- → Series TP Basic
- → Series TP Solid
- → Series TP Premium
- → Accessories
- → TT-Scan

Including products with:

TEMPERATURE CALIBRATORS

Temperature measurement and calibration instruments

Our temperature measurement and calibration instruments are designed and built with long-term reliability, innovative calibration technology, and superior quality in mind. A comprehensive range of temperature products and services, with standardized electrical signals are offered. Our products are engineered and manufactured to DAkkS standards (Germany's equivalent to NIST).

Our temperature calibrators, simulators, controllers and indicators, transmitters and sensors help our customers to ensure the consistent long-term quality of their products, and improve the efficiency of their production processes.
Our strength is our flexibility in developing customized solutions, based on our wealth of technical and application experience.

For laboratory, industry and service

Good reasons for a calibration

- Maintain consistently high product quality
- Meet industry standards and legal regulations
- Optimize processes and boost productivity
- Avoid unscheduled downtime

Temperature sensors are subject to mechanical, thermal and chemical stress. This results in a drift the longer the sensors are in use. Only the regular calibration of the sensors provides information on the difference between the actual temperature and the measured temperature and makes the specific drift visible. In measuring tasks, readings are often taken without regard to the fact that every display value contains an error. In industrial applications even the smallest inaccuracy can lead to production errors.

Calibration with SIKA

Dry block calibrators and micro calibration baths are used to check and calibrate a wide range of temperature measuring instruments and temperature sensors. Mechanical, electro-mechanical or electronic measurement equipment can be checked with ease. The following sensors and instruments can be tested directly:

- Contact-based immersion or surface temperature sensors
- Sensors with special shapes and sizes
- Non-contact infrared instruments and thermal imaging cameras

The compact and robust SIKA instruments are easy to transport, simple to use and offer all the features required for the specific test. Our instruments are already standard in many development, research and testing labs, testing and inspection departments and in the production and manufacturing sector.

Temperature calibrator requirements

Calibration task and operation locations

A temperature calibrator needs to meet a wide range of requirements: as a portable device, it has to cope with frequently changing operation locations in the test bay or in production, while being equally suitable for stationary use in the measuring workshop and testing and inspection laboratory. For this reason, the instruments must be lightweight and handy for quick and easy use on site. The weight and size are determining factors here.

Temperature range

Temperature sensors should be calibrated at the temperature point at which they are used. This means that the temperature calibrator must be able to cover the process temperatures of the temperature sensor under calibration and, in particular, generate the main test points. SIKA offers several temperature calibrators to cover the range from -55 °C to 1300 °C.

Efficiency and flexibility

The time and personnel required to perform the calibration task is a key index for gauging efficiency. The more efficiently things are done, the faster the return on investment in a temperature calibrator. Intuitive operation with clear displays that provide all the necessary information at a glance, along with the calibration volume and the associated re-cooling and cooling times, primarily determine the speed of the calibration. Another time-saver: a large-diameter test item holder that enables several temperature sensors to be calibrated simultaneously.

Reliable system accuracy

Various tests and measurement uncertainty appraisals as defined in the guidelines of the German Calibration Service (DAkkS) are performed during the production of SIKA calibrators. The measurement results are documented in comprehensive examination reports, thereby ensuring a reliable, high degree of system accuracy.

Traceability

Instruments and measuring equipment become worn from constant use. It is unavoidable that equipment ages and measured values drift as a result. Regular inspection with a factory calibration standard is absolutely essential and can be performed easily with a SIKA temperature calibrator as the calibration standard.

Services

Experienced and professional consultants visit you directly on site with demo instruments, thereby ensuring you receive top-quality customer care. Furthermore, SIKA also offers a wide array of services which can generally only be performed efficiently by the manufacturer, such as recalibration, adjustments and repairs. This increases the availability of the temperature calibrators and cuts cost.

Calibration function for every need

Micro bath function

The use of calibration liquids offers certain advantages if temperature sensors with an unusual shape and size are to be tested. The test item is immersed directly into the liquid without an insulating air gap, resulting in direct temperature contact between the calibrator and the test item. The liquid, such as silicone oil, is chosen depending on the calibration temperature required. The continuous adjustment of the magnetic stirrer together with the removable sensor basket agitates the calibration liquid to create a large measuring zone. Furthermore, the sensor basket guarantees unhindered stirring and helps protect the sensor.

Black body function

A patented infrared calibration sleeve is used to calibrate IR pyrometers or thermal imaging cameras. The special surface structure and the asymmetrical shapes create a "cavity radiator" with an emission factor of 0.9994, prevent the reflection of interference radiation and emit the required temperature in an ideal form. The pyrometer is simply held at the specified distance above the measurement opening, thereby forming the desired measurement area on the bottom for the calibration to be performed. A support base can be fitted directly on the unit.

Dry block function

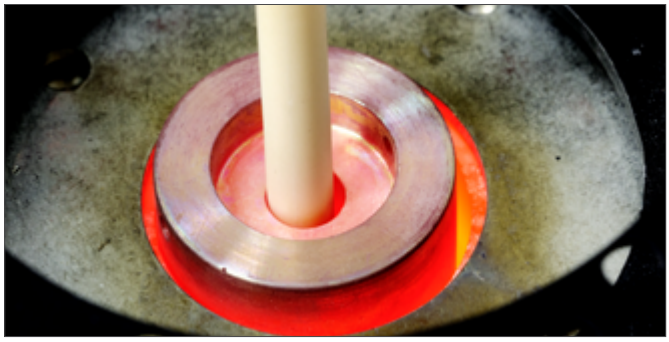
The dry block adapter sleeve is used for straight temperature sensors with almost any length and diameter. Every adapter sleeve can be equipped with a single diameter bore, or multi-diameter bore. Bore diameters ranging from 1.5 mm to 25.5 mm are offered in 0.5 mm increments (see page 15 for our standard adapter sleeves). The optimum thermal coupling from the block to the test instrument is achieved with the appropriate adapter sleeve. The dry block covers the entire temperature range without the need to change the calibration medium.

Surface temperature function

Surface temperature sensors are calibrated using special sleeves that are fitted vertically with the required contact force. Switching calibration control to the external reference sensor creates the best possible temperature reference point on the surface of the sleeve. The reference sensor is located directly beneath the abutting face of the sleeve. The sleeve is designed in such a way that the best temperature homogeneity is achieved in the centre of the abutting face. The special design of the abutting face enables good thermal contact. There is no need to use a thermally conductive paste or other thermal conduction aids.

Series TP Basic

Efficiency and portability are distinguishing features of the temperature calibrators of the TP Basic series. It consists of dry block calibrators which cover a wide temperature range and are used on-site e.g. in the marine sector.
Designed to ensure a comfortable calibration of temperature sensors, they impress with an easy operation and a thoughtful use of different automatic functions.



