

- 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.



akkreditiert durch die / accredited by the
Deutsche Akkreditierungsstelle GmbH
als Kalibrierlaboratorium im / as calibration laboratory in the
Deutschen Kalibrierdienst

Kalibrierschein
Calibration certificate

Gegenstand Object	Mikrokalibrierbad Micro calibration bath	Dieser führung der, Ein Internat Die DAK
Hersteller Manufacturer	Dr. Siebert & Kühn GmbH & Co. KG 34260 Kaufungen	Übereinst Accredit tory Ad generall Für die Wieder verweis
Typ Type	TPM165SE	This is in accord with the un-intern The DA agreement
Fabrikat/Serien-Nr. Serial number	1411861	Labort the met The use brand
Auftraggeber Customer	Mustermann AG Mustermann 1 12345 Musterstadt	Accredit labort the met The use brand
Auftragsnummer Order No.	100 741 854	
Anzahl der Seiten des Kalibrierscheins Number of pages of the certificate	4	
Datum der Kalibrierung Date of calibration	2014-11-30	

Dieser Kalibrierschein darf nur vollständig und unverändert wiederverbreitet werden. A Genehmigung sowohl der Deutschen Akkreditierungsstelle GmbH als auch des Kalibrierscheins ohne Unterschrift haben keine Gültigkeit.
This calibration certificate may not be reproduced other than in full except with the approval of the issuing laboratory. Calibration certificates without signature are invalid.


Datum
Date

2014-11-30

Olaf Schilling

Olaf S.

Dr. Siebert & Kühn GmbH & Co. KG * Struthweg 7-9 * D-34260 Kaufungen * Telefon 052



Prüfprotokoll / Test Certificate

Kalibriergegenstand Calibration object	Temperatur-Mikrobadkalibrator Temperature Liquid Bath Calibrator	Die für die Kalibrierung verwendeten Messsicherungen werden regelmäßig kalibriert und sind rückführbar auf die nationalen Normale der Physikalisch- Technischen Bundesanstalt (PTB). Deutschland oder auf andere nationale Normale. Die für diesen Vorgang erstellte Sicherungs- und Nachweiseinstellung entspricht den Anforderungen der DIN EN ISO/IEC 17025:2005. The measurement equipment used for calibration is regularly calibrated against the national or other national standards. The measurement equipment used for this purpose is traceable to national or international standards according to the requirements of DIN EN ISO/IEC 17025:2005.
Hersteller Manufacturer	SIKA Dr. Siebert & Kühn GmbH & Co. KG 34260 Kaufungen	
Typ Type	TPM165S -35 °C / 165 °C	
Fabrikat/Serien-Nr. Serial number		
Auftraggeber Customer		
Anzahl der Seiten des Kalibrierscheins Number of pages of the certificate	2	
Datum der Kalibrierung Date of calibration	Dez 2014	
Umgebungsbedingungen Ambient conditions	Raumtemperatur/ Amb. temperature Rel. Luftfeuchte/ Rel. air humidity Luftdruck/ Amb. pressure	(23 ± 2) (50 ± 20) (990 ± 2)
Verwendete Normale Used standards	PT100, SN ASL-02, 3730 D-K-17734-01-00 / 201 DMM Keeley, SN 580262, 0249 DDK-K-10011	
Abgleich durchgeführt mit Adjustment carried out with	Silikonöl 10 cSt Bochereinsatz Silicon oil 10 cSt bath insert	

SIKA Dr. Siebert & Kühn GmbH & Co. KG * Struthweg 7-9 - 34260 Kaufungen
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Deutsche Akkreditierungsstelle GmbH

Belohnung gemäß § 8 Absatz 1 AkkreditfVO (V.m. § 1 Absatz 1 AkkreditfVO)
Unterschiedsrente der Mitarbeiterinnen Abkommen
von EA, SAC und IAF zur gegenseitigen Anerkennung

Akkreditierung

Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Kalibrierlaboratorium
SIKA Dr. Siebert & Kühn GmbH & Co. KG
Struthweg 7-9, 34260 Kaufungen
als Kompetenzzentrum nach DIN EN ISO/IEC 17025:2005 bestmögliche Kalibrierungen in folgenden
Bereichen durchzuführen:

