

# User Manual

## CALIBRATION UNIT PGT<sup>®</sup>120-12

**Part-No.: 7100.PGT120.CU.12**



## ■ Scope of Supply

- Calibration Unit PGT®120-12
- 2x measuring cable 1m
- Banana plug adapter isolated 10mm DK / 4mm DK
- User manual available for download ([www.warmbier.com](http://www.warmbier.com))
- Calibration certificate „German / English“

## ■ Description

The Calibration Unit contains resistors to test the limits of the Personal-Grounding-Tester PGT®120.

It works without battery or any external power supply.



For the measurement of the PGT®120 - test voltage you need a DC-voltmeter with an impedance of  $\geq 10 \text{ M}\Omega$ .

**Important: Remove all connections from the measuring inputs of the PGT®120!**

Keep the calibration unit at a dry place.

After taking the Calibration Unit from a cold into a warm environment, let it warm up to prevent from condensation, otherwise it will affect the accuracy.

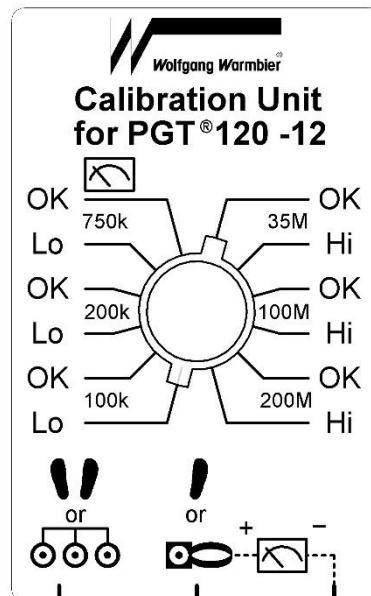
## ■ Technical Data

To check the resistors, connect a suitable resistance meter to the central jack  and the left jack  of the Calibration Unit and set the marked lever of the rotary switch in succession to the marked positions. The corresponding resistor values and tolerances can be taken from the drawing below.

After that connect the resistance meter with the central  and the right jack of the Calibration Unit.

Nominal value:  $24,4 \text{ k}\Omega \pm 1\%$

818,10  $\text{k}\Omega \pm 1\%$   
682,20  $\text{k}\Omega \pm 1\%$   
217,90  $\text{k}\Omega \pm 1\%$   
182,20  $\text{k}\Omega \pm 1\%$   
108,90  $\text{k}\Omega \pm 1\%$   
90,90  $\text{k}\Omega \pm 1\%$



31,80  $\text{M}\Omega \pm 1\%$   
38,15  $\text{M}\Omega \pm 1\%$   
91,03  $\text{M}\Omega \pm 1\%$   
108,83  $\text{M}\Omega \pm 1\%$   
181,83  $\text{M}\Omega \pm 1\%$   
217,53  $\text{M}\Omega \pm 1\%$

24,4  $\text{k}\Omega \pm 1\%$

## ■ Calibration


We recommend a calibration cycle of 3 years.



## ■ Warranty

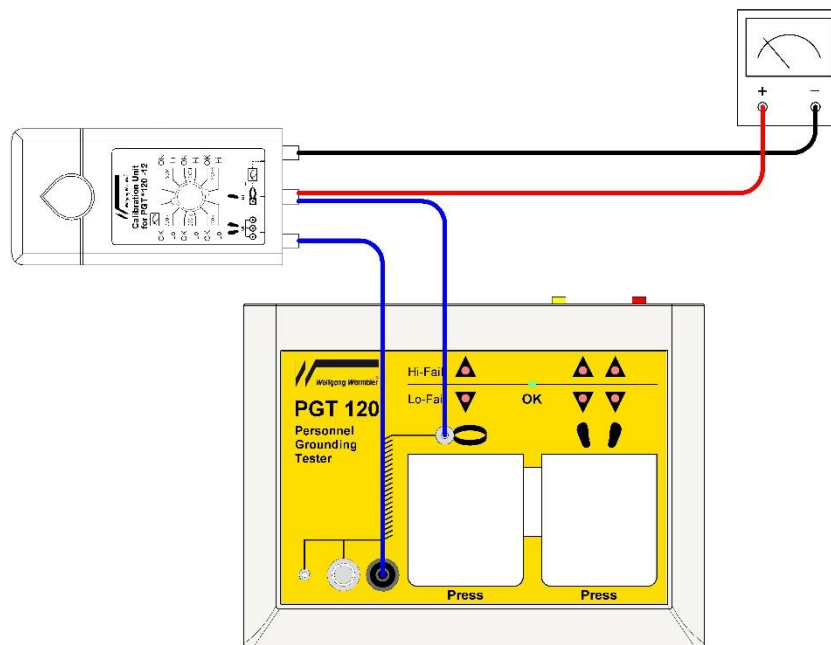
We grant a guarantee of **12 months** if handled correctly in accordance with the user manual.

