TEST INSTRUMENTS FOR INDUSTRY, TRADE AND RESEARCH

PCE Instruments

Discover our new test instruments and their functions.

TESTING

TEST INSTRUMENTS FROM GERMANY

For industry, trade and research

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.

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.

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 pressure, conductivity, redox, vibration acceleration and more.

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HARDNESS TESTING

HARDNESS TESTER PCE-2000N

Meter for metallic materials

The PCE-2000N hardness tester from PCE-Instruments uses the Leeb rebound method. This is a dynamic hardness test method in which a standardized test specimen, usually a hard metal ball, hits a test surface at a defined impact energy. The impact of the hard metal ball on the test surface results in a plastic deformation of the surface at the point of impact. This deformation results in an energy loss which is proportional to the hardness of the workpiece and which can be determined by means of the ratio of rebound to impact velocity of the specimen.

ISO calibrated

- measures all common hardness parameters
- various other impactors as accessories
- measurement in different angles possible
- readings are saved to USB pen drive
- external impact device with 1.5 m cable
- wide measurement range
- 6 different hardness scales

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement ranges	170 ... 960 HLD 17.9 ... 69.5 HRC 19 ... 683 HB 80 ... 1042 HV 30.6 ... 102.6 HS 59.1 ... 88 HRA 13.5 ... 101.7 HRB
Impact device included	D
(optional impact devices)	(DC, D+15, C, G, DL)
Cable length impact device	approx. 1.5 m
Accuracy	±0.5 % (@800 HLD)
Repeatability	0.8 % (@800 HLD)
Hardness scales	HL (Leeb) HV (Vickers) HB (Brinell) HS (Shore) HRA (Rockwell A) HRB (Rockwell B) HRC (Rockwell C)
Measurable materials	Steel Cast steel Alloy steel Stainless steel Grey cast iron Spheroidal graphite iron Cast aluminium alloy Cu-zinc (brass) Copper-tin alloy Copper

Display resolution	128 x 64 pixel OLED
Data memory	600 averages in 6 data groups
Data output	USB pen drive
Power supply	3 x AAA batteries
Auto Power Off	after 12 min of inactivity
Operating conditions	+10 ... +50 °C, 20 ... 90 % RH
Storage conditions	-30 ... +60 °C
Dimensions	160 x 80 x 40 mm (H x W x D)
Weight	Meter with batteries: approx. 300 g / <1 lb Impact device: approx. 75 g / <1 lb
Material	
Steel / cold-rolled steel	HRA 59.1 ... 85.8 HRC 20 ... 68.5 HRB 38.4 ... 99.6 HB 127 ... 651 HSD 32.2 ... 99.5 HV 83 ... 976
Alloyed tool steel	HRC 20.4 ... 67.1 HV 80 ... 898
Stainless steel	HRB 46.5 ... 101.7 HB 85 ... 655 HV 85 ... 802
Grey cast iron	HB 93 ... 334
Spheroidal graphite iron	HB 131 ... 387
Cast aluminium	HRB 23.8 ... 84.6 HB 19 ... 164
Brass	HRB 13.5 ... 95.3 HB 40 ... 173
Bronze	HB 60 ... 290
Copper	HB 45 ... 315

Optional accessories:

Impact device D	Order code	PCE-2000N Probe D
Impact device DC	Order code	PCE-2000N Probe DC
Impact device D+15	Order code	PCE-2000N Probe D+15
Impact device C	Order code	PCE-2000N Probe C
Impact device G	Order code	PCE-2000N Probe G
Impact device DL	Order code	PCE-2000N Probe DL

Subject to change without notice

HARDNESS TESTING

HARDNESS TESTER PCE-900

Leeb hardness tester for metals / measurement of tensile strength

The Leeb hardness tester PCE-900 measures the hardness of nine different metals using the Leeb rebound method. This means that an impact body bounces on a metallic surface and the intensity of the rebound is used as an indicator of the material hardness. The hardness test instrument PCE-900 measures the metal hardness in 6 different hardness scales, including: Rockwell, Vickers, Leeb, Brinell and Shore. A distinction is made between Rockwell B and C when measuring in the Rockwell scale. Via the data interface, the measured values can be transmitted live to the PC. The delivery scope is completed by an ISO calibration certificate.

ISO calibrated

- hardness test by the rebound method
- nine saved material characteristic curves
- easy to use
- ISO calibration certificate included
- data interface
- six different hardness scales
- incl. D-type impact device and test block

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement range	200 ... 900 HL
Measuring accuracy	±0.8 % at HLD=900
Materials	9 different materials
Hardness scales	Leeb: HL Rockwell C: HRC Rockwell B: HRB Brinell: HB Vickers: HV Shore: HSD
Display	12.5 mm LCD with backlight
Included impact device	D-type
Memory	50 data records
Interface	RS-232
Power supply	4 x 1.5 V AAA batteries
Operating temperature:	-10 ... 50 °C
Environmental conditions	Storage temperature: -30 ... 60 °C relative humidity: <90 %
Dimensions	142 x 77 x 40 mm
Weight	Meter: ca. 130 g Impact device: 75 g
Cable length	approx. 1.2 m

Optional accessories:

Surface adaptor for concave spherical surfaces	Order code	HK16.5-30	16.5 ... 30 mm
Surface adaptor for concave spherical surfaces	Order code	HK12.5-17	12.5 ... 17 mm
Surface adaptor for concave spherical surfaces	Order code	HK11-13	11 ... 13 mm
Surface adaptor convex	Order code	Z25-50	25 ... 50 mm (outside)
Surface adaptor convex	Order code	Z10-15	10 ... 15 mm (outside)
Surface adaptor concave	Order code	HZ16.5-30	16.5 ... 30 mm (inside)
Surface adaptor concave	Order code	HZ12.5-17	12.5 ... 17 mm (inside)
Surface adaptor concave	Order code	HZ11-13	11 ... 13 mm (inside)

Subject to change without notice

CONDUCTIVITY MEASUREMENT

CONDUCTIVITY TESTER FOR NFE METALS PCE-COM 20

With wide measurement range of up to 112 % IACS or 65 MS/m

The conductivity tester for measuring the electrical conductivity of non-ferrous metals such as aluminium or copper belongs to the group of NDT devices. The conductivity tester is used in non-destructive material testing. By means of the eddy current measuring principle which has proven for this application, the electrical conductivity of metallic materials can be determined quickly and precisely. With its operating frequency of 60 kHz, the conductivity tester has a wide measurement range of 0.51 … 112 % IACS and reaches an accuracy of +/-0.5 % at 20 °C, with a resolution of up to 0.01 % IACS.

ISO calibrated

- user-friendly hand-held meter
- memory for up to 500 groups of measurements
- durable internal rechargeable battery
- lift-off and temperature compensation
- adjustable backlight
- for mobile use
- automatic calibration
- operating frequency of 60 kHz
- incl. 3 calibration plates (titanium 1.03% IACS, bronze 8.11% IACS and copper 100% IACS)

APPLICATION

TECHNICAL SPECIFICATIONS

Operating frequency	60 kHz, sine wave
Conductivity measurement range	0.51 % IACS ... 112 % IACS 0.3 MS/m ... 65 MS/m resistance 0.015388 ... 3.33333 Ω•mm²/m
Conductivity resolution	0.01 % IACS (at <51 % IACS) 0.1 % IACS (at 51 % IACS ... 112 % IACS)
Conductivity accuracy	±0.5 % at +20 °C / 68 °F ±1 % at 0 ... +40 °C / 32 ... 104 °F
Lift-off effect	probe compensation 0.5 mm
Temperature measurement range	0 ... +50 °C / 32 ... 122 °F
Temperature accuracy	±0.5 °C
Automatic compensation	Automatic adjustment of conductivity result to the value at 20°C / 68°F
Operating conditions	0 ... 50 °C / 32 ... 122 °F, 0 ... 95 % RH
Display	LCD with backlight
Menu languages	English, German, Chinese (simplified)
Power supply	internal rechargeable battery
Probe	Ø 14 mm / ≈0.55 in
Memory	up to 500 groups of measurement values
Data interface	USB
Dimensions	≈ 220 x 95 x 35 mm / 8.66 x 3.74 x 1.38 in
Weight	≈ 415 g / 1 lb (with probe)

