MEASUREMENT

Discover our
Ultrasonic Flowmeters
PCE-TDS 200 Series

PCE INSTRUMENTS

TEST INSTRUMENTS FROM GERMANY

Plumbing, heating and air conditioning industry

The company PCE Instruments based in Meschede-Freienohl in the German Sauerland region was founded in 1999 by three engineers. With more than 120 employees and several branches around the world, the company focuses on the development, production and distribution of high-performance and innovative products from the fields of measuring instruments, control systems, weighing equipment and laboratory technology.

PCE Instruments' wide range of products and services offers high precision and flexibility in any application as well as outstanding quality and functionality. The different fields can be seen in the overview.

The comprehensive product and service programme of PCE Instruments offers you high precision and flexibility in all applications, as well as outstanding quality and functionality. Take a look the areas in the overview.

MEASURING INSTRUMENTS

The field of measuring instruments covers a multitude of innovative portable products as well as products for fixed installation that measure electrical, mechanical, biological and chemical parameters.

CONTROL SYSTEMS

The range of control systems covers the complete demand for sensors, displays, controllers and paperless recorders.

WEIGHING EQUIPMENT

The field of weighing equipment comprises a wide standard range of high-quality scales and balances that can be calibrated and/or verified for trade.

LABORATORY TECHNOLOGY

High-end analytical and laboratory devices have been developed for professional applications and in particular for use in laboratories.

PCE Instruments

Headquarters
PCE Deutschland GmbH
Im Langel 26
59872 Meschede
Germany

Phone
+49 (0) 2903 976 99 8903

Contact
info@pce-instruments.com

Subsidiary UK
PCE Instruments UK Ltd.
Suite 2.08, Trafford House
Chester Rd, Old Trafford, Manchester
United Kingdom, M32 0RS

Phone
+44 (0) 161 464902 0

Contact
info@pce-instruments.co.uk

DEVELOPMENT

In order to develop modified test equipment in line with customers' specifications, proficient engineers and technicians cooperate closely with the customer.

PRODUCTION

PCE Instruments manufactures industrial test instruments that help improving process analysis and optimisation.

CALIBRATION

Our DIN EN ISO 9001:2015 certified calibration laboratory verifies the measuring accuracy of our products. They calibrate pressure, hardness, force, material thickness, sound volume, conductivity, redox, vibration acceleration and more.

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 ≥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 ºC
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 longitudin Sound velocity of the inner lining of the pipe)

Temperature (only PCE-TDS 200+)		
Measuring range	type B	600 … 1800 ºC
	type E	-100 … 900 ºC
	type J	-100 … 1150 ºC
	type K	-100 … 1370 ºC
	type N	-100 … 1150 ºC
	type R	0 … 1700 ºC
	type S	0 … 1500 ºC
	type T	-100 … +400 ºC
Resolution	0,1 ºC	
Accuracy	type B	±(0,5 % + 3 ºC)
	type E	±(0,4 % + 1 ºC)
	type J	±(0,4 % + 1 ºC)
	type K	±(0,4 % + 1 ºC)
	type N	±(0,4 % + 1 ºC)
	type R	±(0,5 % + 3 ºC)
	type S	±(0,5 % + 3 ºC)
	type T	±(0,4 % + 1 ºC)

Subject to change without notice

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	m³ / l / gal / igl / mgl / cf / bal / ib / ob
Unit | Volume	m³ / l / gal / igl / mgl / cf / bal / ib / ob
Unit | Temperature	ºC / ºF
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 ºC 10 ... 95 % H.r. non-condensing
Interface	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 300 … 6000	70 x 40 x 37 mm	-30 … 160 ºC	no
PCE-TDS 200 M SENSOR	DN 50 … 700	70 x 40 x 37 mm	-30 … 160 ºC	no
PCE-TDS 200 MR SENSOR	DN 50 … 700	280 x 60 x 40 mm	-30 … 160 ºC	yes
PCE-TDS 200 S SENSOR	DN 15 … 100	45 x 30 x 30 mm	-30 … 160 ºC	no
PCE-TDS 200 SR SENSOR	DN 15 … 100	198 x 45 x 25 mm	-30 … 160 ºC	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	Sensors are included in the scope of delivery Standard version	Delivery Scope
		1 x Ultrasonic flow meter PCE-TDS 200
		1 x Flow sensors (depending on model)
PCE-TDS 200 L	PCE-TDS 200 L SENSOR for DN 300 … 6000	2 x Temperature sensor TF-RA330 (only PCE-TDS 200+)
PCE-TDS 200 M	PCE-TDS 200 M SENSOR for DN 50 … 700	2 x Connection cable 5 m
PCE-TDS 200 ML	PCE-TDS 200 M SENSOR for DN 50 … 700	2 x detachable cable ties
	PCE-TDS 200 L SENSOR for DN 300 … 6000	1 x power supply unit
PCE-TDS 200 MR	PCE-TDS 200 MR SENSOR for DN 50 … 700	1 x USB-C cable
PCE-TDS 200 S	PCE-TDS 200 S SENSOR for DN 15 … 100	1 x ultrasonic contact gel
PCE-TDS 200 SL	PCE-TDS 200 S SENSOR for DN 15 … 100	1 x PCE measuring tape
	PCE-TDS 200 L SENSOR for DN 300 … 6000	1 x plastic case
PCE-TDS 200 SM	PCE-TDS 200 S SENSOR for DN 15 … 100	1 x instruction manual
	PCE-TDS 200 M SENSOR for DN 50 … 700	
PCE-TDS 200 SML	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	PCE-TDS 200 SR SENSOR for DN 15 … 100	

