Heat Flow Meter
PCE-TDS 100+ Series

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**Ultrasonic flow meter with temperature data logger and evaluation software
for determining flow velocity, flow, heat quantity and heat output**

This portable handheld clamp-on ultrasonic flow meter in combination with the 2-channel temperature datalogger and the evaluation software can be used for non-invasive, unobstructed and highly accurate measurements of the flow velocity, flow, heat quantity and heat output of liquids. User-friendly Velcro® strap clamps allow quick and easy fixing and repositioning of the external electroacoustic transducers and temperature sensors without process interruption. Mobile and stationary measurements are possible on metal, plastic and rubber pipes and tubes with a diameter of 20 to 720 mm. In case of a stationary measurement, both the ultrasonic flow meter and the temperature data logger are connected to a PC or notebook on which the evaluation software is installed. A mobile measurement means that the meters can be used on site, without being connected to a PC. For both types of measurements, a help section in the software shows all required steps to prepare, make and complete a measurement.

- ► portable devices for control measurements
- ► ideal for retrofitting
- ► installation without process interruption
- ► no pressure loss, maintenance-free, no moving parts
- ► including software for heat quantity and heat output
- ► accurate and reliable

General features and specifications PCE-TDS 100+ Series
each model consisting of
PCE-TDS 100
PCE T330 with sensors TF-RA330
and software PCE-TDS 100 Plus

PCE-TDS 100   Ultrasonic flow meter

Flow speed range	-32 ... +32 m/s
Flow speed resolution	0.0001 m/s
Flow speed accuracy	for diameters ≥ 50 mm: ±1.5 % of reading for diameters < 50 mm: ±3.5 % of reading
Reproducibility	±1.0 % of reading
Media	all liquids with an impurity < 5% and a flow > 0.03 m³/h
Flow volume units	Cubic meter, Liter, Gallon (USA), Imperial gallon (UK), Million USA gallon, Barrel (USA), Imperial barrel (UK), Oil barrel, Cubic foot,
Time settings	per day, per hour, per minute, per second
Data logger	1800 measurements
Interface	USB (for online measurement and reading of the internal memory)
Protection	IP 52
Power supply	3 x AA NiMH rechargeable batteries with 2100 mAh (12 h running time) or 100 … 240 V AC 50/60 Hz
Dimensions	214 x 104 x 40 mm 8.4 x 4.1 x 1.5 "
Weight	450 g

PCE-T 330   2-Channel Temperature Datalogger
with 2 temperature sensors TF-RA330

Measuring rate	2/s
Operating temperature	-10 … +50 °C / 14 ... 122 °F
Storage temperature (without batteries)	-20 … +60 °C / -4 ... 140 °F
Power supply	3 x AAA batteries / 1.2 V battery
Battery life	approx. 190 h (without backlight, ambient temperature 25 °C) battery capacity 1200 mAh)
Protection class	IP52 (with protective cover and connected sensor)
Measurement range	-200 … +400 °C -328 ... 752 °F
Resolution	0.01 °C
Accuracy	± (0.3 % of reading +0.40) °C

Evaluation software PCE-TDS 100 Plus for heat quantity and heat output

Graphical representation	flow, flow temperature, return temperature, heat output and heat quantity
Tabular representation	flow, flow temperature, return temperature, heat output and heat quantity
Units of power Thermal output	W, kW, MW, J/h, kJ/h, MJ/h, Btu/h, kBtu/h, MBtu/h
Units of thermal energy / heat quantity	J, kJ, MJ, Wh, kWh, MWh, Btu, kBtu, MBtu
Measurement mode	mobile and stationary
Data logger	Real-time data logger with unlimited runtime (only limited by PC memory capacity)
User guide	software operation with step-by-step instructions for device and software configuration

Models

PCE-TDS 100H+	PCE-TDS 100HSH+	PCE-TDS 100HS+
	Sensor TDS-S1 for pipe diameters DN 15 … 100, 20 … 108 mm approx. 3/4 ... 4 " Sensor dimensions 60 x 45 x 45 mm 2.36 x 1.77 x 1.77 in Temperatures 0 ... 160 °C 32 ... 320 °F	**Sensor TDS-S1** for pipe diameters DN 15 … 100, 20 … 108 mm approx. 3/4 ... 4 " Sensor dimensions 60 x 45 x 45 mm 2.36 x 1.77 x 1.77 in Temperatures 0 ... 160 °C 32 ... 320 °F
Sensor TDS M1 for pipe diameters DN 50 … 700, 57 … 720 mm, approx. 2 ... 28 " Sensor dimensions 90 x 85 x 24 mm 3.5 x 3.3 x 0.9 in Temperatures 0 ... 160 °C 32 ... 320 °F	**Sensor TDS M1** for pipe diameters DN 50 … 700, 57 … 720 mm, approx. 2 ... 28 " Sensor dimensions 90 x 85 x 24 mm 3.5 x 3.3 x 0.9 in Temperatures 0 ... 160 °C 32 ... 320 °F	

Subject to change