Intelio Technologies, Inc.

Mandatory Service Bulletin

230000-002

October 31, 2008

Products Affected:
Activa Virtual Attendant – All Models below serial number 100.

Service Issue:

The original equipment printer (Fujitsu) is being replaced with an improved printer (Custom). The new printer will eliminate jams from customers pulling on receipts and offers much easier replacement of printer paper. Print quality is improved yet print speed is maintained.

Modification Kit:

The new printer is supplied in a kit, KSB-002. Contents of the kit include:
Custom TG-02 Printer mounted on replacement door
Printer data cable
Printer power wire harness with crimp splices
I/O adapter cable with prewired Molex connectors
Digital voltmeter
Crimping tool

A credit card number is required to be on file at Intelio prior to shipment of the installation kit.

The digital voltmeter, the crimping tool and the previously installed printer must be returned to Intelio within 30 days to avoid charges to the credit card.

Installation:

Installation involves removing the old printer, replacing with the new printer, connecting power and data wires to the new printer, installing a new printer driver in the Activa operating system, verifying proper operation, documenting the installation for warranty extension, and returning the installation tools and old printer to Intelio. Referencing Figure 1, please follow these steps:

1) Unlock and open the printer door. Enter the Activa printer diagnostics screen and confirm by using the “test” button that printer power is applied and printer is functional.

2) Since some versions of current Activa printers have different power pin assignments, it's important to verify the polarity of power being supplied to the current printer and thus assure the new printer is correctly connected. You may use a voltmeter of your preference, but for your convenience a digital voltmeter is supplied as part of KSB-002. Measure the polarity of voltage at the two wire printer power connector on the current (old) printer and mark the polarity of each wire color for later reference. Please read appendix A for detailed instructions on using the digital voltmeter to measure polarity.

3) Disconnect data and power cables from the old printer. Pull back the spring hinge pins on the printer door and remove the old door and printer as a unit. Replace in the same manner with the new door and printer assembly.

4) Note the two power wires (red and black) attached to the new printer. Also note that removable terminals are crimped to the free ends of the red and black wires. Cut the old printer power connector off from the power wires to Activa. There may be shrink tubing over those wires. If so, it will be convenient to cut the shrink tubing shorter to allow more working room as you install the new terminals. Select the wire you previously marked as "positive" and using the procedure detailed in Appendix B, crimp on the female terminal supplied. This will mate with the red printer power wire. Similarly, select the wire you marked as "negative", crimp on the male terminal supplied, and mate with the black printer power wire. These terminals will separate should it ever be necessary to remove the printer for service. The male and female halves are installed so that if separated they can only be attached in one way, thus protecting from polarity reversal.

5) Refer to Figure 2. Open the main Activa door and locate the I/O module. It is attached to the upper left side of the Activa interior space. Connector Con10 on the I/O board is an 8 pin white Molex connector toward the top right edge of the board. It may be necessary to cut some of the nylon ty-wraps around the wire harness to improve access to the connector. Do not confuse with Con2, which is closer to the right hand edge of the board. Connector numbers are marked on the printed circuit board. Use a flashlight to view and verify the connector numbers. See Figures 5 and 6 for details on the latching mechanism of these connectors. Squeeze the plug to Con10 as shown in Figure 6, release the latch and holding the latch open, gently wiggle and remove the plug from Con10. Pull only on the nylon body of the connector, not the attached wires, or the wires may be damaged and become loose and intermittent. *You don't want this to happen.* Insert the jumper cable provided between the plug and receptacle of Con10 and make sure the connectors are inserted deeply into each other so that they latch into place.

6) Remove the old printer serial cable. Install the new printer serial cable by snaking the small end of the new printer cable through the round hole on the side of the back of the black sheet metal enclosure and plug the small end into the socket on the new printer. Run the DB9 end of the new printer cable to the PanelPC, plug into COM4 and fasten in place.

