

PCE Instruments PCE-123

PCE Instruments PCE-123 Process Calibrator User Manual

1. INTRODUCTION

The PCE Instruments PCE-123 Process Calibrator is a portable, battery-powered device designed for simulating and measuring various electrical signals in industrial and laboratory settings. It functions as a nominal value indicator, allowing users to test and calibrate a wide range of unit parameters and measuring instruments. The calibrator provides electrical output signals including milliampere (mA), millivolt (mV), volt (V), frequency (Hz), and temperature in Celsius (°C) or Fahrenheit (°F).

This manual provides essential information for the safe and effective operation, setup, and maintenance of your PCE-123 Process Calibrator.

2. SAFETY INFORMATION

Please read and understand all safety instructions before operating the PCE-123 Process Calibrator. Failure to follow these instructions may result in injury or damage to the device.

- **Electrical Safety:** Always ensure the calibrator is properly connected and that test leads are in good condition. Avoid contact with live circuits.
- **Battery Safety:** Use only the specified battery type. Do not mix old and new batteries or different types of batteries. Dispose of batteries according to local regulations.
- **Environmental Conditions:** Operate the device within the specified operating conditions (0 to 50°C; <85% r.h.). Avoid exposure to extreme temperatures, humidity, or corrosive environments.
- **Maintenance:** Refer to the maintenance section for proper cleaning and battery replacement procedures. Do not attempt to repair the device yourself.

3. PACKAGE CONTENTS

Upon unpacking, please verify that all items listed below are present and in good condition:

- PCE-123 Process Calibrator
- Carrying Case

- Type-K Adaptor
- 6 x 1.5V Batteries (AA type)
- Test Cables with Alligator Clips
- User's Manual (this document)

4. PRODUCT OVERVIEW

The PCE-123 Process Calibrator features a clear LCD display, a numeric keypad for input, and dedicated function buttons for ease of use. Below is an image of the device with key components highlighted.



Figure 1: PCE-123 Process Calibrator. This image displays the front of the PCE-123 Process Calibrator. The large LCD screen at the top shows a reading of '04.500 V'. Below the screen is the brand 'PCE' and model 'PCE-123'. The main body features a numeric keypad (0-9) and function buttons, including 'ON/OFF' and 'SHIFT'. Test leads with red and black alligator clips are connected to the bottom right side of the device.

Key Features:

- Easy operation via keypad
- Automatic ramp function for signal generation
- Selectable current ranges: 0 to 20mA / 0 to 24mA
- Input range 0 to 100% for mA, mV, and V signals
- Audible alarm for 'open' circuit (mA) or 'short circuit' (mV, V) conditions

5. SETUP

5.1 Battery Installation

The PCE-123 Calibrator operates on 6 x 1.5V AA batteries (included). To install or replace batteries:

1. Ensure the device is powered off.
2. Locate the battery compartment cover on the back of the unit.
3. Open the cover and insert the 6 AA batteries, observing the correct polarity (+/-) as indicated inside the compartment.
4. Close the battery compartment cover securely.

5.2 Connecting Test Leads

Use the provided test cables with alligator clips for connecting the calibrator to the circuit or device under test.

1. Identify the input/output terminals on the PCE-123.
2. Connect the red test lead to the positive (+) terminal and the black test lead to the negative (-) or common terminal.
3. Ensure connections are firm and secure before powering on the device or applying signals.

6. OPERATING INSTRUCTIONS

The PCE-123 allows for both signal simulation (output) and measurement (input) of various electrical parameters.

6.1 Power On/Off

Press the **ON/OFF** button to power the calibrator on or off.

6.2 Selecting Measurement/Simulation Mode

Use the mode selection switch or buttons (refer to device markings) to choose between different signal types (mA, mV, V, Hz, °C/°F) and between simulation (output) or measurement (input) functions.

6.3 mA DC Current (Simulation/Measurement)

- **Ranges:** 4 to 20mA, 0 to 20mA, 0 to 24mA.
- **Resolution:** 1µA.
- **Operation:** Select the desired mA range. Use the numeric keypad to input the target current value. The calibrator can simulate current with a maximum load of 1kΩ when powered by 24V.
- **Alarm:** An audible beep will sound if there is a short circuit or if the output current exceeds 1mA during certain operations.