Mechanische Messgrößen

- Druck
- Thermodynamische Messgrößen
- Temperaturmessgrößen
 - Widerstandsthermometer
 - Thermopile, Thermoelemente
 - Temperatur-Blockkalibratoren
 - direktanzeigende Thermometer
 - Temperaturmessgrößen und -einheiten

Elektrische Messgrößen

- Gleichstrom- und Wechselstrommessgrößen
 - Gleichstrom
 - Gleichstromleistung
 - Gleichstromleistungsfaktor

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 31.12.2014 als
Akkreditierungsnummer 04-0104-01 und ist gültig bis 31.12.2016. Sie besteht aus der
Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 3 Seiten.

Anlagennummer der Urkunde: 04-0104-01-01

Beauftragte, 17.10.2014

Dr. Siebert & Kühn GmbH & Co. KG



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 under test is simply held at the specified distance above the measurement opening of the calibrator, 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.

Temperature range														Function / Tolerance		
-55 °C	-35 °C	-10 °C	RT	100 °C	165 °C	200 °C	225 °C	255 °C	400 °C	450 °C	650 °C	850 °C	1300 °C	DB	IR	LI
														Dry block	Infrared	Micro bath
		-55 °C	...	200 °C										±0,4 °C		
														±0,2 °C		
														±0,2 °C		
	-35 °C	...	165 °C											±1 °C		
														±0,4 °C		
														±0,2 °C		
														±0,2 °C		
														±0,1 °C		
														±0,4 °C		
														±0,2 °C		
														±0,2 °C	±0,5 °C	
																±0,1 °C
														±0,3 °C	±0,5 °C	±0,1 °C
		-10 °C	...	100 °C										±0,05 °C		
			RT	...200 °C										±1 °C		
			RT	...255 °C												±0,2 °C
														±0,3 °C	±0,5 °C	±0,2 °C
			RT	...450 °C										±0,6 °C		
														±0,3 °C		
			RT	...650 °C										±1 °C		
														±0,8 °C		
														±0,4 °C		
														±0,2 °C		
			RT	...700 °C										±0,4 °C		
			RT	...850 °C										±1 °C		
										400 °C...1300 °C				±2 °C		

		Features			Block dimensions [mm]								Model	
SU Surface	Integrated measuring instrument	External reference sensor	Interface	Ø Diameter				Depth						
				18	28	60	7 x 6,5	100	150	170	200			
					✓					✓			Dry block	TP 17 200
			✓		✓					✓			Dry block	TP 17 200 S
		✓	✓		✓					✓			Dry block	TP 37 200 E
					✓					✓			Dry block	TP 17 165 M
					✓					✓			Dry block	TP 17 165
			✓		✓					✓			Dry block	TP 17 165 S
		✓	✓	✓	✓					✓			Dry block	TP 37 165 E
		✓	✓	✓	✓					✓			Dry block	TP 38 165
						✓				✓			Dry block	TP 17 166
			✓			✓				✓			Dry block	TP 17 166 S
±1 °C		✓	✓			✓				✓			Multifunction block	TP 37 166 E
			✓			✓					✓		Micro bath	TP M 165 S
±1 °C		✓	✓			✓					✓		Multifunction bath	TP 3M 165 E2
			✓				✓			✓			Dry block	TP 17 Zero
					✓					✓			Dry block	TP 18 200 E
			✓			✓					✓		Micro bath	TP M 255 S
±1°C		✓	✓			✓					✓		Multifunction bath	TP 3M 255 E
						✓				✓			Dry block	TP 17 450
			✓			✓				✓			Dry block	TP 17 450 S
						✓				✓			Dry block	TP 17 650 M
						✓				✓			Dry block	TP 17 650
			✓			✓				✓			Dry block	TP 17 650 S
	✓	✓	✓			✓				✓			Dry block	TP 38 650
		✓	✓			✓				✓			Dry block	TP 37 700 E
					✓	✓				✓		✓	Dry block	TP 18 850 E
			✓			✓						✓	Dry block	TP 28 1300 E

Requirements placed on temperature calibrators

Calibration functions

- Dry block function
- Micro bath function
- Infrared function
- Surface function

Your benefit:

- General purpose use through multifunctional calibrators

Calibration order and job site

Handy and compact dimensions and weight.

