PTC200

PTC700

Temperature calibrators PTC200 & PTC700

Premium TC dry block
PTC200: -55–200°C (-67–392°F)
PTC700, RT: 700°C (1290°F)

Premium TCs

The calibrators of the Premium TC series are characterised by their unparalleled performance and outstanding ease of opereation. By means of the intuitive menu structure, all necessary inputs can be made quickly and easily. The large touch screen has plenty of room to display the reference, target and devices under test temperatures. At the end of a calibration process, the Premium TC provides the complete calibration certificate. The continuously growing bandwidth of supported temperature ranges supports an increasing number of temperature sensors on the market. They can be calibrated with a resolution of up to 0.001 °C / K and thus meet the highest requirements, e.g. of the food and pharmaceuticals industry.

PTC200 & PTC700 highlights

- Some of the best measurement uncertainties on the market
- Patented control technology - Fastest stabilisation times on the market - Time savings of up to 50 %
- -55–200°C (-67–392°F) is the widest temperature range with cooling and heating on the market → PTC200
- World's fastest dry-block temperature calibrator
- Unique hybrid technology: combination of high-performance resistance heating with Peltier elements specially optimized for the cooling process for fastest cooling and heat-up times
- Patented touch screen function for simple and convenient operation
- Accessories: device under test management with barcode scanner

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Druck temperature calibrators

Druck temperature calibrators are used for the verification of the functionality and calibration of temperature measuring devices and temperature sensors with a special focus on long-term reliability and utmost accuracy in combination with easy operation.

Every Druck temperature calibrator is meticulously tested for accuracy and stability. This is attested by our standard calibration certificate, which we issue with every temperature calibrator, or by means of an optional ISO 17025 calibration certificate. This is to guarantee that you receive a perfect product which can be traced back to national and international temperature measurement standards.

Automatic calibration with camera

In calibration processes for devices under test with their own temperature display, the display of the DUT must be read for each calibration point. The read value is transferred by the user to the calibrator or the calibration certificate, and the subsequent calibration point is only approached after a manual acknowledgement. For this purpose, the user must return to the calibrator at each calibration point. In some cases, this can lead to long delays if the user carries out other tasks in between. With our automatic calibration with a camera, these time-intensive intermediate steps are no longer needed:

- The patented camera system automatically creates a recording of the DUT display at each calibration point. The subsequent calibration point is approached directly afterwards
  → No user interaction is required during the calibration process, as it is implemented automatically
  → All test points are approached without waiting times

- Upon completion of the entire calibration process, the user transmits the data of the created display records to the calibrator or calibration certificate
  → During the entire calibration process, the user is free to carry out other tasks

- The visual records of the device under test display at each calibration point are saved and attached to the calibration certificate as verification
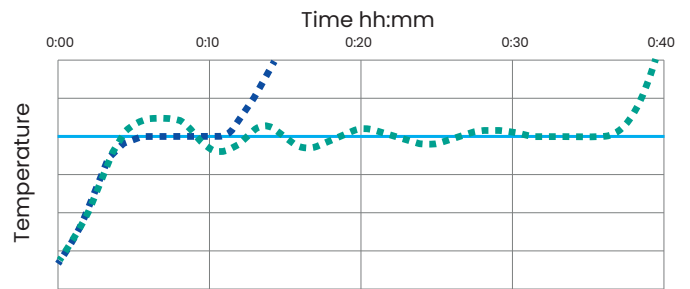
Features

Druck OS with touch screen

- Simple operation of the temperature calibrator via the integrated 7" touch screen
  → Intuitive operation of the calibration functions
  → Management of calibration data directly on the calibrator

- Clear display
  → All important information at a glance

- Completely paperless calibration
  → Value calculation and transmission errors are excluded

- Glass surface made of multi-panel safety glass
  → Extremely robust against damage
  → Easy cleaning of the surface
  → Suitable for use in the food industry
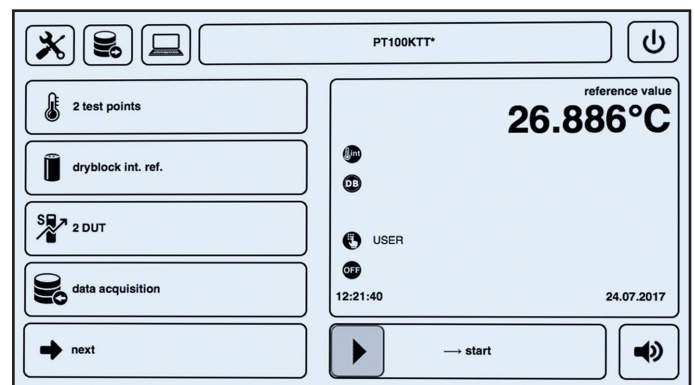
Temperature control with ultra high speed (UHS) controller

