

# Temperature Calibration Technology for Laboratory and Industry



Micro Calibration Baths



Dry Wells



High Temperature Dry Wells



Hand Helds



Compact Dry Wells



Zero Point Dry Wells



# TEMPERATURE STANDARDS

Hand-held	Temperature Calibrator	Portable Dry Well	High Temp. Dry Well
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## CTH6500

The all-purpose model CTH6500 hand-held thermometer, for superior mobile temperature measurement, is notable for its precision, flexibility and ease of handling. In addition to Pt100 resistance thermometers, it can also process signals from typical thermocouples.



## CEP3000

The portable temperature calibrator CEP3000 is an ideal device to handle all of your temperature calibration needs in a truly rugged, low-cost package. It combines virtually all widely used thermocouples and resistance thermometers in one device



## CTD9100-165, 450, 650

The portable calibrators of the CTD9100 family are well suited to local calibration tasks due to their compact design and low weight. A new design concept connects a stable heat source with precise Pt100 temperature measurement. Temperature controlled metal blocks with interchangeable inserts.



## CTD9100-1100

High accuracy and stability at high temperatures combined with compact design allows this device to be carried and used anywhere. Different inserts allow testing of different diameter thermometers and temperature switches.



CTH6500	CEP3000	CTD9100-165, 450, 650	CTD9100-1100
<b>Temperature range:</b> -200 ... +1760 °C (-392 ... + 3200 °F)	<b>Measure and Simulation of:</b> Resistance: Pt, Cu Ni and YSI Voltage: J, K, T, E, R, S, B, L, U, N, P	<b>Temperature range:</b> 165: -35 ... 165 °C (-31 ... 329 °F) 650: 40 ... 650 °C (104 ... 1202 °F)	<b>Temperature range:</b> 200 ...1100 °C (392 ... 2012 °F)
<b>Accuracy:</b> 0.03K with Pt-100.	<b>Accuracy:</b> To 0.4K for thermocouple Type-J 0.3K for 4-wire Pt-100	<b>Accuracy:</b> 165: 0.15 ... 0.25K 650: 0.3 ... 0.8K	<b>Accuracy:</b> 3K
<b>Power supply:</b> 9V battery	<b>Power supply:</b> 4 x AA batteries	<b>Accessories:</b> Operating Software, Carry Case, Inserts	<b>Accessories:</b> Inserts drilled or undrilled, carry case

# TEMPERATURE STANDARDS

## Compact Dry Well

### CTD9100-375

The portable CTD9100 calibrator is particularly suited to field calibration. They are extremely user friendly. Due to their compact design and low weight, the devices can be carried and used almost anywhere. The CTD9100-375 is most notable for its rugged case and very small dimensions.



## Zero Point Dry Well

### CTD9100

This block calibrator not only calibrates, but it also controls temperature. It can simply and easily generate a stable reference temperature, thus simplifying the calibration of thermocouples. The complexity of water fixed-point cells and the danger of freezing and damage in transport are avoided.



## Micro Calibration Baths

### CTB9100-165, 225

Because of their small insertion depth and the resulting stem conduction error, short sensors suffer a marked increase in their measurement uncertainty with temperature dry well calibrators. Once the immersion depth falls below 70 mm, then a micro bath is preferable to a dry well calibrator in all instances.



## Multi Function

### CTM9100-150

This multifunction temperature calibrator is used to calibrate most thermometer types including surface and non-contact inferred thermometers and temperature switches. It includes four applications in one device: Dry Well, Liquid bath, inferred insert and surface insert.



### CTD9100-375

**Temperature range:**  
ambient ... 375°C (ambient ... 700 °F)

**Accuracy:**  
0.4K

**Accessories:**  
Inserts drilled or undrilled, carry case

### CTD9100

**Temperature range**  
-10 ... 0 ... 100°C (14 ... 32 ... 212 °F)

**Accuracy:**  
0.05K @ 0°C

**Accessories:**  
Carry case

### CTB9100-165, 225

**Temperature range**  
165: -35 ... 165°C (-31 ... 329 °F)  
225: 40 ... 225°C (104 ... 437 °F)

**Accuracy:**  
165: ± 0.2K  
225: ± 0.3K

**Accessories:**  
Carry case, silicon oil, operating software

### CTM9100-150

**Temperature range**  
-20 ... 150°C (-4 ... 302°F)

**Accuracy:**  
0.1 ... 1.0K depending on application

**Accessories:**  
Inserts for each application

# TEMPERATURE STANDARDS

## Bench-Top Calibrator

### CED7000

The CED7000 process calibrator combines all the features of a temperature and pressure calibrator in a single instrument. With the performance of a laboratory instrument, an additional isolated measurement channel and optional external pressure modules, the CED7000 is perfect for the widest range of calibration tasks.