**The warranty expires in the event of mechanical damage to the Calibration Unit and/or unauthorized opening of the device!**

## ■ Measurement of Test Voltage

To check the PGT®120-test voltage, set the marked lever of the rotary on the symbol  and connect:

- the middle jack of the Calibration Unit with the 3mm snap of the PGT®120 (same symbols ). Use the 4mm DK socket adaptor which is included.
- the left jack of the Calibration Unit with the black 4mm banana socket of the PGT®120 (wrist strap test, same symbols ).



Use a DC-voltmeter with impedance  $R_i \geq 10M\Omega$ , preferably measuring range 2V.

Connect the right jack of the Calibration Unit also to minus-input of the voltmeter and the central jack of the Calibration Unit to plus-input.

Select the test voltage 30V, 50V and 100V with DIP-switches 6 and 7 and press the left contact electrode for each measurement.

**DIP-Switch Settings**

Switch 6	Switch 7	Test Voltage	Permissible Deviation
OFF	OFF	30 V	10 %
OFF	ON	50 V	10 %
ON	ON	100 V	10 %

The test voltage is calculated by reading x 100.  
Example: reading = 0,97 V  $\Rightarrow$  test voltage = 97,0 V



## ■ Preparation

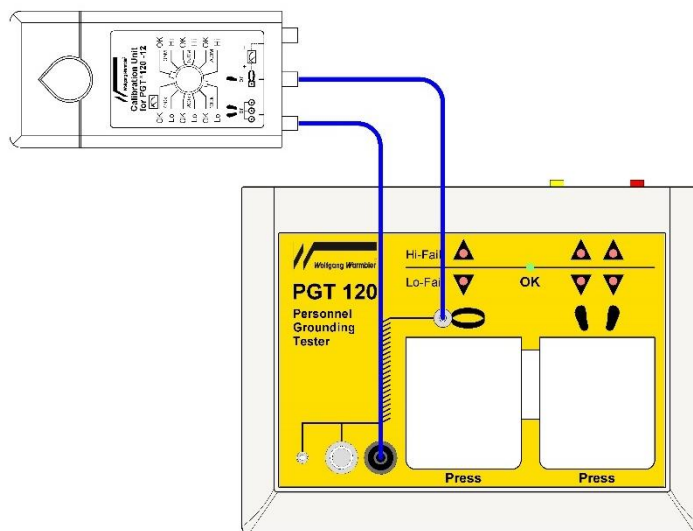
The following DIP switch setting is the starting point for the following tests. Verification must be performed for all three measurement voltages (switches 6 and 7).

ON								5	4			
OFF					8					3	2	1

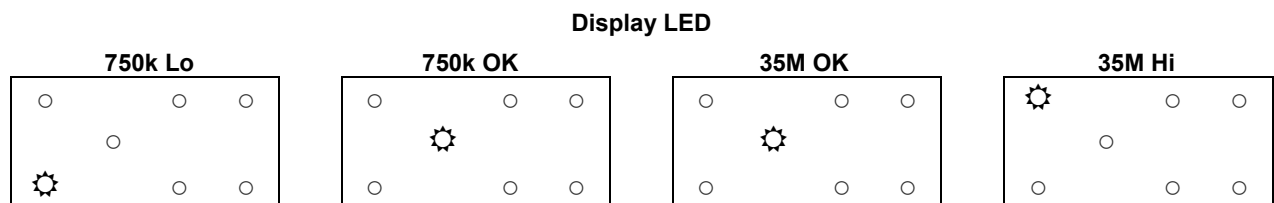
## ■ Verification of Wrist Strap

To check the limits of the wrist strap test connect:

- the middle jack of the Calibration Unit with the 3mm snap of the PGT®120 (same symbols ).
- the left jack of the Calibration Unit with the black 4mm banana socket of the PGT®120 (wrist strap test, same symbols ).