The optimal thermal coupling from the block to the test item is achieved by an exactly fitted adapter sleeve. These adapter sleeves can be produced according to customer specifications, enabling the simultaneous calibration of different temperature sensors.
This results in an easy, fast and efficient test of various test items without compromising quality.

Adapter sleeve - 60 mm

Some of the dry block calibrators have a large 60 mm block borehole and can hold several test items at once.

TP Basic series

TP 17 200

Technical data		
Type	TP 17 200	
Control sensor	Internal	
Dry block		
Temperature range*	-55...200 °C	-67...392 °F
Accuracy	±0.4 °C	±0.72 °F
Stability	±0.1 °C	±0.18 °F
Measurement zone	110...150 mm	4.3...5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	-60...200 °C	-76....392 °F
Resolution	0.1 °C	0.1 °F
General data		
Dimensions		
→ Width	210 mm	8.27 in.
→ Height	380 + 50 mm	14.96 + 1.97 in.
→ Depth	300 mm	11.81 in.
Weight	Approx. 12.5 kg	Approx. 27.56 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 555 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 17 200

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- DAkkS certificate
- Works certificate

The TP 17 200 temperature calibrator, which is also known as TP COOL, works in a temperature range from -55 to 200 °C.

TP 17 165 M

Technical data		
Type	TP 17 165 M	
Control sensor	Internal	
Dry block		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±1 °C	±1.8 °F
Stability	±0.1 °C	±0.18 °F
Measurement zone	110...150 mm	4.3...5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	-50...165 °C	-58...329 °F
Resolution	1 °C	1 °F
General data		
Dimensions		
→ Width	210 mm	8.27 in.
→ Height	380 + 50 mm	14.96 + 1.97 in.
→ Depth	300 mm	11.81 in.
Weight	Approx. 10 kg	Approx. 22.05 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 17 165 M

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- DAkkS certificate
- Works certificate

TP 17 165

Type TP 17 165

Technical data		
Type	TP 17 165	
Control sensor	Internal	
Dry block		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.4 °C	±0.72 °F
Stability	±0.1 °C	±0.18 °F
Measurement zone	110...150 mm	4.3...5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	-50...165 °C	-58...329 °F
Resolution	0,1 °C	0.1 °F
General data		
Dimensions		
→ Width	210 mm	8.27 in.
→ Height	380 + 50 mm	14.96 + 1.97 in.
→ Depth	300 mm	11.81 in.
Weight	Approx. 10 kg	Approx. 22.05 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- DAkkS certificate
- Works certificate

TP 17 166

Type TP 17 166

Technical data		
Type	TP 17 166	
Control sensor	Internal	
Dry block		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.4 °C	±0.72 °F
Stability	±0.1 °C	±0.18 °F
Measurement zone	110...150 mm	4.3...5.91 in.
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	-50...165 °C	-58...329 °F
Resolution	0.1 °C	0.1 °F
General data		
Dimensions		
→ Width	210 mm	8.27 in.
→ Height	380 + 50 mm	14.96 + 1.97 in.
→ Depth	300 mm	11.81 in.
Weight	Approx. 10 kg	Approx. 22.05 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- DAkkS certificate
- Works certificate

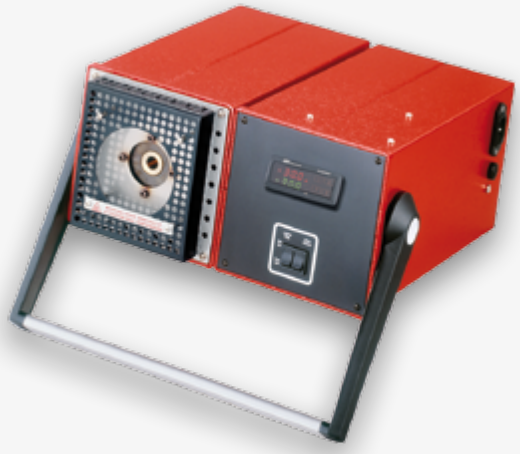
The TP 17 166 temperature calibrator model has a very large calibration volume.

TP 18 200 E

Technical data		
Type	TP 18 200 E	
Control sensor	Internal	
Dry block		
Temperature range*	RT...200 °C	RT...392 °F
Accuracy	±1 °C	±1.8 °F
Stability	±0.1 °C	±0.18 °F
Measurement zone	60...100 mm	2.36...3.94 in.
Block dimensions		
→ Diameter	Ø 18 mm	Ø 0.71 in.
→ Depth	100 mm	3.94 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...200 °C	32...392 °F
Resolution	1 °C	1 °F
General data		
Dimensions		
→ Width	220 mm	8.66 in
→ Height	96 mm	3.78 in.
→ Depth	230 + 50 mm	12.99 + 2.76 in.
Weight	Approx. 4 kg	8.82 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz, optional 100...115 VAC, 50 / 60 Hz	
Power consumption	Approx. 200 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 18 200 E



Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- DAkkS certificate
- Works certificate

TP 17 450

Technical data		
Type	TP 17 450	
Control sensor	Internal	
Dry block		
Temperature range*	RT...450 °C	RT...842 °F
Accuracy	±0.6 °C	±1.08 °F
Stability	±0.1 °C	±0.18 °F
Measurement zone	110...150 mm	4.3...5.91 in.
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...450 °C	32...842 °F
Resolution	0.1 °C	0.1°F
General data		
Dimensions		
→ Width	150 mm	5.91 in.
→ Height	330 + 70 mm	12.99 + 2.76 in.
→ Depth	270 mm	10.63 in.
Weight	Approx. 7.5 kg	Approx. 16.53 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz	
Power consumption	Approx. 2000 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 17 450

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Service transport bag
- Adapter sleeve
- DAkkS certificate
- Works certificate

The TP 17 450 temperature calibrator model has a very large calibration volume.

