

Operation, Installation and Calibration Instructions

N.I.S.T. Calibration Unit for Wrist Strap and Footwear Testers

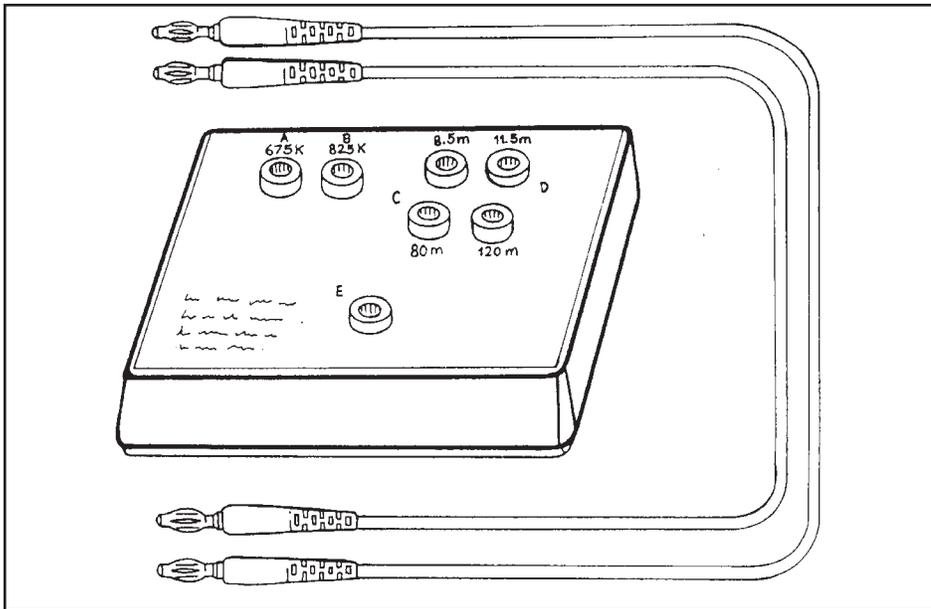


Figure 1. 41230 Calibration Unit

Description

The ESD Systems.com model 41230 calibration unit is designed to simplify the process of calibrating wrist strap and footwear test equipment. The calibration unit allows the user to quickly and easily verify whether a tester is operating within specifications. The 41230 is a passive device, and requires no power source. The calibration unit is manufactured within industry accepted test ranges for both wrist straps and footwear. The wrist strap pass range is set at 750 Kilohm - 10 Megohm, while the footwear test range is set at 750 Kilohm - 100 Megohm. The 41230 is supplied calibrated to NIST traceable standards.

Installation

Remove the calibration unit from the carton and inspect for shipping damage. Each unit should include the following:

- 1 - Calibration unit, item #41230
- 2 - 12" test leads

Calibration Test Procedures

The calibration unit was specifically designed for use in calibration of ESD Systems.com brand test equipment. The following step by step procedures will cover calibration for specific test units. The procedures will not cover adjustment of the test equipment. For detailed information regarding adjustment of specific ESD Systems.com brand testers contact our Customer Service Department at (508) 485-7390.

CALIBRATION OF THE MODEL 41193 WRIST STRAP TESTER

Step 1: Connect one of the test leads to common point banana jack labeled "E" on 41230. Connect the opposite end of test lead to one of the 41193's ground jacks located on the front edge of the unit.

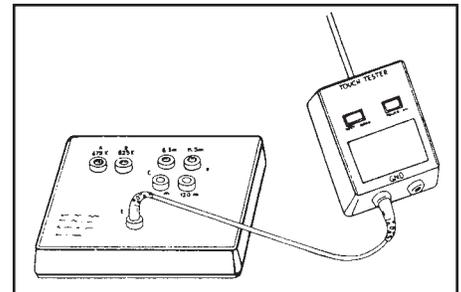


Figure 2. Connecting test lead common from 41230 to 41193.

Step 2: Connect the second test lead to the 675 Kilohm jack labeled "A" on 41230. Touch the opposite end of test lead to the test plate. Observe the LED's for the proper response as indicated below. Be sure to hold the cord at an insulated point, so that the resistance value is not affected by the body.

Resistance Value (In Ohms)	Test Output - LED
Red jack "A" - 675K:	Red (Low - hazard)
Green jack "B" - 825K:	Green (OK - in limits)
Green jack "C" - 8.5M:	Green (OK - in limits)
Yellow jack "D" - 11.5M:	Red (High resistance)

Step 3: Repeat the procedure testing across jacks B, C, and D. The different resistance ranges should give the display shown above. If the tester does not meet calibration specifications, contact factory for adjustment information, or ask for Tech Brief PS-2055.

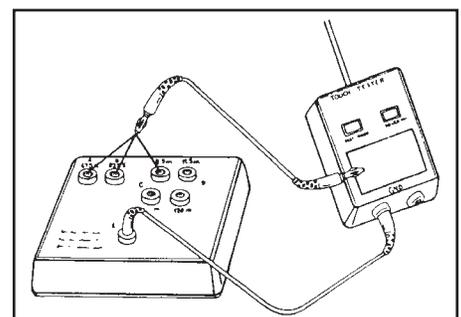


Figure 3. Testing 41193 for "PASS" and "FAIL" ranges as indicated on calibration unit.