7) Install the printer driver and configure the printer:

- Exit the Activa application and Exit to OS.
- Open Windows Explorer and navigate to C:\Shared
  - The file `TG02-driver.zip` should be present
  - Unzip it in place by right clicking on the file and selecting Extract All.
- Install the driver:
  - Navigate to `Control Panel / Printers and Faxes`.
  - If the Custom TG02 printer is already listed, skip ahead to setting the baud rate.
  - Double-click on `Add Printer`.
  - Click the `Next` button.
  - Click the `Next` button.
  - Select `COM4` and then click Next.
  - Click the `Have Disk` button.
  - Click the `Browse` button and navigate to `C:\Shared\TG02-driver\TG02-driver\Driver\TG02\Tg02.inf` file.
  - Click the `Open` button.
  - Click the `OK` button.
  - Click on the printer `Custom TG02` and then click the `Next` button.
  - Click the `Next` button.
  - Click the `Next` button.
  - Click the `Next` button.
  - Click the `Finish` button.
  - Click the `Continue Anyway` button.
  - If it requests additional files from the Windows XP CD-ROM...
    - Click the `Browse` button.
    - Navigate to `C:\Shared\TG02-driver\TG02-driver\Microsoft` directory, where you will find these files.
    - You may need to do this a few times for various files.
- Set the baud rate:
  - Right click on `Custom TG02` in the `Printers and Faxes` window, and click on `Properties`.
  - Click on the `Ports` tab.
  - Click the `Configure Port` button.
  - Set the `Bits per second` to `38400`.
  - Click the `OK` button.

    - Click the `Close` button.
- Configure the application:
    - Close all windows.
    - Double-click `CbxBoot` on the desktop.
    - Verify that the Activa is running **v2.0.10.0** or greater.
    - Log into Maintenance mode.
    - Touch `System Setups`.
    - Touch `Hardware Setups`.
    - Touch the `Printer` tab.
    - Select `Printer Type` of `TG02 (Custom)` and ensure that it is `Enabled`.
    - Touch `Accept`.
    - Touch `Close`.
    - Touch `Close`.

Installation of the new Custom printer is now complete.

Testing:

Go to the printer diagnostics area of Activa. Verify that the printer power is on by pressing the "feed" button on the side of the printer, and the motor will attempt to feed paper. Load a roll of thermal printer paper into the printer according to the picture on the side of the printer showing the proper paper path. The paper should be placed on the axle so that the printer paper rolls under the supply roll and into the gap under the print head as shown. Make sure that the thermally sensitive side of the paper is down, or toward the ground as installed in Activa. Check for the proper orientation of the paper by quickly swiping a thumbnail across each side of the paper, looking for a dark mark. That's the side of the paper that should be facing down as it goes past the print head mechanism.

Use the "Test" button on the printer diagnostic screen and verify proper printer operation.

Note that the printer will not print if the printer door is open and the metal paper guide flap is open. Either close the printer door or manually hold the flap in place.

Troubleshooting:

Verify that printer power is on. The "feed" button will operate, and there will be a red LED visible underneath the printer. If there is no power, verify that the jumper cable is installed correctly at Con10 on the I/O module.
Verify that the data cable is installed between the printer and Activa.
Verify that the Custom printer driver is installed and the TG-02 printer is the default printer.

Verify that the printer will print a test page from the Windows driver.

- Disregard the appearance of the output, since it is not formatted for a narrow receipt printer. Any printed output is acceptable for this step.

Verify that the Activa software version is at least 2.0.10.0 or higher.
Verify that the printer door is closed, or the paper guide flap is held in place manually.

If the printer is still inoperative, contact your distributor for technical support.

