

The LED code repeats as long as the fault exists. To clear the fault, press the RESET button.

The S7800 KDM displays a sequence status message indicating: STADBY, PURGE, PILOT IGN, MAIN IGN, RUN and POSTPURGE. The selectable messages also provide visual indication of current status and historical status of the equipment, such as: Flame Signal, Total Cycles, Total Hours, Fault History, Diagnostic Information, and Expanded Annunciator terminal status (if used). With this information, most problems can be diagnosed without extensive trial and error testing.

Diagnostic Information and History Data are available to assist in troubleshooting the relay module.

The relay module provides diagnostic information to aid the service mechanic in obtaining information when troubleshooting the system. Information available in the Diagnostic Information includes Device Type, Device Suffix, Software Revision, Manufacturing Code, Flame Amplifier Type, Flame Failure Response Time, Selectable Jumper Configuration Status, Run/Test Switch Status and Terminal Status.

## Diagnostic Information Index

The relay module monitors input/output terminals and can display the status of the terminal at the KDM (example: Pilot Valve T8 1). See the applicable relay module installation instructions for a complete terminal description and number. The display shows the actual status of the terminal. If voltage is detected at the terminal, **1** is displayed, but if no voltage is detected at the terminal, **0** is displayed.

## Historical Information Index

The relay module has nonvolatile memory that allows the relay module to retain historical information for the six most recent lockouts. Each of the six lockout files retains the cycle when the fault occurred, the hour of operation when the fault occurred, a fault code, a fault message and burner status when the fault occurred.

### IMPORTANT

*Some older relay modules cannot operate without a KDM, extension cable assembly with KDM, or a Data ControlBus™ Module installed.*

### SERVICE NOTES:

1. If the KDM is scrambled, remove and reinstall the KDM, and reset the 7800 SERIES Relay Module.
2. Reset the 7800 SERIES Relay Module by pressing the RESET pushbutton on the 7800 SERIES Relay Module, or by pressing a remote reset pushbutton wired through the KDM, Data ControlBus™ Module, or Remote Reset Module. A power-up reset causes an electrical reset of the relay module but does not reset a lockout condition.
3. Use the access slots in the sides of the Q7800A,B Wiring Subbase to check terminal voltage.
4. Maximum ambient temperature of a C7012E,F;Series 1 through 6, is reduced to 125°F because of the duty cycle operation of the relay module.

**Table 10. Blinking Fault Codes and Recommended Troubleshooting .**

Blink Code	System Failure	Recommended Troubleshooting
Code 1-1 *Low AC Line Voltage*	Low AC Line detected.	<ol style="list-style-type: none"> <li>1. Check the relay module and display module connections.</li> <li>2. Reset and sequence the Relay Module.</li> <li>3. Check the 7800 power supply and make sure that frequency and voltage meet specifications.</li> <li>4. Check the backup power supply, as appropriate.</li> </ol>
Code 1-2 *AC Quality Problem*	Excessive noise or device running on slow, fast, or AC line dropout detected.	
Code 2-1 *Unexpected Flame Signal*	Flame sensed when no flame is expected during STANDBY or PURGE.	<ol style="list-style-type: none"> <li>1. Check that flame is not present in the combustion chamber; correct any errors.</li> <li>2. Make sure that the flame amplifier and flame detector are compatible.</li> <li>3. Check the wiring and correct any errors.</li> <li>4. Remove the flame amplifier and inspect its connections. Reseat the amplifier.</li> <li>5. Reset and sequence the relay module.</li> <li>6. If the code reappears, replace the flame amplifier and/or the flame detector.</li> <li>7. If the fault persists, replace the relay module.</li> </ol>
Code 2-2 *Flame Signal Absent*	No-flame time present at the end of the Pilot Flame Establishing Period; lost during the Main Flame Establishing Period or during RUN.	<ol style="list-style-type: none"> <li>1. Measure the flame signal. If one exists, verify that it meets specifications.</li> <li>2. Make sure that the flame amplifier and flame detector are compatible.</li> <li>3. Inspect the main fuel valve(s) and valve connection(s).</li> <li>4. Verify that the fuel pressure is sufficient to supply fuel to the combustion chamber. Inspect the connections to the fuel pressure switches. Make sure they are functioning properly.</li> <li>5. Inspect the Airflow Switch and make sure that it is functioning properly.</li> <li>6. Check the flame detector sighting position; reset and recycle. Measure the flame signal strength. Verify that it meets specifications. If not, refer to the flame detector and/or flame amplifier checkout procedures in the installation instructions.</li> <li>7. Replace the flame amplifier and/or the flame detector, if necessary.</li> <li>8. If the fault persists, replace the relay module.</li> </ol>