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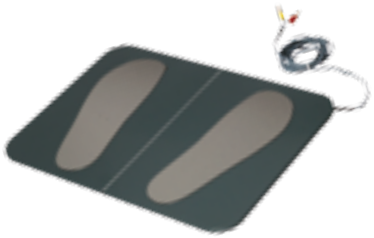
PGT® 120 PERSONNEL GROUNDING TESTER

The Personnell Grounding Tester PGT®120 is a wrist strap and footwear tester for access control of ESD protected areas (EPA's)

- The test result is indicated with audible and visual signals. A relay with a dry contact provides the connection to a door opening system
- Power supply: Internal battery or external power supply unit
- Wrist strap, right and left shoe testing is simultaneously possible by separate measuring circuits
- In combination with a barrier gate, the footwear measurement can be performed in series without pressing a button (hands-free mode).
- Separate measurement of left and right shoe
- Lower limit disabling is possible
- The unit can be used on bench tops or as a wall mounted unit (Wall mounting requires an additional wall mounting plate)
- Adjustable limits through dip switches

Includes:
PGT 120 unit, footwear testing electrode, user´s manual in English and German, Calibration Certificate, 9 volt battery and 230 VAC power supply

IEC EN

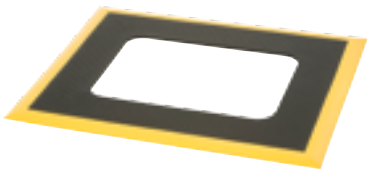


Footwear electrode for separate shoe testing
Dimension: 350 x 500 mm

Product link

Part Nr.	
7100.PGT120	Personnel Grounding Tester PGT®120
7100.PGT120.WK	Wall mounting plate for PGT®120 and PGT® 120.COM (not shown)
7100.PGT120.CU	Calibration unit for PGT® 120.COM
7100.PGT120.SM	Mat for footwear electrode with yellow bevelled edges

When the PGT®120 is operated in the "hands-free mode" , the measurement is performed in series through the shoes without touching the contact electrode on the PGT120 unit



Mat for footwear electrode
Dimension: 830 x 680 x 13 mm

Calibration Unit for PGT®120

Wolfgang Warmbier
Systeme gegen Elektrostatik

User's Manual

Calibration Unit PGT120

Wolfgang Warmbier
Untere Gießwiesen 21
D-78247
Hilzingen/Germany
www.warmbier.com

1 Introduction

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.
To measure the PGT 120 - test voltage you need a DC-voltmeter with an impedance of ≥ 10MΩ.

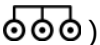
Notice: Remove <u>all</u> connections from the measuring inputs of the PGT!

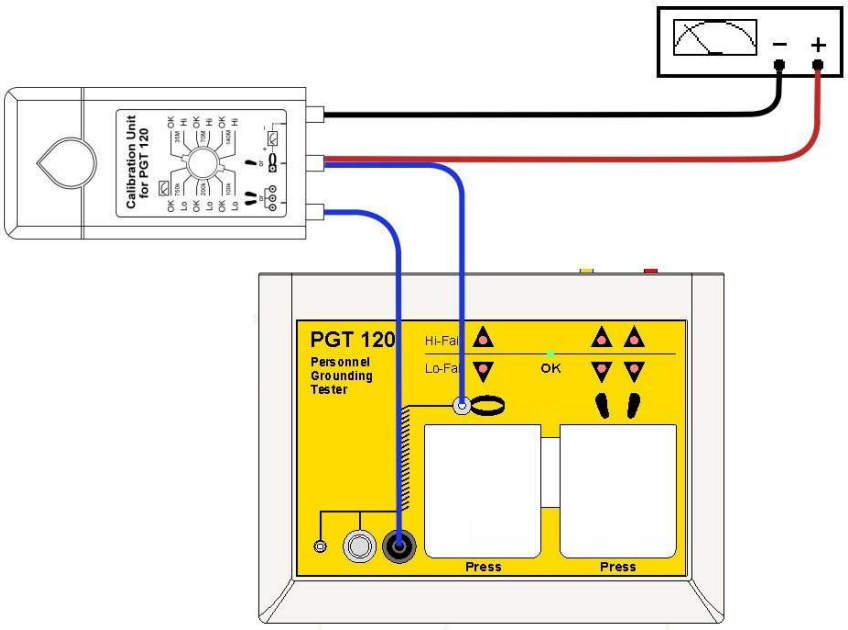
Keep the calibration unit at a dry place.

