PFISTERER

Instructions for use

Capacitive Voltage Tester KP-Test 5

For 3-phase networks to 36kV

Figure 1: Components and construction

Components and construction

Fork electrode
(use on outdoor systems only)

1 **Contact electrode**
(ridged design for making contact with bars)

2 **Test electrode**
(contact electrode extension)

3 **Limiting mark**
(red ring)

4 **Indicator unit**

5 **Insulating rod**

6 **Hand guard**

7 **Handle**

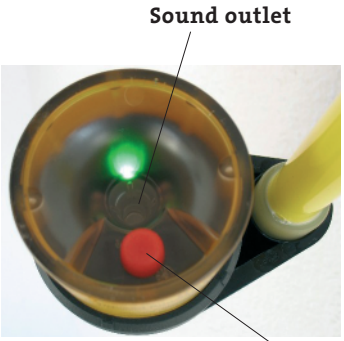


Figure 2: Front view of indicator unit

Figure 3: Voltage tester nameplate (example) and explanations

1. Reference number of voltage tester
2. Rated voltage
3. Rated frequency
4. Type of PFISTERER insulating pole
5. Can also be used for switchgear
6. No standby function
7. Area for sticker

1. Application rules and safety information

Voltage testers are used for the safety of the user. There is a risk to life if even only one of the points in these instructions is not observed. Furthermore, the availability of the system will be jeopardised and there will be no entitlement to claims under the warranty.

1.1 Voltage testers may only be used by specialist or trained personnel as defined by EN 50110-1 for the purpose of establishing that the system is not live.

1.2 Standards:
The KP-Test 5 voltage tester complies with IEC 61243-1:2003 and EN61243-1:2005.

1.3 Rated voltage:
The KP-Test 5 voltage tester may only be used for the rated voltage and rated frequency (3-phase) specified on the nameplate.
The unit indicates "voltage present" in accordance with IEC61243-1 within the following limits:

- from a conductor-earth voltage of 45% of the rated voltage; this is equivalent to a conductor-conductor voltage of 78% of the rated voltage.
- up to a maximum of 110% of the rated voltage.

"Operating voltage not present" is indicated below a conductor-earth voltage of 10% of the rated voltage; this is equivalent to a conductor-conductor voltage of 17% of the rated voltage. Coupled remote voltages, which usually occur, are therefore not indicated.

1.4 Class S:
The KP-Test 5 voltage tester with contact electrode extension complies with Class S (see nameplate) and is therefore suitable for switchgear and overhead conductors.

1.5 Interference voltages and interference fields:
The indication given by the voltage tester can be adversely affected in the case of angled or complex conductor arrangements. Such measuring points must therefore be avoided or their suitability must be checked.

1.6 Use with factory-assembled switchgear:
The KP-Test 5 voltage tester can only be used in factory-assembled type-tested systems under certain conditions. Consultation between the user and the manufacturer of the equipment is required.

1.7 Use in railway systems:
The KP-Test 5 voltage tester is designed for three-phase networks; it is therefore not suitable for railway systems (single-phase systems in which the rated voltage is equal to the conductor-earth voltage). PFISTERER provides special voltage testers for this purpose.

1.8 The voltage tester may only be used with the associated insulating pole. This is specified on the nameplate of the indicator unit (Figure 3).

1.9 Voltage testers must only be held by the handle. The boundary between the handle and the insulating part is marked by the limiting disc. It is prohibited to hold the equipment beyond the limiting disc; see Figure 1.

1.10 Voltage testers must be kept dry and must be clean when in use.

1.11 Voltage testers must be checked by the user for obvious damage before use. Defective voltage testers must not be used. In particular, it must be ensured that the membrane in the sound outlet is undamaged.

1.12 The KP-Test 5 voltage tester may only be used and stored in climatic categories N and W:
Climatic category N: -25 to +55°C and 20 to 96% relative humidity,
Climatic category W: -5 to +70°C and 12 to 96% relative humidity.

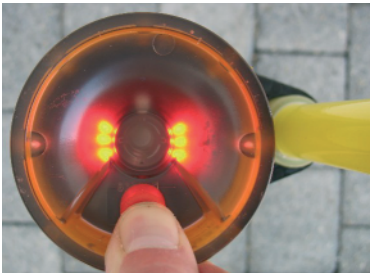
1.13 The Voltage Tester KP-Test 5 can be use in precipitation.
In the event of rain, drops of water may collect on the membrane in the sound outlet and affect the audible signal. These must be removed before use by upturning the unit.

1.14 Interference with and modifications to the voltage tester and the addition of stickers or other components that are not intended for this equipment are not allowed

2. Commissioning and functional testing

2.1 Place associated insulating pole (see nameplate) in the hexagon next to the indicator unit and tighten the star screw so that it is not over-tight. (Figure 3 and Figure 1).

2.2 For testing conductor wires in outdoor systems, attach fork electrode.
Note: In indoor systems, no attachments may be used on the contact electrode, as these affect the bridging protection.



2.3 Press the red start button on the indicator unit for at least 3 seconds: The red LEDs will flash 3 times, and at the same time, the audible signal will sound. After this, the red LEDs will illuminate continuously together with a continuous tone.

