

Vermason		Product Information No: PIS 082		
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CALIBRATION UNIT for ESD WRIST STRAP & FOOTWEAR TESTERS

Code H300, H300 BAE and H301
FEC Code 595 962

Description

This unit is essentially a resistance box to be used for calibrating either a wrist strap tester or a footwear tester. The H300 is set to cover limits as specified in EN61340-5. The H300 BAE also set with upper limits of 25MΩ. The H301 is set to the limits specified in EOS/ESD S1.1-1998/ S9.1-1995. The unit is supplied with a socket-to-socket adaptor and a test certificate.

For calibrating a wrist strap tester turn the knob to the upper part of the dial marked 'Wrist strap tester'.
For calibrating a footwear tester turn the knob to the lower part of the dial marked 'Footwear tester'.

Physical and Electrical specification

Dimensions 145 x 90 x 30mm
Mass approximately 0.17kg

Resistances are factory set as follows:

	H300		H300 BAE		H301	
Sector	Wrist strap tester	Footwear tester	Wrist strap tester	Footwear tester	Wrist strap tester	Footwear tester
Fail low	740kΩ	95kΩ	740kΩ	95kΩ	890kΩ	95kΩ
Pass low	850kΩ	200kΩ	850kΩ	200kΩ	990kΩ	200kΩ
Pass high	33.9MΩ	33.9MΩ	23.9MΩ	23.9MΩ	9.2MΩ	9.2MΩ
Fail high	36.3MΩ	36.3MΩ	26.3MΩ	26.3MΩ	11.1MΩ	11.1MΩ

Note the tolerance of each resistance is ± 7% for low thresholds and ± 3% for high thresholds

How to test and re-calibrate a wrist strap tester

1. Connect the calibration unit lead that is terminated with a 10mm socket to the 10mm stud of the tester.
2. Turn the knob to the 'FAIL LOW' setting on the upper part of the dial marked 'Wrist strap tester'.
3. Place the probe with the conductive rubber base onto the touch plate of the tester, making sure that the probe is placed in the middle of the touch plate for optimal reading.
4. By pushing the probe on the touch plate you will usually activate the tester.
5. The tester should indicate 'FAIL LOW'
6. Repeat this procedure for the other wrist strap knob settings, in each case the indication on the instrument should correspond to the knob setting.
7. If the response is different to the one selected, the tester will need to be re-calibrated.
8. To re-calibrate a Vermason H2** series tester, adjust the potentiometers through two small holes situated on the left-hand side of the tester. The upper potentiometer will adjust the 'FAIL HIGH' limit, the lower potentiometer will adjust the 'FAIL LOW' limit. Use a small flat screwdriver with a blade width of maximum 2mm to adjusting the calibration potentiometers.
9. **It is important to follow the next step by step procedure.** Set the calibration box to the 'PASS' position next to the 'FAIL LOW' position on the upper part of the dial.

10. Activate the tester by pushing on the probe (located on the touch plate as described in 3) and check the tester indicates 'PASS'. If the tester does not indicate 'PASS' turn the lower potentiometer screw clockwise until it just does. Check the tester indication by brief impulses on the switch.
11. Next turn the calibration unit knob to 'FAIL LOW' and activate the tester. It should indicate 'FAIL LOW'. If it does then this step is complete. If not turn the knob of the calibration unit to 'PASS' and turn the lower potentiometer screw anticlockwise until the tester indicates 'FAIL LOW'. Again check tester indications by brief impulses on the switch. Turn the potentiometer backwards half a turn. Leave the knob on 'PASS' and check that the tester now indicates 'PASS'. If the tester still fails, repeat but turn the potentiometer backwards more than half a turn. Continue this procedure until the instrument performs correctly on both knob settings.
12. Set the calibration unit to the 'PASS' position next to the 'FAIL HIGH' position on the upper dial.

Note: *It is now possible that two LED's may come on together during the next steps. This is sometimes caused by electrical noise in the room. It is advisable to work in a less "noisy" room. If this is not possible then proceed to calibrate on an earthed conductive bench (the earth connection should be less than 300 Ω and should use a separate line from the mains for safety reasons). It is also possible to use a screen (earthed conductive sheet 800x400mm) placed vertically in between the source of noise and the calibration area. This screen has to be connected to earth as described previously.*

13. Press on the probe (located as described in 3). The tester should indicate 'PASS'. If not then turn the upper potentiometer clockwise until it does. Again check tester indications by brief impulses on the switch.
14. Turn the calibration unit knob to 'FAIL HIGH' and check the tester indication. If the tester indicates 'FAIL HIGH' then this step is complete. If it does not then adjust the upper potentiometer until it does (turn anticlockwise). Then turn the calibration unit knob to 'PASS' and check the tester indicates 'PASS'. If yes then this step is complete. If not then turn the calibration unit knob to 'FAIL HIGH' and turn the calibration potentiometer clockwise until the tester just indicates 'PASS'. Then turn the potentiometer backwards half a turn. Then start again from the beginning at line 14 but turn the potentiometer backwards more than half a turn.
15. Check the 'PASS' again by setting the calibration unit to the 'PASS' position, next to the 'FAIL HIGH' position on the upper part of the dial. If the tester does not indicate 'PASS' then go through the procedure again.
16. Fill in the calibration certificate indicating the date of calibration, the serial number of the calibration apparatus used and the serial number of the calibrated tester.

How to calibrate a footwear tester

Note: *If the tester is a wrist strap & footwear model setting potentiometers for wrist strap will also set footwear side, but it is advisable to check footwear settings.*

1. When calibrating the footwear tester use the adapter supplied with the calibration box to connect the tester lead terminated with a 10mm socket to the calibration box lead.
2. Turn the knob to the 'FAIL LOW' setting on the lower part of the dial marked 'Footwear tester'.
3. Proceed as described for the wrist strap tester but only use the lower part of the dial.

Calibration

All resistances are in-built using matched fixed resistors. They are measured using an ohmmeter, which is calibrated traceable to NAMAS standards. No variable resistors e.g. potentiometers are used. The resistances should nonetheless be re-checked once a year.

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