

Demo 1: Test a Harness

With Smart-Adapters you have the same excellent test status and error information that you have with traditionally wired fixturing.

Step 1

Make sure all connectors and wires of the cable to be tested are plugged in.

J1

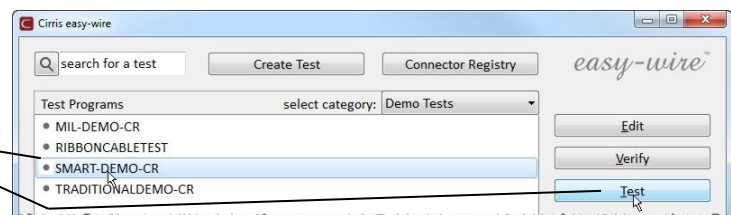


Note: If individual wires have become disconnected, you will need to start with “Demo 2: Guided Build and Test”.

Step 2

If you have a **CR Tester**, in the Easy-Wire main menu, select the test program **SMART-DEMO-CR** and click **Test**.

If you have a **CH2 Tester**, in the Easy-Wire main menu, select the test program **SMART-DEMO-CH2** and click **Test**.



Step 3

When the test window displays “Ready to Test”, click **Start**.



Warning! (CH2 only)

When applying high voltage, the standard CH2 tester limits the test current so the test is considered intrinsically safe. Nevertheless, be careful to not touch the exposed leads on the harness board when high voltage is applied. If you do, you will experience a startling shock.

Step 4

If you have a **CR**, the test should pass. If the test does not pass, see Troubleshooting below.



If you have a **CH2 Tester**, the test program requires a high voltage test before passing a good cable. When the test window displays “Ready to Hipot”, click **Hipot**. The test window will display “Good” when the test passes.



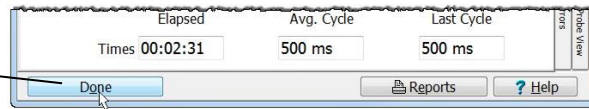
Troubleshooting: If the test does not pass, verify that the test program you selected from the main menu is the SMART-DEMO test program, and that all wires and connectors on the harness board are connected.

See what you can do with Smart-Lights devices

Follow the steps below to see that you can plug Smart-Lights devices back in different connector positions. The test works the same!

Step 1

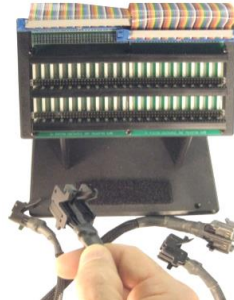
Click **Done** to return to the main menu.



Important: You must return to the main menu when moving Smart-Adapters. It is only when you reload the test program from the main menu that the Smart-Adapters are scanned and their position thereby identified.

Step 2

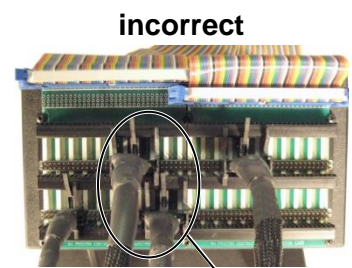
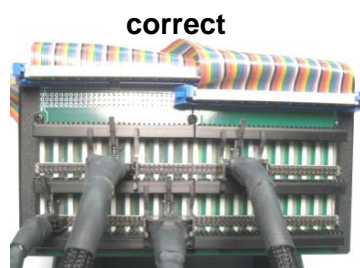
Unplug all the Smart-Adapters from the header strip.



Step 3

Now plug the Smart-Adapters back where ever you want in the strip; just make sure to not overlap connectors.

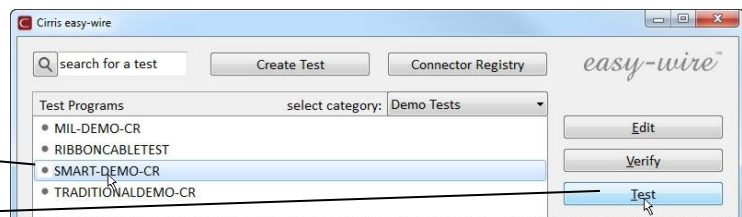
Note: Should you accidentally overlap connectors, the software will prompt you to resolve the overlap before you can start the test.



overlapped adapters

Step 4

Again, click the **SMART-DEMO** program, then click **Test**.



