

HEAT MEASUREMENT

ULTRASONIC FLOW METER PCE-TDS 200 SERIES

Measuring range ± 32 m/s at (DN <50 mm) / 32 GB data memory

The flow meter has a measuring range of ± 32 m/s. With an accuracy of ± 1.5 % f.s. for a pipe diameter of DN ≥ 50 , ± 3.5 % f.s. for a pipe diameter of DN <50 and a reproducibility of ± 0.5 % f.s., the flow meter is a particularly precise measuring device. The installation aid graphically displays the signal quality from the flow meter. In addition, it is graphically displayed whether the

sensors of the flow meter are positioned at the correct distance from each other. To carry out flow measurement with the flow meter, the flow velocity, the volume flow and the volume are displayed after entering the pipe and medium specifications.

ISO cal option

- ▶ measuring range: ± 32 m/s
- ▶ reproducibility of ± 0.5 % of the measured value
- ▶ various ultrasonic probes available
- ▶ heat quantity measurement (only PCE-TDS 200+ series)
- ▶ data memory for 10 million measuring points (32 GB)
- ▶ individually adjustable alarm limits
- ▶ USB-C interface for data transfer
- ▶ optional: software and calibration certificate ISO or DAkkS



APPLICATION



TECHNICAL SPECIFICATIONS

Flow measurement

Measuring range	± 32 m/s
Resolution	0.001 m/s
Accuracy DN ≥ 50 mm	± 1.5 % f.s. (velocity > 0.3 m/s)
Accuracy DN < 50 mm	± 3.5 % f. Mw. (speed > 0.3 m/s)
Repeatability	± 0.5 % f. Mw
Temperature resistance	-30 ... +160 °C
Measuring method	N / V / W / Z

Medium

Petrol
Diesel
Ethanol
Sea water
Methanol
Oil
Petroleum
Crude oil
Water
User defined (manual input of sound velocity from the medium)

Suitable for all liquids with an impurity of less than 5%.

Pipe material

Copper CU
Steel FE
Stainless steel VA
Aluminium AL
Brass ME
Cast iron CI
Iron FE
Nickel NI
Titanium TI
Zinc ZI
Acrylic AC
Polyethylene PE
Polypropylene PP
Polyvinyl chloride PVC
Nylon NY
User defined (manual input of the sound velocity of the pipe material)

Inner pipe lining

No lining
Epoxy resin
Rubber
Mortar
Polystyrene PS
Polyethylene PE
Polytetrafluoroethylene PTFE
Polyurethane PU
Polypropylene PP
User defined (man. Input of the longitudinal sound velocity of the inner lining of the pipe)

Temperature (only PCE-TDS 200+)

Measuring range	type B 600 ... 1800 °C
	type E -100 ... 900 °C
	type J -100 ... 1150 °C
	type K -100 ... 1370 °C
	type N -100 ... 1150 °C
	type R 0 ... 1700 °C
	type S 0 ... 1500 °C
	type T -100 ... +400 °C
Resolution	0,1 °C
Accuracy	type B $\pm (0,5$ % + 3 °C)
	type E $\pm (0,4$ % + 1 °C)
	type J $\pm (0,4$ % + 1 °C)
	type K $\pm (0,4$ % + 1 °C)
	type N $\pm (0,4$ % + 1 °C)
	type R $\pm (0,5$ % + 3 °C)
	type S $\pm (0,5$ % + 3 °C)
	type T $\pm (0,4$ % + 1 °C)



Subject to change without notice

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Further specifications

Measuring parameters PCE-TDS 200	flow velocity / volume flow / volume
Measuring parameters PCE-TDS 200+	flow velocity / volume flow / volume
Unit linear dimension	Temperature / Heat output / Heat quantity
Unit Flow velocity	mm / in
Unit Flow rate	m/s / ft/s
Unit Volume	m ³ / l / gal / igl / mgl / cf / bal / ib / ob
Unit Temperature	m ³ / l / gal / igl / mgl / cf / bal / ib / ob
Unit Heat quantity	°C / °F
Unit Heat output	K / kJ / MJ / Wh / kWh / MWh / Btu / kBtu / MBtu
Unit Cost display	W / kW / MW / J/h / kJ/h / MJ/h / Btu/h / kBtu/h / MBtu/h
Date / Time	€ / £ / \$ / TL / Zł / ¥
Display	second / minute / hour / day
Units	LCD of 2.8
Memory	metric / Imperial
Menu languages	10 million values (32 GB)
Operating and Storage conditions	German / Chinese / Danish / English / Turkish / French / Italian / English / Turkish / French / Italian / Italian / Japanese / Dutch / Polish / Portuguese / Russian / Polish / Portuguese / Russian / Spanish
Interface	-20 ... +65 °C
Protection class	10 ... 95 % H.r. non-condensing
Power supply	USB For online measurement, reading out of the internal memory and for recharging the battery
Charger	IP52
Operating time	LiPo battery / 3.7 V / 2500 mAh
Dimensions	USB / 5 V DC / 500 mA
Weight	approx. 10 h
	165 x 85 x 32 mm
	255 g

