

Backlit LCD Module

Assembly Manual

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I. IMPORTANT NOTES BEFORE BEGINNING

A. Failure to take ESD precautions could permanently damage the liquid-crystal display (LCD) module. ESD damage is permanent and invisible to the naked eye.



It is important to always wear your ESD ground strap while assembling your LCD assembly. All steps require ESD protection.

II. SET UP YOUR WORK AREA

A. Your work surface should be well lit and well ventilated.

B. Gather your tools: ESD grounding strap; soldering iron; solder (noncorrosive electronics solder); wire cutters; screwdrivers (Phillips and Pan head); pliers; wire strippers; etc.

C. Prepare ESD grounding protection. A typical ESD ground strap is adequate. Put the strap around your wrist and clip the other end to the head of a slightly-loosened screw of a working, grounded AC outlet plate. The strap should have an internal 10M ohm (or equivalent) resistor in series to ground. This will safely dissipate any static charge that might otherwise damage your components during assembly and test.

D. Lay out the module and components. Do not remove components from their bags yet. Familiarize yourself with the parts list, layout diagram, and part numbers. Notice that the component bags are marked with the item number found on the parts list.

III. MAKE THE LCD ASSEMBLY

A. Prep the Ribbon Cable

1. Prepare ribbon cable **00080**. Pins 1 and 16 of the ribbon cable connector will be wired to the anode and cathode, respectively, of the LED backlighting found in the LCD module (**00047**). These wires need to be approximately 1.25" longer than the other 14 wires of the ribbon cable. Note that the wires for pins 1 and 16 are next to each other. Pin 16 wire is the red wire and pin 1 wire is the gray wire that touches the red one.

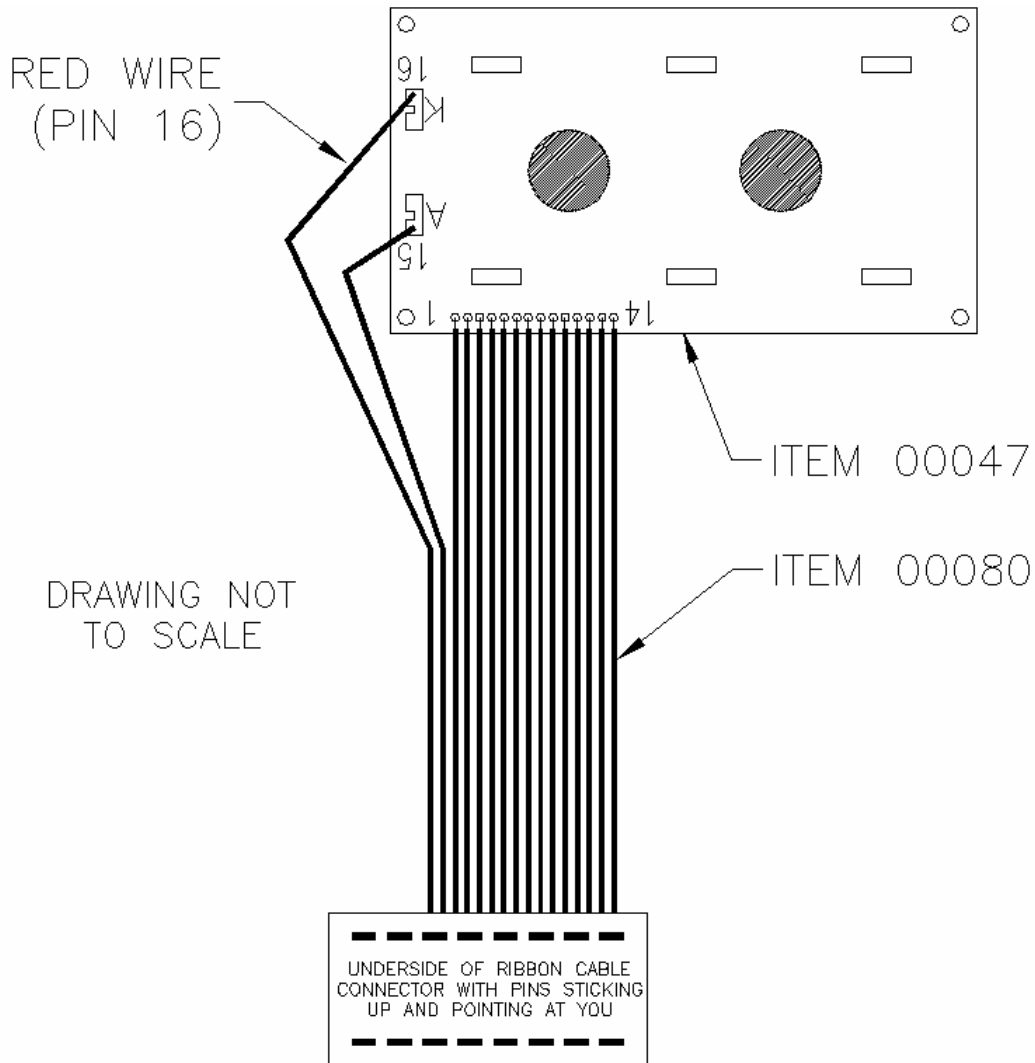
Take the loose end of the ribbon cable (the end that is flush cut and missing a connector). Cut approximately 1.5" off the ends of all wires except pin 1 wire and pin 16 wire. Now, separate all 16 wires from each other using a utility knife or other blade. Be very careful not to nick the wires. Pull the wires apart no more than 0.5".

Finally, strip the insulation from the end (0.25") of each of the 16 wires.

B. Solder the Ribbon Cable to the LCD Module



1. Solder the prepped cable to LCD module **00047**. Follow the wiring diagram below. Note that the backlight wires (pin 1 wire and pin 16 wire) are soldered to large solder pads. Rest the end of the wire on the pad and apply solder. These wires are not inserted through holes in the LCD circuit board. All other wires are passed through holes in the LCD circuit board from the back side (opposite the display window). All soldering of these wires will be done on the display window side of the LCD module. Ensure there is a covering over the LCD display while you are soldering to protect it from flux splatter.



C. Mounting Hardware

1. Set the mounting hardware (**00110** washers, **00108** nuts, **00114** spacers and **00129** screws) aside for now. During the final assembly, you will use these to mount this LCD module in your enclosure -- see the Final Assembly Manual.

IV. INSPECT YOUR WORK

Before proceeding, take some time to inspect your workmanship. Look for and correct the following potential problems:

- solder that bridges two or more traces
- missed solder joints
- untrimmed leads
- incorrect component orientation
- forgotten parts (did you have any leftover components?)

If things look the way they should, you are ready to move on!