

## User Instructions

### MultiSafe DSP-UB 3

Voltage Tester for 3rd-rail





- 1 display unit
- 2 extension with O-electrode
- 3 red / green LED-indication for voltage
- 4 display (LCD) for voltage, two color backlight
- 5 On- Off-button / hold button for selftest
- 6 handgear
- 7 contact magnet for ground connection
- 8 1,5 m connection line

### Symbols on the instrument



Attention! Observe user instructions!



Indicates EC conformity



Device for live working



This device has to be disposed of according to the applicable regulations and laws (for Europe: WEEE 2012/19/EU). Please contact [service@tietzsch.de](mailto:service@tietzsch.de) in regard to the return of old devices.

## 1. Application

The MultiSafe DSP-UB 3 is a two-pole voltage tester to test on railway lines with lateral power supply (3rd-rail). Thanks to its green and red LEDs, the display is easy to see even in dark surroundings. The firmly attached magnet and the extension allowing greater safety distances and ease of handling.

With the MultiSafe DSP-UB 3 you can test within the specified nominal voltage range of 10 to 3000 V DC and 10 to 3000 V AC voltages. The integrated self-test enables the function to be checked on site. Thanks to its high degree of protection (IP65) the MultiSafe DSP-UB 3 may even be used in rain.

### 1.1 Intended use

This device is intended for use in applications as described in the operating instructions only. Thus, it is imperative to observe the notes on safety and the technical data in conjunction with the ambient conditions.

Any other form of usage is not permitted and can lead to accidents or destruction of the unit.

Any misuse will result in the expiry of all guarantee and warranty claims.

## 2. Safety Precautions

When used for its intended purpose, the safety of the operator, as well as that of the instrument, is assured.

**In order to maintain flawless technical safety conditions, and to assure safe use, it is imperative that you read these operating instructions thoroughly and carefully before placing your instrument into service, and that you follow all instructions contained therein.**

**Observe the following safety precautions:**

- The voltages indicated on the MultiSafe are rated voltages. The voltage tester may only be used in systems working within these rated voltage ranges.
- Faultless indication of display values is only guaranteed between -15° and +55°C.
- Hold the instrument by the handgear only, to avoid covering the display and not touching the test electrode.
- The test probe may only be connected up to the red limiting mark to live plant components.
- The maximum on-period is 120 seconds.
- Only qualified persons may carry out work with these device. The user needs to be familiar with the risks for measuring voltage and compliance with safety regulations and the proper use of the voltage detector.
- The voltage tester may only be dismantled by authorised personnel.
- The grp-extension of the voltage tester must not to be removed. It must be mounted on the display unit of the DSP UB 3. The tester cannot be used without the grp-extension.

- Workings may only be performed with appropriate personal protective equipment. Observe the minimum object distance to other plant components that are energized or earthed and use personal protective equipment as specified by national accident prevention regulations (in Germany: DGUV V3 or DIN EN 50110-1).
- The function of the voltage tester must be checked briefly before and whenever possible after the use. Carry out the function test. If the indication of one or several systems fails in the course of checking, the instrument must not be used again.
- This voltage detector may not permit to clearly indicate the absence of operating voltage in case of interference voltage because of its relatively high internal impedance. When the indication "voltage present" appears on a part that is expected to be disconnected of the installation, it is recommended confirming by an other means that there is no operating voltage on the part to be tested.
- Before using the device check the housing, the extension and the connecting line for visible damage. If damages are visible the voltage tester may not be placed into operation. In case of strong dirt contamination, the tester must be cleaned before use. If it is dirty or oxidized, the magnetic contact should be cleaned with emery paper.
- The tester has to be stored in a clean and dry environment.

### 3. Putting into operation

#### Attention!

The DSP-UB 3 **does not** switch on automatically at voltage.

**Switch-on:** Press button .

**Switch-off:** Press button  until „oFF“ is indicated.

When no voltage is applied, the device switches off automatically after 120 s. The display illumination switches off after approximately 5 s when no voltage is applied

#### 3.1 Battery

Your instrument is already supplied with a 9 V block battery.

The battery status is indicated by a battery symbol on the display (see section 5). You need to change the battery of the device before continuing with testing when the empty battery symbol on the display flashes.

### 3.2 Establish contact with the earth


Place the contact magnet on the bare rail.  
The contact surface must be clean and free from coarse rust.