Sensor Order.-no.	Nominal diameter in DN *	Dimensions Sensor	Temperature Measuring range	Rail
PCE-TDS 200 L SENSOR	DN 50 ... 700	70 x 40 x 37 mm	-30 ... 160 °C	no
PCE-TDS 200 M SENSOR	DN 50 ... 700	70 x 40 x 37 mm	-30 ... 160 °C	no
PCE-TDS 200 MR SENSOR	DN 50 ... 700	280 x 60 x 40 mm	-30 ... 160 °C	yes
PCE-TDS 200 S SENSOR	DN 15 ... 100	45 x 30 x 30 mm	-30 ... 160 °C	no
PCE-TDS 200 SR SENSOR	DN 15 ... 100	198 x 45 x 25 mm	-30 ... 160 °C	yes

*The nominal diameter is the inside diameter of a pipe.
 Note : If you order the sensor later, we need the PCE-TDS 200 device to adapt the sensor to the device.

TECHNICAL SPECIFICATIONS

Model	Sensors are included in the scope of delivery	Delivery Scope
PCE-TDS 200	Standard version	1 x Ultrasonic flow meter PCE-TDS 200 1 x Flow sensors (depending on model) 2 x Temperature sensor TF-RA330 (only PCE-TDS 200+) 2 x Connection cable 5 m 2 x detachable cable ties 1 x power supply unit 1 x USB-C cable 1 x ultrasonic contact gel 1 x PCE measuring tape 1 x plastic case
PCE-TDS 200 L	PCE-TDS 200 L SENSOR for DN 300 ... 6000	
PCE-TDS 200 M	PCE-TDS 200 M SENSOR for DN 50 ... 700	
PCE-TDS 200 ML	PCE-TDS 200 M SENSOR for DN 50 ... 700	
PCE-TDS 200 MR	PCE-TDS 200 L SENSOR for DN 300 ... 6000	
PCE-TDS 200 S	PCE-TDS 200 MR SENSOR for DN 50 ... 700	
PCE-TDS 200 SL	PCE-TDS 200 S SENSOR for DN 15 ... 100	
PCE-TDS 200 SM	PCE-TDS 200 S SENSOR for DN 15 ... 100	
PCE-TDS 200 SML	PCE-TDS 200 L SENSOR for DN 300 ... 6000	
PCE-TDS 200 SR	PCE-TDS 200 S SENSOR for DN 15 ... 100	
	PCE-TDS 200 M SENSOR for DN 50 ... 700	
	PCE-TDS 200 L SENSOR for DN 300 ... 6000	
	PCE-TDS 200 SR SENSOR for DN 15 ... 100	
Model	Sensors included in the scope of delivery	
PCE-TDS 200+	Version with temperature sensors	
PCE-TDS 200+ L	PCE-TDS 200 L SENSOR for DN 300 ... 6000	
PCE-TDS 200+ M	PCE-TDS 200 M SENSOR for DN 50 ... 700	
PCE-TDS 200+ ML	PCE-TDS 200 M SENSOR for DN 50 ... 700	
PCE-TDS 200+ MR	PCE-TDS 200 L SENSOR for DN 300 ... 6000	
PCE-TDS 200+ S	PCE-TDS 200 MR SENSOR for DN 50 ... 700	
PCE-TDS 200+ SL	PCE-TDS 200 S SENSOR for DN 15 ... 100	
PCE-TDS 200+ SM	PCE-TDS 200 S SENSOR for DN 15 ... 100	
PCE-TDS 200+ SML	PCE-TDS 200 L SENSOR for DN 300 ... 6000	
PCE-TDS 200+ SR	PCE-TDS 200 S SENSOR for DN 15 ... 100	
	PCE-TDS 200 M SENSOR for DN 50 ... 700	
	PCE-TDS 200 L SENSOR for DN 300 ... 6000	
	PCE-TDS 200 SR SENSOR for DN 15 ... 100	
Accessories		
CAL-PCE-TDS-ISO	ISO Calibration Certificate	
CAL-PCE-TDS-DAkkS	DAkkS Calibration Certificate	
CAL-T2	Calibration certificate for 2-channel thermometer	
Additional sensors	see table above	
PCE-TDS 200 case	spare transport case	
PCE-TDS 200 SW	software	
TF-RA330	Temperature Contact Sensor Typ T, 1 m	
TF-RA330-3	Temperature Contact Sensor Typ T, 3 m	
TF-RA330-5	Temperature Contact Sensor Typ, 5 m	
TT-GEL	Ultrasonic Contact Gel, 100 ml	
K-Gel	High Temperature Coupling Gel, 100 ml	



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