## Reference Probes

### CTP1000, 2000, 9000

These working standard thermometers are particularly suited for applications in industrial laboratories. They enable easy comparative calibration in our baths and dry block calibrators.



## Accessories

Inserts are available for dry wells and baths to accommodate various thermocouples, RTD's, or thermometers.

Accessories also include drilled or un-drilled metal inserts, ceramic inserts, specially designed surface inserts, RTD or thermocouple working standards, placement/removal tools, bath liquid and syringes. The un-drilled inserts can be drilled to specific diameters to accommodate special sensors.



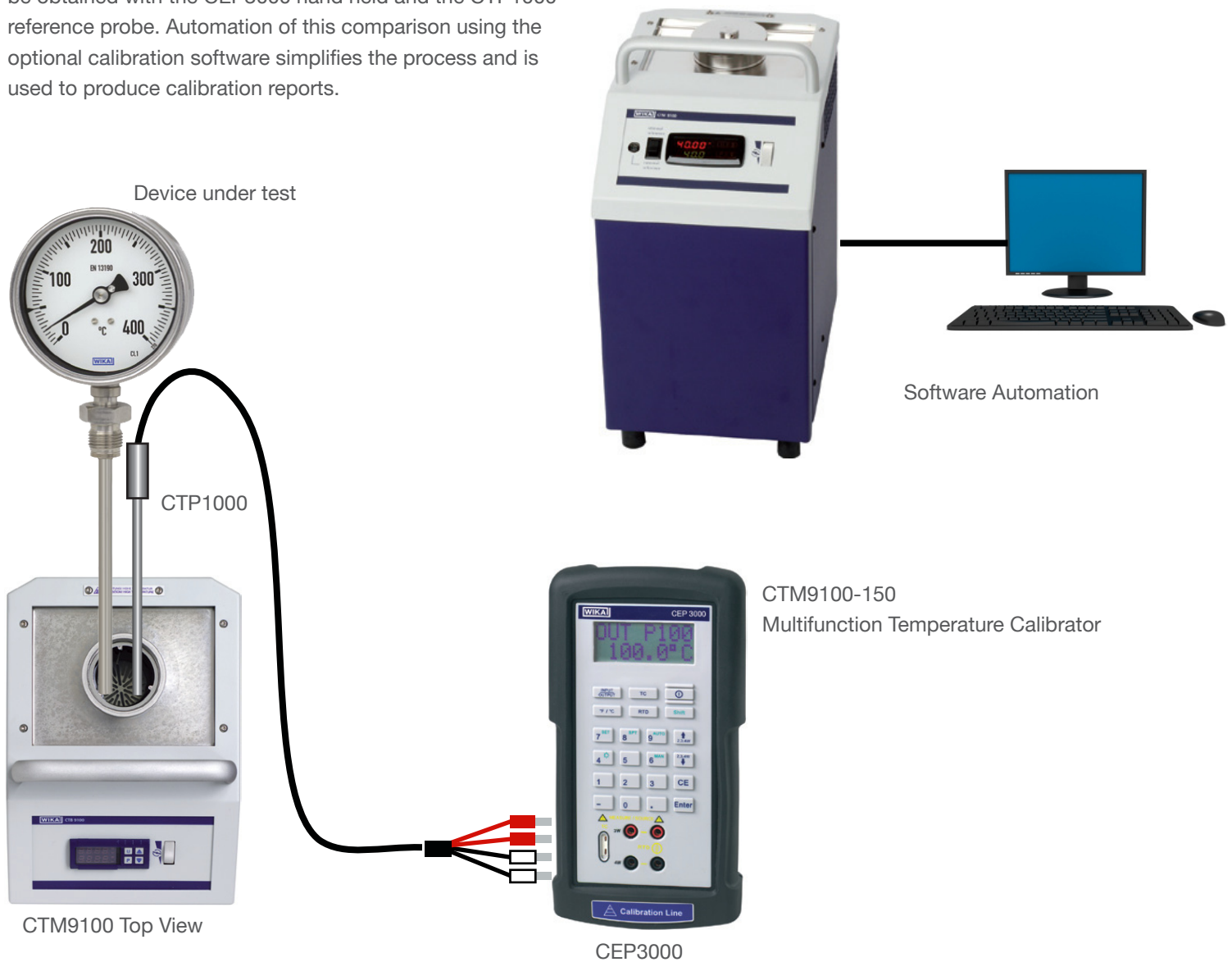
CED7000	CTP1000, 2000, 9000	Accessories	
<p><b>Measurement and simulation of:</b> thermocouples (13), resistance thermometers (9), voltage, current, resistance</p>	<p>Platinum resistance thermometers or Type-S Thermocouple working standards</p>	<p><b>Insert with four holes:</b> 7 mm, 9 mm, 11 mm and 13.5 mm <b>Insert with seven holes:</b> 1 x 2 mm, 3 x 3.5 mm, 2 x 4.5 mm, 1 x 6 mm</p>	<p><b>Platinum resistance thermometers:</b> Models CTP1000 and CTP2000 <b>Thermocouple:</b> Model CTP9000</p>
<p><b>Accuracy:</b> up to 0.003% of reading</p>	<p><b>Range:</b> -200...1300°C (-328 ... 2372°F)</p>	<p>Insert replacement tools</p>	<p>Testing connection cables</p>
	<p><b>Stability:</b> down to 20mK</p>	<p>Surface insert Infrared insert</p>	<p>Bath liquid and pump</p>