6.4 mV / V DC (Simulation/Measurement)

- **Ranges:** 0 to 100.00 mV, 0 to 1.0000 V, 0 to 10.000 V.

- **Resolution:** 10 μ V (mV), 1 mV (V), 1.0000 V (V).
- **Operation:** Select the mV or V mode. Input the desired voltage value using the keypad. The calibrator provides power at 1mA for these measurements.
- **Alarm:** An audible beep will sound if there is a short circuit or if the output current exceeds 10mA during certain operations.

6.5 Temperature (Simulation/Measurement)

The PCE-123 supports various thermocouple types for temperature simulation and measurement.

- **Supported Types:** Type-K, J, E, T.
- **Ranges:**
 - K: -200 to 0°C and 0 to 1370°C
 - J: -100 to 0°C and 0 to 760°C
 - E: -10 to 0°C and 0 to 700°C
 - T: -200 to 0°C and 0 to 400°C
- **Resolution:** 1°C across the entire range.
- **Operation:** Connect the appropriate thermocouple or use the Type-K adaptor. Select the temperature mode and thermocouple type. Input the desired temperature value.

6.6 Frequency (Simulation/Measurement)

- **Ranges:** 1 to 125Hz and 126 to 62.5kHz.
- **Resolution:** 1Hz (1 to 125Hz), 604 readings (126 to 62.5kHz).
- **Operation:** Select the frequency mode. Input the desired frequency value using the keypad.

6.7 Automatic Ramp Function

The PCE-123 features an automatic ramp function, which allows for gradual increase or decrease of output signals over time. Consult the on-screen menu or specific function keys for activating and configuring this feature.

6.8 Input 0 to 100%

For mA, mV, and V signals, the calibrator supports inputting values as a percentage (0 to 100%) of the selected range, simplifying scaling operations.

7. MAINTENANCE

7.1 Battery Replacement

When the battery indicator shows low power (5.5V for 150mA consumption), replace all 6 AA batteries as described in Section 5.1. Always use fresh, high-quality batteries.

7.2 Cleaning

To clean the device, wipe the exterior with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure no moisture enters the device.

7.3 Storage

When not in use for extended periods, store the PCE-123 in its carrying case in a dry environment, away from direct sunlight and extreme temperatures (-20 to 60°C; <85% r.h.). Remove batteries if storing for more than one month to prevent leakage.

8. TROUBLESHOOTING

This section addresses common issues you might encounter with your PCE-123 Process Calibrator.

- **Device does not power on:** Check battery installation and ensure batteries are fresh.
- **Alarm beep during mA output:** This indicates an 'open' circuit or an output current exceeding 1mA. Check connections and the load.
- **Alarm beep during mV/V output:** This indicates a 'short circuit' or an output current exceeding 10mV. Check connections and the load.
- **Inaccurate readings:** Ensure correct mode selection, proper test lead connections, and that the device is operating within its specified environmental conditions. Calibrate if necessary.

If you experience persistent issues not covered here, please contact PCE Instruments customer support.

9. TECHNICAL SPECIFICATIONS

Parameter	Specification
mA DC Current	
Ranges	4 to 20mA / 0 to 20mA / 0 to 24mA
Resolution	1µA
Accuracy	±0.025% ±3µA
Max Load (24V powered)	1kΩ
mV / V DC Current	
Ranges	0 to 100.00 mV, 0 to 1.0000 V, 0 to 10.000 V
Resolution	10 µV (mV), 1 mV (V), 1.0000 V (V)
Accuracy	±0.05% ±30 µV (mV), ±0.05% ±3 mV (V), ±0.05% ±300 µV (V)
Power	1mA
Temperature Sensor (Type-K, J, E, T)	
Ranges (K)	-200 to 0°C and 0 to 1370°C
Ranges (J)	-100 to 0°C and 0 to 760°C
Ranges (E)	-10 to 0°C and 0 to 700°C