Documentation:

Make an appropriate SOC entry stating Mandatory Service Bulletin 230000-002 has been complied with. The SOC entry is required to validate extension of the printer warranty. This may also be accomplished by emailing the site name, address and date of completion of MSB-002 to support@intelio.com

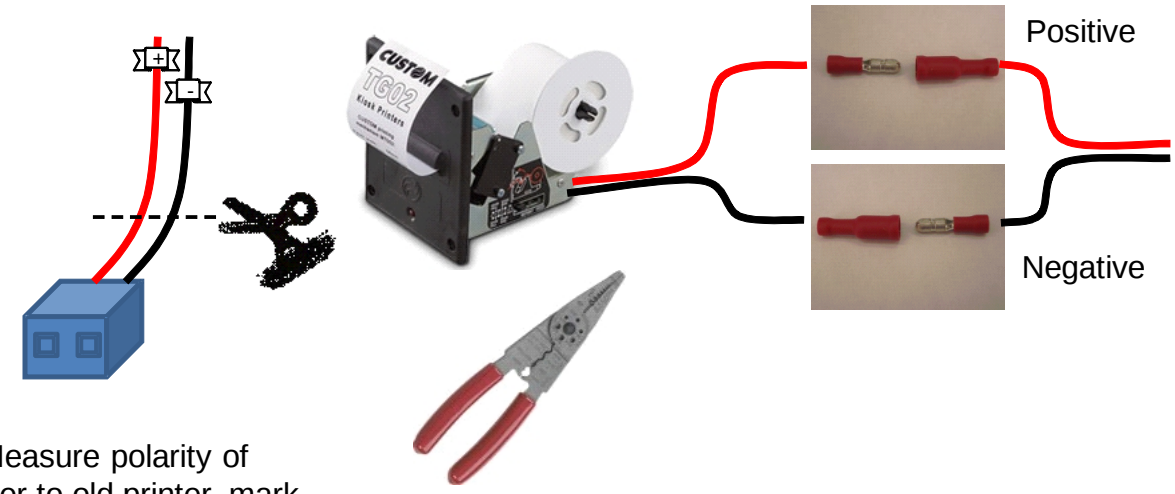
Return for credit:

Return the voltmeter, crimping tool and old printer within 30 days to:

Intelio Technologies, Inc.
16560 Aston Street
Irvine, CA 92606
Attn: KSB-002 Return

Warranty:

One Intelio kit KSB-002 is supplied at no cost for registered Activas prior to serial number 23000-100. Installation of this kit keeps the Activa printer (only) in warranty for one year from the date of upgrade.

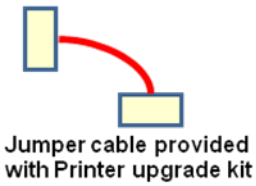


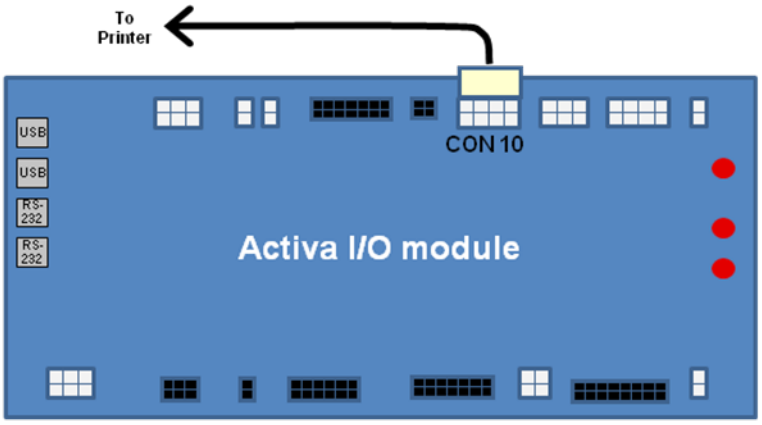
1) Measure polarity of power to old printer, mark wires, cut off existing plug with wire cutters.

2) Strip wire ends and crimp on new terminals

3) Install new Printer Assembly w/ Door

Figure 1 – Overview of printer power connections.





