AIJGO-34

PERSONAL GROUNDING TESTER WITH DUAL FOOT ELECTRODE, RFID READER, LCD DISPLAY AND OPERATING SOFTWARE

INSTRUCTION MANUAL

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ABOUT THE PRODUCT

- Tester for checking personal grounding before entering an ESD protected area (EPA)
- Testing footwear system and wrist strap/groundable ESD smock system at the same time
- Can be used to test a groundable ESD smock system
- Test result indication on LCD display, with LED light and sound
- For indoor use only

The AIJGO-34 is a tester for checking personal grounding before entering an ESD protected area (EPA). It may be a good choice if you want to identify persons entering the site. Tester with LIGHT BAR system – such AIJGO products have a steel touch button, the measured results are indicated by LED lights. COMFORT system product – such AIJGO devices have touch button and RFID reader, an RFID card is required for use, which includes the type of test to be used. This type can be: 1. Footwear system test 2. Wrist strap/groundable ESD smock system test 3. Footwear system and wrist strap/groundable ESD smock system combined test 4. VIP test. The test can start after the card has been scanned. Thanks to the dual foot electrode, the tester simultaneously measures the resistance of the right and left foot relative to the hand. After the test, the measured values are displayed on the built-in LCD display. The measured results are stored on an internal SD card. The tester can be connected to a gate using the relay output (e.g. to a turnstile entrance gate, swing gate, etc.). It can be installed on an entrance gate, table, wall or stand. It is also possible to configure it so that a test can be carried out without touching the touch button, but an RFID card is required in this case too. The product is supplied with an operating software and can operate individually with this. If required, a management software called PieManager can be purchased to configure it over a LAN network and to retrieve the measured results. The system assigns a test method to users and manages their identification data. It saves the entry data as .csv files (compatible with Excel and text editor) and automatically logs daily events.

It is recommended and sufficient to purchase only one management software if several testers are purchased and networked. Purchasing and networking multiple management software with multiple testers can lead to communication and system malfunctions. If you have several testers and you do not network them, but use them as separate devices, please buy individual software for each device to configure and collect data over the LAN network.

The tester is supplied with manufacturer's calibration certificate, dual foot electrode, mounting plate and universal holder.

CE declaration

We declare that the AIJGO-34 product complies with the requirements of IEC 61340-5-1, ANSI/ESD S20.20 and Directive 2001/95/EC (General product safety).

Warning

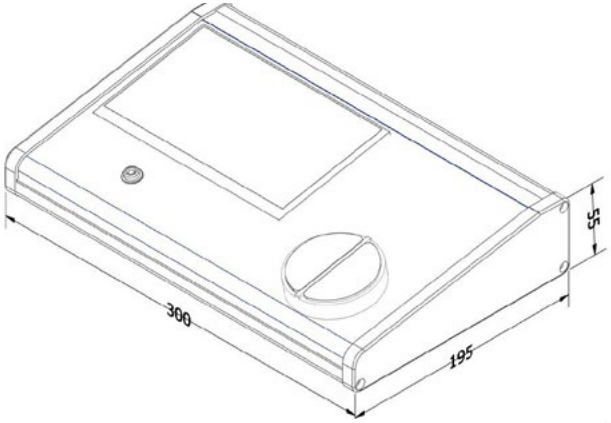
The device can deliver an effective output power of up to 20 µA or less at a maximum voltage of 100 V for 2-4 seconds at 0,5 second cycles. Therefore, persons with an implanted electronic device (e.g. insulin pump, pacemaker, etc.), known or acute hear rhythm disorders and other disorders of the heart's impulse generation and conduction, seizure disorders (e.g. epilepsy) should consult their doctor before using this device.

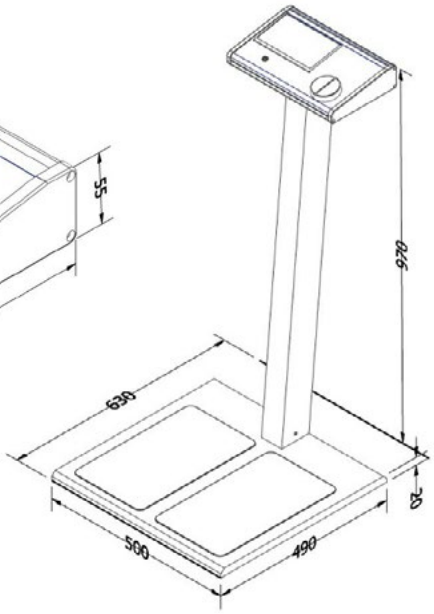
It is forbidden to modify the device, both in terms of hardware and software. Do not open the device. Any modification to the product will void the warranty.

