

ULTRASONIC FLOW METER PCE-TDS 200 SERIES

Flow velocity / volume flow and volume / heat quantity

The flow meter has a measuring range of ± 32 m/s. With an accuracy of ± 1.5 % f.s. for a pipe diameter of $DN \geq 50$, ± 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 $DN \geq 50$ 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

FLOW MEASUREMENT

TECHNICAL SPECIFICATIONS

Further specifications

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

PCE-TDS 200

PCE-TDS 200 L
PCE-TDS 200 M
PCE-TDS 200 ML

PCE-TDS 200 MR
PCE-TDS 200 S
PCE-TDS 200 SL

PCE-TDS 200 SM

PCE-TDS 200 SML

PCE-TDS 200 SR

Model

PCE-TDS 200+

PCE-TDS 200+ L
PCE-TDS 200+ M
PCE-TDS 200+ ML

PCE-TDS 200+ MR
PCE-TDS 200+ S
PCE-TDS 200+ SL

PCE-TDS 200+ SM

PCE-TDS 200+ SML

PCE-TDS 200+ SR

Accessories

CAL-PCE-TDS-ISO
CAL-PCE-TDS-DAkkS
CAL-T2

Additional sensors
PCE-TDS 200 case
PCE-TDS 200 SW
TF-RA330
TF-RA330-3
TF-RA330-5
TT-GEL
K-Gel

Sensors are included in the scope of delivery

Standard version

PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 MR SENSOR for DN 50 ... 700
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 M SENSOR for DN 50 ... 700
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

Sensors included in the scope of delivery

Version with temperature sensors

PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 MR SENSOR for DN 50 ... 700
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 M SENSOR for DN 50 ... 700
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

ISO Calibration Certificate
DAkkS Calibration Certificate
Calibration certificate for 2-channel thermometer

see table above
spare transport case
software
Temperature Contact Sensor Typ T, 1 m
Temperature Contact Sensor Typ T, 3 m
Temperature Contact Sensor Typ, 5 m
Ultrasonic Contact Gel, 100 ml
High Temperature Coupling Gel, 100 ml

Delivery Scope

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
1 x instruction manual



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