Optional accessories:

Calibration standard for conductivity of titanium	1.02% IACS	Order code PCE-COM 20-CP1
Calibration standard for conductivity of brass	21.02% IACS	Order code PCE-COM 20-CP9
Calibration standard for conductivity of magnesium	11.88% IACS	Order code PCE-COM 20-CP11
Calibration standard for conductivity of magnesium	31.88% IACS	Order code PCE-COM 20-CP3
Calibration standard for conductivity of copper	87.24% IACS	Order code PCE-COM 20-CP10
Calibration standard for conductivity of copper	60.69% IACS	Order code PCE-COM 20-CP8
Calibration standard for conductivity of copper	101.03% IACS	Order code PCE-COM 20-CP13
Calibration standard for conductivity of bronze	8.47% IACS	Order code PCE-COM 20-CP12
Calibration standard for conductivity of bronze	10.55% IACS	Order code PCE-COM 20-CP5
Calibration standard for conductivity of bronze	15.24 % IACS	Order code PCE-COM 20-CP2
Calibration standard for conductivity of aluminium	15.29% IACS	Order code PCE-COM 20-CP7
Calibration standard for conductivity of aluminium	32.07% IACS	Order code PCE-COM 20-CP6
Calibration standard for conductivity of aluminium	57.41% IACS	Order code PCE-COM 20-CP4
Calibration standard for conductivity of aluminium	41.21% IACS	Order code PCE-COM 20-CP14

Subject to change without notice

COATING THICKNESS MEASUREMENT

COATING THICKNESS GAUGE PCE-CT 80

Paint layer thickness gauge for Fe and NFe

The paint layer thickness gauge PCE-CT 80 is a measuring device for the non-destructive measurement of coatings (lacquers, paints, plastics ...) on steel / iron and non-ferrous metals. Thanks to the externally connected sensor on the PCE-CT 80 paint coating thickness gauge, even difficult-to-reach measuring locations can be easily reached.

The menu navigation of the paint thickness gauge allows easy adjustment and setting to new parameters and makes this handy paint coating thickness gauge an indispensable tool for control measurements in production, workshop and quality assurance.

ISO calibrated

- for many materials such as iron, steel, aluminium, copper, brass and stainless steel
- measurements cannot be influenced by vibrations
- practical V-groove on the measuring heads
- internal data memory
- warning for measurements exceeding the measurement range
- wear-resistant, spring-mounted measuring head for precise measurement results
- incl. ISO laboratory calibration with certificate
- Probe PCE-CT 80-FN1.5 included

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement range	Fe: 0 to 5000 µm / 0 ... 196.9 mils (depending on probe) NFe: 0 to 3000 µm / 0 ... 118.1 mils (depending on probe)
Accuracy	±(2 % of reading + 1 µm / 0.039 mils)
Resolution	0.1 µm (<100 µm) 1 µm (>100 µm)
Measurable materials	Non-magnetic layers on steel, iron, ... Non-electrically conductive layers on aluminium, copper, ...
Min. radius of curvature convex	5 mm
Min. radius of curvature concave	25 mm
Min. measuring surface	Ø 17 mm
Min. layer thickness	0.2 mm (on magnetic materials) 0.05 mm (on non-magnetic materials)
Probe mode	Autom. Mode with material detection (Fe + NFe) Magnetic mode (Fe) Eddy current mode (NFe)
Measurement mode	Single measurement Continuous measurement
Calibration	Multipoint calibration (1 ... 4 points for each group) Zero point calibration
Units	µm, mm, mils
Data transfer	USB 2.0
Memory	One volatile measuring group (DIR mode) Four measuring groups with autom. storage and max. 2000 readings (GEN mode)
Statistical functions	Number of measured values, mean, minimum, maximum, standard deviation
Alarm	Display when the adjustable upper and lower alarm limits are exceeded
Operating time	Auto Power Off mode (3 min.)
Power supply	3 x 1.5 V AAA batteries
Display	128 x 128 px LCD
Displayed information	Battery status / flaw detection
Operating conditions	0 ... 50 °C / 32 ... 122 °F 20 ... 90% RH not condensing
Storage conditions	-10 ... 60 °C / 14 ... 140 °F 20 ... 90 % RH not condensing
Dimensions	143 x 71 x 37 mm / 5.6 x 2.8 x 1.5 in (L x W x H)
Weight	with sensor and batteries: approx. 271 g / <1 lb

Optional accessories:

Probe	Order code	PCE-CT 80-FN0.5 Measurement range: Fe: 0 … 500, NFe: 0 … 500
Probe	Order code	PCE-CT 80-FN2 Measurement range: Fe: 0 … 2000, NFe: 0 … 2000
Probe	Order code	PCE-CT 80-FN2.5 Measurement range: Fe: 0 … 2500, NFe: 0 … 2500
Probe	Order code	PCE-CT 80-FN3 Measurement range: Fe: 0 … 3000, NFe: 0 … 3000
Probe	Order code	PCE-CT 80-F5N.3 Measurement range: Fe: 0 … 5000, NFe: 0 … 3000

Subject to change without notice

COATING THICKNESS GAUGE PCE-CT 90

Coating thicknesses on Fe and NFe metals

With its standard sensor, the thickness gauge can measure coating thicknesses of up to 60 mm on various metal surfaces. Massive steel profiles as well as thin metal sheets are suitable as substrates. The thickness gauge can even be used on perforated plates, expanded metal plates, textured plates and wire mesh is the mesh size matches the sensor. On these substrates, the thickness gauge measures the thickness of coatings or plate-shaped linings. These coatings can consist of several layers. The PCE-CT 90 measures the distance from the coating surface to the surface of the metal substrate.

ISO calibrated

- measures construction and insulation materials on metal
- measurement range with standard sensor up to 60 mm
- automatic sensor detection
- zero point and one point calibration
- power supply 2 x 1.5 V AAA batteries
- for magnetic and non-magnetic metals

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement range	depending on sensor (see list of sensors)
Accuracy	depending on sensor (see list of sensors)
Measurable materials	magnetic materials (iron, steel, …) non-magnetic materials (paint, plastics, ceramics, …)
Min. radius of curvature	0.3 … 50 mm (depending on the sensor used)
Calibration	zero point calibration, one point calibration
Units	µm, mm, °C
Power supply	2 x 1.5 V AAA batteries (DC)
Display	graphical display
Operating conditions	-10 … +40 °C 20 ... 98 % RH, non-condensing at 35 °C
Storage conditions	+5 … +40 °C 80 % RH, non-condensing at 25 °C
Dimensions	136 x 75 x 32 mm
Weight	168 g

List of sensors

Model	Measurement range	Accuracy	Measurement description
Fe-0.3*	0 ... 300 µm	±(3 % + 1 µm)	Paint, lacquer, galvanic coating
Fe-0.5*	0 … 500 µm	±(3 % + 1 µm)	Paint, lacquer, galvanic coating
Fe-2*	0 … 2000 µm	±(3 % + 2 µm)	Paint, lacquer
Fe-5*	0 … 5000 µm	±(3 % + 2 µm)	Lacquer and thick coatings
NFe-2**	0 … 2000 µm	±(3 % + 2 µm)	Anodic oxide layers, lacquer layers
M12***	0 … 12 mm	±(3 % + 0,01 mm)	Thick coatings
M30***	0 … 30 mm	±(3 % + 0,02 mm)	Thick coatings
M60***	0 … 60 mm	±(3 % + 0,03 mm)	Thick coatings
DT	-50 …+125 °C	±1 °C	Surface temperature
DTVR	Temperature: -50 …125 °C	±1 °C	Air temperature
	Humidity: 0 … 100 %	±5 %	Relative humidity
	Dew point: -15 …+40 °C	±2 °C	Dew point
DSH	1 … 300 µm	±(3 % + 2 µm)	Roughness