TECHNICAL INFORMATIONS

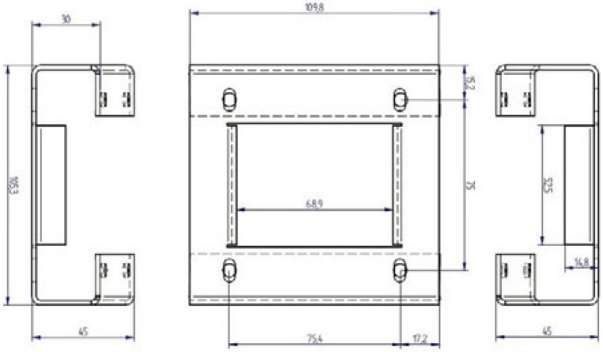
Resistance values indicated as acceptable by the tester	
Default setting when measuring footwear system	100 KΩ – 100 MΩ
You can also set an upper value of 35 MΩ, see the PieManager management software description.	
Default setting when measuring wrist strap/ groundable ESD smock system	750 KΩ – 35 MΩ

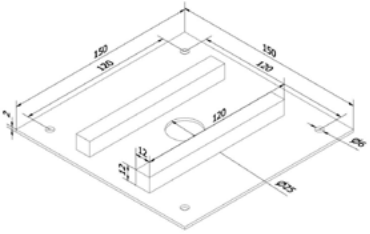
Operating system	Linux Raspbian
	The tester can be configured via LAN network using RJ45 cable
Test voltage	100 V DC
Wrist strap/groundable ESD smock system connection	With a combined 10 mm snap, 4 mm banana plug socket
Power supply	12 V DC
Relay outputs	0,5 A/60 V *Pass relay (Normally Open) with green wire* *Fail relay (Normally Open) with red wire*
Sizes	300 x 195 x 55 mm (tester) 500 x 630 x 970 mm (tester+stand with dual foot electrode, assembled), the touch button and the RFID reader emerges from it beyond this, the tester extends 14 cm backwards beyond the platform. 500 x 490 x 20 mm (the size of the platform itself, in case of a tester version with stand) Tilt angle of the stand: 5 degrees





Mounting plate sizes





Order codes

AIJGO-34	Personal grounding tester with dual foot electrode, RFID reader, operating software, mounting plate and universal holder
AIJGO-STA	Stand for AIJGO tester
AIJGO-34/MSW	PieManager management software for AIJGO-34 and AIJGO-34/COMP (if buying more than one tester, it is sufficient and recommended to buy one if they will be networked together)

PARTS OF THE TESTER

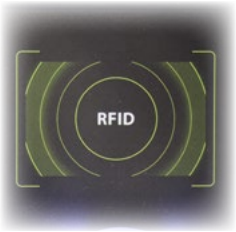
1.	Steel touch button with 9 RGB LEDs
2.	Combined 4 mm banana plug and 10 mm snap socket for connecting wrist strap/ groundable ESD smock
3.	RFID reader
4.	LCD display

5.	Green 4 mm banana plug socket: calibration / verification test point
6.	USB 2.0 socket
7.	LAN socket

8.	12 V power supply connection socket
9.	8-pin socket which can be used to connect foot electrode wires and relay output wires, but if you place the tester on a stand, it is also worthwhile to connect the power supply through this.

RFID reader

Multifunctional unit that can handle cards that comply with most known RFID standards:



LF reader (low frequency), 125/134 kHz types:
eMarine (EM4100, 4102, 4200), HID ProxCard II, Indala, Indala, Kantech, ISO 18000, ISO 11784/85 HDX, ISO 11784/85 FDX(-B), TI RFID (Tiris, e.g. RI-TRP-R4FF, RI-TRP-W4FF), Casi Rusco, HITAG 1/S, HITAG 2

HF reader (high frequency), 13,56 MHz types:

ISO-14443A type of encoders: Mifare Classic (1k/4k), Mifare Ultralight, Mifare DESFire, Mifare Plus, Mifare ProX, Mifare SmartMX

ISO-15693 type of encoders: Texas Instruments TAG-IT Plus, Texas Instruments TAG-IT Standard, Texas Instruments TAG-IT Pro, PicoPass, HID iClass, Legic Advant

ISO-14443B type of encoders: SRI512, SRT512, SRI4K, SRIX4k, ISO-14443B type card emulation

ISO-18092/NFC type communication: active P2P communication according to NFCIP-1, NFC card emulation (passive), mobile phone with NFC function (Android, iOS, Windows Mobile) in the modes listed previously

ITEMS SUPPLIED WITH THE TESTER

1. Dual foot electrode with wire and relay connector

In case of a tester version which is to be mounted on wall/table/entrance gate

In case of a tester version which is to be mounted on stand

2. Universal holder

In case of a tester version which is to be mounted on wall, fix the tester on the universal holder in the direction shown in the picture

In case of a tester version which is to be mounted on table/entrance gate, fix the tester on the universal holder in the direction shown in the picture

In case of a tester version which is to be mounted on stand, fix the tester on the universal holder in any of the two directions above