Remove the molex plug from CON 10 and insert jumper cable provided in series

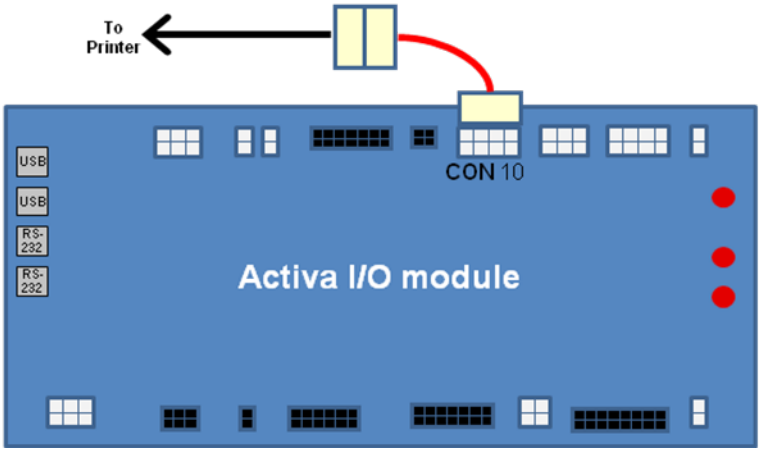


Figure 2 – Installing the I/O Jumper Cable.

Appendix A: Using the Digital Voltmeter to measure printer power polarity.

A Digital Voltmeter is supplied in KSB-002. This procedure is specifically for that voltmeter. While any voltmeter may be used successfully, the specific settings may need to be adapted.

Connect the black probe wire to the lower right socket marked "COM". Connect the red probe wire to the socket above that, marked VOmA. Set the rotary dial to the DCV 200 position, toward the upper left. Switch "on" the voltmeter. With the old printer powered up and the red printer lights showing, touch the black and red probes to the power connector metallic pins. It will be convenient to stick the probes in the back of the connector where the wires from Activa enter the connector. If the voltmeter measures around 24 volts, with no negative sign in front of the reading, the red probe is now on the "positive" polarity wire and that wire should be marked as such. If the negative sign appears in front of the reading, the red probe wire is on the "negative" polarity wire and that wire should be marked as such.

Appendix B: Crimping

Look at Figure 3, showing properly crimped terminals. Notice where the flattened portion of the terminal is positioned, being slightly closer to the active end of the terminal than to the wire end. Squeezing the crimping tool in this area crushes the metal terminal onto the stripped end of the wire, and makes a mechanically sturdy connection. What makes this a somewhat difficult operation is that the insulation obscures a good view of the wire and terminal alignment, so we will explain in some detail.

Please study Figure 4 before proceeding. The "bare terminal" demonstrates what is underneath the red plastic insulation. There is a tube portion that the stripped wire is inserted into, and that portion will be crushed down on the stripped portion of the wire, making an electrical connection and if done correctly, making a strong mechanical connection as well. Notice that the stripped wire is inserted into the metal tube portion of the terminal, and stops when the wire insulation prevents further penetration. The "crimp zone" is the portion of the terminal that is crushed down on the stripped portion of the wire. It is important that the terminal not be crushed anywhere other than in the crimp zone. Follow these steps:

1) Strip approximately 3/32" of insulation from each wire.

2) Insert the wire into the terminal connector far enough that the stripped part of the wire enters the metallic portion of the terminal connector and the wire insulation does not enter the metallic portion of the terminal connector.
3) Position the jaws of the crimping tool around the crimp terminal. Position the crimping tool so that it is over the crimp zone of the terminal and double check that the stripped portion of the wire is still in place.
4) Squeeze down with the crimping tool provided.
5) Pull on the wire with an appropriate force to ensure the crimp is mechanically sound.

Pay careful attention to these points:

- Use the supplied crimping tool, not pliers.
- Don't deform the connector in areas other than the crimp zone, or the connectors will not separate properly and will be non-removable.
- Don't crimp onto any portion of the wire insulation – only the stripped end of the wire is captured under the crushed terminal.
- Make sure all of the wire strands are inserted within the metal tube of the terminal, not folded back or outside of the metal tube.