# APPLICATIONS

## Temperature standards in metrology laboratories

Dry-Well or dry-block calibrators and liquid bath calibrators are used to calibrate temperature sensors. They are traceable and can be used to calibrate most field temperature sensors. Dry-Block calibrators have heated blocks that are used as a stable and accurate temperature source. Dry-Blocks are designed with one or more interchangeable inserts. The insert may have two or more bore holes, one is used for the thermometer being calibrated and one for a reference thermometer for comparative calibration. Liquid Bath calibrators use a heated liquid to create a stable temperature for calibration.

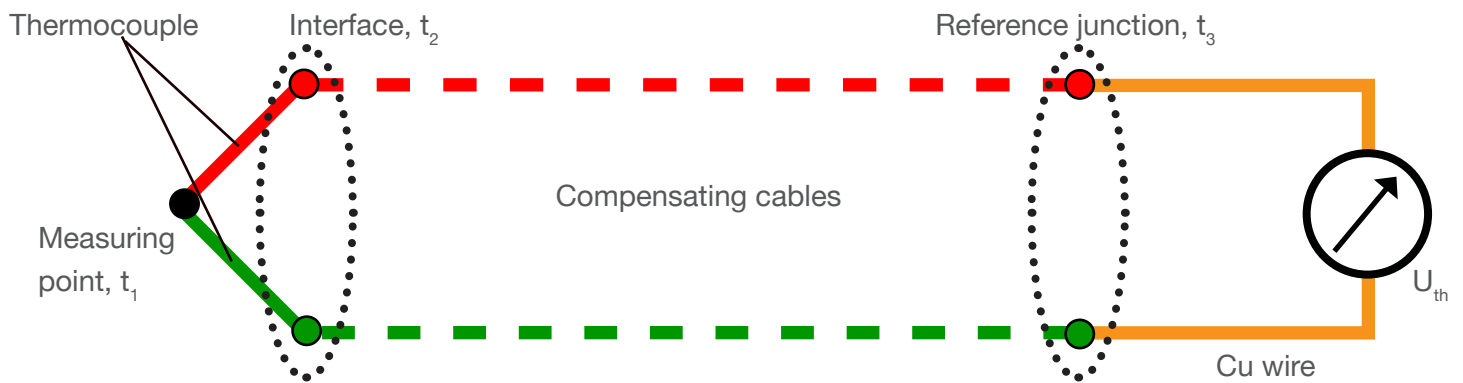
The block or bath is either heated or cooled to the desired calibration temperature. Once the stable temperature has been reached, the temperature probes to be calibrated can be compared with the reference thermometer. Higher accuracies can be obtained with the CEP3000 hand held and the CTP1000 reference probe. Automation of this comparison using the optional calibration software simplifies the process and is used to produce calibration reports.



# APPLICATIONS

## Temperature standards - cold junction calibration

Calibration of thermocouples is simplified by using CTD / CTB 9100 series calibrators in combination with the CTD9100-Zero calibrator to achieve a stable reference temperature. The complexity of water fixed point cells and the damage of freezing or damage in transport is avoided. The "freezing point calibrator" can achieve the absolute zero point and, through active cooling, can achieve more test temperatures.



