USER MANUAL

ELECTROSTATIC METER

PCE-PSM 10

ENGLISH



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski) can be found via our product search on:
www.pce-instruments.com

USE IN FLAMMABLE AND EXPLOSIVE ENVIRONMENT

Explosion-proof Static Meter
Explosion-proof grade:Ex ib IIB T5 Gb

This product can be used in flammable and explosive working places corresponding to IIB or lower level with this safe explosion-proof function.

Can detect static electricity on the surface of any object.
Application field:

- Film Industry
- Textile Industry
- Coating Industry
- Printing Industry
- Injection molding Industry
- Electronics Industry
- Chemical Industry
- Medical Industry and etc.

DUAL LED PRECISE POSITIONING & ACCURATE DETECTION DISTANCE

Wide detection range
It can perform not only high-precision measurement with a minimum display unit of 0.001kv, but also measurement on strongly charged workpieces of ±200 kV, thus meeting a wide range of needs.

High detection accuracy
High-precision mode with accuracy ±10%.

Accurate detection distance
The detection distance is 25mm±1.0mm.

Convenience
Small & light, comfortable button and easy to operate.

CALIBRATION

Calibration conditions

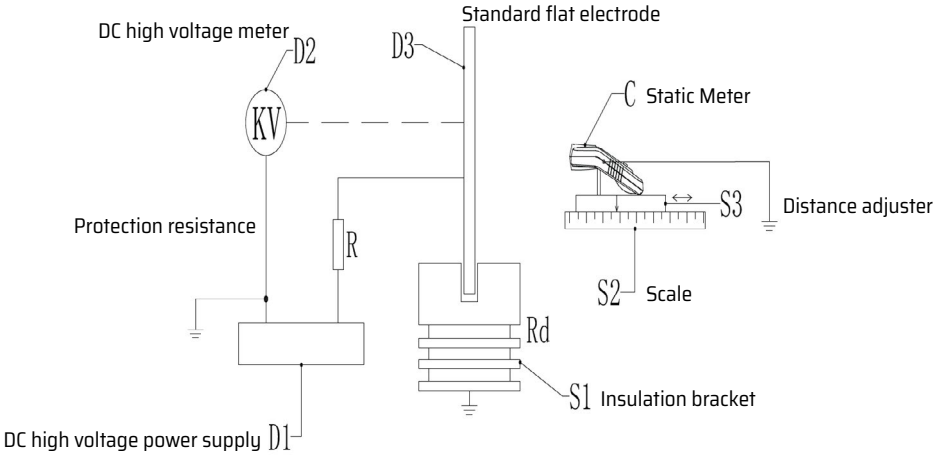
- Ambient temperature: 20°C ±3°C.
- Relative humidity: 40 ... 45%RH.
- No measurable electric field, magnetic field, positive and negative ions around.
- With ground wire, ground wire resistance <1Ω.

Calibration equipment

The instruments and equipment used for calibration must be calibrated by the measurement technical institution to meet the calibration requirements and be within the validity period.

The calibration equipment mainly includes: DC high-voltage meter, DC high-voltage power supply, standard flat electrode, distance regulator, etc. The test meter is located on the center line of the calibration plate.

The block diagram of the noncontact electrostatic voltmeter calibration device is as follows:



Requirements to equipment or devices as follows:

C Calibrated product: PCE-PSM 10

D1 DC high voltage power supply: output range -30KV ... +30KV, continuously adjustable, or minimum step 1V measurement uncertainty less than 1/4 of the allowable error limit of the calibration table;

D2 DC high voltage meter: measuring range -40KV ... +40KV, measurement uncertainty less than 1/4 of the allowable error limit of the calibration table;

D3 Standard plate electrode: The plate electrode should be round or square with rounded corner. The radius of curvature of the edge of the electrode should not cause corona. It is recommended to wrap the edge of the electrode with insulating material; the area of the plate should be large enough. The diameter or side length should be no less than 0.4m.
Our calibration plate is stainless steel size 600mm*600mm square.

Protection resistance: The resistance of the resistor should be >20KV, the protection current and the current of the human body are <5mA, and the resistance value meets the requirements of the following formula: $\mathbf{R/(R+R_d) < 0.1\,\%}$

Where: for protection of resistance, the unit is ohm (Ω);

The resistance of the insulating bracket is in ohms (Ω), the resistance is >1013Ω, and the compressive strength is >25KV. The above two resistors, their different resistance values, may cause the detected static voltage values to be different under the same standard voltage.

