



Calibration Instruments



Patent no.
305295

- **Field Portable or Bench**
- **Largest well capacity (50 mm 12")**
- **Range -40°C below amb. to +150°C**
- **Resolution 0,01°C**
- **Stability $\leq \pm 0,005^\circ\text{C}$**
- **Full graphic display, 1/4 VGA**
- **RS232 interface**
- **Upgrade via Internet and RS232**



TC2000 – the complete concept in Temperature Calibration

A unique combination of both **dry block**
and **bath** in the same unit

Tek Know TC2000 temperature calibrator

Scan-Sense has patented a system which
By changing the insert the TC2000 is
With TC2000's unique flexibility one can combine the best feat
The TC2000 has a built-in computer that enables you to

The patented "A



DRY BLOCK CALIBRATOR

Dry block calibrator advantages:

- Portable
- No liquid or mess
- Large temperature range
- Quick change in well temperature
- Good stability



EXTERNAL REFERENCE

External reference advantages:

- Comparison method is the correct way of performing a calibration
- Possible to work in true temperature by using correction tables for external references



TC2000

- ✓ Full graphic display, 1/4 VGA
- ✓ Internal reference sensor
- ✓ Input for external reference

- ✓ 24VDC power supply for transmitters
- ✓ Correction tables for external references
- ✓ Signal inputs for sensors under test; RTD, T/C, V and mA

the most complete calibrator system ever built

combines dry block well with a liquid bath.
transformed from a dry block to a bath.
features of a dryblock well with a liquid bath on the same calibrator.
easily set-up an automatic multi-point calibration system.

"All-in-one solution"



Automatic calibration system advantages:

- Fully automatic calibration
- Easy to set-up
- Input and signal conditioning for external reference sensor (PRT)
- RTD, TIC, V and mA inputs
- Graphical display/screen
- Calibration values logged
- Produces calibration reports to ISO9000

Liquid bath advantages:

- Excellent stability and accuracy
- Excellent repeatability
- Better capacity to accommodate different sizes and shapes of sensors
- No need to make fittings for sensors
- Small temperature gradients
- Large capacity

has it all

- ✓ Uses Windows® CE operating system
- ✓ Calibration reports directly to printer
- ✓ Calibration set-up from numeric keyboard or softkeys

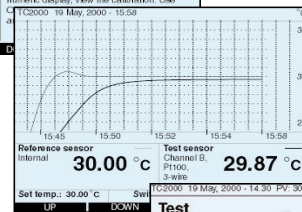
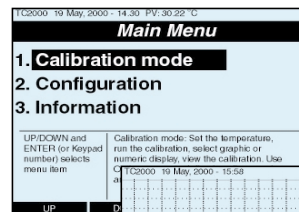
- ✓ 20 calibration points can be set for automatic calibration
- ✓ Integrated case, open the lid and TC2000 is ready for use

Easy-to-use graphical LCD display with guiding menus



Main menu - Calibration mode

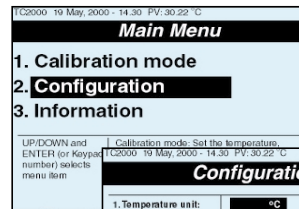
- Calibration set-up from numeric keyboard or softkeys
- Graphical or Numerical display for internal or external ref. sensor and sensor under test
- Switch test indication
- When using TC2000 as a stirred liquid bath, you may set an appropriate impeller speed from the software



Main menu - Configuration

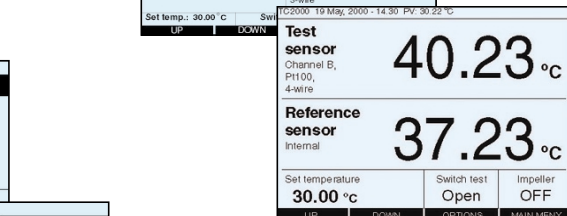
In this mode following set-ups are made:

- Temperature units in °C, °F and °K
- Ref. sensor internal or external
- Ext. ref. sensor correction table
- Sensor under test: TIC, Pt100 mA, V or other
- The TC2000 Helper guides you through all Configurations
- 10 calibration profiles can be stored



