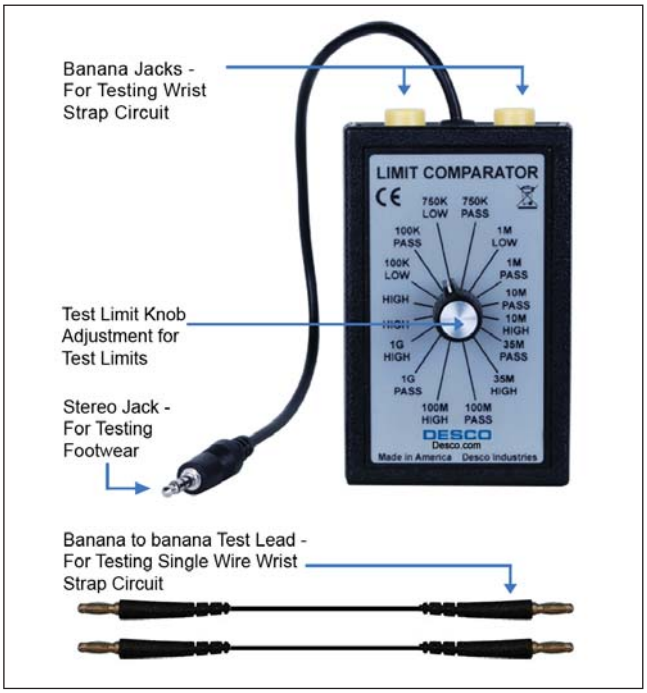
# DESCO TECHNICAL BULLETIN TB-3035

# Limit Comparator - Instructions for Use

Made in America

*Item **19254** X3 Limit Comparator*

## DESCRIPTION




## PACKAGING

1 Limit Comparator
2 Test Leads, Banana to Banana
1 NIST Certificate of Calibration

## OPERATION

**Testing Footwear Circuit, refer to figure 1.**

To complete the footwear test, you will need to test the low and high limits. Refer to the dipswitch setting on the left side of the testers for footwear test ranges. Manufacturer's suggested default test range is 750K low and 35Meg high for the US and Europe.

Do not power down tester, remove stereo cable from bottom right jack of tester labeled "FOOTPLATE" and connect the stereo lead from model 19254 to the jack labeled "FOOTPLATE".

**Testing Low Circuit** – If the tester's low range is set to 750K. Set the knob on model 19254 to the "750K LOW" position. Touch the TEST contact on the tester and you should get a red LED for the left and right foot. Disregard the test result for the wrist strap, if the wrist strap circuit is on.

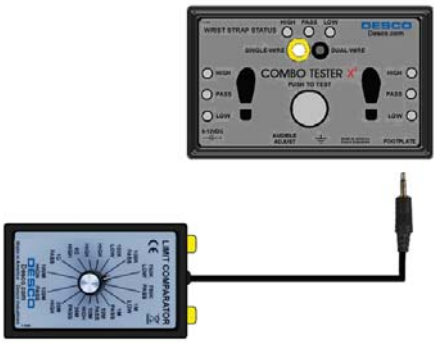



Figure 1. Footwear Test Setup

Set the knob on model 19254 to "750K Pass", touch the TEST contact on the tester and you should get a green LED for the left and right of the foot.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**Testing High Circuit** – If the tester's high range is 35Meg. Set the knob on model 19254 to "35M PASS", touch the TEST contact on the tester and you should get a green LED for the left and right feet. Set the knob on model 19254 to "35M HIGH", touch the TEST contact on the tester and you should get a yellow LED for both the left and right feet. If the limit is set to 1Gig on the tester, test at 1Gig on model 19254, same for 10Meg and 100Meg. Disregard the test result for the wrist strap, if the wrist strap circuit is on.

Footwear Low Fail | Footwear Low and High Pass | Footwear High Fail

Figure 1a.

**Testing Wrist Strap Circuit, refer to figure 2**

To complete the wrist strap test, you will need to test the low and high limits. Refer to the dipswitch setting on the left side of the testers for wrist strap test ranges. Manufacturer's suggested default test range is 750K low and 10Meg high for the US and 750K to 35Meg for Europe.

