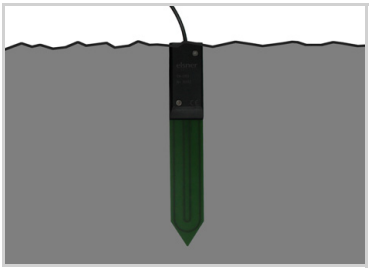

Fig. 2

For a measurement **close to the surface** the **TH-ERD sensor** is pushed vertically into the ground. The casing and the green measuring surface must be completely in the ground. Only then will ground temperature and humidity be recorded correctly.

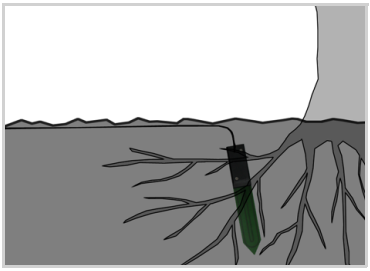

Fig. 3

For a **measurement in the vicinity of the roots of** larger plants, the **TH-ERD sensor** is placed in the ground.

The probe must be surrounded completely by earth (do not place it in a cavity).

The probe must stand vertically in the ground. If the probe is positioned horizontally, water can pool on the measuring area and cause an incorrect humidity reading.