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

Druck
a Baker Hughes business

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

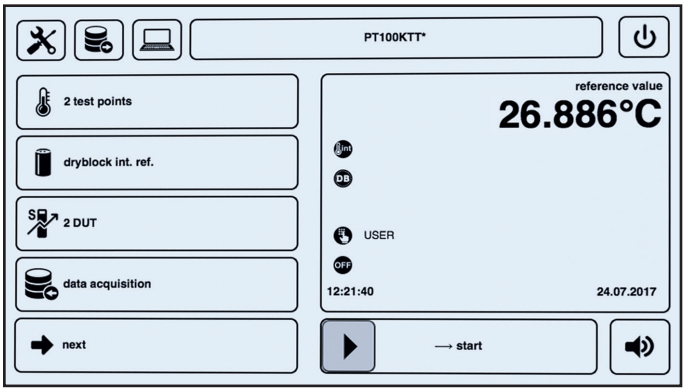
In calibration processes for devices under test with their own temperature display, the display of the DUT must be read for each calibration point. The read value is transferred by the user to the calibrator or the calibration certificate, and the subsequent calibration point is only approached after 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

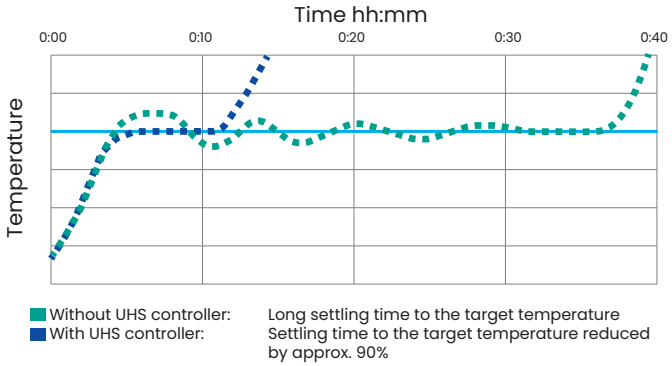
Druck OS with touch screen

- 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



Unique hybrid technology

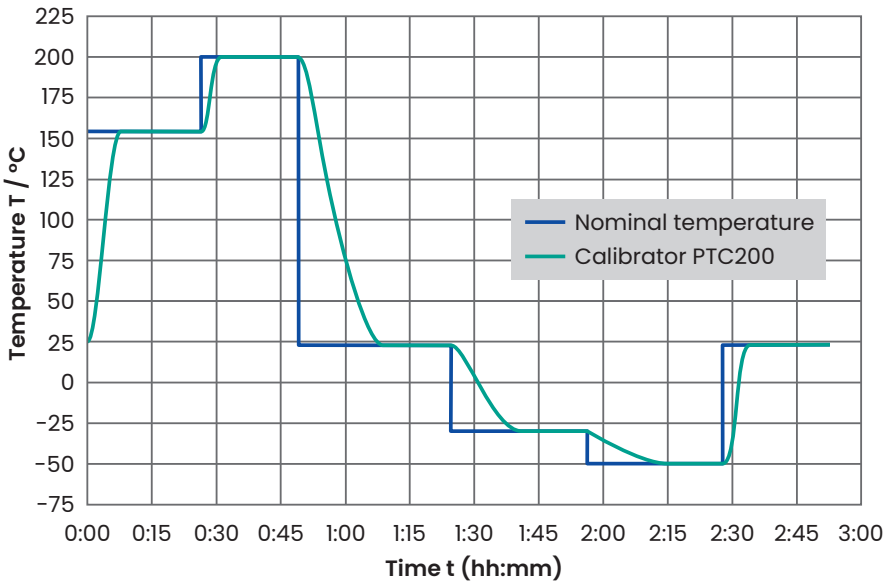
- The best of two worlds: with our unique hybrid technolofy, we combine the benefits of a powerful resistance heating with special Peltier elements that have been optimized for the cooling process
- All heating and cooling processes of the temperature calibrator are significantly accellerated
  → Time and cost savings with every calibration
  → Reduced downtime