2.4 Release the button = > the green LED will illuminate and indicate that the unit is ready for use (no tone). The electronics, the test electrode and the battery charge state are checked during this self-test.

2.5 The unit will be ready for use for ca. 2 minutes and will then switch off automatically. In the case of a red indication ("Voltage present"), the switch-off is ineffective, and the switch-off time starts again. The unit can also be switched off by pressing the button briefly.

3. Determining that the system is not live

3. 1 Safety in use:

3.1.1 The voltage tester is to be used in such a way that the user always maintains the necessary safety distance from any part of the system that may be live. For this reason, the voltage tester may only be inserted into the equipment as far as the limiting mark (red ring) and only held by the handle. It is prohibited to hold the equipment beyond the limiting disc.

3.1.2 The voltage tester is to be used in such a way that all indicator lamps are visible. This is ensured when it is held so that the angle of view is approximately parallel to the axis of the insulating pole.

3.1.3 The voltage tester may be placed in contact with the operating voltage for a maximum of 5 minutes and, in the event of rain, for a maximum of 1 minute.

3.2 After commissioning and functional testing in accordance with Section 2, the green light will come on continuously.

3.3 Place the contact electrode against the bare part of the system to be tested.

→ red LEDs flash and intermittent tone: "Operating voltage present".
→ green LED illuminates and no tone: "No operating voltage present".

3.4 Carry out the voltage test on all 3 phases.

3.5 If it has been established that there is "No operating voltage present", then the functional test must be repeated (see Section 2.3).

4. Faults

If it is not possible to switch the voltage tester on as described in Section 2.2, it may be necessary to change the batteries (see Item 7). If the voltage tester cannot be switched on even after changing the batteries or if mechanical damage is evident, the unit must be withdrawn from further use and returned to the manufacturer.

5. Maintenance, storage and transport

5.1 Voltage testers are safety devices on which human life can depend. Accordingly, voltage testers including the insulating rod must be handled with great care and protected against contamination and damage.

5.2 All components are to be cleaned with a lint-free damp cloth. Solvents or aggressive cleaning agents must not be used.

5.3 The membrane in the sound outlet (Figure 2) is very sensitive and must not be cleaned or touched in any other way. It must be checked regularly for damage.

5.4 The voltage tester must be checked for operation annually (procedure according to Section 2 and 3).

5.5 Voltage testers must be stored and transported dry. Suitable bags or cases must be used for transportation.

5.6 Temperature and humidity during storage and transport must also be maintained in accordance with the climatic category (see Section 1.12).

5.7 Voltage testers must not be subjected to direct sunlight for extended periods.

5.8 Discharged batteries must be removed from the unit. See Section 7 for changing the battery.

6. Routine inspection

Voltage testers must be subjected to a routine inspection in accordance with IEC61243-1 at regular intervals. It is the responsibility of the user to carry out the maintenance plan taking into account

the conditions of use. National regulations also apply. In Germany, this is the BGV A2

The period between routine inspections must not exceed 6 years.

According to IEC61243-1, it is recommended that the routine inspection be carried out by PFISTERER Kontaktsysteme or in a repair workshop that has been qualified by PFISTERER.

Delivery address:
PFISTERER Kontaktsysteme
GmbH & Co. KG
Bahnhofstraße 30
89547 Gerstetten
Germany

7. Changing the batteries

Recommended battery type: Energizer Lithium AA 1.5 Volt.

Two batteries of this type are required.

This battery guarantees the highest possible readiness for use due to its low self-discharge and its high capacity even at low temperatures. With normal use, changing between routine inspections (6 years) is not necessary when this battery is used.

Type AA (LR6) alkali batteries can also be used. However, in this case, more frequent battery changing may be required depending on the battery quality and ambient temperatures. In this case, change the batteries regularly and in good time in order to keep the unit ready for operation.

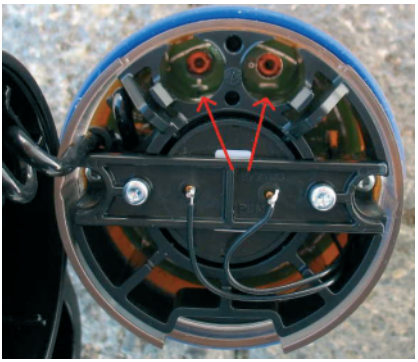
Note:
Batteries must only be changed in a dry and clean environment.

• Remove insulating rod

• Unscrew threaded ring

• Remove bottom part of housing and place on table together with test electrode

• Replace the batteries ensuring that the polarity is correct



• Check blue sealing ring and housing sealing surfaces for cleanliness and damage. The sealing ring provides insulation against high voltage and sealing against moisture. The perfect condition of this ring is a prerequisite for the required safety standard. Use original sealing rings only
(see Section 8).

• Fit the two halves of the housing together ensuring that the spiral cable is not pinched or twisted.

• Screw on the threaded ring and tighten as far as the stop (no gap, see arrow)

• Test the unit in accordance with Section 2.

Note:
Interfering with the unit over and above changing the batteries, and other modifications to the voltage tester are not allowed. Non-operational or damaged voltage testers are to be withdrawn from further use.

8. Spare parts

Item number	Designation
973 210 001	Fork electrode
021 970 009	Sealing ring
619 435 004	Lithium battery CR AA 1.5 V