TP 17 650 M

Type TP 17 650 M

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Service transport bag
- Adapter sleeve
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 17 650 M	
Control sensor	Internal	
Dry block		
Temperature range*	RT...650 °C	RT...1202 °F
Accuracy	±1 °C	±1.8 °F
Stability	±0.1 °C	±0.2 °F
Measurement zone	110...150 mm	4.3...5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...650 °C	32...1202 °F
Resolution	1 °C	1 °F
General data		
Dimensions		
→ Width	150 mm	5.91 in.
→ Height	330 + 70 mm	12.99 + 2.76 in.
→ Depth	270 mm	10.63 in.
Weight	Approx. 7.5 kg	Approx. 16.53 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz, optional 100...115 VAC, 50 / 60 Hz optional 100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 1000 W	

* At an ambient temperature of 20 °C / 68 °F

TP 17 650

Type TP 17 650

Technical data		
Type	TP 17 650	
Control sensor	Internal	
Dry block		
Temperature range*	RT...650 °C	RT...1202 °F
Accuracy	±0.8 °C	±1.44 °F
Stability	±0.1 °C	±0.18 °F
Measurement zone	110...150 mm	4.3...5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...650 °C	32...1202 °F
Resolution	0.1 °C	0.1 °C between RT...999.9 °F, else 1 °F
General data		
Dimensions		
→ Width	150 mm	5.91 in.
→ Height	330 + 70 mm	12.99 + 2.76 in.
→ Depth	270 mm	10.63 in.
Weight	Approx. 7.5 kg	Approx. 16.53 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz, optional 100...115 VAC, 50 / 60 Hz optional 100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 1000 W	

* At an ambient temperature of 20 °C / 68 °F

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Service transport bag
- Adapter sleeve
- DAkkS certificate
- Works certificate

TP 18 850 E

Technical data		
Type	TP 18 850 E	
Control sensor	Internal	
Dry block		
Temperature range*	RT...850 °C	RT...1562 °F
Accuracy	±1 °C	±1.8 °C
Stability	±0.1 °C	±0.18 °C
Measurement zone	60...100 mm or 160...200 mm	2.36...3.94 in. or 6.3...7.87 in.
Block dimensions		
→ Diameter	Ø 18 or 28 mm	Ø 0.71 or 1.1 in.
→ Depth	100 or 200 mm	3.94 or 7.87 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...850 °C	32...1562 °F
Resolution	1 °C	1 °F
General data		
Dimensions		
→ Width	430 mm	16,93 in.
→ Height	190 mm	7.48 in.
→ Depth	410 + 50 mm or 510 + 50 mm	16,14 + 1.97 in. or 20.08 + 1.97 in.
Weight	Approx. 14 kg or 16 kg	Approx. 30.86 lbs. or 35.27 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz	
Power consumption	Approx. 2000 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 18 850 E

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- DAkkS certificate
- Works certificate

Series TP Solid

With the temperature calibrators in the TP Solid series, the emphasis is on flexibility: aside from dry block calibrators, there are also micro calibration baths, with which almost any temperature sensor regardless of its form can be tested. Both offer an easy as well as intuitive operation and fast access to comprehensive functions.

When used as liquid bath calibrator, the temperature sensors are directly immersed into the calibration liquid. This results in a direct temperature contact between the calibrator and the test item without an insulating air gap. Using interchangeable calibration sleeves, these calibrators can be also used for calibration of infrared pyrometers or surface temperature sensors.

Moreover, an external reference sensor makes it possible to test different temperature monitoring equipment without regard to shape, size or measurement method. You can choose between internal and external reference by using a switch on the calibrator. All devices of this series are equipped with a serial PC interface for computer-assisted monitoring of the calibration process.

This flexibility makes the temperature calibrators of the TP Solid series ideal for the use in machine and plant construction.

TP Solid series

TP 17 200 S

Type TP 17 200 S

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- PC software
- PC cable
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 17 200 S	
Control sensor	Internal	
Dry block		
Temperature range*	-55...200 °C	-67...392 °F
Accuracy	±0.2 °C	±0.36 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.3... 5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	-60...200 °C	-76...392 °F
Resolution	0.01 °C between -9.99...99.99 °C, else 0.1 °C	0.01 °F between -9.99...99.99 °F, else 0.1 °F
General data		
PC interface	RS485, RS232 or USB (optional)	
Dimensions		
→ Width	210 mm	8.27 in.
→ Height	380 + 50 mm	14.96 + 1.97 in.
→ Depth	300 mm	11.81 in.
Weight	Approx. 12.5 kg	Approx. 27.56 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 555 W	

* At an ambient temperature of 20 °C / 68 °F

The TP 17 200 S temperature calibrator, which is also known as TP COOL, works in a temperature range from -55 to 200 °C.

TP 17 165 S

Type TP 17 165 S

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- PC software
- PC cable
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 17 165 S	
Control sensor	Internal	
Dry block		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.2 °C	±0.36 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.3... 5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	-50...165 °C	-58...329 °F
Resolution	0.01 °C between -9.99...99.99 °C, else 0.1 °C	0.01 °F between -9.99...99.99 °F, else 0.1 °F
General data		
PC interface	RS485, RS232 or USB (optional)	
Dimensions		
→ Width	210 mm	8.27 in.
→ Height	380 + 50 mm	14.96 + 1.97 in.
→ Depth	300 mm	11.81 in.
Weight	Approx. 10 kg	Approx. 22.05 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

TP 17 166 S

Technical data		
Type	TP 17 166 S	
Control sensor	Internal	
Dry block		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.2 °C	±0.36 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.3... 5.91 in.
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	-50...165 °C	-58...329 °F
Resolution	0.01 °C between -9.99...99.99 °C, else 0.1 °C	0.01 °F between -9.99...99.99 °F, else 0.1 °F
General data		
PC interface	RS485, RS232 or USB (optional)	
Dimensions		
→ Width	210 mm	8.27 in.
→ Height	380 + 50 mm	14.96 + 1.97 in.
→ Depth	300 mm	11.81 in.
Weight	Approx. 10 kg	Approx. 22.05 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 17 166 S

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- Infrared calibration sleeve
- PC software
- PC cable
- DAkkS certificate
- Works certificate

The TP 17 166 S temperature calibrator model has a very large calibration volume.

TP M 165 S

Type TP M 165 S

Scope of delivery

- Test certificate
- Mains cable
- Operating manual
- Sensor basket, suction pump, transport cover
- Magnetic stirrer with magnet lifter
- Sensor lid with 5 silicone plugs

Accessories

- Calibration liquid
- Transport case
- Tube insert
- PC software
- PC cable
- DAkkS certificate
- Works certificate

Technical data		
Type	TP M 165 S	
Control sensor	Internal	
Micro Bath		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.1 °C	±0.18 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.33...5.91 in
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in.
→ Depth	170 mm	6.69 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	-50...165 °C	-58...329 °F
Resolution	0.01 °C between -9.99...99.99 °C, else 0.1 °C	0.01 °F between -9.99...99.99 °F, else 0.1 °F
General data		
PC interface	RS485, RS232 or USB (optional)	
Dimensions		
→ Width	210 mm	8.27 in
→ Height	380 + 50 mm	14.96 + 1.97 in
→ Depth	300 mm	11.81 in
Weight	Approx. 12.5 kg	Approx. 27.56 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

TP M 255 S

Type TP M 255 S

Scope of delivery

- Test certificate
- Mains cable
- Operating manual
- Sensor basket, suction pump, transport cover
- Magnetic stirrer with magnet lifter
- Sensor lid with 5 silicone plugs