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

2 Test voltage measurement

To check the test voltage, set the marked lever of the rotary switch to  and connect:

- the central jack of the calibration unit to the 3 mm snap of the PGT 120 (same symbols ). Use the DK3-socket adaptor which is included.
- The left jack of the calibration unit to the black 4 mm banana socket of the PGT 120
- (wrist strap test, same symbols ).



Use a DC-voltmeter with impedance Ri ≥ 10MΩ, 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 4 and 5 and press the left contact electrode for each measurement.

DIP-switch settings

Switch 4	Switch 5	Test voltage
OFF	OFF	30 V
OFF	ON	50 V
ON	ON	100 V

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

3 Preparation

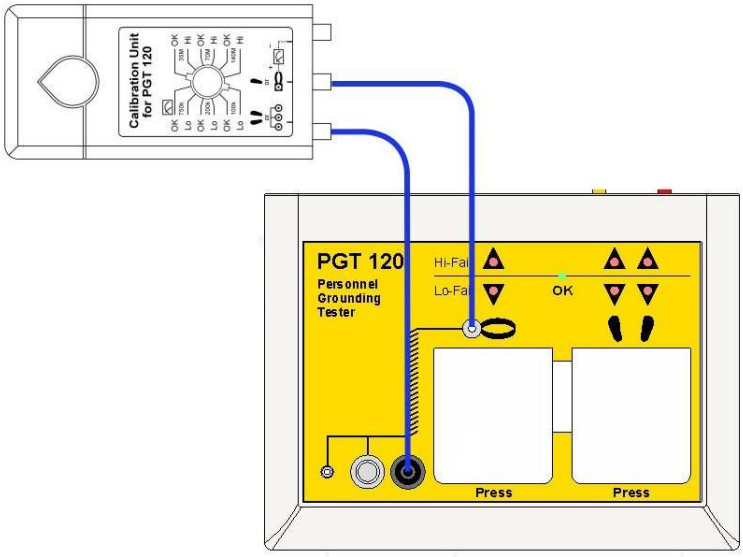
Starting point for all measurements are the following DIP switch settings.
The calibration is performed with the customers test voltage setting (DIP-switch 4 and 5)
If desired, the test can be repeated with the other available test voltage settings.

ON		**7**						
OFF			**6**			**3**	**2**	**1**

4 Wrist strap verification

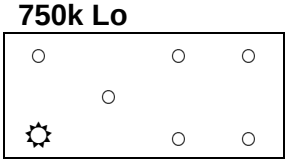
To check the limits of the wrist strap test connect:

- the middle jack of the calibration unit with the 3 mm snap of the PGT 120 (same symbols). Use the DK3-socket adaptor which is included.
- the left jack of the calibration unit with the black 4 mm banana socket of the PGT 120. (wrist strap test, same symbols).

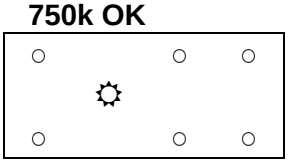


Set the marked lever of the rotary switch in succession to the positions mentioned below. Press the left contact electrode for each measurement.