Ranges (T) Parameter	-200 to 0°C and 0 to 400°C Specification
Resolution	1°C (across entire range)
Accuracy (K)	±1.1°C and ±0.8°C
Accuracy (J)	±0.9°C and ±0.7°C
Accuracy (E)	±0.9°C and ±0.7°C
Accuracy (T)	±1.0°C and ±0.8°C
Frequency	
Ranges	1 to 125Hz and 126 to 62.5kHz
Resolution	1Hz (1 to 125Hz) / 604 readings (126 to 62.5kHz)
Accuracy	±0.04Hz
General Characteristics	
Display	5 position LCD
Operating Conditions	0 to 50°C; <85% r.h.
Storage Conditions	-20 to 60°C; <85% r.h.
Power	6 x 1.5V AA batteries (or 1 x 9V battery option)
Consumption	60mA to 180mA (depending on output)
Battery Indicator	5.5V for 150mA
Dimensions	88 x 168 x 26mm (3.46 x 6.61 x 1.02 inches)
Weight	Approximately 2.91 Pounds (with batteries)

10. WARRANTY AND SUPPORT

PCE Instruments provides a warranty for the PCE-123 Process Calibrator against defects in materials and workmanship. For specific warranty terms, duration, and conditions, please refer to the warranty card included with your product or visit the official PCE Instruments website.

For technical support, service, or inquiries regarding your PCE-123, please contact PCE Instruments customer service through their official channels. Have your model number (PCE-123) and purchase information ready when contacting support.

PCE Instruments Contact Information:

Please visit the [PCE Instruments Store on Amazon](#) or their official website for the most current contact details.

	PCE Instruments Sound Level Meters Catalog and Specifications Comprehensive catalog detailing PCE Instruments' range of sound level meters, acoustic calibrators, and related accessories, including technical specifications, features, and applications for industrial and professional use.
	PCE-VT 3800/3900 Vibration Meter User Manual User manual for PCE Instruments' PCE-VT 3800 and PCE-VT 3900 vibration meters. Covers detailed specifications, operation, measurement modes, data logging, FFT, RPM, route measurements, safety, and calibration for effective machine condition monitoring.
	PCE-UX 3081/3081WQ Moisture Analyzer: Operating Instructions and Technical Guide Comprehensive operating instructions and technical specifications for the PCE-UX 3081 and PCE-UX 3081WQ moisture analyzers. Learn about setup, operation, safety, maintenance, and troubleshooting for accurate moisture and dry matter analysis using thermogravimetric methods.
	PCE-SC 09 Sound Level Calibrator User Manual PCE Instruments Comprehensive user manual for the PCE-SC 09 Sound Level Calibrator by PCE Instruments. Learn about specifications, operation, calibration, safety, and disposal.
	Manuel d'utilisation de la balance compacte série PCE-TB Manuel d'utilisation pour la balance compacte série PCE-TB, couvrant l'introduction, les consignes de sécurité, les spécifications techniques, le fonctionnement, les fonctions et les réglages.
	Manual do Controlador de Velocidade de Vento PCE-WSAC 50 Este manual detalha as especificações, instalação e operação do Controlador de Velocidade de Vento PCE-WSAC 50 da PCE Instruments, incluindo recursos de alarme e interface RS-485.



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Calibrator Calibrator PCE Instruments with crocodile clips carrying case instruction manual ITEM NO K 123 process calibrator OPTIONAL ACCESSORIES CAL ISO calibration certificate Setpoint Device for Simulation processes any operation temperature J E T type sensors °C and °F catalogue pce instruments f english media

Calibrator 244 www.pce-instruments.com/us Calibrators regenerate electrical signals. In measurement ... of security for experts in measurement and control technology or in quality control. Calibrator **PCE-123** PCE-789 Setpoint Device for Simulation processes calibrator for any operation temperature...

