TC2000

COMBINES BENEFITS OF DRY BLOCK, LIQUID BATH, REFERENCE THERMOMETER AND UP TO 20-POINT AUTOMATED CALIBRATION IN ONE UNIT

Probably the most complete temperature calibration system ever built, Tek Know's TC2000 is designed to combine a dry block calibrator, a liquid bath calibrator and a reference thermometer in one uniquely portable design. Get all the advantages of both dry blocks and liquid baths in one calibrator.

With the onboard WINDOWS CE computer and full graphic LCD display, the TC2000 is incredibly user friendly. Set up of an automated 20 point comparison calibration is menu driven and the TC2000 clearly displays temperature of both your sensor under test and if desired an optional external reference probe. In addition a graph of the sensor temperature and block temperature is displayed to accurately verify when stability is reached.

The massive 2" diameter well allows for multiple probes to be inserted in either a liquid bath or metal block. The large calibration volume provides the TC2000 with excellent stability and accuracy. The TC2000 offers a temperature range of -40°C below ambient to +150°C.

KEY FEATURES

- **Field Portability with Laboratory Accuracy**
- **Largest Well Capacity 2" x 6", (50mm X 155mm)**
- **Stability Better than 0.005°C with Liquid Bath Option**
- **Saves Time with Up To 20-Point Automated Comparison Calibration**
- **Built Into Its Own Carrying Case**



TC2000 ADVANTAGES

As Dry Block

- Quick change in well temperature
- No mess or liquids
- Good stability, <±0.02°C
- Large well capacity

As Liquid Bath

- Excellent stability, <±0.005°C
- Excellent repeatability
- Better capacity: accommodates sensors' different sizes and shapes
- No need to make fittings for sensors
- Small temperature gradients

With Built-In Reference Thermometer

- Easy to set up 20 point automatic calibration
- Graphical 1/4 VGA display
- RTD, T/C, V and mA test sensor inputs
- Calibration reports produced according to ISO 9000
- Comparison method optimizes possible thermometer accuracy
- Programmable correction tables for external references

EASY-TO-USE GRAPHICAL LCD DISPLAY WITH GUIDING MENUS

1. Main Menu — Calibration Mode

- Calibration set-up from numeric keyboard or softkeys
- Graphical or Numerical display for internal or external reference sensor and sensor under test
- Switch test indication
- When using TC2000 as a stirred liquid bath, you may set an appropriate impeller speed from this window

2. Main Menu — Configuration

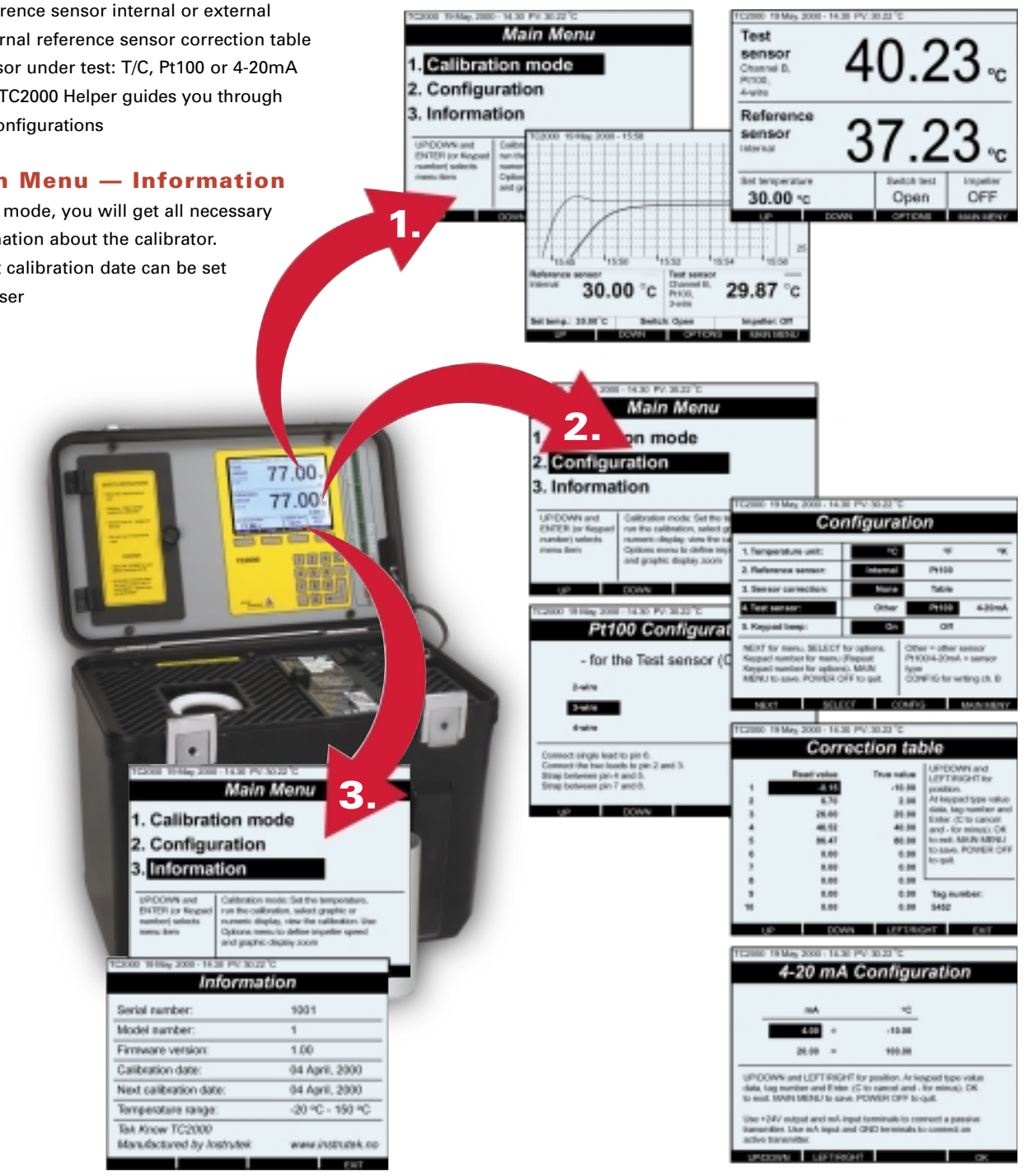
In this mode, the following set-ups are made:

- 20-Point automatic calibration
- Temperature units in °C, °F and °K
- Reference sensor internal or external
- External reference sensor correction table
- Sensor under test: T/C, Pt100 or 4-20mA
- The TC2000 Helper guides you through all configurations

3. Main Menu — Information

In this mode, you will get all necessary information about the calibrator.

- Next calibration date can be set by user



SPECIFICATIONS

FIELD TEMPERATURE RANGE	-40°C below ambient to 150°C (-80°F below ambient to 302°F)
RESOLUTION	0.01°C
GRADIENTS AT 95°C W/ WATER BETWEEN BOTTOM AND 25 MM FROM TOP	±0.06°C
STABILITY (30 MIN. AFTER NORMAL STABILIZATION)	
AS A DRY BLOCK	±0.02°C
AS A STIRRED LIQUID BATH	±0.005°C
AS A STIRRED ICE BATH	±0.001°C
ACCURACY (WITH INTERNAL REF.)	±0.3°C
UNCERTAINTY (BEST)	≤ 0.03°C (depending on ext. reference)
WELL DEPTH	155 mm (6")
WELL DIAMETER	50 mm (2")
THERMOSTAT TEST	yes
INTERFACE	RS232
POWER SUPPLY	110 VAC or 240 VAC (50/60Hz) (specify)
OPERATING TEMPERATURE	0 to 40°C (32 to 104°F)
DIMENSIONS	16 x 10 x 14 in.
WEIGHT (WITHOUT INSERTS)	35 lb.

ELECTRICAL SPECIFICATIONS

INPUTS PORT A	RANGE	RES.	ACCURACY	
PT100 2, 3 AND 4-WIRE*	-50 to 800°C	0.01°C	±0.05°C	±0.009% rdg
INPUTS PORT B				
PT100 2, 3 AND 4-WIRE*	-50 to 800°C	0.01°C	±0.05°C	±0.009% rdg
TYPE K	-100 to 1370°C	0.1°C	±0.25°C	±0.03% rdg
TYPE J	-200 to 1200°C	0.1°C	±0.25°C	±0.03% rdg
TYPE E	-200 to 1000°C	0.1°C	±0.25°C	±0.04% rdg
TYPE T	-200 to 400°C	0.1°C	±0.25°C	±0.03% rdg
TYPE S	0 to 1760°C	0.1°C	±0.25°C	±0.03% rdg
TYPE R	0 to 1760°C	0.1°C	±0.25°C	±0.03% rdg
TYPE B	400 to 1820°C	0.1°C	±0.25°C	±0.03% rdg
TYPE N	-200 to 1300°C	0.1°C	±0.25°C	±0.05% rdg
VOLTAGE	0 to 10V	1µV	±2µV	±0.02% rdg
CURRENT	0 to 22mA	1µA	±2µA	±0.02% rdg
COLD JUNCTION**	0 to 40°C	0.1°C		±0.25% rdg
TC INPUT TEMPERATURE DRIFT	±0.009%/°C or 90 ppm/°C			
V AND MA INPUT TEMPERATURE DRIFT	±0.0027%/°C or 27 ppm/°C			

** Pt100 conforms to IEC751 and temperature scaling of ITS-90*
*** All thermocouple inputs are cold junction compensated*

ORDERING INFORMATION

Standard Delivery includes: Metal Block Insert with 1/8", 3/16", 3/8" holes, RS-232 interface, tool for changing insert, NIST calibration certificate, instruction manual, thermal switch test leads, and all necessary connectors for the reference thermometer.

TC2000	Temperature Calibrator, -40°C below ambient to 150°C (302°F)
TC2000-INS-L	Liquid Insert for TC2000
TC2000-INS-B	Undrilled metal block for custom probe diameters
CAL-TC2000	NIST recertification for TC2000
935-14-72	Standard Reference Probe