Accessories

- Calibration liquid
- Transport case
- Service transport bag
- Tube insert
- PC software
- PC cable
- DAkkS certificate
- Works certificate

Technical data		
Type	TP M 255 S	
Control sensor	Internal	
Micro Bath		
Temperature range*	RT...255 °C	RT...491 °F
Accuracy	±0.2 °C	±0.36 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.33...5.91 in.
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in.
→ Depth	170 mm	6.69 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...255 °C	32...491 °F
Resolution	0.01 °C between RT...99.99 °C, else 0.1 °C	0.01 °F between RT...99.99 °F, else 0.1 °F
General data		
PC interface	RS485, RS232 or USB (optional)	
Dimensions		
→ Width	150 mm	5.91 in.
→ Height	330 + 70 mm	12.99 + 2.76 in.
→ Depth	270 mm	10.63 in.
Weight	Approx. 7.5 kg	Approx. 16.53 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz, optional 100...115 VAC, 50 / 60 Hz optional 100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 1000 W	

* At an ambient temperature of 20 °C / 68 °F

TP 17 450 S

Technical data		
Type	TP 17 450 S	
Control sensor	Internal	
Dry block		
Temperature range*	RT...450 °C	RT...842 °F
Accuracy	±0.3 °C	±0.54 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.33...5.91 in.
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...450 °C	32...842 °F
Resolution	0.01 °C between RT...99.99 °C, else 0.1 °C	0.01 °F between RT...99.99 °F, else 0.1 °F
General data		
PC interface	RS485, RS232 or USB (optional)	
Dimensions		
→ Width	150 mm	5.91 in.
→ Height	330 + 70 mm	12.99 + 2.76 in.
→ Depth	270 mm	10.63 in.
Weight	Approx. 7.5 kg	Approx. 16.53 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz	
Power consumption	Approx. 2000 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 17 450 S

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Service transport bag
- Adapter sleeve
- PC software
- PC cable
- DAkkS certificate
- Works certificate

The TP 17 450 S temperature calibrator model has a very large calibration volume.

TP 17 650 S

Type TP 17 650 S

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

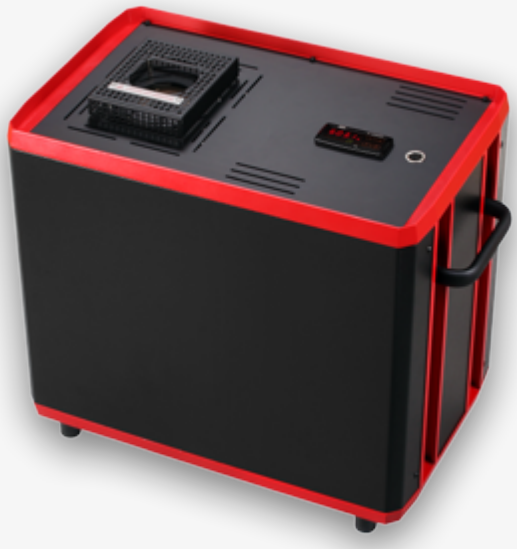
- Transport case
- Service transport bag
- Adapter sleeve
- PC software
- PC cable
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 17 650 S	
Control sensor	Internal	
Dry block		
Temperature range*	RT...650 °C	RT...1202 °F
Accuracy	±0.4 °C	±0.72 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.3... 5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...650 °C	32...1202 °F
Resolution	0.01 °C between RT...99.99 °C, else 0.1 °C	0.01 °F between RT...99.99 °F, 0.1 °F between 100.0...999.9 °F, else 1 °F
General data		
PC interface	RS485, RS232 or USB (optional)	
Dimensions		
→ Width	150 mm	5.91 in.
→ Height	330 + 70 mm	12.99 + 2.76 in.
→ Depth	270 mm	10.63 in.
Weight	Approx. 7.5 kg	Approx. 16.53 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz, optional 100...115 VAC, 50 / 60 Hz optional 100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 1000 W	

* At an ambient temperature of 20 °C / 68 °F

TP 28 1300 E

Type TP 28 1300 E



Technical data		
Type	TP 28 1300 E	
Control sensor	Internal	
Dry block		
Temperature range*	400...1300 °C	752...2372 °F
Tolerance	±2 °C	±3.6 °F
Stability	±0.5 °C	±0.9 °F
Measurement zone	at 200 mm	at 7.87 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	200 mm	7.87 in.
Display unit		
Display	2-line, 4-digit display Red / green, unit °C / °F	
Display range	0...1300 °C	32...2372 °F
Resolution	1 °C	1 °F
General data		
PC interface	RS485, RS232 or USB (optional)	
Dimensions		
→ Width	510 mm	20.08 in.
→ Height	290 mm	11.42 in.
→ Depth	415 + 100 mm	16.34 + 3.94 in.
Weight	Approx. 17,5 kg	Approx. 38.58 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 1000 W	

* At an ambient temperature of 20 °C / 68 °F

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- PC software
- PC cable
- DAkkS certificate
- Works certificate

TP ZERO

Technical data		
Type	TP ZERO	
Control sensor	Internal	
Dry block		
Temperature range*	-10...100 °C	14...148 °F
Accuracy	±0.05 °C at 0 °C	±0.09 °F at 32 °F
Stability	±0.05 °C at 0 °C	±0.09 °F at 32 °F
Measurement zone	110...150 mm	4.3... 5.91 in.
Block dimensions		
→ Diameter	7 drillings with Ø 6.5 mm	7 drillings with Ø 0.26 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	1-line, 4-digit display Red, unit °C (°F optional)	
Display range	-10...100 °C	14...212 °F
Resolution	0.1 °C	0.1 °F
General data		
Dimensions		
→ Width	160 mm	6.3 in.
→ Height	320 + 50 mm	12.6 + 1.97 in.
→ Depth	230 mm	9.06 in.
Weight	Approx. 7 kg	Approx. 15.43 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 225 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP ZERO

Scope of delivery

- Test certificate
- Mains cable
- Operating manual

Accessories

- Transport case
- PC software
- PC cable
- DAkkS certificate
- Works certificate

The TP ZERO temperature calibrator is ideal for creating the ice point.

Series TP Premium

Optimal performance and outstanding ease of use are distinguishing features of the TP Premium series calibrators. With the help of the intuitive menu structure, all the necessary entries can be made quickly and easily. Whether on the two colour, graphic display or on the large touch screen of the TP Touch series – block and set temperature as well as the difference and the variance of the stability can be set and displayed.

A growing variety of supported temperature ranges covers more and more temperature sensors on the market. These sensors can be calibrated with a resolution of up to 0.001 °C and meet the highest standards e.g. of the food and pharmaceutical industry.

