



Troubleshooting Machine Devices:

The Fadal DS Command

When troubleshooting CNC equipment, it is very helpful to know the status of the switches in the areas you are troubleshooting. If the technician can see what switches are "Made" or "Not Made", they are able to more quickly and positively identify any malfunctions in the machine devices. We "Techies" call this the I/O Input Map.

When looking at these switches in real time, there are some things to keep in mind when evaluating the health of the device you are looking at. First, you must know if you have an Active Low or Active High switch. This means when the switch is made, does the switch voltage go low or high? If it goes low, it's called active low or reverse logic for the digital engineers out there doing a little troubleshooting. If the voltage goes high when made, this is called Active High or Positive Logic. Certainly you cannot troubleshoot a switch's health statically unless you know if it's active high or low. If you don't know, test it.

The Fadal control has a method for viewing all switch status' in real time and this is done with the "DS" command. See Figure 1.

At the ENTER NEXT COMMAND prompt, type DI (Diagnostics) and press ENTER. Then press DS and press ENTER. The screen in Figure 1 will display. Press X to exit or power down and back up.

You will see each switch display in rows and columns & has a brief description of what switch you are viewing, and its status. Find the one you are suspecting has issues and begin working with it to be sure it changes states properly. Be careful as the screen refresh rate may not allow you to see the Orientation Switch in action when the machine has control as it is too fast, so move things slowly to check the switch status.

The Switch Display Description document shows all switches available with some supplemental information to help determine proper operation or if you need replacement parts.