Step 5

Again when the test window displays "Ready to Test", click **Start**.



Step 6

If you have a **CR**, the test should pass.

If you have a **CH2**, click **Hipot** and the test should pass.



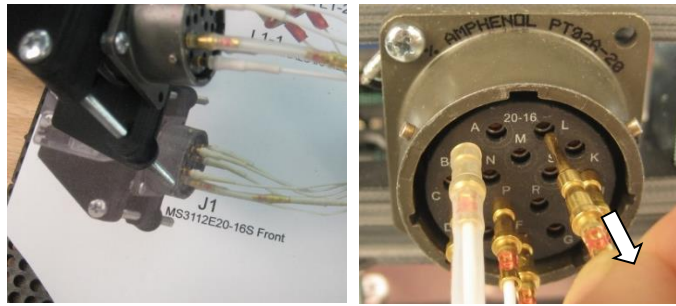
Creating an Open

Step 1

The picture on the harness board shows which connector is J1.

Remove the J1-L wire from the J1 connector and bend it away from the connector.

For the moment make sure the J1-L contact does not touch other wire contacts or the J1 connector housing.



Step 2

In the Test Window, click **Retest**.



You should hear an error sound.

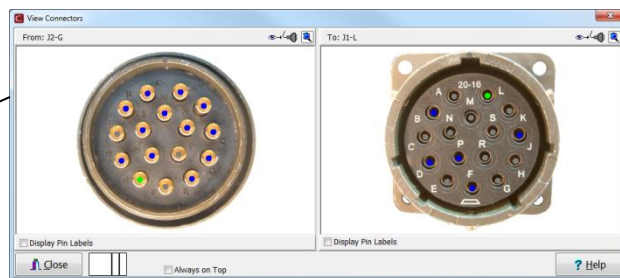


LED's will blink on the harness board.

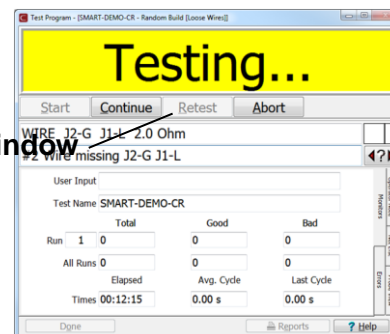


The View Connectors and Test Window are displayed.

View Connectors Window



Test Window



Note: It is important to move and resize these windows so the View Connectors Window can be as large as possible on your screen. That way you will be able to clearly see connector detail in the View Connectors Window. Once adjusted, these windows will open to the same size and position on the monitor.



Step 3

Resize and reposition the windows to make the View Connectors Window as large as possible. Depending on your monitor, a top-bottom or side-by-side configuration may work best. Detailed information on how to do this is below.

top-bottom

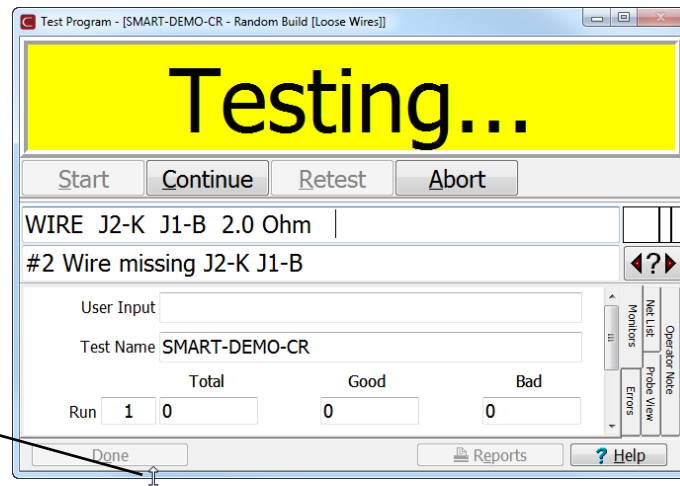


side-by-side



If necessary to conserve screen space, you can decrease the size of the Test Window.

