THERMYS 150

Advanced field reference thermometer / temperature calibrator

THERMYS 150 is an all-in-one high accurate documenting field reference thermometer for thermocouples (14 types), resistive probes (12 types) and thermistors with a high accuracy of up to 0.005% RDG.

Description

THERMYS 150 is an all-in-one high accurate documenting thermometer / temperature calibrator for thermocouples (14 types), resistive probes (12 types) and thermistors with a high accuracy:

- Thermocouples: Up to 0.005% RDG
- RTDs: Up to 0.006% RDG
- Thermistors: Up to 0.006% RDG

It is designed for field and lab use for advanced temperature maintenance and use on test bench in all industries.

- Simultaneous measurement and emission of temperature (IN / OUT)
- Simultaneous measurement over two channels for comparison calibration (IN / IN)

The second channel can be used either for temperature generation or measurement. When used as a dual input thermometer, THERMYS 150 is the perfect tool for temperature comparison calibration and differential measurement. When the second channel is used as an output, the instrument can be used to control temperature recorders, indicators, handheld thermometers. Using this user-friendly instrument, calibration tasks can be quickly carried out over the whole process chain. Take the 900 g documenting process calibrator to the field with you during the whole week with **10 calibration procedures stored** in the device. Run the procedure after connecting the probes to the instrument (Easy connect system®) and save the results for onsite easy and quick calibration. Back to the office, you can then upload the data on a computer in order to **issue customized calibration certificates** with dedicated calibration software DATACAL.
Providing **extended functionalities** (temperature simulation, scaling, steps, synthesizer, statistical functions...) and audit trails, THERMYS 150 complies with both 21 CFR Part 11 and NADCAP Heat Treatment standards and makes advanced data exploitation and full data traceability easier.
IP 54, fully protected by an antichoc rubber holster, THERMYS 150 integrates "easyconnect" terminals and a wide backlite display that makes it easy to use in any severe or dark conditions. THERMYS 150 has also the capability to drive baths and dry-blocks when associated with the specific cable (ref. ACL600).

Easy connection system

Connect your probes by simply pushing on the terminal top and insert wires of up to 3 mm or 10 AWG diameter and compensated thermocouple connectors.
Wires are held tight between two brass plates ensuring thermal stability and a very good cold junction compensation for thermocouples.
This system also enables 4 mm banana plugs and security connectors to be connected on the terminal top.

Specifications

Specifications and performances in temperature @23°C ±5°C

Uncertainty is given in % of reading (THERMYS 150 display) + fixed value.

Resistive probes: Measurement and simulation

Sensor	Range (Input and Output)	Resolution	Accuracy / 1 year (Measurement)	Accuracy / 1 year (Simulation)
Pt50 (α = 3851)	-220°C to +850°C	0.01°C	0.006% RDG + 0.04°C	0.006% RDG + 0.04°C
Pt100 (α = 3851)	-220°C to +850°C	0.01°C	0.006% RDG + 0.03°C	0.006% RDG + 0.03°C
Pt100 (α = 3916)	-200°C to +510°C	0.01°C	0.006% RDG + 0.03°C	0.006% RDG + 0.03°C
Pt100 (α = 3926)	-210°C to +850°C	0.01°C	0.006% RDG + 0.03°C	0.006% RDG + 0.03°C
Pt200 (α = 3851)	-220°C to +850°C	0.01°C	0.006% RDG + 0.04°C	0.006% RDG + 0.04°C
Pt500 (α = 3851)	-220°C to +850°C	0.01°C	0.006% RDG + 0.03°C	0.006% RDG + 0.03°C
Pt1000 (α = 3851)	-220°C to +850°C	0.01°C	0.006% RDG + 0.03°C	0.006% RDG + 0.03°C
Ni100 (α = 618)	-60°C to 180°C	0.01°C	0.006% RDG + 0.05°C	0.006% RDG + 0.05°C
Ni120 (α = 672)	-40°C to +205°C	0.01°C	0.006% RDG + 0.05°C	0.006% RDG + 0.05°C
Ni1000 (α = 618)	-60°C to +180°C	0.01°C	0.006% RDG + 0.05°C	0.006% RDG + 0.05°C
Cu10 (α = 427)	-50°C to 150°C	0.10°C	0.006% RDG + 0.18°C	0.006% RDG + 0.18°C
Cu50 (α = 428)	-50°C to +150°C	0.01°C	0.006% RDG + 0.05°C	0.006% RDG + 0.05°C

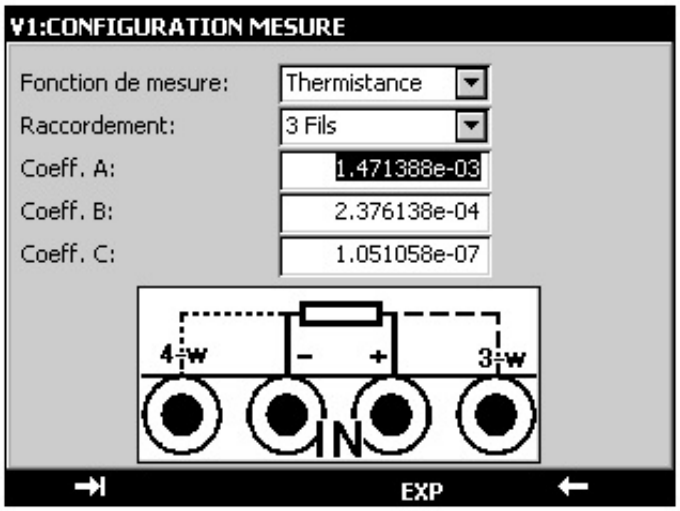
Resistive probes measurements in 2, 3 or 4 wires: automatic recognition of number of connected wires, with indication on screen
Accuracies are given for 4-wire mounted probes
Take into account particular error of temperature sensor used and implementation conditions
Admissible measuring current: 0.01 mA to 1 mA
In simulation mode, specifications given for 1 mA measuring current (Pt50 / 100, Ni100 / 120, Cu10 / 50) or 0.1 mA (Pt200 / 500 / 1000, Ni1000)
Establishing time: <1ms for simulation (simulation on quick transmitters)
Temperature coefficient: < 10% of accuracy /°C