The comprehensive range of accessories of the TP Premium series allows time-saving calibration setups. For example, test items can be identified by a barcode scanner or a running or already finished calibration process can be shown on a PC or smartphone via a Wi-Fi connection anywhere on the world. With the ability to connect an external measuring bridge directly to the calibrators, many test items can be simultaneously calibrated ¬ including the automatic creation of individual works certificates.

TP 38 165

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual
- Precision measuring instrument

Accessories

- Transport case
- Adapter sleeve
- PC software
- PC cable
- External calibration reference sensor TF 255-3-300 or TFEE 255-3-300
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 38 165	
Control sensor	switchable internal / external	
Dry block		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.1 °C	±0.18 °F
Stability	0.01...0.05 °C	0.02...0.09 °F
Measurement zone	110...150 mm	4.33...5.91 in
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	Monochrome, graphic display Units °C / °F / K / Ω / mV / mA	
Display range	-50...165 °C	-58...329 °F
Resolution	0.01 °C	0.01 °F
General data		
PC interface	RS232, USB (optional)	
Dimensions		
→ Width	153 mm	6.02 in.
→ Height	347 mm	13.66 in.
→ Depth	348 mm	13.70 in.
Weight	Approx. 12 kg	Approx. 26.46 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 400 W	

* At an ambient temperature of 20 °C / 68 °F

TP 38 650

Technical data		
Type	TP 38 650	
Control sensor	Switchable internal / external	
Dry block		
Temperature range*	RT...650 °C	RT...1202 °F
Accuracy	±0.2 °C	±0.36 °F
Stability	0.03...0.1 °C	0.05...0.18 °F
Measurement zone	110...150 mm	4.33... 5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	Monochrome, graphic display Units °C / °F / K / Ω / mV / mA	
Display range	0...650 °C	32...1202 °F
Resolution	0.01 °C	0.01 °F
General data		
PC interface	RS232, USB (optional)	
Dimensions		
→ Width	153 mm	6.02 in.
→ Height	347 mm	13.66 in.
→ Depth	348 mm	13.70 in.
Weight	Approx. 10 kg	Approx. 22.05 lbs.
Power supply	230 / 240 VAC, 50 / 60 Hz, optional 100...115 VAC, 50 / 60 Hz	
Power consumption	Approx. 1000 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 38 650

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- Operating manual
- Precision measuring instrument

Accessories

- Transport case
- Adapter sleeve
- PC software
- PC cable
- External calibration reference sensor TF 650-3-300 or TFEE 650-3-300
- DAkkS certificate
- Works certificate

TP 37 200 E

Type TP 37 200 E

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- PC- and network cable
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- External reference sensor TF 255-3-300
- PC software
- Network-switch, barcode-reader, WLAN-router
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 37 200 E	
Control sensor	Switchable internal / external	
Dry block		
Temperature range*	-55...200 °C	-67...392 °F
Tolerance	±0.2 °C	±0.36 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.3...5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	Brilliant Color-Touchscreen (7") Viewing angle 120...140° Brightness 400 cd / m² Unit °C / °F / K	
Display range	-60...200 °C	-76...392 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
PC interface	Ethernet 3 x USB	
Dimensions		
→ Width	210 mm	8.27 in
→ Height	380 + 50 mm	14.96 + 1.97 in
→ Depth	300 mm	11.81 in
Weight	Approx. 12.5 kg	Approx. 27.56 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 555 W	

* At an ambient temperature of 20 °C / 68 °F

TP 37 165 E

Technical data		
Type	TP 37 165 E	
Control sensor	Switchable internal / external	
Dry block		
Temperature range*	-35...165°C	-31...329 °F
Accuracy	±0.2 °C	±0.36 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.33...5.91 in
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.1 in
→ Depth	150 mm	5.91 in
Display unit		
Display	Brilliant Color-Touchscreen (7") Viewing angle 120...140° Brightness 400 cd / m² Unit °C / °F / K	
Display range	-50...165 °C	-58...329 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
PC interface	Ethernet 3 x USB	
Dimensions		
→ Width	210 mm	8.27 in
→ Height	380 + 50 mm	14.96 + 1.97 in
→ Depth	300 mm	11.81 in
Weight	Approx. 10 kg	Approx. 22 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

Type TP 37 165 E

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- PC- and network cable
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- External reference sensor TF 255-3-300
- PC software
- Network-switch, barcode-reader, WLAN-router
- DAkkS certificate
- Works certificate

TP 37 166 E

Type TP 37 166 E

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- PC- and network cable
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- Infrared calibration sleeve
- Surface calibration sleeve
- External reference sensor TF 255-3-300
- PC software
- Network-switch, barcode-reader, WLAN-router
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 37 166 E	
Control sensor	Switchable internal / external	
Dry block		
Temperature range*	-35...165 °C	-31...329 °F
Tolerance	±0.2 °C	±0.36 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.33... 5.91 in.
Infrared		
Temperature range*	-35...165 °C	-31...329 °F
Tolerance	±0.5 °C	±0.9 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110 mm	4.33 in.
Surface		
Temperature range*	-25...150 °C	-13...302 °F
Tolerance	±1 °C	±1.8 °F
Stability	±0.2 °C	±0.36 °F
Measurement zone	Surface	
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	Brilliant Color-Touchscreen (7") Viewing angle 120...140° Brightness 400 cd / m² Unit °C / °F / K	
Display range	-50...165 °C	-58...329 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
PC interface	Ethernet 3 x USB	
Dimensions		
→ Width	210 mm	8.27 in
→ Height	380 + 50 mm	14.96 + 1.97 in
→ Depth	300 mm	11.81 in
Weight	Approx. 13 kg	Approx. 28.66 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

The Typ TP 37 166 E temperature calibrator model has a very large calibration volume.

