



THERMOCOUPLE THERMOMETER WITH TWO INPUTS HD2328.0

The **HD2328.0 with two inputs** is a portable instrument with a large LCD display. It measures the temperature using immersion, penetration air or contact probes. The sensor may be a thermocouple of type K, J, T or E.

The *Max*, *Min* and *Avg* function calculate the maximum, minimum or average values.

Other functions include: the relative measurement REL, the HOLD function, and the automatic turning off that can also be disabled.

The instruments have IP67 protection degree.

INSTRUMENT TECHNICAL CHARACTERISTICS

Instrument

Dimensions (Length x Width x Height)	140x88x38mm
Weight	160g (complete with batteries)
Materials	ABS
Display	2x4½ digits plus symbols
	Visible area: 52x42mm

Operating conditions

Operating temperature	-5...50°C
Warehouse temperature	-25...65°C
Working relative humidity	0...90%RH without condensation

Protection degree

IP67

Power

Batteries	3 1.5V type AA batteries
Autonomy	200 hours with 1800mAh alkaline batteries
Power absorbed with instrument off	20µA

Measuring unit

°C - °F

Connections

Input for probes	2-pole female polarized standard miniature connector
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Measurement of temperature by Instrument

TC measurement range: K	-200 ... +1370°C
TC measurement range: J	-100 ... +750°C
TC measurement range: T	-200 ... +400°C
TC measurement range: E	-200 ... +750°C

Resolution

0.1°C

Instrument accuracy

Thermocouple K	±0.1°C up to 600°C ±0.2°C over 600°C
Thermocouple J	±0.1°C up to 400°C ±0.2°C over 400°C
Thermocouple T	±0.1°C
Thermocouple E	±0.1°C up to 300°C ±0.2°C over 300°C

The accuracy only refers to the instrument. Error due to the thermocouple or to the cold junction reference sensor is not included.

Temperature drift @ 20°C	0.02%/°C
Drift after 1 year	0.1°C/year

Accuracy of the thermocouple probes:

The tolerance of a type of thermocouple corresponds to the maximum acceptable shift from the e.m.f. of any thermocouple of that type, with reference junction at 0°C. The tolerance is expressed in degrees Celsius, preceded by the sign. The percentage tolerance is given by the ratio between the tolerance expressed in degrees Celsius and the measurement junction temperature, multiplied by one hundred.

The thermocouples conforming to regulations must comply with one of the following tolerance levels, the values of which are reported in the table.

G I (special tolerances)

G II (normal tolerances)

The tolerances refer to the operating temperature expected for the thermocouple, in agreement with the thermoelements' diameter.

Tolerance of thermocouples:

Type of thermocouple	Range °C	G I*	G II*
K	0...+1370°C	±1.1°C or ±0.4%	±2.2°C or ±0.75%
J	0...+750°C	±1.1°C or ±0.4%	±2.2°C or ±0.75%
T	0...+400°C	±0.5°C or ±0.4%	±1°C or ±0.75%
E	0...+750°C	±1°C or ±0.4%	±1.7°C or ±0.5%
K**	-200...0°C	---	±2.2°C or ±2%
T**	-200...0°C	---	±1°C or ±1.5%
E**	-200...0°C	---	±1.7°C or ±1%

* The higher of the two optional limits is the valid one. Example: at 200°C the percentage tolerance for type K thermocouple, tolerance G II, is ±0.75% and is equal to ±1.5°C. Therefore the limit of ±2.2°C is valid. On the other hand, at 600°C the percentage tolerance is equal to ±4.5°C and therefore this is the limit to use.

** The thermocouples that meet the limits for temperatures higher than 0°C do not necessarily meet the limits for the range under 0°C.

ORDER CODES

HD2328.0K: The kit is composed of the instrument HD2328.0 with two inputs, 3 1.5V alkaline batteries, operating manual, case.

THE PROBES MUST BE ORDERED SEPARATELY.

Thermocouple probes

The instruments can be connected to all the thermocouple probes fitted with standard miniature connector available on our price-list.

