

XIV. Troubleshooting

WARNING

Turn off power to boiler before working on wiring.

A. Using the Diagnostics Menu

The plain text display provided with this boiler provides an easy means of identifying most common problems. In the event that the control system detects a problem, such as an open limit or defective sensor, the Active Fault button shown in Figure 14.0 will appear and flash on both the Home Screen and the Burner Status Screen. Touching either Active Fault button will take the user to the Diagnostics Menu. From here, press the flashing button on each successive screen to reach a list of possible causes. In the case of a defective temperature sensor, a defect indicator will also show up on the status screens where the corresponding temperature is normally displayed. See Figure 14.0 for an example of this.

The complete Diagnostics Menu is shown in Figure 12.11. The screens on this menu provide the following information:

- 1) **For Service Contact** - Displays the service contact information entered in Section XII, Step D.
- 2) **About** - Displays the software versions for both the Sola Control and the display
- 3) **Fault Menu** - Provides status of different types of faults by category. When a particular fault exists, the button for that category of faults will flash (see Figure 14.0 for an example of a faulty supply sensor). In the example shown in Figure 14.0, both the Sensor and Soft Lockout buttons flash on the Fault Menu because a defective supply sensor also causes a soft lockout. Fault categories include:
 - a) **Soft Lockout** - A soft lockout prevents the boiler from firing until the problem has been corrected and, in some cases, a specified amount of time (up to 1 hour, depending on the nature of the fault) has passed. An example of the Fault Menu structure during a soft lockout is shown in Figure 14.0
 - b) **Hard Lockout** - A hard lockout prevents the boiler from firing until the problem has been corrected AND the boiler has been manually reset. This can either be done at the Sola itself or on the hard lockout screen. An example of the Fault Menu structure during a hard lockout is shown in Figure 14.2
 - c) **Sensors** - The Sensor Screens show the status of all sensors. Possible states of the sensors include:
 - **None** - The Sola is not looking for an input from this sensor
 - **Normal** - The sensor is working normally
 - **Shorted** - There is a short between the Sola and the sensor or the sensor is defective
 - **Open** - There is a break in the wiring between the Sola and the sensor or the sensor is defective
 - **Out of Range** - The sensor is defective or is being subjected to electrical noise.
 - **Unreliable** - The sensor is defective or is being subjected to electrical noise.