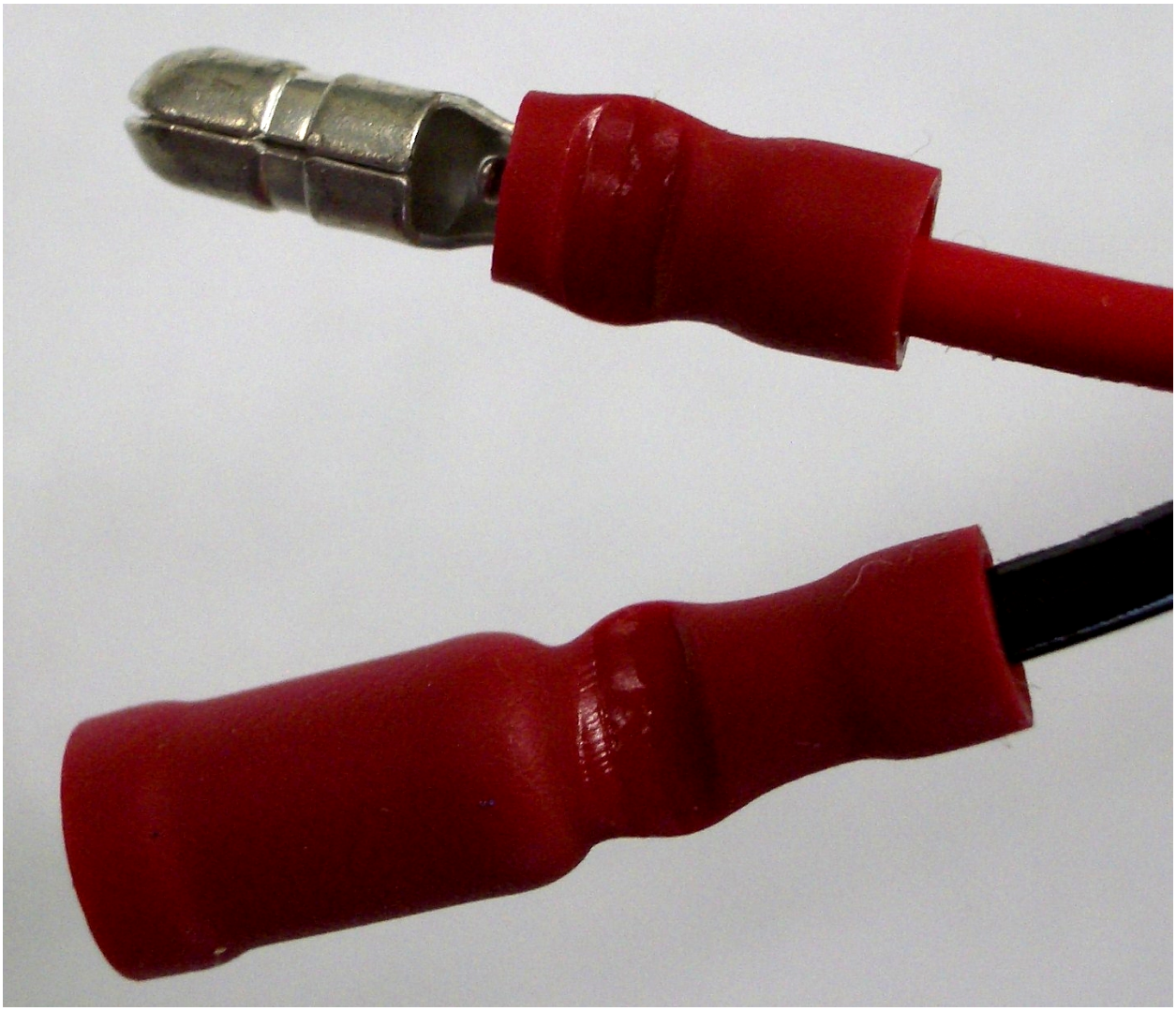


Figure 3: Properly crimped Terminals showing crimp marks in proper crimp zone.