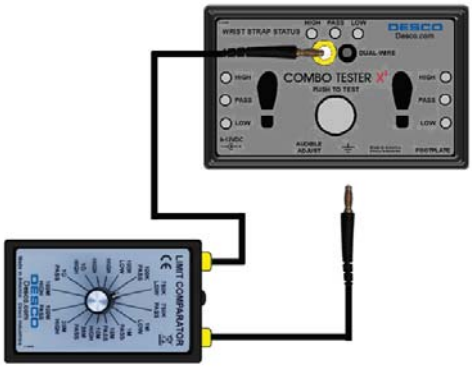


Figure 2. Wrist Strap Test Setup

Do not power down the tester. Using the 2 banana leads included with model 50421. Attach 1 of the banana leads to the right side banana jack on model 50421 and connect the other end to the ground symbol jack on the tester. Connect the last banana jack to the left banana jack of model 50421 and the other end to the "SINGLE – WIRE" banana jack. Note be sure FOOTPLATE lead is removed.

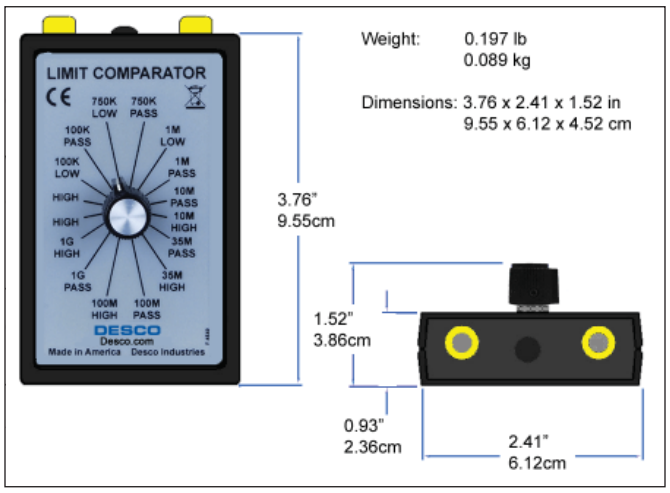
**Testing Low Circuit** - If the tester's low range is set to 750K. Set the knob on model 19254 to the "750K LOW" position. Touch the TEST contact down on the tester and you should get a red LED for the Wrist strap. Disregard the test result for the footwear. Set the knob on model 19254 to "750K Pass", touch the TEST contact on the tester and you should get a green LED for the wrist strap.

**Testing High Circuit –** If the tester's high range is 10Meg. Set the knob on model 19254 to "10M PASS," touch the TEST contact on the tester and you should get a green LED for the wrist strap. Set the knob on model 19254 to "10M HIGH", touch the TEST contact on the tester and you should get a yellow LED for the wrist strap. If the limit is set to 35Meg on the tester, test at 35Meg on model 19254. Disregard the test result for the footwear.

Wrist Strap Low Fail | Wrist Strap Low and High Pass | Wrist Strap High Fail

Figure 2a.

## SPECIFICATIONS AND DIMENSIONS




Testers limit comparator will calibrate:

19276 - Combo X3 Tester, Data Output, w/ Dual Plate
19277 - Combo X3 Tester, Data Output, Programmable, w/ Stand

## CALIBRATION

There are no user adjustments on model 19254. Each value is a fixed resistor load, any model 19254 that falls out of specification will need to be sent to factory for repair. Using a DVM (digital voltmeter), set the meter to read ohms. The limit that the knob is set on can be measured using the DVM connected between Banana 1 to Banana 2 and connected between Conductor 1 and Conductor 2. Refer to figure 3.

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Figure 3. Test Points

| 19254 LIMIT | NOMINAL RESISTANCE | % TOLERANCE OF NOMINAL RESISTANCE |
|---|---|---|
| 100K FAIL LOW | 89K | ±2% |
| 100K PASS | 110K | ±2% |
| 750K FAIL LOW | 675K | ±2% |
| 750K PASS | 825K | ±2% |
| 1M FAIL LOW | 909K | ±2% |
| 1M PASS | 1.10M | ±2% |
| 10M PASS | 9.09M | ±2% |
| 10M FAIL HIGH | 11.09M | ±2% |
| 35M PASS | 31.09M | ±2% |
| 35M FAIL HIGH | 37.89M | ±2% |
| 100M PASS | 90.9M | ±2% |
| 100M FAIL HIGH | 112.9M | ±2% |
| 1G PASS | 912.9M | ±2% |
| 1G FAIL HIGH | 1.113G | ±2% |

**Limited Warranty**

Desco expressly warrants that for a period of one (1) year from the date of purchase, Desco Limit Comparator will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a garment will be replaced at Desco's 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 garment under warranty should be shipped prepaid to the Desco factory. Warranty replacements will take approximately two weeks.

**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 Desco 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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