* Fe: only for ferromagnetic substrates
** NFe: only for non-ferromagnetic substrates
*** Fe and NFe: for ferromagnetic and non-ferromagnetic substrates

Optional accessories:

Coating thickness probe (Fe und NFe)	Order code	PCE-CT 90-M60	0 ... 60 mm
Coating thickness probe (Fe und NFe)	Order code	PCE-CT 90-M30	0 ... 30 mm
Coating thickness probe (Fe und NFe)	Order code	PCE-CT 90-M12	0 ... 12 mm
Coating thickness probe (Fe)	Order code	PCE-CT 90-Fe-2	0 … 2000 µm

Subject to change without notice

WALL THICKNESS GAUGE PCE-TG 300 WITH BLUETOOTH

With a wide measurement range of up to 600 mm

The PCE-TG 300 is a wall thickness gauge with special probes for various applications. In general, the wall thicknesses of all homogeneous materials can be measured with the PCE-TG 300. For damping or scattering materials such as plastic or cast iron, a special probe is available. An angled 90 ° probe also enables measurements at hard-to-reach measuring positions. The speed of sound can be set freely and thus adapted to a wide variety of materials. The measured values are displayed directly on the easy-to-read TFT colour display.

ISO calibrated

- wide measurement range
- various probes available
- battery operation
- fault and cavity detection
- internal measurement data memory
- printing via Bluetooth

APPLICATION

TECHNICAL SPECIFICATIONS

Measuring range	PE: pulse-echo mode 0.65 ... 600 mm (steel) EE: echo-echo mode 2.50 ... 60 mm
Accuracy	± 0.04 mm H [mm] (<10 mm); ± 0.4% H [mm] (> 10 mm) H refers to the material thickness of the workpiece
Resolution	0.1 mm / 0.01 mm / 0.001 mm (adjustable)
Measurable materials	Metals Plastics Ceramics Epoxy resin Glass and all homogeneous materials
Working modes	Pulse echo mode (fault and cavity detection) Echo-Echo mode (hiding layer thicknesses, e. g. lacquers)
Calibration	Sound velocity calibration Zero point calibration Two-point calibration
View mode	Normal mode, scan mode, difference mode
Units	mm / inch
Data transfer	Printing via Bluetooth / USB 2.0
Memory	Non-volatile memory with 100 data groups with 100 data sets each
Operating time	Continuous operation 100 h Automatic stand-by mode (adjustable) Automatic power off mode (adjustable)
Power supply	4 x AA battery 1.5 V
Display	320 x 240 pixel TFT LCD colour display with brightness adjustment
Operating conditions	0 ... 50 °C / 32 ... 122 °F, ≤80 % RH not condensing
Storage conditions	-20 ... 70 °C / -4 ... 158 °F, ≤80% RH non-condensing
Dimensions	185 x 97 x 40 mm / 7.3 x 3.8 x 1.6 in
Weight	375 g / <1 lb

Specifications of the included probe P5EE

Frequency	5 MHz
Diameter	10 mm
Measurement range	P-E: 2 ... 600 mm, E-E: 2,5 ... 100 mm
Minimum pipe diameter	20 x 3 mm
Description	normal measurement and E-E test

Specifications of the optional probes

NO2 (not suitable for curved materials)

Frequency / Ø	2.5 MHz / 14 mm
Measurement range	3 ... 40 mm (steel) 3 ... 300 mm (steel)
Description	For damping / scattering materials (plastics, cast iron)

NO5

Frequency / Ø	5 MHz / 10 mm
Measurement range	1 ... 600 mm (steel)
Minimum pipe diameter	20 x 3 mm
Description	normal measurement

NO5 / 90 °

Frequency / Ø	5 MHz / 10 mm
Measurement range	1 ... 600 mm (steel)
Minimum pipe diameter	20 x 3 mm
Description	normal measurement

NO7

Frequency / Ø	7 MHz / 6 mm
Measurement range	0.65 ... 200 mm (steel)
Minimum pipe diameter	15 x 2 mm
Description	for thin-walled or strongly curved pipes

HT5

Frequency / Ø	5 MHz / 12 mm
Measurement range	1 ... 600 mm (steel)
Minimum pipe diameter	30 mm
Description	for high temperatures (max. 300 °C)

Subject to change without notice

THICKNESS MEASURMENT

COATING THICKNESS GAUGE PCE-CT 100

Non-destructive, precise measurements on ferrous (Fe) & non-ferrous (nFe) metal substrates

This coating thickness gauge PCE-CT 100 uses the magnetic induction (ISO 2178) and eddy current (ISO 2360) measurement methods. These methods are used for non-destructive material testing. The meter measures the thickness of magnetically neutral layers on magnetic or non-magnetic substrate materials.

With the external probe, quick and easy coating thickness measurements are possibe even in hard-to-reach areas. Measured date can be transferred to a PC easily via a USB cable.

ISO calibrated

- high resolution
- compact and easy to use
- for ferrous and non-ferrous metals
- data transfer via USB
- non-destructive testing
- quick and precise

APPLICATION

TECHNICAL SPECIFICATIONS

Resolution	0.1 or <0.2 % of reading (for probes with a measurement range of up to 1.5 mm / 1500 µm / 1.5 mm / 59 mil) 1 µm or <0.2 % of reading (or probes with a measurement range of more than 1.5 mm / 1500 µm / 1.5 mm / 59 mil)
Display	high-resolution colour display with backlight
Menu languages	English, German, French, Italian, Spanish, Turkish, Czech, Chinese
Memory	direct mode: Max. 1,000 measured values in Fe (Type F) and nFe (Type N) mode file memory: max. 100,000 measured values
Calibration	factory calibration zero (one-point calibration) one-foil calibration (two-point calibration) two-foil calibration cal-through-coat calibration
Zero offset	addition of a constant value to the measured value
Statistical parameters	N, $\bar{x}$, σ, Max, Min, Cp, Cpk, Kvar
On-screen statistics	$\bar{x}$, σ, Max, Min
Alarm limits	adjustable with visual and audible signal
Interfaces	USB 2.0, Bluetooth 4.0
Operating temperature	0 ... +50 °C
Power supply	3 x Mignon (AA) 1.5 V
Dimensions	approx. 163 x 82 x 40 mm / 6.42 x 3.23 x 1.58 in (H x W x D)
Weight	approx. 290 g (incl. batteries)
Protection class	IP 52 (protection against dust and dripping water)

The probes are not included in the standard package!
These must be ordered separately, depending on your application!

Optional accessories:

Angled probe	Order code PCE-CT 100 FN1.5R	Measurement range: 0 ... 1500 µm
Angled probe	Order code PCE-CT 100 F3.5	Measurement range: 0 ... 3.5 mm
Angled combined probe	Order code PCE-CT 100 FN1.5/90°	Measurement range: 0 ... 1500 µm
Angled probe	Order code PCE-CT 100 F10	Measurement range: 0 ... 10 mm
Angled probe	Order code PCE-CT 100 F1.5R	Measurement range: 0 ... 1500 µm
Angled combined probe	Order code PCE-CT 100 FN3.5	Measurement range: Fe: 0 ... 3.5 mm, NFe: 0 ... 3.0 mm
Combined probe	Order code PCE-CT 100 FN1.5	Measurement range: 0 ... 1500 µm
Probe	Order code PCE-CT 100 N1.5	Measurement range: 0 ... 1500 µm
Probe	Order code PCE-CT 100 F1.5	Measurement range: 0 ... 1500 µm
High-precision combined probe	Order code PCE-CT 100 FN0.2	Measurement range: 0 ... 200 µm

Subject to change without notice

THICKNESS MEASURMENT

MATERIAL THICKNESS METER PCE-TG 50

Ultrasonic material thickness meter with a measurement range of 1.0 ... 200 mm

The thickness meter PCE-TG 50 is a compact meter used to measure the thickness of metal, glass, plastic and homogeneous plastics. This material thickness gauge uses an external ultrasonic probe which sends ultrasonic waves into the material to be tested. Since different materials conduct ultrasound at different velocities, various ultrasound velocities can be selected in the material thickness meter. With the thickness gauge, you can determine the thickness of metal, glass, plastics and other homogeneous materials within seconds. With the integrated calibration block, this meter can be calibrated on site with little effort.

