Temperatures

Measurements with <u>and</u> without contact. Save the readings. **Quick and exact.**

Portix

An instrument familiy to be introduced:

PortixB   −30 to +400 °C
PortixD   ±0 to +600 °C
PortixH   +300 to +1999 °C

KELLER HCW
A keyria COMPANY

TÜV CERT
DIN EN ISO 9001

Features of the Portix® radiation pyrometer

- available as a combined instrument for contact and noncontact temperature measurement
- robust aluminium housing and protection class IP 65
- suitable even for rough industrial environments
- integrated data storage for 64 readings
- data transfer to the PC via the interface Adaptix C
- adjustable emissivity
- high accuracy by use of microcontroller
- calibrated with internationally certified calibration devices
- high resolution 0.1 °C
- easy to use
- LCD multifunctional display
- automatic switch off
- battery control
- spot light or view finder with target marker
- handy and compact design
- large variety of accessories
- battery included

Overview of Portix® types

Choose the Portix® model which is most suitable for you

Basic instrument and options (freely combinable)	various types		
	Portix B* −30 to +400 °C ± 0 to +600 °C	Portix D* ± 0 to +600 °C	Portix H +300 to +1999 °C
Basic instrument	Type PT 10** Type PT 11	Type PT 15	Type PT 20
With connector for probe PT 1000	Type PT 12	Type PT 16	
With connector for probe NiCr-Ni	Type PT 13		
With aiming sight		Type PT 15/V	Type PT 20/V
With viewfinder **and** connector for probe PT 1000		Type PT 16/V	

*also as Ex-proof version **Type PT 10 without storage

Data storage enables new possibilities
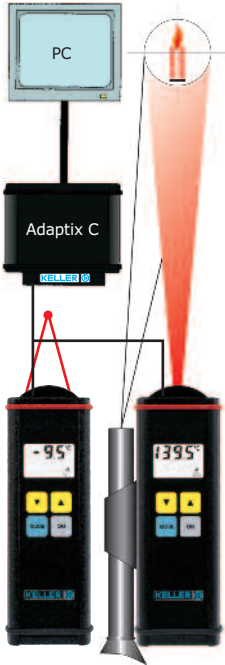
- storage of 64 readings along with the emissivity and current measuring mode
- automatic datalogger function to record dynamic temperature developments
- interval for datalogger adjustable
- stored readings can be transferred to a PC via the module Adaptix C (accessories) and the standard interface RS 232
- graphical display and data evaluation with standard software e.g. EXCEL
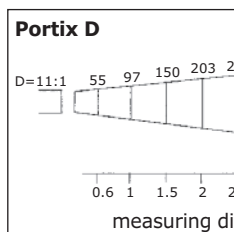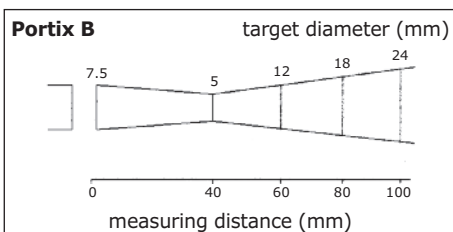- data analysis with evaluation software PT 11/N (accessories)

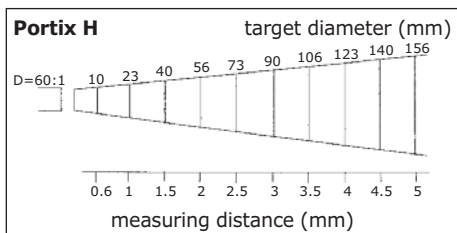## Contact measurements with the combined instrument: Connector for probes PT 1000 or NiCr-Ni
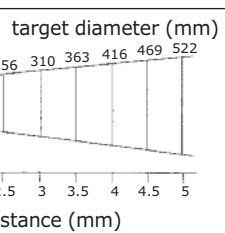
- very high accuracy due to probe type PT 1000 (higher basic accuracy according to DIN as NiCr-Ni elements)
- very short response time (< 7 sec)
- small influence of ambient temperatures
- small influence of contact resistance
- optional: any common NiCr-Ni thermocouple can be used (only Type PT 13); also probe for surfaces

Technical data

	Portix B	
Range	−30 to +400 °C	±0 to +600 °C
Sensor	Thinfilm-Thermopile	
Spectral sensitivity	7 to 16 µm	8 to 14 µm
Distance ratio		
Target in focal distance	Ø 5 mm at 40 mm distance	
Viewfinder	Spotlight with 2 red LED's	
Measurement uncertainty at ε= 1 and Tu = 23 °C	1.5 K + 1 digit (−30 to +199.9 °C) 0.75 % of reading + 1 digit (+200 to +400 °C)	
Temperature coefficient	≤0.07 %/K of reading/K deviation to Tu = 23 °C and ε=1	
Dimensions (L x W x H)	175 x 60.5 x 35.5 mm	
Functions	Min-/Max- storage, storage for 64 readings (not PT 10)	
Probe uncertainty PT 1000 (PT 12/PT 16) NiCr-Ni (PT 13)	0.3 K or 0.4 % of reading 1 K or 0.5 % of reading (whichever is greater) +1 digit at Tu = 23 °C	
Response time t_{90}		
Resolution		
Repeatability		
Display		
Power supply		
Ambient temperature		
Storage temperature		
Housing		
Protection class DIN 40050		
Weight		
Operating life of battery	with spot light 20 h.	
Emissivity ε	20 to 100 % a	

