OneTemp pty ltd
measure | control | record

TEMPSENS

Contact Temperature Calibrators

- Potable Temperature Calibration
- High Temperature Dry Block Furnace
- Liquid Calibration Bath
- Temperature Reference Unit
- Dry Block Calibrator

TEMPSENS

What is Calibration

The comparison of a measuring instrument against an accurate standard to determine any deviation.

The device with known assigned correctness is called the Standard. The second device is the Unit Under Test (UUT).

Accurate Temperature Calibration

Temperature Calibration has many facets. It can be carried out thermally in the case of probes or electrically in the case of Instrument and it can be performed directly with certified equipment, or indirectly with traceable standards.

Thermal (Temperature) calibration is achieved by elevating (or depressing) the temperature sensor to a known, controlled temperature and measuring the corresponding change in its associated electrical parameter (voltage or resistance).

The accurately measured parameters compared with that of a certified reference probe; the absolute difference represents the calibration error. If the sensor is connected to a measuring instrument, the sensor and the instrument combination can be effectively calibrated by this technique.

A typical general purpose system comprises of a thermal reference (stable temperature source), a certified reference probe with its certificate, a precision electronic digital thermometer, bridge or digital voltmeter.

Temperature Source

Dry Block Calibrator

Provides the most convenient, portable facilities for checking & calibrating industrial probes and they are usually reasonable rapid heating and cooling device. The unit consists of a special designed heating block which has located internal holes for the probes. Although the block temperature is accurately controlled, any indication provided should be used for guidance only.

As with any comparison technique a certified sensor and indicator should be used to measure the block temperature and used as a reference for the test probe. Two types of unit are available; portable units which can be taken on to plant for the on-site calibration and laboratory units to which industrial sensors are brought as required.

Stirred Liquid Bath

Provide superior thermal environment for probe immersion as no air gap exist between the probe and the medium Thermal coupling is therefore much better than the alternatives described, and the stirring results in very even heat distribution throughout the medium. Methanol is used for temperature below 0°C, water from 0 to 80°C and silicon oil for upto 250°C.

Black Body Source

Black bodies are reference sources used for testing infrared systems. They are required in industry for calibration of pyrometers, infrared line scanners or cameras. In laboratory, they are part of benches for characterization of complex optronic systems. Tempsens offers a wide range of black bodies to cover all Customer's needs.

Cold Junction Compensation

By connecting any thermocouple to measurement device three dissimilar metal junction are created in the circuit: the thermocouple junction itself, or hot junction, and the junction between each lead and the measurement device, or cold junctions. These cold junction provide their own thermoelectric voltages that are proportional to the temperature at the device terminals.

A technology known as cold junction compensation is therefore used to remove this unwanted effect.

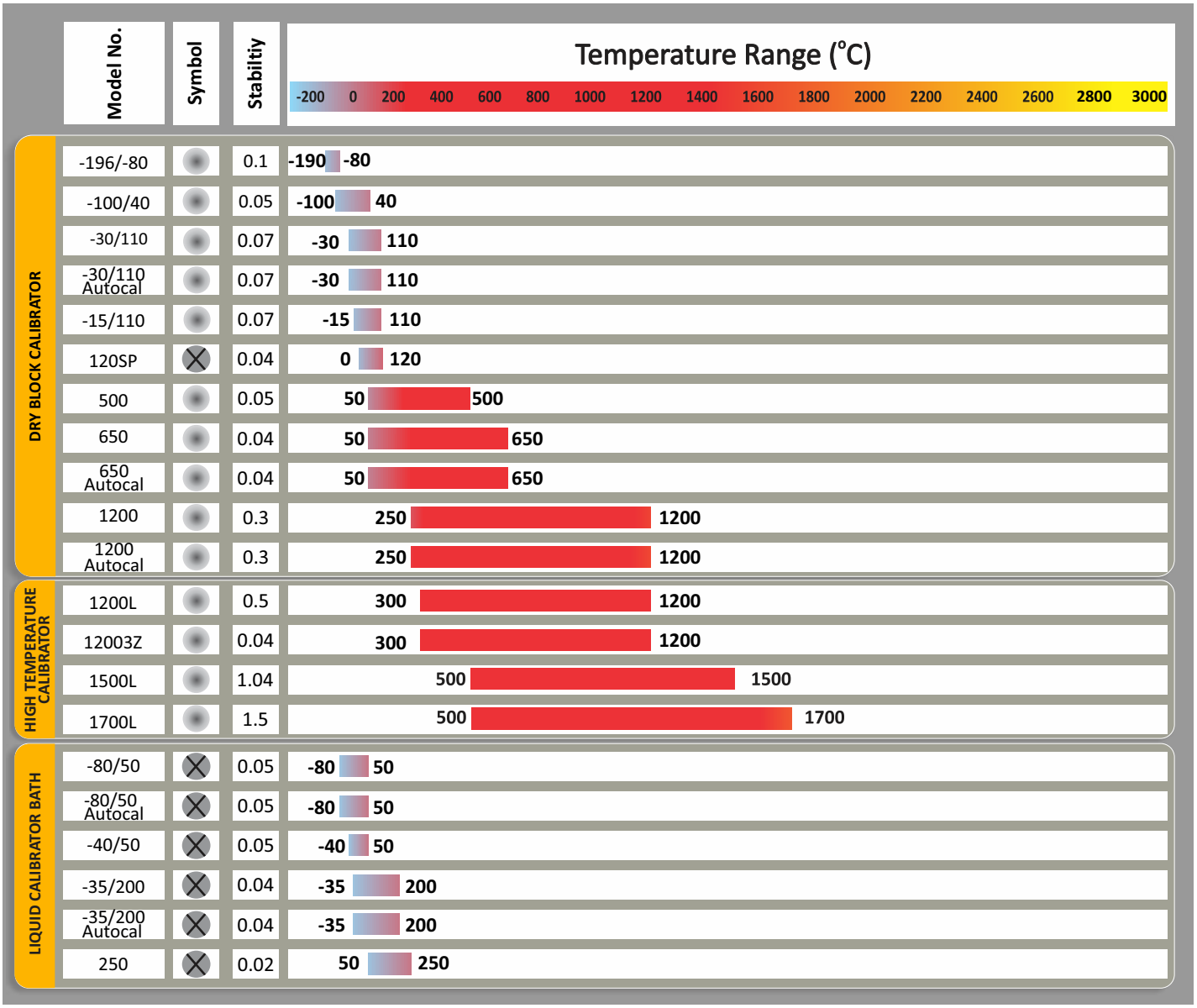
Referernce Unit

In case of accurate thermocouple measurement, it's a common practice to reference the cold junction temperature at ice point (0°C) so that copper leads may be connected to an EMF readout device. This procedure avoids the compensation of cold junction temperature at the terminal of read out which may not be constant and the measurement may not be very accurate.

TEMPSENS

Calibrators Temperature Representation for Contact Type Calibration

Division of contact type calibrators according to the temperature range.



Master Sensor

SENSOR	TYPE	RANGE(°C)	ACCURACY
RTD	PT 25.5 PT 100 PT 200	-80 to 400	Class A
		-80 to 250	1/3 DIN
		-80 to 250	1/5 DIN
		-80 to 250	1/10 DIN
Thermocouple	K/N Type	0 to 1200	± 1.1°C OR ± 0.4%
	R/S Type	0 to 1500	± 0.6°C OR ± 0.1%
SSPRT	–	upto 660	long term drift ⩽ ±50mk/Yr.

Stable Reference Unit

TYPE	CALref 0	CALref 60
Channel	20	24
Ref. temp.*	0°C	60°C
Type of Junction*	J,K,T,E,N,R,S,B	J,K,T,E,N,R,S,B
Wall Mounted Model	✔	✔
Portable Model	✔	✔

* Reference temperature could be change according to customer requirement
* To be specified at time of ordering

TEMPSENS

Triple Point Of Water Cell with Maintenance Apparatus

Triple point of water is the most important defining thermometric fixed point used in the calibration of thermometers. Triple point of water cell is used to create a thermal equilibrium between solid, liquid and vapor phases are independent of ambient pressure. This thermal equilibrium occurs at 273.16 Kelvin or 0.01 degree Celsius. TPW cell is cylindrical borosilicate glass filled with pure water. The water in the cell is high purity and gas free and have isotropic composition.

TPW in Thermal Calibration

Thermal Calibration lab has facility for Fixed point calibration of SPRTs, HTPRTs and standard thermocouples probe. Fixed point calibration are used for primary temperature standard in thermal calibration to achieve the lowest possible uncertainties. Triple point of water cell may be the most commonly used type of fixed point and it is used in ITS-90 calibration. Water can exist as a solid, liquid and vapor at 0.01°C.

Tempsens TPW Cell

Tempsens TPW cells are manufactured with high quality borosilicate glass in two sizes mini & Standard. Special procedure for cleaning, ultra pure water with special degassing technique is used and the cell is flame sealed.

Uncertainty	2mK
Reproducibility	<1mK
Dimensions	OD-32 mm,Total Length-165mm
Material	Borosilicate Glass
Immersion Profile	
Depth	150 mm
Insert Construction	1 hole of 8 mm dia
Water Used	99.999% Pure distilled water
TPW Cell Type	Mini

Maintenance Apparatus For Tpw Cell

DRY BLOCK FURNACE : Dry block offers medium temperature range from -15°C to 110°C. It is a highly stable standard temperature source for calibrating RTD/thermocouples. It has peltier elements to generate stable temperature in the well. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Self tuned PID controller used for increased or decreased temperature.

KEY FEATURES

- ✓ High Stability
- ✓ PC Interfacing
- ✓ Simple to use & Cost effective portability

Maintenance Apparatus

Tempsens made maintenance dry block is best fitted for tpw cells. They are carefuly designed to give the required stability and uniformity and provide sufficient immersion depth for TPW cell. It can be also use as dry block calibrator using equalizing block for comparison calibration.

Equipments Used In Realization

TPW Mini Cell
Platinum Resistance Thermometer (PRT)
Measuring Equipment

Accessories

- Master RTD Model No. TPRT - A - 300
- Carry case
- Operational Manual
- Insertion Block Dia 32mm x 180mm long with 4 x 6mm hole of 150 mm insertion depth

SPECIFICATIONS OF CALSYS -15/110

- **Temperature Range** : -15/110
- **Temperature Resolution** : 0.1°C
- **Controlling Sensor** : RTD
- **Power Requirement** : 230 VAC
- **Weight** : 14 kg
- **Stability** : 0.05°C
- **Time to reach min. Temp.** : 30Min.
- **Method of control** : Digital self tuned PID controller
- **Dimension** : 430(H) x 170(W) x 188(D) mm
- **Insert Construction** : 33mm Dia x 220mm long for dry block

TEMPSENS

Portable Temperature Calibrators

-Portable

-Lightweight

-Highly Stable Temperature Calibrator for Industrial Field Uses

www.tempsens.com

TEMPSENS

CALSYS -196/-80

Portable RTD Calibrator for Industrial/ Laboratory Field Use

CALsys -196/-80 offers ultra low temperature range from -190 to -80°C. It is a highly stable standard source for calibrating Thermocouples / RTD. It has been designed for low temperature range calibration and find application in the glass, pharma, electrical power, automotive & material processing industries. The comparison volume is a metallic block of aluminium having dimension 25mm diameter with 300 mm long which fixed into the liquid nitrogen container for calibration of RTD & thermocouple. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment.

With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

Dry Block Calibrators

Wide Temperature Range

CALsys -196/-80 offer a wide temperature range from -190 °C to -80 °C

Lightweight, portable

The CALsys -196/-80 block is ideal for Industrial/ Laboratory field use. It only weights about 8 kg, and it is small enough to carry around.

Accuracy and performance

The CALsys -196/-80 is an easily portable unit that also provides excellent calibration accuracy with stability ± 0.1°C at -190 °C.

Accredited calibration

Each CALsys -196/-80 is delivered with an accredited calibration certificate.

Computer Interface

The communication port(RS-232/ USB) enables communication with selected CALsys -196/-80 calibrators for automation calibration and documentation thus it made documentation easy.

SPECIFICATIONS

Temperature range	-190 to -80°C
Temperature Resolution	1.0°C
Stability	±0.1°C at-190°C
	±0.1°C at -130°C
	±0.1°C at -80
Uniformity	±0.2°C at-190°C
	±0.15°C at -130°C
	±0.17°C at -80
Controlling Sensor	RTD Pt100
Method of Control	Digital self tuned PID Controller
Insert Construction	Dia 25 x 300 mm long (2 x 6 mm & 2 x 8 mm holes) of 300 mm insertion depth
Time to Reach Max Temp	30 Mins
Computer Interface	RS - 232
Operating Temperature	20 to 45°C
Power Requirement	230 VAC, 300 W
Dimensions of Container	580(H) x 280(Dia)
Nitrogen Container	10Ltr.
Dimension of Control Panel	270(H)x380(W)x270(D)
Weight	15Kg (without packing)

ACCESSORIES

STANDARD ACCESSORIES

- Reference Standard RTD

- NABL accredited calibration certificate - 3 point
- Software - Cal Soft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.
- Operational Manual

KEY FEATURE

- Large Immersion Depths
- Wide Operating Range (-190 to -80°C)
- High Stability
- PC interfacing
- Simple to use and cost effective
- Separate control box

OPTIONAL ACCESSORIES

- TEMPMET 08, TEMPMET 09
- Extra Equalizing Block.....Part No. EQ2

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

Calsys -100/40

Portable, Lightweight, highly accurate low temperature FPSC system based Calibrator for Industrial/ Laboratory field use

Calsys -100/40 offers easy to use portable low temperature calibrator with temperature range from -100 to 40°C. It is a highly stable standard furnace for calibrating RTD. This calibrator can be used on site for high temperature calibration and also find application in aerospace, oil gas petrochemical, pharmaceutical industry, electric power, automotive and material process industry. The comparison volume is a metallic fixed block of special material, which has a fixed insert with 120mm long. Low temperature dry block furnace based on FPSC cooling system. This model provides special design isothermal enclosure which can calibrate sensor against the calibrator. Temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed Calsys -100/40 model offers better esthetic design and performance wise upgraded to next level.

With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

Dry Block Calibrators

Wide Temperature Range

Calsys -100/40 offer a wide temperature range from -100°C to 40°C

Lightweight, portable

The Calsys -100/40 block is ideal for Industrial/ Laboratory field use. It only weights about 11 kg, and it is small enough to carry around.

Speed

The Calsys -100/40 extremely quick to reach various temperatures, i.e. it cools down to -100°C in 90 minutes and heats up room temp to +40°C in 20 minutes. This saves time and increases productivity.

Accuracy and performance

The Calsys -100/40 is an easily portable unit that also provides excellent calibration accuracy with stability ± 0.05°C .

Cooling Technology

Tempsens provide low temperature dry block calibrator with use of FPSC system.

FPSC system able to cool down calibration block upto -100°C with minimum power.

Accredited calibration

Each Calsys -100/40 is delivered with an accredited calibration certificate.

Computer Interface

The communication port (RS-232/ USB) enables communication with selected Calsys -100/40 calibrators for automation calibration and documentation thus it made documentation easy.

SPECIFICATIONS

Temperature range	-100°C to 40°C (at 20°C)
Stability	±0.05°C at -100°C
	±0.03°C at 0°C
	±0.05°C at 40°C
Radial uniformity	±0.1°C at -80°C
Immersion depth	120 mm
Fixed insert dimensions	6.5 mm x 3 holes
Method of Control	Self tunned PID controller
Cooling time	90 Min (Ambient to -100°C)
Resolution	0.1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	380(H) x 170(W) x 188(D) mm
Weight	11Kg
Power requirements	230 VAC, 500W(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	5 °C to 20 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	5°C ... 20°C

Note : Customized options available as per customer requirement.

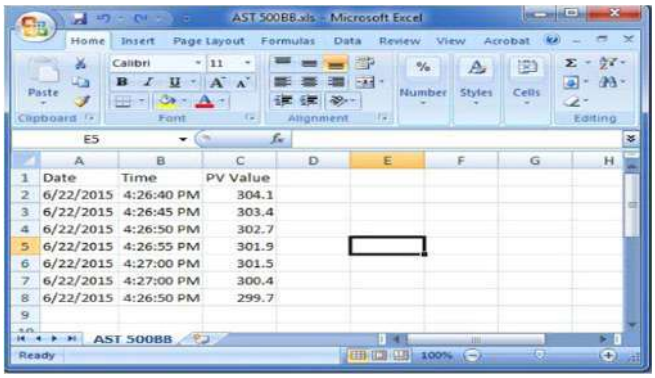
ACCESSORIES

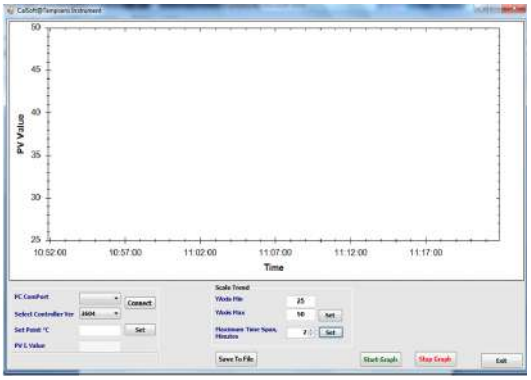
Inserts for Calsys -100/40 models

Inserts for Calsys -100/40 are made of aluminum. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements. Insert Model Description

Inserts	Description
Ci1	Multihole fixed, 1x8 mm, 2x 6.5mm

SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard RTD Part no. TPRT- A- 300.

- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new CALsys -100/40 calibrator and different accessories.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

CALSYS -30/110
CALsys -30/110 Autocal

Highly accurate & Automatic Dry Block Calibrator for Industrial/Laboratory field use

Dry Block Calibrators

Wide Temperature Range

Calsys -30/110 & CALsys -30/110 Autocal a wide temperature range from -30 °C to 110 °C

Lightweight, portable

The Calsys -30/110 & CALsys -30/110 Autocal block is ideal for Industrial/ Laboratory eld use.It only weights about 11 kg, and it is small enough to carry around.

Speed

The Calsys -30/110 & CALsys -30/110 Autocal extremely quick to reach various temp. , i.e. it cools down to 110 °C in 25 minutes and heats up room temp to +110 °C in 10 minutes. This saves time and increases productivity.

Accuracy and performance

The Calsys -30/110 & CALsys -30/110 Autocal is an easily portable unit that also provides excellent calibration accuracy with stability ± 0.07 °C at 110 °C..

Accredited calibration

The Calsys -30/110 & CALsys -30/110 Autocal is delivered with an accredited calibration certicate.

Computer Interface

The communication port (RS-232/ USB) enables communication with selected Calsys -30/100 Calibration for automation calibration and documentation easy.

CALsys -30/110 Autocal

CALsys -30/110

Calsys -30/110 & CALsys -30/110 Autocal easy to use portable low temperature calibrator with temperature range from -30 to 110°C. It is a highly stable standard furnace for calibrating RTD. This calibrator can be used on site for high temperature calibration and also nd application in aerospace, oil gas petrochemical, pharmaceutical industry, electric power, automotive and material process industry. The comparison volume is a metallic fixed block of special material, which has a diameter of 32mm and 120mm long. Low temperature dry block furnace based on thermoelectric cooling circuitry. This model provides special design isothermal enclosure which can calibrate sensor against the calibrator. Temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super ne adjustment. Our newly designed Calsys -30/110 model offers better esthetic design and performance wise upgraded to next level. The CALsys -30/110 Autocal is an automatic temperature calibration system for the Thermocouple and RTD's. The system consists of Temperature bath and PC software, which together contribute to the whole cycle of auto calibration process. The system accept 4 channels, 4 Thermocouples or 4 RTD's. The connection for these channels through special type of locking connectors. The channel configuration can be done with LCD display via touch screen keypad. The thermocouple microvolt & RTD ohm reading for each channel is monitored with CJC compensation. After the calibration process complete the PC software generates a report of actual calibrated values for the inputs.

With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

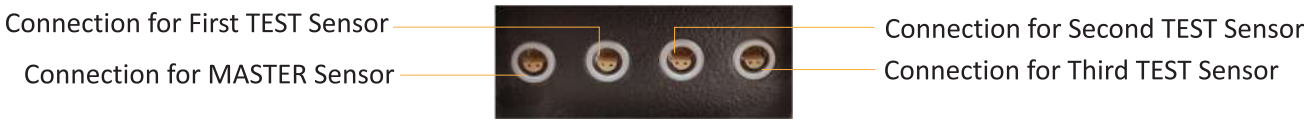
SPECIFICATIONS

CALsys -30/110 Autocal & CALsys -30/110

Temperature range at 25°c	-30 °C to 110 °C
Accuracy	±0.5 °C
Stability	±0.04°C at -30°C
	±0.06°C at 0°C
	±0.07°C at 110°C
Radial uniformity	±0.05°C at -30°C
	±0.07°C at 0°C
	±0.08°C at 110°C
Immersion depth	120 mm
Fixed insert dimensions	32 mm
Method of Control	Self tunned PID controller
Heating time	10 Min
Cooling time	25 Min (110 °C to -30°C)
Resolution	0.1 C (0.01 C optional)
Display	LCD, °C or °F user-selectable
Size (H x W x D)	380(H) x 170(W) x 188(D) mm
Weight	11Kg
Power requirements	230 VAC, 500W(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 25 °C
Input (CALsys -30/110 Autocal)	**Four channels(one master and three test sensors).high quality universal LEMO connector suitable both for T/C (J, K, N, T, R, S, B type) and Rtd**
Software (CALsys -30/110 Autocal)	**The calibrator will be provided with software for data recording (Manual Mode) and Test Certificate genration in Auto Mode**
Data logging (CALsys -30/110 Autocal)	**Data logging facility with logged data export to computer through LAN port (optional USB)**

SENSOR CONNECTION (CALsys -30/110 Autocal)

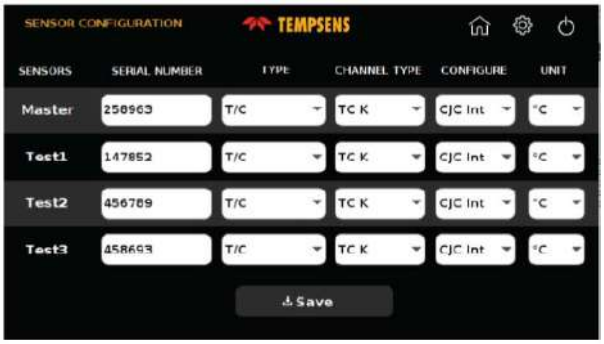
The Calibration system provides calibration up to four channels i.e. one master and three test sensors . We use high quality universal LEMO connector i.e. suitable both for T/C and Rtd.