That lets SIKA calibrators meet all requirements that frequently changing job sites and individual test conditions entail.

Your benefit:

- Simple and fast on site use

Reliable system accuracy

Even during production, SIKA calibrators are put through various tests and a measurement uncertainty consideration in accordance with the DAkkS directive including comprehensive documentation of the measurement results.

Your benefit:

- Reliable and precise calibration results

Performance

Select the desired properties depending on the series and model

- Wide temperature range
- Powerful processors
- Variable test unit mounts
- Different stabilities

Your benefit:

- High-performance calibrators to match your needs

Connections

Whether standard PC interfaces, Ethernet, USB connection or WiFi functions, always the right connection exactly as needed.

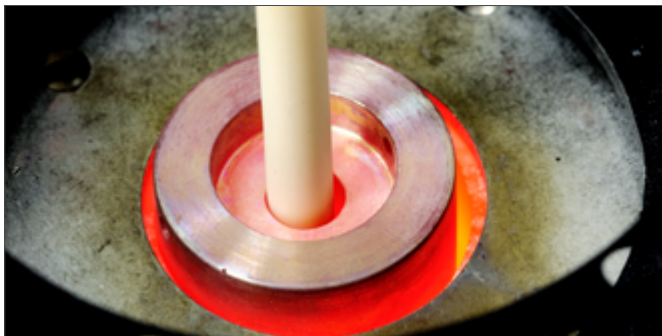
- Function expansion possible
- Connection of accessories
- Data backup

Your benefit:

- Flexibility and future-proof

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.



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



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



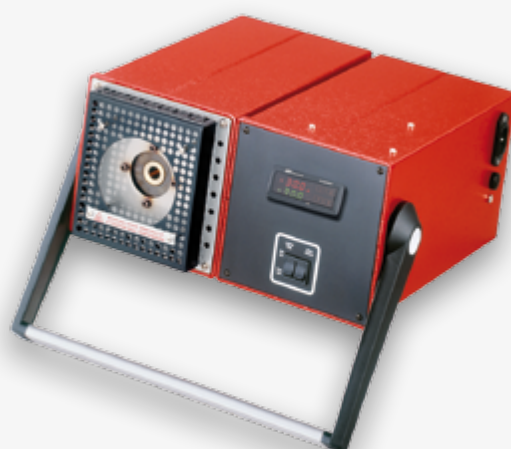
The TP 17 166 temperature calibrator model has a very large calibration volume.

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



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



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	
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

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



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		
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



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		
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		
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
- 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



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		
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		
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		
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



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		
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		
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.



Quickly controlled - quickly calibrated!

For economic reasons, the machine downtimes that arise during the calibration process should be kept as short as possible. SIKA has the solution: the worldwide first temperature calibrators that shorten the calibration time by as much as 30 %. Experience and knowledge gained from the aerospace industry make the innovative temperature calibrators of the TP Premium series the fastest and most temperature-stable calibrators on the market. They come equipped with a temperature controller that is based on a completely novel operating principle. In contrast to the mode of functioning of conventional calibrators, in the new TP Premium the properties of the test unit are virtually modelled.

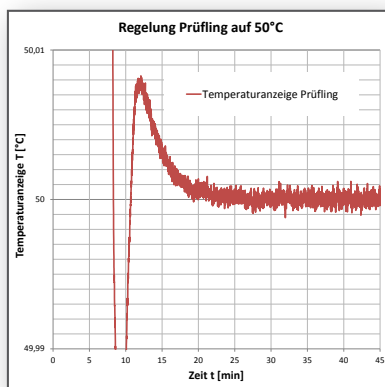
The use of a special control algorithm achieves a significantly shorter calibration time and - unique for portable calibrators - temperature stability in the millikelvin range.