TP 3M 165 E

Type TP 3M 165 E

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- PC- and network cable
- Operating manual
- Sensor basket, suction pump, transport cover
- Magnetic stirrer with magnet lifter
- Sensor lid with 5 silicone plugs

Accessories

- calibration liquid
- Transport case
- Adapter sleeve
- Tube insert
- Infrared calibration sleeve
- Surface calibration sleeve
- External reference sensor TF 255-3-300
- PC software
- Network-switch, barcode-reader, WLAN-router
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 3M 165 E	
Control sensor	Switchable internal / external	
Micro Bath		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.1 °C	±0.18 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.33...5.91 in.
Dry block		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.3 °C	±0.54 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	123...163 mm	4.84...6.42 in.
Infrared		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.5 °C	±0.9 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110 mm	4.33 in.
Surface		
Temperature range*	-25...150 °C	-13...302 °F
Accuracy	±1 °C	±1.8 °F
Stability	±0.2 °C	±0.36 °F
Measurement zone	Surface	
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in.
→ Depth	170 mm	6.69 in.
Display unit		
Display	Brilliant Color-Touchscreen (7") Viewing angle 120...140° Brightness 400 cd / m² Unit °C / °F / K	
Display range	-50...165 °C	-58...329 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
PC interface	Ethernet 3 x USB	
Dimensions		
→ Width	210 mm	8.27 in
→ Height	380 + 50 mm	14.96 + 1.97 in
→ Depth	300 mm	11.81 in
Weight	Approx. 13 kg	Approx. 28.66 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 375 W	

* At an ambient temperature of 20 °C / 68 °F

TP 3M 255 E

Type TP 3M 255 E

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- PC- and network cable
- Operating manual
- Sensor basket, suction pump, transport cover
- Magnetic stirrer with magnet lifter
- Sensor lid with 5 silicone plugs

Accessories

- calibration liquid
- Transport case
- Adapter sleeve
- Tube insert
- Infrared calibration sleeve
- Surface calibration sleeve
- External reference sensor TF 255-3-300
- PC software
- Network-switch, barcode-reader, WLAN-router
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 3M 255 E	
Control sensor	Switchable internal / external	
Micro Bath		
Temperature range*	RT...255 °C	RT...491 °F
Tolerance	±0.1 °C	±0.18 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.33...5.91 in.
Dry block		
Temperature range*	RT...255 °C	RT...491 °F
Tolerance	±0.3 °C	±0.54 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	123...163 mm	4.84...6.42 in.
Infrared		
Temperature range*	RT...255 °C	RT...491 °F
Tolerance	±0.5 °C	±0.9 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110 mm	4.33 in.
Surface		
Temperature range*	RT...200 °C	RT...392 °F
Tolerance	±1 °C	±1.8 °F
Stability	±0.2 °C	±0.36 °F
Measurement zone	Surface	
Block dimensions		
→ Diameter	Ø 60 mm	Ø 2.36 in.
→ Depth	170 mm	6.69 in.
Display unit		
Display	Brilliant Color-Touchscreen (7")	
	Viewing angle 120...140°	
	Brightness 400 cd / m²	
	Unit °C / °F / K	
Display range	0...255 °C	32...491 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
PC interface	Ethernet	
	3 x USB	
Dimensions		
→ Width	210 mm	8.27 in
→ Height	380 + 50 mm	14.96 + 1.97 in
→ Depth	300 mm	11.81 in
Weight	Approx. 8.5 kg	18.74 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 1000 W	

* At an ambient temperature of 20 °C / 68 °F

TP 37 700 E

Type TP 37 700 E

Scope of delivery

- Test certificate
- Mains cable
- Insert exchange tool
- PC- and network cable
- Operating manual

Accessories

- Transport case
- Adapter sleeve
- External reference sensor TF 650-3-300
- PC software
- Network-switch, barcode-reader, WLAN-router
- DAkkS certificate
- Works certificate

Technical data		
Type	TP 37 700 E	
Control sensor	Switchable internal / external	
Dry block		
Temperature range*	RT...700 °C	RT...1292 °F
Tolerance	±0.4 °C	±0.72 °F
Stability	±0.05 °C	±0.09 °F
Measurement zone	110...150 mm	4.33... 5.91 in.
Block dimensions		
→ Diameter	Ø 28 mm	Ø 1.10 in.
→ Depth	150 mm	5.91 in.
Display unit		
Display	Brilliant Color-Touchscreen (7") Viewing angle 120...140° Brightness 400 cd / m² Unit °C / °F / K	
Display range	0...700 °C	32...1292 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
PC interface	Ethernet 3 x USB	
Dimensions		
→ Width	210 mm	8.27 in
→ Height	380 + 50 mm	14.96 + 1.97 in
→ Depth	300 mm	11.81 in
Weight	Approx. 8.5 kg	Approx. 18.74 lbs.
Power supply	100...240 VAC, 50 / 60 Hz	
Power consumption	Approx. 1000 W	

* At an ambient temperature of 20 °C / 68 °F

Accessories

Calibration and testing software

The in-house calibration software application is used for temperature calibrators that are equipped with an external interface for programming and evaluating the calibration values. It can be operated easily from an external PC. The following calibration tasks can be performed:

- Programmable ramp functions
- Programmable temperature cycles
- Series tests (e.g. for incoming goods inspection)
- Preparing the test data in graphical and in tabular form
- Incorporating customer data in the certificates
- Programmable temperature gradients

Calibration liquids

Using a liquid calibration medium is advantageous for checking temperature sensors with unusual shapes or dimensions. The test item is immersed in the liquid without an insulating air gap, resulting in direct contact between the calibrator and the test item. The calibration liquid is chosen according to the desired calibration temperature. The sensor lid with 5 silicone plugs and / or a support base ensures the stable positioning of the test items in the calibration bath. The lid reduces heat emission over the surface of the liquid, thereby ensuring optimum measurement results.

	Demineralised water		**Silicone oil 10 CS**		**Silicone oil 20 CS**		**Silicone oil 50 CS**	
Limits	2...95 °C	35.6...203 °F	-35...155 °C	-31...311 °F	7...220 °C	44.6...428 °F	50...270 °C	122...518 °F
Flash point			165 °C	329 °F	230 °C	446 °F	280 °C	536 °F

Tub insert

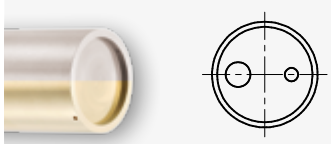
Our tub insert is the ideal solution for applications in which a variety of liquids are used. It eliminates the time-consuming task of exchanging the liquids and cleaning the bath. The separate tub insert is just as leak-proof as the bath itself.

Dry block - Adapter sleeves

Dry block calibrators are designed to simplify temperature calibration in the lab and in the field. With the help of adapter sleeves, straight temperature sensors with almost any length and diameter can be calibrated. The dry block covers the entire temperature range of the calibrator with no need for changing the calibration medium. Viscosity, flash point and outgassing are of no concern. Every adapter sleeve can be equiped with a single or several multi bores. Bores with diameters ranging from 1.5 to 25.5 mm can be realised in 0.5 mm steps. Ideally, the internal diameter of the sleeve is 0.5 mm larger than the outer diameter of the test item.

Adapter Sleeves - standard configurations

Our adapter sleeves are designed for use with SIKA dry block calibrators. The sleeves are configured with various diameter bores to accomodate industry standard temperature sensors. We provide several standard configurations for quick delivery.

