

FTN02 and MTN02 rental

Soil thermal conductivity / resistivity measuring systems for rent

Hukseflux offers soil thermal conductivity measuring systems both for sale and for rent. In case you work on a project basis, renting may be an attractive option. For one month the costs for a fully checked and traceably calibrated system are in the order of 20 % of system purchase costs.



Figure 1 FTN02 being used in an on-site (field) survey



Figure 2 TNS02: Thermal needle TP07 with insertion tool IT03 for laboratory analysis of soil specimens. TP09 and lance LN02 are used for on-site measurements.

Figure 3 (on the right) The complete FTN02 system: FTN02 includes one spare sensor TP09, adapters for charging the system in the office and in an automobile. Also included are communication software and a jar for glycerol. Glycerol must be purchased locally.

Suggested use

- route surveys, on-site (field) measurements
- laboratory analysis of soil specimens

Introduction

Our FTN02 and MTN02 systems allow efficient and accurate measurement of thermal conductivity and resistivity of soils, both in the field and in laboratory environments. The control and readout unit, CRU02, is shared between the two (on-site and laboratory) needle models in the complete TNS02 system, combining FTN02 and MTN02.

model	description
FTN02	system with 1.5 m long lance for field surveys
MTN02	system with small insertion tool mostly for the laboratory or working from trenches
TNS02	combination of the 2 above

model	needle	case	insertion
FTN02	TP09	TC01	LN02
MTN02	TP07	TC02	IT03
TNS02	TP09 + TP07	TC01	LN02 + IT03

Rental fees

Rental fees are in the order of EUR 2 000 for the first month and EUR 1 000 for every additional month. System purchase price is of the order of EUR 10 000. Rental fees do not cover repair or replacement costs. **Ask for our rental conditions.**

Preparation

- Locally purchase 2 litres of glycerol to calibrate the system (we are not allowed to ship this).
- Read the product manual.
- Prepare a laptop; install the CRU02 software.



Training?

FTN02 and MTN02 users can start working right away, using the manual. If needed, we support using telephone and e-mail. Product training, either in-house or at Hukseflux is available upon request.

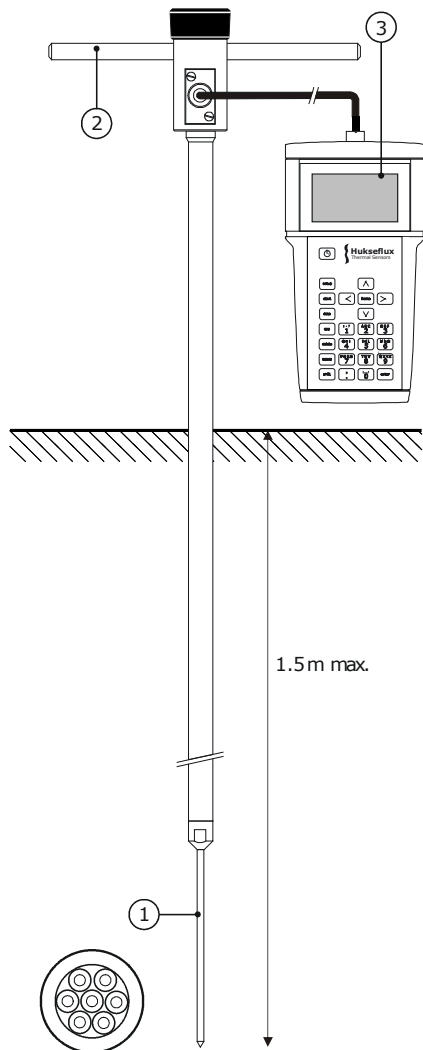


Figure 4 FTN02 system: Mounted at the tip of the lance, LN02 (2), the thermal needle TP09 (1) is inserted into the soil. Users control the measurement using the keyboard and LCD display of CRU02 (3). On the display, the user can monitor the measurement and see the measurement result. After confirmation by the user, results are stored in CRU02's memory. CRU02 contains a rechargeable battery pack for powering the system.

Standards

Applicable standards are IEEE Guide for Soil Thermal Resistivity Measurements (IEEE Standard 442-1981(03)) and ASTM D5334-14 Standard Test Method for Determination of Thermal Conductivity of Soil and Soft Rock.

Purchase after use?

In case of purchase of the equipment after rental, 50 % of the rental fee of the first month may be deducted from the normal purchasing costs. This offer stands for a period of 4 weeks after the end of the rental agreement. A new instrument will then be supplied by Hukseflux.

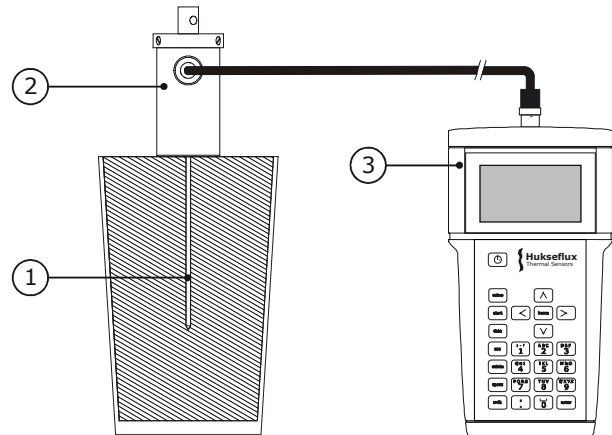


Figure 5 MTN02 system in operation: thermal needle TP07 (1), mounted on the insertion tool IT03 (2), is inserted into the soil sample. The user performs control and readout of the experiment from the CRU02 (3), using its keyboard and LCD.

See also

Hukseflux is specialised in thermal needle design. Alternative models are available at Hukseflux. Please consult the brochures of complementary systems **MTN02** and **FTN02**. Please also look at **TPSYS02**, which is more accurate but has less robust needles. We also provide separate solutions for measurements of sediment core samples and off-shore measurement at large depths (down to 3000 m). For insertion of TP07 in hard soils and for analysis of cements: guiding tubes of type **GT03**. For calibration there is the choice between calibration using glycerol and using **CRC reference cylinders**. In rental systems we suggest use of glycerol.

Ordering

- Please consult the product manuals: visit our [website](http://www.hukseflux.com) or send us an e-mail to get the latest versions.
- **Ask for our rental conditions.**
- **Product training is available upon request.**

Interested in these products?
E-mail us at: info@hukseflux.com