Thermocouples: Measurement and simulation

Type	Input range	Resolution	Accuracy / 1 year (Measurement)	Output range	Resolution	Accuracy / 1 year (Simulation)
K	-250 to -200°C -200 to -120°C -120 to +1372°C	0.10°C 0.05°C 0.01°C	0.50°C 0.15°C 0.005% RDG + 0.08°C	-250 to -50°C -50 to +120°C +120 to +1020°C +1020 to +1370°C	0.01°C 0.01°C 0.01°C 0.01°C	0.15% RDG 0.06°C 0.005% RDG + 0.05°C 0.007% RDG + 0.05°C
T	-250 to -200°C -200 to -100°C -100 to +80°C +80 to +400°C	0.1°C 0. 01°C 0.01°C 0.01°C	0.50°C 0.05% RDG + 0.06°C 0.015% RDG + 0.07°C 0.06°C	-250 to -100°C -100 to +0°C +0 to +400°C	0.01°C 0.01°C 0.01°C	0.1% RDG + 0.05°C 0.02% RDG + 0.06°C 0.055°C
J	-210 to -120°C -120 to +60°C +60 to +1200°C	0.01°C 0.01°C 0.01°C	0.15°C 0.005% RDG + 0.07°C 0.0025% RDG + 0.06°C	-210 to +0°C +0 to +50°C +50 to +1200°C	0.01°C 0.01°C 0.01°C	0.03% RDG + 0.08°C 0.05% RDG + 0.07°C 0.005% RDG + 0.04°C
R	-50 to +150°C +150 to +550°C +550 to 1768°C	0.20°C 0.10°C 0.01°C	+0.60°C +0.30°C +0.30°C	-50 to +0°C +0 to +350°C +350 to +1768°C	0.01°C 0.01°C 0.01°C	0.35% RDG + 0.4°C +0.4°C +0.25°C
S	-50 to +150°C +150 to +550°C +550 to +1450°C +1450 to +1768°C	0.20°C 0.10°C 0.05°C 0.05°C	0.80°C 0.30°C 0.30°C 0.35°C	-50 to +0°C +0 to +350°C +350 to +1768°C	0.01°C 0.01°C 0.01°C	0.25% RDG + 0.4°C 0.30°C 0.25°C
B	+400 to +900°C +900 to +1820°C	0.10°C 0.05°C	0.005% RDG + 0.4°C 0.005% RDG + 0.2°C	+400 to +900°C +900 to +1820°C	0.01°C 0.01°C	0.005% RDG + 0.4°C 0.005% RDG + 0.2°C
U	-200 to -100°C -100 to +660°C	0.01°C 0.01°C	+0.13°C +0.09°C	-200 to +400°C +400 to +600°C	0.05°C 0.05°C	+0.09°C +0.11°C

N	-240 to -190°C -190 to -110°C -110 to +0°C +0 to +400°C +400 to +1300°C	0.10°C 0.05°C 0.01°C 0.01°C 0.01°C	0.25% RDG 0.10% RDG 0.04% RDG + 0.06°C 0.08°C 0.005% RDG + 0.06°C	-240 to -200°C -200 to +10°C +10 to +250°C +250 to +1300°C	0.01°C 0.01°C 0.01°C 0.01°C	0.15% RDG +0.10°C +0.08°C 0.008% RDG + 0.05°C

Thermocouples: PlatineL, Mo, NiMo/NiCo, G, D, L, C: For specifications, refer to the instruction manual (Available on request)
Accuracy is given for reference @ 0°C.
When using the internal reference junction (except couple B) add an additional uncertainty of 0.2 °C at 0 °C.
It is possible (thermocouple B excepted) to choose by programming the cold junction localization: External at 0°C, internal (temperature compensation of instrument's terminals) or manually entered.
Temperature coefficient: <10% of accuracy /°C
Display unit: °C and F.



Thermistors: Measurement

With 50 Kohms range and Steinhart – Hart equation integrated, thermistors can be entered into THERMYS 150 and tested.
Steinhart-hart equation is as follows:
$\frac{1}{T} = A + B(\ln(R)) + C(\ln(R))3$
Where: A, B and C are usually calculated according to temperature at 0°C, 25°C and 70°C

Thermistors: Simulation

Simulation of thermistors up to 3600 ohms using Steinhart-hart equation

Further features

Scaling in measurement and simulation modes

Scaling allows process signals to be displayed in

% of FS or in all other units. This function also allows sensors to be corrected after a calibration.

Relative measurement

Models and accessories

Instrument:

THERMYS150 On-site high accurate documenting temperature calibrator / thermometer
Delivered in standard with:

- User manual
- Battery charger
- Set of 4 testing leads
- Carrying strap
- Factory test report

Accessories:

AN6050 Transport case for CALYS series
ACL9311 Set of 6 measuring cables with removable crocodile clips
ACL600 Cable to drive temperature dry blocks and baths for CALYS 150
Please ask before for compliance with your bath/dry block

Software:

DATACAL Calibration software for CALYS 75 / 100 / 150
Supplied with USB cable

Certification:

QMA11EN COFRAC certificate of calibration
With all relevant data points where the device has been tested
AMS 2750 Compliance certificate to NADCAP AMS 2750 standard

Packing information:

Size 210 mm x 110 mm x 50 mm
Weight without packing 900 g