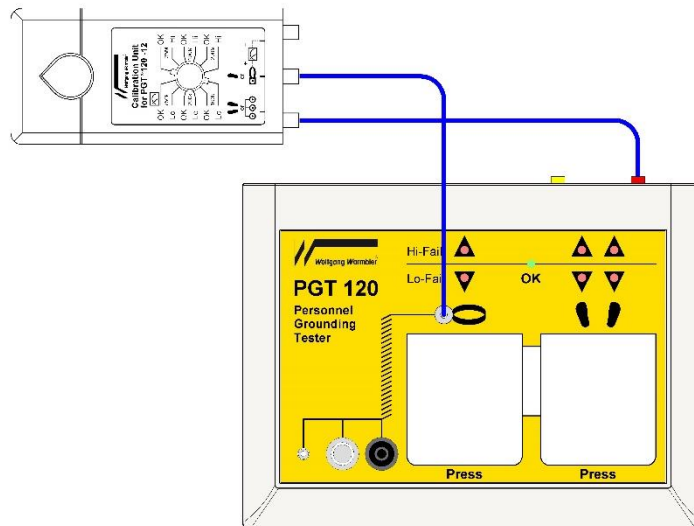
Set the marked lever of the rotary switch in succession to the positions mentioned below. Press the left contact electrode for each measurement:



## ■ Verification of Footwear Test Single Shoe Right

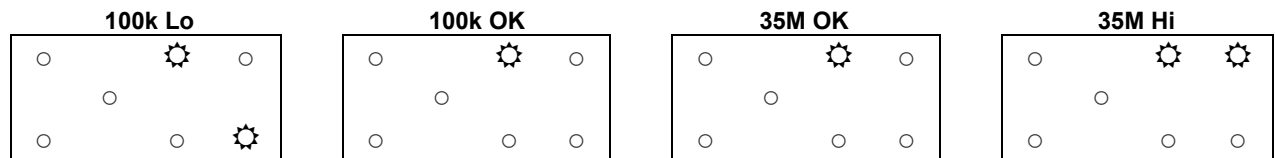
To check the limits of the footwear test connect:

- the middle jack of the Calibration Unit with the 3mm snap of the PGT®120 (same symbols ). Use the 4mm DK socket adaptor which is included.
- the left jack of the Calibration Unit with the red 4mm socket on the rear side of the PGT®120 (footwear electrode, same symbols ).



Set the marked lever of the rotary switch in succession to the positions mentioned below. Press the right contact electrode for each measurement:

### Display LED

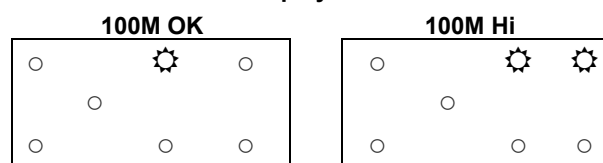


### DIP-Switch Settings: Upper Limit 100 MΩ

Switch 3	Switch 4											
ON	ON	ON							5	4	3	
ON	ON	OFF					8				2	1



Set the marked lever of the rotary switch in succession to the positions mentioned below. Press the right contact electrode for each measurement:

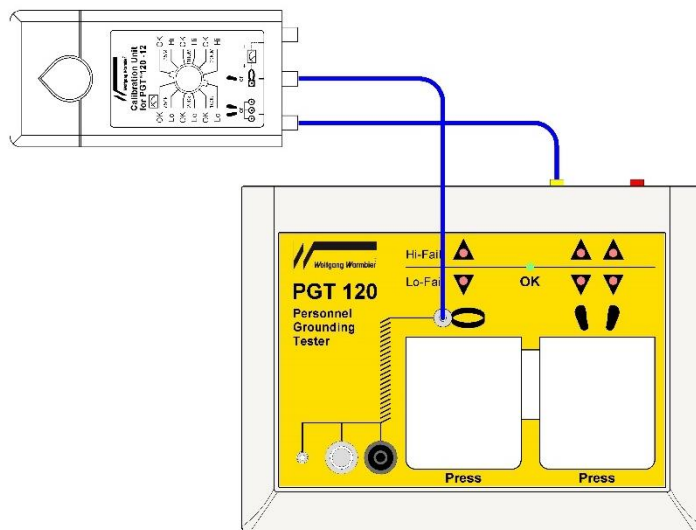
### Display LED



## ■ Verification of Footwear Test Single Shoe Left

To check the limits of the footwear test connect:

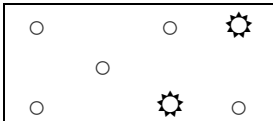
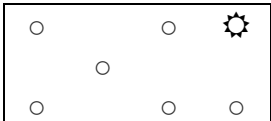
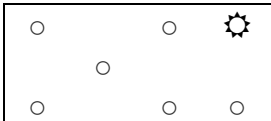
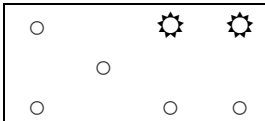
- the middle jack of the Calibration Unit with the 3mm snap of the PGT®120 (same symbols ). Use the 4mm DK socket adaptor which is included.
- the left jack of the Calibration Unit with the yellow 4mm socket on the rear side of the PGT®120 (footwear electrode, same symbols ).