CTD9100 / CTB 9100

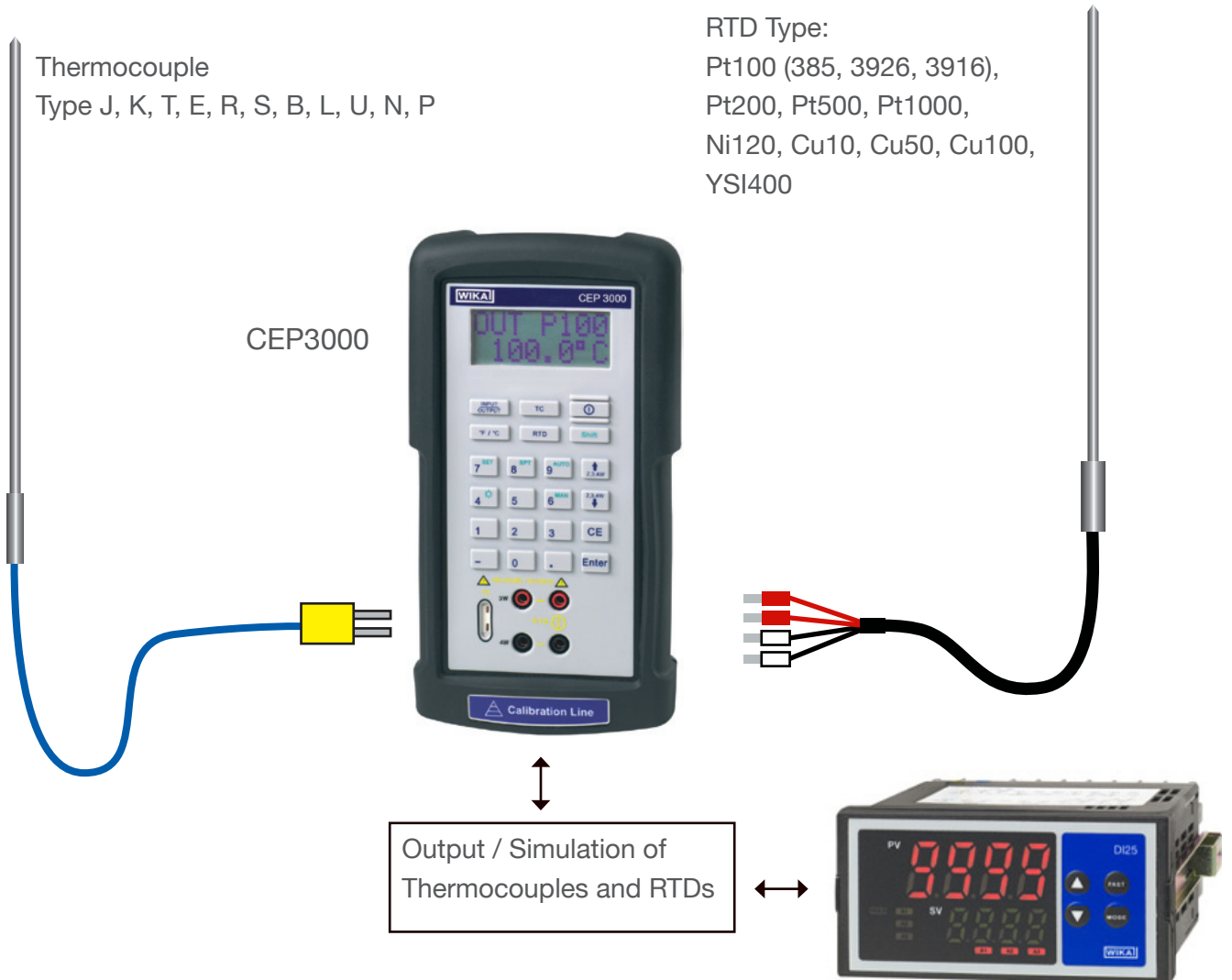


CTD9100-Zero

# APPLICATIONS

Temperature standards in field applications

The CEP3000 is used to measure and simulate 11 different thermocouples and 11 different resistance thermometers. Measurement is achieved through direct connection of a thermocouple or RTD. Simulation of thermocouples and RTDs is achieved through the same connections but the selected output is directed to an appropriate thermocouple or RTD indicator.





## About Mensor

Since 1969 Mensor Corporation has been designing and manufacturing precision pressure measuring and pressure calibration instruments and systems. From the very first quartz manometer designed for the aerospace industry, to the modern CPC 6000 Automated Pressure Calibrator of today, Mensor, now a part of WIKA Alexander Wiegand SE & Co. KG, specializes in providing quality pressure and temperature calibration products and services to a wide variety of industries around the world.

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LEAN  
CLEAN  
GREEN

Mensor is dedicated to manufacturing quality products in a “Lean, Clean and Green” environment. All of our processes are regularly evaluated to promote continuous improvement. Kaizen events, 5S, and SQDC boards are used on a regular basis to promote lean manufacturing. Our 5S program is called “5S plus”. The traditional 5S program represents **Sort, Set, Shine, Standardize** and **Sustain**, where “5S plus” includes **Safety**. We have containers designated to recycle paper, metal, electronics and cardboard. Waste is recycled to do our part in keeping our environment green.

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