IMKO
MICROMODULTECHNIK GMBH

# HIGH-TECH FOR HIGH PRECISION MOISTURE MEASUREMENTS.

A world first!

RELIABLE,
WIRELESS
MOBILE,
FLEXIBLE.

Bluetooth®


# ACCURATE - ROBUST- WIRELESS  THE INNOVATIVE SOLUTION FOR MOBILE MOISTURE MEASUREMENT

**Note:**
Only TRIME®-TDR guarantees excellent accuracy in high saturated soils with high pore water electrical conductivity.

Choose **IMKO's robust PDA** or use any commercially available PDA with Bluetooth® and Microsoft® Windows Mobile®

Bluetooth®

**PICO-BT**, the Bluetooth® module for the PICO sensors, is included with the PICO- TALK software for Microsoft® Windows Mobile®

**With just one PICO-BT module you can collect the readings from a variety of sensors at different measuring locations.** PICO-TALK recognises the serial number of the connected sensor and saves the reading in your system along with this information.

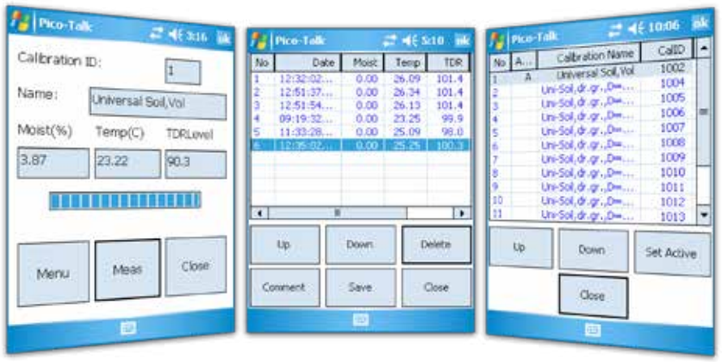
The **TRIME-PICO64** soil moisture sensor with an integrated soil temperature measurement system.
- Large measuring volume
- The best solution for heterogeneous and stony soils

The **TRIME-PICO32** soil moisture sensor with an integrated soil-temperature measurement system.
- Ideal for irrigation control systems and soil moisture monitoring
- Perfect for sandy and loamy soils

The **TRIME-PICO IPH** tube access probe permits rapid, reliable, and non-destructive recording of water content profiles.
- Large measuring volume
- Ideal for soils with high conductivity

# PICO-TALK THE MANAGEMENT SOFTWARE FOR PICO SENSORS

Your Bluetooth module PICO-BT includes our easy-to-use PICO-TALK software for Microsoft® Windows Mobile®. To make it even easier to operate we can provide the software in 3 different languages: German, English, and Chinese. PICO-TALK's individual menus are set out clearly and can all be reached with a single touch of your fingertip.




PICO-TALK's graphical user interface is optimised for single-handed field applications

## RAPID AND SIMPLE MEASUREMENTS

Simply insert your TRIME-PICO sensor into the ground and start the measurement process by pressing your PICO-TALK software's "MEAS" button. You receive an accurate moisture reading within only 2 seconds. In the case of buried sensors you also receive a reading for the soil temperature. The readings are saved directly in the system along with the time and date, enabling you to track what was measured when.

## SAVE READINGS RELIABLY

You also have the option of giving a specific designation to measuring locations and saving the reading under this name.