USER INTERFACE (CALsys -30/110 Autocal)

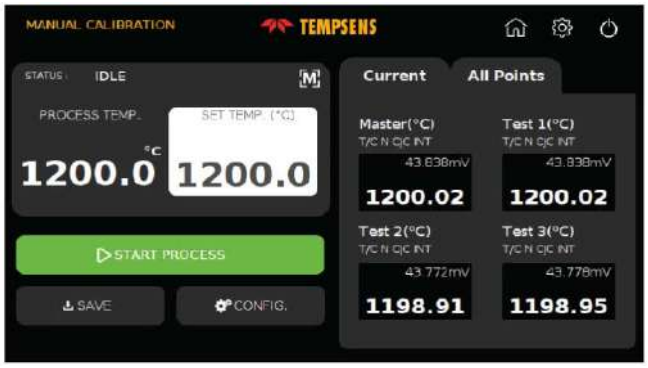
Home Screen: In this screen user can select sensor configuration (for selection of type of sensors), mode of operation (auto / manual) and data transfer (file transfer). This window also shows the ongoing process.

Sensor Configuration: In this screen user select the sensors Thermocouple (J, K, B, N, R, S, T type) / RTD(PT 100, PT 1000, PT 50 etc.) for calibration with their serial number and temperature unit (C/F/K).

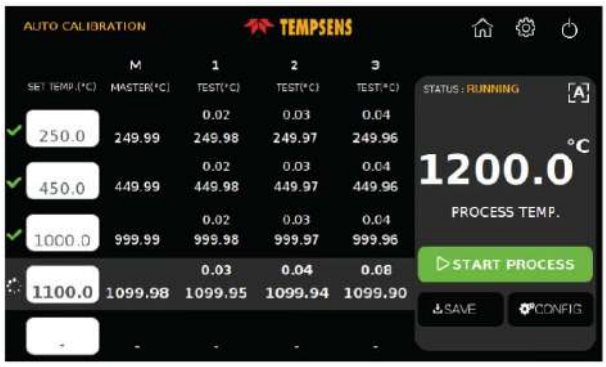


CALSYS -30/110 Autocal have two operating modes i.e. Manual and Auto mode

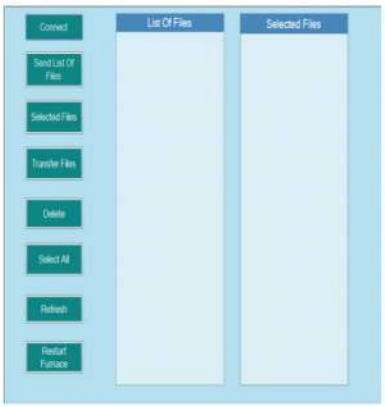
Manual Mode: In this screen user set the temp. Point for calibration and on clicking start process button the process of calibration starts



Auto Mode: In this screen user sets the temperature Points for calibration (Max 5 Points)

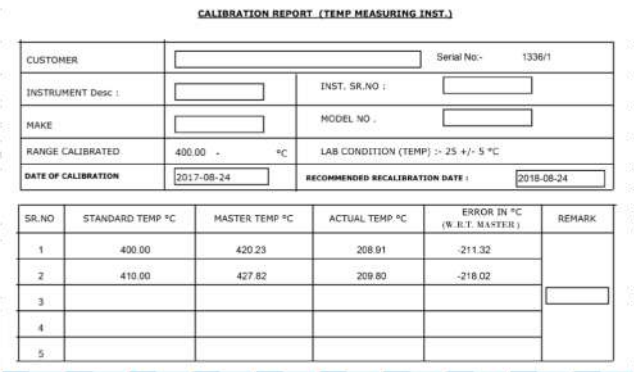


SOFTWARE : Tempsens make Easy to use Customized software enables end user to access temperature data both for Manual mode and Automode



AUTOMATIC CALIBRATION REPORT GENERATION
(Optional)

- Tempsens can offer customized data saving option both for manual and Automode.
- After completion manual/Automode automatic calibration report can be generated at PC side based on pre define format.



CALIBRATION REPORT (TEMP MEASURING INST.)

CUSTOMER		Serial No:- 1336/1	
INSTRUMENT Desc :		INST. SR.NO :	
MAKE		MODEL NO :	
RANGE CALIBRATED	400.00 - °C	LAB CONDITION (TEMP) :- 25 +/- 5 °C	
DATE OF CALIBRATION	2017-08-24	RECOMMENDED RECALIBRATION DATE :	2018-08-24

SR.NO	STANDARD TEMP °C	MASTER TEMP °C	ACTUAL TEMP °C	ERROR IN °C (W.R.T. MASTER)	REMARK
1	400.00	420.23	208.91	-211.32	
2	410.00	427.82	209.80	-218.02	
3					
4					
5					

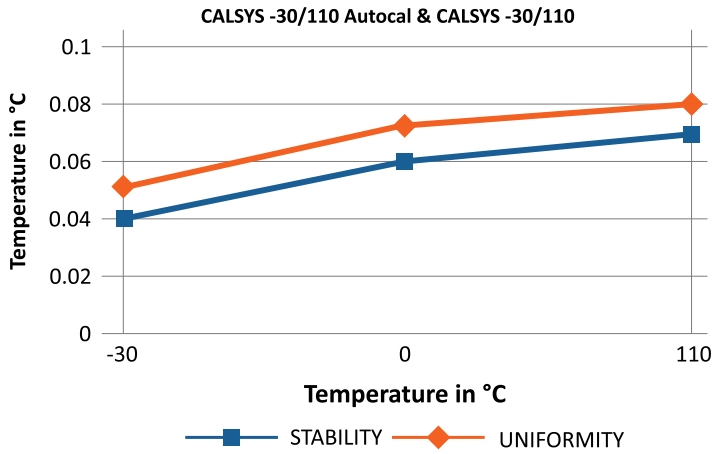
ACCESSORIES

Inserts for CALSYS -30/110 Autocal & CALSYS -30/110 models

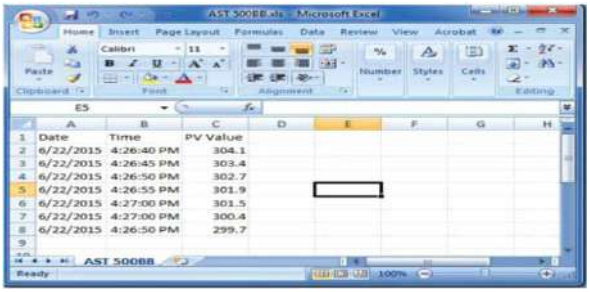
Inserts for CALsys -30/110 Autocal & CALsys -30/110 are made of aluminum. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements.

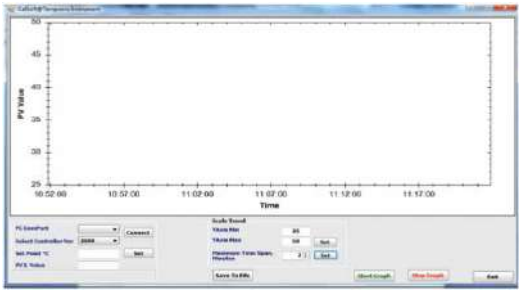
Inserts	Description
Ci1	Multihole fixed, 1x8 mm, 2x 6.5mm
Ci2	Multihole, Special customize

STABILITRY & UNIFORMITY



SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard RTD Part no. TPRT- A- 300.

- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new CALsys Calibrator & different accessories.

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

Calsys -15/110

Portable, Lightweight, highly accurate low temperature Calibrator for Industrial/ Laboratory field use

Dry Block Calibrators

Wide Temperature Range

Calsys -15/110 offer a wide temperature range from -15 °C to 110 °C

Lightweight, portable

The Calsys -15/110 block is ideal for Industrial/ Laboratory field use. It only weights about 11 kg, and it is small enough to carry around

Speed

The Calsys -15/110 extremely quick to reach various temperatures, i.e. it Heats down to -15 °C in 25 minutes and heats up room temp to +110 °C in 10 minutes. This saves time and increases productivity

Accuracy and performance

The Calsys -15/110 is an easily portable unit that also provides excellent calibration accuracy with stability ±0.07 °C at 110°C.

Accredited calibration

Each Calsys -15/110 is delivered with an accredited calibration certificate.

Computer Interface

The communication port(RS-232/USB) enables communication with selected Calsys -15/110 calibrators for automation calibration and documentation thus it made documentation easy.

Calsys -15/110 offers easy to use portable low temperature calibrator with temperature range from –15 to 110°C. It is a highly stable standard furnace for calibrating RTD. This calibrator can be used on site for high temperature calibration and also find application in aerospace, oil gas petrochemical, pharmaceutical industry, electric power, automotive and material process industry. The comparison volume is a metallic block of special material, which has a diameter of 24mm and 120mm long. Low temperature dry block furnace based on thermoelectric cooling circuitry. This model provides special design isothermal enclosure which can calibrate sensor against the calibrator. Temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed Calsys -15/110 model offers better esthetic design and performance wise upgraded to next level.

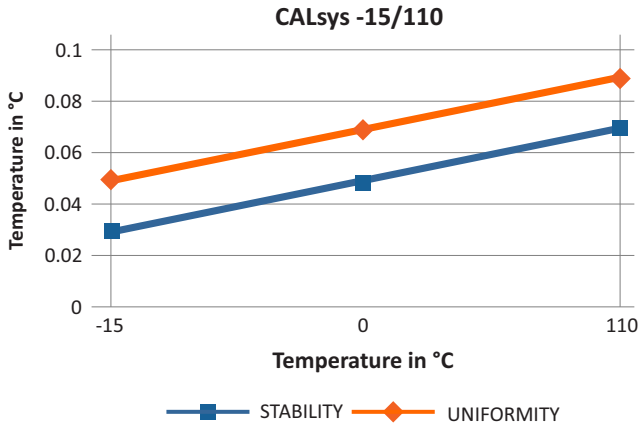
With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Temperature range at 25°c	-15 °C to 110 °C
Accuracy	±0.5 °C
Stability	±0.03°C at -15°C
	±0.05°C at 0°C
	±0.07°C at 110°C
Radial uniformity	±0.05°C at -15°C
	±0.07°C at 0°C
	±0.09°C at 110°C
Hysteresis	0.02 °C
Immersion depth	120 mm
Insert OD dimensions	24 mm
Method of Control	Self tunned PID controller
Heating time	10 Min
Cooling time	25 Min (110 °C to -15°C)
Resolution	0.1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	380(H) x 170(W) x 188(D) mm
Weight	11Kg
Power requirements	230 VAC, 500 W(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	5 °C to 25 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	5°C ... 25°C

STABILITY / UNIFORMITY

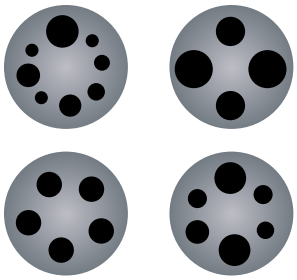


ACCESSORIES

Inserts for Calsys -15/110 models

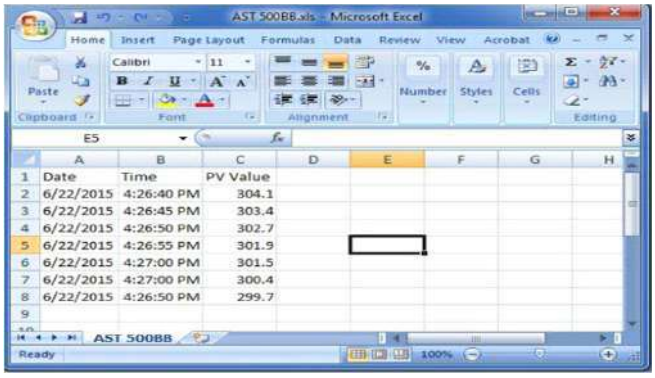
Inserts for Calsys -15/110 are made of aluminum. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements.

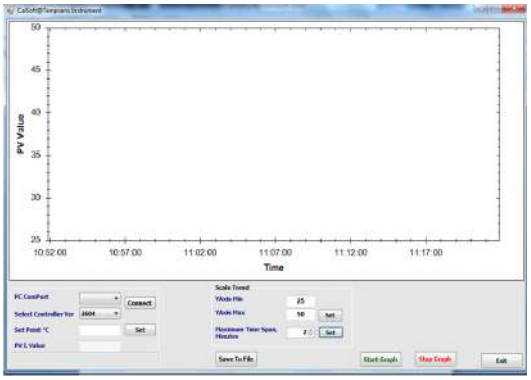
Inserts	Description
Ci1	Multihole, 4 x 6.5 mm
Ci2	Special (Customized)



Customized Equalizing Block....Part No. EQ1

SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard RTD Part no. TPRT- A- 300.

- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new CALsys -15/110 calibrator and different accessories.

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

CALsys 120SP

Peltier Based Temperature Calibrator for Industrial/ Laboratory Field Use

Dry Block Calibrators

Wide Temperature Range

CALsys 120SP offer a wide temperature range from 0 °C to 120 °C

Lightweight, portable

The CALsys 120SP block is ideal for Industrial/ Laboratory field use. It only weights about 8 kg, and it is small enough to carry around.

Speed

The CALsys 120SP extremely quick to reach various temperatures, i.e. it cools down to 100 °C in 80 minutes and heats up room temp 0 to +120 °C in 20 minutes. This saves time and increases productivity.

Accuracy and performance

The CALsys 120SP is an easily portable unit that also provides excellent calibration accuracy with stability ± 0.07°C at 120 °C.

Accredited calibration

Each CALsys 120SP is delivered with an accredited calibration certificate.

Computer Interface

The communication port(RS-232/ USB) enables communication with selected CALsys 120SP calibrators for automation calibration and documentation thus it made documentation easy.

CALsys 120SP offers medium temperature range from 0 to 120°C. It is a highly stable standard temperature source for calibrating RTD /thermocouples. It has peltier elements to generate stable temperature in the well. Use as a dry block & liquid bath using magnetic stirrer in one model. The comparison volume is a metallic block of aluminum, which has diameter of 24mm and 100mm length. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment.

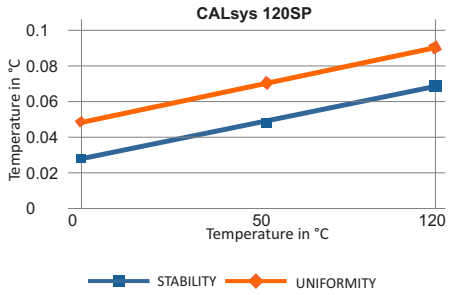
With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Temperature range	0 to 120°C
Temperature Resolution	0.1°C
Stability	± 0.03°C at 0°C
	±0.05°C at 50°C
	±0.07°C at 120°C
Uniformity	±0.05°C at 0°C
	±0.07°C at 50°C
	±0.09°C at 120°C
Controlling Sensor	Precision PRT
Medium	Silicon Oil (for liquid bath)
Method of Control	Digital self tuned PID Controller
Insert Construction	Dia 24 x 100 mm long, 3 x 6 mm hole
Time to Reach Max/Min Temp	20 to 25°C
Operating Temperature	20 to 45°C
Computer Interface	RS - 232
Power Requirement	230 VAC, 500 W
Dimensions	380(H) x 170(W) x 188(D) mm
Weight	14 Kg (without packing)

STABILITY / UNIFORMITY



ACCESSORIES

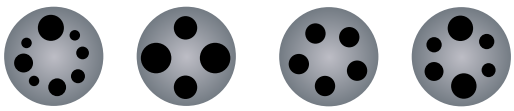
STANDARD ACCESSORIES

- Reference Standard PRT.....Part No.TPRT -A-300
- NABL accredited calibration certificate - 3 point
- Software - Cal Soft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.
- Operational Manual
- Carry Case

Carrying Case

KEY FEATURE

- Wide Operating Range (0 to120°C)
- High Stability
- PC interfacing
- Simple to use and cost effective
- Portability



Customized Equalizing Block....Part No. EQ1

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

CALsys 500

Portable, Dry Block Temperature Calibrator
for Industrial/ Laboratory Field Use

CALsys 500 offers medium temperature range from 50 to 500°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. The comparison volume is a metallic block of aluminum, which has diameter of 27mm and 120mm long. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment

With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

Dry Block Calibrators

Wide Temperature Range

CALsys 500 offer a wide temperature range from 50 °C to 500 °C

Lightweight & portable

The CALsys 500 block is ideal for Industrial/ Laboratory field use. It only weights about 3.80 kg, and it is small enough to carry around.

Speed

The CALsys 500 extremely quick to reach various temperatures, i.e. it cools down to 100 °C in 80 minutes and heats up room temp 50 to 500 °C in 20 minutes. This saves time and increases productivity.

Accuracy and performance

The CALsys 500 is an easily portable unit that also provides excellent calibration accuracy with stability ±0.05°C at 500°C.

Accredited calibration

Each CALsys 500 is delivered with an accredited calibration certificate.

Computer Interface

The communication port(RS-232/ USB) enables communication with selected CALsys 500 calibrators for automation calibration and documentation thus it made documentation easy.

SPECIFICATIONS

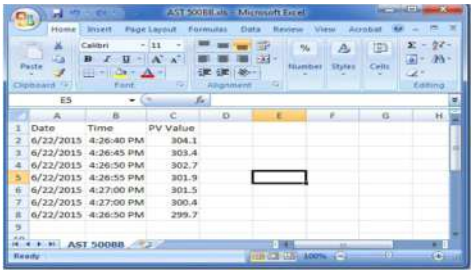
Temperature range	50 to 500°C
Temperature Resolution	0.1°C
Stability	±0.05°C at 500°C
Radial Uniformity	±0.3°C at 500°C
Time to Reach Max. Temperature	25 Mins
Time to Reach Mini Temp	80 Mins(Max temp 100°C)
Controlling Sensor	T/C "N" TYPE
Method of Control	Digital self tuned PID Controller
Insert Construction	Dia 27 x 120 mm long with 3 holes of 6.5 x110 mm insertion depth
Computer Interface	RS - 232
Operating Temperature	20 to 45°C
Power Requirement	230 VAC, 1 KW
Dimensions	270(H) x 154(W) x268(D) mm
Instrument Weight	3.80 Kg(without packing)

ACCESSORIES

STANDARD ACCESSORIES

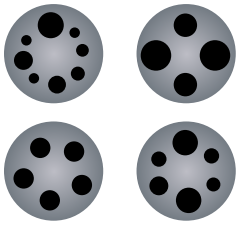
SOFTWARE

- Cal Soft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.



OPTIONAL ACCESSORIES

- Customized Equalizing Block....Part No. EQ1



Customized Equalizing Block....Part No. EQ1

MASTER SENSOR

- Reference Standard Thermocouple (RTD)……
  Part No. TTCK-300

- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new CALsys 500 calibrator and different accessories.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

CALsys 650
CALsys 650 Autocal

Portable, Highly Stable & Automatic Temperature Calibrator for Industrial/ Laboratory Field Use

Dry Block Calibrators

Wide Temperature Range

CALsys 650 & CALsys 650 Autocal offer a wide temperatur range from 50 °C to 650 °C

Lightweight, portable

The CALsys 650 & CALsys 650 Autocal block is ideal for Industrial/ Laboratory field use. It only weight about 8 kg , and it is small enough to carry around.

Speed

The CALsys 650 & CALsys 650 Autocal extremely quick to reach various temperatures, i.e. it cools down to 100 °C in 80 minutes and heats up room temp to +650 °C in 20 minutes. This saves time and increases productivity

Accuracy and performance

The CALsys 650 & CALsys 650 Autocal is an easily portable unit that also provides excellent calibration accuracy with stability ± 0.04°C at 650 °C.

Accredited calibration

Each CALsys 650 & CALsys 650 Autocal is delivered with an accredited calibration certificate.

Computer Interface

The communication port (LAN / USB) enables communication with selected CALsys 650 PLUS & CALsys 650 calibrators for automation calibration and documentation.

CALsys 650 Autocal

CALsys 650

CALsys 650 & CALsys 650 Autocal offers easy to use portable temperature calibrator with medium temperature range from 50 to 650°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. This calibrator can be used on site in workshops, Test and measurement rooms as well as laboratories. The comparison volume is a metallic block of special material, which has a diameter of 32mm and 150mm long. The CALsys 650 Autocal is an automatic temperature calibration system for the Thermocouple and RTD's. The system consists of Temperature bath and PC software, which together contribute to the whole cycle of auto calibration process. The system accept 4 channels, 4 Thermocouples or 4 RTD's. The connection for these channels through special type of locking connectors. The channel configuration can be done with LCD display via touch screen keypad. The thermocouple microvolt & RTD ohm reading for each channel is monitored with CJC compensation. After the calibration process complete the PC software generates a report of actual calibrated values for the inputs. Our newly designed CALsys 650 & CALsys 650 Autocal model offers better esthetic design and performance wise upgraded to next level. This model offers better cooling time which is 2 times faster than our old model and has stability 30% better than the old model. Hence our new model not only saves important time for our valuable customer but also provides better performance.

With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

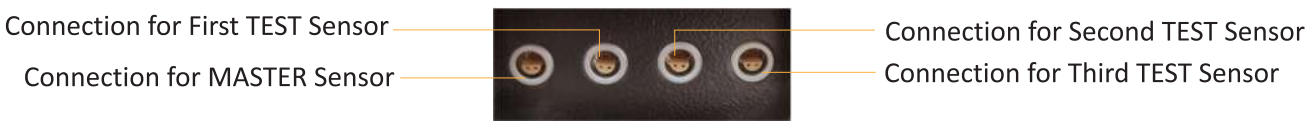
SPECIFICATIONS

CALsys 650 Autocal & CALsys 650

Temperature range	50 °C to 650 °C
Accuracy	±1 °C
Stability	±0.01°C at 50°C
	±0.02°C at 350°C
	±0.03°C at 650°C
Radial uniformity	±0.04°C at 50°C
	±0.07°C at 350°C
	±0.09°C at 650°C
Loading effect (with a 6.35 mm reference probe and three 6.35 mm probes)	0.04 °C
Hysteresis	0.02 °C
Insert OD dimensions	32 mm
Immersion depth	120 mm
Cooling time	80 Min (650 °C to 100 °C)
Heating time	20 Min
Resolution	0.1 °C
Display	LCD, °C or °F user-selectable
Power requirements	230 VAC, 1 KW(50 Hz)
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0°C to 40°C, 0% to 90% RH (non-condensing)
Specifications valid in environmental conditions	13°C ... 33°C
PC Interface	Ethernet port (CALsys 650 PLUS), RS - 232 (CALsys 650)
Size (H x W x D)	325(H) x 185(W) x 265(D) mm
Weight	8 Kg
Input (CALsys 650 Autocal)	**Four channels(one master and three test sensors).high quality universal LEMO connector suitable both for T/C (J, K, N, T, R, S, B type) and Rtd**
Software CALsys 650 Autocal)	**The calibrator will be provided with software for data recording (Manual Mode) and Test Certificate genration in Auto Mode**
Data logging (CALsys 650 Autocal)	**Data logging facility with logged data export to computer through LAN port (optional USB)**

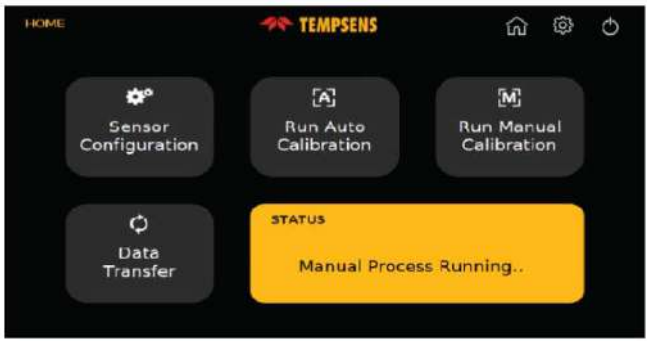
SENSOR CONNECTION (CALsys 650 Autocal)

The Calibration system provides calibration up to four channels i.e. one master and three test sensors . We use high quality universal LEMO connector i.e. suitable both for T/C and Rtd.

