KIMO INSTRUMENTS

# Simplified user manual

Pressure / Temperature / Humidity / Air velocity / Airflow / Sound level

# TM 200 U

## Special determination of U coefficient

# Preamble

This document provides instructions for easy use in the solely to determine the U coefficient U.

This instrument is also supplied with a user manual which defines exhaustively all functions and general features of the instrument.

# 1. Overview

Your TM 200 U kit includes :

**1. Measurement instrument + its protective housing**

**2. One thermocouple module**

**3. Three wire thermocouple probes to measure the temperature of wall face**

**4. One ambient thermocouple probe**

**5. One ambient Pt100 wireless probe**

**6. Fixing paste for probes**

## 2. Determination and explanation of U coefficient

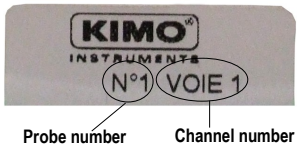
U coefficient is the most important value for the evaluation of thermal features of construction elements.
To calculate U coefficient, 3 temperature values are needed : the outside temperature, the surface temperature of the wall face, ambient air temperature. The wireless probe allows to determine the outside temperature easily and quickly when windows are closed. The probe is directly positioned outside and transmits the measurement value to theTM200 instrument trough the wireless system.
The two other necessary values are determined with three thermocouple wired probes fixed to the wall face thanks to the fixing paste and to the thermocouple probe of ambient temperature of the room, connected to the module of TM200 instrument.
Once the three required temperatures are transmitted to TM200, the device calculates and displays U coefficient.

## 3. General procedure of measurement/calculation of U coefficient

Steps to follow to calculate U coefficient :

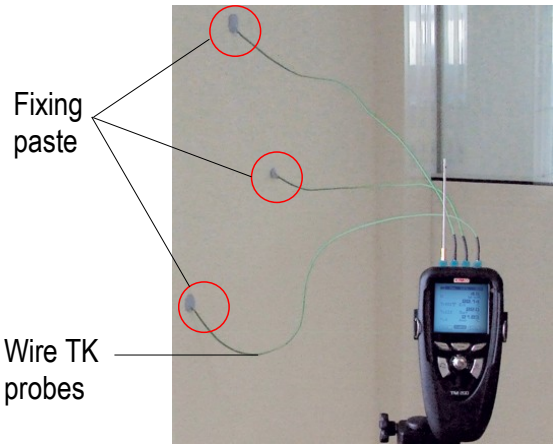
- Connect the thermocouple module on TM 200 U.
- Connect the ambient thermocouple probe (channel 4 labeled probe) on T4 channel of thermocouple module.
- Connect the wire thermocouple probes on T1, T2 and T3 channels of thermocouple module.

The wire thermocouple probes are paired, each probe is associated with a channel of the hermocouple module. Each probe has a label that indicates the probe number (1, 2 or 3) and its corresponding channel (channel 1, channel 2 or channel 3).

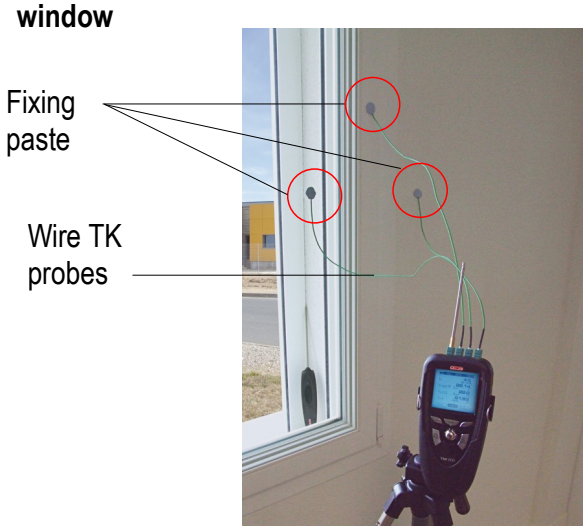



- Fix wire thermocouple probes on the wall face of the room as shown on the photo **(1)** or on an the wall face and the window **(2)**.
Put the ambient Pt100 wireless probe outside **(3)**.

**(1) Installing wire probe on the wall**



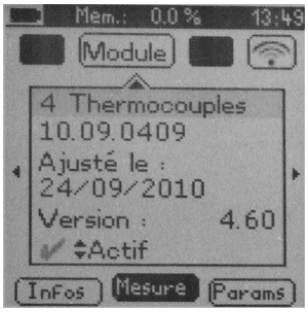

**(2) Installing wire probes on the wall and window**




**(3) Positioning wireless probe**

• Turn on the wireless ambient Pt100 probe.
• Turn on the TM 200 U instrument pressing ON/OFF key.
*TM 200 U directly displays **"Module"** screen.*

**Module screen**




• Press "**Mesure"** button.
*TM 200 U displays temperature of the different probes.*

• Go to Coef.U with the joystick then press **OK**.
*U coefficient value appears on the top of the screen.*

**U coefficient screen**

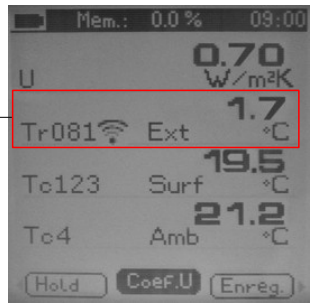
U coefficient value


Following values are also displayed :

• Outside temperature value
It is the value of outside temperature given by the wire Pt100 probe.

**U coefficient screen**

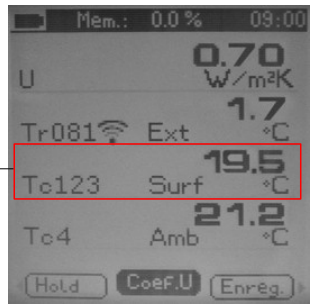
Outside temperature value




• Value of the temperature of thermocouple probes.
This value is an average of temperature of the wall face given by wire probes connected to the thermocouple module.
Each probe connected to a channel will be identified (next to "Tc" on the screen)
A single probe can be connected.

**U coefficient screen**

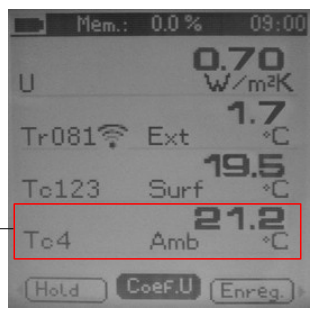
TK probe temperature value




• Value of the temperature of ambient probe
It is the value of the temperature room.

**U coefficient screen**

Ambient probe temperature value



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