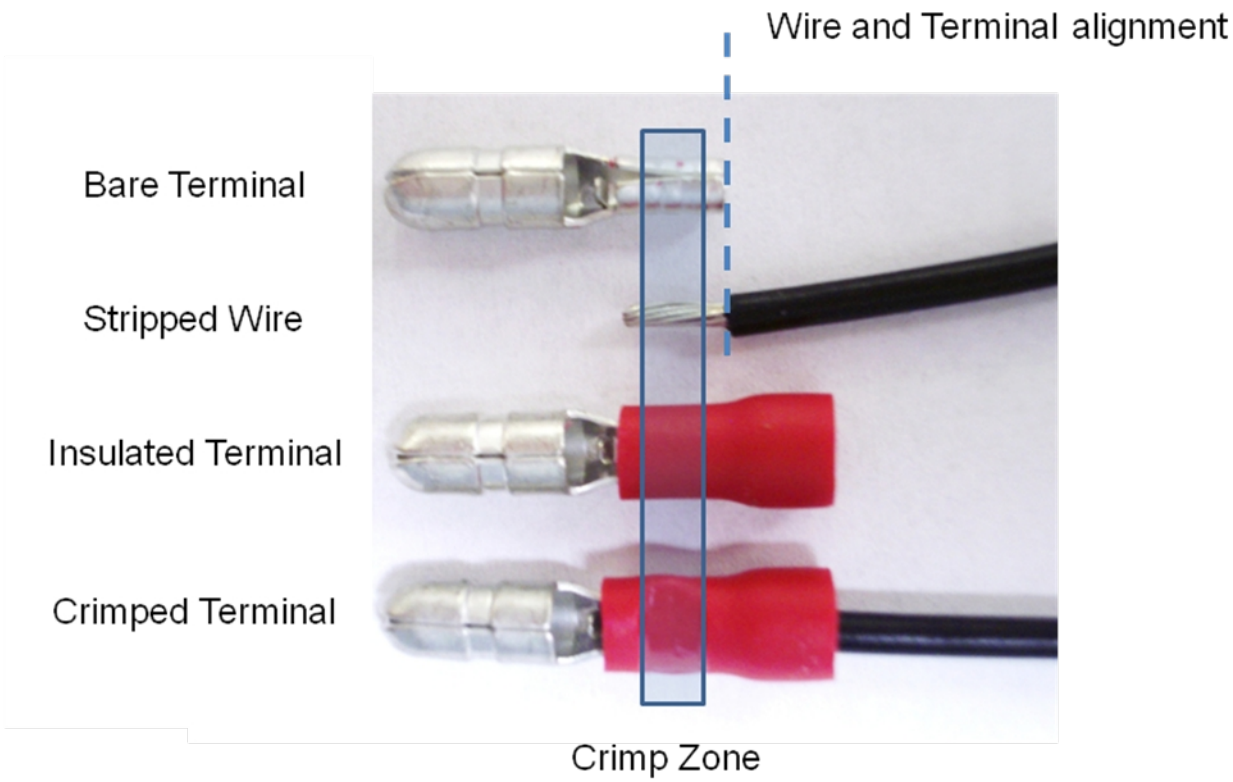


Figure 4: Crimped Terminal showing wire alignment and crimp zone

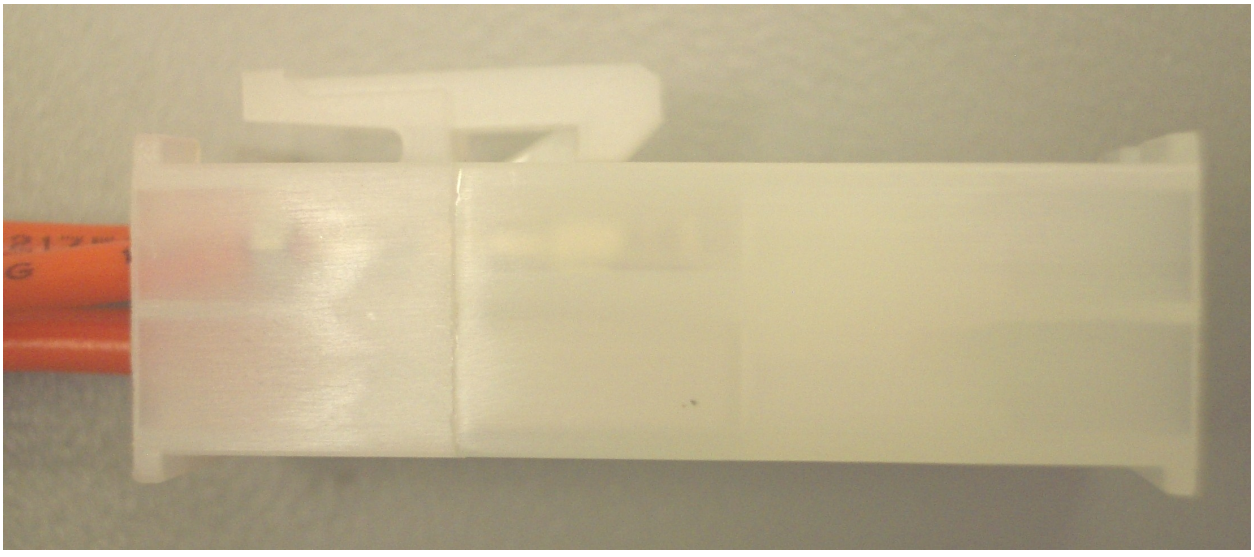