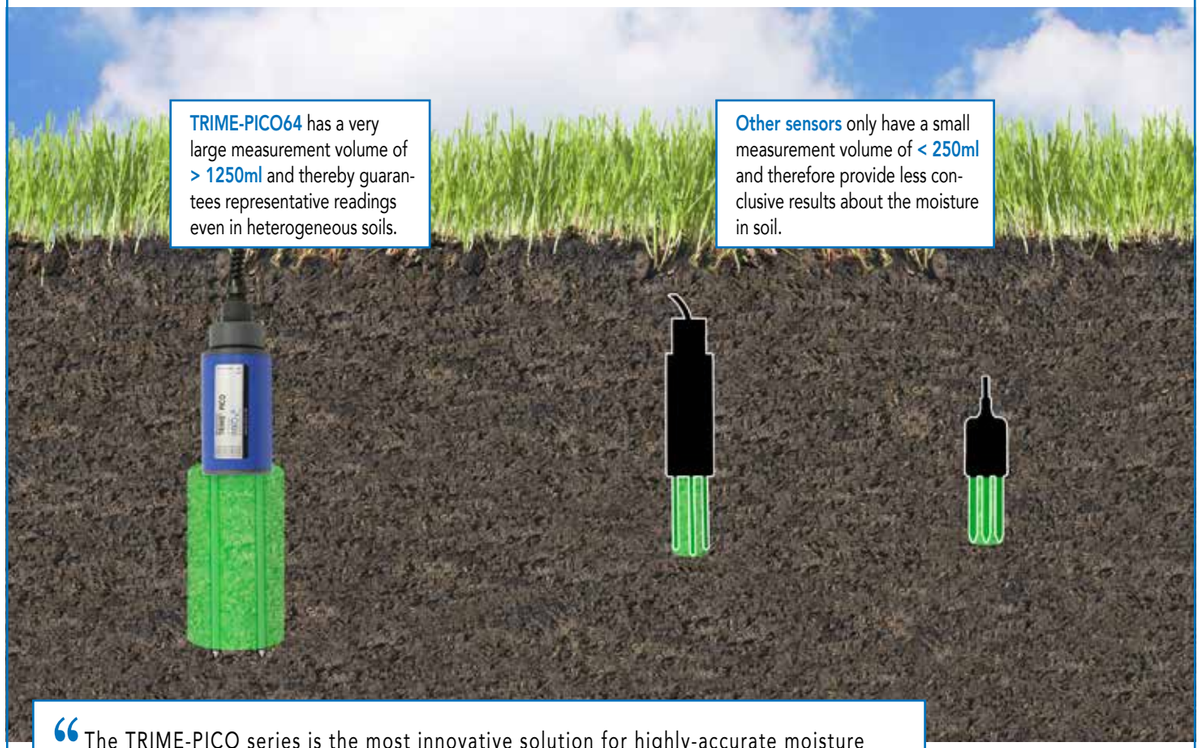
## CUSTOMISED CALIBRATION

TRIME-PICO sensors are supplied with precise soil calibration and can be used straightaway. If you prefer, you can perform the calibration process yourself and save the results in the sensor. PICO-TALK recognises the saved calibrations in the sensor and displays them in PICO-TALK for easy selection.

## EFFORTLESS EXPORT OF READINGS

Do you want to use your readings in other systems? No problem. Your saved data can be exported easily in any application.

# THE DIFFERENCE IS IN THE MEASUREMENT VOLUME




"The TRIME-PICO series is the most innovative solution for highly-accurate moisture measurement. We have carried out tests with the instruments usually available on the market and none of them except TRIME was able to achieve a high level of accuracy in very saline soil. And thanks to Bluetooth, interfering wires are a thing of the past in mobile applications in the field. Top marks from us for the TRIME measurement system."
Prof. Dr. Christof Hübner, University of Applied Sciences in Mannheim

## TRIME-PICO IPH FOR ACCURATE MEASUREMENTS OF WATER CONTENT PROFILES

For the first time ever, the rapid, routine and non-destructive measurements of water content profiles is possible without the use of hazardous radioactive materials.

The TRIME tube probes comprise a cylindrical PVC casing with four spring-mounted aluminium plates on opposite sides. The measurements are performed from within TECANAT plastic access tubes which can be left in the soil. The tubes must be installed prior to the taking the measurements by using a specially developed drilling set. Use up to 3m length of probe cable and tubes.