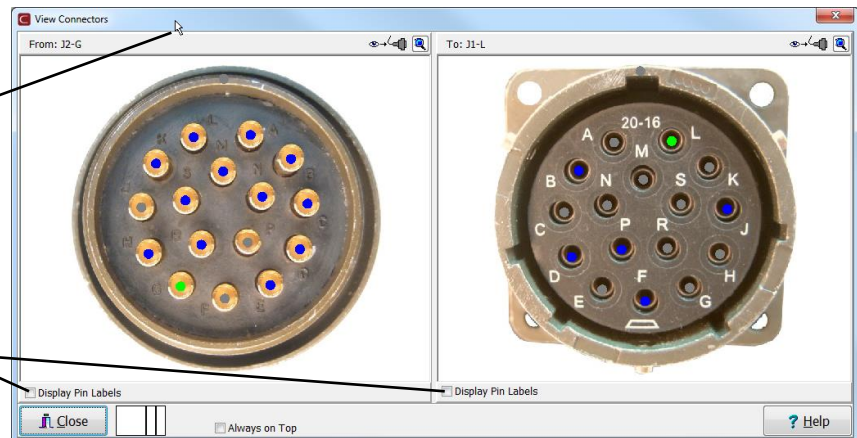
To resize a window hold the mouse over an edge or corner of the window until it turns into a double arrow, then drag the window.



Move a window by dragging its title bar.

Step 4

Since you can see pin labeling in the connector images, you do not have "Display Pin Labels" selected.

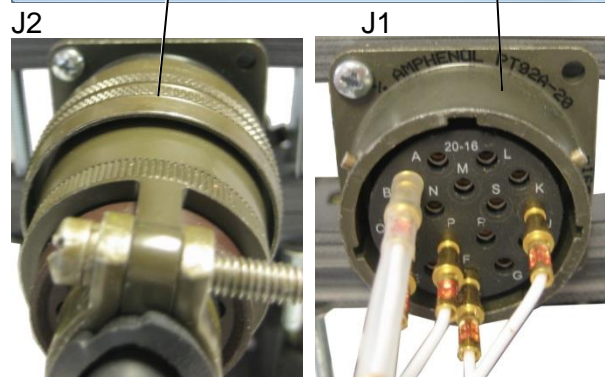


Unless they are readjusted, these windows will always reopen to the same size and position.

The connector images represent the J1 and J2 connectors on the harness board.

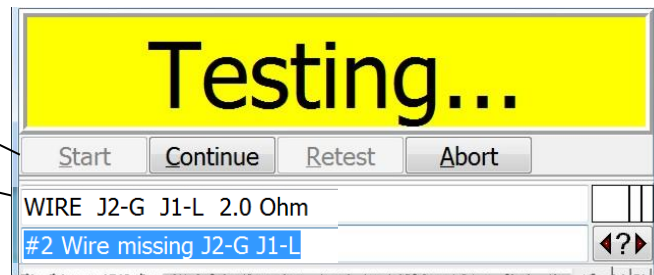
The colored dots on the images represent pin locations.

- **Green dots** indicate the current missing wire instruction.
- **Blue dots** indicate correctly inserted wires.
- **Grey dots** indicate un-pinned and unused pin positions.

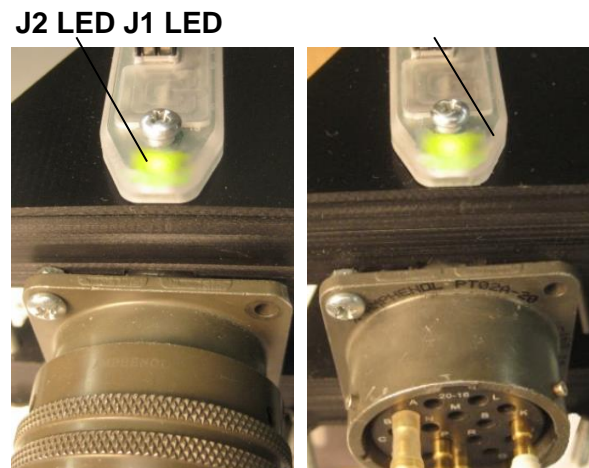


The test window displays the wire instruction on this line...