Figure 5: Molex Connector in latched position.

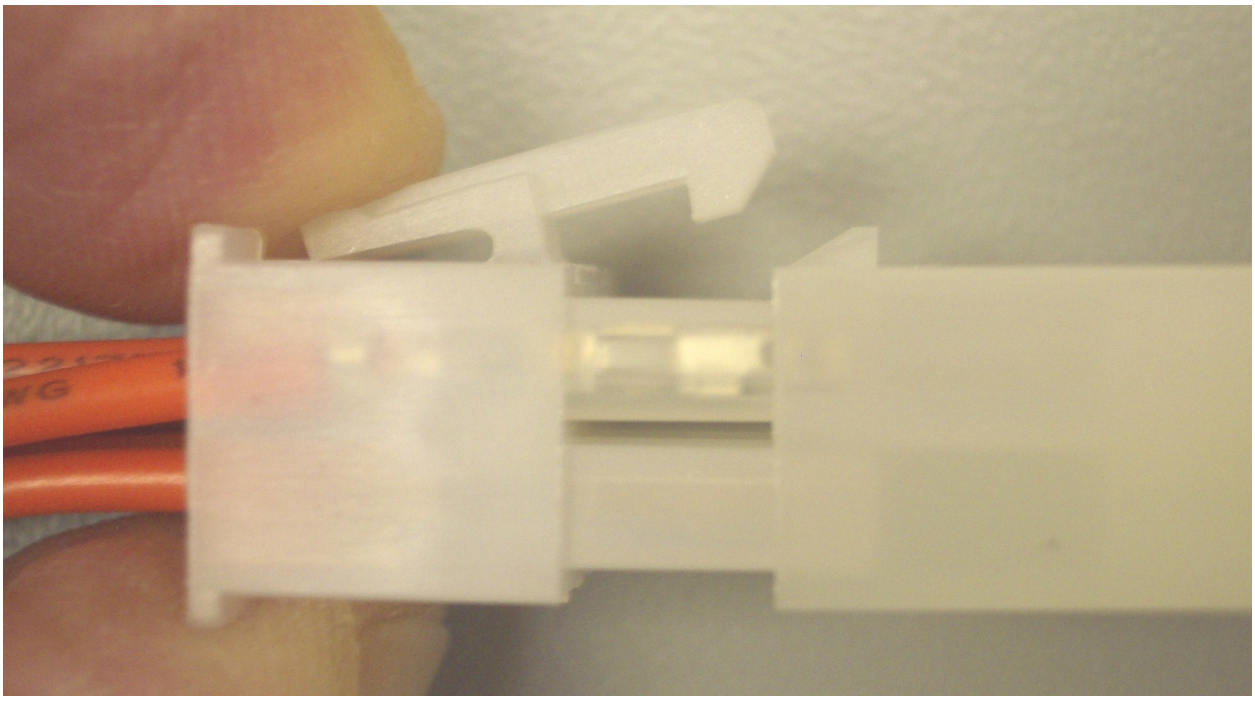


Figure 6: Molex connector in unlatched position.