

TM 200 U
thermometer

Special determination of U coefficient



KEY POINTS

- > Interchangeable measurement module
- > User-friendly (Joystick browsing)
- > Large graphic display
- > Blue backlight
- > 8,000 measurement points
- > Up to 6 measurements simultaneously
- > Wireless communication between instrument and PC
- > Wireless probes

THE TM 200 U THERMOMETER

The TM 200 U thermometer can display simultaneously :

- > U coefficient
- > External temperature (°C)
- > Surface temperature of wall face (°C)
- > Ambient temperature (°C)

TM 200 U KIT INCLUDES

- > 4 thermocouple temperature probes : 3 calibrated wire probes (ref. : FK-PFA-2-MM) and 1 calibrated ambient probe (ref. : SKA 110)
- > 1 ambient Pt100 wireless probe (ref. : SPA 150 RF) calibrated
- > 1 thermocouple module
- > 1 protective housing (ref. CE200)
- > Fixing paste for probes

The TM200U thermometer also includes a **5 calibrations** certificate in **3-point** chain (0-20 and 40°C) with **pairing of the 4 thermocouple probes** : each probe is associated with a channel of the thermocouple module.

CONNECTION

Wireless connection

Instrument / PC
Instrument / probe

Smart-system

Wireless or wired probes automatically recognized when connected to the instrument.

Interchangeable modules

1 instrument = more than one range and one parameter available.



FUNCTIONS


Thermometer

THERMOCOUPLE MODULE	<ul style="list-style-type: none"> - Delta T - Selection of units - Minimum / maximum values and hold function - Storage of 4 thermocouple K, J and T channels - Calculation of U-value
TEMPERATURE PROBES	<ul style="list-style-type: none"> - Delta T - Selection of units - Minimum / maximum values and hold function - Storage

Current / voltage reader

Current / voltage module	<ul style="list-style-type: none"> - Adjustable ranges - Minimum / maximum values and hold function - Storage
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Software

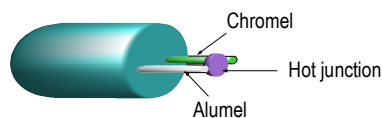
Datalogger 10 	<ul style="list-style-type: none"> - Multi-parameters recording - Manual or automatic storage - Memory : up to 8,000 measurement points or 50 datasets - User-friendly with printing of customized reports - Management of instruments pool, follow-up of calibration periods - Datasets schedule - Wired or wireless interface
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WORKING PRINCIPLE

Thermometer : Thermocouple probe

According to the Seebeck effect, when two wires composed of different metals are joined at both ends, an electric circuit is formed. The voltage increases with temperature.

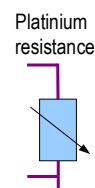
I.E : Thermocouple K :



Thermometer : Pt100 probe

Pt100 is resistance with a positive temperature coefficient which varies according to the temperature. The higher the temperature is, the more the value of the resistance increases.

I.E : for 0°C ≈ 100 Ω -
For 100°C ≈ 138,5 Ω.



TECHNICAL FEATURES

TM200 connection

On the top :

2 mini-Din connections for SMART-Plus probes

Left side :

1 USB port for KIMO cable only
1 power supply plug

Thermocouple module :

Connection : 4 inputs for male miniature plug of thermocouple type K, J or T Class 1 (as per IEC 584-3 norm)

Display

Graphic display 128x128 pixels
Dim. 50 x 54 mm
Blue backlight
Display of 6 measurements (including 4 simultaneously)

Housing

ABS shock-proof, IP54

Keypad

Metal-coated, 5 key, 1 joystick

Conformity

Electromagnetical compatibility (as per NF EN 61326-1 norm)

Power supply

4 alkaline batteries 1.5 V LR6

Operating environment

Neutral gas

Operating temperature

From 0 to + 50 °C

Storage temperature

From -20 to +80 °C

Auto shut-off

Adjustable from 0 to 120 min

Weight

340 g

Languages

French, English, Dutch, German, Italian, Spanish, Portuguese, Swedish, Norwegian, Finn, Danish

U COEFFICIENT DETERMINATION

U coefficient is the most important value for the evaluation of thermal features of construction elements.