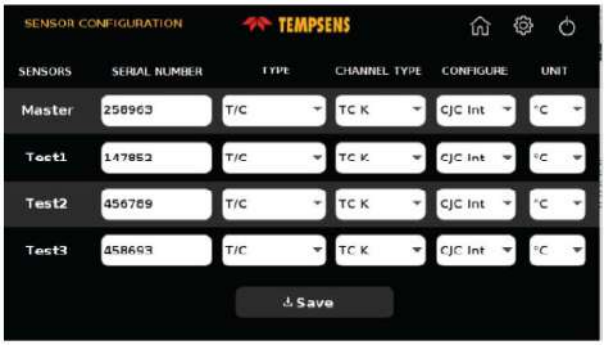


USER INTERFACE (CALsys 650 Autocal)

Home Screen: In this screen user can select sensor configuration (for selection of type of sensors), mode of operation (auto / manual) and data transfer (file transfer). This window also shows the ongoing process.



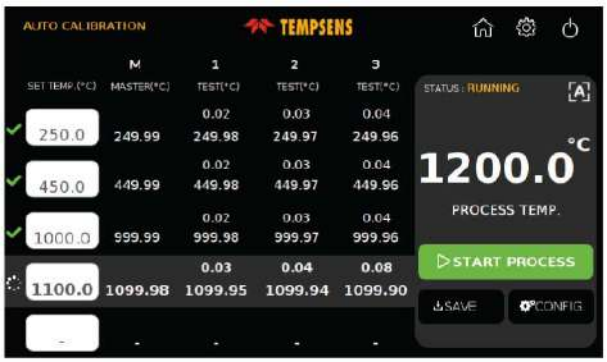
Sensor Configuration: In this screen user select the sensors Thermocouple (J, K, B, N, R, S, T type) / RTD(PT 100, PT 1000, PT 50 etc.) for calibration with their serial number and temperature unit (C/F/K).



CALSYS 650 Autocal have two operating modes i.e. Manual and Auto mode

Manual Mode: In this screen user set the temp. Point for calibration and on clicking start process button the process of calibration starts

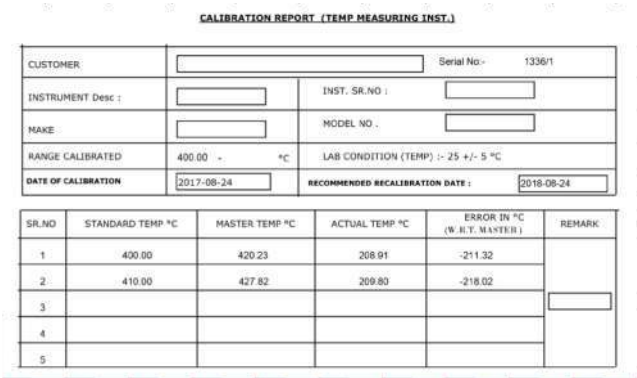
Auto Mode: In this screen user sets the temperature Points for calibration (Max 5 Points)



SOFTWARE : Tempsens make Easy to use Customized software enables end user to access temperature data both for Manual mode and Automode

AUTOMATIC CALIBRATION REPORT GENERATION (Optional)

- Tempsens can offer customized data saving option both for manual and Automode.
- After completion manual/Automode automatic calibration report can be generated at PC side based on pre define format.

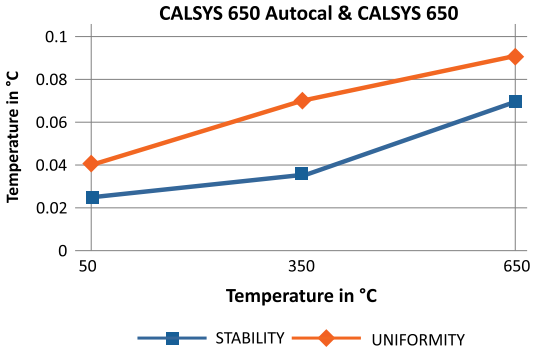


CALIBRATION REPORT (TEMP MEASURING INST.)

CUSTOMER		Serial No:- 1336/1	
INSTRUMENT Desc :		INST. SR.NO :	
MAKE		MODEL NO.	
RANGE CALIBRATED	400.00 - °C	LAB CONDITION (TEMP) :- 25 +/- 5 °C	
DATE OF CALIBRATION	2017-08-24	RECOMMENDED RECALIBRATION DATE :	2018-08-24

SR.NO	STANDARD TEMP °C	MASTER TEMP °C	ACTUAL TEMP °C	ERROR IN °C (W.R.T. MASTER)	REMARK
1	400.00	420.23	208.91	-211.32	
2	410.00	427.82	209.80	-218.02	
3					
4					
5					

STABILITRY & UNIFORMITY

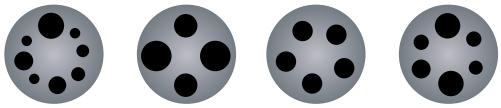


ACCESSORIES

Inserts for CALSYS 650 Autocal & CALSYS 650 models

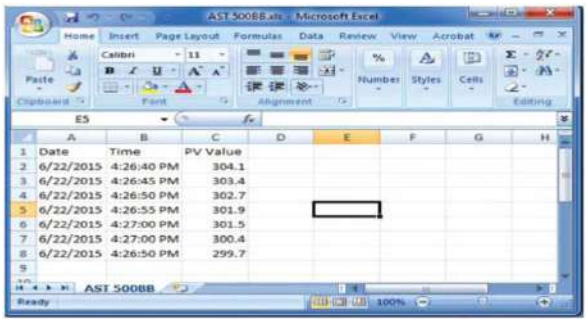
Inserts for CALsys 650 Autocal & CALsys 650 are made of Brass. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements.

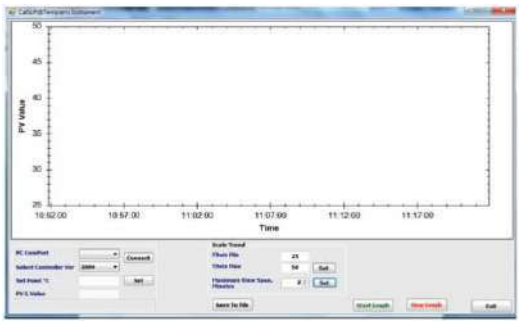
Inserts	Description
Ci1	Multihole, 4 x 6.5 mm
Ci2	Special (Customized)



Customized Equalizing Block....Part No. EQ1

SOFTWARE

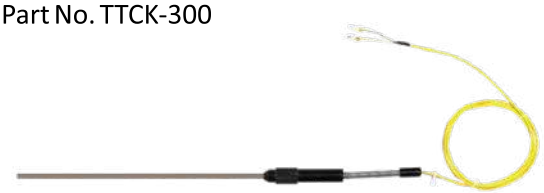




- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard Thermocouple ('K' Type T/C)..... Part No. TTCK-300



- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new CALsys Calibrator & different accessories.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

CALsys 1200 & CALsys 1200 Autocal

Highly accurate & Automatic Dry Block Calibrator for Industrial/Laboratory field use

Dry Block Calibrators

Wide Temperature Range

CALsys 1200 & CALsys 1200 Autocal offer a wide temperature range from 250 °C to 1200 °C

Lightweight, portable

The CALsys 1200 & CALsys 1200 Autocal block is ideal for Industrial/Laboratory field use. It only weight about 13kg and it is small enough to carry around.

Speed

The CALsys 1200 & CALsys 1200 Autocal extremely quick to reach various temperatures, i.e. it cools down to 250°C in 150 minutes and heats up room temp to +1200 °C in 60 minutes.

Accuracy and performance

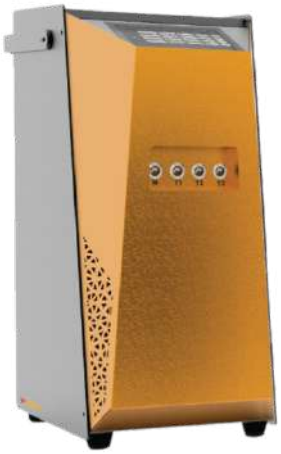
The CALsys 1200 & CALsys 1200 Autocal is an easily portable unit that also provides excellent calibration accuracy with stability ±0.3°C at 1200 °C.

Accredited calibration

Each CALsys 1200 & CALsys is delivered with an accredited calibration certificate.

Computer Interface

The communication port(RS-232/ USB) enables communication with selected CALsys 1200 calibrators for automation calibration and documentation thus it made documentation easy.



CALsys 1200 Autocal

CALsys 1200

CALsys 1200 & CALsys Autocal offers easy to use portable temperature calibrator with high temperature range from 250 to 1200°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. This calibrator can be used on site for high temperature calibration and also find application in glass, electric power, automotive and material process industry. The comparison volume is a metallic block of special material, which has a diameter of 37mm and 215mm long. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed CALsys 1200 model offers better esthetic design and performance wise upgraded to next level.The CALsys -1200 Autocal is an automatic temperature calibration system for the Thermocouple and RTD's. The system consists of Temperature bath and PC software, which together contribute to the whole cycle of auto calibration process. The system accept 4 channels, 4 Thermocouples or 4 RTD's. The connection for these channels through special type of locking connectors. The channel configuration can be done with LCD display via touch screen keypad. The thermocouple microvolt & RTD ohm reading for each channel is monitored with CJC compensation. After the calibration process complete the PC software generates a report of actual calibrated values for the inputs.

With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

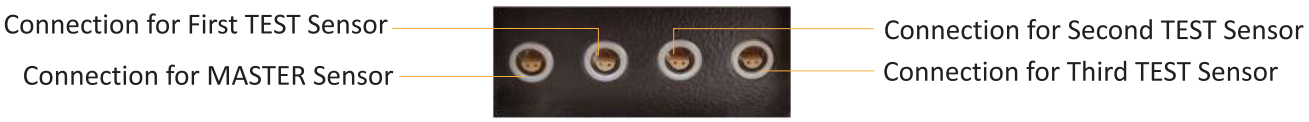
SPECIFICATIONS

CALsys 1200 Autocal & CALsys 1200

Temperature range	250 °C to 1200 °C
Accuracy	±2 °C
Stability	±0.1 °C at 250°C
	±0.2°C at 700°C
	±0.3°C at 1200°C
Radial uniformity	±0.20°C at 250°C
	±0.24°C at 700°C
	±0.36°C at 1200°C
Immersion depth	160 mm
Insert OD dimensions	37 mm
Method of Control	Self tunned PID controller
Heating time	60 Min
Cooling time	150 Min (1200 °C to 250 °C)
Resolution	0.1 °C up to 999°C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	405(H) x 205(W) x 285(D) mm
Weight	13Kg
Power requirements	230 VAC, 1.5 KW(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 33 °C
Input (CALsys 1200 Autocal)	**Four channels(one master and three test sensors).high quality universal LEMO connector suitable both for T/C (J, K, N, T, R, S, B type) and Rtd**
Software (CALsys 1200 Autocal)	**The calibrator will be provided with software for data recording (Manual Mode) and Test Certificate genration in Auto Mode**
Data logging (CALsys 1200 Autocal)	**Data logging facility with logged data export to computer through LAN port (optional USB)**

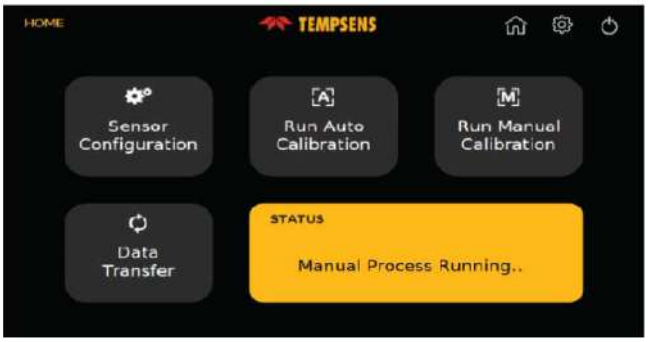
SENSOR CONNECTION (CALsys 1200 Autocal)

The Calibration system provides calibration up to four channels i.e. one master and three test sensors . We use high quality universal LEMO connector i.e. suitable both for T/C and Rtd.

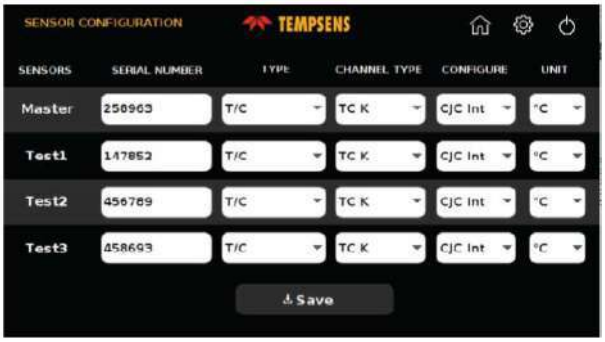


USER INTERFACE (CALsys 1200 Autocal)

Home Screen: In this screen user can select sensor configuration (for selection of type of sensors), mode of operation (auto / manual) and data transfer (file transfer). This window also shows the ongoing process.



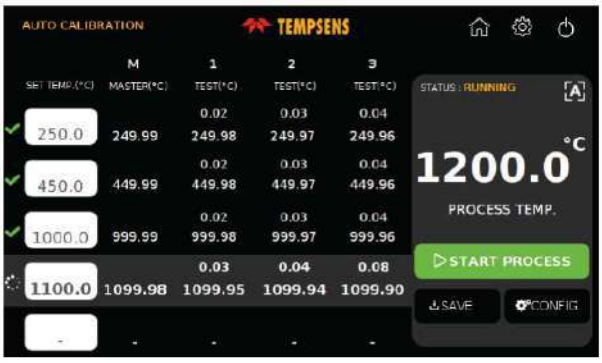
Sensor Configuration: In this screen user select the sensors Thermocouple (J, K, B, N, R, S, T type) / RTD(PT 100, PT 1000, PT 50 etc.) for calibration with their serial number and temperature unit (C/F/K).



CALSYS 1200 Autocal have two operating modes i.e. Manual and Auto mode

Manual Mode: In this screen user set the temp. Point for calibration and on clicking start process button the process of calibration starts

Auto Mode: In this screen user sets the temperature Points for calibration (Max 5 Points)



SOFTWARE : Tempsens make Easy to use Customized software enables end user to access temperature data both for Manual mode and Automode

AUTOMATIC CALIBRATION REPORT GENERATION
(Optional)

- Tempsens can offer customized data saving option both for manual and Automode.
- After completion manual/Automode automatic calibration report can be generated at PC side based on pre define format.

CALIBRATION REPORT (TEMP MEASURING INST.)

CUSTOMER :		Serial No:-	1336/1
INSTRUMENT Desc :		INST. SR.NO :	
MAKE		MODEL NO :	
RANGE CALIBRATED	400.00 - °C	LAB CONDITION (TEMP) :- 25 +/- 5 °C	
DATE OF CALIBRATION	2017-08-24	RECOMMENDED RECALIBRATION DATE :	2018-08-24

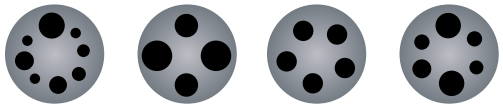
SR.NO	STANDARD TEMP °C	MASTER TEMP °C	ACTUAL TEMP °C	ERROR IN °C (W.R.T. MASTER)	REMARK
1	400.00	420.23	208.91	-211.32	
2	410.00	427.82	209.80	-218.02	
3					
4					
5					

ACCESSORIES

Inserts for CALSYS 1200 Autocal & CALSYS 1200 models

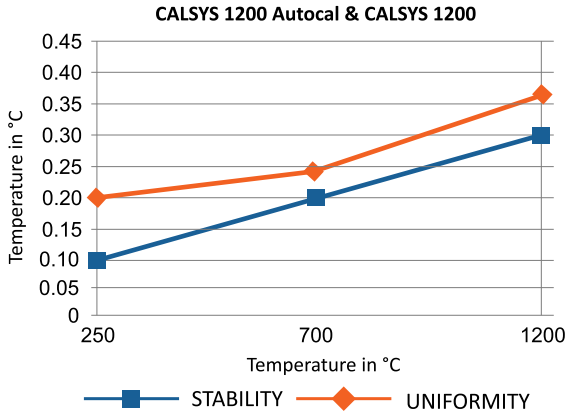
Inserts for Calsys 1200 Autocal & CALsys 1200 are made of special material. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements.

Inserts	Description
Ci1	Multihole, 4 x 6.5 mm
Ci2	Special (Customized)

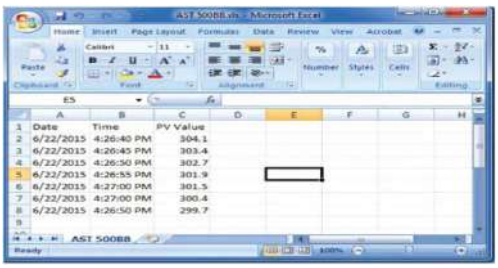


Customized Equalizing Block....Part No. EQ1

STABILITRY & UNIFORMITY



SOFTWARE



- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard Thermocouple ('N' Type T/C)..... Part No. TTCN-300

- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new CALsys Calibrator & different accessories.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

High Temperature Dry Block Furnace

-High Accuracy

-High Temperature

-Highly Stable Temperature Calibrator for Industrial Field Uses

www.tempsens.com

High Temperature Dry Block Furnace

Wide Temperature Range

CALsys 1200L offer a wide temperature range from 300 °C to 1200 °C

Simple to use

The CALsys 1200L block is ideal for Industrial/ Laboratory field use. it is simple enough to testing and calibration uses.

Accuracy and performance

The CALsys 1200L is an easy to use also provides excellent calibration accuracy with stability ±0.5°C at 1200°C.

Accredited calibration

Each CALsys 1200L is delivered with an accredited calibration certificate.

Computer Interface

The communication port(RS-232) enables communication with selected CALsys 1200L calibrators for automation calibration and documentation thus it made documentation easy.

TEMPSENS

Calsys 1200L

Highly accurate temperature Calibrator for Industrial / Laboratory field use

CALsys 1200L offers easy to use temperature calibrator with high temperature range from 300 to 1200°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. This calibrator can be used on site for high temperature calibration and also find application in glass, electric power, automotive and material process industry. The comparison volume is a metallic block of special material, which has a diameter of 37mm and 160mm depth. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed CALsys 1200L model offers better esthetic design and performance wise upgraded to next level.

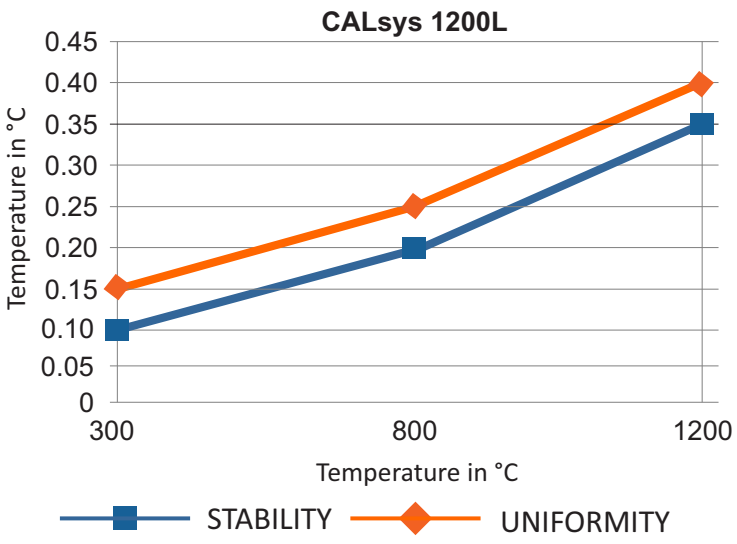
With the Tempsens make Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Temperature range	300 °C to 1200 °C
Accuracy	±2 °C
Stability	±0.1°C at 300°C
	±0.2°C at 800°C
	±0.35°C at 1200°C
Radial uniformity	±0.15°C at 300°C
	±0.25°C at 800°C
	±0.4°C at 1200°C
Controlling sensors	R type duplex
Stabilization time	15 to 20 mins
Immersion depth	160mm
Insert OD dimensions	37 mm
Method of Control	Self tunned PID controller
Heating time	1.5 Hrs
Resolution	1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	590(H) x 450(W) x 530(D) mm
Weight	50Kg
Power requirements	230 VAC, 50 Hz
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 33 °C

STABILITY / UNIFORMITY

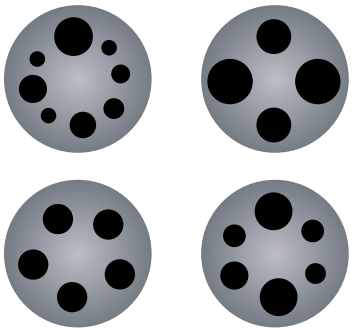


Insert construction

Inserts for CALsys 1200L models

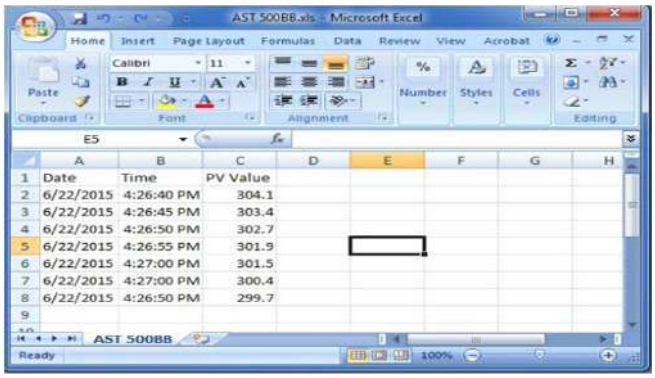
Inserts for CALsys 1200L are made of metallic block of special material. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements

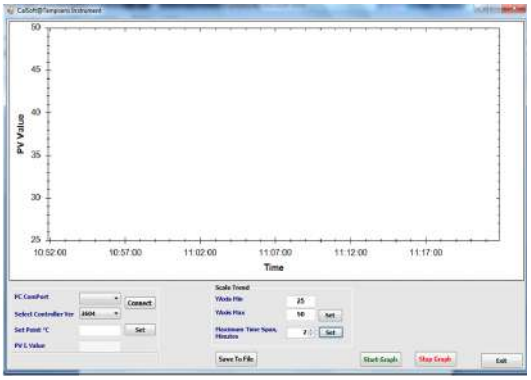
Inserts	Description
Ci1	Multihole, 2 x 6.5 mm, 2x8.5 mm
Ci2	Special (Customized)



Customized Equalizing Block....Part No. EQ1

SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard Thermocouple ('N' Type T/C)……
  Part No. TTCN-300

- NABL accredited calibration certificate - 3 point
- Operational Manual

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

CALsys 1200 3Z

High Temperature Calibrator Dry Block Furnace for Industrial/ Laboratory Field Use

Dry Block Calibrators

Wide Temperature Range

CALsys 1200 3Z offer a wide temperature range from300 °C to 1200 °C

Lightweight, portable

The CALsys 1200 3Z block is ideal for Industrial/ Laboratory field use. It only weights about 50 kg, and it is small enough to carry around.