3. Mounting plate

PACKAGING DIMENSIONS AND WEIGHTS OF THE PRODUCT

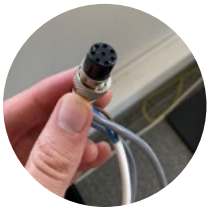
	SIze of the package	Weight of the package
AIJGO-34 with stand - 1. package	94 x 18 x 50 cm	15,3 kg
AIJGO-34 without stand - 2. package	21 x 51 x 43 cm	12,2 kg

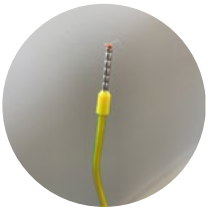
1. package

2. package

ASSEMBLY INSTRUCTIONS

Stand version

1.	Fix the tester with screws on the universal holder	
2.	Connect the wires from the stand to the wires of the platform	
3.	Place the stand on the platform and fix it with screws	 
4.	Connect the wires of the dual foot electrode and the relays, also the adapter to the tester – all using the 8-pin connector	 
5.	Fix the tester with the universal holder on the stand	  

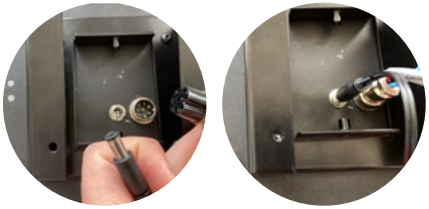
6.	Ask a qualified electrician to connect the gate to the EPH network of the building. For information on connecting the fire alarm wiring, see below.	 
7.	Remove the protecion foil from the foot electrode plates	
8.	Connect the device to mains voltage	
9.	The tester is ready to use	

Wall version

1.	Screw the mounting plate to the wall	
2.	Fix the tester to the universal holder with screws in the direction shown in the picture	
3.	Connect the wires of the dual foot electrode and the relays using the 8-pin connector and also the adapter	 
4.	Connect the device to mains voltage	
5.	Slide the tester with the holder onto the mounting plate	
6.	Remove the protecion foil from the foot electrode plates	

7.	The tester is ready to use	

Entrance gate or table top version

1.	Fix the tester to the universal holder with screws in the direction shown in the picture	
2.	Connect the wires of the dual foot electrode and the relays using the 8-pin connector and also the adapter	
3.	Remove the protecion foil from the foot electrode plates	
4.	Connect the device to mains voltage	
5.	The tester is ready to use	

OPERATION INSTRUCTIONS

1.	Step with both feet on the middle of the foot electrode plates	
2.	When testing a wrist strap/groundable ESD smock system, connect the wrist strap/ groundable ESD smock to the tester socket	
3.	Place the RFID card you want to use on the RFID reader	
4.	Touch both halves of the steel touch button at the same time and keep your hand on it while testing is in progress	
5.	The tester will give a light and sound signal. If the test values are correct, the whole touch button flashes green, if even one value is incorrect, it flashes red. You can read the details on the LCD display, which also shows the test result.	
6.	An upper resistance limit of 35 MΩ can be set for the measurement of a footwear system, see the PieManager management software description	

CALIBRATION / VERIFICATION GUIDE

Foot electrode calibration / verification

1.	Place a measuring electrode on the foot electrode you want to measure and connect it to a resistance decade	
2.	Connect the calibration / verification test point of the tester to the resistance decade	
3.	To calibrate / verificate, adjust the knobs on the resistance decade	
4.	Read your RFID card at the RFID reader of the tester	
5.	Start testing by touching both parts of the touch button simultaneously	

Wrist strap / groundable ESD smock connection calibration / verification

1. Connect the wrist strap/groundable ESD smock connection to a resistance decade

2. Connect the calibration / verification test point of the tester to the resistance decade

3. To calibrate / verificate, adjust the knobs on the resistance decade

4. Read your RFID card at the RFID reader of the tester

5. Start testing by touching both parts of the touch button simultaneously

Table to evaluate the results

Calibration / verification parameters	Accepted maximum deviation downwards from expected value	Lower limit value	Expected value	Upper limit value	Accepted maximum deviation upwards from expected value
Footwear system test *(lower limit)*	- 20%	80 KΩ	100 KΩ	120 KΩ	+ 20%
Footwear system test *(upper limit)*	- 10%	90 MΩ	100 MΩ	110 MΩ	+ 10%
Footwear system test *(upper limit value can be set)*	- 10%	31,5 MΩ	35 MΩ	38,5 MΩ	+ 10%
Footwear system test in case of touchless testing *(upper limit)*	- 10%	180 MΩ	200 MΩ	220 MΩ	+ 10%
Wrist strap/groundable ESD smock system test *(lower limit)*	- 20%	600 KΩ	750 KΩ	900 KΩ	+ 20%
Wrist strap/groundable ESD smock system test *(upper limit)*	- 10%	31,5 MΩ	35 MΩ	38,5 MΩ	+ 10%

If any of the measured values is out of the limit values above, please contact our colleagues.

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