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Current Calibrator PCE Instruments with crocodile clips carrying case instruction manual ITEM NO K 123 process calibrator OPTIONAL ACCESSORIES CAL ISO calibration certificate Setpoint Device for Simulation processes any operation temperature J E T type sensors °C and °F current catalogue pce instruments f english media

Current Calibrator **PCE-123** PCE-789 Setpoint Device for Simulation processes calibrator for any operation temperature: K-, J-, E-, T-type sensors C and F standardised signals: 4 ... 20 mA / 0 ... 100 mV / 0 ... 1 V / 0 ... 12 V frequency range: 1 ... 62,500 Hz Multifunctional Calibrator / Si...

lang:en **score:29** filesize: 1.24 M page_count: 1 document date: 2015-12-23



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Manuale d uso Calibratore Simulatore PCE 123 Instruments man calibratore multifunzione pce v2 0 it instruments italiano slot 5 136387 1137354

Italiano Manuale d istruzioni Calibratore **PCE-123** User manuals in various languages franais, italiano, espaol, portugus, nederlands, trk, polski, , can be found by using our product search on: www.pce-instruments.com Ultima modifica: 20. giugno 2018 V2.0 PCE Instruments Indice 1 Informazioni ...

lang:it **score:27** filesize: 847.84 K page_count: 12 document date: 2018-06-20

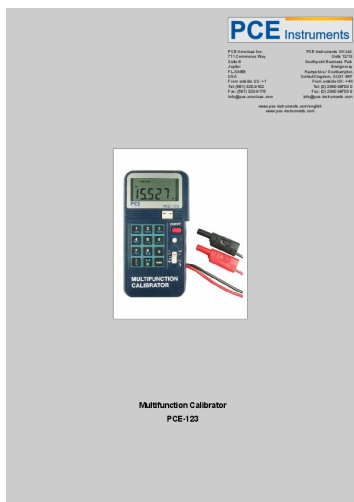


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Electrical Tester PCE Instruments Mini clamp meter batteries bag instruction manual ITEM NO K DC1 mini 200 A AC DC OPTIONAL ACCESSORIES CAL Serie calibration certificate Clamp Freq LC display 3 2 digits with backlight measures current voltage frequency Hold function zero reset electrical tester catalogue pce instruments f english media

Electrical Tester PCE-DC1 PCE-DC2 PCE-DC3 Clamp meter 200 A AC/DC Freq. LC display 3 2/3 digi ... ion certificate only for multimeter function 222 www.pce-instruments.com/us Electrical Tester **PCE-123** PCE-789 Setpoint Device for Simulation processes calibrator for any operation temperature...

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[pdf] User Manual Declaration of Conformity

Microsoft Word ba pce 123 engl DOC Philipp Büro manual calibrator instruments english slot 2 60546
PCE Americas Inc. 711 Commerce Way Suite 8 Jupiter FL-33458 USA From outside
US: 1 Tel: 561 320-9 ... -instruments.com www.pce-instruments.com/english
www.pce-instruments.com Multifunction Calibrator **PCE-123** Features: 1. 4-20mA 1K
load, 24V Loop Supply 2. 0-100.00mV, 0-1.000V, 0-12.000V 3. K, J, ...
lang:en score:24 filesize: 1.41 M page_count: 37 document date: 2015-05-27



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Ludger Droste Teknik Katalog Multimetre PCE Instruments 7 mar 2022 — aynı zamanda bir gerilim
kalibratörüdür ve elektrik bağlantısı gerektirmez regülasyon sinyallerini veya MSR tekniğindeki birimleri
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TEKNK KATALOG **PCE-123** Teknik Katalog Multimetre PCE Teknik Cihazlar Paz.
Tic. Ltd.ti. Halkali Merkez Mah. Pehlivan Sok. No 6/C 34303 Kkekece/ stanbul
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PCE Instruments Abt Messgerät productblad proceskalibrator pce 123 instruments dutch slot 9 5889536
Proceskalibrator **PCE-123** voor de simulatie van elektrische signalen, frequentie en
temperatuur De proceskalibrator is ook een spanningskalibrator, die geen aansluiting
op het netwerk vereist. Hij wordt gebruikt om regelsignalen of signalen van eenheden
in de MSR techniek te simuleren, waarmee u bijn...
lang:nl score:22 filesize: 480.09 K page_count: 4 document date: 2013-06-10



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PCE Instruments Abt Messgerät datenblatt prozesskalibrator sollwertgeber pce 123 instruments deutsch slot 1 18596 |||

Prozesskalibrator - Sollwertgeber **PCE-123** Sollwertgeber / Messwertgeber zur Simulation und Messung von elektrischen Einheitssignalen sowie Frequenz und Temperatur Der Prozesskalibrator / Messwertgeber / Temperatursimulator ist ein Netzunabhängiges Gert zur Simulation, von Regelsignalen / Einheitss...