Accuracy and performance

The CALsys 1200 3Z is an easily portable unit that also provides excellent calibration accuracy with stability ± 0.04°C at 650 °C.

Accredited calibration

Each CALsys 1200 3Z is delivered with an accredited calibration certificate.

Computer Interface

The communication port(RS-232/ USB) enables communication with selected CALsys 1200 3Z calibrators for automation calibration and documentation thus it made documentation easy.

CALsys 1200 3Z calibration source is a highly stable standard furnace for calibrating thermocouples in the laboratory. The temperature of each zone of the furnace is set and controlled by a self tuned PID controller(master + Slave) with automatic super fine adjustment. The standard insert is a metallic block of special material, which is 37mm in diameter with 240 mm long and can hold up to four thermocouples. It has been designed for high temperature range calibration and find application in the glass, electrical power, automotive, material processing industries & laboratories.

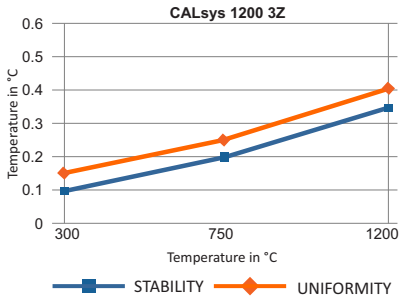
With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Temperature range	300 to 1200°C
Temperature Resolution	1.0°C
Stability	±0.1°C at 300°C
	±0.2°C at 750° C
	±0.35°C at 1200°C
Radial Uniformity	±0.15°C at 300°C
	±0.25°C at 750° C
	±0.40°C at 1200°C
Axial Uniformity	1.0°C up to 80mm at 1200°C
Time to reach max. temperature	1.5 hrs
Controlling Sensor	Precision PT/RH-PT T/C
No. of Zone	Three
Method of Control	Digital self tuned PID Controller
Insert Construction	Dia 37 x 240 mm long (2X6 mm & 2X8 mm holes) of 160mm insertion depth
Computer Interface	RS - 232
Operating Temperature	20 to 45°C
Power Requirement	230 VAC, 2.0 KW
Dimensions	500(H) x 400(W) x 490(D) mm
Weight	50Kg (without packing)

STABILITY / UNIFORMITY



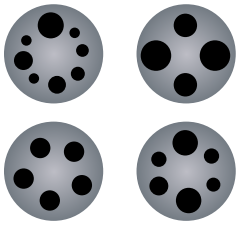
ACCESSORIES

STANDARD ACCESSORIES

- Reference Standard Thermocouple ('N' Type T/C).....Part No. TTCN-300
- NABL accredited calibration certificate - 3 point
- Software - Cal Soft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.
- Operational Manual

OPTIONAL ACCESSORIES

- Customized Equalizing Block....Part No. EQ1



Customized Equalizing Block....Part No. EQ1

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

High Temperature Dry Block Furnace

Wide Temperature Range

CALsys 1500L offer a wide temperature range from 500 °C to 1500 °C

Simple to use

The CALsys 1500L block is ideal for Industrial/ Laboratory field use. It is simple enough to testing and calibration uses.

Accuracy and performance

The Calsys 1500L is an easy to use that also provides excellent calibration accuracy with stability ±1.0°C at 1500°C.

Accredited calibration

Each Calsys 1500L is delivered with an accredited calibration certificate.

Computer Interface

The communication port (RS-232) enables communication with selected Calsys 1500L calibrators for automation calibration and documentation thus it made documentation easy.

TEMPSENS

Calsys 1500L

Highly accurate temperature Calibrator for Industrial / Laboratory field use

Calsys 1500L offers easy to use temperature calibrator with high temperature range from 500 to 1500°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. This calibrator can be used on site for high temperature calibration and also find application in glass, electric power, automotive and material process industry. The comparison volume is a metallic block of special material, which has a diameter of 37mm and 245mm long. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed CALsys 1500L model offers better esthetic design and performance wise upgraded to next level.

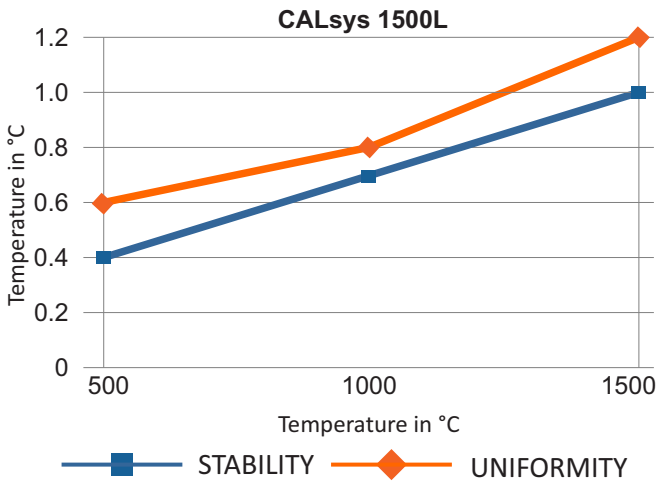
With the Tempsens make Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Temperature range	500 °C to 1500 °C
Accuracy	±3 °C
Stability	±0.4°C at 500°C
	±0.6°C at 1000°C
	±1°C at 1500°C
Uniformity	±0.6°C at 500°C
	±0.8°C at 1000°C
	±1.2°C at 1500°C
Controlling sensors	R type duplex
Stabilization time	15 to 20 mins
Immersion depth	140 mm
Insert dimensions	37 mm
Method of Control	Self tunned PID controller
Heating time	2 Hrs
Resolution	1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	590(H) x 450(W) x 530(D) mm
Weight	55Kg
Power requirements	230 VAC, 3.0 KW(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 33 °C

STABILITY / UNIFORMITY

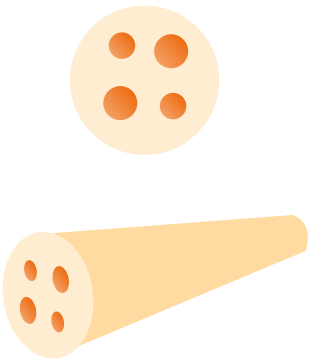


Insert construction

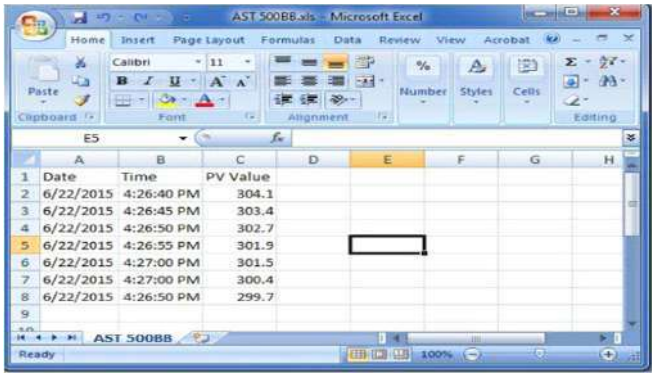
Inserts for CALsys 1500L models

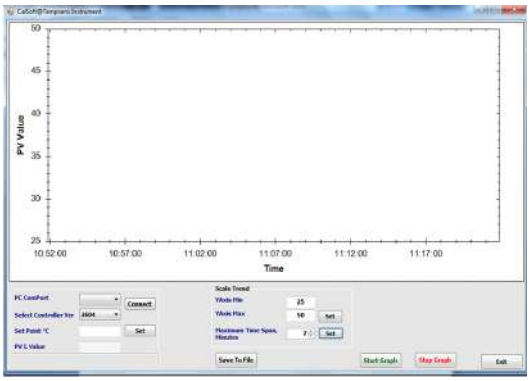
Inserts for CALsys 1500L are made of ceramic block. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements

Inserts	Description
Ci1	Multihole, 2 x 6.5 mm, 2x8.5 mm
Ci2	Special (Customized)



SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR (OPTIONAL)

- Reference Standard Thermocouple (PT-RH-RH/PT R Type T/C)..... Part No. TTCR-300

- NABL accredited calibration certificate - 3 point
- Operational Manual

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

High Temperature Dry Block Furnace

Wide Temperature Range

CALsys 1700L offer a wide temperature range from 500 °C to 1700 °C

Simple to use

The CALsys 1700L block is ideal for Industrial/ Laboratory field use and it is simple enough to testing and calibration uses.

Accuracy and performance

The CALsys 1700L is an easy to use that also provides excellent calibration accuracy with stability ±1.5°C at 1700°C.

Accredited calibration

Each CALsys 1700L is delivered with an accredited calibration certificate.

Computer Interface

The communication port (RS-232) enables communication with selected CALsys 1700L calibrators for automation calibration and documentation thus it made documentation easy.

Calsys 1700L

Highly accurate temperature Calibrator for Industrial / Laboratory field use

CALsys 1700L offers easy to use temperature calibrator with high temperature range from 500 to 1700°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. This calibrator can be used on site for high temperature calibration and also find application in glass, electric power, automotive and material process industry. The comparison volume is a metallic block of special material, which has a diameter of 37mm and 240mm long. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed CALsys 1700L model offers better esthetic design and performance wise upgraded to next level.

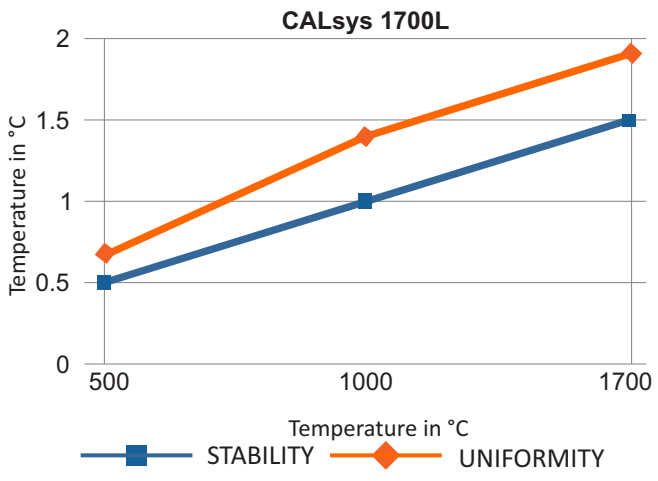
During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

Tempsens make Temperature Calibrator is an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

SPECIFICATIONS

Temperature range	500 °C to 1700 °C
Accuracy	±4 °C
Stability	±0.5°C at 500°C
	±1.0°C at 1000°C
	±1.5°C at 1700°C
Radial uniformity	±0.6°C at 500°C
	±1.4°C at 1000°C
	±1.9°C at 1700°C
Stabilization time	15 to 20mins
Controlling sensor	B type duplex
Radial uniformity	±0.6 °C at 500°C
	±1.4°C at 1000°C
	±1.9°C at 1700°C
Method of Control	Self tunned PID controller
Immersion depth	225mm
Insert OD dimensions	37 mm
Heating time	3 Hrs
Resolution	1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	640(H) x 500(W) x 550(D) mm
Weight	80Kg
Power requirements	230 VAC 50/60Hz
Computer interface	RS - 232
RS - 232	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 33 °C

STABILITY / UNIFORMITY

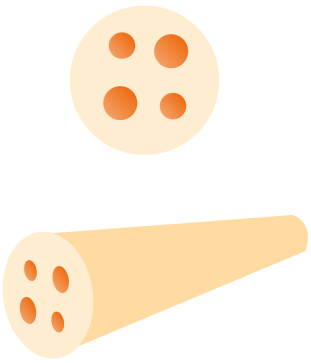


Insert construction

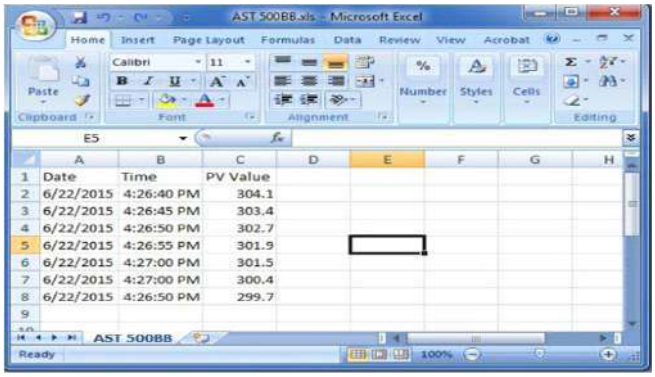
Inserts for CALsys 1700L models

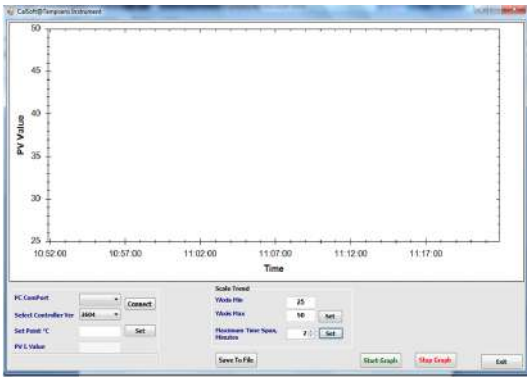
Inserts for CALsys 1700L are made of special material. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements

Inserts	Description
Ci1	Multihole, 2 x 6.5 mm, 2x8.5 mm
Ci2	Special (Customized)



SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR (OPTIONAL)

- Reference Standard Thermocouple (PT-RT/PT “B type T/C”)…… Part No. TTCB-300

- NABL accredited calibration certificate - 3 point
- Operational Manual

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

Liquid Calibration Bath

-High Accuracy

-Wide Temperature Range

-Highly Stable Temperature Calibrator for Industrial Field Uses

CALsys -80/50
CALsys -80/50 Autocal

Highly accurate & Automatic Liquid Calibration bath for Industrial/Laboratory field use

CALsys -80/50 Autocal

CALsys -80/50

CALsys -80/50 & CALsys -80/50 Autocal offers easy to use liquid temperature calibrator with high temperature range from -80 to 50°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. It provide superior thermal environment for probe immersion as no air gape exist between the probe and the medium, thermal coupling is therefore much better than the alternatives described and the stirring results in very even heat distribution throughout the medium. Methanol is used for temperature below 0°C water from 0 to 80 and silicon oil up to 250. It has large tank which filled with methanol. The liquid is heated or cooled to the desired temperature. We have seven types of liquid baths. The volume is 9 ltr. And access opening is 120X120mm with 200mm depth. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed Calsys -80/50 model offers better esthetic design and performance wise upgraded to next level.The CALsys -80/50 Autocal is an automatic temperature calibration system for the Thermocouple and RTD's. The system consists of Temperature bath and PC software, which together contribute to the whole cycle of auto calibration process. The system accept 4 channels, 4 Thermocouples or 4 RTD's. The connection for these channels through special type of locking connectors. The channel configuration can be done with LCD display via touch screen keypad. The thermocouple microvolt & RTD ohm reading for each channel is monitored with CJC compensation. After the calibration process complete the PC software generates a report of actual calibrated values for the inputs.

With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

Liquid Calibration Bath

Wide Temperature Range

The Calsys -80/50 & Calsys -80/50 Autocal offer a wide temperature range from -80 °C to 50 °C

Large immersion depth

The Calsys -80/50 & Calsys -80/50 Autocal is ideal for Industrial/ laboratory field use Large immersion depth 200mm with 120x120 access opening and wide operating range

CFC free refrigrents

The Calsys-80/50 & Calsys-80/50 Autocal extremely highly accurate liquid stirrer bath with free of CFC refrigerants. CFC refrigerant is immensely damaging to the environment. CFC damages the Ozone layer and contributes directly to the destruction of our environment.

Accuracy and performance

The Calsys-80/50 & Calsys-80/50 Autocal is an easily portable unit that also provides execellent calibration accuracy with stability ±0.04°C at -80°C.

Accredited calibration

Each Calsys -80/50 & Calsys -80/50 Autocal is delivered with an accredited calibration certificate

Computer Interface

The communication port(RS- 232) enables communication with selected Calsys -80/50 & Calsys -80/50 Autocal calibrators for automation calibration and documentation thus it made documentation easy.

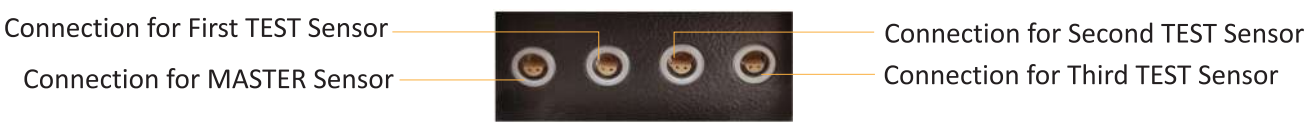
SPECIFICATIONS

CALsys -80/50 Autocal & CALsys -80/50

Temperature range	-80 °C to 50 °C
Accuracy	±0.5 °C
Stability	±0.04°C at -80°C
	±0.07°C at 0°C
	±0.05°C at 50°C
Uniformity	±0.05°C at -80°C
	±0.09°C at 0°C
	±0.07°C at 50°C
Volume	9 Ltr
Immersion depth	200mm
Access opening	120X120 mm
Method of Control	Self tunned PID controller
Cooling time	60 Min (room temperature to -80°C)
Resolution	0.1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	1200(H) x 630(W) x 500(D) mm
Weight	100Kg
Power requirements	230 VAC, 2 KW(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 25 °C
Input (CALsys -80/50 Autocal)	**Four channels(one master and three test sensors).high quality universal LEMO connector suitable both for T/C (J, K, N, T, R, S, B type) and Rtd**
Software (CALsys -80/50 Autocal)	**The calibrator will be provided with software for data recording (Manual Mode) and Test Certificate genration in Auto Mode**
Data logging (CALsys -80/50 Autocal)	**Data logging facility with logged data export to computer through LAN port (optional USB)**

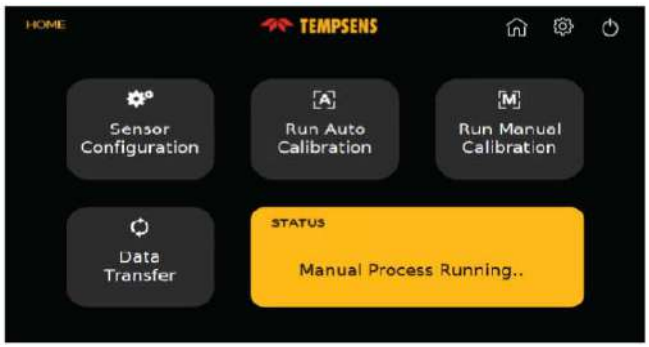
SENSOR CONNECTION (CALsys -80/50 Autocal)

The Calibration system provides calibration up to four channels i.e. one master and three test sensors . We use high quality universal LEMO connector i.e. suitable both for T/C and Rtd.

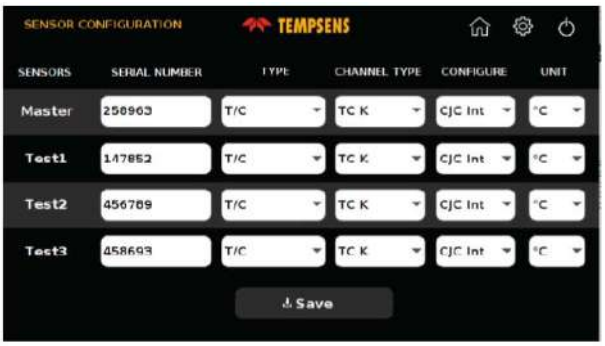


USER INTERFACE (CALsys -80/50 Autocal)

Home Screen: In this screen user can select sensor configuration (for selection of type of sensors), mode of operation (auto / manual) and data transfer (file transfer). This window also shows the ongoing process.

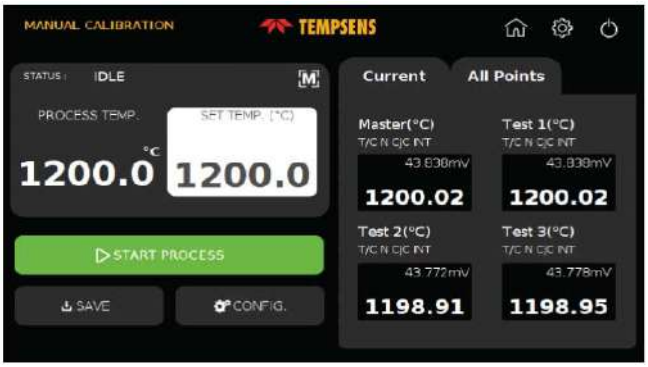


Sensor Configuration: In this screen user select the sensors Thermocouple (J, K, B, N, R, S, T type) / RTD(PT 100, PT 1000, PT 50 etc.) for calibration with their serial number and temperature unit (C/F/K).

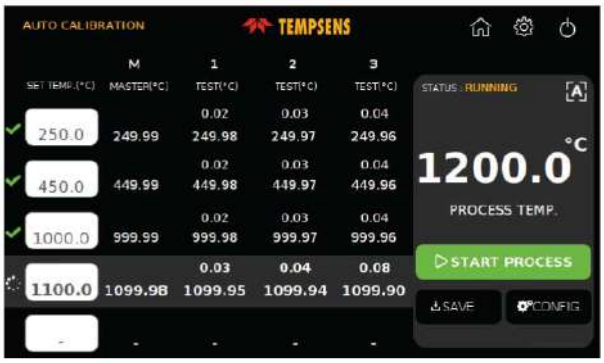


CALSYS -80/50 Autocal have two operating modes i.e. Manual and Auto mode

Manual Mode: In this screen user set the temp. Point for calibration and on clicking start process button the process of calibration starts



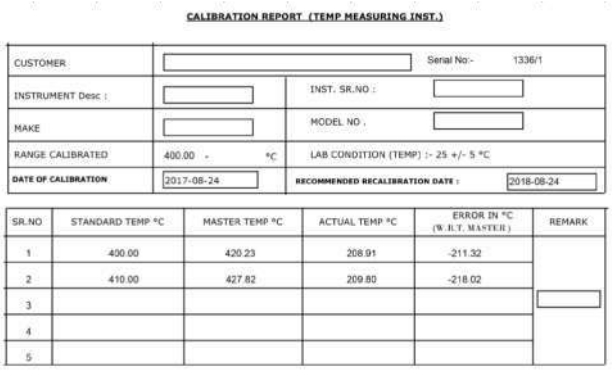
Auto Mode: In this screen user sets the temperature Points for calibration (Max 5 Points)



SOFTWARE : Tempsens make Easy to use Customized software enables end user to access temperature data both for Manual mode and Automode

AUTOMATIC CALIBRATION REPORT GENERATION (Optional)

- Tempsens can offer customized data saving option both for manual and Automode.
- After completion manual/Automode automatic calibration report can be generated at PC side based on pre define format.