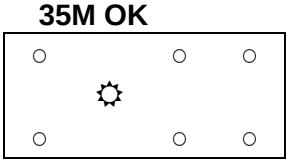
750k Lo



750k OK



35M OK



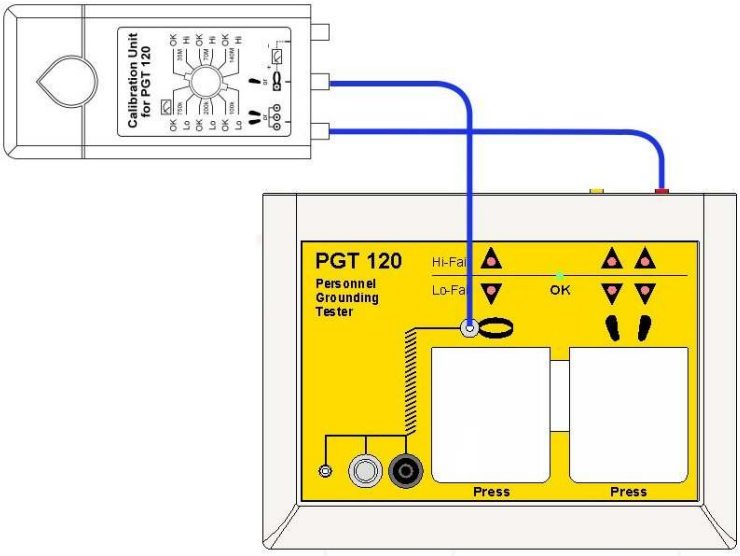
35M Hi

Display LED

5 Footwear test verification (single shoe) - right

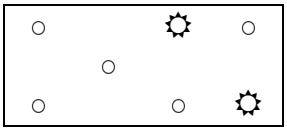
To check the limits of the footwear test connect:

- the middle jack of the calibration unit with the 3 mm snap of the PGT 120 (same symbols). Use the DK3-socket adaptor which is included.
- the left jack of the calibration unit with the red 4 mm socket on the rear side of the PGT 120 (footwear electrode, same symbols).

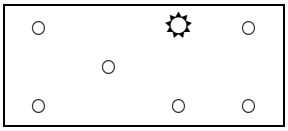


Set the marked lever of the rotary switch in succession to the positions mentioned below. Press the right contact electrode for each measurement.

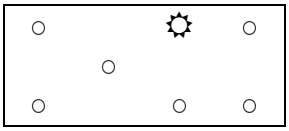
100k Lo



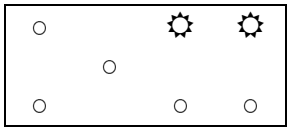
100k OK



35M OK



35M Hi



Display LED

5.1 DIP-switch settings: Upper limit 70 MΩ

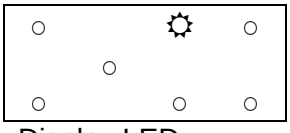
Switch 3
ON

➔

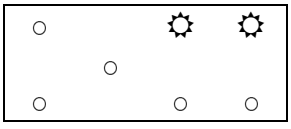
ON		7				3		
OFF			6				2	1

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

70M OK



70M Hi

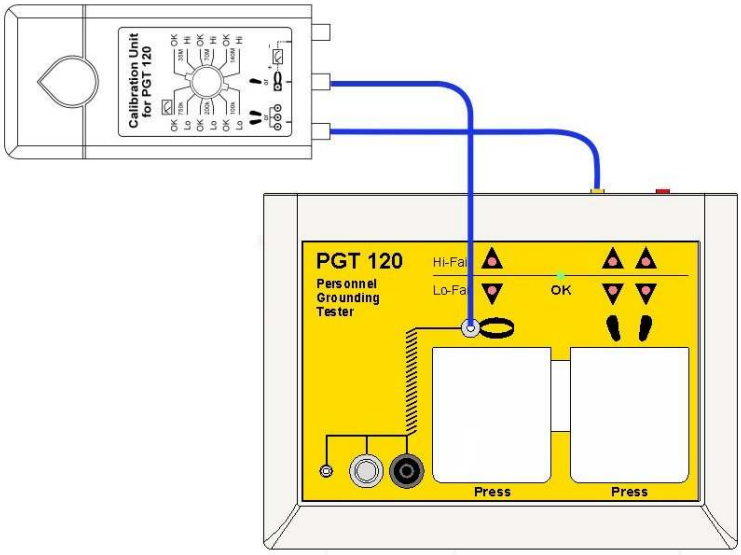


Display LED

6 Footwear test verification (single shoe) - left

To check the limits of the footwear test connect:

- the middle jack of the calibration unit with the 3 mm snap of the PGT 120 (same symbols). Use the DK3-socket adaptor which is included.
- the left jack of the calibration unit with the yellow 4 mm socket on the rear side of the PGT 120 (footwear electrode, same symbols).