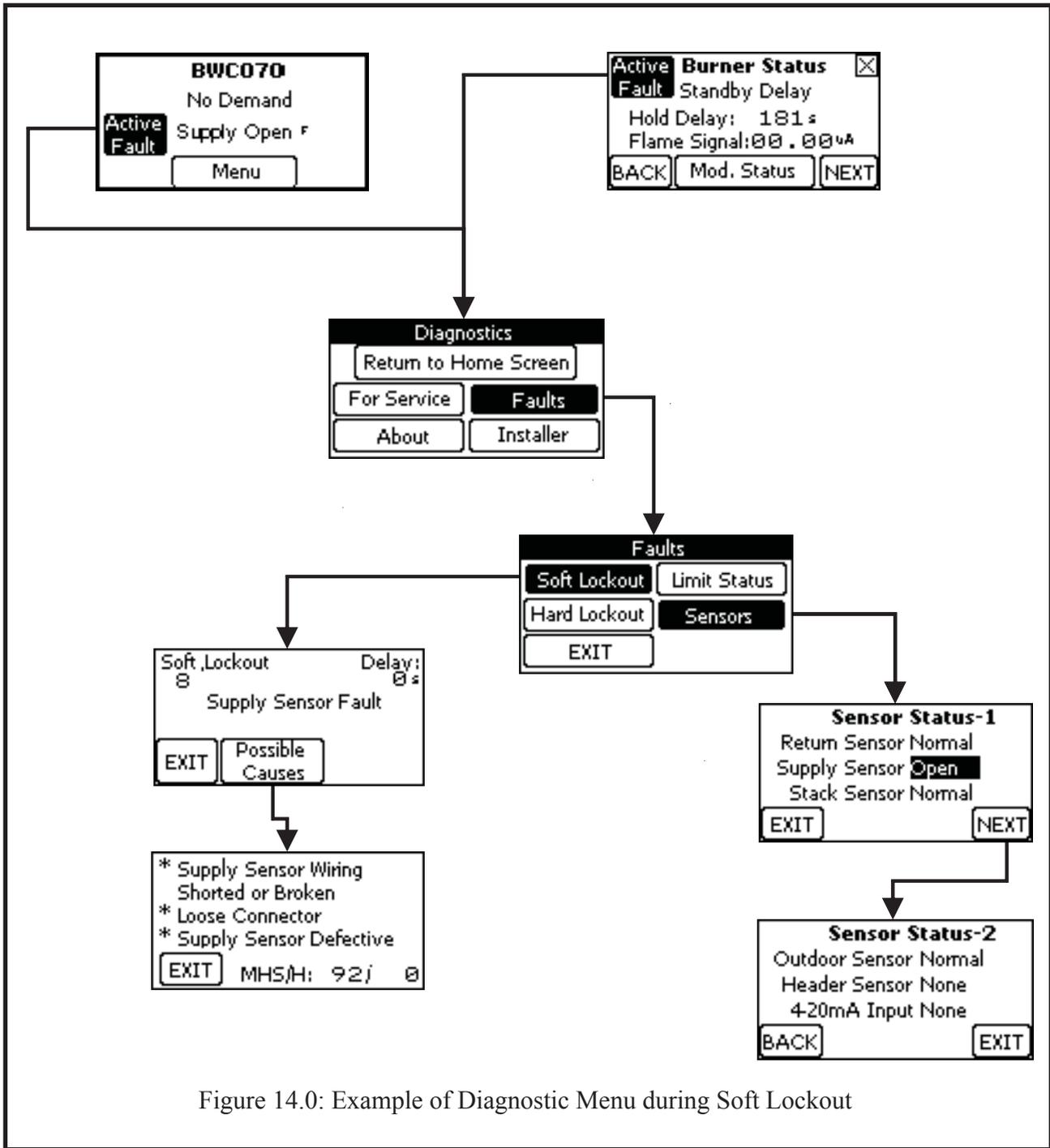


Figure 14.0: Example of Diagnostic Menu during Soft Lockout

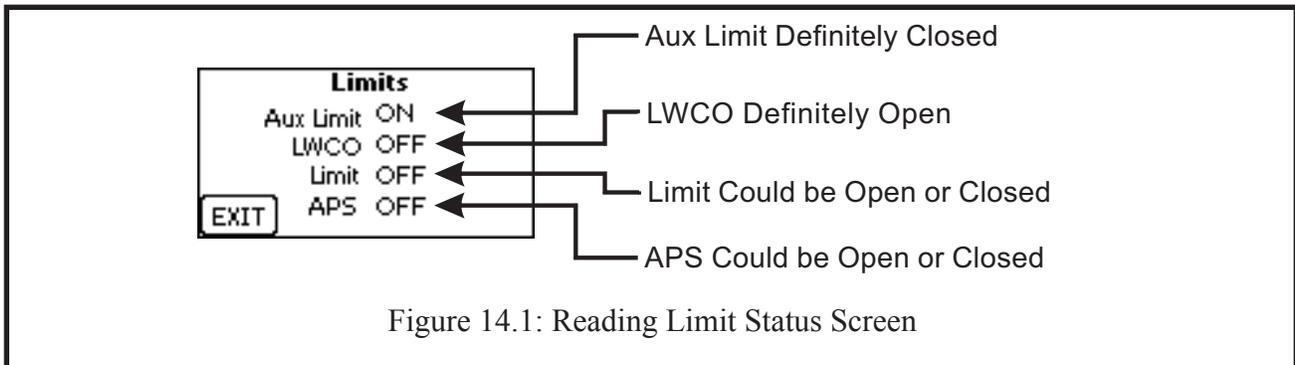


Figure 14.1: Reading Limit Status Screen

d) **Limit Status** - The Limit Status Screen shows the status of all safety limits. Each of these limits is either shown as being ON or OFF. It is important to remember that since all of limits are wired in series, any limit which is in the OFF state will cause all limits “downstream” of it to also appear on this screen as being OFF, regardless of whether or not they actually are. The limits are wired in the following order (also see Figure 10.6):

1. Auxiliary Limit (also the Condensate Float Switch on the BWC151)
2. Low Water Cut-off
3. High Limit
4. Air Pressure Switch

Therefore, in the example shown in Figure 14.1, the Auxiliary limit is known to be closed, the LWCO is known to be open, and the High Limit and Air Pressure switches could be either open or closed.