...and the error information on this line.



Also, the J1 and J2 LEDs blink green indicating the from/to connectors of the wire instruction.

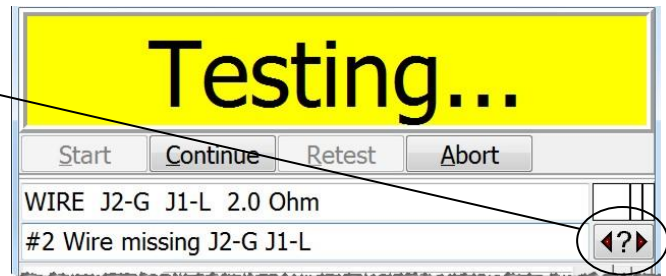


Continue on the next page where you will learn about the tester's which end error capability.

Which End Error Location

This icon shows that that the tester's "Which End Error Detection" has been turned on for this test.

This capability allows the tester to determine which end of the cable has an open or short by measuring small differences in the cable's capacitance and resistance. Because the demo harness is very short, the following step may be required to enhance the Which End Error Detection performance.

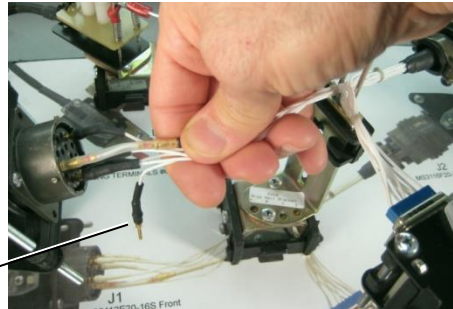


Which End Error Icon

Step 5

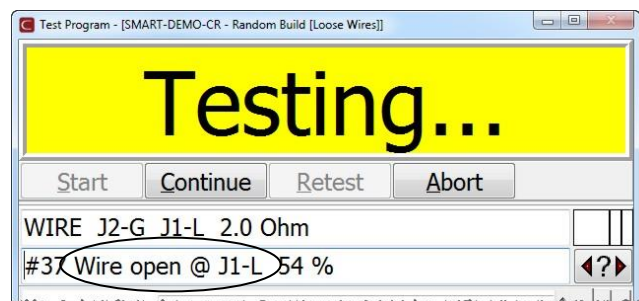
Put your hand around the cable hand on the cable near the J1 Connector. This will increase the capacitance. Make sure to not short the disconnected wire to another pin or to the shell of a connector.

disconnected wire



Step 6

When touching the wire, note the error may change from **Wire missing J2-G to J1-L** to simply **Wire open @ J1-L**, right where we've made the open.



Step 7

Finally, correct the open by inserting the wire back into the "L" socket.



You will hear a "bing" sound, indicating the correct connection has been made.



Again, if you have a CR, the test should pass.



If you have a CH2, click **Hipot**.

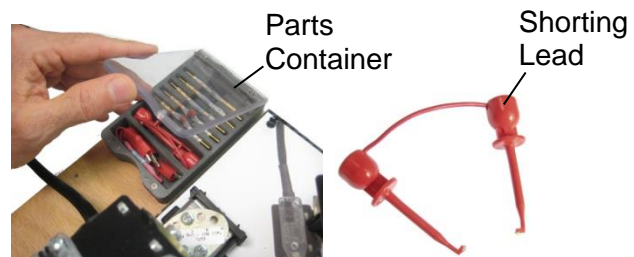
The test should pass and you should hear the "Good Cable" trumpet sounds.