# THE LATEST TECHNOLOGY FOR THE BEST MEASUREMENTS

## Technical Data



| | TRIME®-PICO64 | | | TRIME®-PICO32 | | | TRIME®-PICO IPH T3/44 | | |
|---|---|---|---|---|---|---|---|---|---|
| Power supply: | 7V..24V-DC | | | | | | | | |
| Power consumption: | 100mA @ 12V/DC during 2..3sec. of measuring | | | | | | | | |
| Moisture measuring range: | 0..100% volumetric water content | | | | | | | | |
| Accuracy (in % volumetric water content): | | | | | | | | | |
| conductivity range: | 0..6dS/m | 6..20dS/m | >20dS/m | 0..6dS/m | 6..20dS/m | >20dS/m | 0..6dS/m | 6..15dS/m | >15dS/m |
| Moisture range 0..40%: | ±1% | ±2% | with material specific calibration | ±1% | ±2% | with material specific calibration | ±2% | ±3% | with tube access probe T3C/44 |
| Moisture range 40..70%: | ±2% | ±3% | | ±2% | ±3% | | ±3% | ±4% | |
| Repeating accuracy: | ±0.2% | ±0.3% | | ±0.2% | ±0.3% | | ±0.3% | ±0.5% | |
| Temperature caused drift of electronics (full range): | ±0.3% | | | | | | | | |
| Soil temperature measuring range: | -15°C...50°C | | | | | | | | |
| Soil temperature measuring accuracy: | ±1,5°C absolute; ±0,5°C relative | | | | | | | | |
| Measurement volume: | 1,25L ≙ 160x100mm diameter | | | 0,25L ≙ 110x50mm diameter | | | 3,0L ≙ 180x150mm diameter | | |
| Operating Temperature: | -15°C...50°C (extended temperature range on request) | | | | | | | | |
| Calibration: | Calibration for a wide range of standard soil types (in accordance with Topp (equation)) | | | | | | | | |
| | standard calibration for most soils, customizable material specific calibration, storage of up to 15 user defined calibration curves, calibration of dielectric permittivity is *possible* | | | standard calibration for most soils, customizable material specific calibration, storage of up to 15 user defined calibration curves, calibration of dielectric permittivity is *available* | | | standard calibration for most soils, customizable material specific calibration, storage of up to 15 user defined calibration curves, calibration of dielectric permittivity is *possible* | | |
| Probe body: | waterproof sealed PVC (IP68) | | | | | | | | |
| Size: | 155 x Ø63mm | | | 155 x Ø32mm | | | 144 x Ø32mm | | |
| Rod lenght: | standard: 160mm | | | standard: 110mm | | | standard: 180mm | | |
| Rod diameter: | 6mm | | | 3,5mm | | | — | | |
| Interfaces: | IMP-BUS<br>RS485<br>Analogue output: 2x 0..1V, 0(4)..20mA[1]<br>0..100% vol. water content<br>-40..+70°C soil temperatur | | | | | | —<br>RS485<br>Analogue output: 2x 0..1V, 0(4)..20mA[1]<br>0..100% vol. water content<br>-40..+70°C soil temperatur | | |
| Option 1 (for PICO-BT and TRIME-HD): | 1,5m cable with 7-pin female connector | | | | | | 3,5m cable with 7-pin female connector | | |
| Option 2 (IMP-BUS): | 5m cable with 4-pin female connector | | | | | | — | | |
| Option 3 (all interfaces): | 5m cable with end splices (all interfaces) | | | | | | — | | |

Optional available for cable extension: E-BOX (cable extension box)

[1]Optional available for cable extension and current output: C-BOX (0..1V to 0(4)..20 mA converter box)

## Features PICO-BT module


- Connectable Probes: PICO64, PICO32, PICO-IPH (measurement of soil profiles)
- Class 2 Bluetooth® module, Bluetooth® specification 2.0 compatible
- Up to 10 meter range
- Internal rechargeable battery
- Optimal power management
- Operating Temperature: -20°C...70°C
- Number of measurements with one charge: > 1500
- Ni-MH (4 x 1.2V) (AA) Rechargeable Batteries, 1000mAh

## Features Software PICO-TALK

- Platform: Microsoft© Windows Mobile© 6.0 or 5.0 or Windows© CE
- Easy to install and use
- Stores many thousand measurements
- Up to 15 user defined calibrations selectable
- Intuitive user interface
- Touch screen operation
- 3 different languages: German, English and Chinese
- Requires less memory



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