B. Troubleshooting when the Display is Blank

Use the flow chart in Figure 14.3 to locate the problem when the display is blank or is not readable.

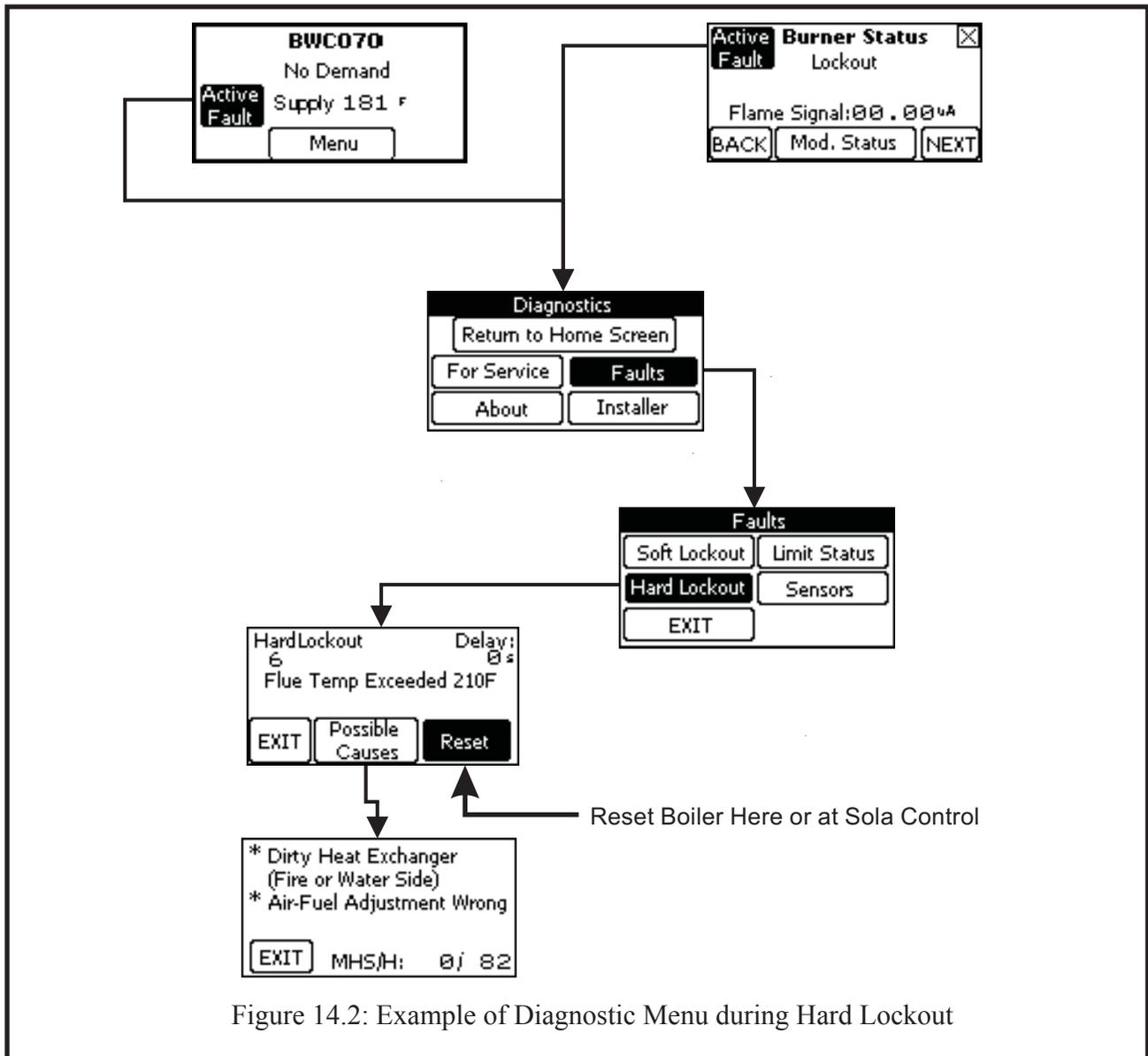