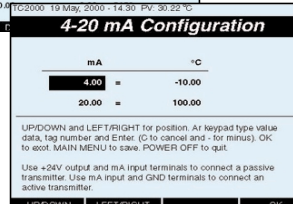
Configuration			
1. Temperature unit:	<input checked="" type="radio"/> °C	<input type="radio"/> °F	<input type="radio"/> °K
2. Reference sensor:	<input checked="" type="radio"/> Internal	<input type="radio"/> Pt100	
3. Sensor correction:	<input checked="" type="radio"/> None <input type="radio"/> Table		
4. Test sensor:	<input type="radio"/> Other	<input checked="" type="radio"/> Pt100	<input type="radio"/> 4-20mA
5. Keypad beep:	<input checked="" type="radio"/> On <input type="radio"/> Off		

Correction table		
Read value	True value	Tag number
1	23.15	-10.00
2	27.00	2.00
3	28.00	20.00
4	46.52	40.00
5	88.47	80.00
6	0.00	0.00
7	0.00	0.00
8	0.00	0.00
9	0.00	0.00
10	0.00	0.00



Main menu - Information

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



Technical information:

Temperature range	-40°C* to +150°C
Accuracy	±0.3°C
Resolution	0.01°C
Gradients at 95°C w/water	
between bottom and 25mm from top	0.06°C
Stability (30 min. after normal stabilisation):	
As a dry block	± 0.02°C
As a stirred liquid bath	± 0.005°C
As a stirred ice bath	± 0.001°C
Uncertainty (best)	≤ 0.03°C (depending on ext. ref.)
Well depth	155mm
Well dia.	50mm
Bath Chamber Dimensions	26 l cm ³
Thermostat test	yes

* Rel. ambient

Electrical specifications:

Input Port A:	Range	Res.	Σ Accuracy:	
Pt100 2, 3 and 4-wire*	-50 to 800°C	0.01°C	Accuracy ± 0.05°C	+ (% of reading) ± 0.009%
Inputs Port B:				
Pt100 2, 3 and 4-wire*	-50 to 800°C	0.01°C	± 0.05°C	± 0.009%
Type K	-100 to 1370°C	0.1°C	± 0.25°C	± 0.03%
Type J	-200 to 1200°C	0.1°C	± 0.25°C	± 0.03%
Type E	-200 to 1000°C	0.1°C	± 0.25°C	± 0.04%
Type T	-200 to 400°C	0.1°C	± 0.25°C	± 0.03%
Type S	0 to 1760°C	0.1°C	± 0.25°C	± 0.03%
Type R	0 to 1760°C	0.1°C	± 0.25°C	± 0.03%
Type B	+400 to 1820°C	0.1°C	± 0.25°C	± 0.03%
Type N	-200 to 1300°C	0.1°C	± 0.25°C	± 0.05%
Voltage**	0 to 10V	1 µV	± 2µV	± 0.02%
Current**	0 to 22mA	1 µA	± 2µA	± 0.02%
Cold junction***	0 to 40°C	0.1°C		± 0.25%

* Pt100 conforms to IEC751 and temperature scaling of ITS-90

** All thermocouple inputs are cold junction compensated

*** Will in addition indicate negative inputs but these are not calibrated

T/C input temperature drift: ±0.009% /°C or 90 ppm/°C

V and mA input temperature drift: ±0.0027% /°C or 27 ppm /°C

Other specifications:

Interface	RS232	
Power supply	VAC	110V (90-130V), 50/60Hz 230V (180-250V), 50/60Hz
Operating temp.	°C	0 to +40
Dimensions	mm	406 x 254 x 356
Weight	kg	15.5 without inserts

Each unit is supplied with a dry block insert, test cable for thermostat, connectors, insert tool, insulation pieces, calibration certificate and manual.

Note: Due to continuous product improvements, published specifications may change without notice.

Ordering specifications:

Temperature calibrator TC2000, 230 VAC	TC2000-P001
Temperature calibrator TC2000, 100/110 VAC	TC2000-P003
Option:	
Liquid insert (optional)	TCFP2000
Dry block insert	(standard)
Standard insert has the following hole configuration:	3.5 mm x2 4.5 mm x 2 6.5 mm x2 8.5 mm x1 10.5 mm x1 12.5 mm x1

Scan-Sense AS is a Norwegian company specialising in design and manufacturing of high quality sensors/instrumentation and related software for measurement of temperature, pressure, load and force.

Scan-Sense AS supplies portable temperature calibrators from -40°C to 1200°C and a range of EEx/IIIS approved portable pressure calibrators from vacuum to 700 Bar.

Distributed by:

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