• Temperature regulator with model-based state control

• Special regulation algorithm based on knowledge and experience from space travel

• Unique temperature stability of < 0.001 °C / K

• Anticipatory activation of the heating and cooling elements
  → The settling time to the target temperature is reduced by approx. 90% at each calibration point
  → Time savings of up to 50% with each calibration process

■ Without UHS controller: Long settling time to the target temperature
■ With UHS controller: Settling time to the target temperature reduced by approx. 90%

Unique hybrid technology

• The best of two worlds: with our unique hybrid technolofy, we combine the benefits of a powerful resistance heating with special Peltier elements that have been optimized for the cooling process

• All heating and cooling processes of the temperature calibrator are significantly accellerated
  → Time and cost savings with every calibration
  → Reduced downtime

Technical data

| PTC200				
Temperature range	–55...200 ºC at ambient temperature 20 ºC		–31...329 ºF at ambient temperature 68 ºF	
Dimension for the calibration insert	Ø 28 x 150 mm (calibration insert easily exchangeable)			
Dry block	**External reference temperature sensor**		**Internal reference temperature sensor**	
Display accuracy	±0.27 ºC	±0.486 ºF	±0.34 ºC	±0.612 ºF
Temperature stability	±0.003 ºC	±0.0054 ºF	±0.020 ºC	±0.036 ºF
Temperature distribution → Axial → Radial	±0.250 ºC ±0.070 ºC		±0.450 ºF ±0.126 ºF	
Influence of load	±0.070 ºC	±0.126 ºF	±0.220 ºC	±0.396 ºF
Stabilization time (with external reference temperature sensor) → to ±0.05 ºC → to ±0.09 ºF → to ±0.005 ºC → to ±0.009 ºF	From 1 min. From 5 min.			
Heating time → 20 ºC – 200 ºC → 68 – 392 ºF → –55 ºC – 200 ºC → –67 – 392 ºF	9 min. 12 min.			
Cooling time → 20 ºC – –55 ºC → 68 – –67 ºF → 200 ºC – 20 ºC → 329 – 68 ºF	35 min. 18 min.			
Resolution of the temperature display	0.1 / 0.01 / 0.001 ºC (selectable)		0.1/0.01/0.001 ºF (selectable)	
Hysteresis	±0.010 ºC		±0.018 ºF	
Temperature units	ºC / ºF / K (selectable)			
Reference temperature sensor	Internal / external (selectable)			
Interfaces	Ethernet, 3 x USB			
Connectivity	OPC UA, serial communication, HTTP. Details and further possibilities on request.			
Dimensions				
→ Width → Height → Depth	210 mm 380 mm + 50 mm (handle) 300 mm			
Weight	15kg Approx.			
Power supply	100....240 VAC, 50/60 Hz			
Power consumption	Approx. 555 W			
Adjustable temperature range	–60 – 200 ºC / –76 – 392 ºF			
Display	Brilliant color touchscreen (7 inches), multi panel safety glass			
Approvals				

