PTC200

PTC700

PTC200 & PTC700

Premium Temperature Calibrators (Dry block)
PTC200: -50 to 200°C (-58 to 392°F)
PTC700: RT to 700°C (RT to 1292°F)

The Druck PTC200 and PTC700 series of Premium Temperate Calibrators are characterised by their unparalleled performance and outstanding ease of operation. 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 PTC provides the complete calibration certificate.

Features

- Some of the best measurement uncertainties on the market
- Patented control technology - Fastest stabilisation times on the market - Time savings of up to 50 %
- -50 to 200°C (-58 to 392°F) is the widest temperature range with cooling and heating on the market (PTC200)
- RT to 700°C (RT to 1292°F) is the highest temperature range in the series (PTC700)
- 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
- Device under test management with optional barcode scanner P/N IOPTC-BAR-1
- Automatic calibration with optional camera P/N IOPTC-CAM-2 and holder P/N IOPTC-CAM-1

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 certified by our traceable factory calibration certificate, which we issue with every temperature calibrator, or an optional Dakks (ISO17025) accredited calibration certificate can be purchased. This is to guarantee that you receive a perfect product which can be traced back to national and international temperature measurement standards.

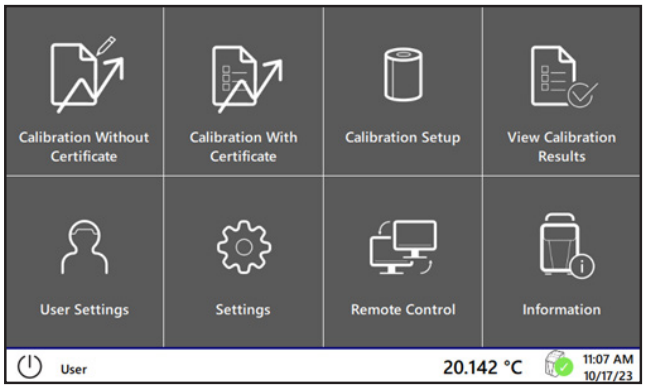
Automatic calibration with camera and holder

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
- P/N IOPTC-CAM-1 Camera holder for USB camera
- P/N IOPTC-CAM-2 Camera

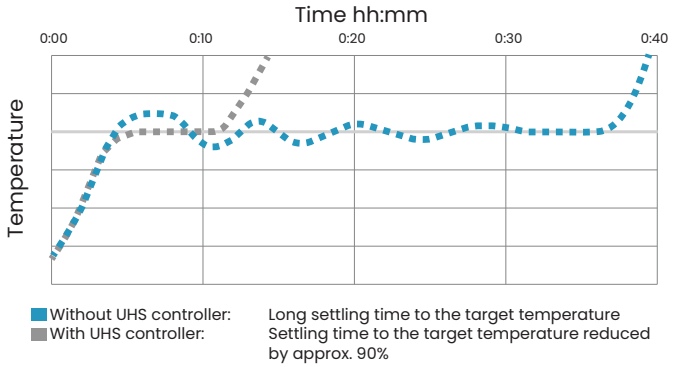
User Interface

- 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

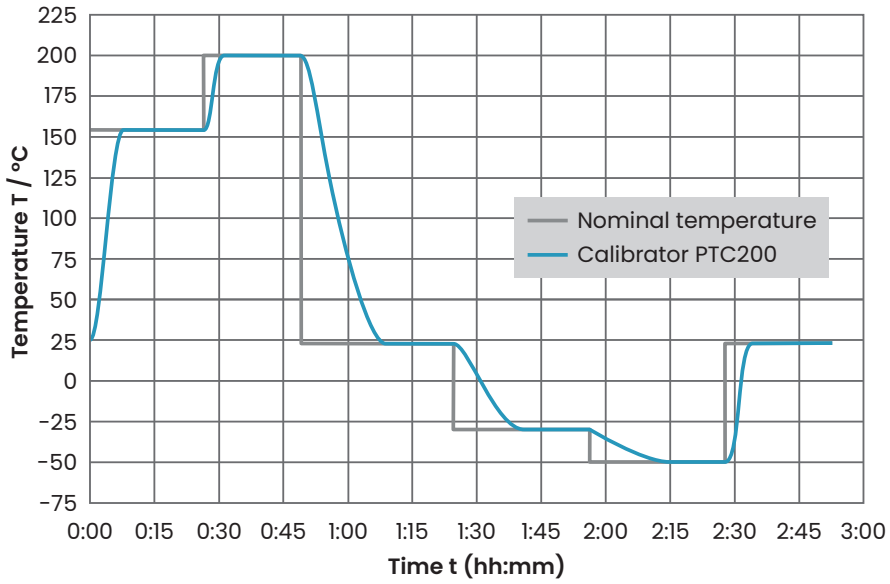
- The best of two worlds: with our unique hybrid technolofy, we combine the benefits of a powerful resistance heating with special Peltier elements that have been optimized for the cooling process
- All heating and cooling processes of the temperature calibrator are significantly accellerated
  - Time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