Technical data

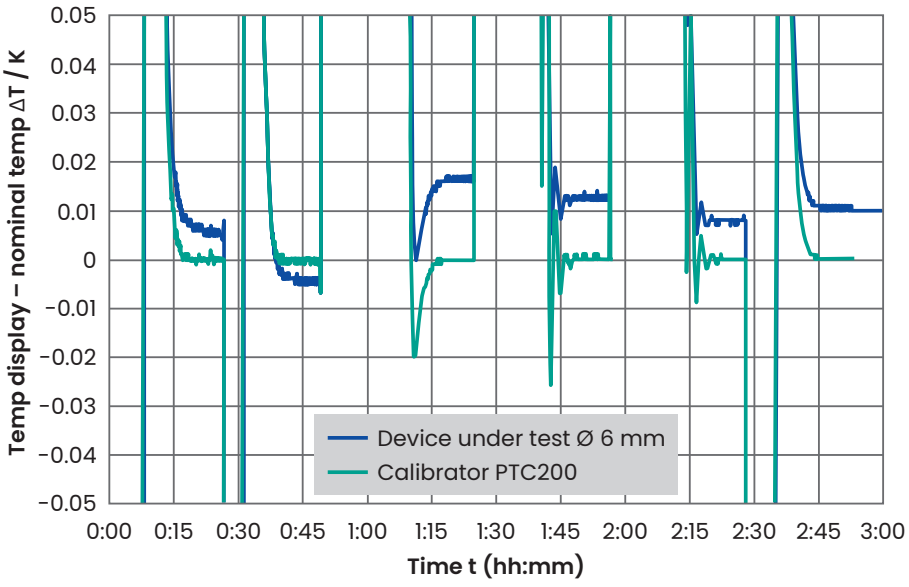
PTC200				
Temperature range	-55...200 °C at ambient temperature 20 °C		-31...329 °F at ambient temperature 68 °F	
Dimension for the calibration insert	Ø 28 x 150 mm (calibration insert easily exchangeable)			
Dry block	**External reference temperature sensor**		**Internal reference temperature sensor**	
Display accuracy	±0.27 °C	±0.486 °F	±0.34 °C	±0.612 °F
Temperature stability	±0.003 °C	±0.0054 °F	±0.020 °C	±0.036 °F
Temperature distribution → Axial → Radial	±0.250 °C ±0.070 °C		±0.450 °F ±0.126 °F	
Influence of load	±0.070 °C	±0.126 °F	±0.220 °C	±0.396 °F
Stabilization time (with external reference temperature sensor) → to ±0.05 °C → to ±0.09 °F → to ±0.005 °C → to ±0.009 °F	From 1 min. From 5 min.			
Heating time → 20 °C – 200 °C → 68 – 392 °F → -55 °C – 200 °C → -67 – 392 °F	9 min. 12 min.			
Cooling time → 20 °C – -55 °C → 68 – -67 °F → 200 °C – 20 °C → 329 – 68 °F	35 min. 18 min.			
Resolution of the temperature display	0.1 / 0.01 / 0.001 °C (selectable)		0.1/0.01/0.001 °F (selectable)	
Hysteresis	±0.010 °C		±0.018 °F	
Temperature units	°C / °F / 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 °C / -76 - 392 °F			
Display	Brilliant color touchscreen (7 inches), multi panel safety glass			
Approvals				

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 °C (1292 °F). For physical reasons, it achieves the best accuracy at temperatures up to 660 °C (1220 °F). For temperatures between 660 °C (1220 °F) and 700 °C (1292 °F) we recommend the use of a separate reference thermometer.

PTC700		
Temperature range	Room temperature...700 °C	Room temperature...1292 °F
Dimension for the calibration insert	Ø 29 x 150 mm (calibration insert easily exchangeable)	
Dry block air shield insert All values determined at 660 °C (1220 °F)	**External reference temperature sensor**	
Display accuracy	±0.27 °C	±0.486 °F
Temperature stability	±0.015 °C	±0.027 °F
Temperature distribution → Axial → Radial	 ±0.400 °C ±0.020 °C	 ±0.72 °F ±0.036 °F
Influence of load	±0.020 °C	±0.036 °F
Dry block All values determined at 660 °C (1220 °F)	**Internal reference temperature sensor**	
Display accuracy	±0.43 °C	±0.774 °F
Temperature stability	±0.100 °C	±0.18 °F
Temperature distribution → Axial → Radial	 ±0.400 °C ±0.040 °C	 ±0.72 °F ±0.072 °F
Influence of load	±0.180 °C	±0.324 °F
General data		
Stabilization time (with external reference temperature sensor) → to ±0.05 °C → to ±0.09 °F → to ±0.005 °C → to ±0.009 °F	 From 1 min. From 5 min.	
Heating time → 20 °C – 690 °C → 68 – 1274 °F	19 min.	
Cooling time → 700 °C – 30 °C → 1292 – 86 °F	85 min.	
Resolution of the temperature display	0.1 / 0.01 / 0.001 °C (selectable)	0.1 / 0.01 / 0.001 °F (selectable)
Hysteresis	±0.015 °C	±0.037 °F
Temperature units	°C / °F / 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 °C	32...1292 °F
Display	Brilliant color touchscreen (7 inches), multi panel safety glass	
Approvals		

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)

PTC200 model			
	Description		**DRUCK PN**
Included in kit	Insert	1x Ø3.5, 1x Ø6.5, 1x Ø13.5 mm	IOPTC-DB-1
		External reference sensor (-55...255 °C) straight version	IOPTC-EXSEN-1
	Power lead	World plug and lead set	ISPTC-20

PTC200 Certificates	
PTC200	**Description**
Calibration Certificates	Factory traceable calibration (included)
	ISO 17025 accredited calibration

PTC200 Optional Accessories		
	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 °C) straight version	IOPTC-EXSEN-1
Connection	Camera holder for USB camera	IOPTC-CAM-1
	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)

PTC700 model			
	Description		**DRUCK PN**
Included in kit	Insert	1xØ3.5, 1xØ4.8, 1xØ6.5, 1xØ13.5	IOPTC-DB-20
		External reference sensor (RT...660 °C) straight version	IOPTC-EXSEN-2
	Power lead	World plug and lead set	ISPTC-20
PTC700 Certificates			
PTC700	**Description**		
Calibration Certificates	Factory traceable calibration (included)		
	ISO17025 accredited calibration		
PTC700 Optional Accessories			
	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-26
	Without bore holes Ø29 x 150mm (alu-bronze) (special plus)		IOPTC-DB-27
Reference	External reference sensor (RT...660 °C) straight version		IOPTC-EXSEN-2
Connection	Camera holder for USB camera		IOPTC-CAM-1
	Camera		IOPTC-CAM-2
	Barcode scanner		IOPTC-BAR-1
	Transport case with trolley		ISPTC-22

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