Model PCE-TDS 200+	Sensors included in the scope of delivery 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 L SENSOR for DN 300 … 6000
PCE-TDS 200+ MR	PCE-TDS 200 MR SENSOR for DN 50 … 700
PCE-TDS 200+ S	PCE-TDS 200 S SENSOR for DN 15 … 100
PCE-TDS 200+ SL	PCE-TDS 200 S SENSOR for DN 15 … 100
	PCE-TDS 200 L SENSOR for DN 300 … 6000
PCE-TDS 200+ SM	PCE-TDS 200 S SENSOR for DN 15 … 100
	PCE-TDS 200 M SENSOR for DN 50 … 700
PCE-TDS 200+ SML	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	PCE-TDS 200 SR SENSOR for DN 15 … 100

Accessories

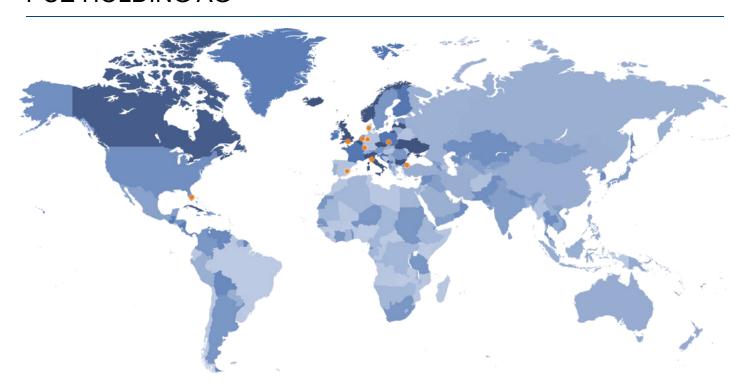|	
CAL-PCE-TDS-ISO	ISO Calibration Certificate
CAL-PCE-TDS-DAkkS	DAkkS Calibration Certificate
CAL-T2	Calibration certificate for 2-channel thermometer
Additional sensors	see table above
PCE-TDS 200 case	spare transport case
PCE-TDS 200 SW	software
TF-RA330	Temperature Contact Sensor Typ T, 1 m
TF-RA330-3	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

Subject to change without notice

PCE HOLDING AG

CONTACT

PCE Instruments UK Ltd.
Suite 2.08, Trafford House
Chester Rd, Old Trafford, Manchester
United Kingdom, M32 0RS

+44 (0) 161 464902 0

info@pce-instruments.co.uk

www.pce-instruments.com

Germany	PCE Deutschland GmbH	www.pce-instruments.com/deutsch
Germany	DriveTest GmbH	www.drivetest.de/en
Spain	PCE Iberica S.L.	www.pce-instruments.com/espanol
USA	PCE Americas Inc.	www.pce-instruments.com/us
UK	PCE Instruments UK Ltd.	www.pce-instruments.com/english
France	PCE Instruments France EURL	www.pce-instruments.com/french
Italy	PCE Italia s.r.l.	www.pce-instruments.com/italiano
Turkey	PCE Teknik Cihazlar Ltd. Şti.	www.pce-instruments.com/turkish
Netherlands	PCE Brookhuis B.V.	www.pce-instruments.com/dutch
Poland	PCE Instruments Polska Sp. z. o. o.	www.pce-instruments.com/polish
Denmark	PCE Instruments Denmark ApS	www.pce-instruments.com/dansk
Bulgaria	PCE Instruments Bulgaria EOOD	
Romania	PCE Instruments RO SRL	