CALIBRATION REPORT (TEMP MEASURING INST.)

CUSTOMER		Serial No:- 1336/1	
INSTRUMENT Desc :		INST. SR.NO :	
MAKE		MODEL NO :	
RANGE CALIBRATED	400.00 - °C	LAB CONDITION (TEMP) :- 25 +/- 5 °C	
DATE OF CALIBRATION	2017-08-24	RECOMMENDED RECALIBRATION DATE :	2018-08-24

SR.NO	STANDARD TEMP °C	MASTER TEMP °C	ACTUAL TEMP °C	ERROR IN °C (W.R.T. MASTER)	REMARK
1	400.00	420.23	208.91	-211.32	
2	410.00	427.82	209.80	-218.02	
3					
4					
5					

Insert construction

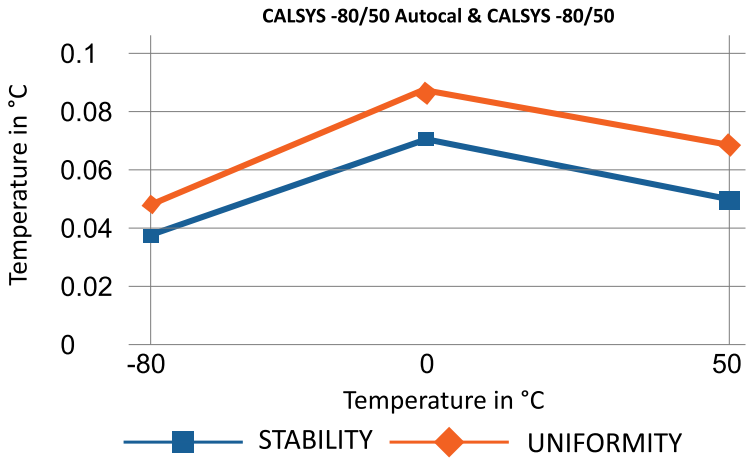
Inserts for CALSYS -80/50 Autocal & CALSYS -80/50 model

Inserts for CALsys -80/50 Autocal & CALsys -80/50 about 120X120 mm access opening with 200mm intertion depth. All specifiactions based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requierements.

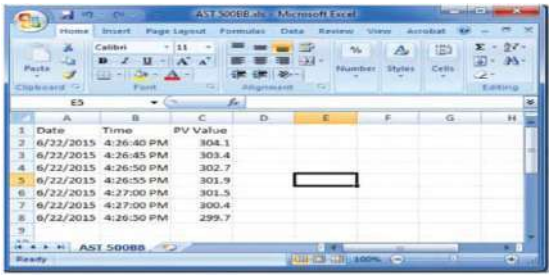
Insert Model Description

Hole Size	Description
Ci1	Multihole, 4 x 6.5 mm
Ci2	Special (Customized)

STABILITRY & UNIFORMITY



SOFTWARE



- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard RTD Part no. TPRT- A- 300.

- NABL accredited calibration certificate - 3 point
- Operational Manual

BLACK BODY CAVITY (OPTIONAL)

The calibration of infrared (IR) thermometers can be performed with black body cavity included with CALsys -80/50 & CALsys -80/50 calibrator. The black body has special design and structure that ensure a high emissivity and accurate result.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

Calsys -40/50

Highly accurate Liquid Calibration bath for Industrial / laboratory field use

Liquid Calibration Bath

Wide Temperature Range

Calsys -40/50 offer a wide temperature range from -40 °C to 50 °C

Large immersion depth

The Calsys -40/50 is ideal for Industrial / Laboratory field use. Large immersion depth 200mm with 120x120 access opening and wide operating range.

CFC free refrigrents

The Calsys -40/50 extremely highly accurate liquid stirrer bath with free of CFC refrigerants. CFC refrigerant is immensely damaging to the environment. CFC damages the Ozone layer and contributes directly to the destruction of our environment.

Accuracy and performance

The Calsys -40/50 is an easily portable unit that also provides excellent calibration accuracy with stability ±0.05°C at 50°C.

Accredited calibration

Each Calsys -40/50 is delivered with an accredited calibration certificate.

Computer Interface

The communication port (RS-232) enables communication with selected Calsys -40/50 calibrators for automation calibration and documentation thus it made documentation easy.

Calsys -40/50 offers easy to use liquid temperature calibrator with high temperature range from -40 to 50°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. It provide superior thermal environment for probe immersion as no air gape exist between the probe and the medium, thermal coupling is therefore much better than the alternatives described and the stirring results in very even heat distribution throughout the medium. Methanol is used for temperature below 0°C water from 0 to 80 and silicon oil up to 250. It has large tank which filled with methanol. The liquid is heated or cooled to the desired temperature. We have seven types of liquid baths. The volume is 9 ltr. And access opening is 120X120mm with 200mm depth. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed Calsys -40/50 model offers better esthetic design and performance wise upgraded to next level.

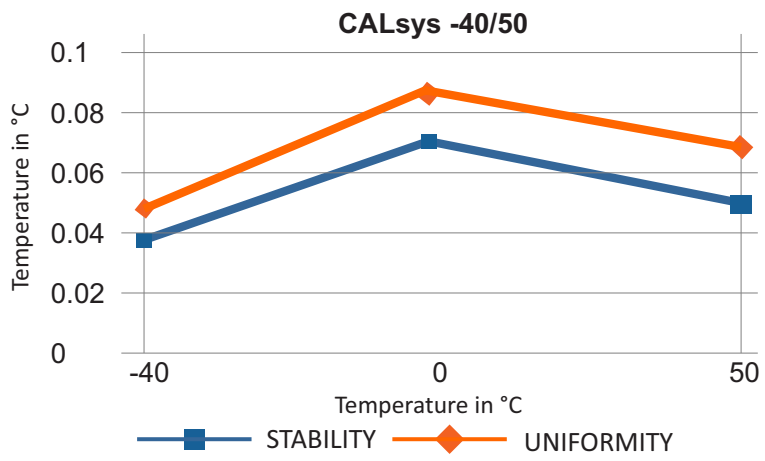
With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Temperature range	-40 °C to 50 °C
Accuracy	±0.5 °C
Stability	±0.04°C at 50°C
	±0.07°C at 0°C
	±0.05°C at 50°C
Uniformity	±0.05°C at -40°C
	±0.09°C at 0°C
	±0.07°C at 50°C
Volume	9 Ltr
Immersion depth	200mm
Access opening	120X120 mm
Method of Control	Self tunned PID controller
Cooling time	60 Min (room temperature to -40°C)
Resolution	0.1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	1200(H) x 630(W) x 500(D) mm
Weight	80Kg
Power requirements	230 VAC, 2 KW(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 33 °C

STABILITY / UNIFORMITY



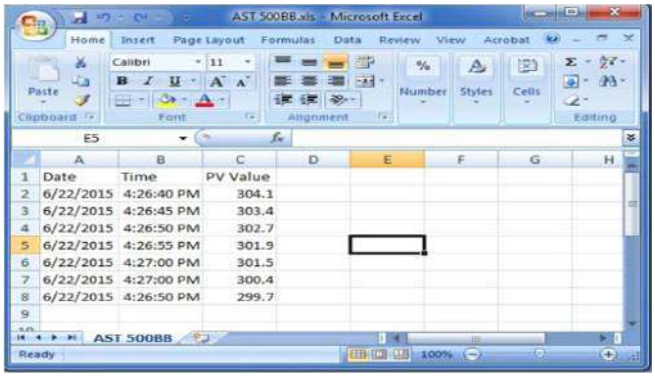
ACCESSORIES

Inserts for Calsys -40/50 models

Inserts for Calsys -40/50 is about 120X120 mm access opening with 200mm insertion depth. All specifications based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements.

Hole Size	Description
Ci1	Multihole, 4 x 6.5 mm
Ci2	Multihole, 4 mm,6 mm,8 mm,10 mm
Ci3	Multihole, 2x3 mm, 2x4 mm,6 mm
Ci4	Multihole, 8 x 3 mm
Ci5	Special (Customized)

SOFTWARE



- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard RTD Part no. TPRT- A- 300.

- NABL accredited calibration certificate - 3 point
- Operational Manual

BLACK BODY CAVITY (OPTIONAL)

The calibration of infrared (IR) thermometers can be performed with black body cavity included with calsys -40/50 calibrator. The black body has special design and structure that ensure a high emissivity and accurate result.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

CALsys -35/200
CALsys -35/200 Autocal

Highly accurate & Automatic Liquid Calibration bath for Industrial/Laboratory field use

Liquid Calibration Bath

Wide Temperature Range

Calsys -35/200 & Calsys -35/200 Autocal offer a wide temperature range from -35 °C to 200 °C

Large immersion depth

Calsys -35/200 & Calsys -35/200 Autocal is ideal for Industrial / Laboratory field use. Large immersion depth 150mm with 105x105 access opening and wide operating range.

CFC free refrigrents

Calsys -35/200 & Calsys -35/200 Autocal extremely highly accurate liquid stirrer bath with free of CFC refrigerants. CFC refrigerant is immensely damaging to the environment. CFC damages the Ozone layer and contributes directly to the destruction of our environment.

Accuracy and performance

Calsys -35/200 & Calsys -35/200 Autocal is an easily portable unit that also provides excellent calibration accuracy with stability ±0.04°C at 200°C..

Accredited calibration

Calsys -35/200 & Calsys -35/200 Autocal is delivered with an accredited calibration certificate.

Computer Interface

The communication port (RS-232) enables communication with selected CALsys -35/200 & CALsys -35/200 Autocal calibrators for automation calibration and documentation thus it made documentation easy.

CALsys -35/200 Autocal

CALsys -35/200

CALsys -35/200 & CALsys -35/200 Autocal offers easy to use liquid temperature calibrator with high temperature range from -35 °C to 200°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. It provide superior thermal environment for probe immersion as no air gape exist between the probe and the medium, thermal coupling is therefore much better than the alternatives described and the stirring results in very even heat distribution throughout the medium. Methanol is used for temperature below 0 °C, water from 0 °C to 80 °C and silicon oil up to 250°C. It has large tank which filled with methanol. The liquid is heated or cooled to the desired temperature. We have seven types of liquid baths. The volume is 6 Ltr and access opening is 105X105mm with 150mm depth. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed CALsys -35/200 model offers better esthetic design and performance wise upgraded to next level. The CALsys -35/200 Autocal is an automatic temperature calibration system for the Thermocouple and RTD's. The system consists of Temperature bath and PC software, which together contribute to the whole cycle of auto calibration process. The system accept 4 channels, 4 Thermocouples or 4 RTD's. The connection for these channels through special type of locking connectors. The channel configuration can be done with LCD display via touch screen keypad. The thermocouple microvolt & RTD ohm reading for each channel is monitored with CJC compensation. After the calibration process complete the PC software generates a report of actual calibrated values for the inputs.

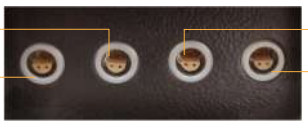
With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

SPECIFICATIONS

CALsys -35/200 Autocal & CALsys -35/200

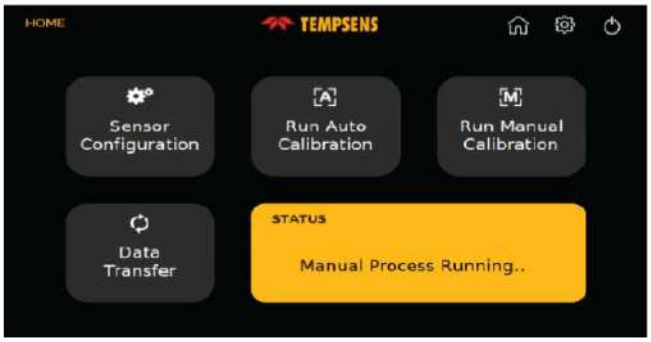
Temperature range	-35 °C to 200 °C
Accuracy	±0.5 °C
Stability	±0.01°C at -35°C
	±0.03°C at 0°C
	±0.04°C at 200°C
Uniformity	±0.03°C at -35°C
	±0.05°C at 0°C
	±0.07°C at 200°C
Volume	6 Ltr.
Immersion depth	150mm
Access opening	105X105 mm
Method of Control	Self tunned PID controller
Cooling time	60 Min (room temperature to -35°C)
Resolution	0.1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	540(H) x 220(W) x620(D) mm
Weight	41Kg
Power requirements	230 VAC, 2 KW(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13°C .... 25°C
Input (CALsys -35/200 Autocal)	**Four channels(one master and three test sensors).high quality universal LEMO connector suitable both for T/C (J, K, N, T, R, S, B type) and Rtd**
Software CALsys -35/200 Autocal)	**The calibrator will be provided with software for data recording (Manual Mode) and Test Certificate genration in Auto Mode**
Data logging (CALsys -35/200 Autocal)	**Data logging facility with logged data export to computer through LAN port (optional USB)**

The Calibration system provides calibration up to four channels i.e. one master and three test sensors . We use high quality universal LEMO connector i.e. suitable both for T/C and Rtd.

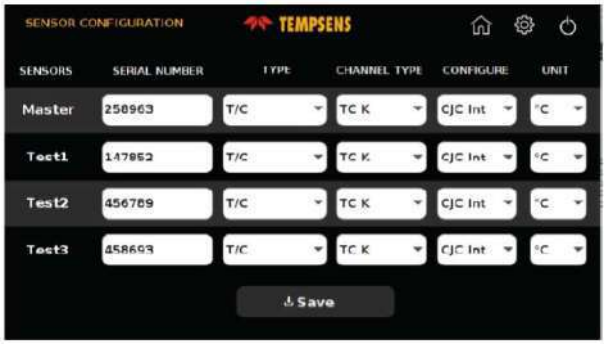


USER INTERFACE (CALsys -35/200 Autocal)

Home Screen: In this screen user can select sensor configuration (for selection of type of sensors), mode of operation (auto / manual) and data transfer (file transfer). This window also shows the ongoing process.

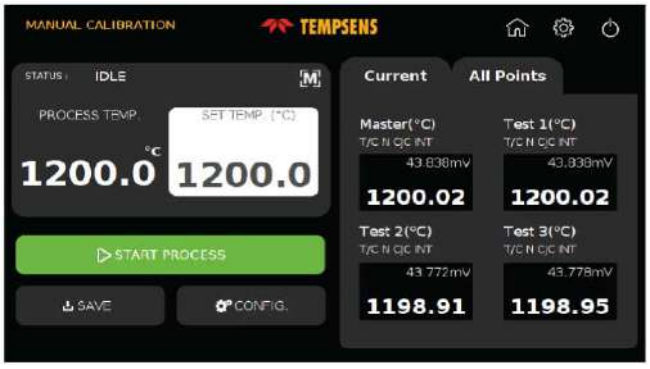


Sensor Configuration: In this screen user select the sensors Thermocouple (J, K, B, N, R, S, T type) / RTD(PT 100, PT 1000, PT 50 etc.) for calibration with their serial number and temperature unit (C/F/K).

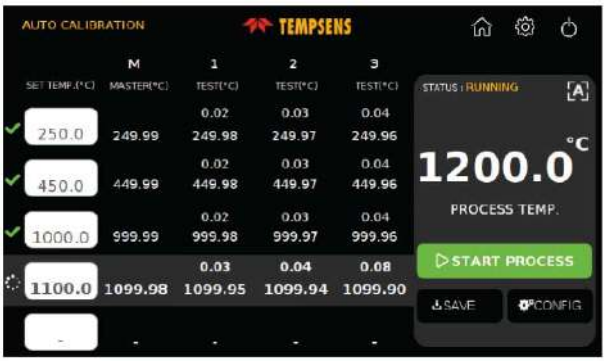


CALSYS -35/200 Autocal have two operating modes i.e. Manual and Auto mode

Manual Mode: In this screen user set the temp. Point for calibration and on clicking start process button the process of calibration starts



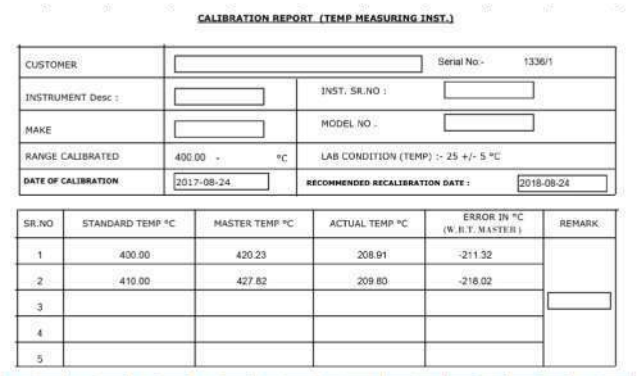
Auto Mode: In this screen user sets the temperature Points for calibration (Max 5 Points)



SOFTWARE : Tempsens make Easy to use Customized software enables end user to access temperature data both for Manual mode and Automode

AUTOMATIC CALIBRATION REPORT GENERATION (Optional)

- Tempsens can offer customized data saving option both for manual and Automode.
- After completion manual/Automode automatic calibration report can be generated at PC side based on pre define format.


CALIBRATION REPORT (TEMP MEASURING INST.)

CUSTOMER		Serial No:-	1336/1
INSTRUMENT Desc :		INST. SR.NO :	
MAKE		MODEL NO :	
RANGE CALIBRATED	400.00 - °C	LAB CONDITION (TEMP) :- 25 +/- 5 °C	
DATE OF CALIBRATION	2017-08-24	RECOMMENDED RECALIBRATION DATE :	2018-08-24

SR.NO	STANDARD TEMP °C	MASTER TEMP °C	ACTUAL TEMP °C	ERROR IN °C (W.R.T. MASTER)	REMARK
1	400.00	420.23	208.91	-211.32	
2	410.00	427.82	209.80	-218.02	
3					
4					
5					

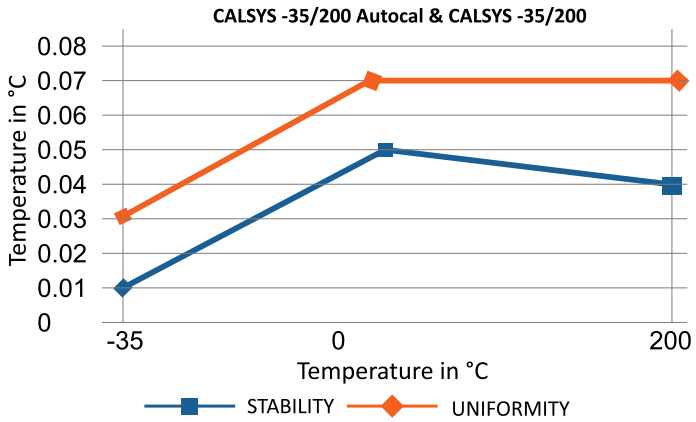
ACCESSORIES

Inserts for CALSYS -35/200 Autocal & CALSYS -35/200 models

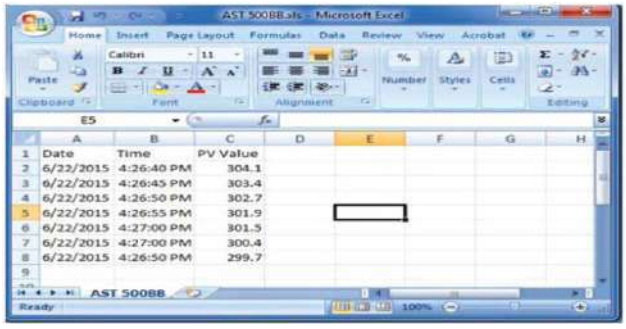
Inserts for CALsys -35/200 Autocal & CALsys -35/200 is about 105 X 105 mm access opening with 150 mm insertion depth. All specifications based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requierements.

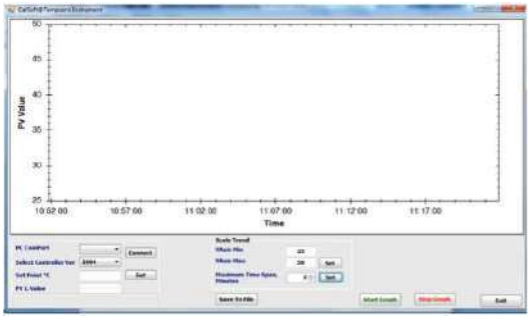
Hole Size	Description
Ci1	Multihole, 4 x 6.5 mm
Ci2	Special (Customized)

STABILITRY & UNIFORMITY



SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard RTD Part no. TPRT- A- 300.

- NABL accredited calibration certificate - 3 point
- Operational Manual

BLACK BODY CAVITY (OPTIONAL)

The calibration of infrared (IR) thermometers can be performed with black body cavity included with CALsys -35/200 & CALsys -35/200 calibrator. The black body has special design and structure that ensure a high emissivity and accurate result.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

Calsys 250

Portable, Lightweight, highly accurate Liquid Calibration bath for Industrial/ laboratory field use

Liquid Calibration Bath

Wide Temperature Range

CALsys 250 offer a wide temperature range from 50 °C to 250 °C

Lightweight, portable

The CALsys 250 is ideal for Industrial / Laboratory field use. It only weighs about 12 kg, and it is small enough to carry around. Large immersion depth and wide operating range.

Speed

The CALsys 250 extremely quick to reach various temperatures, i.e. it cools down to 100 °C in 50 minutes and heats up room temp to +250 °C in 30 minutes. This saves time and increases productivity

Accuracy and performance

The CALsys 250 is an easily portable unit that also provides excellent calibration accuracy with stability ±0.02°C at 250°C.

Accredited calibration

Each CALsys 250 is delivered with an accredited calibration certificate.

Computer Interface

The communication port (RS-232/ USB)enables communication with selected CALsys 250 calibrators for automation calibration and documentation thus it made documentation easy

CALsys 250 offers easy to use portable temperature calibrator with high temperature range from 50 to 250°C. It is a highly stable standard furnace for calibrating thermocouples / RTD. It provide superior thermal environment for probe immersion as no air gape exist between the probe and the medium, thermal coupling is therefore much better than the alternatives described and the stirring results in very even heat distribution throughout the medium. Methanol is used for temperature below 0°C water from 0 to 80 and silicon oil up to 250. We have seven types of liquid baths. The comparison volume is a diameter of 90mm and 140mm depth. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed CALsys 250 model offers better esthetic design and performance wise upgraded to next level.