### 3.3 Checking the function with the integrated self-test

#### Step 1 – Test of the display

The device must be switched off for the self-test.

Press and hold button 

All display segments light up on the display, the backlight changes between red and white. In addition, 4 LEDs light up and the buzzer sounds.

Release button , „TEST“ is indicated on the display.



#### Step 2 – Check test circuit and protective resistors

Hold the test electrode to the grounded rail.  
Through this, the measurement and the connecting line are tested.



“RdY” appears on the display and the green LEDs flash. In this case, the self-test was successful.



If no „rdY“ appears, the earth connection must be checked and, if necessary, cleaned, and the test probe and electrode checked. The self-test must be repeated.

#### Attention!

If one of the displays fails during the self-test – even if only partial failure occurs – or if the instrument does not indicate „rdy“ after the self test, the voltage tester may not be placed into operation!

#### 4. Measuring and testing

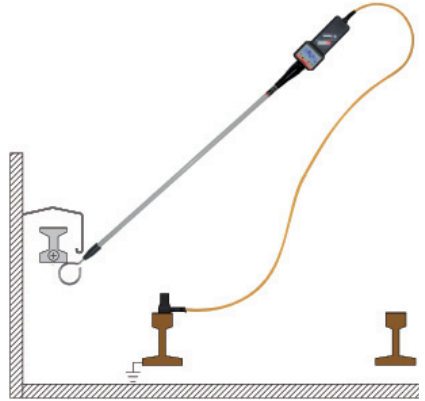
##### Attention!

The function test (see 3.3) has to be performed successfully.

The voltage tester **does not** switch on automatically when voltage is applied.

After a successful self-test, contact the power rail with the O-electrode of the extension.

The O-electrode must be rotated so that the busbar is touched as shown below.



Safe contact through the O-electrode

##### Application in moist environments

The DSP-UB 3 is approved for indoor and outdoor applications. In case of precipitation, the device has to be wiped dry before usage.

#### 4.1 Voltage indication


green LEDs flash  
display illumination white



no voltage  
(voltage < 260 V)

red LEDs lights up  
display illumination red



 **voltage!**  
(voltage > 260 V)

#### DC / AC voltage, polarity

The type of voltage is represented by the symbols „~“ for AC and „-“ for DC.

If the negative pole of a DC voltage is on the display, the „-“ symbol appears. If there is a positive pole there, no sign appears.

#### Voltage > 3000 V AC / 3000 DC

The flashing OL display warns of overvoltages. In this case the test must be stopped immediately!

**Note:** The voltage tester is equipped with continuous function monitoring. If the message „U - Err“ is displayed during the voltage test, the device is defective and must no longer be used!

## 5. Battery

The latest battery status is symbolised by a three-stage battery indicator on the display.



indication of battery status



replace the battery soon –  
few measurements possible  
(Battery symbol flashing:  
no further measurements admissible!)

### Attention!

When the empty battery symbol flashes, then no more measurements can be performed and the battery has to be replaced immediately.

The device requires a 9 V block battery IEC 6LR61 / 6LF22 / 6LP3146 (alkali-manganese).

### 5.1 Replacing the battery

Loosen the screw at the back of the instrument which secures the battery compartment lid, remove the lid. Let the battery drop out of the battery compartment with its CAT IV protection cover and exchange it. Therefore, snap the battery contacts onto the 9 V block battery and insert the battery together with the CAT IV protection cover into the battery compartment. Put the lid back on the battery compartment and screw it tight.

Regularly make sure that the battery of your device does not leak. In case it does, you have to replace the electrolyte completely and to insert a new battery. In case of a long storage period, remove the battery from the device.

Note:

Included in the scope of delivery is one battery. These battery is not to be re-charged. Attempting to recharge it may cause risk to personal safety and damage to the equipment. The battery may not to be opened. Depleted batteries must not be disposed with the domestic waste. Please, return batteries at a local retailer or municipal recycling depot. Return is free of charge and required by law.



## **6. Maintenance / Storage**

### **6.1 General information**

The MultiSafe DSP-UB 3 is completely maintenance-free. Nevertheless, observe the following information in order to maintain safe operation:

Always keep the voltage tester dry and clean. The housing can be cleaned with a cloth dampened with isopropyl (alcohol) or soapy water.

### **6.2 Repeated inspection**

According to EN 61243-2 it is necessary to carry out repeated examinations.

It should not exceed the time-limit of 6 years.

Depending on operation conditions and frequency a previous inspection may be recommendable.