Creating a Short

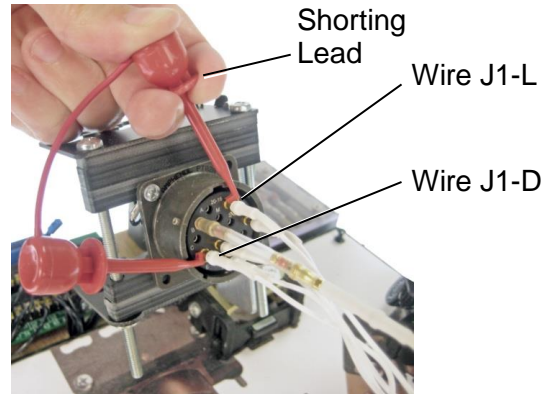
Step 1

Open the parts container on the harness board and remove the shorting lead.



Step 2

Connect the shorting lead between the exposed contacts of wires J1-D and J1-L on connector J1 as shown.



Step 3

In the Test Window, click **Retest**.



You should hear an error sound.

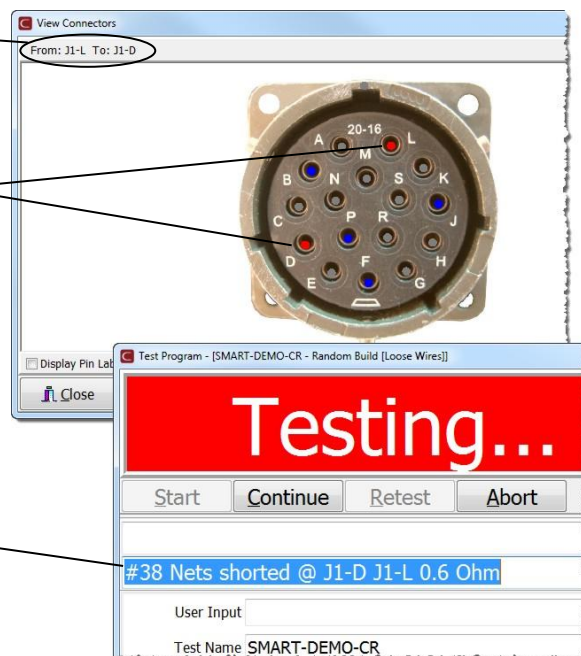


The tester will attempt to determine the location of the short on the demo cable. If able, it will correctly show the shorted connector as shown.

Small red circles on the J1 graphic also indicate the shorted pins.



Notice the LED turns red on the connector that has the problem, which in this case is a short.

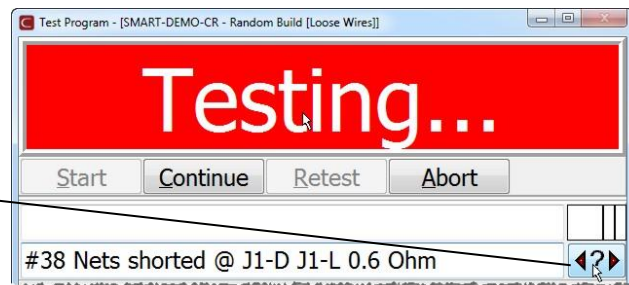


A short (error code #3) is identified between nets 2 and 3. In this case the tester sensed the short through the fixturing in this case at 0.6 Ohm.

Step 4

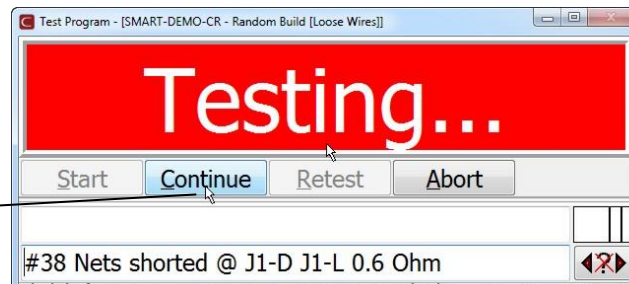
Turn off error detection by clicking the Which End Error Icon.

A red "X" will appear over the icon indicating it is off.



Step 5

Click **Continue** to display the error with Which End Error Detection off.



Note: With Which End Error turned off, note only the shorted net names (Net2 and Net3) are shown in the error message.

#3 Short Net2 Net3 0.8 Ohm

Step 6

Hold the mouse over the error for a moment to display the points of the shorted nets.



Step 5

Remove the shorting lead, and return it to the parts container.



If you have a CR tester, the cable will again test "Good".