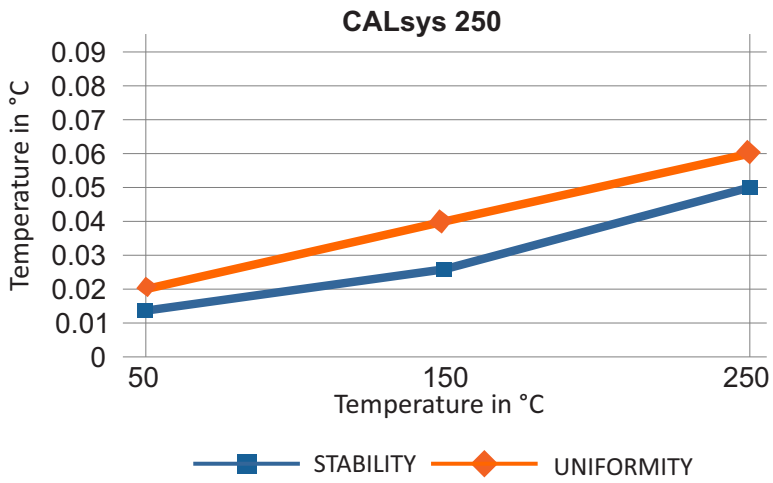
With the Tempsens make Compact Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Temperature range	50 °C to 250 °C
Accuracy	±0.5 °C
Stability	±0.01°C at 50°C
	±0.02°C at 150°C
	±0.03°C at 250°C
Uniformity	±0.02°C at 50°C
	±0.04°C at 150°C
	±0.06°C at 250°C
Removable insert construction	6 holes of 15mm dia
Volume	700ml
Hysteresis	±0.30°C
Method of Control	Self tunned PID controller
Immersion depth	140 mm
Access opening	90 mm
Heating time	30 Min
Cooling time	60 Min (250 °C to 100 °C)
Resolution	0.1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	360(H) x 185(W) x 285(D) mm
Weight	12Kg
Power requirements	230 VAC, 1.5 KW(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C … 33 °C

STABILITY / UNIFORMITY



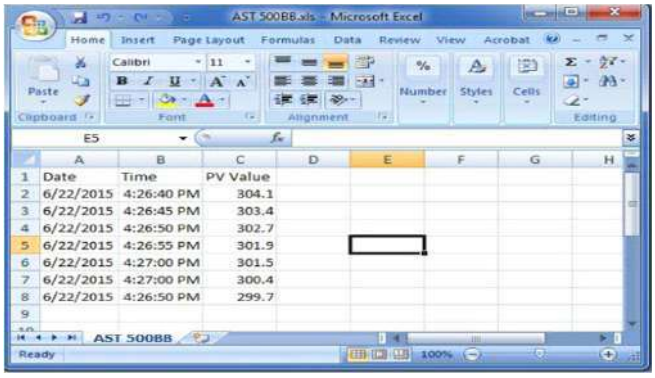
Insert construction

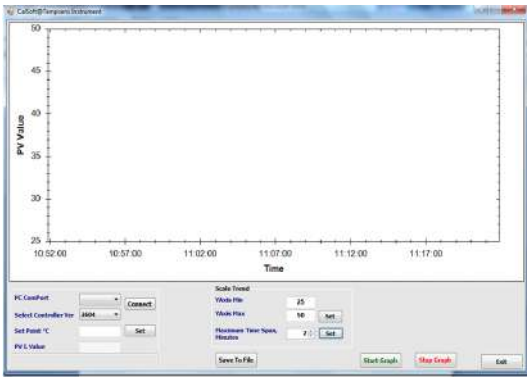
Inserts for Calsys 250 models

Inserts for Calsys 250 is about 90mm access opening with removable inserts of 6 number hole of 15mm dia. All specifications on hole size based on outer diameter of the sensor under test. We also offer customized hole size based on Customer requirements

	Description
Ci1	Multihole, 6x15 mm
Ci2	Special customized

SOFTWARE

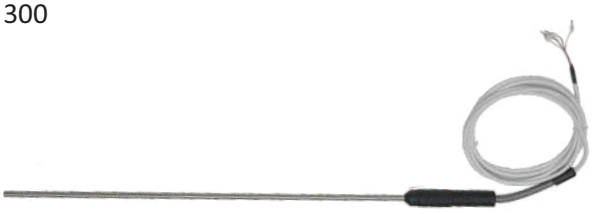




- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR

- Reference Standard Thermocouple (RTD)…… Part No. TTCK-300



- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new CALsys 250 calibrator and different accessories.

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

TEMPERATURE REFERENCE UNIT

-High Stability

-High Uniformity

-Highly Stable Temperature Calibrator for Industrial Field Uses

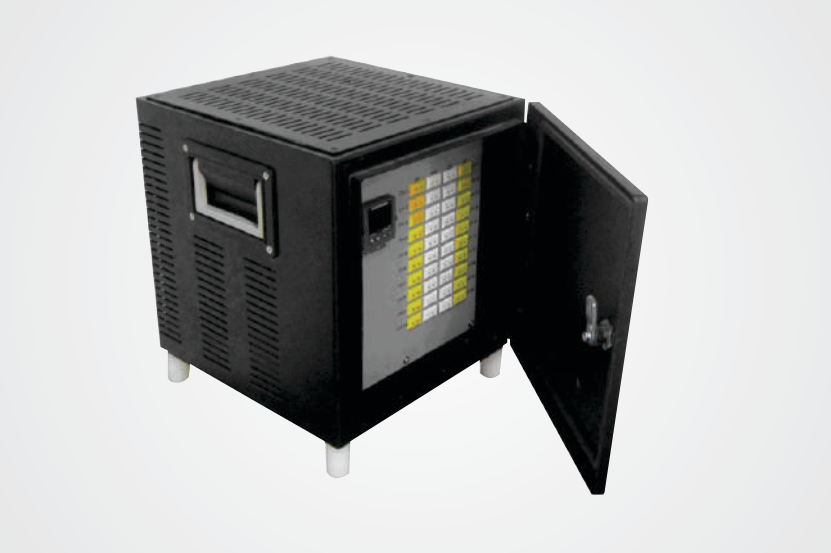
TEMPSENS

CALREF 0

Extended Area Black Body

Key Feature

- 0°C Thermoelectric reference unit
- Eliminates Old Fashioned “Ice Bath”
- Versatile use in industries, Laboratories, Instrument shop
- NABL Traceable Calibration Available



SPECIFICATIONS

Reference Junction Temp.	:	0°C(Standard)
Types of T/C	:	J, K, T, E, N, R, S, B
Accuracy	:	±0.1°C, Errors can be compensated by adjusting controller setting
Stability	:	±0.03°C
Stabilization Time	:	15 Mins
Capacity	:	20 No (User Defined)
Resolution	:	±0.01°C
Dimension	:	315(H) x 305(W) x 332(D)mm
Weight	:	13Kgs
Power Supply	:	230 VAC, 50 Hz
Carry Case	:	Aluminium modular box

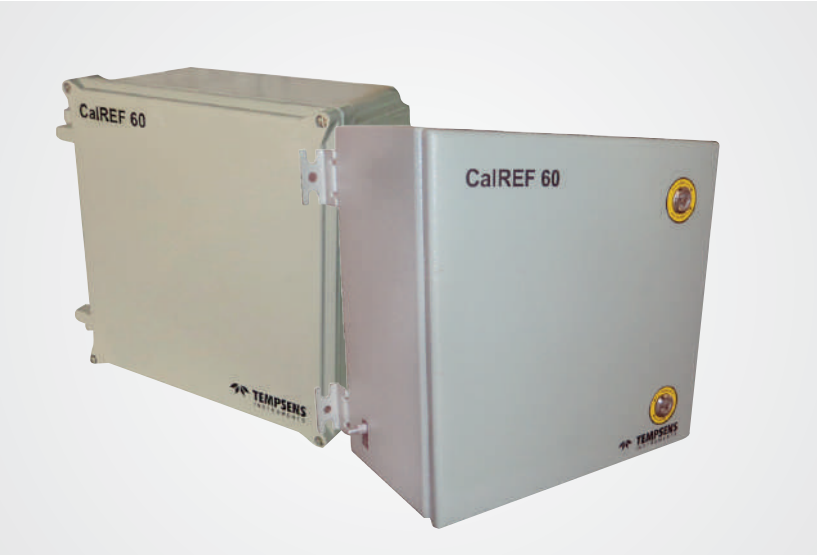
TEMPSENS

CALREF 60

Extended Area Black Body

Key Feature

- 60°C Thermoelectric reference unit
- Versatile use in factory, Laboratory, Instrument Shop
- Rugged Outer case for safe Portability
- NABL Traceable Calibration Available



SPECIFICATIONS

Temperature Range	:	+10 to 90
Types of T/C	:	J, K, T, E, N, R, S, B
Accuracy	:	±0.5°C, Errors can be compensated by adjusting controller setting
Stability	:	±0.05°C
Stabilization Time	:	10 Mins
Capacity	:	6-24 Channel (User Defined)
Max. Capacity	:	48 Channel
Resolution	:	±0.1°C
Dimension(CRCA)	:	350(H) x 350(W) x 210(D) mm
Dimension(FRP)	:	330(H) x 330(W) x 180(D) mm
Weight	:	15Kg(CRCA), 10Kg(FRP)
Power Supply	:	230 V AC, 50/60 Hz / 24 V DC

TEMPSENS

AUTOCAL SYSTEM

-High Stability

-High Uniformity

-Highly Stable Temperature Calibrator for Industrial Field Uses

AUTOCAL SYSTEM

Portable, Highly Stable Automatic Temperature Calibrator for Industrial/ Laboratory Field Use

Automatic Calibration System

Features

- 24 Channel Calibration (12 No. for thermocouples & 12 No. for RTD's)
- Includes Easy to use Connectors
- Internal CJC compensation
- Data Logging of selected channel
- Communication with CALsys Model & PC/Laptop

Specification

- Display LCD Display with Touch Screen
- Resolution (°C) 0.01°C
- Resolution (mV) 6 ½ digit
- Display Unit °C / °F / mV / ohms
- Mounting 19" rack / suitable for carry case
- Calibration With accredited calibration certificates
- Main Supply 230 VAC, 50 Hz

The Autocal 24 is an automatic temperature calibration system for the thermocouple and RTD's. The system consist of furnaces, the autocal device and PC software, which together contribute to the whole cycle of auto calibration process.

Each thermocouple and RTD input is designated as channel for the system. The system accept 24 channels, 12 thermocouples & 12 RTD's. The connection for these channels through special type of locking connectors. The channel switching can be done with PC software/LCD display via touch screen keypad. The thermocouple microvolt & RTD ohm reading for each channel is monitored with CJC compensation. After the calibration process complete the PC software generate a report of actual calibrated values for the inputs.

TEMPSENS

MEASURING INSTRUMENTS

-High Stability

-High Uniformity

-Highly Stable Temperature Calibrator for Industrial Field Uses

Measuring Instruments

Features

- High stability
- High accuracy of RTD measurement 0.01°C
- High accuracy of T/C measurement 0.1°C
- High Resolution (0.01/0.001)
- 2 Measuring inputs
- 10 Thermocouples **B, C, D, E, J, K, N, R, S, T**
- 6 RTD's **PT-100, PT-10, PT-50, PT-500, PT-200, PT-1000**
- Thermocouple reference junction external, internal and off
- Units °C/ °F
- Data Logging 4000 values
- Suitable for 2/3/4 wire RTD.

Calsys C-4004

High Accuracy Temperature Indicator Suitable for 6 RTD's and 10 T/C Types

Calsys C-4004 is fully characterized for all major sensors (thermocouples such as B, C, D, E, J, K, N, R, S, T and RTD's like PT-100, PT-50, PT-10, PT-200, PT-500, PT-1000). The instrument can be used in industries where high accuracy temperature measurement is essential. Two channel input provides A, B & A-B measurement on LCD Display. The device is providing exceptionally stable cold junction compensation with choices for user like Automatic, Off and External.

Calsys C-4004 comes with front panel keys for easy operation like unit selection (°C/°F), Resolution (0.01/0.001) and Data Logging.

Overall stability is optimized by utilizing high quality components with high precision. There are four input ports, two for thermocouple and two for RTD.

In order to measure temperature suitable probe should be connected to TC & RTD input. The temperature measured by the device will be displayed in bigger fonts and the actual resistance (ohms) in case of RTD and voltage (mV) in case of Thermocouple will be displayed in smaller fonts. All channel details and configuration will be displayed on the LCD display.

Calsys C-4004 can accept two RTD's, or two Thermocouples or one RTD and one Thermocouple at a time. Measured temperature can be displayed from one of the inputs or Difference of both the input channels.

SPECIFICATIONS

Display	192 x 64 LCD Graphic Panel with back light
Inputs	2 Channels for RTD and Thermocouple via lemo 1-S series connector
Reference Junction	Reference Junction compensation may be selected for the following modes : **Automatic :** Internal reference junction range 0 to +100°C **External :** Via Pt 100 sensor connected to channel A and B range to 0 to +100°C **Off :** Turns the Reference Junction OFF = 0°C
Working Temp.	0..50°C rel. humidity Less than90% non condensing condition
Storage Temp.	-20 to +55°C
Mains Supply	85-264 VAC / 120-370 VDC, 47-63 Hz
Data Logging	Up to 4000 values can be stored along with date and time
Dimensions	244 x 350 x 114

TEMPMET 08

Input

Thermocouples : J, K, N, E, R, S, T, B, C, D

RTD : Pt100, Pt10, Pt1000, Pt50, Pt200, Pt500

Unit : °C, °F

Resolution : 0.01°C

Accuracy : 0.1% of full scale

Channel : Tempmet 08-02 : 1 T/C, 1 RTD

Tempmet 08-04 : 2 T/C, 2 RTD

TEMPMET 08

Specification

RTD + T/C Type	RTD + T/C Range	Accuracy
		Tempmet 08
Pt100	-200°C to 850°C	±1.05°C
Pt10	-200°C to 800°C	±1.0°C
Pt1000	-200°C to 800°C	±1.0°C
Pt 50	-200°C to 800°C	±1.0°C
Pt200	-200°C to 800°C	±1.0°C
Pt500	-200°C to 800°C	±1.0°C
J	-210°C to 1200°C	±1.41°C
K	-200°C to 1372°C	±1.57°C
N	-200°C to 1300°C	±1.50°C
E	-200°C to 1000°C	±1.20°C
R	0°C to 1768°C	±1.76°C
S	0°C to 1768°C	±1.76°C
T	-200°C to 400°C	±0.65°C
B	400°C to 1820°C	±1.42°C
C	0°C to 2315°C	±2.315°C
D	0°C to 2315°C	±2.315°C

TEMPMET 09

Input

Thermocouples : J, K, N, E, R, S, T, B, C, D

RTD : Pt100, Pt10, Pt1000, Pt50, Pt200, Pt500

Unit : °C, °F, Ohms, mV

Resolution : 0.001°C

Accuracy : 0.1% of full scale

Channel : Tempmet 09-02 : 1 T/C, 1 RTD

Tempmet 09-04 : 2 T/C, 2 RTD

TEMPMET 09

Specification

RTD + T/C Type	RTD + T/C Range	Accuracy
		Tempmet 09
Pt100	-200°C to 850°C	±0.5°C
Pt10	-200°C to 800°C	±0.5°C
Pt1000	-200°C to 800°C	±0.5°C
Pt 50	-200°C to 800°C	±0.5°C
Pt200	-200°C to 800°C	±0.5°C
Pt500	-200°C to 800°C	±0.5°C
J	-210°C to 1200°C	±0.5°C
K	-200°C to 1372°C	±0.5°C
N	-200°C to 1300°C	±0.5°C
E	-200°C to 1000°C	±0.40°C
R	0°C to 1768°C	±0.8°C
S	0°C to 1768°C	±0.8°C
T	-200°C to 400°C	±0.5°C
B	400°C to 1820°C	±0.6°C
C	0°C to 2315°C	±0.9°C
D	0°C to 2315°C	±0.9°C

TEMPSENS

Non Contact Temperature Calibrators

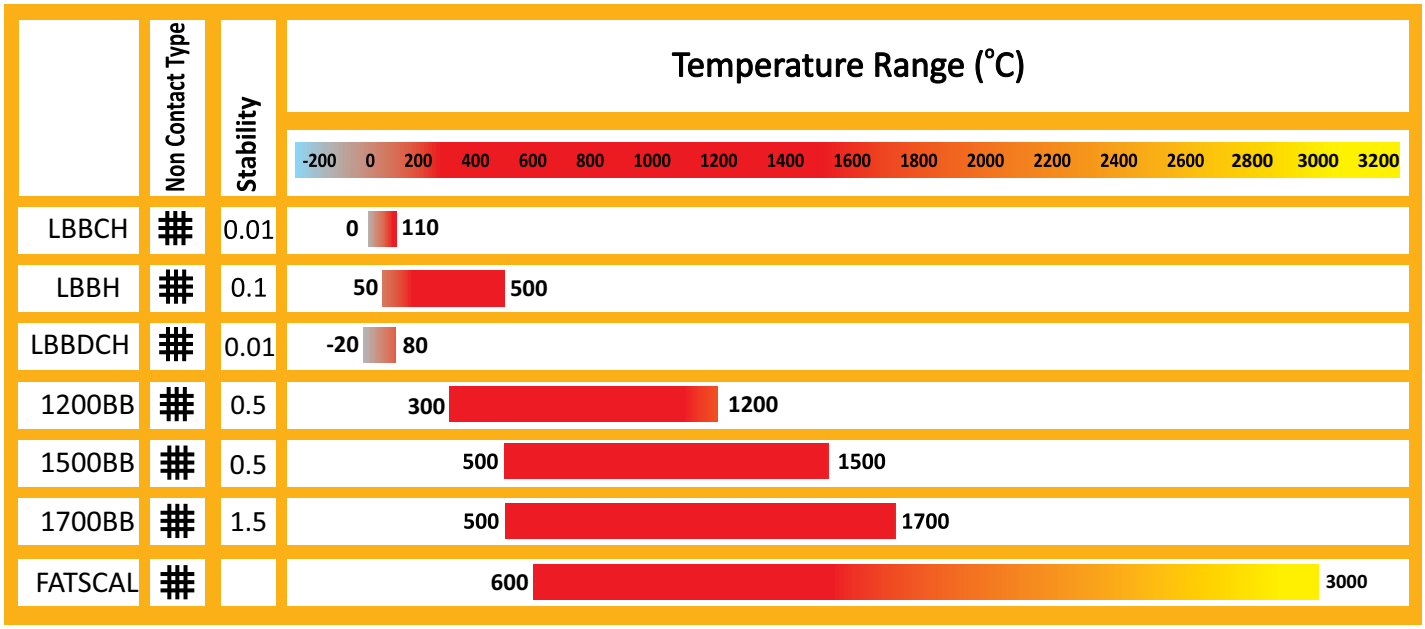
- Extended Area Black Body
- High Temperature Black Body Furnace
- NABL Accredited Temperature Calibration
- Onsite Temperature Calibration

www.tempsens.com

TEMPSENS

Calibrators Temperature Representation for Non-Contact Type Calibration

Division of non-contact type calibrators according to the temperature range.



 # Black Body

Master Sensor

Type	Range (°C)	Accuracy
AST AL30	0 to 1000°C	T<200°C : ±1.5%, T ⩾200°C: ±1.0%
AST AL390	300 to 1400°C	T < 500°C : ±1.5% of measured value, T ≥ 500°C : ±1.0% of measured value
AST A250	250 to 2500°C	±0.3% of the measured value +1°C
AST A450	600 to 2500°C	±0.3% of the measured value +1°C
AST A250C	350 to 1350°C	±0.5% of measured value +1°C
AST A450C	600 to 2500°C	±0.5% of measured value +1°C
AST A150	75 to 700°C	Above 400°C: 0.5% of measured value in °C+1°C
AST E250PL	250 to 1800°C	±0.3% of the measured value +1°C
AST E450PL	600 to 1900°C	±0.3% of the measured value +1°C

TEMPSENS

Extended Area Black Body

-High Stability

-High Uniformity

-Highly Stable Temperature Calibrator for Industrial Field Uses

TEMPSENS

LBBCH

Low temperature Extended area black body

Extended Area Black Body

Wide Temperature Range

LBBCH offer a temperature range from 0 °C to 110 °C

Large emissive area

LBBCH has the large emitting surface area precise temperature control with good uniformity. It is available in the customize sizes.

High Emissivity

The LBBCH Exceptionally high emissivity of 0.98 ± 0.02 .Extremely quick to reach various temperatures, i.e. heats up room temp to +110 °C in 10 minutes. This saves time and increases productivity.

Accuracy and performance

The LBBCH is high stable unit that also provides excellent calibration accuracy with stability ±0.01°C at 110°C.

Easy to use

LBBCH has inbulit PID controller or can be provided separately that shows real time display of the surface and set temperature

Computer Interface

The communication port (RS232/ USB) enables communication with selected LBBCH calibrators for automation calibration and documentation thus it made documentation easy. Remote control via Ethernet link, Rs232 or USB port.

Extended area black body is defined by the large emitting surface area precise temperature control with good uniformity. Tempsens make Blackbodies are state of the art, highly accurate and stable with different standard sizes and temperature ranges. The LBBCH Series Extended Area black bodies are low temperature infrared reference sources operating either in absolute or differential mode. This Black body series featuring the very high stability, they are particularly well adapted for the characterization and performance validation of a very wide range of IR Sensors, such as high resolution cameras for Thermography and long range thermal imagers. Essentially the black body emits a known amount of energy for an infinite number of wavelengths. This enables to draw the expected black body radiation curve for a given temperature. Temperature is accurately controlled by High accurate PID self tuning controller.