"Time is money" - the benefits for the user are obvious: shorter calibration times mean shorter machine downtimes. Depending on the production process, using the new TP Premium series calibrators makes substantial cost savings possible.

Direct control of the test unit

By taking the thermal inertia of the test unit into consideration in the calibration volume in the frame of a model-based control, on top of outstanding temperature stability the following goals can also be achieved:

- Shortening of the waiting times until thermal equilibrium is reached from about 30 minutes down to between 25 and 15 minutes.
- Energy savings across the service life of a temperature calibrator of up to 5 MWh.
- Certainty of reaching the thermal equilibrium so that unnecessary calibration uncertainties are avoided.



TP 38 165



Type TP 38 165

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		
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

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

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		
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 / m ² Unit °C / °F / K	
Display range	-60...200 °C	-76...392 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
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 / m ² Unit °C / °F / K	
Display range	-50...165 °C	-58...329 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
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 / m ² Unit °C / °F / K	
Display range	-50...165 °C	-58...329 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
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 E2

Type TP 3M 165 E2



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 E2	
Control sensor	Switchable internal / external	
Micro Bath		
Temperature range*	-35...165 °C	-31...329 °F
Accuracy	±0.1 °C	±0.18 °F
Stability	±0.010 °C	±0,018 °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	±0.010 °C	±0,018 °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	±0.010 °C	±0,018 °F
Measurement zone	110 mm	4.33 in.
Surface		
Temperature range*	-25...150 °C	-13...302 °F
Accuracy	±1 °C	±1.8 °F
Stability	±0.1 °C	±0.18 °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 / m ² Unit °C / °F / K	
Display range	-50...165 °C	-58...329 °F
Resolution	0.1/0.01/0.001 °C / °F / K	
General data		
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	±0.2 °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 / m ² Unit °C / °F / K	
Display range	0...255 °C	32...491 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
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

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 / m ² Unit °C / °F / K	
Display range	0...700 °C	32...1292 °F
Resolution	0.1 / 0.01 / 0.001 °C / °F / K	
General data		
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

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

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							
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**		✓	✓	✓	✓		
Software					✓	✓	
Data cable					✓	✓	
calibration reference sensor							

- * The specifications listed are for guidance.
Detailed 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	0.001 °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	0.05 °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	<0.2 °C/0.36 °F
60 mm	60 mm	28 mm	28 mm	60 mm	60 mm	
✓		✓	✓	✓	✓	✓
				✓	✓	✓
	✓				✓	✓
				✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
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TP Premium tested according to EN 61326-1, class A (industry sector)

Accessories

Versatile accessory range

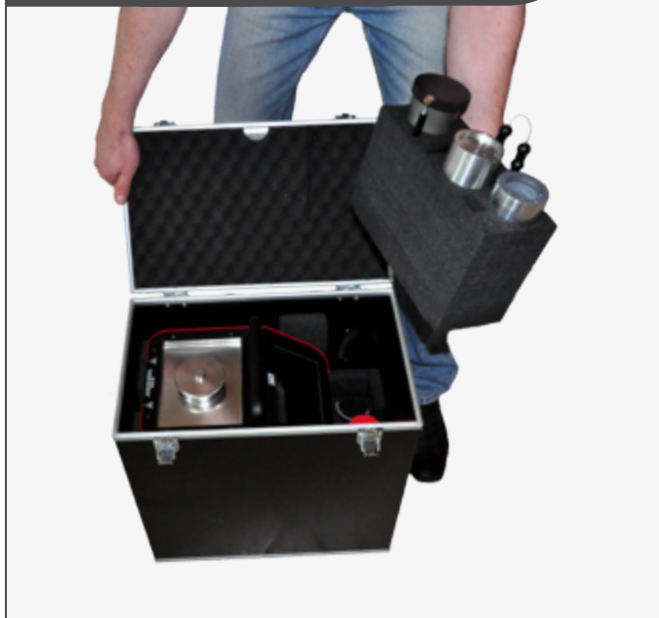
Customised adaptations are not just limited to our calibrators. Special applications often require special accessories. For instance, we are able to supply adapter sleeves for temperature calibrators with various drill holes for mounting several temperature sensors or in special designs, for example for mounting sensors used in the foodstuffs industry or railway technology. Reference sensors and adapter kits in various versions are also available.