### DIP-Switch Settings: Upper Limit 35 MΩ

Switch 3	Switch 4	→	ON							5	4				
OFF	ON		OFF					8					3	2	1

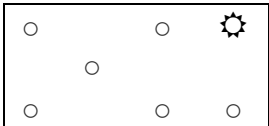
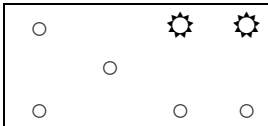
Set the marked lever of the rotary switch in succession to the positions mentioned below. Press the right contact electrode for each measurement:

Display LED			
100k Lo	100k OK	35M OK	35M Hi
			

### DIP-Switch Settings: Upper Limit 100 MΩ

Switch 3	Switch 4	➔	ON							5	4	3		
ON	ON		OFF					8					2	1

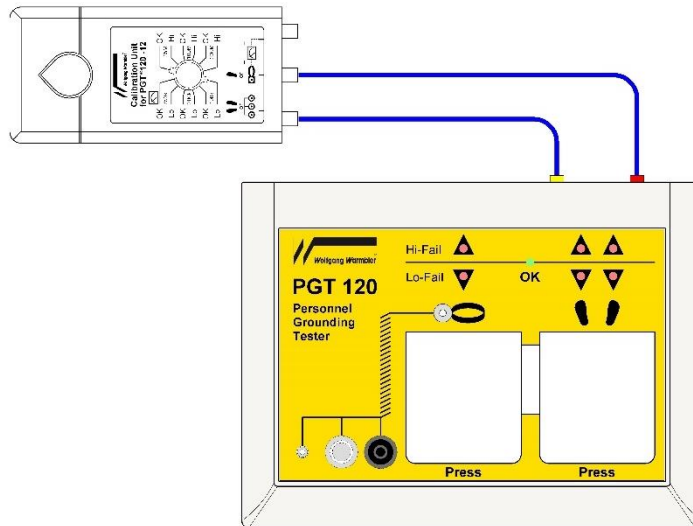
Set the marked lever of the rotary switch in succession to the positions mentioned below. Press the right contact electrode for each measurement:

Display LED	
100M OK	100M Hi
	

## ■ Verification of Footwear Test in Series

To check the limits of the footwear test connect:

- the middle jack of the Calibration Unit with the red 4mm socket on the rear side of the PGT®120 !
- the left jack of the Calibration Unit with the yellow 4mm socket on the rear side of the PGT®120 !



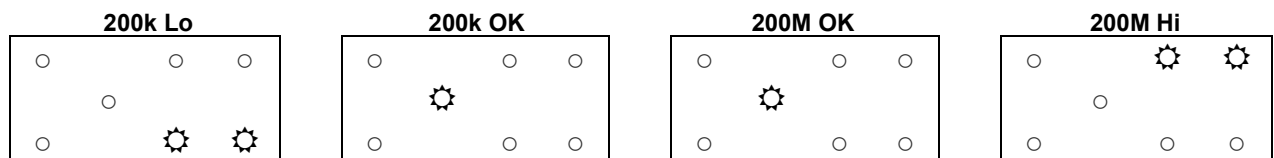
### DIP-Switch Settings: Upper Limit 200 MΩ for series

Switch 8												
ON	ON					8			5	4	3	
OFF	OFF										2	1

Set the marked lever of the rotary switch in succession to the positions mentioned below. Reset the instrument after each measurement by disconnecting the left wire:

**The touch plate must not be actuated with these settings!**

#### Display LED



## ■ Device return and environmentally compatible disposal

This instrument complies with IEC 63000:2016 (Restriction of the use of certain hazardous substances [RoHS]).

This device complies with the requirements according to category 9 of the ElectroG (monitoring and control instruments).

We identify our electrical and electronic devices in accordance with WEEE 2012/19/EU and ElektroG with the symbol shown to the right per DIN EN 50419.

These devices may not be disposed of with the trash.

Please contact our service department regarding the return of old devices.