With the Tempsens make Compact Extended Area Black body Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

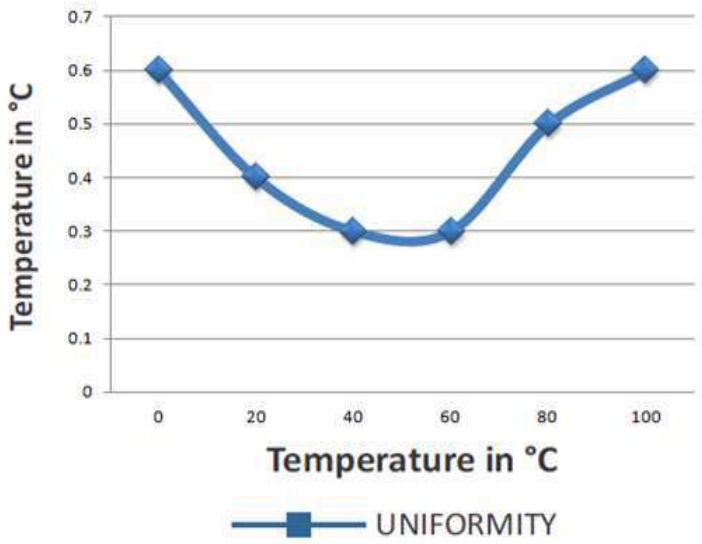
During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Parameter	LBB11CH	LBB22CH	LBB33CH
Emissive area	100 x 100 mm²	200 x 200 mm²	300 x 300 mm²
Temperature range (Standard)	10°C to 110°C		
Temperature range (Optional)	0°C to 110°C		
Emissive area uniformity (1)	±1% @(T-Tmax)		
Emissivity	0.98±0.02		
Stability	±0.01°C		
Temperature measurement Accuracy	±0.3°C		
Display resolution	0.01°C		
Method of control	Digital self tuned PID Controller		
Head dimensions W x H x D (mm³)	300 X 320 X 190 mm	550 x 550 x 260 mm	550 x 550 x 260 mm
Weight	15 kg	25 kg	35 kg
Max. power consumption	1 K W	1.5 K W	2 K W
Power supply	230 VAC, 1 ph. 50 Hz	230 VAC, 1 ph. 50 Hz	230 VAC, 1 ph. 50 Hz
Remote control	Ethernet, RS-232	Ethernet, RS-232	Ethernet, RS-232
Operating temperature range (head)	5°C to +25°C	5°C to +25°C	5°C to +25°C

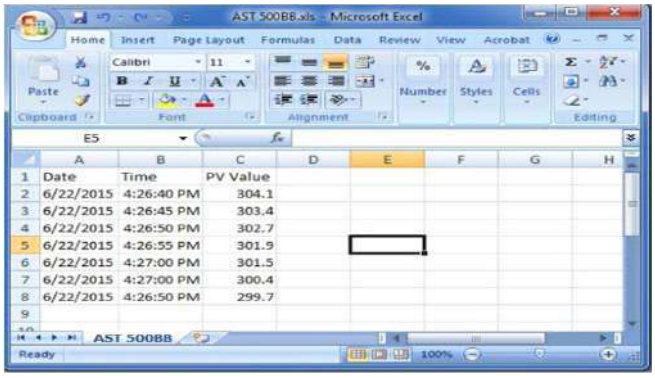
*1 at 80% of emissive area

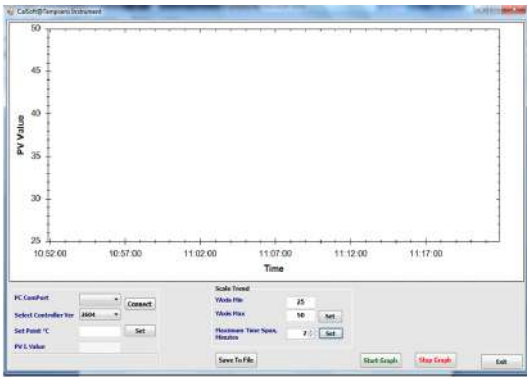
UNIFORMITY OF LBBCH



ACCESSORIES

SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR (OPTIONAL)

- Master pyrometer

- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new Extended Area Black Body calibrator and different accessories.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

LBBH

High temperature Extended area black body

Extended Area Black Body

Wide Temperature Range

LBBH offer a wide temperature range from 50 °C to 500 °C

Large emissive area

LBB has the large emitting surface area precise temperature control with good uniformity. It is available in the customize sizes.

High Emissivity

The LBBH Exceptionally high emissivity of 0.98 ± 0.02 .

extremely quick to reach various temperatures, i.e. heats up room temp to +500 °C in 45 minutes. This saves time and increases productivity.

Accuracy and performance

The LBBH is high stable unit that also provides excellent calibration accuracy with stability ±0.01°C at 500°C.

Easy to use

LBBH has inbulit PID controller or can be provided separately that shows real time display of the surface and set temperature

Computer Interface

The communication port (RS 232/ USB) enables communication with selected LBBH calibrators for automation calibration and documentation thus it made documentation easy. Remote control via Ethernet link, Rs232.

Extended area Black body is defined by the large emitting surface area precise temperature control with good uniformity. The blackbody is designed to provide infrared radiation as an ideal blackbody emitter. Because of the large uniform surface area the body called extended area black body. These data ensure high accuracy for the calibration of thermal imagers over their full field of view, the non-uniformity correction of infrared cameras, the simultaneous test of several sensors during manufacturing process the measurement of the size of source effect on cameras. We separately provide high accurate programmable controller with black body source. High accuracy chamber have designed separately. The temperature of furnace is set or changes by the controller.

With the Tempsens make Compact Extended Area Black body Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

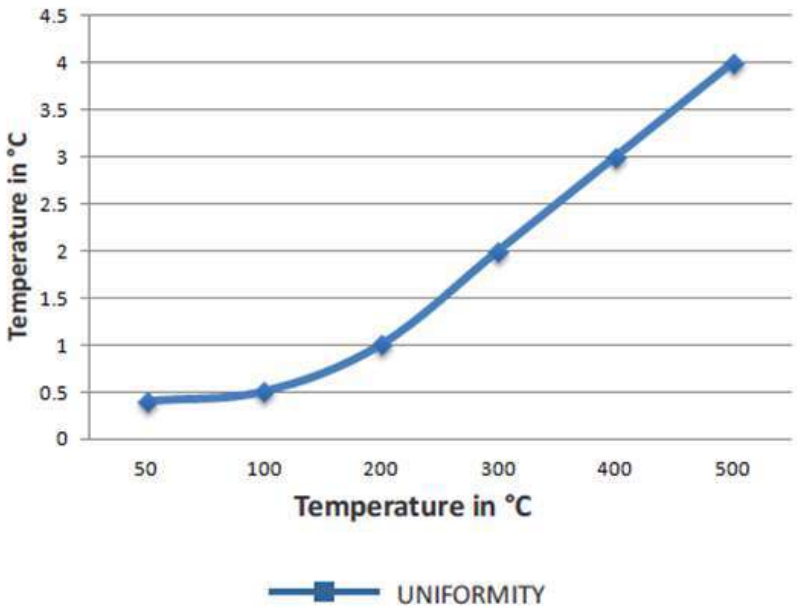
During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

Parameter	LBB11H	LBB22H	LBB33H
Emissive area	100x100 mm^2	200x200 mm^2	300x300 mm^2
Temperature range	50 to 500°C		
Emissive area uniformity (1)	±2 at 400°C	±3 at 400°C	±4 at 400°C
Emissivity	0.98±0.02	0.98±0.02	0.98±0.02
Stability	±0.1°C		
Temperature measurement Accuracy	±0.5°C		
Method of control	Digital self tuned PID Controller		
Display resolution	0.1°C		
Warm-up time from ambient to T_{max}	30 min	45 min	60 min
Head dimensions W x H x D (mm^3)	300 x 320 x 190 mm	550 x 550 x 260 mm	550 x 550 x 260 mm
Head weight	20 kg	25 kg	30 kg
Max. power consumption	2000 W	3000 W	5000 W
Power supply	230 VAC, 1 ph. 50 Hz	230 VAC, 1 ph. 50 Hz	230 VAC, 1 ph. 50 Hz
Remote control	Ethernet, RS-232	Ethernet, RS-232	Ethernet, RS-232
Operating temperature range (head)	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C

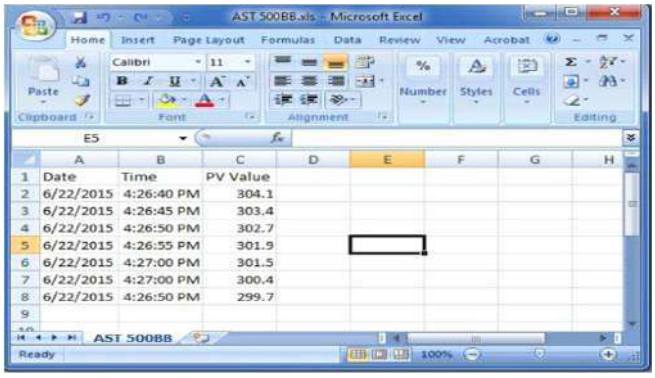
*1 at 80% of emissive area

UNIFORMITY OF LBBH



ACCESSORIES

SOFTWARE



- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR (OPTIONAL)

- Master pyrometer

- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new Extended Area Black Body calibrator and different accessories.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

LBBDCH

Low Temperature Differential Extended Area Black Body

Extended Area Black Body

Wide Temperature Range

LBBDCH offer a temperature range from -35°C with respect to ambient to 90°C with respect to ambient.

Large Emissive Area

LBBDCH has the large emitting surface area precise temperature control with good uniformity. It is available in the customize sizes.

High Emissivity

The LBBDCH Exceptionally high emissivity of 0.98 ±0.02. Extremely quick to reach various temperatures, i.e. heats up room temp to +50°C in 15 minutes. This saves time and increases productivity.

Accuracy and Performance

The LBBDCH is high stable unit that also provides excellent calibration accuracy with stability ±0.01°C at 50°C.

Easy to Use

LBBDCH has inbulit PID controller or can be provided separately that shows real time display of the surface and set temperature

Computer Interface

The communication port enables communication with selected LBBDCH calibrators for automation calibration and documentation thus it made documentation easy. Remote control via Ethernet link, RS-232 or USB port.

Extended area black body is defined by the large emitting surface area precise temperature control with good uniformity. Tempsens make Blackbodies are state of the art, highly accurate and stable with different standard sizes and temperature ranges. The LBBDCH Series Extended Area black bodies are low temperature infrared reference sources operating either in absolute or differential mode. This Black body series featuring the very high stability, they are particularly well adapted for t h e characterization and performance validation of a very wide range of IR Sensors, such as high resolution cameras for Thermography and long range thermal imagers. Essentially the black body emits a known amount of energy for an infinite number of wavelengths. This enables to draw the expected black body radiation curve for a given temperature. Temperature is accurately controlled by High accurate PID self tuning controller.

With the Tempsens make Compact Extended Area Black body Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

SPECIFICATIONS

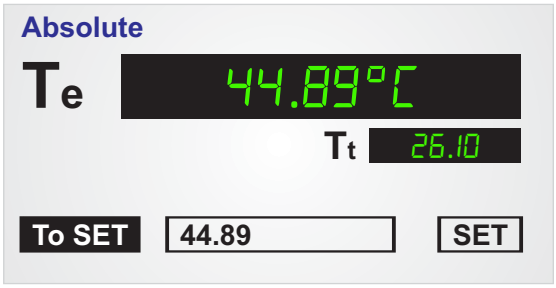
Parameter	LBBDCH
Emissive area	80 x 80 mm^2
Absolute Temperature Range	-35°C with respect to ambient to 90°C with respect to ambient.
Differential Temperature Range	-20°C to 80°C (Ambient 0°C)
Emissive area uniformity (1 & 2)*	±0.20°C @50°C
Emissivity	0.98±0.02
Stability	±0.01°C
Temperature measurement Accuracy	±0.1°C
Display	5" LCD °C or °F user selectable
Controller Dimension	100(H) x 120(W) x 300(D) mm
Display resolution	0.01°C
Method of control	Digital self tuned PID Controller
Head dimensions W x H x D (mm^3)	300 X 320 X 190 mm
Weight	15 kg
Max. power consumption	1 K W
Power supply	230 VAC, 1 ph. 50 Hz
Remote control	Ethernet, RS-232
Operating temperature range (head)	-20°C to +50°C

*1 at 80% of emissive area
*2 Uniformity will decrease during nitrogen purging

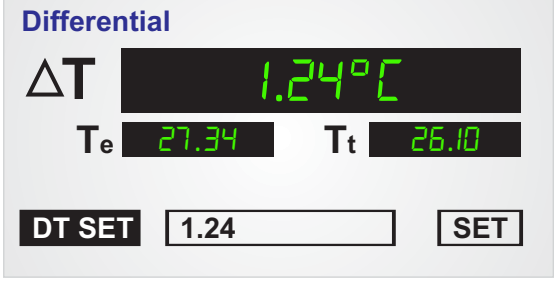
USER INTERFACE

The Temperature Control window opens in either the Absolute or Differential working modes.

Absolute Mode : In absolute mode there will be temperature indication for Emitter plate and target but no temperature difference will be shown. We can controll only emitter temperature only.



Differential Mode. : In differential mode we can change temperature difference between emitter and target needed. We have to put delta T value as set point. Controller will automativally change emitter temperature to achieve desired delta T value.



DESCRIPTION

Absolute Mode Blackbodies

The Absolute Mode BB (Blackbody) consists of an emitter plate, which is thermoelectrically heated or cooled to a pre-defined absolute temperature. One PRT (Platinum Resistance Thermometer) is mounted in the emitter and is used by the controller to measure the emitter temperature.

Differential Mode Blackbodies

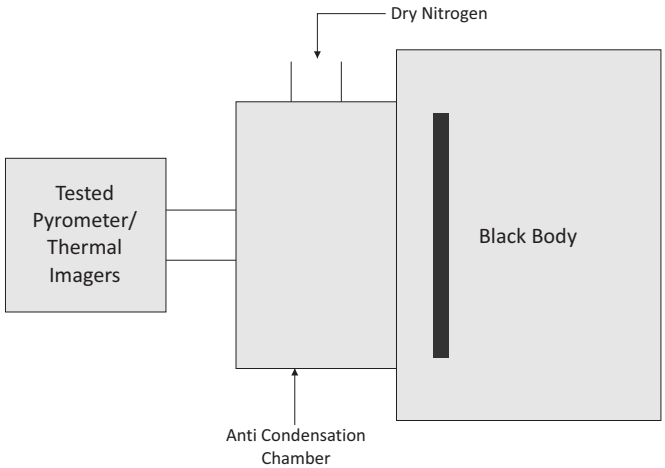
The Differential Mode BB consists of an emitter plate, which is thermoelectrically heated or cooled with respect to the target temperature (thus, the differential temperature between the Emitter and the target is controlled). The target plate is mounted in front of the emitter surface. Mounted in the emitter and target plates are two PRT sensors, used by the controller to measure their temperature difference.

The basic difference between absolute and differential BB is Target panel mounting arrangement at front.

ACCESSORIES

Anti Condensation Chamber

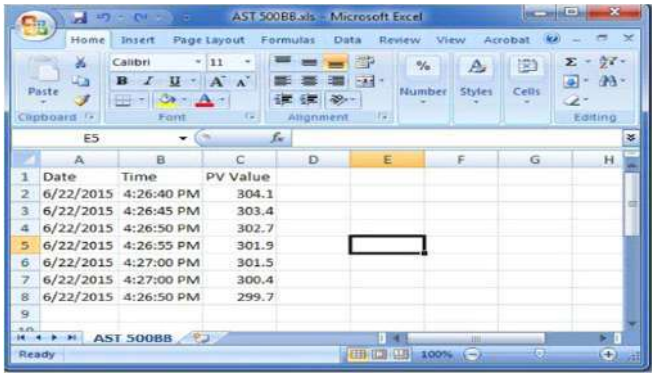
Along with LBBCH model blackbodies AST also offers anti condensation chamber around black body emitter for dry air / nitrogen to prevent any ice build up or water vapor condensation in case black body operate below ambient. one end off the chamber will be fit to black body emitter and another hole of the chamber fits to optics of tested pyrometer or thermal imagers .

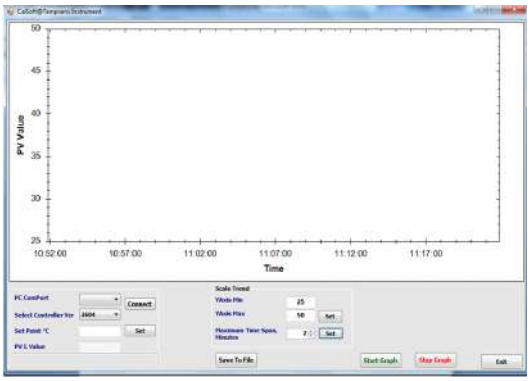


Size	150 (H) X 150 (W) X 200 (D)
Weight	3 Kg.

ACCESSORIES

SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR (OPTIONAL)

- Master pyrometer

- NABL accredited calibration certificate - 3 point
- Operational Manual

CARRY CASE

- Tempsens makes customized carry case is a rugged, safe perfectly designed to carry our new Extended Area Black Body calibrator and different accessories.

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

High Temperature Black Body Furnace

-High Accuracy

-High Temperature

-Highly Stable Temperature Calibrator for Industrial Field Uses

TEMPSENS

High Temperature Black Body Furnace

Wide Temperature Range

CALsys 1200BB offer a wide temperature range from 300 °C to 1200 °C

Simple to use

The CALsys 1200BB block is ideal for Industrial/Laboratory field use. It is simple enough to testing and calibration uses.

Speed

The Calsys 1200BB extremely quick to reach various temperatures heats up room temp to +1200 °C in 20 min.

Accuracy and performance

The Calsys 1200BB is an easily portable unit that also provides excellent calibration accuracy with stability ±0.5°C at 1200°C.

Accredited calibration

Each Calsys 1200BB is delivered with an accredited calibration certificate.

Computer Interface

The communication port (RS-232) enables communication with selected Calsys 1200BB calibrators for automation calibration and documentation thus it made documentation easy.

Calsys 1200BB

Highly accurate temperature Calibrator for Industrial / Laboratory field use

Calsys 1200BB offers easy to use blackbody calibrator with high temperature range from 300 to 1200°C. It is a highly stable standard furnace for calibrating pyrometer and non contact sensor. This calibrator can be used on site for high temperature calibration and also find application in pyrometer industry, non contact sensor calibration. the unique feature of this black body furnace is large temperature control black body target with dia of 46mm and 85mm depth which offers large view for IR camera . The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed CALsys 1200BB model offers better esthetic design and performance wise upgraded to next level. The emissivity of the target is 0.99(±0.01).

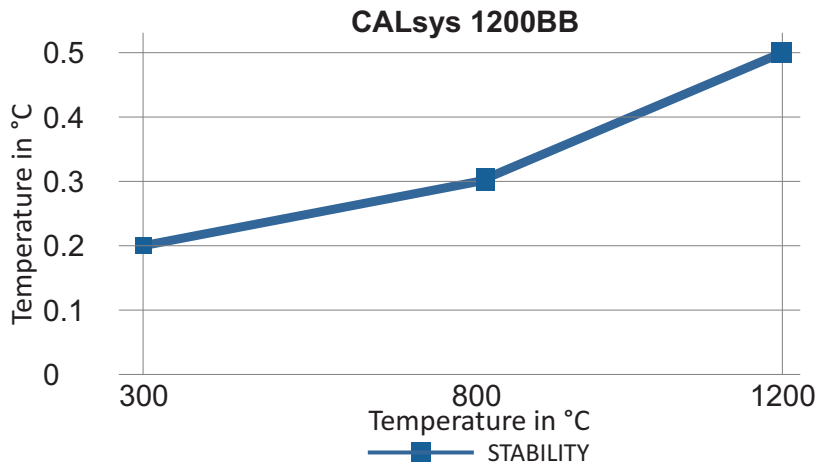
With the Tempsens make Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

Specifications

Temperature range	300 °C to 1200 °C
Accuracy	±2 °C
Stability	±0.2°C at 300°C
	±0.3°C at 800°C
	±0.5°C at 1200°C
Cavity type	Silicon carbide
External Aparture	40mm dia
Cavity Diameter	46 mm (85mm depth)
Method of Control	Self tunned PID controller
Heating time	1.5 Hrs
Resolution	1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	590(H) x 450(W) x 530(D) mm
Weight	50Kg
Power requirements	230 VAC, 2.5 KW(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 33 °C

STABILITY OF CALSYS 1200 BB



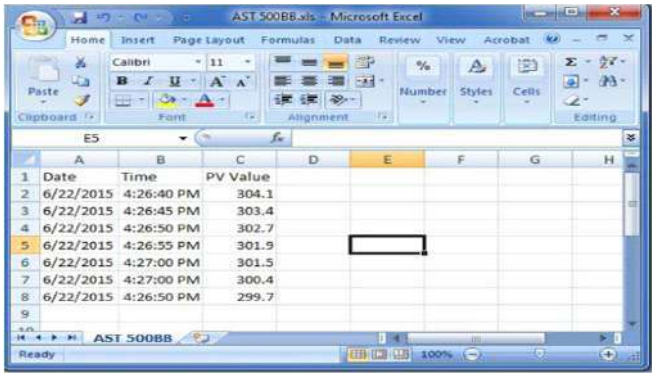
Access Opening 1200BB

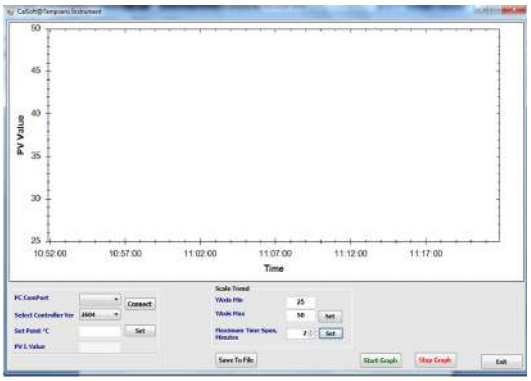
Blackbody Cavity for CALsys 1200BB models

We use 46mm dia silicon carbide (Radiation cavity type) in CALsys 1200BB. We also offer customized access opening based on Customer requirements.

Silicon Carbide Cavity.

SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR (OPTIONAL)

Master Pyrometer

- Black Body Cavity.....Part No. Eq3
- NABL accredited calibration certificate - 3 point
- Operational Manual

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

Calsys 1500BB

Highly accurate temperature Calibrator for industrial / Laboratory field use

Calsys 1500BB offers easy to use blackbody calibrator with high temperature range from 500 to 1500°C. It is a highly stable standard furnace for calibrating pyrometer and non contact sensor. This calibrator can be used on site for high temperature calibration and also find application in pyrometer industry, non contact sensor calibration. the unique feature of this black body furnace is large temperature controlblack body target of 40mm and 85mm long. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed Calsys 1500BB model offers better esthetic design and performance wise upgraded to next level.

With the Tempsens make Temperature Calibrator, you have chosen an extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

High Temperature Black Body Furnace

Wide Temperature Range

Calsys 1500BB offer a wide temperature range from 500 °C to 1500 °C

Simple to use

The Calsys 1500BB block is ideal for Industrial / Laboratory field use.It is simple enough to testing and calibration uses.

Speed

The Calsys 1500BB extremely quick to reach various temperatures heats up room temp to +1500 °C in 20mins . This saves time and increases productivity.

Accuracy and performance

The Calsys 1500BB is an easily portable unit that also provides excellent calibration accuracy with stability ±1.0 °C at 1500 °C.

Accredited calibration

Each Calsys 1500BB is delivered with an accredited calibration certificate.