CE   RoHS   REACH COMPLIANT

Temperature steps PTC200
with external reference temperature sensor

Step test with commercially established limit temperatures and 15 minutes additional holding time after stabilization
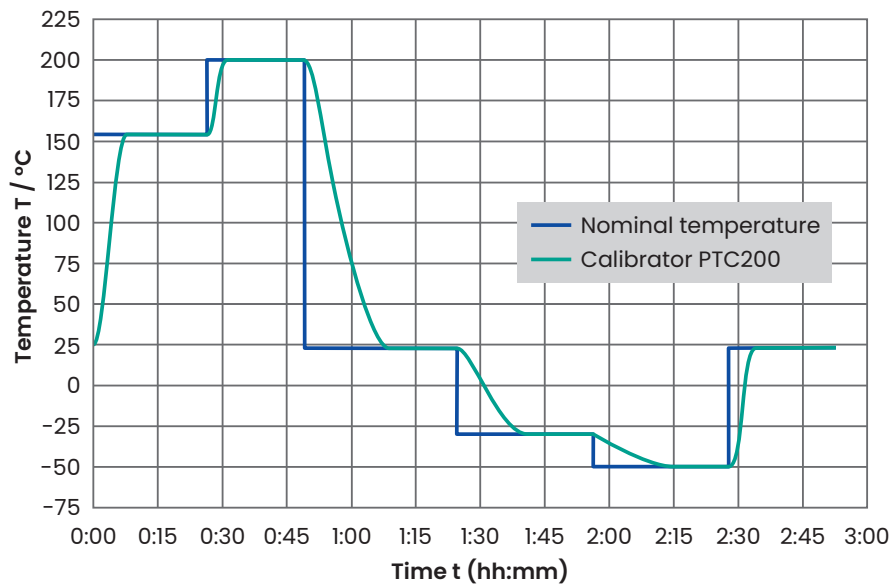
Detailed image from step test: fast settling to ±0.005 °C
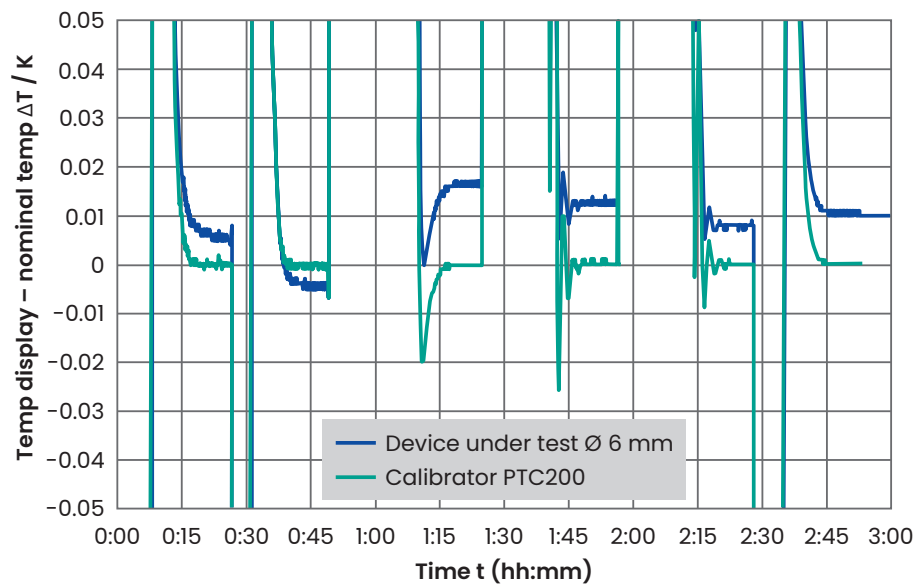
Technical data

The PTC700 can be operated up to 700 ºC (1292 ºF). For physical reasons, it achieves the best accuracy at temperatures up to 660 ºC (1220 ºF). For temperatures between 660 ºC (1220 ºF) and 700 ºC (1292 ºF) we recommend the use of a separate reference thermometer.

PTC700		
Temperature range	Room temperature...700 ºC	Room temperature...1292 ºF
Dimension for the calibration insert	Ø 29 x 150 mm (calibration insert easily exchangeable)	
Dry block air shield insert All values determined at 660 ºC (1220 ºF)	**External reference temperature sensor**	
Display accuracy	±0.27 ºC	±0.486 ºF
Temperature stability	±0.015 ºC	±0.027 ºF
Temperature distribution → Axial → Radial	±0.400 ºC ±0.020 ºC	±0.72 ºF ±0.036 ºF
Influence of load	±0.020 ºC	±0.036 ºF
Dry block All values determined at 660 ºC (1220 ºF)	**Internal reference temperature sensor**	
Display accuracy	±0.43 ºC	±0.774 ºF
Temperature stability	±0.100 ºC	±0.18 ºF
Temperature distribution → Axial → Radial	±0.400 ºC ±0.040 ºC	±0.72 ºF ±0.072 ºF
Influence of load	±0.180 ºC	±0.324 ºF
General data		
Stabilization time (with external reference temperature sensor) → to ±0.05 ºC → to ±0.09 ºF → to ±0.005 ºC → to ±0.009 ºF	From 1 min. From 5 min.	
Heating time → 20 ºC – 690 ºC → 68 – 1274 ºF	19 min.	
Cooling time → 700 ºC – 30 ºC → 1292 – 86 ºF	85 min.	
Resolution of the temperature display	0.1 / 0.01 / 0.001 ºC (selectable)	0.1 / 0.01 / 0.001 ºF (selectable)
Hysteresis	±0.015 ºC	±0.037 ºF
Temperature units	ºC / ºF / K (selectable)	
Reference temperature sensor	Internal / external (selectable)	
Interfaces	Ethernet, 3 x USB	
Connectivity	OPC UA, serial communication, HTTP. Details and further possibilities on request.	
Dimensions		
→ Width → Height → Depth	210 mm 330 mm + 50 mm (handle) 300 mm	
Weight	10.0 kg	
Power supply	110...115 V 60 Hz / 230 V 50 Hz Protective conductor (PE) needed	
Power consumption	Approx. 1000 W	
Adjustable temperature range	0...700 ºC	32...1292 ºF
Display	Brilliant color touchscreen (7 inches), multi panel safety glass	
Approvals		