6.1 DIP-switch setting for upper limit 35 MΩ

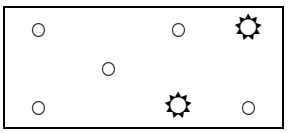
Switch 3
OFF

➔

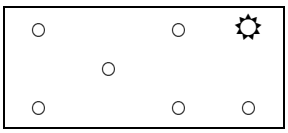
ON		7						
OFF			6			3	2	1

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

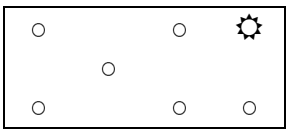
100k Lo



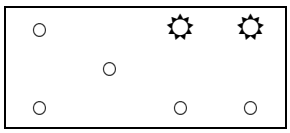
100k OK



35M OK



35M Hi



Display LED

6.2 DIP-switch setting for upper limit 70 MΩ

Switch 3
ON

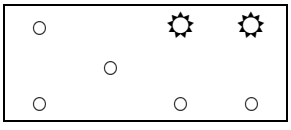
➔

ON		7				3		
OFF			6				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.

70M OK

70M Hi

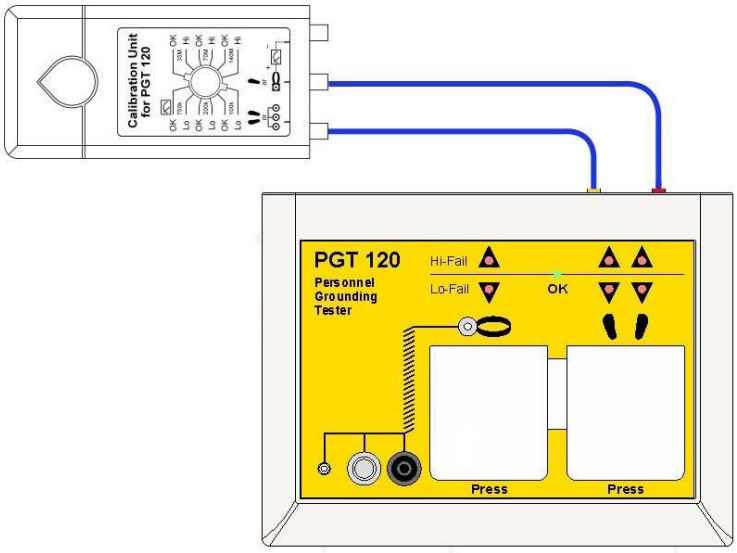


Display LED

7 Footwear test in series

To check the limits of the footwear test connect:

- the middle jack of the calibration unit with the red 4 mm socket on the rear side of the PGT 120
- the left jack of the calibration unit with the yellow 4 mm socket on the rear side of the PGT 120



7.1 DIP-switch setting

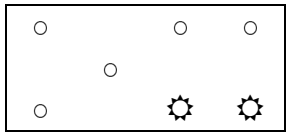
Switch 6
ON

➔

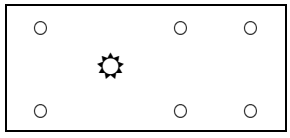
ON		**7**	**6**			**3**		
OFF							**2**	**1**

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:

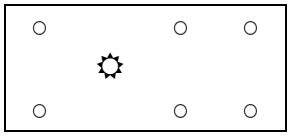
200k Lo



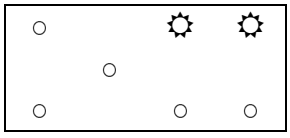
200k OK



140M OK



140M Hi



Display LED

7.2 DIP-switch setting for upper limit 70 MΩ (only for PGT 120 with serial No. 00260 and above) :

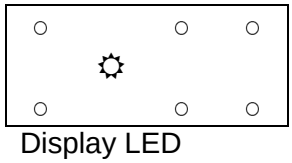
Switch 3
OFF

➔

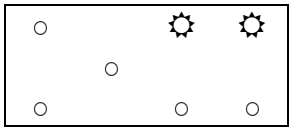
ON		**7**	**6**					
OFF						**3**	**2**	**1**

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:

70M OK



70M Hi



Display LED

8 Calibration Unit verification

Recommended calibration cycle: 3 years

To check the resistors, connect a suitable Ohmmeter 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.

Also connect the Ohmmeter to the central and right jack of the Calibration Unit.
Nominal value must be: 24,4 kΩ ±1%