ISO calibrated

- adjustable ultrasound velocity (for different materials)
- software and interface cable (optional)
- measures wall thicknesses between 1.2 and 200.00 mm
- integrated steel block for calibration
- includes carrying case

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement range	1.2 ... 200.00 mm (steel)
Accuracy	±0.5 % of rdg. ±0.1 mm
Resolution	0.1 mm (0.001 inch)
Ultrasound velocity	800 ... 9950 m/s
Units	mm / inch (adjustable)
Power supply	3 x 1.5 V AAA batteries
Calibration block	5.0 mm (integrated)
Data interface	RS-232 interface
Included sensor	frequency 5 MHz measurement area: Ø 8 mm; contact area: Ø 10.2 mm head: Ø 1.4 mm
Display	4-digit LCD
Operating conditions	temperature: -10 ... +50 °C humidity: <80 % RH
Material temperature	0 ... +50 °C (permanent) +50 ... +85 °C (for 5 minutes; then 30 minutes cooldown below +50 °C)
Dimensions	handset: 142 x 77 x 40 mm
Weight	265 g (with batteries and sensor)

Optional accessories:

Standard probe	Order code ST-TG 50	Ø 8 mm
Miniature probe	Order code MP-TG 50	Ø 6 mm
High-temperature probe	Order code HTP-TG 50	-10 ... +300 °C

Subject to change without notice

FORCE GAUGE PCE-DFG N 500

Digital force gauge for tensile and compressive force measurement up to 500 N

The PCE-DFG N 500 is a digital force gauge for tensile and compressive force measurement up to 500 N. It has a resolution of 0.1 N. The measured values are shown on a large display with backlight which is rotatable by 180 °. Therefore, reading the measured values correctly is possible in any position and at any time. The outstanding accuracy of ±0.1 % f. s. is confirmed by the factory calibration certificate that comes with the meter. In addition to the internal memory with sufficient capacity for 100 readings, a USB interface is available for data transfer.

ISO calibrated

- tensile and compressive force measurement
- 1600 Hz sampling rate
- error limit 0.1% of the measurement range
- PEAK function (MIN / MAX)
- limit value function
- various units of measurement
- automatic or manual storage
- graphical evaluation
- display with automatic orientation
- time / date
- control and evaluation software
- auto power off adjustable
- battery level indicator
- mains operation possible
- memory capacity for 100 measurements
- incl. ISO calibration certificate

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement range	0 ... 500 N
Accuracy	± 0.1 % of the measurement range
Resolution	0,1 N
Units	N, kg, lb, KPa
Display	2.8 " TFT graphical display
Alarm modes	inside, outside, crack, shutdown
Sampling rate	6 ... 1600 Hz
Memory	100 measurements, 8000 values each
Power supply	rechargeable NiMh battery 6 V / 1600 mAh
Battery life	approx. 10 h
Charging adaptor	12 V / 1 A
Outputs	Interface: USB Switching output: 12 V / 50 mA
Protection class	IP 54
Operating and storage conditions	-10 ... 50 °C / 14 ... 122 °F 5 ... 95 % RH non-condensing
Force absorption element	M6 x 7 mm
Dimensions	200 x 97 x 42 mm / 7.9 x 3.8 x 1.7 in
Weight	540 g / 1.2 lbs

Optional accessories:

Clamp for peel-off tests	Order code	PCE-SJJ035
Holder for button and rivet testing	Order code	PCE-SJJ032
Clamping device for bristle testing	Order code	PCE-SJJ029
Clamping device for bristle testing	Order code	PCE-SJJ020
Universal clamping device	Order code	PCE-SJJ017
Clamping device for tensile tests	Order code	PCE-SJJ012
Fork holder for tensile & compr. tests	Order code	PCE-SJJ09
Clamping tool for tensile tests	Order code	PCE-SJJ08
Clamping device for tensile tests	Order code	PCE-SJJ07
Adaptor clamp for tensile tests	Order code	PCE-SJJ010
Adaptor clamp for tensile tests	Order code	PCE-SJJ06
Round adaptor stamp for compr. tests	Order code	PCE-SJJ04
Adaptor for compr. tests	Order code	PCE-SJJ01
Motorised force test stand	Order code	PCE-MTS50
Force test stand	Order code	PCE-FTS50
Clamping device for test stand	Order code	PCE-SJJ03
Adaptor ring for tensile tests	Order code	PCE-SJJ02
Clamping device for test stand	Order code	PCE-SJJ024
Clamping device for test stand	Order code	PCE-SJJ015
Clamping jaw for test stand	Order code	PCE-SJJ13
Clamping jaw for test stand PCE-FTS50 and PCE-FM 50/200	Order code	PCE-SJJ05
Clamping jaw for test stand PCE-FTS50	Order code	PCE-SJJ011

Subject to change without notice

FORCE MEASUREMENT

FORCE GAUGE PCE-DFG N 10K

With external measuring cell and USB interface for connection to a PC

The force gauge measures both tensile and compressive forces with a very high resolution. Tensile and compressive forces are often measured in test laboratories, for example to determine the yield strength, the pull-off force and the force required to actuate a push-button or switch. The force gauge is supplied with an external measuring cell. The PCE-DFG N 10K force gauge can measure up to 10,000 N / 2,248 lbs. Models for 1,000 N / 225 lbs, 2,500 N / 562 lbs and 5,000 N / 1,124 lbs are also available. Various eyelets or hooks with M10 or M12 threads can be screwed into the measuring cells but other devices with the same thread can also be attached to the measuring cell.

ISO calibrated

- USB interface
- memory capacity for 100 measurements
- incl. ISO calibration certificate
- graphical display
- fast response time
- PC software

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement range	0 ... 10,000 N / 0 ... 2,248 lbs
Resolution	5 N
Accuracy	± 0.1 % of the measurement range
Units	N, kg, lb, KPa
Display	2.8 " TFT graphical display
Alarm modes	inside, outside, crack, shutdown
Sampling rate	6 ... 1600 Hz
Memory	100 measurements, 8000 values each
Power supply	rechargeable NiMH battery, 6 V / 1600 mAh
Battery life	approx. 10 h
Mains / charging adaptor	12 V / 1 A
Outputs	Interface: USB Switching output: 12 V / 50 mA
Protection class	IP 54
Operating and storage conditions	-10 ... 50 °C / 14 ... 122 °F 5 ... 95 % RH non-condensing
Mounting thread measuring cell	
up to 1000 N / 225 lbs	M10
2500 ... 10000 N / 562 ... 2,248 lbs	M12
Dimensions	200 x 97 x 42 mm / 7.9 x 3.8 x 1.7
Weight	540 g / 1.2 lbs

Optional accessories:

Universal clamping device	Order code	PCE-SJJ017
Clamping device for tensile tests	Order code	PCE-SJJ012
Fork holder for tensile & compr. tests	Order code	PCE-SJJ09
Adaptor clamp for tensile tests	Order code	PCE-SJJ06
Round adaptor stamp for compr. tests	Order code	PCE-SJJ04
Adaptor for compr. tests	Order code	PCE-SJJ01
Clamping device for test stand	Order code	PCE-SJJ015

Further models of the PCE-DFG N series:

PCE-DFG N5	internal measuring	cell meas. range	0 ... 5 N
PCE-DFG N10	internal measuring	cell meas. range	0 ... 10 N
PCE-DFG N20	internal measuring	cell meas. range	0 ... 20 N
PCE-DFG N200	internal measuring	cell meas. range	0 ... 200 N
PCE-DFG N500	internal measuring	cell meas. range	0 ... 500 N
PCE-DFG N 1K	internal measuring	cell meas. range	0 ... 1000 N / 100 kg
PCE-DFG N 2,5K	internal measuring	cell meas. range	0 ... 2500 N / 250 kg
PCE-DFG N 5K	internal measuring	cell meas. range	0 ... 5000 N / 500 kg
PCE-DFG N 20K	internal measuring	cell meas. range	0 ... 20000 N / 2 t
PCE-DFG N 50K	internal measuring	cell meas. range	0 ... 50000 N / 5 t
PCE-DFG N 100K	internal measuring	cell meas. range	0 ... 100000 N / 10 t

Subject to change without notice

FORCE MEASUREMENT

FORCE GAUGE PCE-DFG-NF 1K

Measurement of compressive forces with external load cell

The force gauge with an external load cell is designed for the measurement of compressive forces in hard-to-reach measuring locations. The pressure cell is connected to the force gauge by a sensor cable of approx. 3 m length and thanks to the small cell dimensions it ensures versatile applications. The force gauge/ load cell has several threaded holes at the bottom to enable fixed installation. The force gauge can operate at a sampling rate of up to 1600 Hz. The sampled readings are displayed as an instantaneous value as well as in a graph showing the measurement curve directly in the force gauge.

ISO calibrated

- USB interface
- graphical display
- fast response time
- PC software
- incl. calibration
- memory for 100 measurements
- incl. ISO calibration certificate

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement range	0 ... 1000 N
Resolution	0.1 N
Accuracy	±0.5 % of meas. range
Measurement units	N, kg, lb, kPa
Display	2.8" TFT graphical display
Alarm modes	inside, outside, crack, shutdown
Sampling rate	6 ... 1600 Hz
Memory	100 measurements
Power supply	rechargeable NiMh battery, 6 V / 1600 mAh
Battery life	approx. 10 hours
Power adaptor / charging adaptor	12 V / 1 A
Outputs	interface: USB switching output: 12 V / 50 mA
Protection class	IP 54
Operating and storage conditions	-10 ... 50 °C 5 ... 95 % RH, non-condensing
Dimensions load cell	Ø 20 mm / H 12 mm / M3 thread (see technical drawing)
Cable length pressure cell	approx. 3 m
Dimensions	200 x 97 x 42 mm
Weight	540 g

Further models of the PCE-DFG NF series:

PCE-DFG NF 0,5K	Measurement range	0 ... 500 N
PCE-DFG NF 2K	Measurement range	0 ... 2000 N
PCE-DFG NF 5K	Measurement range	0 ... 5000 N
PCE-DFG NF 10K	Measurement range	0 ... 10000 N / 0 ... 10 kN
PCE-DFG NF 20K	Measurement range	0 ... 20000 N / 0 ... 20 kN
PCE-DFG NF 50K	Measurement range	0 ... 50000 N / 0 ... 50 kN

Subject to change without notice

VIBRATION MEASUREMENT

VIBRATION METER PCE-VT 2700 / PCE-VT 2700S

Compact vibration meter for the three most important vibration parameters

This vibration meter is the ideal tool for maintenance staff to quickly check vibrating parts, machines and equipment. The vibration meter shows the vibration acceleration, the vibration velocity and the vibration displacement directly on the display. This allows the user to detect and monitor imbalance and bearing damage before it occurs. The vibration meter comes in a complete set including probe tips (2 x 50 mm), external sensor, magnetic adaptor plate, probe attachment (PCE-VT 2700S only) and carrying case. An integrated RS-232 interface interface makes it possible to transfer data directly from the vibration meter to the PC. The meter is also ISO calibratable.

ISO calibrated

- Peak Hold
- ABS plastic housing
- 4-digit LCD
- low battery indicator
- incl. ISO calibration certificate
- measures acceleration
- measures velocity
- measures the RPM

APPLICATION

TECHNICAL SPECIFICATIONS

Acceleration measurement range	0.0 ... 399.9 m/s² (Peak) / 0.0 ... 1311 ft/s² (Peak)
Velocity measurement range	0.00 ... 399.9 mm/s (RMS) / 0.00 ... 15.75 inch/s (RMS)
Displacement measurement range	0.000 ... 3.9999 mm (Pk-Pk) 0.000 ... 158.0 mil (Pk-Pk)
Revolutions measurement range	50 … 99.900 RPM (displayed value must be multiplied by 10)
Resolution	0.1 m/s²; 0.1 mm/s; 1 µm
Accuracy	± 5 % of reading + 2 digits
Acceleration frequency range	9 Hz … 1 kHz (in 1 kHz mode) / 9 Hz … 10 kHz (in 10 kHz mode)
Velocity frequency range	10 Hz … 1 kHz
Displacement frequency range	10 Hz … 1 kHz
Display	4-digit LCD display, last reading is displayed
Units	metric or imperial
Interface	RS-232
Power supply	3 x 1.5 V batteries AAA / LR03 / battery life up to 5 h of continuous operation
Auto Power Off	after 5 minutes of inactivity (no key pressed)
Low Bat indication	<2.1 V
Operating conditions	-5 ... +55 °C; 0...95 % RH, non-condensing
Dimensions	142 x 77 x 40 mm
Weight	225 g (incl. batteries)
Sensor PCE-VT 2700	external sensor with 1.5 m cable 75 mm pin probe magnetic adaptor plate
Sensor PCE-VT 2700S	probe attachment with 1.5 m cable 75 mm pin probe

Optional accessories:

Re-calibration for PCE VT 2700	Order code	CAL-RE-PCE-VT 2700
Software for PCE-VT 2700	Order code	VT-2700-SW
Replacement sensor incl. cabel (5-pole)	Order code	Sensor-PCE-VT 2700

Subject to change without notice

VIBRATION MEASUREMENT

VIBRATION METER PCE-VM 20

Vibration meter for vibration measurement on machines

Rotating components in machines generally cause machine vibrations which can go over to the entire machine via mechanically coupled components. This creates a mixture of vibration with different frequencies. This machine vibration can have different effects some of which may be desired (e. g., in conveyors or vibrating sieves) – however, in most cases they are undesirable and cause poor manufacturing qualities and increased wear of the machine. Increased wear and tear due to machine vibrations leads to reduced running times, higher failure rates and higher maintenance expenditure, i. e. to avoidable costs as a whole.

- real-time FFT analysis
- robust housing
- many vibration parameters
- integrated rechargeable LiPo battery
- direct evaluation of machine vibration in compliance with DIN ISO 10816

APPLICATION

TECHNICAL SPECIFICATIONS

Vibration acceleration	0 ... 200 m/s², RMS and Peak-Peak
Vibration velocity	0 ... 200 mm/s, RMS
Vibration displacement	0 ... 2000 µm, Peak-Peak
Accuracy vibration	±5 %
Operating modes	vibration, temperature, revolutions
Darstellbare Messgrößen	Frequency Vibration acceleration vibration velocity vibration FFT spectrum
Units	metric, imperial mm/s², mm/s, µm RPM und Hz
Interface	USB 2.0
Memory	4 GB micro SD card
Battery life	up to 8 h continuous operation
Battery type	lithium polymer
Display	128 x 160 pixel colour LCD
Environmental conditions	-10 ... +55 °C ≤80 % RH non-condensing
Dimensions	132 x 70 x 33 mm / 5.2 x 2.8 x 1.3 in (L x W x D)
Weight	approx. 150 g

Handset: must not be exposed to strong vibration, magnetic fields, corrosive media or dust

