The six pin connector on the right has pin one at the top, here is what they connect to:
1 - CD4094 Pin 3 Clock top row.
2 - CD4094 Pin 15 Output Enable for all 4094's (And bottom 4015 pin 7 as data)
3 - CD4094 Pin 2 Serial Data bottom row
4 - CD4094 Pin 1 Strobe for all 4094's (And both 4015 pin 9 and 1 as clock)
5 - CD4094 Pin 2 Serial Data top row
6 - CD4094 Pin 3 Clock bottom row

CD4094 Eight bit shift registers are used throughout the sign. They then used TD62083 drivers to drive the sign. I do not know how it drives the rows as the CD4094's only are used for the columns. There are some CD4015's that appear to be used for the rows. The next step is to interface it to a Arduino.

You might notice that there are no references to the row selection hardware. I have tried to get the sign working, but then I took it all back apart to trace out some more runs. Here is what I found. Pin 2 goes to the 4049's pin 15 as "output enable", but it also goes to the bottom 4015A pin 7 as "Data". Pin 4 goes to the 4049's Pin 1 as "strobe" but it also goes to both 4015's pin 9 and 1 as "Clock".

Here I am working on it. It may not run off a 5 volt 2.5V AC adapter, it needs more power!
*** Update - it works on 5 volts at 2.5 amps when displaying text ***