CALIBRATION OF THE MODEL 41201, 41202, 41203 WRIST STRAP TESTERS

The models 41201, 41202, and 41203 testers utilize the identical test unit. The difference between the three models is the hardware that is included with each unit. The model 41201 includes only the tester, model 41202 includes the tester and a metal foot plate, while the 41203 is the tester and metal test stand assembly.

This test unit is designed with two separate test circuits with distinct pass fail ranges. The wrist strap test circuit incorporates a 750 Kilohm - 10 Megohm pass range while the footwear test circuit is set to pass at 750 Kilohm - 100 Megohm. Each test circuit needs to be tested individually. For detailed information on these testers ask for Tech Brief PS-2057.

Wrist Strap Test Circuit

Step 1: Connect one of the test leads to common point banana jack labeled "E" on 41230. Connect the opposite end of test lead to the 41201's wrist cord jack located on the face of the unit.

Step 2: Connect the second test lead to the 675 Kilohm jack labeled "A" on 41230. Touch the opposite end of test lead to the test plate and press down with enough pressure to activate the test circuit. Observe the LED's for the proper response as indicated below. Be sure to hold the cord at an insulated point, so that the resistance value is not affected by the body.

Resistance Value Test Output - LED (In Ohms)

Red jack "A" - 675K:	Red (Low - hazard)
Green jack "B" - 825K:	Green (OK - in limits)
Green jack "C" - 8.5M:	Green (OK - in limits)
Yellow jack "D" - 11.5M:	Red (High resistance)

Step 3: Repeat the procedure testing across jacks B, C, and D. The different resistance ranges should give the display shown above. If the tester does not meet calibration specifications, contact factory for calibration, or ask for Tech Brief PS-2057.

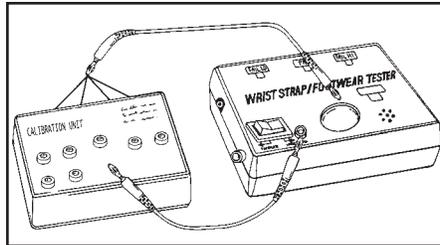


Figure 4. Testing 41201 for "PASS" and "FAIL" wrist strap test circuit

Foot Wear Test Circuit

Step 1: Connect one of the test leads to common point banana jack labeled "E" on 41230. Connect the opposite end of test lead to the 41201's foot plate ground jack located on the side of the unit.

Step 2: Connect the second test lead to the 675 Kilohm jack labeled "A" on 41230. Touch the opposite end of test lead to tester's test plate and press down with enough pressure to activate the test circuit. Observe the LED's for the proper response as indicated below. Be sure to hold the cord at an insulated point, so that the resistance value is not affected by the body.

Resistance Value Test Output - LED (In Ohms)

Red jack "A" - 675K:	Red (Low-hazard)
Green jack "B" - 825K:	Green (OK-in limits)
Green jack "C" - 80M:	Green (OK-in limits)
Yellow jack "D" - 120M:	Red (High resistance)

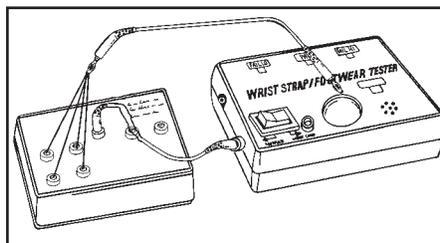


Figure 5. Testing 41201 for "PASS" and "FAIL" ranges for footwear circuit as indicated on calibration unit.

Step 3: Repeat the procedure testing across jacks B, C (80 Megohm), and D (120 Megohm). The different resistance ranges should give the display shown above. If the tester does not meet calibration specifications, contact factory for adjustment information, or ask for Tech Brief PS-2058.

Specifications

Power Source: Passive device, no power source required

Resistance Ranges -

Wrist straps:	Low - 675 Kilohm
	Pass - 825 Kilohm
	Pass - 8.5 Megohm
	High - 11.5 Megohm
Foot wear:	Low - 675 Kilohm
	Pass - 825 Kilohm
	Pass - 80 Megohm
	High - 120 Megohm

Calibration: NIST traceable

Accuracy: ±2%

Weight: 10 ounces

Dimensions: 4.50" x 3.25" x 1.00"

Limited Warranty

ESD Systems.com expressly warrants that for a period of one (1) year from the date of purchase, our 41230's will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a unit will be tested, repaired or replaced at our option, free of charge. Call Customer Service at 508-485-7390 for a Return Material Authorization (RMA) and proper shipping instructions and address. Include a copy of your original packing slip, invoice, or other proof of purchase date. Any unit under warranty should be shipped prepaid to our factory. Warranty repairs will take approximately two weeks.

If your unit is out of warranty, ESD Systems.com will quote repair charges necessary to bring your unit up to factory standards. Call Customer Service at 508-485-7390 for a Return Material Authorization (RMA) proper shipping instructions and address. Ship your unit prepaid.

Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

Limit of Liability

In no event will ESD Systems.com or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.



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