S1 Insulated bracket

S2 Scale, measuring range: 5mm ... 700mm, measurement uncertainty less than 0.5mm

S3 Distance adjuster: Place the test meter on the calibration device. The front end of the test chart should be extended. The geometry and material of the support should be minimized to affect the electric field distribution around the front end of the test chart.

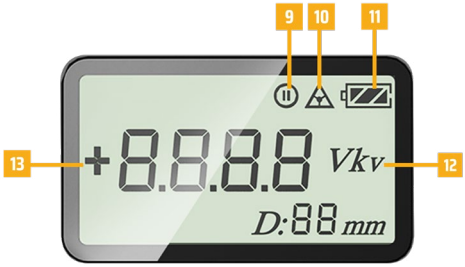
PANEL AND DISPLAY FUNCTION



1 LED distance light
2 Static detection window



3 Display backlight key:
Short press to turn the back light on or off
4 LED test distance positioning key:
Short press, on or off LED distance focusing
5 Ground wire socket:
This port is used for factory calibration
6 Test data hold key:
Short press, the data remains unchanged
Short press again to resume real-time display
7 Reset button:
Long press to reset
8 Power switch:
Short press to turn on (the screen displays ON)
Long press to turn off (the screen displays OFF)

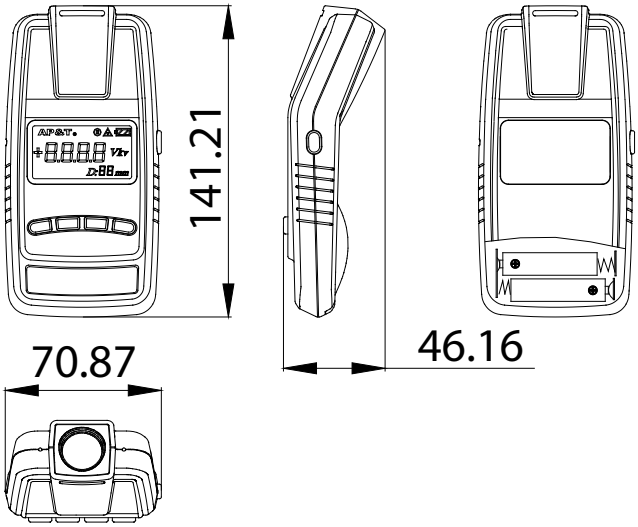


9 Keep on mark
10 Test distance positioning
11 Battery indicator
12 Voltage unit
13 Voltage

SPECIFICATION

Type	Static meter
Model	PCE-PSM 10
Detection range (KV)	0.1 ... ±200.0
Exterior color	Black shell
Detection accuracy	±10%
Detection distance	25mm ±1.0mm
Input voltage	DC3V (2 x AAA)
Working current	<100mA
Power off	Press and hold the power button for 3 seconds or 180 seconds to automatically power off
Working temperature	-18°C ... +50°C
Working humidity	0 ... 85%RH
Dimensions	141*71*38mm (L*W*H)
Net weight	146g (including: 2 batteries)
Gross weight	359g±20g (including: 4 batteries and packaging accessories)

PRODUCT SIZE



INSTALLATION TIPS

(1) Install the battery and switch on/off:
First open the battery cover on the back of the static meter and put in 2xAAA standard batteries in the package. Press switch button to open.

(2) Preparation before testing:
In order to ensure the normal use of the static meter, first confirm that the three-segment power display on the display screen is marked as full (or enough power) and the parameters reading on the screen are clearly visible. Check whether the various function buttons can be used normally. See the display function diagram for details.

(3) Detecting static electricity on the surface of the object:
When using, the static detection window of the meter should be parallel to the surface of the object to be measured, and 25mm which is the standard detection distance should be kept away from the surface of the object to be measured. It is recommended to use a ruler for distance calibration if conditions permit. After measuring the data, data hold button can be pressed to keep the measured data on the display. Press the data hold button repeatedly to resume the detection status.

WARNING!
The meter should be gradually approached to the surface of the charged object from far to near during detecting. Do not continue to be approach the charged object when the detection value reaches the range limit in order to avoid electrostatic discharge damage to the static meter.

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law. For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations. If you have any questions, please contact PCE Instruments.

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