Through close cooperation between the customer, sales and design we are able to implement solutions for nearly any application. Installation support and customer specific system-integrations can also be implemented on request.

Transport trolley

A service transport trolley is available in robust aluminium construction to ensure safe transport to on-site locations. This provides not only the calibrator itself a well-padded space but also other accessories, such as adapter sleeves, tub inserts, calibration liquids, calibration reference sensors and others. For small calibrator types there is also the a service transport bag in robust padded nylon.

Transport trolley - safely stowed!



Network Switch & Router

High-grade technology is needed to let data in networks rush quickly from one user to the next. The SIKA temperature calibrators of the TP Premium series have an Ethernet interface with RJ45 jacks that guarantee high data transmission rates and secure trouble-free, reliable work.

With the supplied network cable, it's very simple to connect the calibrator to, e.g., the network adapter of a PC or, through a network outlet, with a cable network.

The network switch implements connecting several devices with each other if necessary.

The SIKA LAN switch creates a distributor with a total of five connection ports. The transfer rate of 1,000 Mbit/s facilitates efficient and stable communication with all subscribers.

To connect one or more calibrators to various pieces of terminal equipment such as a PC, notebook, tablet or smartphone, a WiFi router is the best solution. The convenient connection through WiFi enables mobile access to all required calibrator data. The user can very easily monitor the current status of the calibration process at any time.



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.

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.



	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



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 equipped 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 accommodate 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 [$\frac{1}{8}$ in.] 1x 6.5 mm [$\frac{1}{4}$ in.]	✓	✓	
		1x 3.5 mm [$\frac{1}{8}$ in.] 1x 6.5 mm [$\frac{1}{4}$ in.] 1x 13.5 mm [$\frac{1}{2}$ in.]	✓	✓	
		1x 3.5 mm [$\frac{1}{8}$ in.] 1x 5.0 mm [$\frac{3}{16}$ in.] 1x 6.5 mm [$\frac{1}{4}$ in.] 1x 9.5 mm [$\frac{3}{8}$ in.]	✓	✓	
		1x 3.5 mm [$\frac{1}{8}$ in.] 6x 6.5 mm [$\frac{1}{4}$ in.]	✓	✓	
		1x 3.5 mm [$\frac{1}{8}$ in.] 2x 5.0 mm [$\frac{3}{16}$ in.] 2x 6.5 mm [$\frac{1}{4}$ in.] 2x 9.5 mm [$\frac{3}{8}$ in.]	✓	✓	
		Blank sleeve	✓	✓	✓
		1x 10.5 mm [$\frac{3}{8}$ in.]			✓
		1x 13.5 mm [$\frac{1}{2}$ in.]			✓



For other configurations - consult factory

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.

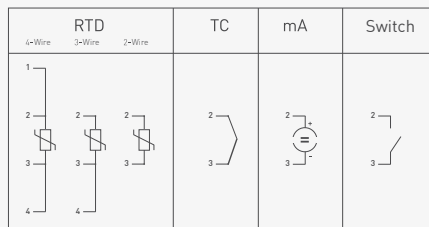


Type TT-Scan



Properties

Possibilities to connect



Version

Scanner device with precision measuring instrument

Measuring inputs

Switchable
For up to 8 sensors
Sensor type free configurable

General data

Power supply

230 VAC $\pm 10\%$, 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



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.

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	

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 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	

Customised solutions

The right product for your range

Our products can be customised with almost no limitations. Through detailed arrangements, our calibrators can be adapted technically and optically to your wishes. This creates individual measuring devices which match your corporate design and integrate seamlessly into your range.

Many well-known manufacturers around the world trust in SIKA calibration technology „Made in Germany“.

Modifications

- Temperature ranges
- Materials
- Programming
- Software
- Menu navigation
- Shape / Colour