Portix B target diameter (mm)

7.5   5   12   18   24

0   40   60   80   100

measuring distance (mm)

Portix D

D=11:1   55   97   150   203   2

0.6   1   1.5   2   2

measuring di

Portix D	Portix H
±0 to +600 °C	+300 to +1999 °C
Thinfilm-Thermopile	InGaAs-photodiode
8 to 14 µm	1.1 to 1.7 µm
11:1	60:1
Ø 55 mm at 0.6 m distance	Ø 10 mm at 0.6 m distance
Viewfinder with target marking for 1 m, ∞ (Typ PT 15/V and PT 16/V)	Viewfinder with target marking for 1 m, 2.5 m, ∞ (Typ PT 20/V)
2 K + 1 digit (0 to +199.9 °C) 1 % of reading +1 digit (+200 to +600 °C)	4 K or 0.5 % of reading, whichever is greater (<1500 °C), 0.75 % of reading + 1 digit (>1500 °C)
≤0.07 %/K of reading/K deviation to Tu = 23 °C and $\varepsilon=1$	≤0.05 %/K of reading/K deviation to Tu = 23 °C
182 x 60.5 x 35.5 mm	182 x 60.5 x 35.5 mm
Min-/Max- storage, storage for 64 readings	Min-/Max- storage, storage for 64 readings
0.3 K or 0.33 % of reading (whichever is greater) +1 digit at Tu = 23 °C	
≤1 sec.	
0.1 K (<200 °C); 1.0 K (>200 °C)	
1 K at $\varepsilon= 1$ and Tu = 23 °C	
3½-digit LC-display	
9 V-battery 6 LR 61	
−10 to +50 °C	
−20 to +60 °C	
aluminium	
IP 65	
app. 270 g incl. battery	
continuous operation, without spotlight 60 h. continuous operation	
adjustable (steps 0.1 %, only for pyrometer measurements)	

target diameter (mm)
56 310 363 416 469 522

.5 3 3.5 4 4.5 5

stance (mm)

Portix H   target diameter (mm)

D=60:1   10   23   40   56   73   90   106 123 140 156

0.6 1 1.5 2 2.5 3 3.5 4 4.5 5

measuring distance (mm)

From the food industry to steel production:
Fast and reliable temperature detection can be crucial for many situations:

Electric components
Measure components under power such as small electronics, control cabinets, transformers. For maintenance and safety testing.
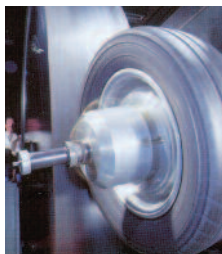

Food industry
Quick temperature check – with or without contact – of foods such as fresh meat, dough, dairy products and frozen foods during storage, transport or processing.
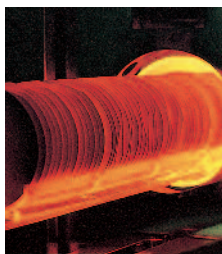

Rotating and moving objects
Check of inadmissible heat on bearings, rollers, motors and other moving objects in order to prevent damage and malfunction.

Annealing furnaces and tunnel kilns
Quick and direct temperature detection with a non-wearing measurement system for optimal process control.

Accessories	Type
Insertion probe PT 1000 Accuracy class A: 0.15 + 0.002* |T [°C]| sticking depth 100 mm, response time <7 s	PF 92 AF 1
Adaptix C: interface for data transfer	PT 11/A
Evaluation software to process the data	PT 11/N
Epsidot: emissivity changing sticker (heat resistent up to 250 °C)	
Carrying case	
Calibration certificate according to ISO 9000	

KELLER range of pyrometers

Digital radiation pyrometers for non-contact temperature measurement

CellaTemp PZ
with through-lens-sighting in one-colour- and two-colour-versions with ranges from 0 °C to +3000 °C

CellaTemp PZ
Digital precise pyrometer with optical head ø16 mm or ø 30 mm, +30 °C to +3000 °C

CellaTemp PS
Digital miniature pyrometer with stainless steel housing ø 30 x 190 mm for applications in a range from –30 °C to +3000 °C

CellaTemp PS 36
Digital pyrometer with miniature optical head ø 16 mm. Range from +700 °C to +2500 °C

Optix
Portable pyrometer with through-the-lens-sighting and focusable and interchangeable optics from +250 °C to +2500 °C

Complete Solutions

Industrial Measuring Technology

- Pyrometers
- Temperature data loggers
- Humidity measuring instruments
- Weighing amplifiers

Service

- Installation, commissioning and servicing
- Repairs
- Instrumentation service

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Systems Technology

- Networking of measuring instruments and computers
- Visualisation and measurement data recording software

Automation Technology

- Hardware design and construction
- Switchbox construction
- PLC software programming

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