Technical data

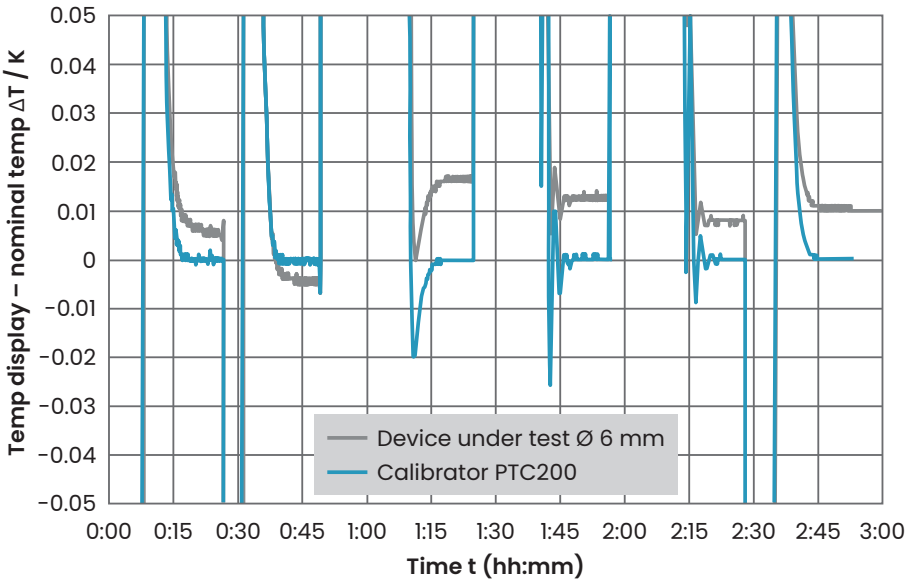
PTC200 Functions				
Temperature range	-50 to 200 °C at ambient temperature 20 °C		-31 to 329 °F at ambient temperature 68 °F	
	Lower temperatures can be achieved by reducing the ambient temperature			
Dimension for the calibration insert	Ø 28 x 150 mm (calibration insert easily exchangeable)			
Dry block (Function 5 and 6)	**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	±0.250 °C		±0.450 °F	
→ Radial	±0.070 °C		±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 to 200 °C → 68 to 392 °F	9 min.			
→ -50 °C to 200 °C → -58 to 392 °F	12 min.			
Cooling time				
→ 20 °C to -50 °C → 68 to -58 °F	35 min.			
→ 200 °C to 20 °C → 329 to 68 °F	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	Serial communication and HTTP			
Dimensions				
– Width	210 mm			
– Height	380 mm + 50 mm (handle)			
– Depth	300 mm			
Weight	15kg Approx.			
Power supply	100....240 V ac, 50/60 Hz			
Power consumption	Approx. 555 W			
Display	Brilliant color touchscreen (7 inches), multi panel safety glass			
Approvals				
Approvals	CE marked, REACH, WEEE, UKCA, RCM, Batteries Regulation (EU) 2023/1542			
RoHS	EU: 2011/65/EU, UK: S.I.2012/3032, UAE, China			
EMC	EU: 2014/30/EU, UK: S.I.2016/1091, Australia: RCM			
Electrical Safety	LVD - 2014/35/EU, UK: S.I.2016/1101			

Temperature steps PTC200 with external reference temperature sensor (P/N IOPTC-EXSEN-1)

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 Functions		
Temperature range	Room temperature to 700 °C	Room temperature to 1292 °F
Dimension for the calibration insert	Ø 29 x 150 mm (calibration insert easily exchangeable)	
Dry block air shield insert (Function 1) 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	±0.400 °C	±0.72 °F
→ Radial	±0.020 °C	±0.036 °F
Influence of load	±0.020 °C	±0.036 °F
Dry block (Function 6) 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	±0.400 °C	±0.72 °F
→ Radial	±0.040 °C	±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	From 1 min.	
→ to ±0.005 °C → to ±0.009 °F	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	Serial communication and HTTP	
Dimensions		
→ Width	210 mm	
→ Height	330 mm + 50 mm (handle)	
→ Depth	300 mm	
Weight	10.0 kg	
Power supply	110...115 V ac, 60 Hz / 230 V ac, 50 Hz Protective conductor (PE) needed	
Power consumption	Approx. 1100 W	
Display	Brilliant color touchscreen (7 inches), multi panel safety glass	
Approvals		

Ordering information for PTC200

The PTC200 are supplied with a safety manual and traceable factory calibration certificate as standard along with the following kit:

Kit included with PTC200

DRUCK P/N	Description
IOPTC-DB-1	IOPTC-DB-1 Insert Brass 1x Ø3.3, 1x Ø3.5, 1x Ø6.5, 1x Ø13.5 mm
IOPTC-EXSEN-1	External reference sensor -55 to 255 °C straight version
ISPTC-20	World plug and lead set
ISPTC-ET-1	Insert exchange tongs
ISPTC-EC-1	Ethernet Cable

1. Select the model

2. Select PTC and External reference sensor (ext ref sensor) calibrations

Model Type (Mandatory to select one)

PTC200 Premium Temperature Calibrator (Dry Block) -50 to 200°C (-58 to 392°F)

PTC and ext ref sensor calibration certificate – select only one

0 Traceable factory calibration on PTC

1 Dakks (ISO17025) accredited calibration on PTC (Functions 5 and 6)

Example model numbers: **PTC200-0**
PTC200-1

Accessories

Please state any accessories required as separate items when placing an order.
The PTC200 are compatible with the following accessories unless otherwise specified.