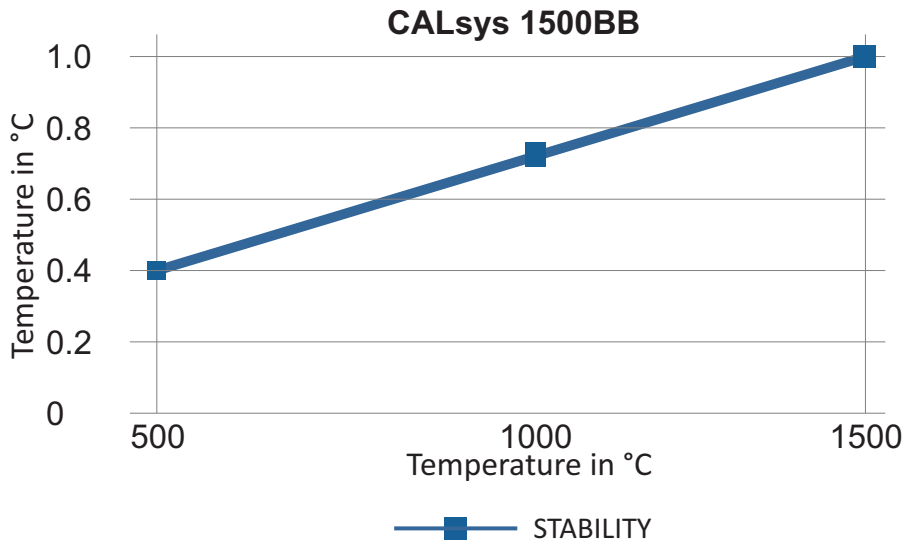
Computer Interface

The communication port(RS-232) enables communication with selected Calsys 1500BB calibrators for automation calibration and documentation thus it made documentation easy.

SPECIFICATIONS

Temperature range	500 °C to 1500 °C
Accuracy	±3 °C
Stability	±0.2°C at 500°C
	±0.3°C at 1000°C
	±0.5°C at 1500°C
Cavity type	Silicon carbide
External Aparture	40 mm dia
Method of Control	Self tunned PID controller
Cavity Diameter	46mm (85 mm depth)
Heating time	1.5 Hrs
Resolution	1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	590(H) x 450(W) x 530(D) mm
Weight	55Kg
Power requirements	230 VAC, 3.0 KW(50 Hz)
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C ... 33 °C

STABILITY OF CALSYS 1500 BB



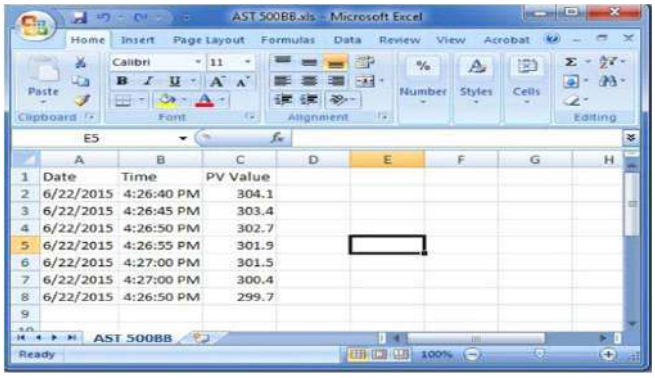
Access Opening 1500BB

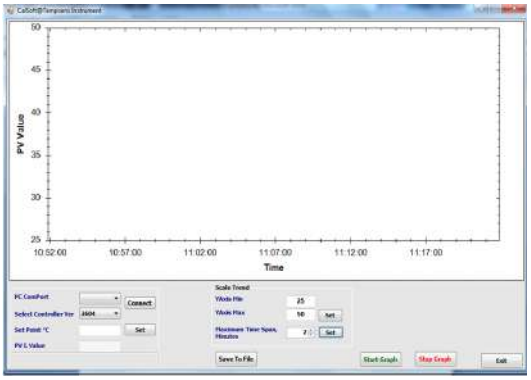
Blackbody Cavity for CALsys 1500BB models

We use 46mm dia silicon carbide (Radiation cavity type) in CALsys 1500BB. We also offer customized access opening based on Customer requirements.

Silicon Carbide Cavity.

SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR (OPTIONAL)

- Master Pyrometer

- Black Body Cavity.....Part No. Eq3
- NABL accredited calibration certificate - 3 point
- Operational Manual

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

Calsys 1700BB

Highly accurate temperature Calibrator for Industrial / Laboratory field use

CALsys 1700BB offers easy to use blackbody calibrator with high temperature range from 500 to 1700°C. It is a highly stable standard furnace for calibrating pyrometer and non contact sensor. This calibrator can be used on site for high temperature calibration and also find application in pyrometer industry, non contact sensor calibration.. The unique feature of this black body furnace is large temperature control black body target of 29mm diameter. The temperature of the calibrator is set and controlled by a self tuned PID controller with automatic super fine adjustment. Our newly designed CALsys 1700BB model offers better esthetic design and performance wise upgraded to next level.

Tempsens make Temperature Calibrator extremely effective instrument which we hope will live up to all your expectations. This is a fast, timesaving, and reliable true industrial temperature calibrator designed for on-site use.

During the past several years, we have acquired extensive knowledge of industrial temperature calibration. This expertise is reflected in our products which are all designed for daily use in an industrial environment.

High Temperature Black Body Furnace

Wide Temperature Range

Calsys 1700BB offer a wide temperature range from 500 °C to 1700 °C

Simple to use

The Calsys 1700BB block is ideal for Industrial/ Laboratory field use. It is simple enough to testing and calibration uses.

Speed

The Calsys 1700BB extremely quick to reach various temperatures heats up room temp to +1700°C in 30min. This saves time and increases productivity.

Accuracy and performance

The Calsys 1700BB provides excellent calibration accuracy with stability ±1.5°C at 1700 °C.

Accredited calibration

Each Calsys 1700BB is delivered with an accredited calibration certificate.

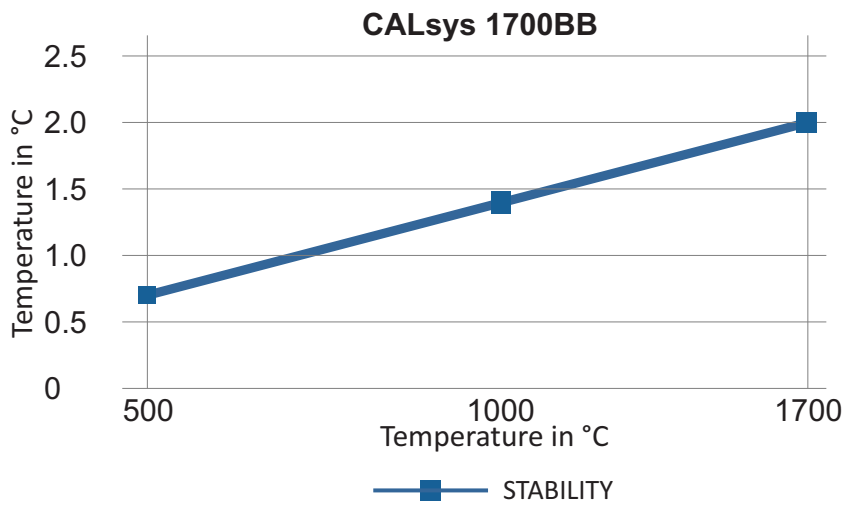
Computer Interface

The communication port (RS-232) enables communication with selected Calsys 1700BB calibrators for automation calibration and documentation thus it made documentation easy.

SPECIFICATIONS

Temperature range	500 °C to 1700 °C
Accuracy	±4 °C
Stability	±0.5°C at 500°C
	±1.0°C at 1000°C
	±1.5°C at 1700°C
Stabilization time	15 to 20mins
Controlling sensor	B type duplex(PT/RH-PT)
Cavity type	ceramic
Cavity dimention	29mm End closed tube
Heater	$MoSio_2$
Heating time	3 Hrs
Method of control	Digital self tuned PID Controller
Resolution	1 °C
Display	LCD, °C or °F user-selectable
Size (H x W x D)	640(H) x 500(W) x 550(D) mm
Weight	80Kg
Power requirements	230 VAC 50/60Hz
Computer interface	RS - 232
Calibration	Accredited calibration certificate provided
Environmental operating conditions	0 °C to 40 °C, 0 % to 90 % RH (non-condensing)
Specifications valid in environmental conditions	13 °C … 33 °C

STABILITY OF CALSYS 1700 BB



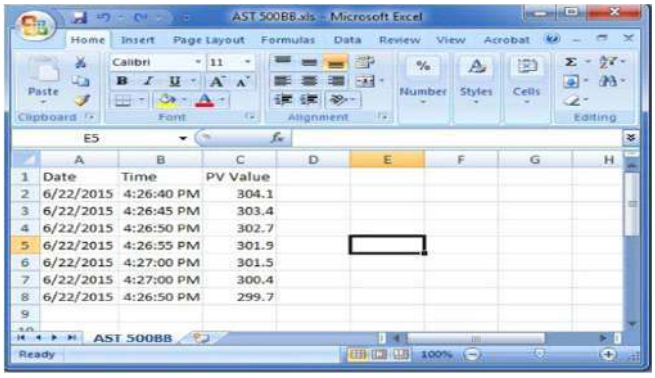
Access Opening 1700BB

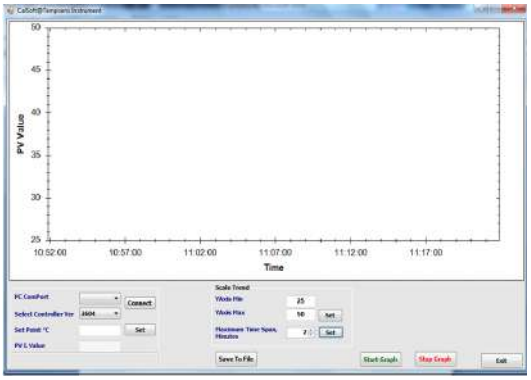
Blackbody Cavity for CALsys 1700BB models

We use 29mm dia End closed tube (Radiation cavity type) in CALsys 1700BB. We also offer customized access opening based on Customer requirements.

Ceramic Cavity

SOFTWARE





- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

MASTER SENSOR (OPTIONAL)

- Mater pyrometer

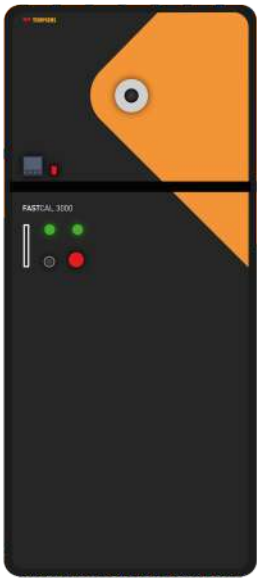
- Black Body Cavity……. Part No. Eq3
- NABL accredited calibration certificate - 3 point
- Operational Manual

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

TEMPSENS

FASTCAL 3000

High Temperature Black-Body Calibrator For Industrial/ Laboratory Field Use



High Temperature Black-Body Calibrator

Wide Temperature Range

FASTCAL 3000 offer a wide temperature range from 600°C to 3000 °C

Safety Interlocks

Safety Interlocks with Cooling water for over temperature and over current protection. also with Low purge gas flow.

Speed

The FASTCAL 3000 extremely quick to reach various temperatures, i.e. heats up 600°C to 3000°C in 5 minutes. This saves time and increases productivity.

Accuracy and Emissivity

The FASTCAL 3000 provides excellent calibration accuracy ± 0.3% with an effective emissivity of 0.99.

Accredited calibration

Each FASTCAL 3000 is delivered with an accredited calibration certificate.

Computer Interface

The communication port (RS-232/RS-485) enables communication with selected FASTCAL 3000 calibrators for automation calibration and documentation thus it made documentation easy.

High temperature pyrometer calibration machine has been designed to provide stable and accurate temperature to enable professionals to calibrate Temperature Sensing Devices by comparison method. High temperature pyrometer calibration machine model has been named FASTCAL because of its fast calibration. The 'FASTCAL' model has been designed to be rugged and easily maintained.

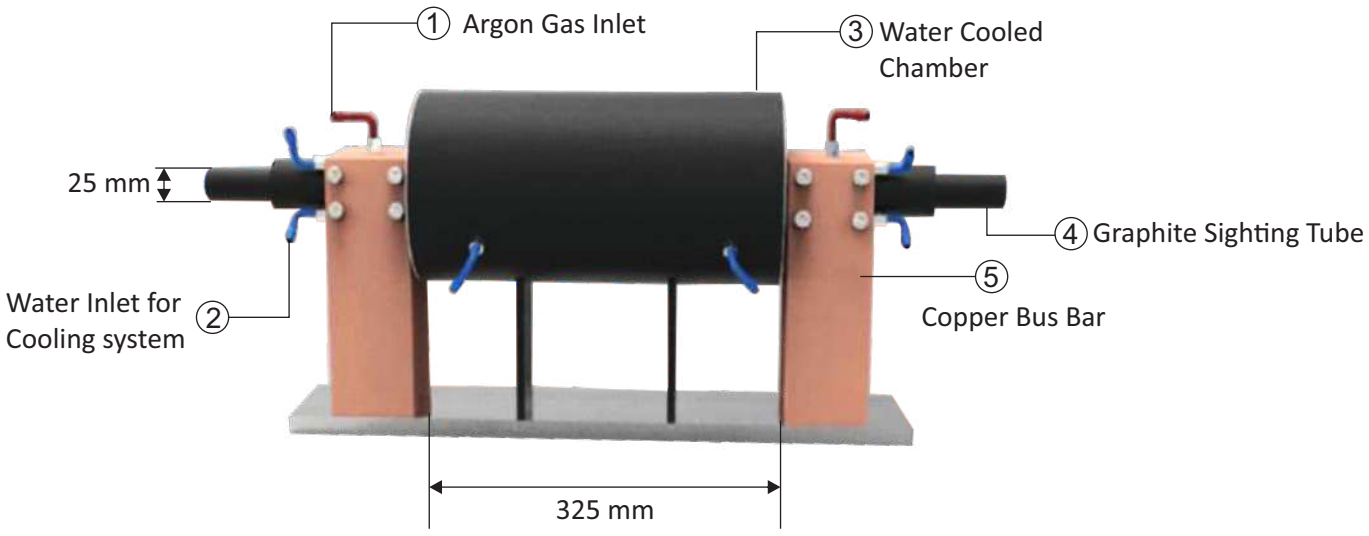
Deliver any temperature ranging between 700°C to 3000°C. A graphite strip is works as a cavity for blackbody calibrator under inert atmosphere the heated length of graphite element and aperture. These heating elements provide excellent uniformity and a heat-up time of within 5 minutes to reach 3000°C.

A self tune digital PID controller with adjustable set point And Infrared pyrometer to sense the Temperature holds the temperature within ±3 deg c up to 3000°C assuring high Accuracy calibration. An independent over temperature alarm And cut out system, prevents heating elements burnout.The controller is mounted on the calibration source and remote set point programming may be achieved via the standard RS232 or optional RS485 communication port.

SPECIFICATIONS

Temperature Range	600°C to 3000°C
Method of Control	PID controller Eurotherm make 3504
Controlling Sensor	Pyrometer, Make AST AST Model 250
Wavelength	1000 nm or 1600 nm (Pyrometer)
Accuracy	0.3 % of the reading with full span of pyrometer
Temperature Resolution	0.1 °C
Emissivity	0.99
Cavity	Graphite Dual cavity blackbody, one side for control and one side for measurement
Heating Aperture	25mm, other size also available as per user request.
Master T/C	1 hole of 6.5 mm & 1 hole of 8.5 mm.
Cooling	Water cooling system through chiller unit.
Purge Gas	Argon gas flow with 10-12 LPM respective.
Heating Time	Approx 5 Minute from 600 to 3000°C
Safety Interlocks	Cooling water over temperature, Low purge gas flow, cooling water flow, over current and over temperature protection.
Remote Controller	Set Point control and temperature monitoring by RS 232
Ambient Temperature	Ambient +/-15°C
Power	440VAC,Two Phase AC 50/60 Hz 60 KW
Dimension	1570mm(H) x 825mm(W) x 1200mm(D)
Weight	300 Kg approx.

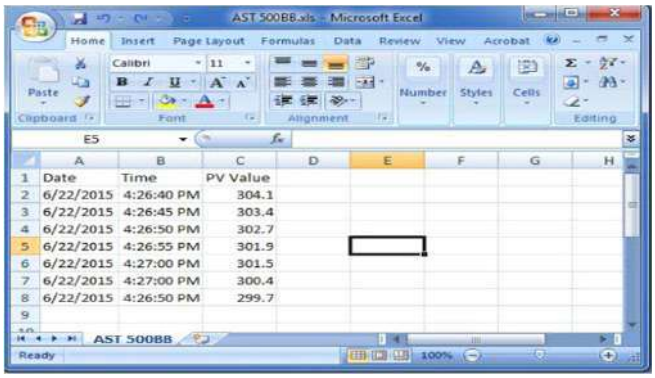
FASTCAL 3000 Graphite Cavity Assembly



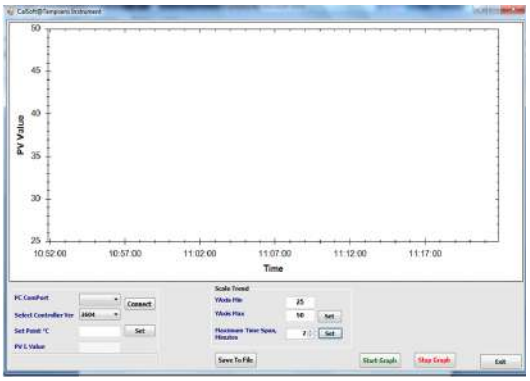
Standard Accessories

- **Chiller Unit :** Chiller unit separately provided with FASTCAL 3000 for cooling purposes also use for safety interlock for high temperature protection
- NABL accredited calibration certificate - 3 point
- Operational Manual

SOFTWARE



	A	B	C
1	Date	Time	PV Value
2	6/22/2015	4:26:40 PM	304.1
3	6/22/2015	4:26:45 PM	303.4
4	6/22/2015	4:26:50 PM	302.7
5	6/22/2015	4:26:55 PM	301.9
6	6/22/2015	4:27:00 PM	301.5
7	6/22/2015	4:27:00 PM	300.4
8	6/22/2015	4:26:50 PM	299.7



- CalSoft including for setting bath temperature and monitoring the PV. Graphical representations of PV/TIME with 2 hours data logging.

Black Body Cavity Assembly Parts

Graphite Cavity

Graphite T/C Block

Graphite Block Front

Graphite Block Back

Quartz tube

TEMPSENS

Tempsens Instruments (I) Pvt. Ltd. U# II
A-190, Road No.5, M.I.A., Udaipur-313003 (Rajasthan) INDIA
Ph.:+91-294-3500629, Fax.:+91-294-3500631
Email: calsys@tempsens.com, info@tempsens.com

CALIBRATION SERVICES

Tempsens Calibration Center is an independent unit of Tempsens instruments (I) Pvt. Ltd, having laboratories at Udaipur, Vadodara & Bangalore. It is accredited for wide range of temperature calibration services.

It is the only private sector Laboratory in the country with accredited Fixed Point Temperature calibration Facilities. The lab has highly stable calibration furnaces, measuring instruments and accurate master sensors traceable to National and International Standards.

The calibration center functions as per ISO 17025 / NABL standards. Calibration of contact type sensors can be made in temperature range of -196°C to 1600°C and Calibration of non contact type sensors can be made in temperature range 0°C to 2900°C. Further the laboratory is accredited for onsite temperature calibration.

The lab offer both at Lab & On-Site Calibration of Furnace/Bath from -80°C to 1600°C and Black Body Calibration from 50°C to 1700°C.

Furnace/Chamber Calibration (TUS) with multiple sensors from -80°C to 1200°C is also in the scope of the lab.

IN HOUSE CALIBRATION FACILITY

Quality Measured / Instruments	Temperature Range	Calibration & Measurement Capability
Contact Type RTD, Thermocouples Thermometers	-196°C -80 to -38°C -38°C to 0°C >0°C to 140°C >140°C to 250°C >250°C to 650°C >650°C to 1200°C >1200°C to 1600°C	0.05°C 0.03°C 0.03°C 0.04°C 0.04°C 0.12°C 1.30°C 2.60°C
Non Contact Type Pyrometer	0°C to 250°C >250°C to 500°C >500°C to 1500°C >1500°C to 1700°C >1700°C to 2900°C	1.5°C 2.4°C 2.5°C 3.2°C 4.0°C

ON SITE CALIBRATION FACILITY

Quality Measured/ Instruments	Temperature Range	Calibration & Measurement Capability
Contact type RTD. Thermocouples Thermometers	-25°C to 0°C >0°C to 140°C >140°C to 250°C >250°C to 650°C >650°C to 1200°C	0.07°C 0.04°C 0.09°C 0.12°C 1.30°C
Non Contact Type Pyrometer	0°C to 250°C >250°C to 500°C >500°C to 1200°C	1.50°C 2.40°C 2.5°C
Multipoint Position Calibration of Chamber, Oven, Furnaces (Thermal Mapping(TUS))	-80°C to 200°C >200°C to 1200°C	2.8°C 4.1°C

C-0321 Udaipur Lab

C-1155 Vadodara Lab

C-1226 Bangalore Lab

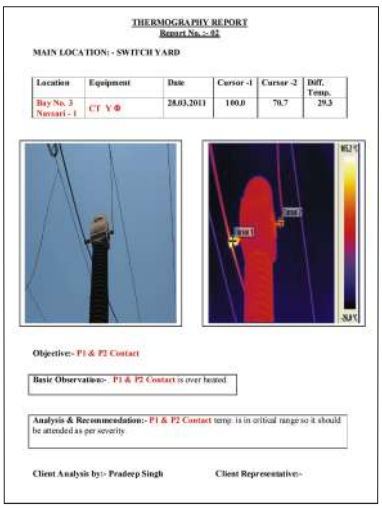
FIXED POINT CALIBRATION FACILITIES

Quality Measured/ Instruments	Temperature Range	Calibration & Measurement Capability
Calibration of SPRT/PRTS/ thermocouple etc.	Triple Point of Water (0.01°C) Melting Point of Gallium (29.7646°C) Freezing Point of Tin (231.928°C) Freezing Point of Zinc (419.527°C) Freezing Point of Aluminum (660.323°C)	0.0038°C 0.0065°C 0.0065°C 0.0071°C 0.0075°C
Calibration of Thermocouple at Secondary Fixed Point	Melting Point of Gold(1064.18 °C)	0.72°C
	Melting Point of Palladium(1554.8 °C)	0.83°C

THERMOGRAPHY SERVICES

Tempsens provide thermography services for various industries. Thermography enables to monitor the thermal efficiency of critical process systems that rely on heat transfer of retention.

This is one of the most powerful, fast and one of the most cost-effective condition monitoring technique that has wide application in any industry in detecting incipient faults, if left unattended, would not only lead to loss of productivity and quality but also increase operations and maintenance costs.


THERMOGRAPHY REPORT

MAIN LOCATION: - SWITCH YARD

Location	Equipment	Date	Cursor -1	Cursor -2	Diff. Temp.
Bay No. 3 Navsari - 1	CT Y Φ	28.03.2013	100.0	70.7	29.3

Objective:- P1 & P2 Contact

Basic Observation:- P1 & P2 Contact is over heated

Analysis & Recommendation:- P1 & P2 Contact temp. is in critical range so it should be attended as per severity

Client Analysis by:- Pradeep Singh

Client Representative:-

Sample Thermography Report

THERMAL & CABLE SOLUTIONS

www.tempsens.com

OneTemp pty ltd
measure | control | record
1300 768 887
www.onetemp.com.au

TEMPSENS