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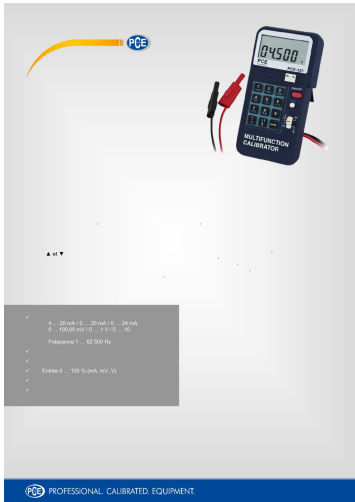


[pdf] Datasheet

Datasheet Multimetro PCE 123 Instruments Zetalab it 1137355 pce instruments italiano slot 5 133295 |||

PCE Italia s.r.l. Via Pesciatina 878 / B-Interno 6 55010 Gragnano LUCCA Italia Telefono: 39 0583 975 114 Fax: 39 0583 974 824 info pce-italia.it www.pce-instruments.com/italiano Multimetro **PCE-123** corrente, temperatura, tensione /

multimetro con indicatore del valore nominale per simulazione e ... lang:it score:22 filesize: 90.43 K page_count: 2 document date: 2018-06-20



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Calibrateur **PCE-123** Simulation et calibration de courant, tension, frquence et temprature Le calibrateur de processus n a pas besoin de connexion au rseau et s utilise pour simuler des signaux de rglage avec lequel vous pourrez vrifier et calibrer presque tous les paramtres des units et les appareil...

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Karin Celik Datasheet PCE 123 ICA Thiết bị hiệu chuẩn dòng IMALL datasheet 1 imall cđn vccloud vn 2021 05 |||

PCE Americas Inc. 711 Commerce Way Suite 8 Jupiter FL-33458 USA From outside US: 1 Tel: 561 320-9 ... 703 9 info pce-instruments.com www.pce-instruments.com/english www.pce-instruments.com Calibrator **PCE-123-ICA** Current calibrator **PCE-123-ICA** Digital, electrical, current, voltage or process calibrat... lang:en score:20 filesize: 223.4 K page_count: 2 document date: 2019-11-10

[pdf] User Manual Specifications Catalog

Clamp meter Power PCE Instruments Automatic manual range selection off AC current up to 1 000 A Voltage 600 V DC Diode test Continuity Technical specifications Magn meas Measurement Resolution Accuracy Overload protec DCV 400 mV 4 40 100 μ V $\pm$ 0.8 % 3 dgt clamp catalog pce instruments f english media

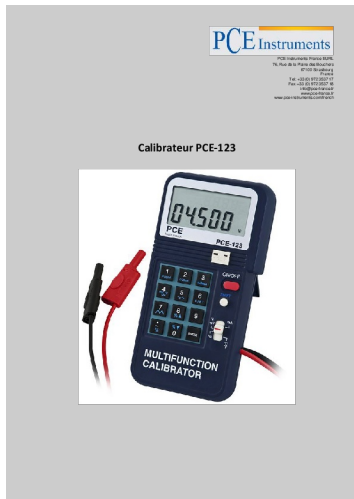
Clamp meter / Power meter Clamp meter / Power meter PCE-DC1 PCE-DC2 PCE-DC3 Clamp meter 200 A A ... s Calibration certificate 215,00 www.pce-instruments.com/english 243 Calibrators Calibrators **PCE-123** PCE-789 Simulate regulation signals Multifunctional calibrator / Simulator Can calibrat... lang:en score:18 filesize: 4.48 M page_count: 20 document date: 2015-04-30



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151 Karin Celik Testeur de câbles pour la simulation et mesure il y a 2 jours — signaux électriques d entrée ainsi que fréquence température fiche technique pce 123 instruments french api getartfile fnr 905849 dsp inline |||