Technical data of the vibration sensor

Sensitivity	100 mV/g
Frequency response (± 3 dB)	0.5 ... 15000 Hz
Frequency response (± 10 %)	2.0 ... 10000 Hz
Dynamic range	± 50 g, peak
Power supply (IEPE)	18 ... 30 V DC
Constant current source	2 ... 10 mA
Spectral noise at 10 Hz	14 µg / √Hz
Spectral noise at 100 Hz	2.3 µg / √Hz
Spectral noise at 1000 Hz	2 µg / √Hz
Output impedance	<100 Ω
Bias voltage	10 ... 14 V DC
Housing insulation	>100 MΩ
Environmental conditions	-50 ... 121°C / -58 ... 249.8 °F
Maximum impact protection	5000 g, peak
Resonant frequency	23,000 Hz
Housing material	316L stainless steel
Connection	2-pin MIL-C-5015
Protection class	IP68
Weight	90 g / <1 lb

Subject to change without notice

EVAPORATION CABINET PCE-DLT 10

Automatic test sequence/ for up to 5 samples

With the evaporation cabinet PCE DLT 10, the water vapour resistance of samples (ideal size: 300 x 200 mm) is tested according to AMK-MB-005 Humidity and Climatic Resistance Test Module 1 (water vapour loading). A test with an evaporation cabinet simulates placement of a piece of furniture above cooking hobs, kitchen sinks or dishwashers – wherever water vapour can occur. The extra large water container is a special feature of this evaporation cabinet. It enables ideal use of the test chamber. It makes sure that the same test conditions apply in the complete test cabinet.

- evaporation cabinet for steam test according to AMK-MB-05
- max. 5 samples
- automatic test sequence with constant temperature
- data logger
- good-bad indication of temperature
- determination of moisture expansion
- checking of joint formation and edge release

APPLICATION

TECHNICAL SPECIFICATIONS

An extractor fan should be installed where the evaporation cabinet is used to be able to extract the amount of water vapour that will leak out.

Test method	nased on AMK-MB-005 (04/2015)
Temperature control range	automatic 50 ... 52 °C
Heating capacity	3000 W
Measurement display	colour touch LCD
Measurement memory	1.5 GB (>1 million measured values)
Storage rate	max. 10 Hz (adjustable)
Interface	USB (for USB pen drive) Ethernet (optionally selectable)
Temperature sensor	PT100 class A 4 conductors
Power supply	230 V AC / 50 Hz CEE 16 A plug Abmessungen 1130 x 720 x 690 mm
Gewicht	approx. 36 kg

Optional accessories:

Sampling of workpieces Order code PCE-Service 7/2

We would be pleased to perform a sampling of your workpieces at our company.

Subject to change without notice

ANEMOMETER / ALARM CONTROLLER PCE-WSAC 50

Anemometer with pre-alarm and full alarm / wind speed display

This wind speed alarm controller is suitable for lots of different applications. The anemometer can measure the slightest wind movements.
The wind alarm controller can be used to monitor the curremt wind speed but also to get an average value of the wind velocities measured in the last two or five minutes. If wind speeds are higher than the preset values, a pre-alarm is first applied before the full alarm is emitted. Both alarms are visual and audible.

ISO calibrated

- wind speed alarm controller with adjustable alarms
- 2 alarm types
- power supply: 230 V AC
- input signal: 4...20 mA
- communication: RS485
- 2 alarm relays
- beep sound for alarm
- sensor supply via display unit

APPLICATION

TECHNICAL SPECIFICATIONS

Power supply	230 V AC
Supply voltage for sensors (output)	12 V DC 24 V DC
Measurement range	0 ... 50 m/s
Measuring accuracy	±3 % of measurement range
Signal input	4 ... 20 mA
Alarm relay	2 x changeover contact 220 V AC / 10 A
Interface	RS485 (optional)
Operating temperature	-20 ... +60 °C
Protection class	IP66
Dimensions	197.5 x 90 x 45 mm

Optional accessories:

Sensor cable 25 m	Order code	PCE-WSAC 50-SC25
Mounting bracket	Order code	PCE-FST 200-201 MNT
Wind sensor	Order code	PCE-FST-200-201-U voltage output
Wind sensor	Order code	PCE-FST-200-201-I current output

Power supply and sensor input signal individually selectable:

Power supply	230 V AC 115 V AC 24 V DC
Sensor input signal	4 ... 20 mA 0 ... 10 V

Wind sensor and interface optional (at extra cost)

Subject to change without notice

PLASTICS TESTER PCE-MFI 400

Melt mass flow rate of plastics

The plastics tester is used for rapid testing of the melt mass flow rate of plastics. The plastics testing device is designed for both incoming goods inspection and continuous production monitoring. The clear display of all relevant parameters on the 7" touch screen makes it possible to make measurements very quickly. The automatic cutting function additionally contributes to the high reproducibility of the plastics tester. Some saved standard plastics make some cumbersome configuration processes unnecessary. These include PS, PP, PE, ABS, PC, PMMA and many more.

- large 7" TFT touch display
- clear presentation
- heating temperature up to +400 °C
- pre-set materials
- robust metal housing
- different weights included

TECHNICAL SPECIFICATIONS

Measurement rate	
Melting rate	0.1 ... 400.0 g / 10 min
Temperature	+120 ... +400 °C
Measuring accuracy temperature	±0.2 °C
Resolution	0.1 °C
Test load	0.325 ... 21.6 kg
Test piston Ø	9.48 mm
Capillary Ø	2.095 mm
Standards	ISO1133-1997, ASTM 1238-04C, GB/T3682-2000
Display	
Type	7" LCD touch display
Resolution	800 x 480 pixels
Colour depth	16000 colours
Dimensions (without test load)	500 x 320 x 500 mm / 19.7 x 12.6 x 19.7 in
Weight (without test load)	approx. 15 kg / 33 lbs
Power supply	90 ... 264 V AC
Power consumption (at full load)	approx. 0.6 kVA

APPLICATION

Subject to change without notice

HYDRAULIC LIFTING TABLE SCALES PCE-HLTS 500

Infinite height adjustment for back-friendly use

Thanks to the infinitely variable height adjustment, the hydraulic lifting table scales help you work faster, more comfortably and with less strain on your back. This industrial scale model consists of a robust scissors lift table with an individual working height of 350 …. 1130 mm / 13.8 ... 44.5 in. The hydraulic lifting table scales can lift a load of up to 500 kg / 1102.3 lbs and weigh it with a resolution of 0.2 kg / 0.4 lbs. The industrial hydraulic lifting table scales offer a working surface of 1300 x 850 mm / 51.2 x 33.5 in surrounded by a safety edge which in the event of a jam interrupts the lowering process immediately in order to avoid personal injury.

- infinite height adjustment from 350… 1130 mm / 13.8 ... 44.5 in
- weighing range up to 500 kg
- resolution 0.2 kg
- lifting and lowering the platform by pushing a button
- RS232 interface
- all-round safety terminal strip
- summing function
- target / actual check of the total weight
- piece counting function
- external control unit with lifting button, lowering button and emergency stop
- lowering process not possible in the event of a power failure thanks to safety valve

TECHNICAL SPECIFICATIONS

Lifting table	
Load	500 kg / 1102.3 lbs
Lift range	350 … 1130 mm / 13.8 ... 44.5 in
Lift	780 mm / 30.7 in
Lift drive	hydraulic
Platform size	1300 x 850 mm / 51.2 x 33.5 in
Platform type	closed
Lifting speed without load	approx. 60 mm / s
Lifting cycles	max. 10 per hour / max. approx. 30,000
Control panel	lifting button, lowering button and emergency stop cable length approx. 3 m / 9.9 ft
Power hydraulic pump	2.2 kW
Power supply lift table	380V / CEE 16A
Cable length	approx. 3.5 m / 11.5 ft
Weight	approx. 225 kg / 496 lbs
Scales	
Weighing range	500 kg
Resolution	0.2 kg
Measurement uncertainty	±1 kg
Taring	Multiple taring across the entire weighing range
Display	LCD with a digit height of 25 mm / 1 in
Display assembly	tripod / operating height 115 mm / 4.5 in
Length of cable to display	approx. 5 m
Interface	RS-232 / Sub D9 / male
Power supply	rechargeable 6 V battery / 9 … 12 V mains adaptor
Weight	approx. 55 kg

Further model of the PCE-HLTS series:

PCE-HLTS 2T	Weighing range up to 2 t

APPLICATION

Subject to change without notice

FLOW MEASUREMENT

FLOW METER PCE-TDS 100H

Ultrasonic method for homogeneous liquids

The PCE-TDS 100H is designed for quick and mobile measurements of flow rates within pipes. To make such a measurement, it is not necessary to enter the piping system directly. The ultrasonic flow meter works in line with the transit time difference method. This means that transducers send a directed ultrasonic signal through the pipe diagonally which is then reflected and received by the transducer again. On the basis of the signal's transit time delay that occurs when a pre-defined medium passes through a pipe, the meter can determine the flow if the pipe diameter and material are known.The desired parameters must be set before making a measurement.

