

Limit Comparator for Wrist Strap System Analyzer - Operation and Calibration

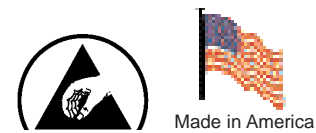


Figure 1. Semtronics 62662 (EN445/425) Limit Comparator

Description

This unit is designed to allow a fast, reliable check of proper function of the 62150 (EN425) System Analyzer.

Operation

1. Plug the test lead banana plugs into the unit.
2. Connect the banana plug to the banana jack located on the top of model 62150. (See Line A in Figure 2.)
3. Press the molded button of the other lead onto the test button of the 62150 and switch "ON" the 62662. (See Line B in Figure 2.)
4. Starting with the Comparator Rotary Switch in the first position (left-most position). The red LED's should be lit on both the Limit Comparator and the System Analyzer.

5. Turn the Comparator Switch to the right, noting the change in color of the lighted LED's. The colors should remain in agreement for both the 62150 and 62662 throughout all six positions.

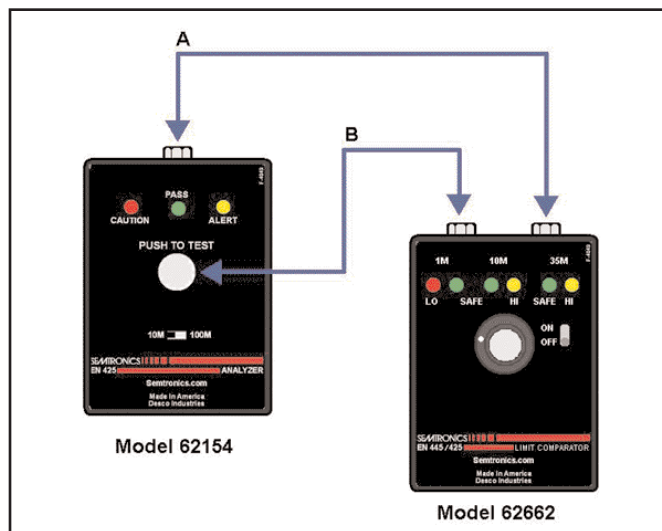


Figure 2. Set-up for calibration - test lead connections

6. If the lighted LED's are not in agreement in any of the six positions, the 62150 System Analyzer should be removed from service for further testing and/or adjustment. The System Analyzer crossover limits may be accurately defined using a resistance substitution box.

Calibration

The six positions of the 62662 Limit Comparator have trim pots which may be adjusted to set the resistance limits.

To adjust the limits, use the following procedure:

1. Remove the rubber feet from the back of the unit.
2. Remove the four screws from the corners of the unit and separate the case.

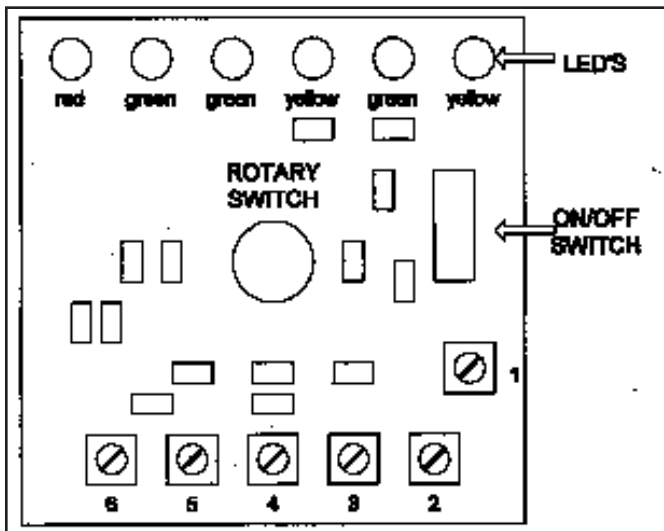


Figure 3. Trimpot adjustments

- The trim pots appearing on the PCB control the limits of the six positions as shown below.

The Trimpot adjustment ranges are as follows:

Typical recommended settings:

- 1 Megohm - Red - 800K $\pm 10\%$ adjustment trimpot 1
- 1 Megohm - Green - 1.2 Meg $\pm 10\%$ adjustment trimpot 2
- 10 Megohm - Green - 9 Meg $\pm 10\%$ adjustment trimpot 3
- 10 Megohm - Yellow - 11 Meg $\pm 10\%$ adjustment trimpot 4
- 100 Megohm - Green - 90 Meg $\pm 10\%$ adjustment trimpot 5
- 100 Megohm - Yellow - 125 Meg $\pm 10\%$ adjustment trimpot 6

- Connect an Ohmmeter with suitable ranges across the banana jacks of the Limit Comparator.
- Adjust each trimpot for the desired resistance value for the test position.
- Reassemble the unit case by reversing Steps 1 and 2.

For most users a Wrist Strap Tester should be set with a lower limit of 1 megohm and an upper limit of 10 megohms.

Battery

This unit is standard 9 volt battery. The battery compartment is located on the lower back side of the unit.

The recommended technical requirement lower limit of ANSI/ESD S20.20 Table 1 for Wrist Strap cord is $0.80 \times 10E6$ ohms or 0.8 Megohms; the upper limit of ANSI/ESD S20.20 Table 1 for Wrist Strap Systems is $< 35 \times 10E6$ ohms or less than 35 Megohms.

The ESD Association Wrist Strap standard ANSI/ESD S1.1 section 6.1.3 "Nominally, the upper resistance reading should be < 10 Megohms or a user defined value." Using the 10 megohm upper limit meets both ESD S4.1 and ANSI/ESD S20.20 as 10 megohms is less than 35 megohms.

Limited Warranty

Semtronics expressly warrants that for a period of one (1) year from the date of purchase, Semtronics Limit Comparators 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 909-627-8178 (Chino, CA) or 781-821-8370 (Canton, MA) for Return Material Authorization (RMA) and proper shipping instructions and address. Include a copy of your original packing slip, invoice, or other proof of date of purchase. Any unit under warranty should be shipped prepaid to the Semtronics factory. Warranty replacements will take approximately two weeks. If your unit is out of warranty, Semtronics will quote repair charges necessary to bring your unit up to factory standards. Call Customer Service at 909-627-8178 for proper shipping instructions and address. Ship your unit freight 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

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