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Ordering information (PTC200)

1. Select the model (includes traceable calibration)

2. Select 17025 accredited calibration if required

3. Select any accessories required (each model comes with kit for start up)

	Description		DRUCK PN
	Insert	1x Ø3.5, 1x Ø6.5, 1x Ø13.5 mm	IOPTC-DB-1
		External reference sensor (−55…255 ºC) straight version	IOPTC-EXSEN-1
	Power lead	World plug and lead set	ISPTC-20

Description	
Factory traceable calibration (included)	
ISO 17025 accredited calibration	

	Description	DRUCK PN
Inserts	1x Ø3.5, 1x Ø6.5, 1x Ø13.5 mm	IOPTC-DB-1
	1x Ø6.5 mm (brass)	IOPTC-DB-2
	2x Ø3.5 (brass)	IOPTC-DB-3
	1x Ø3.5, 1x Ø4.5 mm (brass)	IOPTC-DB-4
	1x Ø3.5, 1x Ø6.5 mm (brass)	IOPTC-DB-5
	1x Ø3.5, 1x Ø8.5 mm (brass)	IOPTC-DB-6
	1x Ø3.5, 1x Ø6.5, 1x Ø8.5, 1x Ø10.5 mm (brass)	IOPTC-DB-7
	Without Bore Holes (brass)	IOPTC-DB-21
Reference	External Reference sensor (−55…255 ºC) straight version	IOPTC-EXSEN-1
	Camera holder for USB camera	IOPTC-CAM-1
Connection	Camera	IOPTC-CAM-2
	Barcode scanner	IOPTC-BAR-1
	Transport case with trolley	ISPTC-22

Ordering information (PTC700)

1. Select the model (includes traceable calibration)

2. Select 17025 accredited calibration if required

3. Select any accessories required (each model comes with kit for start up)

	Description		DRUCK PN
Insert	1xØ3.5, 1xØ4.8, 1xØ6.5, 1xØ13.5		IOPTC-DB-20
	External reference sensor (RT…660 ºC) straight version		IOPTC-EXSEN-2
Power lead	World plug and lead set		ISPTC-20

Description
Factory traceable calibration (included)
ISO17025 accredited calibration

	Description	DRUCK PN
Inserts	1xØ4.5 (alu-bronze)	IOPTC-DB-12
	1xØ6.5 (alu-bronze)	IOPTC-DB-13
	1xØ8.5 (alu-bronze)	IOPTC-DB-14
	Dry block (alu-bronze)	IOPTC-DB-15
	1xØ4.8, 1xØ4.5 (alu-bronze air shield)	IOPTC-DB-16
	1xØ4.8, 1xØ6.5 (alu-bronze air shield)	IOPTC-DB-17
	1xØ4.8, 1xØ8.5 (alu-bronze air shield)	IOPTC-DB-18
	1xØ4.8, 1xØ3.5, 1xØ6.5, 1xØ8.5, 1xØ10.5 (alu-bronze air shield)	IOPTC-DB-19
	1xØ3.5, 1xØ4.8, 1xØ6.5, 1xØ13.5	IOPTC-DB-20
	Without bore holes Ø29 x 150mm (alu-bronze)	IOPTC-DB-25
	Without bore holes Ø29 x 150mm (alu-bronze)	IOPTC-DB-26
	Without bore holes Ø29 x 150mm (alu-bronze) (special plus)	IOPTC-DB-27
Reference	External reference sensor (RT…660 ºC) straight version	IOPTC-EXSEN-2
	Camera holder for USB camera	IOPTC-CAM-1
Connection	Camera	IOPTC-CAM-2
	Barcode scanner	IOPTC-BAR-1
	Transport case with trolley	ISPTC-22

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