Adapter sleeves	Dimensions	Ø 60 mm (Aluminium)	Ø 28 mm (Brass alloy)	Ø 18 mm (Brass alloy)
Standard	Bores	TP 3M Series TP M Series	TP 37 Series TP 17 Series	TP 18 Series
	1x 3.5 mm (⅛ in.) 1x 6.5 mm (¼ in.)	✓	✓	
	1x 3.5 mm (⅛ in.) 1x 6.5 mm (¼ in.) 1x 13.5 mm (½ in.)	✓	✓	
	1x 3.5 mm (⅛ in.) 1x 5.0 mm (3/16 in.) 1x 6.5 mm (¼ in.) 1x 9.5 mm (⅜ in.)	✓	✓	
	1x 3.5 mm (⅛ in.) 6x 6.5 mm (¼ in.)	✓	✓	
	1x 3.5 mm (⅛ in.) 2x 5.0 mm (3/16 in.) 2x 6.5 mm (¼ in.) 2x 9.5 mm (⅜ in.)	✓	✓	
	Blank sleeve	✓	✓	✓
	1x 10.5 mm (⅜ in.)			✓
	1x 13.5 mm (½ in.)			✓

For other configurations - consult factory

Overview temperature calibrators

	TP Basic*				TP Solid*		
-55...200 °C			TP 17 200		TP 17 200 S		
-35...165 °C* **		TP 17165 M	TP 17 165	TP 17 166	TP 17 165 S		
-10...100 °C					TP Zero		
RT...200 °C	TP 18 200 E						
RT...255 °C							
RT...450 °C				TP 17 450			
RT...650 °C		TP 17 650 M	TP 17650		TP 17 650 S		
RT...700 °C* **							
RT...850 °C	TP 18 850 E					TP 28 1300 E	
400...1300 °C							
Metrology*							
Best Resolution	1 °C/1 °F	1 °C/1 °F	0.1 °C/0.1 °F	0.1 °C/0.1 °F	0.01 °C/0.01 °F	1 °C/1 °F	
Stability	0.1 °C/0.18 °F	0.1 °C/0.18 °F	0.1 °C/0.18 °F	0.1 °C/0.18 °F	0.05 °C/0.09 °F	0.5 °C/0.9 °F	
Accuracy	1 °C/1.8 °F	1 °C/1.8 °F	<0.8 °C/1.44 °F	<0.6 °C/1.08 °F	<0.4 °C/0.7 °F	2 °C/3.6 °F	
Testholder							
Block Ø	18/28 mm	28 mm	28 mm	60 mm	28 mm	28 mm	
Dry block	✓	✓	✓	✓	✓	✓	
Infrared							
Microbath							
Surface							
Scope of delivery							
PC interface					✓	✓	
External reference connection							
Internal measuring instrument							
Data logger function							
Controller OFF			✓	✓	✓	✓	
Manual control			✓	✓	✓	✓	
Set-value memory					✓	✓	
Temperature levels					✓	✓	
Gradient control					✓	✓	
Periodic counter	✓	✓	✓	✓	✓	✓	
Accessories							
Transport case	✓	✓	✓	✓	✓	✓	
Service transport bag**		✓	✓	✓	✓		
PC software					✓	✓	
PC cable					✓	✓	
calibration reference sensor							

* The specifications listed are for guidance.
Detailled information can be found on the individual product pages.

** For calibrators with slim body only

*** Standard linearisation may differ from the temperature range

			TP Premium*			
				TP 37 200 E		
	TP 17 166 S	TP M 165 S	TP 38 165	TP 37165 E	TP 37 166 E	TP 3M 165 E
		TP M 255 S				TP 3M 255 E
	TP 17 450 S					
			TP 38 650			
				TP 37 700 E		
	0.01 °C/0.01 °F	0.01 °C/0.01 °F	0.01 °C/0.01 °F	0.001 °C/0.001 °F	0.001 °C/0.001 °F	0.001 °C/0.001 °F
	0.05 °C/0.09 °F	0.05 °C/0.09 °F	0.03 °C/0.54 °F	0.05 °C/0.09 °F	0.05 °C/0.09 °F	0.05 °C/0.09 °F
	<0.3 °C/0.54 °F	<0.2 °C/0.36 °F	<0.2 °C/0.36 °F	<0.4 °C/0.7 °F	<0.3 °C/0.54 °F	<0.2 °C/0.36 °F
	60 mm	60 mm	28 mm	28 mm	60 mm	60 mm
	✓		✓	✓	✓	✓
					✓	✓
		✓				✓
					✓	✓
	✓	✓	✓	✓	✓	✓
			✓	✓	✓	✓
			✓			
			✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓		✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓				
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
			✓	✓	✓	✓

TP Premium tested according to EN 61326-1, class A (industry sector)

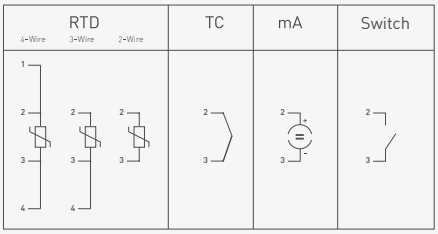
For your test equipment monitoring

TT-Scan

Resistance thermometers, thermocouples, temperature transmitters and switches must be calibrated using an instrument that measures the output signal and displays it as a temperature.

Checking groups of temperature sensors can be automated by extending your SIKA calibrator with a TT-Scan unit and calibration software. Up to eight test items can be checked at the same time with this arrangement. The configuration of the test item type is free programmable. A reference sensor can be connected. The TT-Scan unit has a USB port for connection to a PC. SIKA calibration software analyses the measurement data and presents the results in graphic or tabular form. At the same time it automatically generates up to 8 certificates, which may also include customer data.

Type TT-Scan

Properties		
Possibilities to connect		
Version	Scanner device with precision measuring instrument	
Measuring inputs	Switchable For up to 8 sensors Sensor type free confi gurable	
General data		
Power supply	230 VAC ±10 %, 50/60 Hz via adapter	
Power consumption	Approx. 10 W	
Dimensions (D x W x H)	200 x 140 + 40 x 380 mm	7.87 x 5.51 + 1.57 x 14.96 in.
Weight	Approx. 2.5 kg	Approx. 5,51 lbs.
Equipment features		
	32 x 4 mm/1.26 x 0.16 in. connections free of thermal voltage Connection for external calibration reference sensor External cold junction available Serial USB data interface, incl. USB data cable	
Options		
	Aluminium transport case, test & calibration software, DAkkS certificate, SIKA works certificate, external calibration reference sensors	