If you have a CH2 tester, click **Hipot** to complete the test and the cable will again test "Good".

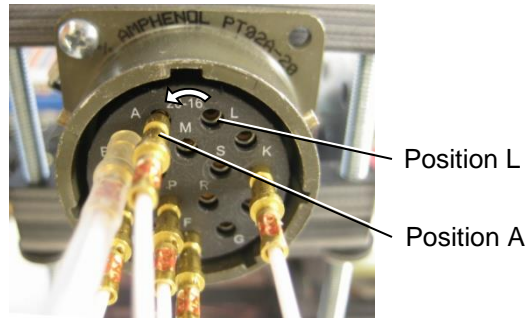


Experiment with other shorts, or continue on to "Creating a Miswire".

Creating a Miswire

Step 1

On connector J1, move the pin in position L to position A.



Step 2

In the Test Window, click **Retest**.



You will hear an error sound and an LED will blink red.

In the graphic, notice that the “from point” J2-G and the incorrect “to point” J1-A are red.



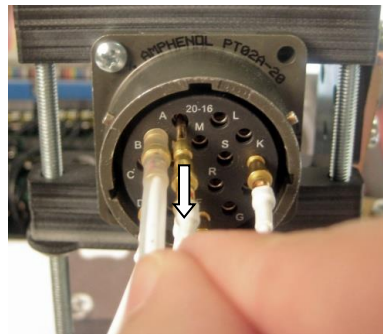
The test window indicates that the correct instruction is J2-G to J1-L, and that J2-G is miswired (error code #4) to J1-A.

Step 3

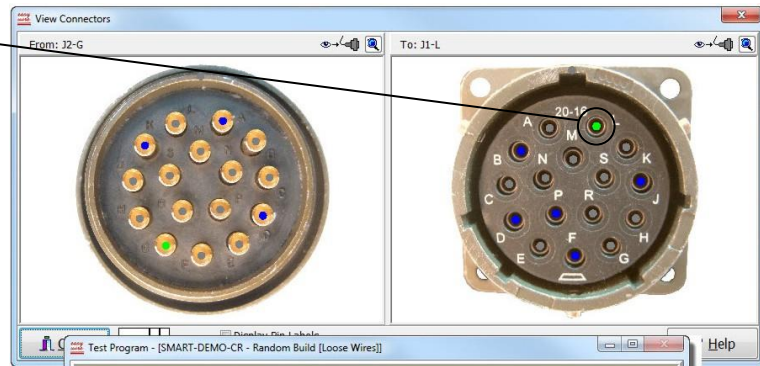
Remove the pin from J2-A.



When you remove pin A, you will hear a “tick” sound meaning the miswire has been resolved.



The graphic indicates where the wire should be inserted.



The Test Window indicates the test instruction that needs to be completed,

and the status for the instruction.

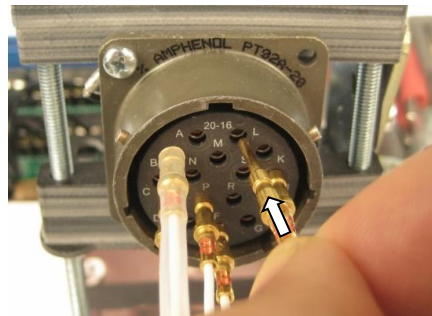


Step 4

Make the correct connection for the J2-L wire.



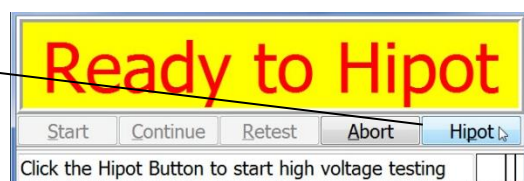
You will hear a “bing” when you make the connection.



If you have a CR, the test should pass.



If you have a CH2, click **Hipot**, you will see “Good” in the Test Window when the test passes.



If desired, experiment with more test errors. If you're not sure where a wire should go, proceed to “Demo 2: Guided Build and Test” to see how Easy-Wire guides you to build the assembly.

Step 5

When you are ready to continue, click **Done** to close the test window.