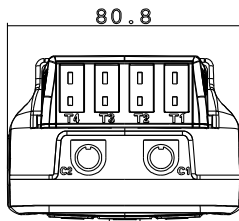
To calculate U coefficient, 3 temperature values are needed : the outside temperature, the surface temperature of the wall face, ambient air temperature. The wireless probe allows to determine the outside temperature easily and quickly when windows are closed. The probe is directly positioned outside and transmits the measurement value to the TM200 instrument through the wireless system.

The two others 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.

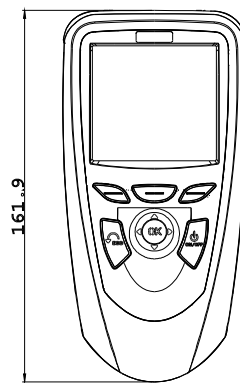
Once the three required temperatures are transmitted to TM200, the device calculates and displays U coefficient.

DIMENSIONS (mm)

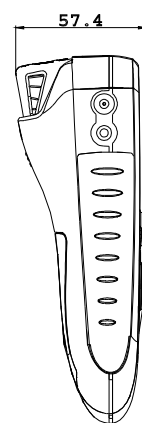
• Top view




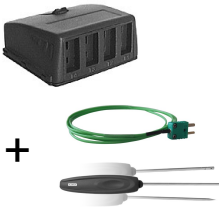
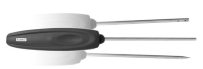
• Front view



• Side view



SPECIFICATIONS

	Measuring units	Measuring range	Accuracy*	Resolutions
CURRENT / VOLTAGE				
	V, mA	From 0 to 2.5 V From 0 to 10 V From 0 to 4/20 mA	±2mV ±10mV ±0.01mA	0.001 V 0.01 V 0.01 mA
THERMOCOUPLE (See related datasheet)				
	°C, °F	K: From -200 to 1300°C J: From -100 to 750°C T: From -200 to 400°C	±1.1°C or ±0.4% of reading** ±0.8°C or ±0.4% of reading** ±0.5°C or ±0.4% of reading**	0.1 °C 0.1 °C 0.1 °C
Pt100 probes (See related datasheet)				
	°C, °F	From -50 to 250°C (According to model)	±0.3% of reading ±0.25°C (According to model)	0.01 °C

*All accuracies indicated in this document were stated in laboratory conditions and can be guaranteed for measurements carried out in the same conditions, or carried out with required compensation.
** The accuracy is expressed either by a deviation in °C, or by a percentage of the value concerned. Only the bigger value is considered.

SUPPLIED WITH ...

X Optional ✓ Supplied with

DESCRIPTION	TM 200 U		
Current/voltage module	X	8 rechargeable batteries with chargee	X
Thermocouple temperature module	✓	Calibration certificates	✓
K thermocouple probe	✓	Transport case	✓
RF SMART-Plus Pt100 probe	✓	Tripod	X
		Probe holder	✓

Large choice of temperature probes (See related datasheet) :

- ambient
- contact
- penetration
- Food industry penetration
- General use



ACCESSORIES (See related datasheet)

Datalogger-10 : Datalogger-10 PC software for data recording and processing. Wired (LPCF) or wireless (LPCR) interface.



KPIJ : Ammeter clamp with PVC cable, lg. 2m and jack connector.

RTS : Telescopic extension, length 1 m, bent at 90° for measuring probe.

CTC-P : Current/voltage input cable in PVC, 2 m length and jack connector



GST : Silicone heat conductive grease for temperature probes

ADS : Adaptor for power supply 230 Vac

BN : Black ball Ø 150mm with junction for temperature probe Ø 4,5mm. Further dimensions available.



JAC : Set of 4 LR6 batteries



CHA : 4 batteries charger



WARRANTY PERIOD

Instruments have 1-year guarantee for any manufacturing defect (return to our After-Sales Service required for appraisal)

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