Figure 14.2: Example of Diagnostic Menu during Hard Lockout

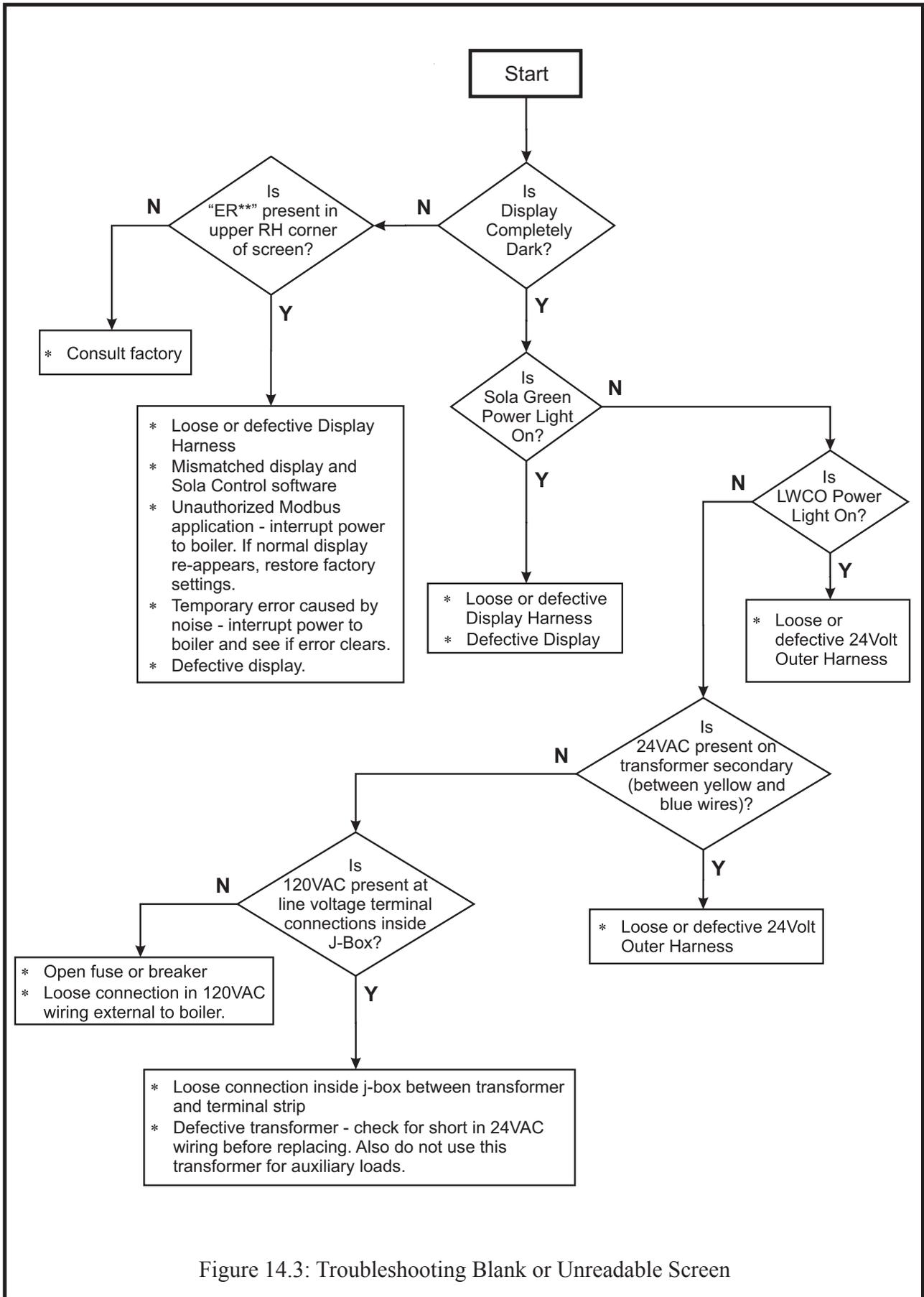


Figure 14.3: Troubleshooting Blank or Unreadable Screen