PCE Instruments France EURL 76, Rue de la Plaine des Bouchers 67100 Strasbourg France Tel: 33 0 9 ... Dimensions 88 x 168 x 26 mm Poids 330 g Contenu de la livraison 1 x Testeur de cbles nominale **PCE-123** 1 x Mallette 1 x Adaptateur type K 1 x Porte batteries 6 x Batteries 1 x Cbles de vrificatio... lang:fr score:16 filesize: 189.21 K page_count: 3 document date: 2015-10-24

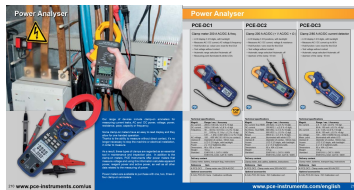


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france.fr www.pce-instruments.com/french Calibrateur **PCE-123** NOTICE D EMPLOI
Caractéristiques: 1. 4-20mA charge 1K, alimentation en bou...

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Power Analyser Power Analyser PCE-DC1 PCE-DC2 PCE-DC3 Clamp meter 200 A
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instruments.com/english 243 Calibrators Calibrators **PCE-123** PCE-789 Simulate
regulation signals Multifunctional calibrator / Simulator Can calibrat...

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para medir en superfic ... Adaptador de red Para ms sondas vase pgina 11 10
Telefono: 902 044 604 Medidores de temperatura **PCE-123** Termopares / sondas de
temperatura tipo K Generador de seales Calibrador de procesos Ter...

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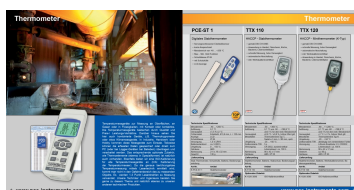


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Digital Multimeter PCE Instruments DCA 10 A 0 01 μ A $\pm$ 0 15 % 2 dgt multimeter test leads batteries
software RS 232 interface data can be recorded by means of digital catalogue pce instruments f english
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Digital Multimeter PCE-UT 61E TRMS DMM with Relative Value IEC61010-1; CAT III
1,000 V; CAT IV 60 ... CAL-PCE-GPA ISO calibration certificate www.pce-
instruments.com/english 215 Digital Multimeter **PCE-123** PCE-789 Setpoint Device for
Simulation proceses calibrator for any operation temperature...

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thermometer katalog pce instruments f deutsch media

Thermometer PCE-ST 1 Digitales Stabthermometer fest angeschlossener
Edelstahlsensor kurze Ansprec ... teil Passende weitere Fhler finden Sie auf Seite11
10 Bestellhotline: 02903/9769952 Thermometer **PCE-123** Thermoelemente /
Temperaturfhler K-Typ Sollwertgeber zur Simulation Prozesskalibrator fr ...

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PCE Clamp Meter CatalogTestEquity Instruments 360 Single Phase and Three Power with Data

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Clamp meter / Power meter Clamp meter / Power meter PCE-DC1 PCE-DC2 PCE-DC3 Clamp meter 200 A A ... s Calibration certificate 215,00 www.pce-instruments.com/english 243 Calibrators Calibrators **PCE-123** PCE-789 Simulate regulation signals Multifunctional calibrator / Simulator Can calibrat...

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PCE Instruments Abt Messgerät datenblatt datenlogger handmultimeter pce dm 22 instruments deutsch slot 1 10606

Datenlogger - Handmultimeter PCE-DM 22 TRUE RMS Handmultimeter mit vielen Messfunktionen, Speicher / ... MM TRMS , Oszilloskop 5 MHz , Frequenz.-

Funktionsgenerator / Logik-Analyser - Prozesskalibrator **PCE-123** Sollwertgeber zur Simulation von elektrischen Signalen, Frequenz u. Temp. - Multimeter PKT...

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15 Messgeraete elektr export Layout 1 Jürgen Nöcker Multimeters PCE Instruments clamp meters

industrial needs catalogue Site Map Page |||

Electricity Meters PCE-DM12 PCE-DM32 DM-9960 Digital multimeter with auto-

ranging Digital multi ... n miliohms tester Optional accessories CAL-2002 ISO

certificate 57 Electricity Meters TM-10 **PCE-123** PCE-OC 1 TV and satellite signal

level meter Multifunction calibrator for thermocouple an...

lang:en score:11 filesize: 848.7 K page_count: 12 document date: 2012-02-15