The serial number with the date of manufacturing (WWYYNN = **W**eek **Y**ear **N**umber) is imprinted on the battery cover on the backside of the device. Repeated inspections are offered by the manufacturer and indicated by the inspection plate.

## **7. Repair**

Repair is only allowed by the manufacturer or explicitly authorised repair shops.

In case of damages on the device or failure of the function test according to section 3.2 or for detailed inspection/calibration, please contact:

**service@tietzsch.de** or send the device and a description of failure back to the manufacturer (address see page 1).

## **8. Limited warranty and limitation of liability**

By continuous quality checks and production controls, most modern electronics and high quality materials we guarantee that the tester will be free from defects in material and workmanship for two years.

This warranty does not cover batteries, improper handling, not intended purpose, opening the housing, improper storage or damages from accidents. No other warranties such as fitness for a particular purpose will be given.

We are not liable for any indirect, incidental or consequential damages or losses arising from any cause or theory.

## 9. Technical data

Type/ Nominal voltage range:	DSP-UB 3: 10 ... 3000 V AC 10 ... 3000 V DC
Nominal frequency range:	DC/15 ... 500 Hz
Measurement range:	10 ... 3000 V AC 10 ... 3000 V DC $\pm 3 \% + 5 D$
Input resistance:	448 k $\Omega$ at 3000 V
Current peak value I <sub>s</sub> :	< 3,4 mA
On-time:	at max nominal voltage TRon 120 s RToff max 240 s (recovery time)
Display:	2 red LEDs for voltage 2 green LEDs for no voltage LCD 1999 Digit two-color backlight
Polarity:	LCD voltage type - / ~
integrated self-test:	connection cable, extension, electronic, display, protective resistors
Power supply:	9 V-Block IEC 6LR61 / 6LF22 / 6LP3146 alkali-manganese
Construction:	for indoor and outdoor installations
Insulation test voltage:	6 kV
Operating temperatures:	-15 ... + 55°C
Casing:	ABS, display cover made of impact resistant polycarbonate
Design:	two-pole voltage tester with a fixed 850 mm extension made of GRP with O-electrode for testing covered busbars, PUR sheathed cable - double insulated with contact magnet for connection to the grounded running rail
Protection category:	IP 65, device can be used during precipitation
Connecting line:	PUR sheathed cable, 1500 V, 1,5 m with firmly attached magnet
Standards:	in accordance with IEC 61243-2
EMV requirements:	DIN-EN 61326
Dimensions/Weight:	1150 x 70 x 70 mm 450 g



## EG-Konformitätserklärung

Hiermit erklären wir, dass das nachstehend bezeichnete Produkt in seiner Konzeption und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinien entspricht. Bei einer mit uns nicht abgestimmten Änderung des Produktes verliert diese Erklärung ihre Gültigkeit.

Diese Erklärung beinhaltet jedoch keine Zusicherung von Eigenschaften.

### Hersteller:

Rudolph Tietzsch GmbH & Co. KG  
Willinghauser Str. 18  
D-58256 Ennepetal

### Beschreibung des elektrischen Betriebsmittels:

• Typ/Modell: **MultiSafe DSP-UB 3**

• Funktion: Zweipoliger Hochspannungsprüfer

• Baujahr: ab 2021

### Es wird die Übereinstimmung mit denen für das Produkt geltenden

#### Richtlinien/Bestimmungen erklärt:

• EMV-Richtlinie (2014/30/EU) vom 26. Februar 2014

• RoHS-Richtlinie (2011/65/EU) vom 8. Juni 2011 und

Änderung von Anhang II (2015/863/EU) vom 31. März 2015 und

Richtlinie (2017/2102/EU) zur Änderung der Richtlinie 2011/65/EU vom 15. November 2017

• WEEE-Richtlinie (2012/19/EU) vom 4. Juli 2012

#### Angewandte harmonisierte Norm:

• Arbeiten unter Spannung – Spannungsprüfer –

Teil 2: Resistive (ohmsche) Ausführung für Wechselspannungen von 1kV bis 36 kV

DIN EN 61243-2 (VDE 0682 Teil 412):1997 + A1:2003-09

EN 61243-2:1997 + A2:2002

### Jahreszahl der CE-Kennzeichenvergabe: 2021

### Angabe/Identität zur Person des Unterzeichners:

Michael Tietzsch (Geschäftsführer)

Ennepetal den 2021-01-18