Measuring inputs

	Version	Measuring range		Tolerance	
Resistance thermometer EN 60751					
Pt100 **Pt500** **Pt1000**	2-, 3-, 4-wire	-90.00 °C...850.00 °C	-130.00 °F...1562.0 °F	±0.005 % full scale ±0.01 °C	±0.005 % full scale ±0.02 °F
Connection possibility through 4 mm connections free of thermal voltage					
Thermocouples according to DIN EN 60584 / DIN 43710					
Type K	NiCr-NiAl	-90.00...999.99 °C 1000.0...1370.0 °C	-130.00...1831.9 °F 1832.0...2498.0 °F	±0.007 % full scale ±0.01 °C ±0.005 % full scale ±0.1 °C	±0.007 % full scale ±0.02 °F ±0.005 % full scale ±0.18 °F
Type J	FeCu-Ni	-90.00...900.00 °C	-130.00...1652.0 °F	±0.005 % full scale ±0.01 °C	±0.005 % full scale ±0.02 °F
Type N	NiCrSi - NiSiMg	-90.00...999.99 °C 1000.0...1370.0 °C	-130.00...1831.98 °F 1832.0...2498.0 °F	±0.007 % full scale ±0.01 °C ±0.005 % full scale ±0.1 °C	±0.007 % full scale ±0.02 °F ±0.005 % full scale ±0.18 °F
Type E	NiCr-CuNi	-90,00...700.00 °C	-130.00...1292.0 °F	±0.005 % full scale ±0.01 °C	±0.005 % full scale ±0.02 °F
Type R	Pt13Rh – Pt	0.00...999.99 °C 1000.0...1760.0 °C	32.00...1831.9 °F 1832.0...3200.0 °F	±0.05 % full scale ±0.01 °C ±0.03 % full scale ±0.1 °C	±0.05 % full scale ±0.02 °F ±0.03 % full scale ±0.18 °F
Type T	Cu-CuNi	-90.00...400.00 °C	-90.00...400.00 °F	±0.01 % full scale ±0.01 °C	±0.01 % full scale ±0.02 °F
Type B	Pt30Rh-Pt6Rh	0.00...999.99 °C 1000.0...1820.0 °C	32.00...1831.98 °F 1832.0...3308.0 °F	±0.05 % full scale ±0.01 °C ±0.03 % full scale ±0.1 °C	±0.05 % full scale ±0.02 °F ±0.03 % full scale ±0.18 °F
Type S	Pt10Rh-Pt	0.00...999.99 °C 1000.0...1760.0 °C	32.00...1831.98 °F 1832.0...3200.0 °F	±0.05 % full scale ±0.01 °C ±0.03 % full scale ±0.1 °C	±0.05 % full scale ±0.02 °F ±0.03 % full scale ±0.18 °F
Type L	Fe-CuNi	-90.00...900.00 °C	-130.00...1652.0 °F	±0.005 % full scale ±0.01 °C	±0.005 % full scale ±0.02 °F
Type U	Cu-CuNi	90.00...600.00 °C	194.00...1112.0 °F	±0.01 % full scale ±0.01 °C	±0.01 % full scale ±0.02 °F
Automatic comparison point compensation between 0 °C/32 °F and 60 °C/140 °F Accuracy of the comparison point Pt100 DIN class A Possibility of connection through 4 mm/0.16 in. connections free of thermal voltage					
Standard signal input					
Current (switchable)	mA	0(4)...20 mA		±0.015 % full scale ±0.01 mA	
Transmitter supply 24 VDC, I_{max} = 30 mA, Possibility of connection through 4 mm/0.16 in. connections free of thermal voltage					
Temperature switch					
Automatic detection of an edge change, determining the hysteresis, Independent detection normally closed / normally open Potential-free input contacts (U_{max} = 5 V, I_{max} = 1 mA) Possibility of connection through 4 mm/0.16 in. connections free of thermal voltage					
Calibration reference sensor connection					
Pt100	4-wire	-90.00...850.00 °C	-90.00...850.00 °F	±0.005 % full scale ±0.01 °C	±0.005 % full scale ±0.02 °F
Polynomial correctable through internal parameters or through external EEPROM inside the sensor Possibility of connection through 7-pin built-in socket					

Calibration reference sensors

Type TF 650-3-300

If the sensor to be calibrated is too short to be inserted into the homogeneous temperature zone of the metal block, an external reference sensor can be used without any problems. This results in a small, flexible measurement zone.

An ace of calibration

Particular attention is given to the physical construction to ensure that shocks have minimal effect on the reference sensor.

The use of robust measuring elements in thinfilm technology ensure standardised and reliable performance.

Intensive ageing tests are carried out at the maximum operating temperature to examine longterm temperature stability. In order to detect longterm effects through thermal stress, a defined tempering process is carried out with a special selection of reference sensors over 300 hours. In the case of stress caused by thermocycling, no significant hysteresis effects were found.

The physical structure of the reference sensors requires that different materials be joined together. The special design of the joint areas prevents the occurrence of parasitic thermoelectric voltages. Thus the measurement reading is not affected by the temperature gradients from the measurement point to the handle.

In examining the self-heating characteristics it was seen that measurement currents ⩽ 1 mA are ideally suited, since no distortion of the measurement result occurs. Here the self-heating effect can be neglected.

Calibration reference sensor - Type TF

Pt100 without probe specific linearization in the controller for Series TP...S-U, TP 3...

Technical data		
Measuring range		
TF 255-3-300	-50...255 °C / sensitive area 2 mm	-58...491 °F / sensitive area 0.08 in.
TF 650-3-300	-50...650 °C / sensitive area 5 mm	-58...1202 °F / sensitive area 0.2 in.
Tolerance		
	±0.05 °C between -9.99...99.99 °C, else ±0.1 °C	±0.09 °F in the range of -31.00...391.98 °F, else ±0.18 °F
Version		
Material	Rust and acid-proof Stainless steel 1.4571	
	Robust plastic handle	
Immersion tube	Ø 3 mm, L = 300 mm	Ø 0.12 in., L = 11.81 in.
Electrical connection	Silicon cable with 4-pin mini DIN-plug	

Calibration reference sensor - Type TFEE

Pt100 with probe specific linearization through EEPROM in the handle for TT-Scan and Series TP 38...

Technical data		
Measuring range		
TFEE 255-3-300	-50...255 °C / sensitive area 2 mm	-58...491 °F / sensitive area 0.08 in.
TFEE 650-3-300	-50...650 °C / sensitive area 5 mm	-58...1202 °F / sensitive area 0.2 in.
Tolerance		
	±0.05 °C between -35.00...199.99 °C, else ±0.1 °C	±0.05 °F in the range of -31.00...391.98 °F, else ±0.18 °F
Version		
Material	Rust and acid-proof Stainless steel 1.4571	
	Robust plastic handle	
Immersion tube	Ø 3 mm, L = 300 mm	Ø 0.12 in., L = 11.81 in.
Electrical connection	Silicon cable with 7-pin mini DIN-plug	