ISO calibrated

- ideal for retrofitting
- installation without process interruption easy assembly
- accurate and reliable no pressure loss
- maintenance-free, no moving parts
- wear-free
- portable device for control measurements
- incl. ISO calibration certificates
- 2 x sensor TDS-M1 included (PCE-TDS 100H

TDS-S1

TDS-M1

APPLICATION

TECHNICAL SPECIFICATIONS

Measurement range handheld unit	-32 ... +32 m/s
Resolution	0.0001 m/s
Accuracy for DN ≥50 mm	±3.5 % of reading
for DN <50 mm	±1.0 % of reading
Reproducibility	±1.0 % of reading
Media	All liquids with an impurity <5% and a flow >0.03 m³/h
Flow units	cubic metre [m³] litre [l] gallon (USA) [gal] imperial gallon (UK) [igl] million USA gallon [mgl] cubic foot [cf] barrel (USA) [bal] imperial barrel (UK) [ib] oil barrel [ob]
Time settings	per day [/d] pro hour [/h] pro minutes [/m] and per second [/s]
Data logger	1800 measurements
Interface	USB (for online measurement and readout of the internal memory)
Protection class	IP 52
Power supply	3 x AA rechargeable NiMH batteries / 2100 mAh (at full charge, 12 h running time) 100 … 240 V AC 50/60 Hz
Dimensions	214 x 104 x 40 mm
Weight	450 g
Sensor (only PCE-TDS 100 H)	nominal width DN 50 … 700, 57 … 720 mm
Temperature of liquid	-30 … 160 °C
Dimensions	50 x 45 x 45 mm
Weight	260 g

Optional accessories:

Standard transducers	Order code TDS-M1 High-
temperature transducers	Order code TDS-S1
On-rail flow transducer	Order code TDS-HS
On-rail flow transducer	Order code TDS-HM Flow
transducers	Order code TDS-L1
Ultrasonic coupling gel	Order code TT-GEL

TDS-HS

TDS-HM

TDS-L1

Further models of the PCE-TDS 100 series:

PCE-TDS 100HSH	**2 x Sensor TDS-S1**	nominal width DN 15 … 100, 20 … 108 mm
	2 x Sensor TDS-M1	nominal width DN 50 … 700, 57 … 720 mm
PCE-TDS 100HS	**2 x Sensor TDS-S1**	nominal width DN 15 … 100, 20 … 108 mm

Subject to change without notice

DATA LOGGER

DATA LOGGER PCE-VDL 16I

For the parameters temperature, relative humidity, air pressure, light and vibration

The mechanical engineering data logger PCE-VDL 16I from PCE Instruments measures and records the relevant parameters temperature, relative humidity, air pressure, light as well as 3-axis acceleration by means of a vibration sensor. This makes the data logger the ideal tool for monitoring machine vibration and at the same time measuring and recording important environmental conditions of the equipment. Depending on the sampling rate, the data logger can record for several days. The recorded readings are saved to the internal 32 GB SD card and can be transferred to other media for evaluation where required.

ISO calibrated

- 3-axis acceleration up to 800 Hz
- measures temperatur, humidity, air pressure and light
- 32 GB SD memory card
- compact design: 86.8 x 44.1 x 22.2 mm
- country of origin Germany

APPLICATION

TECHNICAL SPECIFICATIONS

Parameter	
Temperature measurement range	-20 ... +65 °C
Accuracy	±0.2 °C
Sampling rate	1 s ... 1800 s
Relative humidity measurement range	0 ... 100 % RH
Accuracy	±1.8 % RH
Sampling rate	1 s ... 1800 s
Air pressure measurement range	10 ... 2000 mbar
Accuracy	±2 mbar (within range 750 ... 1100 mbar) otherwise ±4 mbar
Sampling rate	1 s ... 1800 s
Light measurement range	0.045 … 188,000 lux
Accuracy	n/a
Sampling rate	1 s 1800 s
3-axis acceleration measurement range	±16 g
Accuracy	±0.24 g
Sampling rate	800 Hz 1 Hz

General technical data of the mini data logger PCE-VDL 16I

Memory capacity	2.5 readings per measurement, 3.2 billion readings with uncluded 32 GB microSD memory card
Keys	start / stop of a measurement; data logger on / off
LED	Log: operating status Alarm: alarm indicator Charge: charging status USB: status of PC connection
Power supply	integrated rechrageable Li-Ion battery 3.7 V / 500 mAh The meter is charged via the USB interface.
Integrated sensors	3-axis acceleration
Interface	USB
PC software	free setup an evaluation siftware (Windows XP / Vista / 7 / 8 / 10 32 bit / 64 bit) to record and evaluate data
Operating conditions	temperature -20 ... +65 °C
Storage conditions	temperature +5 ... +45 °C (ideal storage conditions for battery) 10 ... 95 % RH, non-condensing
Standards	complies with EU regulation RoHS/WEEE
Weight	approx. 60 g
Dimensions (L x W x H)	87 x 44 x 23 mm

Optional accessories:

Mounting plate	Order code PCE-VDL MNT

Subject to change without notice

VIBRATION MEASUREMENT

DATA LOGGER PCE-VDL 24I

3-axis acceleration up to 1600 Hz

The acceleration sensor of this 3-axis data logger comes with a sampling rate of 1600 Hz. The sensor mesures the current acceleration (3 axes), for instance in case of a shock or vibration. The measurements are made in pre-set (selectable) time intervals. The data measured with the internal 3-axis acceleration sensor are saved to a 32 GB memory card. This makes the data logger perfectly suitable to determine the acceleration for the purposes of fault diagnostics / stress test of components, machine monitoring, shock measurements and preventive maintenance in general.

ISO calibrated

- 3-axis acceleration up to 1600 Hz
- 32 GB SD memory card
- compact design: 86.8 x 44.1 x 22.2 mm
- country of origin Germany

APPLICATION

TECHNICAL SPECIFICATIONS

Parameter 3-axis acceleration	
Measurement range	±16 g
Accuracy	±0.24 g
Sampling rate	1600 Hz ... 1 Hz
General technical data of the 3-axis acceleration sensor	
Memory capacity	2.5 readings per measurement, 3.2 billion readings with uncluded 32 GB microSD memory card
Keys	start / stop of a measurement; data logger on / off
LED	Log: operating status Alarm: alarm indicator Charge: charging status USB: status of PC connection
Power supply	integrated rechrageable Li-Ion battery 3.7 V / 500 mAh The meter is charged via the USB interface.
Integrated sensors	3-axis acceleration
Interface	USB
PC software	free setup an evaluation siftware (Windows XP / Vista / 7 / 8 / 10 32 bit / 64 bit) to record and evaluate data
Operating conditions	temperature -20 ... +65 °C
Storage conditions	temperature +5 ... +45 °C (ideal storage conditions for battery) 10 ... 95 % RH, non-condensing
Standards	complies with EU regulation RoHS/WEEE
Weight	approx. 60 g
Dimensions (L x W x H)	87 x 44 x 23 mm
Optional accessories:	
Mounting plate	Order code PCE-VDL MNT

Subject to change without notice

GAUSS METER

ELECTROMAGNETIC FIELD GAUGE PCE-MFM 2400 Series

Tesla and Gauss measurement for static magnetic fields

With a measurement range of 2,400 mT, the electromagnetic field meter covers a wide range of measuring tasks. The electromagnetic field meter has an accuracy of 1 % which makes it a very precise meter. The electromagnetic field meter can be used, for instance, to test relays and permanent magnets for existing magnetic fields. It is therefore often used in production processes or in quality control. With the backlight of the electromagnetic field meter, the measured values are always easy to read even under poor lighting conditions.

