High Speed, High Accuracy Tester Installation, Operation and Maintenance

Made in the United States of America and Britain

Figure 1. Vermason 222562 High Speed, High Accuracy Wrist Strap Tester

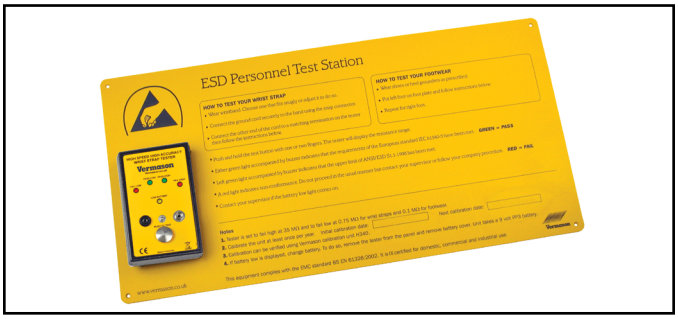

Figure 2. Vermason 222563 High Speed, High Accuracy Wrist Strap Test Station

Figure 3. Vermason 222564 High Speed, High Accuracy Wrist Strap / Footwear Test Station

Figure 4. Vermason 222565 High Speed, High Accuracy Wrist Strap / Footwear Test Station with Output

Description

All models of the Vermason High Speed, High Accuracy Tester range comprise a digital test unit controlled by a programmable IC. They can test the efficiency of personnel grounding systems while being worn, by measuring the resistance in the circuit including the body of the operator. The instrument will indicate whether the resistance is in the ranges specified in EN 61340-5-1 using Annex A test method A.1.

"All personnel shall be grounded or equipotentially bonded … when handling ESDS [ESD sensitive items]. When personnel are seated at ESD protective workstations, they shall be connected to ground via a wrist strap system" [EN 61340-5-1 Edition 1 2007-08 clause 5.3.2 Personnel grounding]

"The operator shall wear the wrist strap in the normal position and plug the free end of the cord into the test apparatus. The hand contact plate shall be pressed to verify that the grounding systems resistance is within acceptable parameters. The test apparatus can be an integrated, commercially available tester or other Instrumentation that is capable of measuring resistance from $5{,}0 \times 10^4$ ohms to at least $1{,}0 \times 10^8$ ohms. The tester open-circuit voltage is typically between 9 V d.c. and 100 V d.c." [EN 61340-5-1 Edition 1.0 2007-08 Annex A Test method A.1 Measurement method for wrist strap testing]

Wrist Strap Test Frequency

"Wrist straps should be tested periodically. The frequency of testing, however, is driven by the amount of usage, wear and ESD risk exposure that can occur between tests. For, example, what is the quantity of product handled between test periods?

Typical test programs recommend that wrist straps that are used daily should be tested daily. However, if the products that are being produced are of such value that a guarantee of a continuous, reliable ground is needed then continuous monitoring should be considered or even required." [CLC/TR 61340-5-2 User guide Wrist Strap clause 4.7.2.4.4 Test frequency] "Where continuous monitoring is used, no additional testing is required." [EN 61340-4-1, per A.5.2]

NOTE 1: Electrical breakages within the cord can be checked by flexing the cord during measurement

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If the resistance is still too high, dry skin might be the problem. Dry skin conditions can be resolved by applying moisturizing lotion on the wrist and repeating the resistance test again. The moisturizing lotion should be one that is compatible with process requirements and does not cause contamination.

NOTE 2: Metal expansion bracelet style wrist bands may trap moisture underneath and can be more effective for people with dry skin. [CLC/TR 61340-5-2 User guide Wrist Strap clause 4.7.2.4.3 Test procedure]

The Vermason High Speed, High Accuracy Tester is available in four models:

Item	Description
222562	Wrist Strap Tester
222563	Wrist Strap Test Station
222564	Wrist Strap / Footwear Test Station
222565	Wrist Strap / Footwear Test Station with Output

Packaging

Item 222562
1 High Speed, High Accuracy Wrist Strap Tester
1 9V Alkaline Battery
1 Certificate of Calibration

Item 222563
1 High Speed, High Accuracy Wrist Strap Tester
1 Wall Plate
1 9V Alkaline Battery
1 Certificate of Calibration

Item 222564
1 High Speed, High Accuracy Wrist Strap / Footwear Tester
1 Wall Plate
1 Foot Plate, Single Foot
1 9V Alkaline Battery
1 Certificate of Calibration

Item 222565
1 High Speed, High Accuracy Wrist Strap / Footwear Tester
1 Wall Plate
1 Foot Plate, Single Foot
1 Output Cable
1 9V Alkaline Battery
1 Certificate of Calibration

Installation

1. Insert the 9V battery into the tester.
2. If applicable install the tester at the desired location using the four mounting holes in the corners of the yellow wall plate.
3. If applicable set the foot plate below the tester.
4. If applicable connect the footwear lead at the bottom of the tester to the foot plate.

222565 WRIST STRAP / FOOTWEAR TEST STATION WITH OUTPUT

The 222565 tester features a relay terminal that can be integrated with electronic door locks, lights, buzzers, etc. It is capable of switching up to .5A @ 50VDC.

An Output Cable with stripped ends is included with the tester to help you wire your device to the tester's relay terminal. The list below describes the relay contacts for each wire.

White Wire = Normally Closed
Black Wire = Normally Open
Red Wire = Common

Operation

WRIST STRAP

1. Snap the coiled cord to the wristband and fit it snugly onto the wrist.
2. Connect the other end of the wrist cord to a matching termination on the tester.
3. Push and hold the test button until a result is displayed.

   A green LED with buzzer indicates a PASS condition. A red LED indicates a FAIL condition.

   Replace battery if the LOW BATTERY LED illuminates.

FOOTWEAR

1. ESD Footwear covers heel grounders, toe grounders and ESD shoes/boots
2. Place one foot on the foot plate and raise the other off the floor.
3. Push and hold the test button until a result is displayed.

   A green LED with buzzer indicates a PASS condition. A red LED indicates a FAIL condition.

   Replace battery if the LOW BATTERY LED illuminates.
4. Repeat Steps 2-3 for the other foot.

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Calibration

A periodic check (once every 6 to 12 months) using a precision resistance box should be performed to verify proper operation.

The Vermason 222547 Calibration Unit is available for the periodic testing of the High Speed, High Accuracy Testers.

The Calibration Unit can be used in the test location within a few minutes virtually eliminating downtime, verifying that the High Speed, High Accuracy Tester is operating within tolerances.

See TB-7581 for more information.

Figure 5. Vermason 222547 Calibration Unit

Specifications

Wrist Strap Limit:
750 kilohm - 35 megohm

Footwear Limit:
750 kilohm - 35 megohm

Accuracy:
±10%

Test Voltage:
24VDC

Dimensions:
Tester
146mm L x 91mm W x 33mm H

Wall Plate
300mm L x 600mm W x 3mm H

Foot Plate
420mm L x 220mm W

Weight:
0.3kg (including battery and wall plate)

Power Supply:
9V battery or one of the following power adapters:
222529 (UK)
222530 (Europe)

Battery Life:
approximately 3,000 tests (3 seconds per test)

Limited Warranty, Warranty Exclusions, Limit of Liability and RMA Request Instructions

See the Desco Europe Warranty - http://www.descoeurope.com/Limited-Warranty.aspx

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