DRUCK P/N	Description
IOPTC-DB-1	Insert Brass 1x Ø3.3, 1x Ø3.5, 1x Ø6.5, 1x Ø13.5 mm
IOPTC-DB-2	Insert 1x Ø6.5 mm (Brass)
IOPTC-DB-3	Insert 2x Ø3.5 mm (Brass)
IOPTC-DB-4	Insert 1x Ø3.5, Ø4.5 mm (Brass)
IOPTC-DB-5	Insert 1x Ø3.5, Ø6.5 mm (Brass)
IOPTC-DB-6	Insert 1x Ø3.5, Ø8.5 mm (Brass)
IOPTC-DB-7	Insert 1x Ø3.5, Ø6.5, Ø8.5, Ø10.5 mm (Brass)
IOPTC-DB-21	Insert no Bore Holes D28mm (Brass)
IOPTC-CAM-1	Camera holder for USB camera
IOPTC-CAM-2	Camera
IOPTC-BAR-1	Barcode scanner
IOPTC-CASE-1	Transport case with trolley

The PTC200 is supplied with P/N IOPTC-EXSEN-1 External reference probe of 3mm diameter. When ordering inserts, the recommendation for the ext ref probe drilling should be 3.3mm to 3.5mm.

Ordering information for PTC700

The PTC700 are supplied with a safety manual and traceable factory calibration certificate as standard along with the following kit:

Kit included with PTC700

DRUCK P/N	Description
IOPTC-DB-20	IOPTC-DB-20 Insert Air Shield 1x Ø3.5, 1x Ø4.8, 1x Ø6.5, 1x Ø13.5 mm (Alu-bronze)
IOPTC-EXSEN-2	External reference sensor 5 to 700 °C straight
ISPTC-20	World plug and lead set
ISPTC-ET-1	Insert exchange tongs
ISPTC-EC-1	Ethernet Cable

1. Select the model

2. Select PTC and External reference sensor (ext ref sensor) calibrations

Model Type (Mandatory to select one)

PTC700 Premium Temperature Calibrator (Dry Block) RT to 700°C (RT to 1292°F)

PTC and ext ref sensor calibration certificate – select only one

0 Traceable factory calibration on PTC

1 Dakks (ISO17025) accredited calibration on PTC (Functions 1 and 6)

Example model numbers: **PTC700-0**
PTC700-1

Accessories

Please state any accessories required as separate items when placing an order.
The PTC700 are compatible with the following accessories unless otherwise specified.

DRUCK P/N	Description
IOPTC-DB-12	Insert 1x Ø4.5 mm (Alu-bronze)
IOPTC-DB-13	Insert 1x Ø6.5 mm (Alu-bronze)
IOPTC-DB-14	Insert 1x Ø8.5 mm (Alu-bronze)
IOPTC-DB-15	Insert 1x Ø3.5, Ø4.5, Ø6.5, Ø8.5, Ø10.5 mm (Alu-bronze)
IOPTC-DB-16	Insert Air Shield 1x Ø4.8, 1x Ø4.5 mm (Alu-bronze)
IOPTC-DB-17	Insert Air Shield 1x Ø4.8, 1x Ø6.5 mm (Alu-bronze)
IOPTC-DB-18	Insert Air Shield 1x Ø4.8, 1x Ø8.5 mm (Alu-bronze)
IOPTC-DB-19	Insert Air Shield 1x Ø3.5, 1x Ø4.8, 1x Ø6.5, 1x Ø8.5, 1x Ø10.5 mm (Alu-bronze)
IOPTC-DB-20	Insert Air Shield 1x Ø3.5, 1x Ø4.8, 1x Ø6.5, 1x Ø13.5 mm (Alu-bronze)
IOPTC-DB-26	Insert Air Shield no Bore Holes D29 mm (Alu-bronze)
IOPTC-CAM-1	Camera holder for USB camera
IOPTC-CAM-2	Camera
IOPTC-BAR-1	Barcode scanner
IOPTC-CASE-1	Transport case with trolley

The PTC700 is supplied with P/N IOPTC-EXSEN-2 External reference probe of 4.5mm diameter. When ordering inserts, the recommendation for the ext ref probe drilling should be 4.8mm to 5.0mm

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920-703G

BHCS39225A (03/2026)

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