ISO calibrated

- very precise measurement technology
- measurement range up to 24,000 G and 2,400 mT
- transversal and axial sensor
- measures static magnetic fields
- automatic shutdown

APPLICATION

TECHNICAL SPECIFICATIONS

Measuring range	0… 200 mT 200… 2,400 mT 0 ... 2,000 G 2,000 ... 24,000 G
Accuracy	± 1% of full reading
Resolution	0.01 mT 0.1 g
Measuring direction	Transversal
Magnetic field	Static (DC)
Unit	mT, G
Power supply	1 x 9V block battery
Automatic shutdown	Automatic shutdown after 5 minutes in idle status
Moduss	Hold mode, measurement mode
Display	Backlight digital 4-digit value display
Operating temperature	32 ... 122 ° F, / 0 … 50 °C
Storage temperature	-4 ... 122 °F / 20 … 50 °C
Dimensions	185 x 97 x 40 mm / 7.28 x 3.82 x 1.57 in
Weight	0.68 lb, 310 g
Model	
PCE-MFM 2400	
Sensor	Hall sensor transversal, cable length approx. 3.28 ft., 1 m
PCE-MFM 2400+	
Sensor	Axial Hall sensor, cable length approx. 6.56 ft., 2 m

Subject to change without notice

NEW PRODUCTS

BELT-TENSIONMETER PCE-BTM 2000

To measure the tension of V-belts or drive belts

The PCE-BTM 2000 is a measuring instrument to determine the tension of V-belts or drive belts. Belt tension can only be measured when the belt is not in operation. A small impulse with the help of a beater is enough to make the belt vibrate. With a measuring probe and a sensor beam, the generated vibration frequency is determined.

The belt tension is calculated on the basis of the measuring data of the natural frequency as well as the belt mass and the length of the free belt span. It is not necessary to enter the belt mass and the belt length. The maximum service life of V-belts or drive belts can only be achieved with ideal tension.

ISO calibrated

- data memory
- high accuracy
- TFT colour display 2.4"
- belt tension displayed in Newton

Technical Specification of the PCE-BTM 2000

Measured value	Vibration frequency
Measuring range	10 … 800 Hz
Accuracy	Sample error: 1 %
	Measurement resolution: ±1 Hz
Display:	TFT-color display, 2,4" 240x320

APPLICATION

VIBRATION METER PCE-VT 3700 / PCE-VT 3800 / PCE-VT 3900

three versions of the device are being developed

Three versions of the device are being developed (PCE-VT 3700, PCE-VT 3800, PCE-VT 3900). The PCE-VT 3700 which only displays the measurement value on its LCD. Higher versions include more features like storage of measurement data, route measuring, FFT and a USB interface for communication with PC software.

TECHNICAL SPECIFICATIONS

Measuring data:	Vibration acceleration
	Vibration velocity
	Vibration displacement
Measuring range:	0,0 ... 399,9 mm/s²
	0,0000 ... 399,9 mm/s
	0,0 ... 3,9999 mm
Resolution:	0,1 mm/s
	0,1 mm/s
	1,0 µm
Frequency range:	acceleration: 10 Hz – 10 kHz
	Velocity: 10 Hz – 1 kHz
	Displacement: 5 Hz – 250 Hz

STROBOSKOP PCE-LES 102 / PCE-LES 308

LED-Stroboscope to visualize rotating and vibrating objects

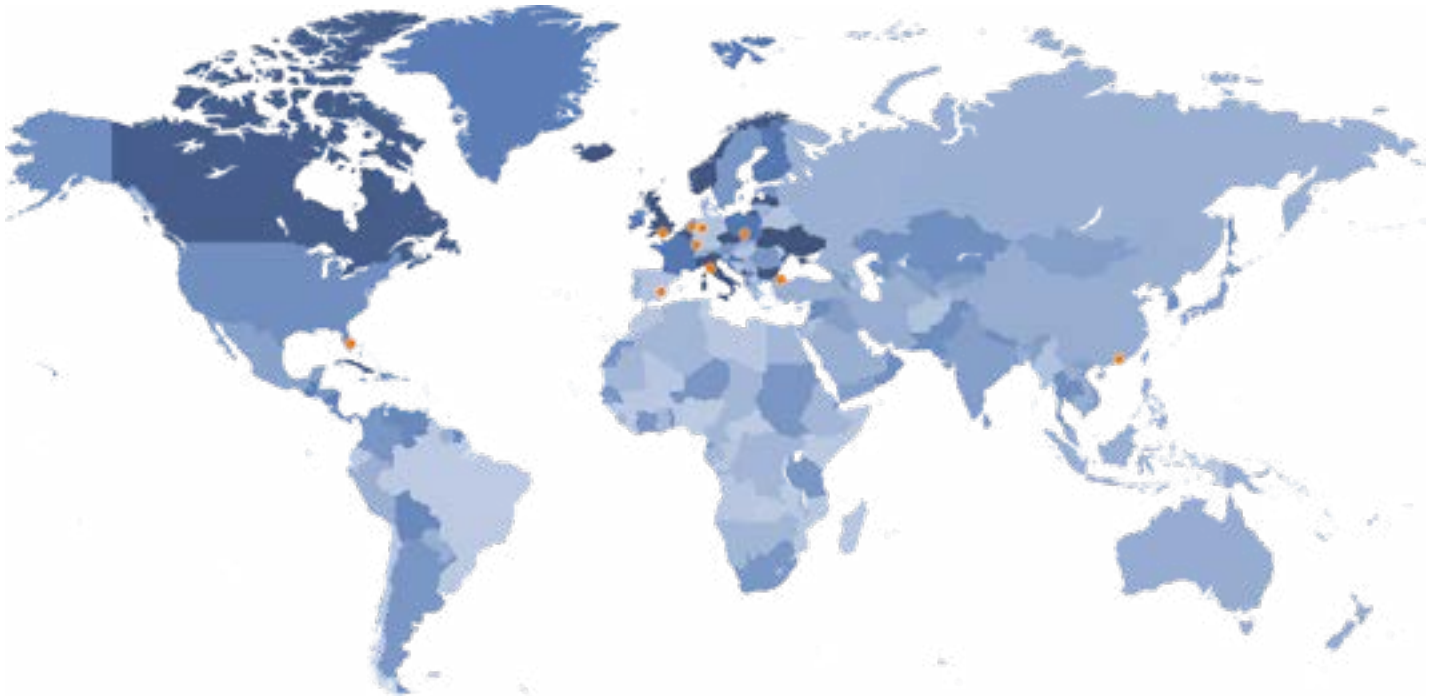
The PCE-LES Series LED Tachometer combine LED technology with compact and accurate electronics. The PCE-LES 308 has an external trigger input / output and has the ability to save measurement values. It has a slow motion mode. The slow motion mode can be used when no movement of the machine is sensible. The slow-motion mode variates the frequency in a way, a slowed down movement is visible.

TECHNICAL SPECIFICATIONS

Model	**PCE-LES 102**	**PCE-LES 308**
Frequency range:	1 … 1666 Hz	1 … 5000 Hz
Frequency accuracy:	±0,009 %	±0,001 %
Number of LEDs:	2 high power	8 high power

Subject to change without notice

COMPANY LOCATIONS



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